

CATALOG

# SACE Tmax XT

Low voltage molded case circuit-breakers



Break new ground

- Data and connectivity
- Ease of use and installation
- Performance and protection
- Safety and reliability

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**Break new ground.**

**A cutting-edge molded case circuit-breaker range delivering a brand new product experience, with extreme performance and protection features up to 1600A, maximizing ease of use, integration and connectivity. Built to deliver safety, reliability and quality.**

# SACE Tmax XT

The complete offering

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# Main characteristics

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## SACE Tmax XT overview

### Break new ground

Break new ground simply means delivering value through the entire customer journey by leaving behind the traditional concept of circuit-breaker. The SACE Tmax XT range offers a unique customer experience that, sharing the same features and logics with the Emax 2 range, for the first time ever overcomes the differences between molded case and air circuit-breakers. The most advanced products designed to maximize data and connectivity, ease of use and installation, performance and protection, safety and reliability.

The SACE Tmax XT range offers higher performance, better protection and more precise metering than equivalent units, and can handle from 160 up to 1600A.

Combined with the world's most precise electronic trip units in the smallest frames, the new range delivers significant time savings and enhances installation quality.

Reliability is further increased, and speed of installation reduced, thanks to Bluetooth and Ekip connectivity for mobile devices.



The SACE Tmax XT family's built-in connectivity links smartphones, tablets and PCs to data analysis tools on the ABB Ability™ cloud platform in real time. The extreme precision of the data measured means users have access to accurate information anywhere and anytime, making it easier to monitor resources and identify savings opportunities. Using the embedded smart power controller can help reduce energy consumption by up to 20 percent.

Upgrading the breakers is straightforward: for the first time, customers can download new functions from the ABB Ability Marketplace™, choosing from among more than 50 different protection, metering and automation functionalities.



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## Distinctive features

### Data and connectivity



Plant management of the future – SACE Tmax XT sets standards in modern plant and energy management. Access, monitor and control information remotely, anywhere, at any time. Improving efficiency and saving energy.





The SACE Tmax XT is the first molded case circuit-breaker to become an active element inside the electrical plant without using external accessories.

**Local connection**

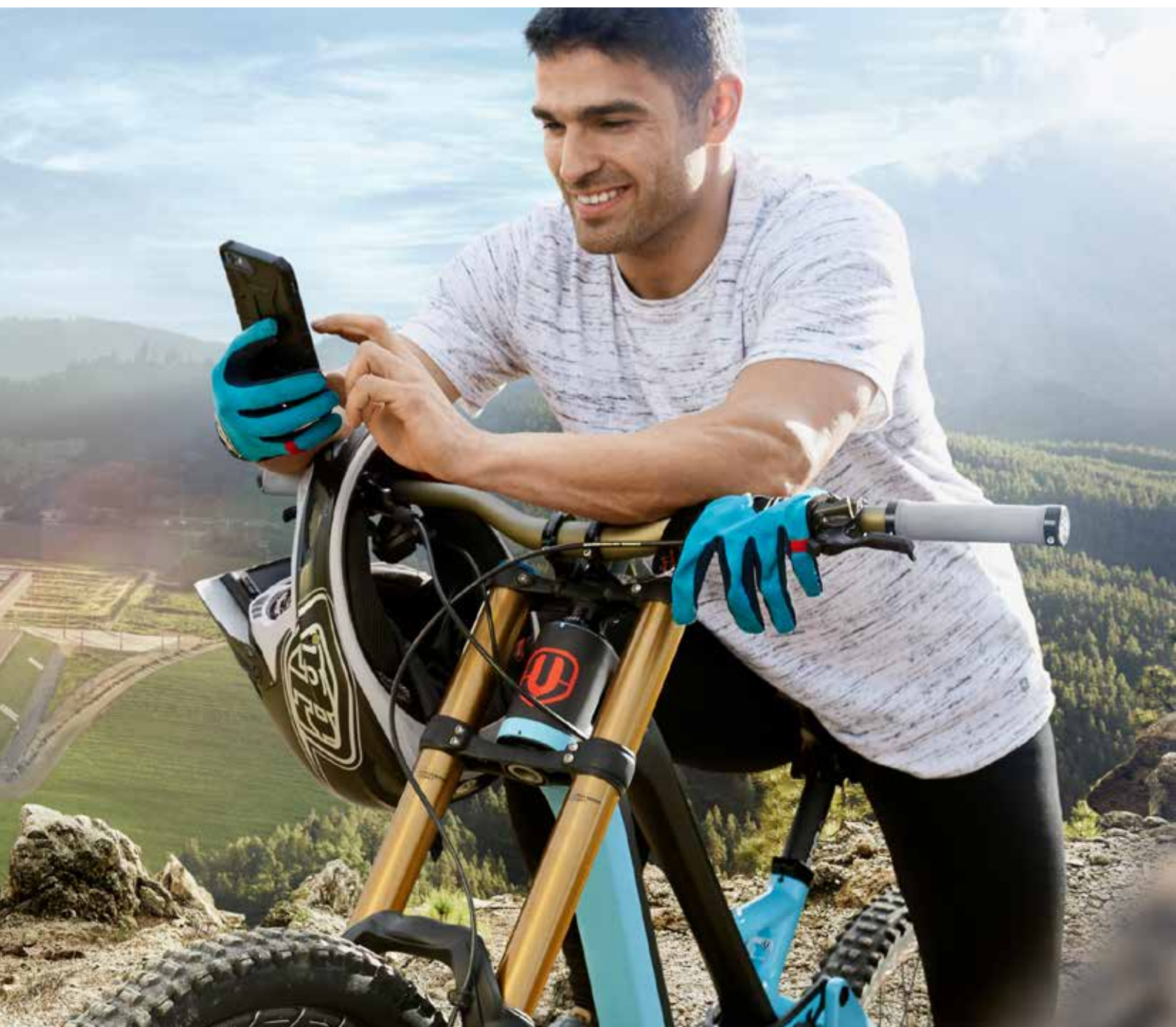
Commissioning and device setting have never been so easy thanks to the Bluetooth connectivity and the Ekip Connect software.

**Remote communication**

All the data of the electrical plant are accessible and the interaction with the breakers from remote is straightforward thanks the several communication protocols available.

**Cloud connectivity**

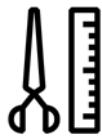
Cloud connection is now possible to exploit the full service of ABB Ability™ EDCS thanks to the Ekip Com HUB.





## Distinctive features

### Ease of use and installation



Maximum flexibility for every application – SACE Tmax XT sets standards for electrical installations. Easy selection, one-fits-all accessories and intuitive design pave the way for fast upgrades and create values through the entire customer journey. Even for the most critical projects.



**Ease of selection**

The clever organization of the SACE Tmax XT range and the user-friendly software e-Configure allows the customer to easily select and customize the right products for their needs.

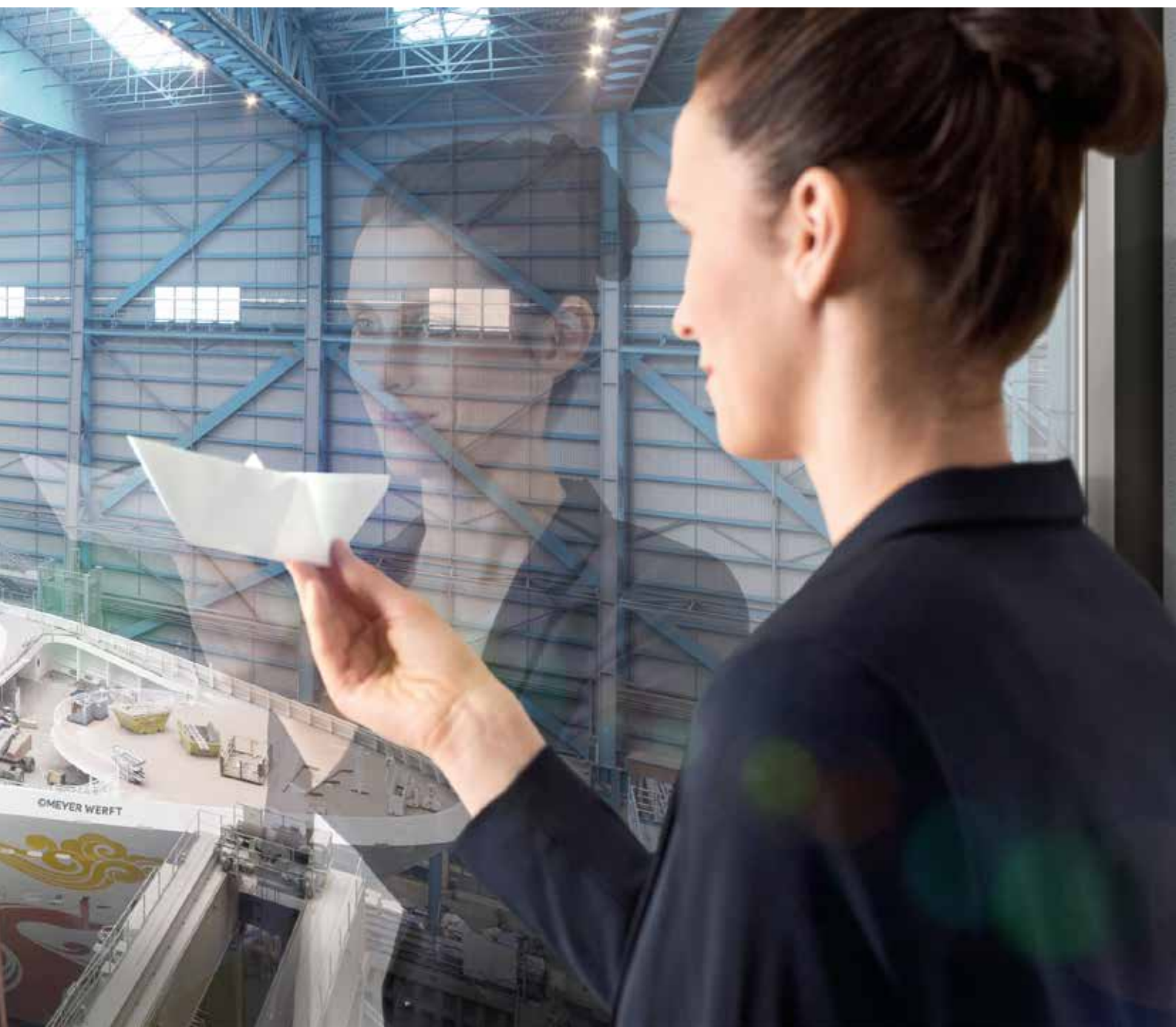
**One-fits-all accessories**

Improving the circuit-breaker from its basic functions

to a more versatile and sophisticated device is made possible thanks to the SACE Tmax XT modular structure and the variety of available accessories.

**Upgradability**

The Ekip Touch and Hi-Touch trip units can always be upgraded via ABB Ability Marketplace™ and new functionalities shall be always available for an ever ending future.



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## Distinctive features

### Performance and protection



Continuity of service and equipment protection – SACE Tmax XT sets standards when extreme breaking capacity is needed. Sharing the same logics, interfaces and features regardless of operating voltage environmental conditions. Embedding the most advanced protections into the smallest of frames.





**Electrical performances**

SACE Tmax XT is designed and tested to meet any installation requirement, even the most critical ones.

**Metering**

SACE Tmax XT provides all the tools needed to set up a competent and effective energy management strategy thanks to the trip units able to measure electrical parameters with 1% accuracy certification.

**Protections and logics**

SACE Tmax XT integrates extra functionalities into the size of a standard molded case circuit-breaker. The most advanced protection functions and logics are available thanks to its cutting-edge trip units.



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## Distinctive feature

### Safety and reliability



Absolute attention to detail, with style from design to manufacturing SACE Tmax XT sets standards for edge technologies. Half a century of research and experience means top-level products that are ready to face future challenges.





Discover more about SACE Tmax XT



Web page: [go.abb/XT](https://go.abb/XT)



# Products conformity

SACE Tmax XT circuit-breakers and their accessories comply with IEC 60947, EN 60947 international Standards

## Compliance with Standards

Tmax XT circuit-breakers and their accessories are constructed in compliance with:

- Standard:
  - IEC 60947-2;
- Directives:
  - EC "Low Voltage Directive" (LVD) N° 2014/35/EC;
  - EC "Electromagnetic Compatibility Directive" (EMC) 2014/30/EC;

## Shipping Registers:

- Lloyd's Register of Shipping, Germanischer Lloyd, Bureau Veritas, Rina, Det Norske Veritas, Russian Maritime Register of Shipping, ABS.

Certification of conformity with product Standards is carried out at the ABB SACE test laboratory (accredited by SINAL) in compliance with the EN 45011 European Standard, by the Italian certification body ACAE, member of the European LOVAG organization and by the Swedish certification body SEMKO recognized by the international IECCE organization.



CCC



JIS



KC



Registro Italiano Navale (RINA):  
Italy



Lloyd's Register of Shipping (LR):  
United Kingdom



American Bureau Shipping (ABS):  
United States of America



LOVAG low voltage agreement  
group



Germanischer Lloyd (GL):  
Germany



Bureau Veritas (BV):  
France



Det Norske Veritas (DNV):  
Norway



Russian Maritime Register of Shipping (RMRS):  
Russia



Nippon Kaiji Kyokai (NKK):  
Japan



Gost - Eac

For more information about circuit-breakers, certified ratings and their corresponding validity, please contact ABB SACE.



### Company Quality System

The ABB SACE Quality System complies with the following Standards:

- ISO 9001 International Standard;
- EN ISO 9001 (equivalent) European Standards;
- UNI EN ISO 9001 (equivalent) Italian Standards;
- IRIS International Railway Industry Standards.

The ABB SACE Quality System attained its first certification by the RINA certification body in 1990.

### Environmental Health & Safety Management System, Social Responsibility and Ethics

Special care for the environment is a priority commitment for ABB SACE. This is confirmed through the company's Environmental Management System which is certified by the RINA (ABB SACE was the first industry in the electromechanical sector in Italy to obtain this recognition) in conformity with the International ISO14001 Standard. In 1999 the Environmental Management System was integrated with the Occupational Health and Safety Management System according to the OHSAS 18001 Standard and later, in 2005, with the SA 8000 (Social Accountability 8000) Standard. All this amounts to solid evidence of ABB's commitment to respecting business ethics and promoting a safe and healthy working environment.

ISO 14001, OHSAS 18001 and SA8000 recognitions together with ISO 9001 made it possible to obtain RINA BEST<sup>4</sup> (Business Excellence Sustainable Task) certification.

In addition to this, the following markings and certifications have been achieved :

- GISA 01.02A03;
- LCA (Life Cycle Assessment).

### Product Material Compliance

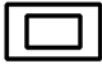
The XT family complies with the following international regulations:

- RoHS II, Directive 2011/65/EC;
- China RoHS;
- REACH, 2006/1907/EC, Registration, Evaluation, Authorisation and Restriction of Chemicals;
- WEEE 2012/19/EU -Waste Electrical & Electronic Equipment;
- Conflict Minerals - Dodd-Frank Consumer Protection Act. Section 1502.



## Construction characteristics

All the SACE Tmax XT molded case circuit-breakers are built in accordance with the following constructional characteristics.



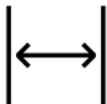
### Double insulation

The Tmax XT circuit-breaker has double insulation between the live power parts (excluding the terminals) and the front parts of the apparatus where the operator works during normal operation. The seat of each electrical accessory is completely segregated from the power circuit, preventing any risk of contact with live parts. The operating mechanism especially is completely insulated from the powered circuits. Furthermore, the circuit-breaker has oversized insulation, both between the live internal parts and near the connection terminals. Furthermore, the distances exceed those required by the IEC Standards and fully comply with the prescriptions of the UL 489 Standard.



### Positive operation

The operating lever always indicates the precise position of the moving contacts of the circuit-breaker, thereby guaranteeing safe and reliable signals, in compliance with IEC 60073 and IEC 60417-2 Standards (I = Closed; O = Open; yellow-green line = open due to protection trip). The circuit-breaker operating mechanism has a free release regardless of the pressure on the lever and the speed of operation. Protection tripping automatically opens the moving contacts: to close them again, the operating mechanism must first be reset by pushing the operating lever from the intermediate position to the lowest open position.



### Insulation behaviour

In the open position, the circuit-breaker guarantees insulation distances in compliance with the IEC 60947-2 Standard, thus preventing leakage currents to flow between the input and output terminals.



### Tropicalization

Circuit-breakers and accessories in the Tmax XT series are tested in compliance with the IEC 60068-2-30 Standard, carrying out 2 cycles at 55 °C with the “variant 1” method (clause 7.3.3). The suitability of the Tmax XT series under the most severe environmental conditions is further ensured with the hot-humid climate according to climatograph 8 in the IEC 60721-2-1 Standards thanks to:

- molded insulating cases made of synthetic resins reinforced with glass fibers;
- anti-corrosion treatment of the main metallic parts;
- Fe/Zn 12 zinc-plating (ISO 2081) protected by a conversion layer, free from hexavalent chromium (ROHS-compliant), with the same corrosion resistance guaranteed by ISO 4520 class 2C;
- application of anti-condensation protection for electronic overcurrent releases and relative accessories.



## The ranges

- 2/2**      **SACE Tmax XT automatic circuit-breakers for alternating current (AC) distribution**
- 2/6**      **SACE Tmax XT automatic circuit-breakers for direct current (DC) distribution**
- 2/10**     **SACE Tmax XT switch-disconnectors**



# SACE Tmax XT automatic circuit-breakers for alternating current (AC) distribution



| Size  |                         | XT1                           |                  |          |         |            |
|---|-------------------------|-------------------------------|------------------|----------|---------|------------|
| Rated uninterrupted current                                     | [A]                     | 160                           |                  |          |         |            |
| Poles   | [No.]                   | 3, 4                          |                  |          |         |            |
| Rated service voltage, U <sub>e</sub>                           | (AC) 50-60Hz [V]        | 690                           |                  |          |         |            |
| Rated insulation voltage, U <sub>i</sub>                        | [V]                     | 800                           |                  |          |         |            |
| Rated impulse withstand voltage, U <sub>imp</sub>               | [kV]                    | 8                             |                  |          |         |            |
| Versions  |                         | Fixed, Plug-in <sup>(1)</sup> |                  |          |         |            |
| Breaking capacities according to IEC 60947-2                    |                         | B                             | C                | N        | S       | H          |
| Rated ultimate short-circuit breaking capacity, I <sub>cu</sub> |                         |                               |                  |          |         |            |
| I <sub>cu</sub> @ 220-230-240V 50-60Hz (AC)                     | [kA]                    | 25                            | 40               | 65       | 85      | 100        |
| I <sub>cu</sub> @ 380V 50-60Hz (AC)                             | [kA]                    | 18                            | 25               | 36       | 50      | 70         |
| I <sub>cu</sub> @ 415V 50-60Hz (AC)                             | [kA]                    | 18                            | 25               | 36       | 50      | 70         |
| I <sub>cu</sub> @ 440V 50-60Hz (AC)                             | [kA]                    | 15                            | 25               | 36       | 50      | 65         |
| I <sub>cu</sub> @ 500V 50-60Hz (AC)                             | [kA]                    | 8                             | 18               | 30       | 36      | 50         |
| I <sub>cu</sub> @ 525V 50-60Hz (AC)                             | [kA]                    | 6                             | 8                | 22       | 35      | 35         |
| I <sub>cu</sub> @ 690V 50-60Hz (AC)                             | [kA]                    | 3                             | 4                | 6        | 8       | 10         |
| Rated service short-circuit breaking capacity, I <sub>cs</sub>  |                         |                               |                  |          |         |            |
| I <sub>cs</sub> @ 220-230-240V 50-60Hz (AC)                     | [kA]                    | 100%                          | 100%             | 75% (50) | 75%     | 75%        |
| I <sub>cs</sub> @ 380V 50-60Hz (AC)                             | [kA]                    | 100%                          | 100%             | 100%     | 100%    | 75%        |
| I <sub>cs</sub> @ 415V 50-60Hz (AC)                             | [kA]                    | 100%                          | 100%             | 100%     | 75%     | 50% (37.5) |
| I <sub>cs</sub> @ 440V 50-60Hz (AC)                             | [kA]                    | 75%                           | 50%              | 50%      | 50%     | 50%        |
| I <sub>cs</sub> @ 500V 50-60Hz (AC)                             | [kA]                    | 100%                          | 50%              | 50%      | 50%     | 50%        |
| I <sub>cs</sub> @ 525V 50-60Hz (AC)                             | [kA]                    | 100%                          | 100%             | 50%      | 50%     | 50%        |
| I <sub>cs</sub> @ 690V 50-60Hz (AC)                             | [kA]                    | 100%                          | 100%             | 75% (5)  | 50% (5) | 50%        |
| Breaking capacities according to NEMA-AB1                       |                         |                               |                  |          |         |            |
| @ 240V 50-60Hz (AC)   | [kA]                    | 25                            | 40               | 65       | 85      | 100        |
| @ 480V 50-60Hz (AC)   | [kA]                    | 8                             | 18               | 30       | 36      | 65         |
| Utilization Category (IEC 60947-2)                              |                         | A                             |                  |          |         |            |
| I <sub>cw</sub>   | [kA]                    | -                             |                  |          |         |            |
| Reference Standard  |                         | IEC 60947-2                   |                  |          |         |            |
| Insulation behaviour  |                         | ✓                             |                  |          |         |            |
| Mounted on DIN rail   |                         | DIN EN 50022                  |                  |          |         |            |
| Mechanical life   | [No. Operations]        | 25,000                        |                  |          |         |            |
|   | [No. Hourly operations] | 240                           |                  |          |         |            |
| Electrical life @ 415 V (AC)                                    | [No. Operations]        | 8,000                         |                  |          |         |            |
|   | [No. Hourly operations] | 120                           |                  |          |         |            |
| Dimensions  |                         |                               |                  |          |         |            |
| Fixed   | 3 poles                 | [mm]                          | 76.2 x 70 x 130  |          |         |            |
| (Width x Depth x Height)  | 4 poles                 | [mm]                          | 101.6 x 70 x 130 |          |         |            |
| Trip units for power distribution                               |                         |                               |                  |          |         |            |
| TMD/TMA   |                         |                               |                  |          |         |            |
| TMD/TMF   |                         | ■                             |                  |          |         |            |
| Ekip Dip  |                         |                               |                  |          |         |            |
| Ekip Touch  |                         |                               |                  |          |         |            |
| Trip units for motor protection                                 |                         |                               |                  |          |         |            |
| MF/MA   |                         |                               |                  |          |         |            |
| Ekip Dip  |                         |                               |                  |          |         |            |
| Ekip Touch  |                         |                               |                  |          |         |            |
| Trip units for generator protection                             |                         |                               |                  |          |         |            |
| TMG   |                         |                               |                  |          |         |            |
| Ekip Dip  |                         |                               |                  |          |         |            |
| Ekip Touch  |                         |                               |                  |          |         |            |
| Interchangeable trip units                                      |                         |                               |                  |          |         |            |
| Weight  |                         |                               |                  |          |         |            |
| Fixed   | 3/4 poles               | [kg]                          | 1.1 / 1.4        |          |         |            |
| Plug in (EF terminals)  | 3/4 poles               | [kg]                          | 2.21 / 2.82      |          |         |            |
| Withdrawable (EF terminals)                                     | 3/4 poles               | [kg]                          |                  |          |         |            |

(1) XT1 plug-in In max=125A

(2) I<sub>cs</sub>=100% I<sub>cu</sub> up to 250 A with EF, ES and Rear terminal. When any other terminals are used and I<sub>l</sub> >200A I<sub>cu</sub>=25%



| XT2                          |      |      |          |      | XT3            |          |      | XT4                          |      |      |        |                     |
|------------------------------|------|------|----------|------|----------------|----------|------|------------------------------|------|------|--------|---------------------|
| 160                          |      |      |          |      | 250            |          |      | 160 / 250                    |      |      |        |                     |
| 3, 4                         |      |      |          |      | 3, 4           |          |      | 3, 4                         |      |      |        |                     |
| 690                          |      |      |          |      | 690            |          |      | 690                          |      |      |        |                     |
| 1000                         |      |      |          |      | 800            |          |      | 1000                         |      |      |        |                     |
| 8                            |      |      |          |      | 8              |          |      | 8                            |      |      |        |                     |
| Fixed, Withdrawable, Plug-in |      |      |          |      | Fixed, Plug-in |          |      | Fixed, Withdrawable, Plug-in |      |      |        |                     |
| N                            | S    | H    | L        | V    | N              | S        | N    | S                            | H    | L    | V      | X                   |
| 65                           | 85   | 100  | 150      | 200  | 50             | 85       | 65   | 85                           | 100  | 150  | 200    | 200                 |
| 36                           | 50   | 70   | 120      | 150  | 36             | 50       | 36   | 50                           | 70   | 120  | 150    | 200                 |
| 36                           | 50   | 70   | 120      | 150  | 36             | 50       | 36   | 50                           | 70   | 120  | 150    | 200                 |
| 36                           | 50   | 65   | 100      | 150  | 25             | 40       | 36   | 50                           | 65   | 100  | 150    | 200                 |
| 30                           | 36   | 50   | 60       | 70   | 20             | 30       | 30   | 36                           | 50   | 60   | 70     | 100                 |
| 20                           | 25   | 30   | 36       | 50   | 13             | 20       | 20   | 25                           | 45   | 50   | 50     | 100                 |
| 10                           | 12   | 15   | 18       | 20   | 5              | 6        | 10   | 12                           | 15   | 20   | 25     | 100                 |
| 100%                         | 100% | 100% | 100%     | 100% | 75%            | 50%      | 100% | 100%                         | 100% | 100% | 100%   | 100%                |
| 100%                         | 100% | 100% | 100%     | 100% | 75%            | 50% (27) | 100% | 100%                         | 100% | 100% | 100%   | 100%                |
| 100%                         | 100% | 100% | 100%     | 100% | 75%            | 50% (27) | 100% | 100%                         | 100% | 100% | 100%   | 100%                |
| 100%                         | 100% | 100% | 100%     | 100% | 75%            | 50%      | 100% | 100%                         | 100% | 100% | 100%   | 100%                |
| 100%                         | 100% | 100% | 100%     | 100% | 75%            | 50%      | 100% | 100%                         | 100% | 100% | 100%   | 100%                |
| 100%                         | 100% | 100% | 100%     | 100% | 75%            | 50%      | 100% | 100%                         | 100% | 100% | 100%   | 100%                |
| 100%                         | 100% | 100% | 75% (15) | 75%  | 75%            | 50%      | 100% | 100%                         | 100% | 100% | 100%   | 100% <sup>(2)</sup> |
| 65                           | 85   | 100  | 150      | 200  | 50             | 85       | 65   | 85                           | 100  | 150  | 200    | 200                 |
| 30                           | 36   | 65   | 100      | 150  | 25             | 35       | 30   | 36                           | 65   | 100  | 150    | 100                 |
| A                            |      |      |          |      | A              |          |      | A                            |      |      |        |                     |
| -                            |      |      |          |      | -              |          |      | -                            |      |      |        |                     |
| IEC 60947-2                  |      |      |          |      | IEC 60947-2    |          |      | IEC 60947-2                  |      |      |        |                     |
| ✓                            |      |      |          |      | ✓              |          |      | ✓                            |      |      |        |                     |
| DIN EN 50022                 |      |      |          |      | DIN EN 50022   |          |      | DIN EN 50022                 |      |      |        |                     |
| 25,000                       |      |      |          |      | 25,000         |          |      | 25,000                       |      |      |        |                     |
| 240                          |      |      |          |      | 240            |          |      | 240                          |      |      |        |                     |
| 8,000                        |      |      |          |      | 8,000          |          |      | 8,000                        |      |      | 10,000 |                     |
| 120                          |      |      |          |      | 120            |          |      | 120                          |      |      |        |                     |
| 90 x 82.5 x 130              |      |      |          |      | 105 x 70 x 150 |          |      | 105 x 82.5 x 160             |      |      |        |                     |
| 120 x 82.5 x 130             |      |      |          |      | 140 x 70 x 150 |          |      | 140 x 82.5 x 160             |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ■                            |      |      |          |      | ■              |          |      | ■                            |      |      |        |                     |
| ✓                            |      |      |          |      | ✓              |          |      | ✓                            |      |      |        |                     |
| 1.2 / 1.6                    |      |      |          |      | 1.7 / 2.1      |          |      | 2.5 / 3.5                    |      |      |        |                     |
| 2.54 / 3.27                  |      |      |          |      | 3.24 / 4.1     |          |      | 4.19 / 5.52                  |      |      |        |                     |
| 3.32 / 4.04                  |      |      |          |      |                |          |      | 5 / 6.76                     |      |      |        |                     |

# SACE Tmax XT automatic circuit-breakers for alternating current (AC) distribution



| Size   |           | XT5   |   |      |                     |                     |                     |                     |  |
|--|-----------|---|---|------|---------------------|---------------------|---------------------|---------------------|--|
| Rated uninterrupted current                                |           | [A]   | 400 / 630                                     |      |                     |                     |                     |                     |  |
| Poles  |           | [No.]                                       | 3, 4  |      |                     |                     |                     |                     |  |
| Rated service voltage, <b>Ue</b>                           |           | (AC) 50-60Hz                                | [V]   | 690  |                     |                     |                     |                     |  |
| Rated insulation voltage, <b>Ui</b>                        |           |   | [V]   | 1000 |                     |                     |                     |                     |  |
| Rated impulse withstand voltage, <b>Uimp</b>               |           |   | [kV]  | 8    |                     |                     |                     |                     |  |
| Versions   |           | Fixed, Withdrawable, Plug-in <sup>(5)</sup> |   |      |                     |                     |                     |                     |  |
| Breaking capacities according to IEC 60947-2               |           |   | N   | S    | H                   | L                   | V                   | X                   |  |
| Rated ultimate short-circuit breaking capacity, <b>Icu</b> |           |   |   |      |                     |                     |                     |                     |  |
| Icu @ 220-230-240V 50-60Hz (AC)                            |           | [kA]  | 70  | 85   | 100                 | 150                 | 200                 | 200                 |  |
| Icu @ 380V 50-60Hz (AC)                                    |           | [kA]  | 36  | 50   | 70                  | 120                 | 200                 | 200                 |  |
| Icu @ 415V 50-60Hz (AC)                                    |           | [kA]  | 36  | 50   | 70                  | 120                 | 200                 | 200                 |  |
| Icu @ 440V 50-60Hz (AC)                                    |           | [kA]  | 36  | 50   | 65                  | 100                 | 180                 | 200                 |  |
| Icu @ 500V 50-60Hz (AC)                                    |           | [kA]  | 25  | 30   | 50                  | 85                  | 150                 | 150                 |  |
| Icu @ 525V 50-60Hz (AC)                                    |           | [kA]  | 25  | 30   | 50                  | 85                  | 100                 | 120                 |  |
| Icu @ 690V 50-60Hz (AC)                                    |           | [kA]  | 20  | 25   | 40                  | 70                  | 80                  | 100                 |  |
| Rated service short-circuit breaking capacity, <b>Ics</b>  |           |   |   |      |                     |                     |                     |                     |  |
| Ics @ 220-230-240V 50-60Hz (AC)                            |           | [kA]  | 100%  | 100% | 100%                | 100%                | 100%                | 100%                |  |
| Ics @ 380V 50-60Hz (AC)                                    |           | [kA]  | 100%  | 100% | 100%                | 100%                | 100%                | 100%                |  |
| Ics @ 415V 50-60Hz (AC)                                    |           | [kA]  | 100%  | 100% | 100%                | 100%                | 100%                | 100%                |  |
| Ics @ 440V 50-60Hz (AC)                                    |           | [kA]  | 100%  | 100% | 100%                | 100%                | 100%                | 100%                |  |
| Ics @ 500V 50-60Hz (AC)                                    |           | [kA]  | 100%  | 100% | 100%                | 100%                | 100%                | 100%                |  |
| Ics @ 525V 50-60Hz (AC)                                    |           | [kA]  | 100%  | 100% | 100%                | 100%                | 100%                | 100%                |  |
| Ics @ 690V 50-60Hz (AC)                                    |           | [kA]  | 100%  | 100% | 100% <sup>(2)</sup> | 100% <sup>(3)</sup> | 100% <sup>(3)</sup> | 100% <sup>(3)</sup> |  |
| Breaking capacities according to NEMA-AB1                  |           |   |   |      |                     |                     |                     |                     |  |
| @ 240V 50-60Hz (AC)  |           | [kA]  |   |      |                     |                     |                     |                     |  |
| @ 480V 50-60Hz (AC)  |           | [kA]  |   |      |                     |                     |                     |                     |  |
| Utilization Category (IEC 60947-2)                         |           |   | A (up to 630A), B (up to 500A) <sup>(4)</sup> |      |                     |                     |                     |                     |  |
| Icw (1 sec)  |           | [kA]  | 6   |      |                     |                     |                     |                     |  |
| Reference Standard   |           |   | IEC 60947-2                                   |      |                     |                     |                     |                     |  |
| Insulation behaviour                                       |           |   | ✓   |      |                     |                     |                     |                     |  |
| Mounted on DIN rail  |           |   | -   |      |                     |                     |                     |                     |  |
| Mechanical life  |           | [No. operations]                            | 20,000  |      |                     |                     |                     |                     |  |
|  |           | [No. hourly operations]                     | 120   |      |                     |                     |                     |                     |  |
| Electrical life @ 415 V (AC)                               |           | [No. operations]                            | 7.000 (400A) - 5.000 (630A)                   |      |                     |                     |                     |                     |  |
|  |           | [No. hourly operations]                     | 60  |      |                     |                     |                     |                     |  |
| Dimensions   |           |   |   |      |                     |                     |                     |                     |  |
| Fixed  | 3 poles   | [mm]  | 140 x 103 x 205                               |      |                     |                     |                     |                     |  |
| (Width x Depth x Height)                                   | 4 poles   | [mm]  | 186 x 103 x 205                               |      |                     |                     |                     |                     |  |
| Trip units for power distribution                          |           |   |   |      |                     |                     |                     |                     |  |
| TMD/TMA  |           |   | ■   |      |                     |                     |                     |                     |  |
| TMD/TMF  |           |   |   |      |                     |                     |                     |                     |  |
| Ekip Dip   |           |   | ■   |      |                     |                     |                     |                     |  |
| Ekip Touch   |           |   | ■   |      |                     |                     |                     |                     |  |
| Trip units for motor protection                            |           |   |   |      |                     |                     |                     |                     |  |
| MF/MA  |           |   | ■   |      |                     |                     |                     |                     |  |
| Ekip Dip   |           |   | ■   |      |                     |                     |                     |                     |  |
| Ekip Touch   |           |   | ■   |      |                     |                     |                     |                     |  |
| Trip units for generator protection                        |           |   |   |      |                     |                     |                     |                     |  |
| TMG  |           |   | ■   |      |                     |                     |                     |                     |  |
| Ekip Dip   |           |   | ■   |      |                     |                     |                     |                     |  |
| Ekip Touch   |           |   | ■   |      |                     |                     |                     |                     |  |
| Interchangeable trip units                                 |           |   | ✓   |      |                     |                     |                     |                     |  |
| Weight   |           |   |   |      |                     |                     |                     |                     |  |
| Fixed  | 3/4 poles | [kg]  | 3.25 / 4.15                                   |      |                     |                     |                     |                     |  |
| Plug in (EF terminals)                                     | 3/4 poles | [kg]  | 5.15 / 6.65                                   |      |                     |                     |                     |                     |  |
| Withdrawable (EF terminals)                                | 3/4 poles | [kg]  | 5.4 / 6.9                                     |      |                     |                     |                     |                     |  |

(1) Not suitable for IT distribution Systems (2) Ics = 75% In > 500A (3) Ics = 50% In > 500A (4) Category B: only when equipped with an electronic trip unit



| XT6 <sup>(1)</sup>                        |      |      | XT7                      |      |      | XT7 M                    |      |      |
|---|------|------|--------------------------|------|------|--------------------------|------|------|
| 800 / 1000 <sup>(6)</sup>                 |      |      | 800 / 1000 / 1250 / 1600 |      |      | 800 / 1000 / 1250 / 1600 |      |      |
| 3, 4                                      |      |      | 3, 4                     |      |      | 3, 4                     |      |      |
| 690                                       |      |      | 690                      |      |      | 690                      |      |      |
| 1000                                      |      |      | 1000                     |      |      | 1000                     |      |      |
| 8   |      |      | 8                        |      |      | 8                        |      |      |
| Fixed, Withdrawable                       |      |      | Fixed, Withdrawable      |      |      | Fixed, Withdrawable      |      |      |
| N   | S    | H    | S                        | H    | L    | S                        | H    | L    |
| 70  | 85   | 100  | 85                       | 100  | 200  | 85                       | 100  | 200  |
| 36  | 50   | 70   | 50                       | 70   | 120  | 50                       | 70   | 120  |
| 36  | 50   | 70   | 50                       | 70   | 120  | 50                       | 70   | 120  |
| 30  | 45   | 50   | 50                       | 65   | 100  | 50                       | 65   | 100  |
| 25  | 35   | 50   | 45                       | 50   | 85   | 45                       | 50   | 85   |
| 25  | 35   | 50   | 45                       | 50   | 65   | 45                       | 50   | 65   |
| 20  | 22   | 25   | 30                       | 42   | 50   | 30                       | 42   | 50   |
| 100%                                      | 100% | 100% | 100%                     | 100% | 100% | 100%                     | 100% | 100% |
| 100%                                      | 100% | 100% | 100%                     | 100% | 100% | 100%                     | 100% | 100% |
| 100%                                      | 100% | 100% | 100%                     | 100% | 100% | 100%                     | 100% | 100% |
| 100%                                      | 100% | 100% | 100%                     | 100% | 100% | 100%                     | 100% | 100% |
| 100%                                      | 100% | 100% | 100%                     | 100% | 100% | 100%                     | 100% | 100% |
| 100%                                      | 100% | 100% | 100%                     | 100% | 100% | 100%                     | 100% | 100% |
| A (up to 1000A) - B (800A) <sup>(4)</sup> |      |      | B                        |      |      | B                        |      |      |
| 10  |      |      | 20                       |      |      | 20                       |      |      |
| IEC 60947-2                               |      |      | IEC 60947-2              |      |      | IEC 60947-2              |      |      |
| ✓   |      |      | ✓                        |      |      | ✓                        |      |      |
| -   |      |      | -                        |      |      | -                        |      |      |
| 20,000                                    |      |      | 10,000                   |      |      | 20,000                   |      |      |
| 120                                       |      |      | 60                       |      |      | 60                       |      |      |
| 5,000                                     |      |      | 3,000                    |      |      | 3,000                    |      |      |
| 60  |      |      | 60                       |      |      | 60                       |      |      |
| 210 x 103.5 x 268                         |      |      | 210 x 166 x 268          |      |      | 210 x 178 x 268          |      |      |
| 280 x 103.5 x 268                         |      |      | 280 x 166 x 268          |      |      | 280 x 178 x 268          |      |      |
| ■   |      |      |                          |      |      |                          |      |      |
| ■   |      |      | ■                        |      |      | ■                        |      |      |
|   |      |      | ■                        |      |      | ■                        |      |      |
| ■   |      |      | ■                        |      |      | ■                        |      |      |
|   |      |      | ■                        |      |      | ■                        |      |      |
| ■   |      |      | ■                        |      |      | ■                        |      |      |
| ■   |      |      | ■                        |      |      | ■                        |      |      |
| ✓   |      |      | ✓                        |      |      | ✓                        |      |      |
| 9.5 / 12                                  |      |      | 9.7 / 12.5               |      |      | 11 / 14                  |      |      |
| 12.1 / 15.1                               |      |      | 29.7 / 39.6              |      |      | 32 / 42.6                |      |      |

(5) Plug-in/Withdrawable: max In 40°C=600A (6) 1000A only for fixed execution with EF, ES, R and FCCuAl terminals. EF terminals are supplied as standard if no other terminals are ordered

# SACE Tmax XT automatic circuit-breakers for direct current (DC) distribution



|  |                         |                               |                  |          |          |          |
|--|-------------------------|-------------------------------|------------------|----------|----------|----------|
| <b>Size</b>  |                         | <b>XT1</b>                    |                  |          |          |          |
| <b>Rated uninterrupted current</b>                         | [A]                     | 160                           |                  |          |          |          |
| <b>Poles</b>   | [No.]                   | 3, 4                          |                  |          |          |          |
| <b>Rated service voltage, Ue</b>                           | (DC) [V]                | 500                           |                  |          |          |          |
| <b>Rated insulation voltage, Ui</b>                        | (DC) [V]                | 800                           |                  |          |          |          |
| <b>Rated impulse withstand voltage, Uimp</b>               | [kV]                    | 8                             |                  |          |          |          |
| <b>Versions</b>  |                         | Fixed, Plug-in <sup>(2)</sup> |                  |          |          |          |
| <b>Breaking capacities according to IEC 60947-2</b>        |                         | <b>B</b>                      | <b>C</b>         | <b>N</b> | <b>S</b> | <b>H</b> |
| <b>Rated ultimate short-circuit breaking capacity, Icu</b> |                         |                               |                  |          |          |          |
| Icu @ 250V (DC) 2-pole in series                           | [kA]                    | 18                            | 25               | 36       | 50       | 70       |
| Icu @ 500V (DC) 2-pole in series                           | [kA]                    | –                             | –                | –        | –        | –        |
| Icu @ 500V (DC) 3-pole in series <sup>(1)</sup>            | [kA]                    | 18                            | 25               | 36       | 50       | 70       |
| Icu @ 750V (DC) 3-pole in series                           | [kA]                    | –                             | –                | –        | –        | –        |
| <b>Rated service short-circuit breaking capacity, Ics</b>  |                         |                               |                  |          |          |          |
| Ics @ 250V (DC) 2-pole in series                           | [kA]                    | 100%                          | 100%             | 100%     | 100%     | 75%      |
| Ics @ 500V (DC) 2-pole in series                           | [kA]                    | –                             | –                | –        | –        | –        |
| Ics @ 500V (DC) 3-pole in series <sup>(1)</sup>            | [kA]                    | 100%                          | 100%             | 100%     | 100%     | 75%      |
| Ics @ 750V (DC) 3-pole in series <sup>(1)</sup>            | [kA]                    | –                             | –                | –        | –        | –        |
| <b>Utilization Category (IEC 60947-2)</b>                  |                         | A                             |                  |          |          |          |
| <b>Reference Standard</b>                                  |                         | IEC 60947-2                   |                  |          |          |          |
| <b>Insulation behaviour</b>                                |                         | ✓                             |                  |          |          |          |
| <b>Mounted on DIN rail</b>                                 |                         | DIN EN 50022                  |                  |          |          |          |
| <b>Mechanical life</b>                                     | [No. Operations]        | 25,000                        |                  |          |          |          |
|  | [No. Hourly operations] | 240                           |                  |          |          |          |
| <b>Dimensions</b>  |                         |                               |                  |          |          |          |
| Fixed  | 3 poles                 | [mm]                          | 76.2 x 70 x 130  |          |          |          |
| (Width x Depth x Height)                                   | 4 poles                 | [mm]                          | 101.6 x 70 x 130 |          |          |          |
| <b>Trip units for power distribution</b>                   |                         |                               |                  |          |          |          |
| TMD/TMA  |                         |                               |                  |          |          |          |
| TMD/TMF  |                         | ■                             |                  |          |          |          |
| <b>Trip units with low magnetic (TMG)</b>                  |                         |                               |                  |          |          |          |
| TMG  |                         |                               |                  |          |          |          |
| <b>Interchangeable trip units</b>                          |                         |                               |                  |          |          |          |
| <b>Weight</b>  |                         |                               |                  |          |          |          |
| Fixed  | 3/4 poles               | [kg]                          | 1.1 / 1.4        |          |          |          |
| Plug in (EF terminals)                                     | 3/4 poles               | [kg]                          | 2.21 / 2.82      |          |          |          |
| Withdrawable (EF terminals)                                | 3/4 poles               | [kg]                          |                  |          |          |          |

(1) XT1: a 4 poles in series connection is required to be used in 500 V DC installations.

(2) XT1 plug-in In max=125A





| XT2                          |      |      |      |      | XT3            |     |
|------------------------------|------|------|------|------|----------------|-----|
| 160                          |      |      |      |      | 250            |     |
| 3, 4                         |      |      |      |      | 3, 4           |     |
| 500                          |      |      |      |      | 500            |     |
| 1000                         |      |      |      |      | 800            |     |
| 8                            |      |      |      |      | 8              |     |
| Fixed, Withdrawable, Plug-in |      |      |      |      | Fixed, Plug-in |     |
| N                            | S    | H    | L    | V    | N              | S   |
| 36                           | 50   | 70   | 85   | 100  | 36             | 50  |
| –                            | –    | –    | –    | –    | –              | –   |
| 36                           | 50   | 70   | 85   | 100  | 36             | 50  |
| –                            | –    | –    | –    | –    | –              | –   |
| 100%                         | 100% | 100% | 100% | 100% | 100%           | 75% |
| –                            | –    | –    | –    | –    | –              | –   |
| 100%                         | 100% | 100% | 100% | 100% | 100%           | 75% |
| –                            | –    | –    | –    | –    | –              | –   |
| A                            |      |      |      |      | A              |     |
| IEC 60947-2                  |      |      |      |      | IEC 60947-2    |     |
| ✓                            |      |      |      |      | ✓              |     |
| DIN EN 50022                 |      |      |      |      | DIN EN 50022   |     |
| 25,000                       |      |      |      |      | 25,000         |     |
| 120                          |      |      |      |      | 120            |     |
| 90 x 82.5 x 130              |      |      |      |      | 105 x 70 x 150 |     |
| 120 x 82.5 x 130             |      |      |      |      | 140 x 70 x 150 |     |
| ■                            |      |      |      |      | ■              |     |
| ■                            |      |      |      |      | ■              |     |
| ✓                            |      |      |      |      |                |     |
| 1.2 / 1.6                    |      |      |      |      | 1.7 / 2.1      |     |
| 2.54 / 3.27                  |      |      |      |      | 3.24 / 4.1     |     |
| 3.32 / 4.04                  |      |      |      |      |                |     |

# SACE Tmax XT automatic circuit-breakers for direct current (DC) distribution



| Size   |           | XT4                          |                  |          |          |          |          |          |
|--|-----------|------------------------------|------------------|----------|----------|----------|----------|----------|
| Rated uninterrupted current                                |           | [A]                          | 160 / 250        |          |          |          |          |          |
| Poles  |           | [No.]                        | 3, 4             |          |          |          |          |          |
| Rated service voltage, <b>Ue</b> (DC)                      |           | [V]                          | 750              |          |          |          |          |          |
| Rated insulation voltage, <b>Ui</b> (DC)                   |           | [V]                          | 1000             |          |          |          |          |          |
| Rated impulse withstand voltage, <b>Uimp</b>               |           | [kV]                         | 8                |          |          |          |          |          |
| Versions   |           | Fixed, Withdrawable, Plug-in |                  |          |          |          |          |          |
| Breaking capacities according to IEC 60947-2               |           |                              | <b>N</b>         | <b>S</b> | <b>H</b> | <b>L</b> | <b>V</b> | <b>X</b> |
| Rated ultimate short-circuit breaking capacity, <b>Icu</b> |           |                              |                  |          |          |          |          |          |
| Icu @ 250V (DC) 2 poles in series                          | [kA]      | 36                           | 50               | 70       | 85       | 100      | 100      |          |
| Icu @ 500V (DC) 2 poles in series                          | [kA]      | 36                           | 50               | 70       | 85       | 100      | 100      |          |
| Icu @ 500V (DC) 3 poles in series                          | [kA]      | 36                           | 50               | 70       | 85       | 100      | 100      |          |
| Icu @ 750V (DC) 3p in series                               | [kA]      | -                            | -                | -        | -        | -        | -        | 70       |
| Rated service short-circuit breaking capacity, <b>Ics</b>  |           |                              |                  |          |          |          |          |          |
| Ics @ 250V (DC) 2 poles in series                          | [kA]      | 100%                         | 100%             | 100%     | 100%     | 100%     | 100%     |          |
| Ics @ 500V (DC) 2 poles in series                          | [kA]      | 100%                         | 100%             | 100%     | 100%     | 100%     | 100%     |          |
| Ics @ 500V (DC) 3 poles in series                          | [kA]      | 100%                         | 100%             | 100%     | 100%     | 100%     | 100%     |          |
| Ics @ 750V (DC) 3 poles in series                          | [kA]      | -                            | -                | -        | -        | -        | -        | 100%     |
| Utilization Category (IEC 60947-2)                         |           | A                            |                  |          |          |          |          |          |
| Reference Standard   |           | IEC 60947-2                  |                  |          |          |          |          |          |
| Insulation behaviour                                       |           | ✓                            |                  |          |          |          |          |          |
| Mounted on DIN rail  |           | DIN EN 50022                 |                  |          |          |          |          |          |
| Mechanical life  |           | [No. Operations]             |                  | 25,000   |          |          |          |          |
|  |           | [No. Hourly operations]      |                  | 240      |          |          |          |          |
| Dimensions   |           |                              |                  |          |          |          |          |          |
| Fixed  | 3 poles   | [mm]                         | 105 x 82.5 x 160 |          |          |          |          |          |
| (Width x Depth x Height)                                   | 4 poles   | [mm]                         | 140 x 82.5 x 160 |          |          |          |          |          |
| Trip units   |           |                              |                  |          |          |          |          |          |
| TMD/TMA  |           | ■                            |                  |          |          |          |          |          |
| TMD/TMF  |           |                              |                  |          |          |          |          |          |
| Trip units with low magnetic (TMG)                         |           |                              |                  |          |          |          |          |          |
| TMG  |           |                              |                  |          |          |          |          |          |
| Interchangeable trip units                                 |           | ✓                            |                  |          |          |          |          |          |
| Weight   |           |                              |                  |          |          |          |          |          |
| Fixed  | 3/4 poles | [kg]                         | 2.5 / 3.5        |          |          |          |          |          |
| Plug in (EF terminals)                                     | 3/4 poles | [kg]                         | 4.19 / 5.52      |          |          |          |          |          |
| Withdrawable (EF terminals)                                | 3/4 poles | [kg]                         | 5 / 6.76         |          |          |          |          |          |

(1) Power supply only from the top



| XT5                          |      |      |      |                   |                    | XT6                 |     |     |
|------------------------------|------|------|------|-------------------|--------------------|---------------------|-----|-----|
| 400 / 630                    |      |      |      |                   |                    | 800                 |     |     |
| 3, 4                         |      |      |      |                   |                    | 3, 4                |     |     |
| 750                          |      |      |      |                   |                    | 750                 |     |     |
| 1,000                        |      |      |      |                   |                    | 1,000               |     |     |
| 8                            |      |      |      |                   |                    | 8                   |     |     |
| Fixed, Withdrawable, Plug-in |      |      |      |                   |                    | Fixed, Withdrawable |     |     |
| N                            | S    | H    | L    | V                 | X                  | N                   | S   | H   |
| 25                           | 35   | 50   | 70   | 85                | 100                | 35                  | 50  | 70  |
| 25                           | 35   | 50   | 70   | 85                | 100                | 20                  | 35  | 50  |
| -                            | -    | -    | -    | -                 | -                  | -                   | -   | -   |
| -                            | -    | -    | -    | 85 <sup>(1)</sup> | 100 <sup>(1)</sup> | 18                  | 24  | 36  |
| 100%                         | 100% | 100% | 100% | 100%              | 100%               | 100%                | 50% | 50% |
| 100%                         | 100% | 100% | 100% | 100%              | 100%               | 100%                | 50% | 50% |
| -                            | -    | -    | -    | -                 | -                  | -                   | -   | -   |
| -                            | -    | -    | -    | 100%              | 100%               | 100%                | 75% | 50% |
| A                            |      |      |      |                   |                    | A                   |     |     |
| IEC 60947-2                  |      |      |      |                   |                    | IEC 60947-2         |     |     |
| ✓                            |      |      |      |                   |                    | ✓                   |     |     |
| -                            |      |      |      |                   |                    | -                   |     |     |
| 20,000                       |      |      |      |                   |                    | 20,000              |     |     |
| 120                          |      |      |      |                   |                    | 120                 |     |     |
| 140 x 103 x 205              |      |      |      |                   |                    | 210 x 103.5 x 268   |     |     |
| 186 x 103 x 205              |      |      |      |                   |                    | 280 x 103.5 x 268   |     |     |
| ■                            |      |      |      |                   |                    | ■                   |     |     |
| ■                            |      |      |      |                   |                    | ■                   |     |     |
| ✓                            |      |      |      |                   |                    | ✓                   |     |     |
| 3.25 / 4.15                  |      |      |      |                   |                    | 9.5 / 12            |     |     |
| 5.15 / 6.65                  |      |      |      |                   |                    | -                   |     |     |
| 5.4 / 6.9                    |      |      |      |                   |                    | 12.1 / 15.1         |     |     |



**Protection**

Each switch-disconnector must be protected on the supply side by a coordinated device which safeguards it against short-circuits.

The section "Coordination" in the table below shows the correspondence between each switch-disconnector and the relevant circuit-breaker.

**Making capacity**

The making capacity  $I_{cm}$  is highly important since a switch-disconnector must be able to withstand the dynamic, thermal and current stresses which can occur during closing operations without being destroyed, right up to short-circuit closing conditions.

| XT5D                         |                  | XT6D                               |  | XT7D                               |  | XT7D M                             |  |
|------------------------------|------------------|------------------------------------|--|------------------------------------|--|------------------------------------|--|
| 400                          | 630              | 630 - 800 - 1000                   |  | 1000 - 1250 - 1600                 |  | 1000 - 1250 - 1600                 |  |
| 3, 4                         | 3, 4             | 3, 4                               |  | 3, 4                               |  | 3, 4                               |  |
| Fixed, Plug-in, Withdrawable |                  | Fixed, Withdrawable <sup>(1)</sup> |  | Fixed, Withdrawable                |  | Fixed, Withdrawable                |  |
| 690                          | 690              | 690                                |  | 690                                |  | 690                                |  |
| 750                          | 750              | 750                                |  | 750                                |  | 750                                |  |
| 800                          | 800              | 1,000                              |  | 1,000                              |  | 1,000                              |  |
| 8                            | 8                | 8                                  |  | 8                                  |  | 8                                  |  |
| 7,65                         | 12,3             | 30                                 |  | 40                                 |  | 40                                 |  |
| 440                          | 440              | 220                                |  | 252                                |  | 252                                |  |
| 5                            | 7,6              | 15                                 |  | 20                                 |  | 20                                 |  |
|                              |                  |                                    |  |                                    |  |                                    |  |
| 400                          | 630              | 630 - 800 - 1000                   |  | 1000 - 1250 - 1600                 |  | 1000 - 1250 - 1600                 |  |
| 400                          | 630              | 630 - 800                          |  | 1000 - 1250 - 1600                 |  | 1000 - 1250 - 1600                 |  |
| 400                          | 630              | 630 - 800 - 1000                   |  | 1000 - 1250 - 1600                 |  | 1000 - 1250 - 1600                 |  |
| 400                          | 630              | 630 - 800                          |  | 1000 - 1250 - 1600                 |  | 1000 - 1250 - 1600                 |  |
|                              |                  |                                    |  |                                    |  |                                    |  |
| 400 2p in series             | 630 2p in series | 630 - 800 - 1000 - 2p in series    |  | 1000 - 1250 - 1600 - 2p in series  |  | 1000 - 1250 - 1600 - 2p in series  |  |
| 400 2p in series             | 630 2p in series | 630 - 800 - 2p in series           |  | 1000 - 1250 - 1600 - 2p in series  |  | 1000 - 1250 - 1600 - 2p in series  |  |
| 400 2p in series             | 630 2p in series | 630 - 800 - 1000 - 2p in series    |  | 1000 - 1250 - 1600 - 3p in series  |  | 1000 - 1250 - 1600 - 3p in series  |  |
| 400 2p in series             | 630 2p in series | 630 - 800 - 2p in series           |  | 1000 - 1250 - 3p in series         |  | 1000 - 1250 - 3p in series         |  |
| 400 3p in series             | 630 3p in series | 630 - 800 - 1000 - 3p in serie     |  | 1000 - 1250 - 1600 - 4 p in series |  | 1000 - 1250 - 1600 - 4 p in series |  |
| 400 3p in series             | 630 3p in series | 630 - 800 - 3p in serie            |  | 1000 - 1250 - 4 p in series        |  | 1000 - 1250 - 4 p in series        |  |
| 5,000                        | 3,000            | 3,500                              |  | 2,500                              |  | 2,500                              |  |
| 20,000                       | 20,000           | 20,000                             |  | 10,000                             |  | 20,000                             |  |

| XT5 630 |    |    |     |     | XT6800 |    |    | XT6 1000 |    |    | XT7 1000 |    |     | XT7 1200 |    |     | XT71600 |    |     | XT7 M 1000 |    |     | XT7 M 1200 |    |     | XT7 M 1600 |    |     |
|---------|----|----|-----|-----|--------|----|----|----------|----|----|----------|----|-----|----------|----|-----|---------|----|-----|------------|----|-----|------------|----|-----|------------|----|-----|
| N       | S  | H  | L   | V   | N      | S  | H  | N        | S  | H  | S        | H  | L   | S        | H  | L   | S       | H  | L   | S          | H  | L   | S          | H  | L   | S          | H  | L   |
| 36      | 50 | 70 | 120 | 200 | 36     | 50 | 70 | 36       | 50 | 70 | 50       | 70 | 120 | 50       | 70 | 120 | 50      | 70 | 120 | 50         | 70 | 120 | 50         | 70 | 120 | 50         | 70 | 120 |
| -       | -  | -  | -   | -   | -      | -  | -  | -        | -  | -  | -        | -  | -   | -        | -  | -   | -       | -  | -   | -          | -  | -   | -          | -  | -   | -          | -  | -   |
| -       | -  | -  | -   | -   | -      | -  | -  | -        | -  | -  | -        | -  | -   | -        | -  | -   | -       | -  | -   | -          | -  | -   | -          | -  | -   | -          | -  | -   |
| -       | -  | -  | -   | -   | -      | -  | -  | -        | -  | -  | -        | -  | -   | -        | -  | -   | -       | -  | -   | -          | -  | -   | -          | -  | -   | -          | -  | -   |
| -       | -  | -  | -   | -   | -      | -  | -  | -        | -  | -  | -        | -  | -   | -        | -  | -   | -       | -  | -   | -          | -  | -   | -          | -  | -   | -          | -  | -   |
| 36      | 50 | 70 | 120 | 200 | -      | -  | -  | -        | -  | -  | -        | -  | -   | -        | -  | -   | -       | -  | -   | -          | -  | -   | -          | -  | -   | -          | -  | -   |
| 36      | 50 | 70 | -   | -   | -      | -  | -  | -        | -  | -  | -        | -  | -   | -        | -  | -   | -       | -  | -   | -          | -  | -   | -          | -  | -   | -          | -  | -   |
| -       | -  | -  | -   | -   | 36     | 50 | 70 | -        | -  | -  | -        | -  | -   | -        | -  | -   | -       | -  | -   | -          | -  | -   | -          | -  | -   | -          | -  | -   |
| -       | -  | -  | -   | -   | -      | -  | -  | 36       | 50 | 70 | -        | -  | -   | -        | -  | -   | -       | -  | -   | -          | -  | -   | -          | -  | -   | -          | -  | -   |
| -       | -  | -  | -   | -   | -      | -  | -  | -        | -  | -  | 50       | 70 | 120 | -        | -  | -   | -       | -  | -   | 50         | 70 | 120 | -          | -  | -   | -          | -  | -   |
| -       | -  | -  | -   | -   | -      | -  | -  | -        | -  | -  | -        | -  | -   | 50       | 70 | 120 | -       | -  | -   | -          | -  | -   | 50         | 70 | 120 | -          | -  | -   |
| -       | -  | -  | -   | -   | -      | -  | -  | -        | -  | -  | -        | -  | -   | -        | -  | -   | 50      | 70 | 120 | -          | -  | -   | -          | -  | -   | 50         | 70 | 120 |





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# Protection trip units

|             |                                   |
|-------------|-----------------------------------|
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## Introduction

SACE Tmax XT trip units break new ground: they represent a new benchmark for the molded case circuit-breakers as they are able to satisfy any performance requirement.

The Tmax XT trip units are designed to be used in a wide range of applications. This complete, flexible protection trip unit can be adapted to the actual level of protection required, independently of the complexity of the system.

The range is available for three levels of performances, to meet any requirement, from simple to advanced applications.

- **TM, thermal-magnetic trip unit**
- **Ekip Dip, electronic trip unit**
- **Ekip Touch/Hi-Touch, electronic trip units**








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### Thermal-magnetic trip units

Used in both AC and DC networks, these are a solution for protection against overloads and short-circuits. Overload protection is ensured thanks to ABB thermal device based on a temperature dependent bimetal heated by the current. Protection against short-circuiting is realized with a magnetic device.

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### The Ekip Dip trip units

The first level of electronic trip units, used for the protection of AC network: these are based on microprocessor technologies and guarantee high reliability and tripping precision. They provide protection against overloads, selective short-circuits, short-circuits and earth faults. The power required for their operation is provided directly from the current sensors.

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### The Ekip Touch/Hi-Touch trip units

These represent the state of the art in terms of technology for AC network protection with advanced protection and system management functions. Diverse communication protocols enable the reading of measurement parameters and circuit-breaker control remotely. Class 1 active energy measurement in compliance with the IEC 61557-12 Standard permits highly demanding requirements of energy efficiency to be satisfied. The integrated display makes interaction with the Ekip Touch an easy and intuitive experience for the user and the embedded Bluetooth functionality allows fast interaction via EPiC (Electrification products intuitive Configurator). The Ekip Touch trip unit guarantees maximum flexibility. In fact, by selecting among the numerous software solutions available, it is possible to customize the functionality of the device at will. On the other side, the Ekip Hi-Touch trip unit includes all functions by default, representing the top-of-the-line in the SACE Tmax XT offer.

#### **New digital experience**

With the new Ekip Touch and Hi-Touch trip units, it is always possible to select and install the desired functions on the device. The functions can be selected when ordering the circuit-breaker or downloaded directly from the ABB Ability Marketplace™, even from a smart phone or tablet, thus reducing installation time to zero.

## New digital experience

Ekip Touch/Hi-Touch trip units can be now customized with the functions required.

Ekip Touch/Hi-Touch always allow the user to enter in a new product experience thanks to the possibility to build up his own tailor-made trip unit by selecting the set of protections, measurements and logics.

Circuit-breakers' customization has never been so easy.

With the new Ekip Touch and Hi-Touch trip units, the most advanced functionalities can be enabled following two different purchasing processes:

- **1 ABB Ability Marketplace™**

Users can download digital upgrades via web and enable them directly on the trip unit, without removing the circuit-breaker from the installation point, with zero shipping time and no installation costs. This process allows additional functions to be selected after the trip unit has been already received on site and installed. Moreover, stock can be optimized by keeping in the warehouse few types of trip units and customizing them according to the customer's specific needs. Once purchased, each function can be easily activated by using a smartphone or tablet via EPiC and embedded Bluetooth connectivity, or a laptop with Ekip Connect 3 and an Ekip T&P.

- **2 Traditional ordering**

This option represents the standard way to order ABB devices. The traditional process allows the users to select and directly install the desired functions when ordering the circuit-breaker. Once received and installed, SACE Tmax XT always offers the possibility to add new functionalities via ABB Ability Marketplace™.

The new Ekip digital offering includes:

- **Packages**

The software packages offer the possibility to customize the circuit-breaker by selecting additional protection functions and measurements. The device can be personalized to create tailor-made solutions according to the specific application. Maximum flexibility is guaranteed by offering specific technical features that can be combined in the Ekip Touch/Hi-Touch during the product life cycle.

- **Bundles**

Simplify the selection of advanced functions and logics with group of packages able to satisfy requirements by market segments and applications.

Bundles shall require additional plug and play hardware modules.

- **Solutions**

The SACE Tmax XT circuit-breaker is no more intended as a simply stand-alone protection device, but it has become an active player in the electrical system, able to exchange data and trigger actions managing the behavior of other connected devices. Thanks to the new electronic trip units, it is possible to implement transfer logics, load shedding and peak shaving strategies. Such solutions require additional plug and play hardware modules and other smart devices.



SACE Tmax XT allows to easily upgrade and customize the Ekip Touch and Hi-Touch trip units, guaranteeing maximum flexibility for any application, delivering value throughout the entire customer journey.

### 1. Design



Build the circuit-breaker according to specific project requirements.

#### Key drivers

- Ease of doing business
- Technical specifications
- Application and function

#### Benefits

- Flexibility of choice
- Customization by application

### 2. Commissioning



Customize the device thanks to the digital offering. Manage last minute changes through digital upgrades.

#### Key drivers

- Ease of doing business
- Management of components
- Time to market

#### Benefits

- Stock optimization
- Zero lead time and installation effort

### 3. Service



Unlock the full potential of your circuit-breaker at any time, minimizing downtime and installation changes.

#### Key drivers

- Manage installed base
- Simplify diagnostics
- Simplify the hardware re-design

#### Benefits

- Zero lead time and installation effort
- Avoid downtime

# New digital experience

## Packages

Each package includes a set of protection functions or measurements that can be enabled in the trip unit.

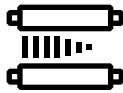
Six packages relate to protection functions: Voltage Protections, Frequency Protections, Power Protections, Advanced Voltage Protections, RO-COF Protections and Adaptive Protections.



### Voltage Protections

Set of protections included: UV - Undervoltage, OV - Overvoltage, UV2 - 2nd Undervoltage, OV2 - 2nd Overvoltage, PS - Phase Sequence, VU - Voltage unbalance.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Frequency Protections

Set of protections included: UF - Underfrequency, OF - Overfrequency, UF2 - 2nd Underfrequency, OF2 - 2nd Overfrequency.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Power Protections

Set of protections included: RP - Reverse active power, CosΦ - Power factor, D - Directional overcurrent, RQ - Loss of field or reverse reactive power, OQ - Reactive overpower, OP - Active overpower, UP - Active underpower, RQ - 2nd Loss of field or Reverse reactive power.

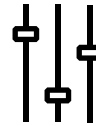
How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Advanced Voltage Protections

Set of protections included: S(V) - Voltage controlled overcurrent, S(V)2 - 2nd Voltage controlled overcurrent, R - Residual voltage.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### ROCOF Protections

Set of protections included: ROCOF - Rate of change of frequency.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Adaptive Protections

Set of protections included: Dual Setting - Set A-B.

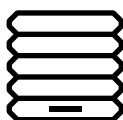
How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Measuring Package

To monitor the plant through several measurements: Phase-to-phase voltage, Phase-to-neutral voltage, Phase sequence, Frequency, Active power, Reactive power, Apparent power, Power factor, Peak factor.

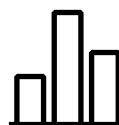
How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Data Logger

To record data about events in the plant: Currents, Voltages, Sampling rate, Maximum recording duration, Recording stop delay, Number of registers.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Network Analyzer

To monitor the power quality of the network through: Harmonic analysis, Hourly average voltage value, Short voltage interruption, Short voltage spikes, Slow-voltage sags and swells, Voltage unbalance.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.

When a package is purchased via ABB Ability Marketplace™, it must be activated through:













- Ekip Connect 3 installed on a PC using Ekip T&P to scan the trip unit
- EPiC installed on a mobile device, by directly using the embedded Bluetooth connection available in the new Ekip trip units.

# New digital experience

## Packages

Thanks to the maximum flexibility guaranteed by these packages, the new Ekip trip units are now completely customizable. Depending on the specific trip unit version, different packages are available by default, but all of them can be added to the trip unit.










Default functionalities and upgradability of the trip units:

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|--|---|---|---|---|
|                      | Standard Protection   | Standard Measures   | Measuring Package   | Voltage Protections   | Frequency Protections   | Power Protections   | Adaptive Protections  | Adaptive Protections   | Network Analyzer  | Advanced Voltage Protections  | ROCOF Protections   | Power Controller  |
| Ekip Touch           | ●   | ●   | ↑   | ↑   | ↑   | ↑   | ↑   | ↑  | ↑   | ↑   | ↑   | ↑   |
| Ekip Touch Measuring | ●   | ●   | ●   | ↑   | ↑   | ↑   | ↑   | ↑  | ↑   | ↑   | ↑   | ↑   |
| Ekip G Touch         | ●   | ●   | ●   | ↑   | ↑   | ↑   | ↑   | ●  | ↑   | ↑   | ↑   | ↑   |
| Ekip M Touch         | ●   | ●   | ●   | ●   | ●   | ↑   | ●   | ↑  | ↑   | ↑   | ↑   | ↑   |
| Ekip Hi-Touch        | ●   | ●   | ●   | ●   | ●   | ↑   | ●   | ●  | ●   | ↑   | ↑   | ↑   |
| Ekip G Hi-Touch      | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●  | ●   | ●   | ●   | ↑   |

● Available by default  
 ↑ Upgradable  
 ↑ Some functions available. Upgradable with the full package.

The flexibility offered by the packages allows also the selection of the proper functions that can be required by the different segments and applications, purchasing only the needed functionalities.

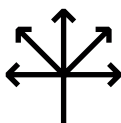
Suggested packages by segment:

| Packages                     |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|--|---|---|---|
|                              | Wind  | Solar   | Data Center   | Building Infrastructure   | GenSet  | Mining   | Marine  | Industries  | Utilities   |
| Voltage Protections          | ●   | ●   |   | ●   | ●   |  | ●   |   |   |
| Advanced Voltage Protections | ●   | ●   |   |   | ●   |  |   |   |   |
| Frequency Protections        | ●   | ●   |   |   | ●   | ●  |   | ●   | ●   |
| Power Protections            |   |   | ●   | ●   |   | ●  |   | ●   | ●   |
| ROCOF Protections            | ●   | ●   |   |   | ●   |  |   |   |   |
| Adaptive Protections         | ●   | ●   |   | ●   |   | ●  |   |   |   |
| Measuring Package            | ●   | ●   | ●   | ●   | ●   | ●  | ●   | ●   | ●   |
| Data Logger                  | ●   | ●   | ●   | ●   | ●   |  | ●   | ●   |   |
| Network Analyzer             | ●   | ●   | ●   | ●   | ●   | ●  | ●   |   | ●   |
| Power Controller             |   |   | ●   | ●   |   | ●  |   |   | ●   |

# New digital experience

## Bundles

Each bundle includes a set of packages that can be enabled on the trip unit. Five bundles are available to satisfy different needs: Intelligent Grid Edge, Power Management, Grid Connection, Diagnostics and Measure Advanced.



### Intelligent Grid Edge

Make your grid smart.

Thanks to this bundle, the circuit-breaker becomes the main player of the smart interconnection of power distribution and loads for demand-supply coordination. Packages included: Measuring Package, Adaptive Protections, Power Protections, Voltage Protections and Ekip Power Controller.

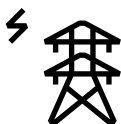
How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Power Management

Embedded demand management.

Thanks to this bundle, the circuit-breaker is ready for demand management to ensure service continuity and reduce energy costs. Packages included: Measuring Package, Adaptive Protections, Power Protections and Voltage Protections. How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Grid Connection

Optimize renewable power generation.

No more external and additional relays are needed with this bundle. It enhances tracking and improved energy harvesting. Packages included: Measuring Package, Adaptive Protections, Power Protections and Ekip Power Controller.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.



### Diagnostics

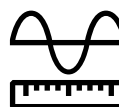
Comprehensive data for root-cause analysis and preventive maintenance.

This bundle gives full diagnostics of the system to guarantee a full control of the plant status.

Packages included: Measuring Package, Network Analyzer and Data Logger.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.

Available for Tmax XT5 and XT7 only.



### Measure Advanced

Embedded advanced metering and power quality information.

This bundle gives the possibility to preserve the loads, by avoiding equipment malfunctioning and optimizing energy consumption thanks to additional measurements and full power quality analysis. Packages included: Measuring Package, Network Analyzer.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.

Available for Tmax XT5 and XT7 only.

When a bundle is purchased via ABB Ability Marketplace™, it must be activated through:

- Ekip Connect 3 installed on a PC using Ekip T&P to scan the trip unit
- EPiC installed on a mobile device, by directly using the embedded Bluetooth connection available in the new Ekip trip units.

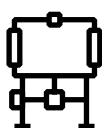




# New digital experience

## Solutions

Five solutions are available to fully exploit the potential of the Ekip architecture: Interface Protection System, Synchro Reclosing, Embedded ATS, Adaptive Load Shedding and Ekip Power Controller.



### Interface Protection System

This solution is used to disconnect the generating units from the grid when voltage and frequency values are out of the ranges prescribed by the Standard. This disconnection is usually carried out through an Interface Device and an Interface Protection System. Thanks to the Ekip Touch/Hi-Touch trip units, this function is integrated in one single circuit-breaker.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.

The hardware accessories must be ordered via traditional ordering channels.

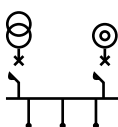


### Synchro Reclosing

Thanks to the Synchro Reclosing solution, the circuit-breaker is able to island the Microgrid in case of disturbances due to faults or power quality events, and reconnect it to the distribution network when the proper conditions are guaranteed again. This last feature allows an islanded microgrid to be reconnected to the main grid, after the synchronism for automatic re-closure has been verified.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.

The hardware accessories must be ordered via traditional ordering channels.



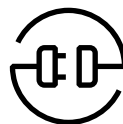
### Embedded ATS

This function enables the activation of auxiliary generation sources (e.g. generators) and transfers the feed of the loads from the distribution

network to such auxiliary sources, thus ensuring a secure transfer to maintain service continuity and reliability of the system.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.

The hardware accessories must be ordered via traditional ordering channels.



### Adaptive Load Shedding

Thanks to this solution, the circuit-breaker enables islanding transition to avoid blackouts.

It actively controls the power consumption based on the priorities set by the user.

How to order: via ABB Ability Marketplace™ or traditional ordering channels.

The hardware accessories must be ordered via traditional ordering channels.



### Ekip Power Controller

This function is the ideal solution for load management and represents an optimum compromise between reliability, simplicity and cost-effectiveness. Based on a patented calculation algorithm, Ekip Power Controller allows a list of loads to be controlled from remote according to the priorities defined by the user.

How to order: via ABB Ability Marketplace™ or traditional ordering channels. The hardware accessories must be ordered via traditional ordering channels.

When a solution is purchased via ABB Ability Marketplace™, it must be activated through Ekip Connect 3 installed on a PC using Ekip T&P to scan the trip unit.

These solutions require the installation of hardware components that have to be ordered through the traditional ordering channels. For further information, please refer to the specific documentation available on ABB Library ([www.abb.com/abblibrary/DownloadCenter/](http://www.abb.com/abblibrary/DownloadCenter/)).

# New digital experience

## Solutions

|                              | Functions included                                | Hardware accessories |
|------------------------------|---|----------------------|
| <b>PACKAGES</b>              |   |                      |
| Voltage Protections          | UV - Undervoltage                                 | -                    |
|                              | OV - Overvoltage                                  |                      |
|                              | UV2 – 2nd Undervoltage                            |                      |
|                              | OV2 – 2nd Overvoltage                             |                      |
|                              | PS – Phase sequence                               |                      |
|                              | VU – Voltage unbalance                            |                      |
| Frequency Protections        | UF - Underfrequency                               | -                    |
|                              | OF - Overfrequency                                |                      |
|                              | UF2 – 2nd Underfrequency                          |                      |
|                              | OF2 - 2nd Overfrequency                           |                      |
| Power Protections            | RP – Reverse active power                         | -                    |
|                              | Cos $\Phi$ - Power factor                         |                      |
|                              | D – Directional current                           |                      |
|                              | RQ – Loss of field or Reverse reactive power      |                      |
|                              | OQ – Reactive overpower                           |                      |
|                              | OP – Active overpower                             |                      |
|                              | UP – Active underpower                            |                      |
|                              | 2RQ – 2nd Loss of field or Reverse reactive power |                      |
| Advanced Voltage Protections | S(V) – Voltage controlled overcurrent             | -                    |
|                              | S(V)2 – 2nd Voltage controlled overcurrent        |                      |
|                              | R – Residual voltage                              |                      |
| ROCOF Protections            | ROCOF   | -                    |
| Adaptive Protections         | Dual setting                                      | Ekip Signalling      |
| Measuring Package            | Phase-to-phase voltage                            | -                    |
|                              | Phase-to-neutral voltage                          |                      |
|                              | Phase sequence                                    |                      |
|                              | Frequency   |                      |
|                              | Active power                                      |                      |
|                              | Reactive power                                    |                      |
|                              | Apparent power                                    |                      |
|                              | Power factor                                      |                      |
| Data Logger                  | Peak factor                                       |                      |
|                              | Currents  | -                    |
|                              | Voltages  |                      |
|                              | Sampling rate                                     |                      |
|                              | Maximum recording duration                        |                      |
|                              | Recording stop delay                              |                      |
| Network Analyzer             | Number of registers                               |                      |
|                              | Hourly average voltage value                      | -                    |
|                              | Short voltage interruptions                       |                      |
|                              | Short voltage spikes                              |                      |
|                              | Slow voltage sags and swells                      |                      |
|                              | Voltage unbalance                                 |                      |
|                              | Harmonic analysis                                 |                      |

|                             | Functions included    | Hardware accessories                                  |
|-----------------------------|-----------------------|---|
| BUNDLES                     |                       |   |
| Intelligent Grid Edge       | Measuring Package     | Ekip Link, Ekip Signalling, motor operators and coils |
|                             | Adaptive Protections  |   |
|                             | Power Protections     |   |
|                             | Voltage Protections   |   |
|                             | Ekip Power Controller |   |
| Power Management            | Measuring Package     | Ekip Signalling                                       |
|                             | Adaptive Protections  |   |
|                             | Power Protections     |   |
|                             | Voltage Protections   |   |
| Grid Connection             | Measuring Package     | Ekip Link, Ekip Signalling, motor operators and coils |
|                             | Adaptive Protections  |   |
|                             | Power Protections     |   |
|                             | Ekip Power Controller |   |
| Diagnostics                 | Measuring Package     | -   |
|                             | Network Analyzer      |   |
|                             | Data Logger           |   |
| Measure Advanced            | Measuring Package     | -   |
|                             | Network Analyzer      |   |
| SOLUTIONS                   |                       |   |
| Interface Protection System | -                     | Ekip Link, Ekip Signalling, motor operators and coils |
| Synchro Reclosing           | -                     | Ekip Link, Ekip Signalling, motor operators and coils |
| Embedded ATS                | -                     | Ekip Link, Ekip Signalling, motor operators and coils |
| Adaptive Load Shedding      | -                     | Ekip Link, Ekip Signalling, motor operators and coils |
| Ekip Power Controller       | -                     | Ekip Link, Ekip Signalling, motor operators and coils |

# Offer

SACE Tmax XT trip units offer a solution for any installation requirement, from the building sector to industry, from marine purposes to datacenters any need is always satisfied.

The complete, flexible protection trip unit is classified in three different fields of applications as follows:

## Power distribution protection

Tmax XT is the ideal solution for all distribution levels, from main low voltage switchboards to sub-switchboards, and also for transformers and drives. The field of application is very broad and ranges from residential and commercial buildings, infrastructure, microgrids, but also industrial environments, oil and gas installations, mining facilities, data centers, marine applications, wind and solar farms. Depending on the complexity of the system, it is possible to select between different performance levels. Thus, when higher protection accuracy is required, or advanced control systems are needed, it is always possible to choose the appropriate version.

## Motor protection

Motors are used in several industrial sectors, like food and beverage, chemicals, metallurgic, paper, water and extractive industries.

When a motor system needs to be protected, the safety and reliability of the solution are important aspects that must be considered when choosing and manufacturing the system for motor starting and monitoring.

Start-up is a particularly critical phase for the motor itself and for the system powering it. When it comes to direct starting, the SACE Tmax XT range proposes different solutions, from magnetic only protection to a very advanced protection system.

## Generator protection

Tmax XT has been designed to provide a solution for the protection of small generators and networks where distribution is realized through very long cables. In addition, it also provides protection for generators without using external devices that require dedicated relays and wiring. This solution minimizes the time needed for implementation and commissioning of the system, and ensures the high levels of accuracy and reliability required for running generators in applications such as naval, GenSet or cogeneration.

|              | Field of application | Current protection | Remote Control | Measurement and protection of current, frequency, voltage power, energy | Embedded software functions |
|--------------|----------------------|--------------------|----------------|---|-----------------------------|
| TMD/TMA      | Power Distribution   | ●                  | ●              |   |                             |
| Ekip Dip     |                      | ●                  | ●              |   |                             |
| Ekip Touch   |                      | ●                  | ●              | ●   | ●                           |
| MA           | Motor                | ●                  | ●              |   |                             |
| Ekip M Dip   |                      | ●                  | ●              |   |                             |
| Ekip M Touch |                      | ●                  | ●              | ●   | ●                           |
| TMG          | Generator            | ●                  | ●              |   |                             |
| Ekip G Dip   |                      | ●                  | ●              |   |                             |
| Ekip G Touch |                      | ●                  | ●              | ●   | ●                           |







# Offer

The Tmax XT trip units represent the ideal solution for any application up to 1600A.

The Tmax XT molded case circuit-breaker family complies with numerous installation requirements. Circuit-breakers are available with trip units dedicated to three different application groups. The table below shows the trip units for each circuit-breaker frame and the related rated interrupted current ranges.

The power distribution and generator protection application trip units are available in both 3 and 4-pole versions. With the XT2, XT4, XT5, XT6, XT7 and XT7 M versions the trip units are interchangeable, in order to make a performance up-grade of the system easier.



| Rated uninterrupted current ranges [A] |                           | XT1                     | XT2      | XT3       |
|--|---------------------------|-------------------------|----------|-----------|
| <b>Power Distribution Protection</b>   |                           |                         |          |           |
| <b>Thermal-magnetic</b>                |                           |                         |          |           |
|  | TMD                       | 16...160 <sup>(1)</sup> | 1,6...32 | 63...250  |
|  | TMA                       |                         | 40...160 |           |
| <b>Ekip Dip</b>                        |                           |                         |          |           |
|  | Ekip Dip LS/I             |                         | 10...160 |           |
|  | Ekip Dip LIG              |                         | 10...160 |           |
|  | Ekip Dip LSI              |                         | 10...160 |           |
|  | Ekip Dip LSIG             |                         | 10...160 |           |
| <b>Ekip Touch</b>                      |                           |                         |          |           |
|  | Ekip Touch LSI            |                         | 40...160 |           |
|  | Ekip Touch LSIG           |                         | 40...160 |           |
|  | Ekip Touch Measuring LSI  |                         | 40...160 |           |
|  | Ekip Touch Measuring LSIG |                         | 40...160 |           |
|  | Ekip Hi-Touch LSI         |                         | 40...160 |           |
|  | Ekip Hi-Touch LSIG        |                         | 40...160 |           |
| <b>Motor Protection</b>                |                           |                         |          |           |
| <b>Magnetic</b>                        |                           |                         |          |           |
|  | MF/MA                     |                         | 1...160  | 100...200 |
| <b>Ekip Dip</b>                        |                           |                         |          |           |
|  | Ekip M Dip I              |                         | 10...160 |           |
|  | Ekip M Dip LIU            |                         | 25...160 |           |
| <b>Ekip Touch</b>                      |                           |                         |          |           |
|  | Ekip M Touch LRIU         |                         | 40...100 |           |
| <b>Generator Protection</b>            |                           |                         |          |           |
| <b>Thermal-magnetic</b>                |                           |                         |          |           |
|  | TMG                       |                         | 16...160 | 63...250  |
| <b>Ekip Dip</b>                        |                           |                         |          |           |
|  | Ekip G Dip LS/I           |                         | 10...160 |           |
| <b>Ekip Touch</b>                      |                           |                         |          |           |
|  | Ekip G Touch LSIG         |                         |          |           |
|  | Ekip G Hi-Touch LSIG      |                         |          |           |

1) 16A and 20A for N, S, H have the TMF trip unit

Maximum flexibility is guaranteed for customers: on the XT5, XT7 and XT7 M, with Ekip Touch trip units, the interchangeable rating plug enables the rated current to be changed according to system requirements.



| XT4       | XT5       | XT6        | XT7        | XT7 M      |
|-----------|-----------|------------|------------|------------|
| 16...32   |           |            |            |            |
| 40...250  | 320...630 | 630...800  |            |            |
| 40...250  | 250...630 | 630...1000 | 630...1600 | 630...1600 |
| 40...250  | 250...630 | 630...1000 | 630...1600 | 630...1600 |
| 40...250  | 250...630 | 630...1000 | 630...1600 | 630...1600 |
| 40...250  | 250...630 | 630...1000 | 630...1600 | 630...1600 |
| 100...250 | 250...630 |            | 630...1600 | 630...1600 |
| 100...250 | 250...630 |            | 630...1600 | 630...1600 |
| 100...250 | 250...630 |            | 630...1600 | 630...1600 |
| 100...250 | 250...630 |            | 630...1600 | 630...1600 |
| 100...250 | 250...630 |            | 630...1600 | 630...1600 |
| 100...250 | 250...630 |            | 630...1600 | 630...1600 |
| 10...200  | 320...500 |            |            |            |
| 40...250  | 250...630 | 630...1000 | 630...1600 | 630...1600 |
| 40...160  | 250...500 | 630        |            |            |
| 100...200 | 250...500 |            | 630...1600 | 630...1600 |
|           | 320...630 |            |            |            |
| 40...250  | 250...630 | 630...1000 | 630...1600 | 630...1600 |
|           | 250...630 |            | 630...1600 | 630...1600 |
|           | 250...630 |            | 630...1600 | 630...1600 |

# Thermal-magnetic trip unit

## Overview

The thermal-magnetic trip units are used for the protection of AC and DC networks. They are a solution for systems where only protection against overloads and short-circuits are needed.

### Power Distribution Protection

- TMD
- TMA

### Motor Protection

- MA

### Generator Protection

- TMG

- Key:
1. Current threshold for short-circuit protection;
  2. Rotary switch for short-circuit protection;
  3. Current threshold for overload protection;
  4. Rotary switch for overload threshold setting.



### Rotary switch

Depending on the version it is possible to set the desired thresholds for protection by turning the front rotary switch.

| Field of application                 | Trip Unit | L - Overload Protection |           | I - Short-circuit Protection |                     |
|--------------------------------------|-----------|-------------------------|-----------|------------------------------|---------------------|
|                                      |           | Current Threshold       | Trip Time | Current Threshold            | Trip Time           |
| <b>Power Distribution Protection</b> | TMD       | Adjustable              | Fixed     | Fixed                        | Fixed instantaneous |
|                                      | TMA       | Adjustable              | Fixed     | Adjustable                   | Fixed instantaneous |
| <b>Motor Protection</b>              | MA        | -                       | -         | Adjustable                   | Fixed instantaneous |
| <b>Generator Protection</b>          | TMG       | Adjustable              | Fixed     | Adjustable                   | Fixed instantaneous |

### Power Distribution Protection

#### TMD

| In [A] | 1.6 | 2 | 2.5 | 3.2 | 4 | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 125 | 160 | 200 | 250 |
|--------|-----|---|-----|-----|---|---|-----|---|----|------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| XT1    |     |   |     |     |   |   |     |   |    |      |    |    |    |    |    |    |    |    |     |     |     |     |
| XT2    |     |   |     |     |   |   |     |   |    |      |    |    |    |    |    |    |    |    |     |     |     |     |
| XT3    |     |   |     |     |   |   |     |   |    |      |    |    |    |    |    |    |    |    |     |     |     |     |
| XT4    |     |   |     |     |   |   |     |   |    |      |    |    |    |    |    |    |    |    |     |     |     |     |

Note: the XT1 with In = 16A or 20A and with N, S and H breaking capacity have the TMF trip unit only

#### TMA

| In [A] | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 225 | 250 | 320 | 400 | 500 | 630 | 800 |
|--------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| XT2    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |
| XT4    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |
| XT5    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |
| XT6    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |

### Motor Protection

#### MA

| In [A] | 1 | 2 | 3.2 | 4 | 6.3 | 8.5 | 10 | 12.5 | 16 | 20 | 32 | 52 | 63 | 80 | 100 | 125 | 160 | 200 | 320 | 400 | 500 | 630 |
|--------|---|---|-----|---|-----|-----|----|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| XT1    |   |   |     |   |     |     |    |      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |
| XT2    |   |   |     |   |     |     |    |      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |
| XT3    |   |   |     |   |     |     |    |      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |
| XT4    |   |   |     |   |     |     |    |      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |
| XT5    |   |   |     |   |     |     |    |      |    |    |    |    |    |    |     |     |     |     |     |     |     |     |

Note: the XT2 and XT4 up to 12.5A are available only as complete circuit-breakers  
the XT4 V and X versions up to 52A are available only as complete circuit-breakers with the Icu value at 690V AC = 5kA  
the XT2 up to 12.5A have the MF trip unit with fixed short-circuit protection

### Generator Protection

#### TMG

| In [A] | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 320 | 400 | 500 | 630 |
|--------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| XT2    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |
| XT3    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |
| XT5    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |

Note: the XT2 up to 63A are available only as complete circuit-breakers

# Thermal-magnetic trip unit

## Protection settings

Available settings for TMD and TMA trip units:

| Circuit Breaker | Trip Unit | In [A] | L - Overload |             |      |             |     | I - Short-circuit |               |      |             |             |
|-----------------|-----------|--------|--------------|-------------|------|-------------|-----|-------------------|---------------|------|-------------|-------------|
|                 |           |        | I1 [A]       |             |      | Neutral [A] |     | I3 [A]            |               |      | Neutral [A] |             |
|                 |           |        | MIN          | MED         | MAX  | 100%        | 50% | MIN               | MED           | MAX  | 100%        | 50%         |
| XT1             | TMD       | 16     |              |             | 16   | 16          | -   | 450               |               |      | 450         | -           |
|                 |           | 20     |              |             | 20   | 20          | -   | 450               |               |      | 450         | -           |
|                 |           | 25     | 17.5         | 21.25       | 25   | 25          | -   | 450               |               |      | 450         | -           |
|                 |           | 32     | 22.4         | 27.2        | 32   | 32          | -   | 450               |               |      | 450         | -           |
|                 |           | 40     | 28           | 34          | 40   | 40          | -   | 450               |               |      | 450         | -           |
|                 |           | 50     | 35           | 42.5        | 50   | 50          | -   | 500               |               |      | 500         | -           |
|                 |           | 63     | 44.1         | 53.55       | 63   | 63          | -   | 630               |               |      | 630         | -           |
|                 |           | 80     | 56           | 68          | 80   | 80          | -   | 800               |               |      | 800         | -           |
|                 |           | 100    | 70           | 85          | 100  | 100         | -   | 1000              |               |      | 1000        | -           |
|                 |           | 125    | 87.5         | 106.25      | 125  | 125         | 80  | 1250              |               |      | 1250        | 800         |
|                 |           | 160    | 112          | 136         | 160  | 160         | 100 | 1600              |               |      | 1600        | 1000        |
| XT2             | TMD       | 1.6    | 1.1          | 1.3         | 1.6  | 1.6         | -   | 16                |               |      | 16          |             |
|                 |           | 2      | 1.4          | 1.7         | 2    | 2           | -   | 20                |               |      | 20          |             |
|                 |           | 2.5    | 1.7          | 2.1         | 2.5  | 2.5         | -   | 25                |               |      | 25          |             |
|                 |           | 3.2    | 2.2          | 2.7         | 3.2  | 3.2         | -   | 32                |               |      | 32          |             |
|                 |           | 4      | 2.8          | 3.4         | 4    | 4           | -   | 40                |               |      | 40          |             |
|                 |           | 5      | 3.5          | 4.2         | 5    | 5           | -   | 50                |               |      | 50          |             |
|                 |           | 6.3    | 4.4          | 5.3         | 6.3  | 6.3         | -   | 63                |               |      | 63          |             |
|                 |           | 8      | 5.6          | 6.8         | 8    | 8           | -   | 80                |               |      | 80          |             |
|                 |           | 10     | 7            | 8.5         | 10   | 10          | -   | 100               |               |      | 100         |             |
|                 |           | 12.5   | 8.7          | 10.6        | 12.5 | 12.5        | -   | 125               |               |      | 125         |             |
|                 |           | 16     | 11 (11.2)    | 14 (13.6)   | 16   | 16          | -   | 300               |               |      | 300         |             |
|                 |           | 20     | 14           | 17          | 20   | 20          | -   | 300               |               |      | 300         |             |
|                 |           | 25     | 18 (17.5)    | 21 (21.2)   | 25   | 25          | -   | 300               |               |      | 300         |             |
|                 |           | 32     | 22 (22.4)    | 27 (27.2)   | 32   | 32          | -   | 320               |               |      | 320         |             |
|                 | TMA       | 40     | 28           | 34          | 40   | 40          | -   | 300               | 350 (360)     | 400  | 300...400   | -           |
|                 |           | 50     | 35           | 43 (42.5)   | 50   | 50          | -   | 300               | 400           | 500  | 300...500   | -           |
|                 |           | 63     | 44 (44.1)    | 54 (53.5)   | 63   | 63          | -   | 300               | 465           | 630  | 300...630   | -           |
|                 |           | 80     | 56           | 68          | 80   | 80          | -   | 400               | 600           | 800  | 400...800   | -           |
|                 |           | 100    | 70           | 85          | 100  | 100         | -   | 500               | 750           | 1000 | 500...1000  | -           |
|                 |           | 125    | 88 (87.5)    | 106 (106.2) | 125  | 125         | 80  | 625               | 940           | 1250 | 625...1250  | 400...800   |
|                 |           | 160    | 112          | 136         | 160  | 160         | 100 | 800               | 1200          | 1600 | 800...1600  | 500...1000  |
|                 | TMD       | 63     | 44.1         | 53.55       | 63   | 63          | -   | 630               |               |      | 630         | -           |
|                 |           | 80     | 56           | 68          | 80   | 80          | -   | 800               |               |      | 800         | -           |
|                 |           | 100    | 70           | 85          | 100  | 100         | -   | 1000              |               |      | 1000        | -           |
|                 |           | 125    | 87.5         | 106.25      | 125  | 125         | 80  | 1250              |               |      | 1250        | 800         |
|                 |           | 160    | 112          | 136         | 160  | 160         | 100 | 1600              |               |      | 1600        | 1000        |
|                 |           | 200    | 140          | 170         | 200  | 200         | 125 | 2000              |               |      | 2000        | 1250        |
|                 |           | 250    | 175          | 212.5       | 250  | 250         | 160 | 2500              |               |      | 2500        | 1600        |
| XT4             | TMD       | 16     | 11           | 14 (13.6)   | 16   | 16          | -   | 300               |               |      | 300         | -           |
|                 |           | 20     | 14           | 17          | 20   | 20          | -   | 300               |               |      | 300         | -           |
|                 |           | 25     | 18 (17.5)    | 21 (21.2)   | 25   | 25          | -   | 300               |               |      | 300         | -           |
|                 |           | 32     | 22 (22.4)    | 27 (27.2)   | 32   | 32          | -   | 320               |               |      | 320         | -           |
|                 | TMA       | 40     | 28           | 34          | 40   | 40          | -   | 300               | 350           | 400  | 300...400   | -           |
|                 |           | 50     | 35           | 43 (42.5)   | 50   | 50          | -   | 300               | 400           | 500  | 300...500   | -           |
|                 |           | 63     | 44 (44.1)    | 54 (53.5)   | 63   | 63          | -   | 315               | 473 (472.5)   | 630  | 315...630   | -           |
|                 |           | 80     | 56           | 68          | 80   | 80          | -   | 400               | 600           | 800  | 400...800   | -           |
|                 |           | 100    | 70           | 85          | 100  | 100         | -   | 500               | 750           | 1000 | 500...1000  | -           |
|                 |           | 125    | 88 (87.5)    | 106 (106.2) | 125  | 125         | 80  | 625               | 938 (937.5)   | 1250 | 625...1250  | 315...630   |
|                 |           | 160    | 112          | 136         | 160  | 160         | 100 | 800               | 1200          | 1600 | 800...1600  | 500...1000  |
|                 |           | 200    | 140          | 170         | 200  | 200         | 125 | 1000              | 1500          | 2000 | 1000...2000 | 1250...1250 |
|                 |           | 225    | 158 (157.5)  | 191 (191.2) | 225  | 225         | 125 | 1125              | 1688 (1667.5) | 2250 | 1125...2250 | 625...1250  |
|                 |           | 250    | 175          | 213 (212.5) | 250  | 250         | 160 | 1250              | 1875          | 2500 | 1250...2500 | 500...1000  |
| XT5             | TMA       | 320    | 224          | 272         | 320  | 320         | 200 | 1600              | 2400          | 3200 | 1600...3200 | 1000...2000 |
|                 |           | 400    | 280          | 340         | 400  | 400         | 250 | 2000              | 3000          | 4000 | 2000...4000 | 1250...2500 |
|                 |           | 500    | 350          | 425         | 500  | 500         | 320 | 2500              | 3750          | 5000 | 2500...5000 | 1600...3200 |
|                 |           | 630    | 441          | 535.5       | 630  | 630         | 400 | 3150              | 4725          | 6300 | 3150...6300 | 2000...4000 |
| XT6             | TMA       | 800    | 560          | 680         | 800  | 800         | 500 | 4000              | 6000          | 8000 | 4000...8000 | 2500...5000 |

Available settings for MA and TMG trip units:

| Circuit Breaker | Trip Unit | In [A] | L - Overload |     |     | I - Short-circuit |     |        |       |             |      |     |
|-----------------|-----------|--------|--------------|-----|-----|-------------------|-----|--------|-------|-------------|------|-----|
|                 |           |        | I1 [A]       |     |     | Neutral [A]       |     | I3 [A] |       | Neutral [A] |      |     |
|                 |           |        | MIN          | MED | MAX | 100%              | 50% | MIN    | MED   | MAX         | 100% | 50% |
| XT1             | MA        | 3.2    |              |     |     |                   |     | 13     | 24    | 35          |      |     |
|                 |           | 6.3    |              |     |     |                   |     | 25     | 47    | 69          |      |     |
|                 |           | 16     |              |     |     |                   |     | 48     | 112   | 176         |      |     |
|                 |           | 32     |              |     |     |                   |     | 96     | 224   | 352         |      |     |
|                 |           | 52     |              |     |     |                   |     | 156    | 364   | 572         |      |     |
|                 |           | 63     |              |     |     |                   |     | 189    | 441   | 693         |      |     |
|                 |           | 80     |              |     |     |                   |     | 240    | 560   | 880         |      |     |
|                 |           | 100    |              |     |     |                   |     | 300    | 700   | 1100        |      |     |
|                 |           | 125    |              |     |     |                   |     | 375    | 875   | 1375        |      |     |
| XT2             | MF        | 1      |              |     |     |                   |     |        |       | 14          |      |     |
|                 |           | 2      |              |     |     |                   |     |        |       | 28          |      |     |
|                 |           | 4      |              |     |     |                   |     |        |       | 56          |      |     |
|                 |           | 8.5    |              |     |     |                   |     |        |       | 120         |      |     |
|                 |           | 12.5   |              |     |     |                   |     |        |       | 175         |      |     |
|                 | MA        | 20     |              |     |     |                   |     | 120    | 200   | 280         |      |     |
|                 |           | 32     |              |     |     |                   |     | 192    | 320   | 448         |      |     |
|                 |           | 52     |              |     |     |                   |     | 314    | 520   | 728         |      |     |
|                 |           | 80     |              |     |     |                   |     | 480    | 800   | 1120        |      |     |
|                 |           | 100    |              |     |     |                   |     | 600    | 1000  | 1400        |      |     |
|                 |           | 160    |              |     |     |                   |     | 960    | 1600  | 2240        |      |     |
|                 |           |        |              |     |     |                   |     |        |       |             |      |     |
| XT3             | MA        | 100    |              |     |     |                   |     | 600    | 900   | 1200        |      |     |
|                 |           | 125    |              |     |     |                   |     | 750    | 1125  | 1500        |      |     |
|                 |           | 160    |              |     |     |                   |     | 960    | 1440  | 1920        |      |     |
|                 |           | 200    |              |     |     |                   |     | 1200   | 1800  | 2400        |      |     |
| XT4             | MA        | 10     |              |     |     |                   |     | 50     | 75    | 100         |      |     |
|                 |           | 12.5   |              |     |     |                   |     | 62.5   | 93.7  | 125         |      |     |
|                 |           | 20     |              |     |     |                   |     | 100    | 150   | 200         |      |     |
|                 |           | 32     |              |     |     |                   |     | 160    | 240   | 320         |      |     |
|                 |           | 52     |              |     |     |                   |     | 260    | 390   | 520         |      |     |
|                 |           | 80     |              |     |     |                   |     | 400    | 600   | 800         |      |     |
|                 |           | 100    |              |     |     |                   |     | 500    | 750   | 1000        |      |     |
|                 |           | 125    |              |     |     |                   |     | 625    | 937.5 | 1250        |      |     |
|                 |           | 160    |              |     |     |                   |     | 800    | 1200  | 1600        |      |     |
| XT5             | MA        | 200    |              |     |     |                   |     | 1000   | 1500  | 2000        |      |     |
|                 |           | 320    |              |     |     |                   |     | 2240   | 3200  | 4160        |      |     |
|                 |           | 400    |              |     |     |                   |     | 2800   | 4000  | 5200        |      |     |
|                 |           | 500    |              |     |     |                   |     | 3500   | 5000  | 6500        |      |     |
| XT2             | TMG       | 16     | 11           | 14  | 16  | 16                |     |        | 160   |             | 16   |     |
|                 |           | 20     | 14           | 17  | 20  | 20                |     |        | 160   |             | 20   |     |
|                 |           | 25     | 18           | 21  | 25  | 25                |     |        | 160   |             | 25   |     |
|                 |           | 32     | 22           | 27  | 32  | 32                |     |        | 160   |             | 32   |     |
|                 |           | 40     | 28           | 34  | 40  | 40                |     |        | 200   |             | 40   |     |
|                 |           | 50     | 35           | 43  | 50  | 50                |     |        | 200   |             | 50   |     |
|                 |           | 63     | 44           | 54  | 63  | 63                |     |        | 200   |             | 63   |     |
|                 |           | 80     | 56           | 68  | 80  | 80                |     |        | 240   |             | 80   |     |
|                 |           | 100    | 70           | 85  | 100 | 100               |     |        | 300   |             | 100  |     |
|                 |           | 125    | 88           | 106 | 125 | 125               |     |        | 375   |             | 125  |     |
| XT3             | TMG       | 160    | 112          | 136 | 160 | 160               |     |        | 480   |             | 300  |     |
|                 |           | 63     | 44           | 54  | 63  | 63                |     |        | 400   |             | 400  |     |
|                 |           | 80     | 56           | 68  | 80  | 80                |     |        | 400   |             | 400  |     |
|                 |           | 100    | 70           | 85  | 100 | 100               |     |        | 400   |             | 400  |     |
|                 |           | 125    | 88           | 106 | 125 | 125               |     |        | 400   |             | 400  |     |
|                 |           | 160    | 112          | 136 | 160 | 160               |     |        | 480   |             | 480  |     |
|                 |           | 200    | 140          | 170 | 200 | 200               |     |        | 600   |             | 600  |     |
| XT5             | TMG       | 250    | 175          | 213 | 250 | 250               |     |        | 750   |             | 750  |     |
|                 |           | 320    | 224          | 272 | 320 | 320               |     | 800    | 1200  | 1600        | 1600 |     |
|                 |           | 400    | 280          | 340 | 400 | 400               |     | 1000   | 1500  | 2000        | 2000 |     |
|                 |           | 500    | 350          | 425 | 500 | 500               |     | 1250   | 1875  | 2500        | 2500 |     |
|                 |           | 630    | 441          | 536 | 630 | 630               |     | 1575   | 2363  | 3150        | 3150 |     |



# Ekip Dip

## Overview

The Ekip Dip is a first level of electronic trip unit, used for the protection of AC networks.

### Power Distribution Protection

- Ekip Dip LS/I
- Ekip Dip LIG
- Ekip Dip LSI
- Ekip Dip LSIG

### Motor Protection

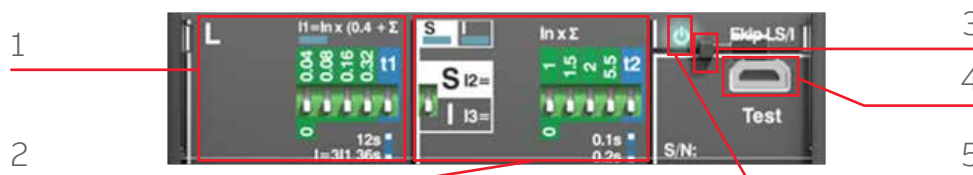
- Ekip M Dip I
- Ekip M Dip LIU

### Generator Protection

- Ekip G Dip LS/I

Key:

1. Dip switches for an overload protection setting.
2. Dip switches for short-circuit and time delayed short-circuit protection settings.
3. Slot for lead seal.
4. Test connector.
5. Power-on LED.



### Dip switches

The dip switches on the front of the trip unit allow manual settings also when the trip unit is off.

### LEDs

The LEDs on the front indicate the status of the release (on/off) and provide information about the protection tripped when the Ekip TT accessory is connected.

### Front connector

The connector on the front of the unit allows the connection of:

- Ekip TT for trip testing; LED-test and signaling of the most recent trip.
- Ekip T&P, for connection to a laptop with the Ekip Connect program (thus measurement reading, as well as trip and protection function tests are made available for the user).

### Thermal memory

All the Ekip Dip trip units include a thermal memory function. The trip unit records the trips which have occurred in the last few minutes. Since the trip causes overheating, in order to protect the cables and let them cool down, the trip unit imposes a shorter delay tripping time in case of a fault. This way, the system is protected against damage due to cumulative overheating. This can be disabled, if needed, by using the Ekip T&P.

### External neutral

Ekip Dip trip units are available in both 3 and 4 poles. The 3-pole version with earth fault protection (G) can be equipped with an external sensor for the neutral phase. In this way, the external neutral phase is protected and uninterrupted.

### Communication

- Using the dedicated Ekip Com module, XT2 and XT4 can communicate with Modbus RTU when they are equipped with the following trip units:
- Ekip LSI
- Ekip LSIG.

### Characteristics of electronic Ekip Dip trip units

|                                     |                        |
|-------------------------------------|------------------------|
| Operating temperature               | -25°C...+70°C          |
| Relative humidity                   | 98%                    |
| Self-supplied                       | 0.2xIn (single phase)* |
| Auxiliary supply (where applicable) | 24V DC ± 20%           |
| Operating Frequency                 | 45...66Hz              |
| Electromagnetic compatibility       | IEC 60947-2 Annex F    |

\*For 10A: 0,4xIn

| Field of application                 | Trip Unit    |      | L - Overload Protection |            | S - Selective Short-circuit Protection |            | I - Short-circuit Protection |           |
|--------------------------------------|--------------|------|-------------------------|------------|--|------------|------------------------------|-----------|
|                                      |              |      | Current Threshold       | Trip Time  | Current Threshold                      | Trip Time  | Current Threshold            | Trip Time |
| <b>Power Distribution Protection</b> | Ekip Dip     | LS/I | Adjustable              | Adjustable | Adjustable                             | Adjustable | Adjustable                   | Fixed     |
|                                      |              | LIG  | Adjustable              | Adjustable | -                                      | -          | Adjustable                   | Fixed     |
|                                      |              | LSI  | Adjustable              | Adjustable | Adjustable                             | Adjustable | Adjustable                   | Fixed     |
|                                      |              | LSIG | Adjustable              | Adjustable | Adjustable                             | Adjustable | Adjustable                   | Fixed     |
| <b>Motor Protection</b>              | Ekip M Dip I | I    | -                       | -          | -                                      | -          | Adjustable                   | Fixed     |
|                                      |              | LIU  | Adjustable              | Adjustable | -                                      | -          | Adjustable                   | Fixed     |
| <b>Generator Protection</b>          | Ekip G Dip   | LS/I | Adjustable              | Adjustable | Adjustable                             | Adjustable | Adjustable                   | Fixed     |

### Power Distribution Protection

Ekip Dip LS/I

Ekip Dip LIG

Ekip Dip LSI

Ekip Dip LSIG

| In [A] | 10 | 25 | 40 | 63 | 100 | 160 | 250 | 320 | 400 | 630 | 800 | 1000 | 1250 | 1600 |
|--------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| XT2    | ●  | ●  |    | ●  | ●   | ●   |     |     |     |     |     |      |      |      |
| XT4    |    |    | ●  | ●  | ●   | ●   | ●   |     |     |     |     |      |      |      |
| XT5    |    |    |    |    |     |     | ●   | ●   | ●   | ●   |     |      |      |      |
| XT6    |    |    |    |    |     |     |     |     |     |     | ●   | ●    |      |      |
| XT7    |    |    |    |    |     |     |     |     |     |     | ●   | ●    | ●    | ●    |

### Motor Protection

Ekip M Dip I

| In [A] | 10 | 25 | 40 | 63 | 100 | 160 | 250 | 320 | 400 | 630 | 800 | 1000 | 1250 | 1600 |
|--------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| XT2    | ●  | ●  |    | ●  | ●   | ●   |     |     |     |     |     |      |      |      |
| XT4    |    |    | ●  | ●  | ●   | ●   | ●   |     |     |     |     |      |      |      |
| XT5    |    |    |    |    |     |     | ●   | ●   | ●   | ●   |     |      |      |      |
| XT6    |    |    |    |    |     |     |     |     |     |     | ●   | ●    |      |      |
| XT7    |    |    |    |    |     |     |     |     |     |     | ●   | ●    | ●    | ●    |

Ekip M Dip LIU

| In [A] | 10 | 25 | 40 | 63 | 100 | 160 | 250 | 320 | 400 | 500 | 800 | 1000 | 1250 | 1600 |
|--------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| XT2    |    | ●  |    | ●  | ●   | ●   |     |     |     |     |     |      |      |      |
| XT4    |    |    | ●  | ●  | ●   | ●   |     |     |     |     |     |      |      |      |
| XT5    |    |    |    |    |     |     | ●   | ●   | ●   | ●   |     |      |      |      |
| XT6    |    |    |    |    |     |     |     |     |     |     | ●   |      |      |      |

### Generator Protection

Ekip G Dip LS/I

| In [A] | 10 | 25 | 40 | 63 | 100 | 160 | 250 | 320 | 400 | 630 | 800 | 1000 | 1250 | 1600 |
|--------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| XT2    | ●  | ●  |    | ●  | ●   | ●   |     |     |     |     |     |      |      |      |
| XT4    |    |    | ●  | ●  | ●   | ●   | ●   |     |     |     |     |      |      |      |
| XT5    |    |    |    |    |     |     | ●   | ●   | ●   | ●   |     |      |      |      |
| XT6    |    |    |    |    |     |     |     |     |     |     | ●   | ●    |      |      |
| XT7    |    |    |    |    |     |     |     |     |     |     | ●   | ●    | ●    | ●    |

# Ekip Dip

## Protection settings

Available settings for Ekip Dip trip units:

### Ekip DIP LS/I & Ekip DIP LIG

| ABB code | Protection Function     | Threshold  | Trip Time  | Trip Curve                                   |
|----------|-------------------------|--|--|--|
| <b>L</b> | Overload                | I1 = 0.4...1 x In with steps of 0.04   | t1 at 3 x I1 = 12 - 36s<br>12 - 48s for XT7                        | t=k/I <sup>2</sup>                           |
| <b>S</b> | Selective short-circuit | I2 = Off - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4.5 - 5.5 - 6.5 - 7 - 7.5 - 8 - 8.5 - 9 - 10 x In                                     | t2 = 0.1 - 0.2s<br>at 10 x In when t = k/I <sup>2</sup>            | t=k<br>t = k or t = k/I <sup>2</sup> for XT7 |
| <b>I</b> | Short-circuit           | I3 = Off - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4.5 - 5.5 - 6.5 - 7 - 7.5 - 8 - 8.5 - 9 - 10 x In                                     | t3 ≤ 20ms<br>t3 ≤ 30ms for XT7                                     | t=k  |
| <b>G</b> | Earth fault             | I4 = Off - 0.20 - 0.25 - 0.45 - 0.55 - 0.75 - 0.80 - 1 x In<br>I4 = Off - 0.2 - 0.3 - 0.4 - 0.6 - 0.8 - 0.9 - 1.0 x In for XT7 | t4 = 0.1 - 0.2 - 0.4 - 0.8s<br>at 3 x In when t = k/I <sup>2</sup> | t=k<br>t = k or t = k/I <sup>2</sup> for XT7 |

### Ekip DIP LSI & Ekip DIP LSIG

| ABB code | Protection Function     | Threshold   | Trip Time  | Trip Curve                                   |
|----------|-------------------------|---|--|--|
| <b>L</b> | Overload                | I1 = 0.4...1 x In with steps of 0.02<br>I1 = 0.4 - 0.42 - 0.45 - 0.47 - 0.5 - 0.52 - 0.55 - 0.57 - 0.6 - 0.62 - 0.65 - 0.67 - 0.7 - 0.72 - 0.75 - 0.77 - 0.8 - 0.82 - 0.85 - 0.87 - 0.9 - 0.92 - 0.95 - 0.97 - 1 x In for XT7 | t1 at 3xI1 =<br>3 - 12 - 36 - 60s at 3xI1 for XT2-XT4<br>3 - 12 - 36 - 48s for XT5<br>3 - 12 - 36 - MAX for XT6<br>3 - 12 - 24 - 36 - 48 - 72 - 108 - 144s for XT7 | t=k/I <sup>2</sup>                           |
| <b>S</b> | Selective short-circuit | I2 = Off - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4.5 - 5.5 - 6.5 - 7 - 7.5 - 8 - 8.5 - 9 - 10 x In<br>I2 = Off - 0.6 - 0.8 - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4 - 5 - 6 - 7 - 8 - 9 - 10 for XT7   | t2 = 0.05 - 0.1 - 0.2 - 0.4 for XT2-XT4-XT5-XT6<br>t2 = 0.1 - 0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 for XT7<br>at 10xIn when t = k/I <sup>2</sup>                | t = k or t = k/I <sup>2</sup>                |
| <b>I</b> | Short-circuit           | I3 = Off - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4.5 - 5.5 - 6.5 - 7 - 7.5 - 8 - 8.5 - 9 - 10 x In<br>I3 = Off - 1.5 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 for XT7  | t3 ≤ 20ms<br>t3 ≤ 30ms for XT7   | t=k  |
| <b>G</b> | Earth fault             | I4 = Off - 0.20 - 0.25 - 0.45 - 0.55 - 0.75 - 0.80 - 1 x In<br>I4 = Off - 0.2 - 0.3 - 0.4 - 0.6 - 0.8 - 0.9 - 1.0 x In for XT7  | t4 = 0.1 - 0.2 - 0.4 - 0.8s<br>at 3 x In when t = k/I <sup>2</sup>   | t=k<br>t = k or t = k/I <sup>2</sup> for XT7 |

Note: t1 MAX for XT6: 42s for XT6 1000 and 72s for XT6 800

**Ekip M DIP I**

| ABB code | Protection Function | Threshold  | Trip Time   | Trip Curve |
|----------|---------------------|--|---|------------|
| I        | Short-circuit       | I <sub>3</sub> = Off - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4.5 - 5.5 - 6.5 - 7 - 7.5 - 8 - 8.5 - 9 - 10 x I <sub>n</sub> | t <sub>3</sub> ≤ 15ms for XT5-XT4<br>t <sub>3</sub> ≤ 20ms for XT5-XT4<br>t <sub>3</sub> ≤ 30ms for XT7 | t=k        |

**Ekip M DIP LIU**

| ABB code | Protection Function           | Threshold   | Trip Time   | Trip Curve         |
|----------|-------------------------------|---|---|--------------------|
| L        | Overload                      | I <sub>1</sub> = 0.4...1 x I <sub>n</sub> with steps of 0.04        | Operating Class for XT2-XT4:<br>5E - 10E - 20E<br>Operating Class for XT5-XT6:<br>5E - 10E - 20E - 30E  | t=k/I <sup>2</sup> |
| I        | Short-circuit                 | I <sub>3</sub> = 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 x I <sub>n</sub> | t <sub>3</sub> ≤ 15ms for XT5-XT4<br>t <sub>3</sub> ≤ 20ms for XT5-XT4<br>t <sub>3</sub> ≤ 30ms for XT7 | t=k                |
| U        | Phase loss<br>(IEC 60947-4-1) | ON/OFF  | When ON. t <sub>6</sub> = 2s  | t=k                |

**Ekip G DIP LS/I**

| ABB code | Protection Function     | Threshold  | Trip Time   | Trip Curve                                     |
|----------|-------------------------|--|---|--|
| L        | Overload                | I <sub>1</sub> = 0.4...1 x I <sub>n</sub> with steps of 0.04   | t <sub>1</sub> at 3 x I <sub>1</sub> = 3 - 6s   | t=k/I <sup>2</sup>                             |
| S        | Selective short-circuit | I <sub>2</sub> = Off - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4.5 - 5.5 - 6.5 - 7 - 7.5 - 8 - 8.5 - 9 - 10 x I <sub>n</sub> | t <sub>2</sub> = 0.05 - 0.075 - 0.1 - 0.2<br>at 10 x I <sub>n</sub> when t = k/I <sub>2</sub> | t=k<br>t = k or t = k / I <sup>2</sup> for XT7 |
| I        | Short-circuit           | I <sub>3</sub> = Off - 1 - 1.5 - 2 - 2.5 - 3 - 3.5 - 4.5 - 5.5 - 6.5 - 7 - 7.5 - 8 - 8.5 - 9 - 10 x I <sub>n</sub> | t <sub>3</sub> ≤ 20ms<br>t <sub>3</sub> ≤ 30ms for XT7  | t=k  |

# Ekip Dip

## Tolerances

### Tolerances in case of:

- Self-powered trip unit at full power
- 2 or 3 phase supply

| Trip Unit   | Protection       | Trip Threshold   | Trip Time   |
|---|------------------|--|---|
| <b>Ekip DIP LS/I</b><br><b>Ekip DIP LIG</b><br><b>Ekip G Dip LS/I</b> | L                | trip between 1,05...1,3 x I <sub>n</sub> according IEC 60947-2 | ±10% up to 4xI <sub>n</sub><br>±20% from 4xI <sub>n</sub>   |
|   | S                | ±10%   | XT2-XT4-XT5-XT6: 15% <sup>(2)</sup><br>XT7:<br>t=k: ±10%<br>t=k/I <sup>2</sup> : ±15% up to 4xI <sub>n</sub><br>±20% from 4xI <sub>n</sub>  |
|   | I                | ±10%   | -   |
|   | G <sup>(1)</sup> | ±10%   | XT2-XT4-XT5-XT6: ±20%<br>XT7: ±15%  |
| <b>Ekip DIP LSI</b><br><b>Ekip DIP LSIG</b>                           | L                | trip between 1,05...1,3 x I <sub>n</sub> according IEC 60947-2 | XT2-XT4-XT5-XT6:<br>±10% up to 4xI <sub>n</sub><br>±20% from 4xI <sub>n</sub><br>XT7:<br>±10% up to 6xI <sub>n</sub><br>±20% from 6xI <sub>n</sub>  |
|   | S                | ±10%   | XT2-XT4-XT5-XT6:<br>t=k: ±10% up to 4xI <sub>n</sub><br>±20% from 4xI <sub>n</sub><br>t=k/I <sup>2</sup> : ±15% t <sub>2</sub> >100ms<br>±20ms t <sub>2</sub> ≤100ms<br>XT7:<br>t=k the better of the two data:<br>±10% or ± 40ms<br>t=k/I <sup>2</sup> : ±15% up to 6xI <sub>n</sub><br>±20% from 6xI <sub>n</sub> |
|   | I                | ±10%   | -   |
|   | G <sup>(1)</sup> | XT2-XT4-XT5-XT6: ±10%<br>XT7: ±7%                              | XT2-XT4-XT5-XT6: ±15%<br>XT7:<br>t=k the better of the two data:<br>±10% or ± 40ms<br>t=k/I <sup>2</sup> : ±15% up to 6xI <sub>n</sub><br>±20% from 6xI <sub>n</sub>  |
| <b>Ekip M Dip I</b><br><b>Ekip M Dip LIU</b>                          | L                | trip between 1,05...1,2xI <sub>n</sub>                         | ±10% up to 4xI <sub>n</sub><br>±20% up to 4xI <sub>n</sub>  |
|   | I                | ±10%   | -   |
|   | U                | ±10%   | ±10%  |

Note: When the trip unit is used at 400Hz the tripping time tolerance is +/- 25%

(1) G protection is inhibited for currents higher than: - 2xI<sub>n</sub> with XT2 and XT4  
- 4xI<sub>n</sub> with XT5 and XT6

(2) for G Dip LS/I: - ±10% t<sub>2</sub> > 100ms  
- ±20% t<sub>2</sub> ≤ 100ms

**Tolerances in other conditions:**

| <b>Trip Unit</b>       | <b>Protection</b> | <b>Trip Threshold</b>   | <b>Trip Time</b>  |
|------------------------|-------------------|---|---|
| <b>Ekip DIP LS/I</b>   | L                 | trip between 1,05...1,3 x I <sub>l</sub> according IEC 60947-2  | ±20%  |
| <b>Ekip DIP LIG</b>    | S                 | ±10%  | ±20%  |
| <b>Ekip G Dip LS/I</b> | I                 | ±15%  | ≤60ms   |
|                        | G                 | ± 30%   | ± 20%   |
|                        |                   | For I <sub>n</sub> =10A I <sub>fault</sub> min=4A<br>For I <sub>n</sub> =25A I <sub>fault</sub> min=9A                | For I <sub>n</sub> =10A,25A: ±30%   |
| <b>Ekip DIP LSI</b>    | L                 | trip between 1,05...1,3 x I <sub>l</sub> according IEC 60947-2  | ±20%  |
| <b>Ekip DIP LSIG</b>   | S                 | ±10%  | ±20%  |
|                        | I                 | ±15%  | ≤60ms   |
|                        | G                 | XT2-XT4-XT5-XT6<br>± 30%  | XT2-XT4-XT5-XT6<br>± 20%  |
|                        |                   | For I <sub>n</sub> =10A I <sub>fault</sub> min=4A<br>For I <sub>n</sub> =25A I <sub>fault</sub> min=9A<br>XT7<br>± 7% | For I <sub>n</sub> =10A,25A: ±30%<br>XT7<br>t=k the better of the two data: ±10% or ±40ms<br>t=k/I <sup>2</sup> : ± 15% |
| <b>Ekip M Dip I</b>    | L                 | trip between 1.05...1.2xI <sub>l</sub>  | ±20%  |
| <b>Ekip M Dip LIU</b>  | I                 | ±15%  | ≤60ms   |
|                        | U                 | ±20%  | ±20%  |

# Ekip Touch/Hi-Touch

## Overview

The Ekip Touch/Hi-Touch provide a complete series of protections and high accuracy measurements of all electrical parameters and can be integrated perfectly with the most common automation and supervision systems.

### Power Distribution Protection

- Ekip Touch LSI
- Ekip Touch LSIG
- Ekip Touch Measuring LSI
- Ekip Touch Measuring LSIG
- Ekip Hi-Touch LSI
- Ekip Hi-Touch LSIG

### Motor Protection

- Ekip M Touch LRIU

### Generator Protection

- Ekip G Touch LSIG
- Ekip G Hi-Touch LSIG

Key:

1. Power-on LED; pre-alarm LED; alarm LED
2. Test and programming connector
3. Display
4. Home push-button to return to homepage;
5. Push-button for testing and tripping information



### Communication & Connectivity

The Ekip Touch/Hi-Touch trip units can be integrated perfectly into all automation and energy management systems to improve productivity and energy consumption and for remote control. The circuit-breakers can be equipped with communication modules for Modbus, Profibus, and DeviceNet™ protocols as well as Modbus TCP, Profinet and EtherNet/IP™. The modules can be easily installed even at a later date.

A solution with integrated modules is useful when the space in the switchboard is limited, but also a solution with external Ekip Cartridge modules is highly suitable for when an advanced control and communication system is required.

Furthermore, the IEC61850 communication module enables connection to automation systems widely used in medium voltage power distribution to create intelligent networks (Smart Grids). All circuit-breaker functions are also accessible via the Internet, in complete safety and through the Ekip Link switchgear supervision system. Furthermore, with an easy connection thanks to the Ekip Com Hub module, the circuit-breakers allow the system to be monitored via ABB Ability™ EDCS.



### Efficiency and measurements

Achieving maximum efficiency of an electrical installation requires intelligent management of power supplies and energy use. For this reason, the new technologies used in the Ekip Touch/Hi-Touch trip units allow the productivity and reliability of installations to be optimized while reducing consumption and fully respecting the environment. These advanced functionalities, together with the protection and communication functions contribute to making Tmax XT with Ekip Touch/Hi-Touch the circuit-breaker that maximizes efficiency in all low-voltage electrical installations.

With 1% accuracy on power and energy measurements, the trip units are certified according the IEC 61557-12 Standard. Ekip Touch/Hi-Touch trip units are no longer simply protection devices, but integrate multimeter and network analyzer functionality, thus guaranteeing a top level energy management system.

### Digital Upgrade

Ekip Touch/Hi-Touch trip units are available in different versions, to enable a wide range of functions: from the Ekip Touch to the Ekip Hi-Touch, it is always possible to customize any device thanks to the additional digital modules.

All functions are available on the ABB Ability Marketplace™ and can be added both when ordering the trip unit as well as after the installation of the circuit-breaker. Ekip Connect efficiently provides desired functions, and EPiC makes the operation even faster, directly from a Smartphone.

Several packages are available to download, and all of them are designed to save time, costs, and space, since no external devices are needed.

### Interface

It is possible to interact with the trip unit in several ways via:

- **The front display**

An LCD display with a push button ensures easy navigation on the XT2 and XT4, while a color touch screen is available for intuitive and quick navigation on the XT5 and XT7, together with the possibility of viewing the waveform for different parameters.

- **Smartphone via Bluetooth**

Thanks to the integrated Bluetooth functionality, it is possible to set and check all the measurements and information directly from a smartphone thanks to the EPiC app. Even when the cabinet door is closed, it is always possible to carry out maintenance in a safer way.

- **PC with Ekip Connect**

It is also easy to interact with the trip unit with a PC. Thanks to the Ekip T&P cable the trip unit can be easily connected to a USB PC port and using the Ekip Connect program it is possible to fully interact with the trip unit.

# Ekip Touch/Hi-Touch

## Overview

### Supply

The Ekip Touch/Hi-Touch protection trip unit is self-supplied through the current sensors and does not require an external supply for the basic protection functions or for the alarm indication functions. The trip units for all the circuit-breakers start to power on from a minimum of  $0.2 \times I_n^*$  and activate the indication functions, ammeter and the display. All protection settings are stored in a non-volatile memory that maintains the information, even without a power supply. An auxiliary supply can also be easily connected. In fact, the trip unit can be supplied by means of a galvanically isolated 24V DC auxiliary voltage with the following characteristics:

| Parameter                         | Operation limits  |
|-----------------------------------|---|
| <b>Voltage</b>                    | 24V DC galvanically isolated*   |
| <b>Tolerance</b>                  | $\pm 10\%$  |
| <b>Maximum wave</b>               | $\pm 5\%$   |
| <b>Maximum surge current @24V</b> | 10A for 5ms   |
| <b>Maximum rated power @24V</b>   | 4W  |
| <b>Connecting cable</b>           | Insulated with ground cable (characteristics equal to or greater than Belden 3105A/B) |

The insulation characteristics must refer to the IEC 60950 (UL 1950) or their equivalent

The Ekip Supply module can be connected to both DC and AC current power supplies to activate additional functions such as:

- using the unit with circuit-breaker open;
- using additional modules such as Ekip Signalling and Ekip Com;
- connection to external devices such as Ekip Multimeter;
- recording the number of operations;
- G protection with values below 100A or below  $0.2 \times I_n^*$ ;
- zone selectivity;
- Gext and MCR protection functions.

| Supply                                 | Ekip Supply   |                 |
|--|---------------|-----------------|
| <b>Nominal voltage</b>                 | 24-48 V DC    | 110-240 V AC/DC |
| <b>Voltage range</b>                   | 21.5-53 V DC  | 105-265 V AC/DC |
| <b>Rated power (including modules)</b> | 10W max.      | 10W max.        |
| <b>Inrush current</b>                  | ~10A for 5 ms | ~10A for 5 ms   |

The Ekip Touch/Hi-Touch is also supplied with a battery that enables the cause of the fault to be indicated after a trip. In addition, the battery enables the date and time to be updated, thus ensuring the chronology of events. When the Ekip Touch/Hi-Touch is operating, it uses an internal control circuit to automatically indicate that the battery is flat. Furthermore, when the unit is switched off a battery test can be run by simply pressing the iTest key.

\* for XT2 with  $I_n=40A$ :  $0.3 \times I_n$ ; for XT2 & XT4 with  $I_n=100A$ :  $0.25 \times I_n$

### Rating Plug

The XT5 and XT7 trip units allow the rated current to be modified by simply changing the front rating plug. Thus, an upgrade of the circuit-breaker, whenever needed, can be carried out without replacing the circuit-breaker.

### Commissioning

The setting, testing and downloading of reports can be carried out directly from a smartphone, tablet or PC. In addition, the commissioning stage can be further accelerated, minimizing the possibility of errors, by directly configuring the protection trip unit with the DOC design software settings.

### Test function

The test port and the iTest key on the front of the protection unit can be used to carry out circuit-breaker tests by connecting one of the following devices:

- The Ekip TT, which allows trip tests, LED tests and checks for the absence of alarms detected by the watchdog function;
- The Ekip T&P, which permits not only trip tests and LED tests but also testing of the individual protection functions and the saving of the relative report;
- The iTest key, to run a battery test when the circuit-breaker is disconnected.

The following table shows the main features for each version of the trip unit. The additional features can be added to the trip unit at the time of purchase or after via the ABB Ability Marketplace™.

| Trip Unit                 | Current measurement & protection | Voltage, power, energy measurements | Voltage, power, energy protections | Embedded functions* |
|---------------------------|----------------------------------|-------------------------------------|------------------------------------|---------------------|
| Ekip Touch LSI            | ●                                | ○                                   | ○                                  | ○                   |
| Ekip Touch LSIG           | ●                                | ○                                   | ○                                  | ○                   |
| Ekip Touch Measuring LSI  | ●                                | ●                                   | ○                                  | ○                   |
| Ekip Touch Measuring LSIG | ●                                | ●                                   | ○                                  | ○                   |
| Ekip Hi-Touch LSI         | ●                                | ●                                   | ●                                  | ●                   |
| Ekip Hi-Touch LSIG        | ●                                | ●                                   | ●                                  | ●                   |
| Ekip M Touch LRIU         | ●                                | ●                                   | ●                                  | ●                   |
| Ekip G Touch LSIG         | ●                                | ●                                   | ●                                  | ●                   |
| Ekip G Hi-Touch LSIG      | ●                                | ●                                   | ●                                  | ●                   |

● Default available

○ Additionable features

\* See the following pages for more details

# Ekip Touch/Hi-Touch

## Overview

### Watchdog

All the Ekip Touch/Hi-Touch trip units for the Tmax XT ensure high reliability thanks to an electronic circuit that periodically checks the continuity of the internal connections, such as the trip coil, rating plug and each current sensor (ANSI 74). In the event of an alarm, a message is shown on the display, and if it is set during the installation phase, the trip unit can command the opening of the circuit-breaker. If a protection function intervenes, Ekip Touch/Hi-Touch always checks that the circuit-breaker has been opened by auxiliary contacts that indicate the position of the main contacts. Otherwise, Ekip Touch/Hi-Touch indicates an alarm (ANSI BF code Breaker Failure) to command the opening of the circuit-breaker upstream.

Ekip Touch/Hi-Touch also features self-protection, which ensures the correct operation of the unit in overtemperatures (OT) inside the protection trip unit.

The following indications or controls are available:

- “Warning” LED for temperature below -20 °C or above +70 °C, at which point the trip unit operates correctly with the display switched off.
- “Alarm” LED for temperature outside the operating range, at which point the trip unit commands the opening of the circuit-breaker (if set during the configuration phase).

**Power Distribution Protection**

Ekip Touch LSI

Ekip Touch LSIG

Ekip Touch Measuring LSI

Ekip Touch Measuring LSIG

Ekip Hi-Touch LSI

Ekip Hi-Touch LSIG

| In [A] | 40 | 63 | 100 | 160 | 250 | 320 | 400 | 630 | 800 | 1000 | 1250 | 1600 |
|--------|----|----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| XT2    | ●  | ●  | ●   | ●   |     |     |     |     |     |      |      |      |
| XT4    |    |    | ●   | ●   | ●   |     |     |     |     |      |      |      |
| XT5    |    |    |     |     | ●   | ●   | ●   | ●   |     |      |      |      |
| XT7    |    |    |     |     |     |     |     |     | ●   | ●    | ●    | ●    |

**Motor Protection**

Ekip M Touch LRIU

| In [A] | 40 | 63 | 100 | 160 | 200 | 250 | 320 | 400 | 500 | 800 | 1000 | 1250 |
|--------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| XT2    | ●  | ●  | ●   | ●   |     |     |     |     |     |     |      |      |
| XT4    |    |    | ●   | ●   | ●   |     |     |     |     |     |      |      |
| XT5    |    |    |     |     |     | ●   | ●   | ●   | ●   |     |      |      |
| XT7    |    |    |     |     |     |     |     |     |     | ●   | ●    | ●    |

**Generator Protection**

Ekip G Touch LSIG

Ekip G Hi-Touch LSIG

| In [A] | 250 | 320 | 400 | 630 | 800 | 1000 | 1250 | 1600 |
|--------|-----|-----|-----|-----|-----|------|------|------|
| XT5    | ●   | ●   | ●   | ●   |     |      |      |      |
| XT7    |     |     |     |     | ●   | ●    | ●    | ●    |

# Ekip Touch/Hi-Touch

## Protection functions

The Ekip Touch/Hi-Touch enables all the protection functions to be set with a few simple steps.

Thanks to the ABB Ability Marketplace™, it is always possible to customize the Ekip Touch/Hi-Touch trip units when ordering and also when the circuit-breaker is already installed by using the Ekip Connect App.

Each trip unit has a default protection set, as shown in the table below. Adding other functional packages to this set is always possible, either directly when ordering the circuit-breaker, or via ABB Ability Marketplace™ at a later time.

The following protection software packages are available to be added to any version of Ekip Touch/Hi-Touch trip units:

- Voltage Protection
- Voltage Protection Advanced
- Frequency Protection
- Power Protection
- ROCOF Protection
- Adaptive Protection

| ABB Code                                   | ANSI Code         | Function  | Ekip Touch LSI | Ekip Touch LSIG | Ekip Touch Measuring LSI |
|--|-------------------|---|----------------|-----------------|--------------------------|
| <b>Default Protection</b>                  |                   |   |                |                 |                          |
| <b>L</b>                                   | 49                | Overload  | ●              | ●               | ●                        |
| <b>S</b>                                   | 50 TD / 68 / 51   | Selective short circuit                               | ●              | ●               | ●                        |
| <b>I</b>                                   | 50                | Instantaneous short-circuit                           | ●              | ●               | ●                        |
| <b>G</b>                                   | 50N/50N TD/68/51N | Earth Fault   |                | ●               |                          |
| <b>N</b>                                   |                   | Neutral   | ●              | ●               | ●                        |
| <b>2I</b>                                  | 50                | 2nd instantaneous short-circuit                       | ●              | ●               | ●                        |
| <b>MCR</b>                                 |                   | Closing on short-circuit                              | ●              | ●               | ●                        |
| <b>linst</b>                               |                   | Instantaneous high intensity short-circuit protection | ●              | ●               | ●                        |
| <b>IU</b>                                  | 46                | Current unbalance                                     | ●              | ●               | ●                        |
| <b>Harmonic Distortion</b>                 |                   |   | ●              | ●               | ●                        |
| <b>T</b>                                   |                   | Temperature   | ●              | ●               | ●                        |
| <b>Hardware trip</b>                       |                   |   | ●              | ●               | ●                        |
| <b>Current Thresholds</b>                  |                   |   | ●              | ●               | ●                        |
| <b>S2</b>                                  | 50 TD/68          | 2nd Time delayed overcurrent                          | ●              | ●               | ●                        |
| <b>Voltage Protection package</b>          |                   |   |                |                 |                          |
| <b>Phase Sequence</b>                      | 47                | Cyclical direction of the phases                      | ○              | ○               | ○                        |
| <b>UV</b>                                  | 27                | Undervoltage  | ○              | ○               | ○                        |
| <b>OV</b>                                  | 59                | Overvoltage   | ○              | ○               | ○                        |
| <b>UV2</b>                                 | 27                | 2nd Undervoltage                                      | ○              | ○               | ○                        |
| <b>OV2</b>                                 | 59                | 2nd Overvoltage                                       | ○              | ○               | ○                        |
| <b>VU</b>                                  | 47                | Voltage unbalance                                     | ○              | ○               | ○                        |
| <b>Voltage Protection Advanced package</b> |                   |   |                |                 |                          |
| <b>S(V)</b>                                | 51V               | Voltage controlled overcurrent                        | ○              | ○               | ○                        |
| <b>S(V) 2nd</b>                            | 51V               | 2nd Voltage controlled overcurrent                    | ○              | ○               | ○                        |
| <b>RV</b>                                  | 59N               | Residual overvoltage                                  | ○              | ○               | ○                        |

● Available as standard

○ Available as software package to be ordered via ABB Marketplace™ or during the circuit-breaker ordering phase. To add this function, the Measuring package must be installed first.

| Ekip Touch Measuring<br>LSIG | Ekip Hi-Touch LSI | Ekip Hi-Touch LSIG | Ekip M Touch LRIU | Ekip G Touch LSIG | Ekip G Hi-Touch LSIG |
|------------------------------|-------------------|--------------------|-------------------|-------------------|----------------------|
| ●                            | ●                 | ●                  |                   | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            |                   | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  |                   | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ○                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ○                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ○                 | ○                  | ○                 | ●                 | ●                    |
| ○                            | ○                 | ○                  | ○                 | ○                 | ●                    |
| ○                            | ○                 | ○                  | ○                 | ●                 | ●                    |



# Ekip Touch/Hi-Touch

## Protection functions

| ABB Code                                  | ANSI Code     | Function                                     | Ekip Touch LSI   | Ekip Touch LSIG  | Ekip Touch Measuring LSI |
|---|---------------|--|------------------|------------------|--------------------------|
| <b>Frequency Protection package</b>       |               |  |                  |                  |                          |
| UF  | 81L           | Underfrequency                               | ○                | ○                | ○                        |
| OF  | 81H           | Overfrequency                                | ○                | ○                | ○                        |
| UF2                                       | 81L           | 2nd Underfrequency                           | ○                | ○                | ○                        |
| OF2                                       | 81H           | 2nd Overfrequency                            | ○                | ○                | ○                        |
| <b>Power Protection package</b>           |               |  |                  |                  |                          |
| RP  | 32R           | Reverse active power                         | ○                | ○                | ○                        |
| Cos $\varphi$                             | 78            | Power Factor                                 | ○                | ○                | ○                        |
| D   | 67            | Directional overcurrent                      | ○                | ○                | ○                        |
| RQ  | 40/32R        | Loss of field or reverse reactive power      | ○                | ○                | ○                        |
| OQ  | 320F          | Reactive overpower                           | ○                | ○                | ○                        |
| OP  | 320F          | Active overpower                             | ○                | ○                | ○                        |
| UP  | 32LF          | Active underpower                            | ○                | ○                | ○                        |
| <b>ROCOF Protection package</b>           |               |  |                  |                  |                          |
| ROCOF                                     | 81R           | Rate of change of frequency                  | ○                | ○                | ○                        |
| <b>Adaptive Protection package</b>        |               |  |                  |                  |                          |
| Set A-B                                   |               | Dual Setting                                 | ○                | ○                | ○                        |
| <b>Motor Protection</b>                   |               |  |                  |                  |                          |
| L   |               | Motor protection overload                    |                  |                  |                          |
| R   | 51LR          | Rotor blockage                               |                  |                  |                          |
| U   | 46            | Phase lackand/or unbalance                   |                  |                  |                          |
| Uc  | 37            | Undercurrent                                 |                  |                  |                          |
| <b>Protection with additional modules</b> |               |  |                  |                  |                          |
| SC  | 25            | Synchrocheck                                 | ●                | ●                | ●                        |
| Ekip CI                                   |               | Motor contactor interface protection         |                  |                  |                          |
| PTC                                       |               | PTC for temperature                          |                  |                  |                          |
| G ext                                     | 50G TD/86/51G | Earth fault                                  | ● <sup>(1)</sup> | ● <sup>(1)</sup> | ● <sup>(1)</sup>         |
| Rc  | 64 50N TD 87N | Residual current / Differential ground fault | ● <sup>(1)</sup> | ● <sup>(1)</sup> | ● <sup>(1)</sup>         |

● Available

○ Available as software package to be ordered via ABB Ability Marketplace™ or during the circuit-breaker ordering phase. To add this function, the Measuring package must be installed first.

Note:

1) Available with additional module for XT7 and XT7 M only

When an Ekip Touch LSI or LSIG trip unit is upgraded with one of the following packages:

- Voltage Protection
- Voltage Protection Advanced
- Frequency Protection
- Power Protection
- ROCOF Protection

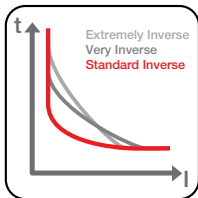
it is mandatory to add first the Measuring package described on the following pages.

| Ekip Touch<br>Measuring LSIG | Ekip Hi-Touch LSI | Ekip Hi-Touch LSIG | Ekip M Touch LRIU | Ekip G Touch LSIG | Ekip G Hi-Touch LSIG |
|------------------------------|-------------------|--------------------|-------------------|-------------------|----------------------|
| ○                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ○                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ○                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ●                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ○                 | ●                    |
| ○                            | ○                 | ○                  | ○                 | ●                 | ●                    |
| ○                            | ○                 | ○                  | ○                 | ●                 | ●                    |
| ○                            | ○                 | ○                  | ○                 | ●                 | ●                    |
| ○                            | ○                 | ○                  | ○                 | ○                 | ●                    |
| ○                            | ●                 | ●                  | ●                 | ○                 | ●                    |
|                              |                   |                    | ●                 |                   |                      |
|                              |                   |                    | ●                 |                   |                      |
|                              |                   |                    | ●                 |                   |                      |
|                              |                   |                    | ●                 |                   |                      |
| ●                            | ●                 | ●                  | ●                 | ●                 | ●                    |
|                              |                   |                    | ●                 |                   |                      |
|                              |                   |                    | ●                 |                   |                      |
| ● (1)                        | ● (1)             | ● (1)              | ● (1)             | ● (1)             | ● (1)                |
| ● (1)                        | ● (1)             | ● (1)              | ● (1)             | ● (1)             | ● (1)                |

# Ekip Touch/Hi-Touch

## Protection functions

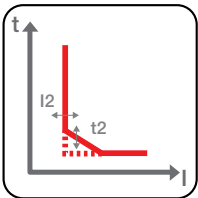
The Ekip Touch/Hi-Touch can be customized with the protection functions required.



### L – Overload (L - ANSI 49)

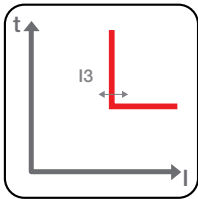
This function is used for protection against overloads. It allows the setting of the trip threshold, trip time and pre-alarm threshold. Three different types of trip curves are available:

1.  $t = k/I^2$  with an inverse long time;
2. IDMT in accordance with IEC 60255-151 for coordination with medium voltage protection, available according to Standard Inverse (SI), Very Inverse (VI) and Extremely Inverse (EI) curves;
3. With a  $t = k/I^4$  curve for better coordination with upstream circuit-breakers or fuses.



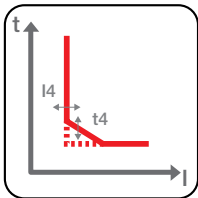
### S – Time-delayed overcurrent (S - ANSI 51 & 50TD)

This function is used to protect against selective short-circuits. If necessary, it can be disabled, or if needed, only the trip can be excluded keeping the alarm indication, to be used in installations where continuity of service is required. With a constant trip time ( $t = k$ ), or constant specific let through energy ( $t = k/I^2$ ).



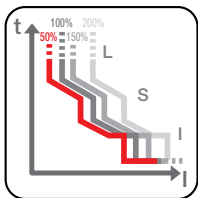
### I – Short-circuit

This function is used for instantaneous protection against short-circuits. The trip threshold is adjustable and, if needed, the protection can be disabled.



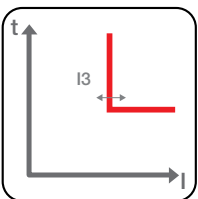
### G - Ground fault

This function protects against earth faults. The trip threshold and trip time are adjustable. When needed, the protection can be disabled.



### Neutral protection

This function is used to adjust the setting provided from protections L, S and I on the Neutral pole with a control factor which is different from the other phases. It is available with values at 50%, 100%, 150% or 200% of the phase currents. It can be disabled if necessary.

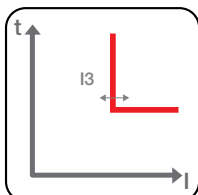


### 2I - Second protection against instantaneous overcurrent

This function protects against the instantaneous short-circuit (e.g. I protection) and it is enabled with an activation event (or command), that can be programmed by the user. It can be activated for different uses in three ways:

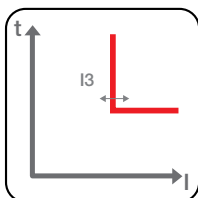
- locally, directly on the Ekip display unit
- locally, with a smartphone with the EPiC app via Bluetooth
- locally, with a PC with the Ekip Connect program
- remotely, via any Ekip Com module connected to the circuit-breaker
- remotely, via a switch wired through an Ekip Signalling module.

When active, the Ekip display unit will show a confirmation of the activation and a red LED alarm will flash on the diagnosis bar.



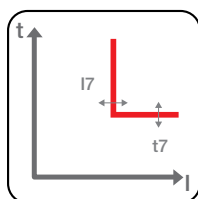
### MCR – Closing on Short-circuit

This protection uses the same algorithm as the I protection, limiting the operation to a settable time window starting from the closing of the circuit-breaker. The protection can be disabled, when needed. The function is active with an auxiliary supply.



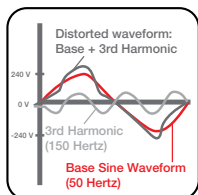
### Iinst

This guarantees the integrity of the circuit-breaker and installation in the case of particularly high current values requiring shorter reaction times than those provided by the instantaneous short-circuit protection. The protection cannot be disabled, and the tripping threshold and time are defined by ABB.



### IU - Current unbalance (ANSI 46)

This function protects against an unbalance between the currents of the single phases protected by the circuit-breaker.



### Harmonic distortion

This allows a control alarm to be activated for a distorted waveform. If enabled, an alarm is activated for waveform factors higher than 2.1.

### T - Temperature

This protects the circuit-breaker against abnormal temperatures recorded by the unit. It is always active, and has two states, according to the temperature:

- Warning:  $-25 < t < -20$  or  $70 < t < 85$  Display off; Warning LED on @ 0.5Hz.
- Alarm:  $t < -25$  or  $t > 85$  Display off; Alarm and Warning LEDs on @2Hz; Circuit-breaker opening command.

### Hardware Trip

This protects against internal disconnections of the circuit-breaker. If enabled, a fault is signaled and an opening command is sent if one or more of the following events are detected:

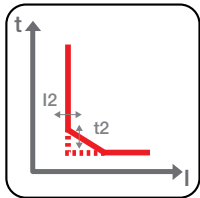
- Current sensors disconnected (phase or external if enabled)
- Rating plug disconnected (only for XT5 and XT7)
- Trip coil disconnected (only signaling)
- Incompatibility between protection release and mainboard (only for XT7)
- Internal problems with the release.

### Current thresholds

This function enables the realization of four independent thresholds to be indicated to enable corrective actions before the overload L protection trips the circuit-breaker. For example, by disconnecting the loads controlled by an Ekip Signalling device positioned downstream of the circuit-breaker.

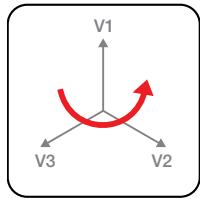
# Ekip Touch/Hi-Touch

## Protection functions



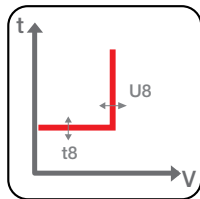
### S2 - Second time-delayed overcurrent protection

In addition to the Standard S protection, a second (excludible) time-constant protection is available that enables two independent thresholds to be set to ensure precise selectivity, especially under highly critical conditions.



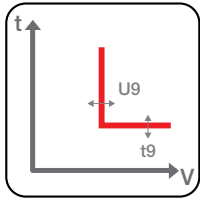
### Phase sequence

This trips in case of an inversion of the phase sequence.



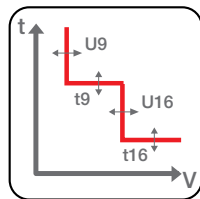
### UV - Undervoltage (UV - ANSI 27)

With a constant trip time ( $t = k$ ), this trips when the phase voltage falls below the set threshold.



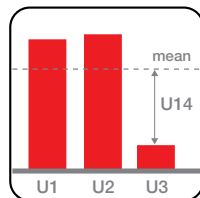
### OV - Overvoltage (OV - ANSI 59)

With a constant trip time ( $t = k$ ), this trips when the phase voltage exceeds the set threshold.



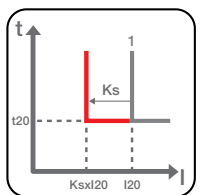
### UV2 & OV2 - Second protection against undervoltage and overvoltage (ANSI 27 and 59)

This enables two minimum and maximum voltage thresholds to be set with different delays to discriminate, for example, between voltage dip transients due to the start-up of a motor and an actual fault.



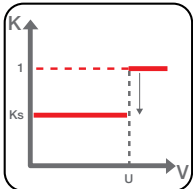
### VU - Voltage unbalance (VU - ANSI 47)

With a constant trip time ( $t = k$ ), this protects against an unbalance between the voltages of the single phases that are protected by the circuit-breaker.

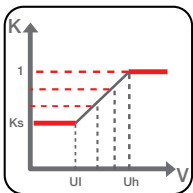


### S(V) - Voltage controlled overcurrent protection (ANSI 51V)

This provides protection from a maximum current with a constant trip time ( $t = k$ ) that is sensitive to the voltage value. Following a voltage drop, the current set threshold decreases in steps or linearly. It is possible to set the operating mode to: active, alarm only, or deactivated. The protection operates also with the circuit-breaker open, thus allowing fault identification before circuit-breaker closing.



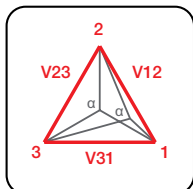
In step mode (controlled mode) the protection is tripped at a set threshold ( $I_{20}$ ) if the voltage is above  $U$ , whereas it is tripped at the lower threshold of the factor  $K_s$  ( $I_{20} * K_s$ ) if the voltage is below  $U$ .



In linear mode (restrained mode) two voltage limits are selected within which the protection is tripped at the set threshold ( $I_{20}$ ) reduced by a factor of  $K$  corresponding to the measured voltage. The variation of the factor  $K$  is proportional to the voltage, and for voltages greater than the upper threshold ( $U_h$ ) the threshold  $I_{20}$  works, whereas for voltages below the lower threshold ( $U_l$ ) the minimum threshold ( $I_{20} * K_s$ ) applies.

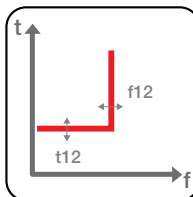
### S2(V) – 2nd protection against voltage-controlled overcurrent protection (ANSI 51V)

Available in addition to the protection S(V), this enables total selectivity to be achieved in all installations. It is possible to set the operating mode to: active, alarm only, or deactivated. The protection also operates with the circuit-breaker open, thus allowing fault identification before circuit-breaker closing.



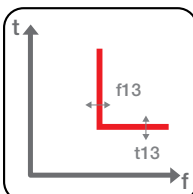
### Residual overvoltage (ANSI 59N)

With a constant trip time ( $t = k$ ), this protects against insulation loss in systems with insulated neutral or with neutral earthed with impedance. It is possible to set the operating mode to: active, alarm only, or deactivated. The protection also operates with the circuit-breaker open, thus allowing fault identification before circuit-breaker closing.



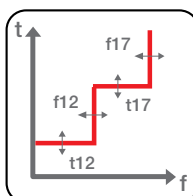
### UF Underfrequency (ANSI 81L)

With a constant trip time ( $t = k$ ), this trips when the network frequency falls below a set threshold.



### OF Overfrequency (ANSI 81H)

With a constant trip time ( $t = k$ ), this trips when network frequency exceeds a set threshold.



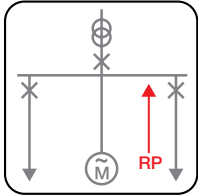
### UF2 & OF2 Second protection against underfrequency and overfrequency (ANSI 81L and 87H)

This enables two minimum and maximum frequency thresholds to be set simultaneously. For example, just an alarm can be set for tripping when the first threshold is reached, and the circuit-breaker can be set to be opened when the second threshold is reached.



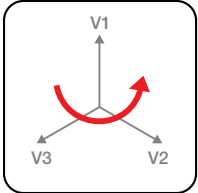
# Ekip Touch/Hi-Touch

## Protection functions



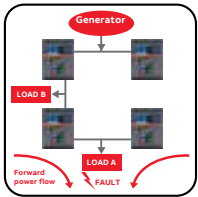
### RP Reverse active power

With a constant trip time ( $t = k$ ), this trips when the total active power – in the opposite direction of the current – exceeds the set threshold.



### Cosφ Power factor

Available with a three-phase threshold, this provides a warning when the system operates with a power factor that is lower than the set power factor.



### D Directional overcurrent

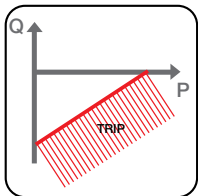
This form of protection is able to recognize the direction of the current during the fault period and thus detect if the fault is upstream or downstream of the circuit-breaker. The protection, with a fixed time trip curve ( $t=k$ ), intervenes with two different time delays ( $t_{7bw}$  and  $t_{7fw}$ ), according to the current direction. In ring distribution networks, it enables the identification and disconnection of the area in which a fault has occurred, while maintaining operation in the rest of the installation.

### Zone selectivity for protection D (ANSI 68)

This enables the possibility to interconnect more circuit-breakers, so that, in case of a fault, the affected area can be disconnected nearest to the fault and operation in the rest of the installation is maintained. It is possible to enable directional zone selectivity alternatively to zone selectivity of S and G protections. This also works in the presence of an auxiliary supply.

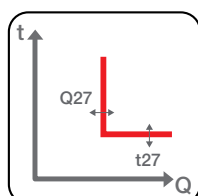
### Start-up function for protection D

This enables higher trip thresholds to be set at the outgoing point, as available for protections S, I and G.



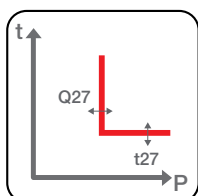
### RQ Loss of field or reverse reactive power (ANSI 40 or 32RQ)

With a constant trip time ( $t = k$ ) this circuit-breaker trips when the total reactive power absorbed by the generator exceeds the set threshold. It is possible to select a constant threshold ( $k=0$ ) or a function of the delivered active power of the generator ( $k \neq 0$ ).



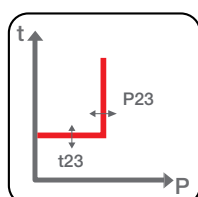
#### OQ Reactive overpower (ANSI 32OF)

With a constant trip time ( $t = k$ ), this trips when the reactive power exceeds the set threshold in the direction from the generator to the network.



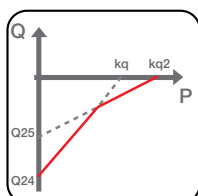
#### OP Active overpower (ANSI 32OF)

With a constant trip time ( $t = k$ ), this trips when the active power exceeds the threshold set in the delivering direction from the generator.



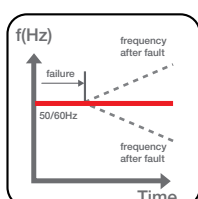
#### UP Active underpower (ANSI 32LF)

With a constant trip time ( $t = k$ ), this trips when the active power delivered by the generator is lower than the set threshold. It is possible to disable the protection temporarily to manage the start-up phase by setting a time window from the closing of the circuit-breaker, by using an electric signal or via incoming communication to a relay.



#### RQ Second protection against loss of field or reverse reactive power (ANSI 40 or 32R)

This functions as the above mentioned RQ protection. These two functions can be active and used at the same time, thus allowing the under-excitation curve of the generator to be accurately followed and avoiding unwanted disconnections.

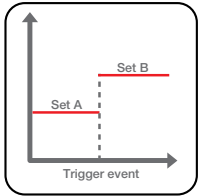


#### ROCOF Rate of change of frequency (ANSI 81R)

This enables both positive and negative frequency variations to be detected rapidly. The threshold is constant and the function trips when the frequency variation in Hz/s is greater than the set threshold. It is possible to set the operating mode to: active, alarm only, or deactivated. The protection enables the identification and disconnection of the area where the fault has occurred while maintaining operation in the rest of the installation.

# Ekip Touch/Hi-Touch

## Protection functions

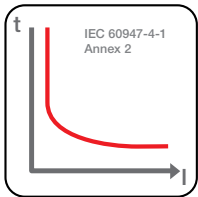


### Adaptive protection: dual setting of protections (Set A-B)

The Ekip Hi-Touch can store a set of alternative parameters (set B) for all protections. This second set can replace the default series (set A) with an external control. A typical application for dual settings may be when an emergency source is activated in the system, causing a change of load capacity and short-circuit levels, and in cases of switchgear maintenance to protect the operator against electric arcs (the minimum trip delays of set B guarantee safety for the operator).

It is possible to activate series B by:

- Digital input, available with an Ekip Signalling module;
- Communication network, by means of one of the Ekip Com communication modules;
- Directly from the Ekip Hi-Touch display;
- Using a settable internal time, after the circuit-breaker has closed.

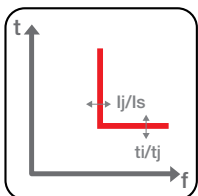


### L Motor protection overload in compliance with Standard IEC 60947-4-1 Annex 2

The L function protects the motor against overloads in accordance with the indications and classes defined by Standard IEC 60947-4-1 and the Annex 2. The trip time is established by choosing the appropriate trip class, which depends on the motor that must be protected. In addition to this protection, the thermal memory function (implemented in accordance with Standard IEC60255-8 and the above-mentioned Standard) is permanently activated. After tripping the Ekip M Touch LRIU, the thermal memory is active for a time that depends on the trip class selected (see table).

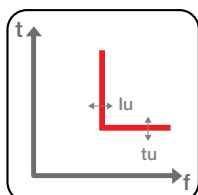
The protection unit will trip faster than the time established for a cold fault condition if a new overload occurs before the thermal memory automatically resets (hot trip condition). The protection has a “start-up” stage from the moment the current exceeds  $0.25 \times I_n$  to the moment the minimum time of the selected trip class is reached.

| TRIP CLASS | CLASS MIN | CLASS MAX | TMEM RESETTING TIME |
|------------|-----------|-----------|---------------------|
| 5E         | 3s        | 5s        | 5 min               |
| 10E        | 5s        | 10s       | 10 min              |
| 20E        | 10s       | 20s       | 20 min              |
| 30E        | 20s       | 30s       | 33 min              |



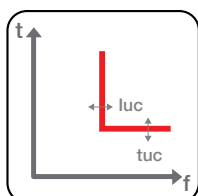
### R Protection against rotor blockage

This protects the motor in two different ways, depending on whether the fault occurs on startup or during normal operation. The behavior in the two operating conditions is defined by the Standard IEC 947-4-1 in Annex 2. In the first case (Jam), the operation of the R function protects the motor against rotor jamming during normal operation. The R (Jam) protection function works in conjunction with the L protection to ensure that the motor start-up phase is completed. The R (Jam) protection is inhibited during the start-up phase for the same time as the minimum time in the selected overload protection trip class. Once this time has elapsed, the R protection is activated and causes the circuit-breaker to trip if the current remains above the current threshold setting ( $I_5$ ) for longer than the time ( $t_5$ ) setting of the protection. In the second case (Stall), the protection is designed to operate to protect the motor against rotor jamming upon start-up. If activated, the R (Stall) protection is not inhibited during start-up and causes the circuit-breaker to open if the current remains above the current threshold setting ( $I_8$ ) for longer than the time setting ( $t_8$ ) of that protection. The protection has a “start-up” stage from the moment the current exceeds  $0.25 \times I_n$  to the moment the minimum time of the selected trip class is reached.



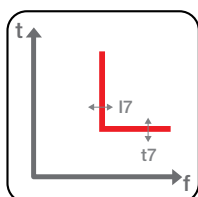
### U Protection against phase loss and/or unbalance

This can be implemented when the motor must be promptly protected owing to the absence of a phase. The protection trips if the r.m.s. value of at least one of the phase currents drops below the level equal to 0.1 times the rated current of the trip unit and a second phase exceeds 0.25 times the rated current. The circuit-breaker is opened if the current value fails to rise above this level within 2 sec. During start-up, the tripping time of the protection is the lowest value between 2 sec or half the minimum time of the start-up class. The protection has a “start-up” stage starting from the moment the current exceeds  $0.25 \times I_n$  to the moment the minimum time of the selected trip class is reached.



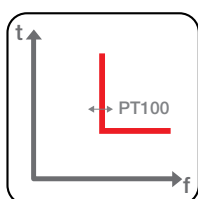
### Uc Undercurrent protection

This function protects the motor from operating in conditions where the load is reduced or null. The circuit-breaker is opened if all the phases remain below the threshold setting  $I_9$  for delay-time  $t_9$ . The protection has a “start-up” stage from the moment the current exceeds  $0.25 \times I_n$  to the moment the minimum time of the selected trip class is reached.



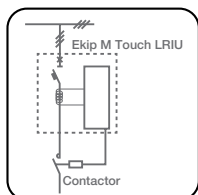
### IU Protection against phase unbalance

This unit is used when a motor needs to be protected against differences in the currents circulating in the phases. Threshold setting  $I_7$  defines the maximum level of difference between each phase and the mean value of the three phases. If a phase differs more than its set level from the mean value, the protection opens the circuit-breaker once its time-delay setting ( $t_7$ ) has elapsed. The protection is activated only if all three phase currents exceed  $0.25 \times I_1$ . During the start-up phase, the tripping time is the lowest value between  $t_7$  or half the minimum time of the start-up class. The protection has a “start-up” stage from the moment the current exceeds  $0.25 \times I_n$  to when the minimum time of the selected trip class is reached.



### PTC Temperature protection

In its initial configuration, this trip unit is set up to receive an incoming signal from a PTC sensor installed on the motor. The operating thresholds of the protection are defined in accordance with the Standard IEC 60947-8. If the threshold is exceeded, the trip unit opens the circuit-breaker after a 1 sec time-delay.

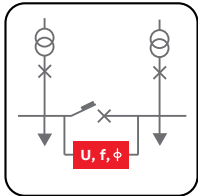


### Ekip CI Contactor Interface for motor protection

The breaking capacity of a contactor is definitely lower than a circuit-breaker, but with a number of possible operations consistently higher than those of the breaker (approx. 1,000,000): motor protection and operation are thus optimized when these two devices are used in conjunction with each other. In its initial configuration, the trip unit is set for operation in Normal mode, activating the contactor by means of the Ekip CI module if one of the protections trip (with the exception of protections I and G). If the configuration is changed from Normal to Heavy, the trip unit opens the circuit-breaker directly without transmitting the command to the contactor. An auto-reset function allows the actuation status of the Ekip CI to reset automatically after the contactor has tripped owing to the L function, once an adjustable time from 1 to 1000s has elapsed. Auto-reset can occur only in Normal mode. A BACK UP function is also available and deals with situations where an opening command transmitted to the contactor via module Ekip CI has not been successful. In this case, the EKIP M Touch LRIU trip unit sends an opening command to the circuit-breaker after waiting for the set time  $T_x$ . The actuation time of the contactor given by the manufacturer must be considered when the time-delay setting  $T_x$  is entered. The function is active with an auxiliary supply.

# Ekip Touch/Hi-Touch

## Protection functions



### SC Synchrocheck

By comparing voltage, frequency and phase values of the two circuits involved, the synchronism control function indicates that the synchronism conditions necessary to allow the circuit-breaker to be closed have been reached. The function is available in two operating modes:

- In systems with both busbars supplied, where synchronism is determined by:

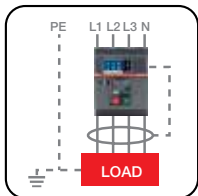
1. the voltage of the two half-busbars above the  $U_{live}$  threshold for the set time
2. the difference of the two voltages below the threshold  $\Delta U$
3. the difference of the frequency of the two voltages below the threshold  $\Delta f$
4. the difference of the phase of the two voltages below the threshold  $\Delta$
5. the desirable time for synchronism condition  $t_{syn}$
6. the circuit-breaker.

- In systems with an out-of-service line (dead busbar), where the synchronism condition is determined by the concurrence of the following conditions for the set  $t_{Ref}$  time:

1. the voltage of the active half-busbar is above threshold  $U_{live}$
2. the voltage of the dead half-busbar is below threshold  $U_{dead}$
3. the circuit-breaker is open.

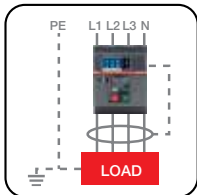
In both cases, the synchronism signal is activated when the required conditions are reached and it remains active for at least 200ms. After this lapse of time, the consent signal is deactivated, if the synchronism conditions fail.

The indication of the synchronism reached is available directly as an electrical indication via a contact that is always provided with the module. This function can be activated simply by connecting the Ekip Synchrocheck module to any Ekip Touch device provided with an Ekip Measuring module.



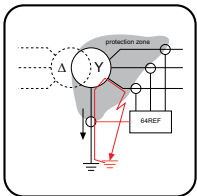
### G ext – Ground fault on toroid

This is available only for the XT7, with a trip time which is independent of the current ( $t = k$ ) or with a constant specific let-through energy ( $t = k/I^2$ ). If the pre-alarm reaches a 90% threshold this permits the fault to be reported to supervision systems without any interruption of continuity. The protection needs an external toroid installed, for example, on the star center of the transformer, and is an alternative to the G and Rc functions. This device works with an auxiliary supply.



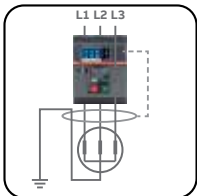
### RC Residual current

This is available only for the XT7, with a constant time ( $t=k$ ) and protects against indirect contacts and is integrated into the Ekip Touch LSIG with an Ekip Measuring with a dedicated residual current rating plug and external toroid. The protection is an alternative to the G and Gext functions.



### Second protection against ground fault

This is available only for the XT7. Whereas with the Ekip Touch, the user has to choose between implementation of the G type protection using internal current sensors (calculating the vector sum of the currents) or Gext external toroids (direct measurement of the ground fault current), the Ekip Hi-Touch offers the exclusive feature of simultaneous management of both configurations by two independent ground fault protection curves. Owing to this characteristic, the trip unit is able to distinguish a non-restricted from a restricted ground fault, and then activate the opening of the circuit-breaker and command the opening of the medium voltage circuit-breaker. Another possible configuration is with the residual current protection replacing the Gext protection, while the G protection remains active. The residual current protection is activated in the presence of the residual current rating-plug and of the toroid.



### RC Differential ground fault protection against ground faults

Available on the XT7 only, this unit protects against internal ground faults on the generator windings. It is required that the toroid (additional accessory) embraces the active conductors and the ground conductor. RC protection is integrated via a dedicated residual current rating plug and an external toroid.

# Ekip Touch/Hi-Touch

## Additional protection functions

### Additional protection functions:

| Protection | Thermal memory | Trip Enable | Zone Selectivity | StartUp enable | Blocks | Directional Zone Selectivity |
|------------|----------------|-------------|------------------|----------------|--------|------------------------------|
| L          | ●              |             |                  |                |        |                              |
| S          | ●              | ●           | ●                | ●              | ●      |                              |
| I          |                |             |                  | ●              | ●      |                              |
| G          |                | ●           | ●                | ●              | ●      |                              |
| MCR        |                |             |                  |                | ●      |                              |
| IU         |                | ●           |                  |                |        |                              |
| T          |                | ●           |                  |                |        |                              |
| S2         |                | ●           | ●                | ●              | ●      |                              |
| D          |                |             |                  | ●              |        | ●                            |
| UV         |                |             |                  | ●              |        |                              |
| OV         |                |             |                  | ●              |        |                              |
| VU         |                |             |                  | ●              |        |                              |
| UF         |                |             |                  | ●              |        |                              |
| OF         |                |             |                  | ●              |        |                              |
| RP         |                |             |                  | ●              |        |                              |
| S(V)       |                |             |                  | ●              |        |                              |
| S2(V)      |                |             |                  | ●              |        |                              |
| RV         |                |             |                  | ●              |        |                              |
| RQ         |                |             |                  | ●              |        |                              |
| RQ2        |                |             |                  | ●              |        |                              |
| OQ         |                |             |                  | ●              |        |                              |
| OP         |                |             |                  | ●              |        |                              |
| UP         |                |             |                  | ●              |        |                              |
| ROCOF      |                |             |                  | ●              |        |                              |
| UV2        |                | ●           |                  |                | ●      |                              |
| OV2        |                | ●           |                  |                | ●      |                              |
| UF2        |                | ●           |                  |                | ●      |                              |
| OF2        |                | ●           |                  |                | ●      |                              |
| UP         |                | ●           |                  |                |        |                              |
| Gext       |                | ●           | ●                |                |        |                              |

#### Thermal memory

This function is used to protect components such as transformers and cables against overheating due to overloads. It adjusts the trip time of the protection according to the time elapsed after the first overload, taking account of the overheating caused. It can be activated when a  $t = k/I^2$  (with an inverse long time) curve is used.

#### Trip Enable

The function enables the trip to be excluded so that only the alarm is indicated. This is used in installations where continuity of service is an essential requirement.



### Zone Selectivity

The function allows multiple circuit-breakers belonging to the same installation to be connected together, in order to coordinate the trip units and to reduce the tripping times in the case of protections S, G and S2. Thus, in the event of a failure:

- the circuit-breaker closest to the fault trips
- the other circuit-breakers are locked for a programmable time.

Each circuit-breaker that detects a fault reports it to the circuit-breaker upstream; the circuit-breaker that detects the fault but does not receive any communication from those downstream opens without waiting for the set delay to elapse.

It is possible to enable zone selectivity if a fixed-time curve has been selected and the auxiliary supply is present.

### StartUp Enable

The function modifies the threshold of the protection for a period that can be set by the user, avoiding unwanted trips due to high inrush currents of certain loads (motors, transformers, lamps). The starting phase lasts 100ms to 30s and is recognized automatically by the trip unit:

- at the closing of the circuit-breaker with a self-supplied trip unit;
- when the peak value of the maximum current exceeds the set threshold ( $0.1...10 \times I_n$ ) with an externally supplied trip unit.

A new start-up is possible after the current falls below the threshold. This function can be activated with a fixed time protection function ( $t = k$ ). Moreover, the I3 startup threshold must be higher than the I2 startup threshold.

### Protection blocks

With the Ekip Connect software six blocks are available for some protections, which is useful for deactivating the protection based on programmable events. In particular:

- four blocks are associated with the programmable states A, B, C and D
- one block is associated with the start-up (present for protections that have a StartUp function);
- one block, not present for frequency protections, is associated with the checking the measured frequency.

Each block is independent and has its own activation command. The protection is deactivated for a time equal to the duration of the event itself:

- if the programmed event occurs (true), in the case of state-based blocks
- if the StartUp function is active and the start-up threshold is exceeded (the active block for the set start-up time), whenever the StartUp block function is enabled.
- if at least one frequency measured is outside the range 30...80 Hz, in the case of a frequency based block.

### Directional Zone Selectivity

The Zone Selectivity function allows multiple circuit-breakers belonging to the same installation to be connected together in order to coordinate the trip units and reduce tripping times, but with some important differences:

- it is to be used in installations with a ring circuit
- it allows tripping to be managed and coordinated according to the power flows (determined by the direction of the current), in order to minimize dispersion of energy.

It works as an alternative to S and G Zone Selectivity.

# Ekip Touch/Hi-Touch

## Protection settings

Available settings for each protection function:

| ABB Code                     | ANSI Code | Function  | Threshold Range   | Threshold Step                                 |
|------------------------------|-----------|---|---|--|
| <b>Protections</b>           |           |   |   |  |
| <b>L</b>                     | 49        | Overload according to 60947-2                                 | $I1 = 0.4...1 \times I_n$   | $0.001 \times I_n$                             |
|                              | 49        | Overload according to 60255-151                               | $I1 = 0.4...1 \times I_n$   | $0.001 \times I_n$                             |
| <b>S</b>                     | 50 TD     | Time-delayed overcurrent                                      | $I2 = 0.6...10 \times I_n$  | $0.1 \times I_n$                               |
|                              | 68        | Zone selectivity<br>Start up                                  | Activation: $0.6...10 \times I_n$   | $0.1 \times I_n$                               |
|                              | 51        | Time-delayed overcurrent                                      | $I2 = 0.6...10 \times I_n$  | $0.1 \times I_n$                               |
| <b>I</b>                     | 50        | Instantaneous short-circuit                                   | XT2-XT4-XT5: $I3 = 1.5...10 \times I_n$<br>XT7: $I3 = 1.5...15 \times I_n$                | $0.1 \times I_n$                               |
|                              |           | Start up  | Activation:<br>XT2-XT4-XT5: $I3 = 1.5...10 \times I_n$<br>XT7: $I3 = 1.5...15 \times I_n$ | $0.1 \times I_n$                               |
| <b>G (1)</b>                 | 50N TD    | Earth fault   | $I4 = 0.1...1 \times I_n$   | $0.001 \times I_n$                             |
|                              | 68        | Zone selectivity<br>Start up                                  | Activation: $0.2...10 \times I_n$   | $0.02 \times I_n$                              |
|                              | 51N       | Earth fault   | $I4 = 0.1...1 \times I_n$   | $0.001 \times I_n$                             |
| <b>N</b>                     |           | Neutral   | On/Off  | 50%-100%-200%<br>of the phases                 |
| <b>2I</b>                    | 50        | Programmable 2nd Instantaneous short-circuit                  | XT2-XT4-XT5: $I3 = 1.5...10 \times I_n$<br>XT7: $I3 = 1.5...15 \times I_n$                | $0.1 \times I_n$                               |
| <b>MCR</b>                   |           | Closing on short-circuit                                      | XT2-XT4-XT5: $I3 = 1.5...10 \times I_n$<br>XT7: $I3 = 1.5...15 \times I_n$                | $0.1 \times I_n$                               |
| <b>IU</b>                    | 46        | Current unbalance   | $I6 = 2...90\% I_n$ unbalance   | 1% $I_n$                                       |
| <b>LC1/2</b><br><b>Iw1/2</b> | -         | Current threshold<br>Activation up/down                       | $LC1 = 50...100\% \times I1$  | 1%   |
|                              |           |   | $LC2 = 50...100\% \times I1$  | 1%   |
|                              |           |   | $Iw1 = 0.1...10 \times I_n$<br>$Iw1 = 0.1...10 \times I_n$                                | $0.01 \times I_n$                              |
| <b>S2</b>                    | 50 TD     | 2nd Time-delayed overcurrent                                  | $I2 = 0.6...10 \times I_n$  | $0.1 \times I_n$                               |
|                              | 68        | Zone selectivity<br>Start up                                  | Activation: $0.6...10 \times I_n$   | $0.1 \times I_n$                               |
| <b>Phase Sequence</b>        | 47        | Cyclical direction of the phases                              | 1-2-3 or 3-2-1  |  |
| <b>UV</b>                    | 27        | Undervoltage  | $U8 = 0.5...0.98 \times U_n$  | $0.001 \times U_n$                             |
| <b>OV</b>                    | 59        | Overvoltage   | $U9 = 1.02...1.5 \times U_n$  | $0.001 \times U_n$                             |
| <b>UV2</b>                   | 27        | 2nd Undervoltage  | $U15 = 0.5...0.98 \times U_n$   | $0.001 \times U_n$                             |
| <b>OV2</b>                   | 59        | 2nd Overvoltage   | $U16 = 1.02...1.5 \times U_n$   | $0.001 \times U_n$                             |
| <b>VU</b>                    | 47        | Voltage unbalance   | $U14 = 2...90\% U_n$ unbalance  | 1% $U_n$                                       |
| <b>S(V)</b>                  | 51V       | Voltage controlled overcurrent<br>Step mode (controlled mode) | $I20 = 0.6...10 \times I_n$   | $0.1 \times I_n$                               |
|                              |           |   | $U1 = 0.2...1 \times U_n$   | $0.01 \times U_n$                              |
|                              |           |   | $Ks = 0.1...1$  | 0.01   |
|                              | 51V       | Linear mode (restrained mode)                                 | $U1 = 0.2...1 \times U_n$<br>$Uh = 0.2...1 \times U_n$<br>$Ks = 0.1...1$                  | $0.01 \times U_n$<br>$0.01 \times U_n$<br>0.01 |

| Trip Time  | Time Step | Excludability | Excludability trip | Pre-Allarm           | Curve                          |
|--|-----------|---------------|--------------------|----------------------|--------------------------------|
| XT2-XT4 : t1 = 3...60 s @ 3 x I1<br>XT5: t1 = 3...48 s @ 3 x I1<br>XT7: t1 = 3...144 s @ 3 x I1  | 1 s       | no            | no                 | 50%...90% I1 step 1% | $t = k/I^2$                    |
| t1 = 3...144 s for XT7<br>t1 = 3...9 s for XT2-XT4-XT5<br>SI: k=0.14; α=0.02<br>VI: k=13.5; α=1<br>EI: k=80; α=2<br>SI: k=0.14; α=0.02<br>$t = k / I4$ ; k=80; α=4 | 1 s       | no            | no                 | 50%...90% I1 step 1% | $t = (k t1)/((if/I1)\alpha-1)$ |
| XT2 - XT4 : t2 = 0.05...0.4 s<br>XT5: t2 = 0.05...0.5 s<br>XT7: t2 = 0.05...0.8 s  | 0.01 s    | yes           | yes                | no                   | $t = k$                        |
| t2sel = 0.04...0.2 s @ 10 x In   | 0.01 s    | yes           |                    |                      |                                |
| Range: 0.1 ... 30s   | 0.01 s    | yes           |                    |                      |                                |
| XT2 - XT4 : t2 = 0.05...0.4 s @ 10 x In<br>XT5: t2 = 0.05...0.5 s @ 10 x In<br>XT7: t2 = 0.05...0.8 s @ 10 x In  | 0.01 s    | yes           | yes                | no                   | $t = k/I^2$                    |
| Instantaneous  |           | yes           | no                 | no                   | $t = k$                        |
| Range: 0.1 ... 30s   | 0.01 s    | yes           |                    |                      |                                |
| t4 = Inst.0.1 ...1 s with I > I4   | 0.05 s    | yes           | yes                | 50%...90% I4 step 1% | $t = k$                        |
| t4sel = 0.04...0.2 s   | 0.01 s    | yes           |                    |                      |                                |
| Range: 0.1 ... 30s   | 0.01 s    | yes           |                    |                      |                                |
| t4 = 0.1...1 s   | 0.05 s    | yes           | yes                | 50%...90% I4 step 1% | $t = k/I^2$                    |
|  |           | yes           |                    |                      |                                |
| Instantaneous  |           | yes           | no                 | no                   | $t = k$                        |
| Instantaneous<br>Monitor time range 40...500 ms  | 0.01 s    | yes           | no                 | no                   | $t = k$                        |
| t6 = 0.5...60 s  | 0.5 s     | yes           | yes                | no                   | $t = k$                        |
|  |           | yes           | only signaling     | no                   |                                |
| XT2 - XT4 : t2 = 0.05...0.4 s<br>XT5: t2 = 0.05...0.5 s<br>XT7: t2 = 0.05...0.8 s  | 0.01 s    | yes           | yes                | no                   | $t = k$                        |
| t5sel = 0.04...0.2s  | 0.01 s    | yes           | yes                |                      |                                |
| Range: 0.1 ... 30s   | 0.01 s    | yes           |                    |                      |                                |
|  |           | yes           | only signaling     | no                   |                                |
| t8 = 0.05...120 s  | 0.01 s    | yes           | yes                | no                   | $t = k$                        |
| t9 = 0.05...120 s  | 0.01 s    | yes           | yes                | no                   | $t = k$                        |
| t15 = 0.05...120 s   | 0.01 s    | yes           | yes                | no                   | $t = k$                        |
| t16 = 0.05...120 s   | 0.01 s    | yes           | yes                | no                   | $t = k$                        |
| t14 = 0.5...60 s   | 0.5 s     | yes           | yes                | no                   | $t = k$                        |
| t20 = 0.05...30 s  | 0.01 s    | yes           | yes                | no                   | $t = k$                        |

# Ekip Touch/Hi-Touch

## Protection settings

| ABB Code                                  | ANSI Code     | Function  | Threshold Range   | Threshold Step   |
|---|---------------|---|---|--|
| <b>Protections</b>                        |               |   |   |  |
| <b>S2(V)</b>                              | 51V           | 2nd Voltage controlled overcurrent<br>Step mode (controlled mode) | $I_{21} = 0.6...10 \times I_n$  | $0.1 \times I_n$   |
|   |               |   | $U_{I2} = 0.2...1 \times U_n$   | $0.01 \times U_n$  |
|   |               |   | $K_{s2} = 0.1...1$  | 0.01   |
|   | 51V           | Linear mode (restrained mode)                                     | $U_{I2} = 0.2...1 \times U_n$<br>$U_{h2} = 0.2...1 \times U_n$<br>$K_{s2} = 0.1...1$  | $0.01 \times U_n$<br>$0.01 \times U_n$<br>0.01   |
| <b>RV</b>                                 | 59N           | Residual overvoltage  | $U_{22} = 0.05...0.5 \times U_n$  | $0.001 \times U_n$   |
| <b>UF</b>                                 | 81L           | Underfrequency  | $f_{12} = 0.9...0.999 f_n$  | $0.001 \times f_n$   |
| <b>OF</b>                                 | 81H           | Overfrequency   | $f_{13} = 1.001...1.1 f_n$  | $0.001 \times f_n$   |
| <b>UF2</b>                                | 81L           | 2nd Underfrequency  | $f_{17} = 0.9...0.999 f_n$  | $0.001 \times f_n$   |
| <b>OF2</b>                                | 81H           | 2nd Overfrequency   | $f_{18} = 1.001...1.1 f_n$  | $0.001 \times f_n$   |
| <b>RP</b>                                 | 32R           | Reverse active power  | $P_{11} = -1...-0.05 S_n$   | $0.001 S_n$  |
| <b>Cos <math>\phi</math></b>              | 78            | Power factor  | $\cos \phi = 0.5...0.95$  | 0.01   |
| <b>D</b>                                  | 67            | Directional overcurrent   | $I_7 Fw/Bw = 0.6...10 \times I_n$   | $0.1 \times I_n$   |
|   | 68            | Zone selectivity  |   |  |
|   |               | Start up  | Activation: $0.6...10 \times I_n$   | $0.1 \times I_n$   |
|   |               | Minimum angle of direction (°)                                    | 3.6, 7.2, 10.8, 14.5, 18.2, 22,<br>25.9, 30, 34.2, 38.7, 43.4, 48.6,<br>54.3, 61, 69.6  |  |
| <b>RQ</b>                                 | 40/32R        | Loss of field or reverse reactive power                           | $Q_{24} = -1...-0.1 \times S_n$   | $0.001 \times S_n$   |
|   |               |   | $K_q = -2...2$  | 0.01   |
|   |               | Loss of field or reverse reactive power                           | $Q_{25} = -1...-0.1 \times S_n$   | $0.001 \times S_n$   |
|   |               |   | $K_q = -2...2$  | 0.01   |
|   |               | Minimum voltage threshold   | $V_{min.} = 0.5...1.2$  | 0.01   |
| <b>OQ</b>                                 | 320F          | Reactive overpower  | $Q_{27} = 0.4...2 \times S_n$   | $0.001 \times S_n$   |
| <b>OP</b>                                 | 320F          | Active overpower  | $P_{26} = 0.4...2 \times S_n$   | $0.001 \times S_n$   |
| <b>UP</b>                                 | 32LF          | Active underpower   | $P_{23} = 0.1...1 \times S_n$   | $0.001 \times S_n$   |
|   |               | StartUp   |   |  |
| <b>ROCOF</b>                              | 81R           | Rate of change of frequency                                       | $f_{28} = 0.4...10 \text{ Hz / s (up &/or down)}$   | 0.2 Hz/s   |
| <b>L (Motor Protection)</b>               | 49            | Motor protection overload   | $I_1 = 0.4...1 \times I_n$  | $0.001 \times I_n$   |
|   |               | According 60947-4-1   |   |  |
| <b>R</b>                                  | 51R           | Rotor blockage - Jam  | $I_j = 2...10 \times I_1$   | 0.1  |
|   | 51R           | Rotor blockage - Stall  | $I_s = 1...10 \times I_1$   | 0.1  |
| <b>U</b>                                  |               | Phase lackand/or unbalance  | On/Off  | -  |
| <b>Uc</b>                                 | 37            | Undercurrent  | $50...90\% \times I_1$  | 10%  |
| <b>Protection with additional modules</b> |               |   |   |  |
| <b>SC</b><br><b>Synchrocheck</b>          | 25            | Synchrocheck (Live busbars)                                       | $U_{live} = 0.5...1.1 \times U_n$<br>$\Delta U = 0.02...0.12 \times U_n$<br>$\Delta f = 0.1...1 \times \text{Hz}$<br>$\Delta \Phi 5...50^\circ \text{ elt}$ | $0.001 \times U_n$<br>$0.001 \times U_n$<br>$0.1 \times \text{Hz}$<br>$5^\circ \text{ elt}$  |
|   |               | Synchrocheck (Live. Dead busbars)                                 | $U_{live} = 0.5...1.1 \times U_n$<br>$U_{dead} = 0.02...0.2 \times U_n$   | $0.001 \times U_n$<br>$0.001 \times U_n$   |
|   |               | Frequency check off   |   |  |
|   |               | Phase check off   |   |  |
|   |               | Dead bar configuration  | Reverse/Standard  |  |
|   |               | Primary voltage   | 100...1150  | 100, 115, 120, 190, 208,<br>220, 230, 240, 277, 347,<br>380, 400, 415, 440, 480,<br>500, 550, 600, 660, 690,<br>910, 950, 1000, 1150 |
|   |               | Secondary voltage   | 100...120   | 100, 110, 115, 120   |
|   |               | Earth fault   | $I_4 = 0.1...1 \times I_n \text{ toroid}$   | $0.001 \times I_n \text{ Toroid}$  |
|   |               | Zone selectivity  |   |  |
|   |               | Start up  | Activation: $0.1...1 \times I_n$  | $0.02 \times I_n$  |
| <b>Gext</b>                               | 50G TD        | Earth fault   | $I_4^{(1)} = 0.1...1 \times I_n$  | $0.001 \times I_n$   |
|   | 68            | Zone selectivity  |   |  |
| <b>Rc</b>                                 | 51G           | Earth fault   | $I_4^{(1)} = 0.1...1 \times I_n$  | $0.001 \times I_n$   |
|   | 64 50N TD 87N | Residual current / Differential ground fault                      | $I_{\Delta n} = 3 - 5 - 7 - 10 - 20 - 30A$  |  |

All the protection functions can be excluded if needed except for L, I, MCR. The RC for the XT7 is active only when the rating plug is present. All of the Synchrocheck functions are for signaling. An adjustable pre-alarm threshold (50...90%  $I_1$ ) is available for L protection, as well as a fixed pre-alarm threshold is available for G and Gext protection.

| Trip Time   | Time Step         | Excludability | Excludability trip | Pre-Alarm            | Curve                |
|---|-------------------|---------------|--------------------|----------------------|----------------------|
| t21 = 0.05...30 s                                     | 0.01 s            | yes           | yes                | no                   | t = k                |
| t22 = 0.5...120 s                                     | 0.01 s            | yes           | yes                | no                   | t = k                |
| t12 = 0.15...300 s                                    | 0.01 s            | yes           | yes                | no                   | t = k                |
| t13 = 0.15...300 s                                    | 0.01 s            | yes           | yes                | no                   | t = k                |
| t17 = 0.15...300 s                                    | 0.01 s            | yes           | yes                | no                   | t = k                |
| t18 = 0.15...300 s                                    | 0.01 s            | yes           | yes                | no                   | t = k                |
| t11 = 0.5...100 s                                     | 0.1 s             | yes           | yes                | no                   | t = k                |
| t7 Fw/Bw = 0.2...0.8 s                                | 0.01 s            | yes           | only signaling     | no                   | t = k                |
| t7sel = 0.13...0.5s                                   | 0.01 s            | yes           | yes                | no                   | t = k                |
| Range 0.1...0.8s                                      | 0.01 s            | yes           |                    |                      |                      |
| t24 = 0.5...100 s                                     | 0.1 s             | yes           | yes                | no                   | t = k                |
| t24 = 0.5...100 s                                     | 0.1 s             | yes           | yes                | no                   | t = k                |
| t27 = 0.5...100 s                                     | 0.5 s             | yes           | yes                | no                   | t = k                |
| t26 = 0.5...100 s                                     | 0.5 s             | yes           | yes                | no                   | t = k                |
| t23 = 0.5...100 s                                     | 0.5 s             | yes           | yes                | no                   | t = k                |
| Range from closing: 0.1...30S or with digital input   | 0.01 s            | yes           |                    |                      | -                    |
| t28 = 0.5...10 s for f>f28                            | 0.01 s            | yes           | yes                | no                   | t = k                |
| XT2-XT4: 5E - 10E - 20E                               |                   |               |                    |                      | t = k/I <sup>2</sup> |
| XT5-XT7: 5E - 10E - 20E - 30E                         |                   |               |                    |                      |                      |
| tj = 1...10 s   | 0.5 s             |               |                    |                      | t = k                |
| ts = 2...10 s   | 0.5 s             |               |                    |                      | t = k                |
| tu = 1...10 s   | 0.5 s             |               |                    |                      | t = k                |
| tuc = 1...20 s  | 0.5 s             |               |                    |                      | t = k                |
| Stability voltage time for live state = 100...30000ms | 0.001 s<br>0.01 s | yes           | only signaling     | no                   |                      |
| Minimum matching time = 100...3000ms                  |                   |               |                    |                      |                      |
| tref = 0.1...30 s                                     | 0.1 s             | yes           | only signaling     | no                   |                      |
|   |                   | yes           |                    |                      |                      |
|   |                   | yes           |                    |                      |                      |
|   |                   | yes           |                    |                      |                      |
| t4 = 0.1...1 s  | 0.05 s            | yes           | yes                | 50...90% I41 step 1% | t = k                |
| t41sel = 0.04...0.2 s                                 | 0.01 s            | yes           |                    |                      |                      |
| Range: 0.1...30s                                      | 0.01 s            | yes           |                    |                      |                      |
| t4 = 0.1...1 s with I = 4 x In                        | 0.05 s            | yes           | yes                | 50...90% I41 step 1% | t = k/I <sup>2</sup> |
| tΔn = 0.06 – 0.1 – 0.2 – 0.3 – 0.4 – 0.5 – 0.8 s      |                   |               | no                 | no                   | t = k                |

# Ekip Touch/Hi-Touch

## Tolerances

| ABB Code           | ANSI Code | Function                           | Threshold Range   | Trip Time  |
|--------------------|-----------|------------------------------------|---|--|
| <b>Protections</b> |           |                                    |   |  |
| L                  | 49        | Overload according to 60947-2      | trip between 1.05 and 1.2 x I <sub>N</sub>                  | ± 10% I < 6 x I <sub>N</sub><br>± 20% I ≥ 6 x I <sub>N</sub>   |
|                    | 49        | Overload according to 60255-151    | trip between 1.05 and 1.2 x I <sub>N</sub>                  | ± 10% I < 6 x I <sub>N</sub><br>± 20% I ≥ 6 x I <sub>N</sub>   |
| S                  | 50 TD     | Selective short-circuit            | ± 7% I < 6 x I <sub>N</sub><br>± 10% I ≥ 6 x I <sub>N</sub> | The better of the two data:<br>± 10% or ± 40ms   |
|                    | 51        | Selective short-circuit            | ± 7% I < 6 x I <sub>N</sub><br>± 10% I ≥ 6 x I <sub>N</sub> | ± 15% I < 6 x I <sub>N</sub><br>± 20% I ≥ 6 x I <sub>N</sub>   |
| I                  | 50        | Instantaneous short-circuit        | ± 10%   | ≤ 30ms   |
| G <sup>(1)</sup>   | 50N TD    | Earth Fault                        | ± 7%  | 50ms with t <sub>4</sub> =instantaneous  |
|                    | 51N       | Earth Fault                        | ± 7%  | ± 15%  |
| 2I                 | 50        | 2nd Instantaneous short-circuit    | ± 10%   | ≤ 30ms   |
| MCR                |           | Closing on short-circuit           | ± 10%   | ≤ 30ms   |
| IU                 | 46        | Current unbalance                  | 10%   | The better of the two data:<br>± 10% or ± 40ms (for t <sub>5</sub> <5s) / ± 40ms (for t <sub>5</sub> ≥ 5s)     |
| LC1/2 - Iw1/2      |           | Current threshold                  | ± 10%   |  |
| S2                 | 68        | 2nd Selective short-circuit        | ± 7% I < 6 x I <sub>N</sub><br>± 10% I ≥ 6 x I <sub>N</sub> | The better of the two data:<br>± 10% or ± 40ms   |
| UV                 | 27        | Undervoltage                       | ± 2%  | The better of the two data:<br>± 10% or ± 100ms (for t <sub>8</sub> <5s) / ± 100ms (for t <sub>8</sub> ≥ 5s)   |
| OV                 | 59        | Overvoltage                        | ± 2%  | The better of the two data:<br>± 10% or ± 100ms (for t <sub>9</sub> <5s) / ± 100ms (for t <sub>9</sub> ≥ 5s)   |
| UV2                | 27        | 2nd Undervoltage                   | ± 2%  | The better of the two data:<br>± 10% or ± 100ms (for t <sub>15</sub> <5s) / ± 100ms (for t <sub>15</sub> ≥ 5s) |
| OV2                | 59        | 2nd Overvoltage                    | ± 2%  | The better of the two data:<br>± 10% or ± 100ms (for t <sub>16</sub> <5s) / ± 100ms (for t <sub>16</sub> ≥ 5s) |
| VU                 | 47        | Voltage unbalance                  | ± 5%  | The better of the two data:<br>± 10% or ± 100ms (for t <sub>14</sub> <5s) / ± 100ms (for t <sub>14</sub> ≥ 5s) |
| S(V)               | 51V       | Voltage controlled overcurrent     | ± 10%   | The better of the two data:<br>± 10% or ± 100ms (for t <sub>20</sub> <5s) / ± 100ms (for t <sub>20</sub> ≥ 5s) |
| S2(V)              | 51V       | 2nd Voltage controlled overcurrent | ± 10%   | The better of the two data:<br>± 10% or ± 100ms (for t <sub>21</sub> <5s) / ± 100ms (for t <sub>21</sub> ≥ 5s) |
| RV                 | 59N       | Residual overvoltage               | ± 10%   | The better of the two data:<br>± 10% or ± 100ms (for t <sub>22</sub> <5s) / ± 100ms (for t <sub>22</sub> ≥ 5s) |
| UF                 | 81L       | Underfrequency                     | ± 1% (with f <sub>n</sub> ± 2%)                             | The better of the two data:<br>± 10% or ± 100ms (for t <sub>12</sub> <5s) / ± 100ms (for t <sub>12</sub> ≥ 5s) |
| OF                 | 81H       | Overfrequency                      | ± 1% (with f <sub>n</sub> ± 2%)                             | The better of the two data:<br>± 10% or ± 100ms (for t <sub>13</sub> <5s) / ± 100ms (for t <sub>13</sub> ≥ 5s) |
| UF2                | 81L       | 2nd Underfrequency                 | ± 1% (with f <sub>n</sub> ± 2%)                             | The better of the two data:<br>± 10% or ± 100ms (for t <sub>17</sub> <5s) / ± 100ms (for t <sub>17</sub> ≥ 5s) |
| OF2                | 81H       | 2nd Overfrequency                  | ± 1% (with f <sub>n</sub> ± 2%)                             | The better of the two data:<br>± 10% or ± 100ms (for t <sub>18</sub> <5s) / ± 100ms (for t <sub>18</sub> ≥ 5s) |

| ABB Code                                  | ANSI Code | Function                                      | Threshold Range   | Trip Time   |
|---|-----------|---|---|---|
| RP  | 32R       | Reverse active power                          | ± 10%   | The better of the two data:<br>± 10% or ± 100ms (for t11<5s) / ± 100ms (for t11 ≥ 5s) |
| D   | 68        | Directional overcurrent                       | ± 7% I ≤ 6 x I <sub>n</sub><br>± 10% I ≥ 6 x I <sub>n</sub> | If t7 ≤ 200 ms : +/-20 ms<br>If 200ms < t7 ≤ 400 ms : 10%<br>If t7 > 400 ms : 40 ms   |
| RQ  | 40/32R    | Loss of field or reverse reactive power       | ± 10%   | The better of the two data:<br>± 10% or ± 100ms (for t24<5s) / ± 100ms (for t24 ≥ 5s) |
| OQ  | 320F      | Reactive overpower                            | ± 10%   | The better of the two data:<br>± 10% or ± 100ms (for t27<5s) / ± 100ms (for t27 ≥ 5s) |
| OP  | 320F      | Active overpower                              | ± 10%   | The better of the two data:<br>± 10% or ± 100ms (for t26<5s) / ± 100ms (for t26 ≥ 5s) |
| UP  | 32LF      | Active underpower                             | ± 10%   | The better of the two data:<br>± 10% or ± 100ms (for t23<5s) / ± 100ms (for t23 ≥ 5s) |
| ROCOF                                     | 81R       | Rate of change of frequency                   | 10% (20% when "0,4Hz/s" is set)                             | The better of the two data:<br>± 20% or ± 200ms                                       |
| L (Motor Protection)                      |           | Motor protection overload According 60947-4-1 |   |   |
| R   | 51LR      | Rotor blockage - Jam                          | I <sub>j</sub> = 2...10 x I <sub>l</sub>                    | t <sub>j</sub> = 1...10 s   |
|   | 51LR      | Rotor blockage - Stall                        | I <sub>s</sub> = 1...10 x I <sub>l</sub>                    | t <sub>s</sub> = 2...10 s   |
| U   |           |   |   |   |
| Uc  | 37        |   |   |   |
| <b>Protection with additional modules</b> |           |   |   |   |
| SC  | 25        | Synchrocheck (Live busbars)                   | 10%   |   |
| Synchrocheck                              |           | Synchrocheck (Live. Dead busbars)             | 10%   |   |
| Gext                                      | 50GTD     | Earth fault                                   | ± 7%  | The better of the two data:<br>± 10% or ± 40ms  |
|   | 51G       | Earth fault                                   | ± 7%  | ± 15%   |
|   | 51G       | Earth fault                                   |   |   |
| Rc  | 64 50N TD | Residual current /                            | - 20% ÷ 0%  | 140ms @ (max trip time)   |
|   | 87N       | Differential ground fault                     |   | 950ms @ (max trip time)   |

The tolerances above apply to trip units already powered by the main circuit with current flowing in at least two phases or an auxiliary power supply.  
In all other cases the following tolerance values apply:

| ABB Code         | Trip threshold                             | Trip time               |
|------------------|--|-------------------------|
| L                | Trip between 1.05 and 1.2 x I <sub>l</sub> | ± 20%                   |
| S                | ± 10%                                      | ± 20%                   |
| I                | ± 15%                                      | ≤ 60ms                  |
| G                | ± 10%                                      | 20% (60ms when t4=inst) |
| Other protection | ± 15%                                      | ± 20%                   |



# Ekip Touch/Hi-Touch

## Measurement functions and data

### Currents

All the Ekip Touch/Hi-Touch trip units measure the RMS value of the instantaneous currents of the three phases and the neutral. There are two different levels of accuracy depending on the version (0.5% and 1%). In addition, also the minimum and maximum values recorded within an adjustable time interval are available.

### Voltage

Instantaneous phase-to-phase and phase-to-neutral voltages can be measured. They are available at a 0.5% level of accuracy. In addition, the minimum and maximum values recorded within an adjustable time interval are available.

### Power

Real time measurements of the total and phase power. Available at 2 different level of accuracy depending on the version, 1 % and 2%. In addition, the minimum and maximum values recorded within an adjustable time interval are available.

### Energy meters

Measurements of the active, reactive and apparent energy totals, updated every minute. The measurements can be reset when needed.

### Frequency

Measurement of line real time frequency, expressed in hertz.

### Peak Factor

Real time measurements of the peak factors of the phase currents. The measurements are expressed as a ratio between the peak values and RMS values, for each single phase.

### Power Factor

Power factor and real time measurements of the ratio between the total active power and total apparent power, expressed as  $\cos\phi$ . In addition, the trip unit signals an alarm if the  $\cos\phi$  value drops below an adjustable threshold, settable via Ekip Connect software (from 0.5 to 0.95).

### Datalogger

This function allows the data related to a trigger event to be recorded. These data are:

- Analog measurements: phase currents and phase-to-phase voltages
- Digital events: protection alarms, circuit-breaker status signals, tripping of protections.

When the datalogger is activated, the trip unit continuously acquires data by filling and emptying an internal register. If a trigger event occurs, the trip unit inhibits acquisition (either immediately or with an adjustable time-lag) and stores the data, which is available for downloading.

### Network Analyzer

This function fully evaluates the quality of the network. It is possible to set the controls to long cycle voltage and current in order to analyze the system functionality. Voltages and currents are monitored to find:

- The sequence of voltages
- Short term voltage drops or interruptions
- Short duration voltage increases
- Slow voltage drops
- Slow voltage increases
- Unbalances between the voltages
- Harmonic distortion of voltages and currents.

### Waveforms

A selected quantity can be represented as a waveform and acquired at the moment of selection.

The phase current and phase-phase voltage can be displayed.

### Harmonics

A representation in the form of a histogram of the measurements of the harmonics that make up the waveform, and related to the frequency set.

### Operation counter

In the presence of a power supply, the trip unit records information about the openings of the circuit-breaker including:

- the number of manual openings
- the total number of operations (manual + trips).

By activating communication with the trip unit, the following parameters are also available:

- the number of openings due to protection tripping
- the number of openings for which tripping has not been completed in due time (back-up commands have been necessary)
- the number of opening tests performed.

### Contact wear

This gives an estimation of the conditions of the main circuit-breaker contacts. The value is expressed as a percentage, and is 0% in case of no wear, and 100% in case of total wear. This is calculated automatically by the trip unit at every opening for protection or, in the presence of a power supply, also at every manual opening of the circuit-breaker.

### Openings

Information about the last 30 openings are available. In particular:

- tripped protection
- the progressive number of the opening
- the date and time of the opening (referred to the internal clock)
- measurements associated with the trip protection.





The most recent opening is viewable also by pressing the iTest key.

### Events

The last 200 events are recorded. The following information is available:

- trip unit: configuration status of the bus, operating mode, active set, auxiliary power supply
- protections: delay in action or alarms
- connection states or alarms: circuit-breaker, current sensors, trip coil, rating plug
- tripping: state of the opening command, or signal of tripping for protection.

The icons help to quickly understand the type of event:

-  event reported for information purposes
-  delay of a protection in progress, trip expected
-  alarm referring to a non-hazardous condition
-  alarm for operation, failure, or connection fault.

### Synchrocheck

Synchrocheck measurements relating to the function of synchronism between two independent power sources.

# Ekip Touch/Hi-Touch

## Measurement functions and data

The parameters measurable for each trip unit are shown in the following tables. Three different software packages are available to upgrade the trip units:

- Measuring package for measurement of voltage, power and energy
- Datalogger for data record
- Network Analyzer for the evaluation of the power quality.

| Instantaneous measurements                                  |                                    | Ekip Touch                   | Ekip Touch Measuring | Ekip Hi-Touch | Ekip M Touch | Ekip G Touch | Ekip G Hi-Touch |
|---|------------------------------------|------------------------------|----------------------|---------------|--------------|--------------|-----------------|
| Currents (RMS)  | L1, L2, L3, Ne                     | [A] ●                        | ●                    | ●             | ●            | ●            | ●               |
| Ground fault current (RMS)                                  | Ig                                 | [A] ●                        | ●                    | ●             | ●            | ●            | ●               |
| Measuring package   |                                    |                              | ●                    | ●             | ●            | ●            | ●               |
| Phase-phase voltage (RMS)                                   | U12, U23, U31                      | [V] ○                        | ●                    | ●             | ●            | ●            | ●               |
| Phase-neutral voltage (RMS)                                 | U1, U2, U3                         | [V] ○                        | ●                    | ●             | ●            | ●            | ●               |
| Phase sequence  |                                    | ○                            | ●                    | ●             | ●            | ●            | ●               |
| Frequency   | f                                  | [Hz] ○                       | ●                    | ●             | ●            | ●            | ●               |
| Active power  | P1, P2, P3, Ptot                   | [kW] ○                       | ●                    | ●             | ●            | ●            | ●               |
| Reactive power  | Q1, Q2, Q3, Qtot                   | [kVAR] ○                     | ●                    | ●             | ●            | ●            | ●               |
| Apparent power  | S1, S2, S3, Stot                   | [KVA] ○                      | ●                    | ●             | ●            | ●            | ●               |
| Power factor  | PF1, PF2, PF3, PF total            | ○                            | ●                    | ●             | ●            | ●            | ●               |
| Peak factor   | total                              | ○                            | ●                    | ●             | ●            | ●            | ●               |
| Counters: recorded from installation or from the last reset |                                    |                              |                      |               |              |              |                 |
| Active energy   | Ep total, Ep positive, Ep negative | [kWh] ○<br>[kVARh]<br>[KVAh] | ●                    | ●             | ●            | ●            | ●               |
| Reactive energy   | Eq total, Ep positive, Ep negative | [kWh] ○<br>[kVARh]<br>[KVAh] | ●                    | ●             | ●            | ●            | ●               |
| Apparent energy   | Es total                           | [kWh] ○<br>[kVARh]<br>[KVAh] | ●                    | ●             | ●            | ●            | ●               |

● Available as standard

○ Available as software package to be ordered via ABB Ability Marketplace™ or during the circuit-breaker ordering phase

Depending on the need two different accuracy levels are available for the trip unit, the Standard Precision and High Precision certified according to IEC 61557-12:

| Instantaneous measurements         |        |                                    | Standard Precision | High Precision certified according to IEC 61557-12 |
|------------------------------------|--------|------------------------------------|--------------------|--|
| <b>Currents (RMS)</b>              | [A]    | L1, L2, L3, Ne                     | 1%                 | 0.50%  |
| <b>Ground fault current (RMS)</b>  | [A]    | I <sub>g</sub>                     | 2%                 | 0.50%  |
| <b>Phase-phase voltage (RMS)</b>   | [V]    | U12, U23, U31                      | 0.50%              | 0.50%  |
| <b>Phase-neutral voltage (RMS)</b> | [V]    | U1, U2, U3                         | 0.50%              | 0.50%  |
| <b>Frequency</b>                   | [Hz]   | f                                  | 0.20%              | 0.20%  |
| <b>Active power</b>                | [kW]   | P1, P2, P3, P <sub>tot</sub>       | 2%                 | 1%   |
| <b>Reactive power</b>              | [kVAR] | Q1, Q2, Q3, Q <sub>tot</sub>       | 2%                 | 2%   |
| <b>Apparent power</b>              | [KVA]  | S1, S2, S3, S <sub>tot</sub>       | 2%                 | 1%   |
| <b>Power factor</b>                |        | PF1, PF2, PF3, PF total            | 2%                 | 1%   |
| <b>Active energy</b>               | [kW]   | Ep total, Ep positive, Ep negative | 2%                 | 1%   |
| <b>Reactive energy</b>             | [kVAR] | Eq total, Ep positive, Ep negative | 2%                 | 2%   |
| <b>Apparent energy</b>             | [KVA]  | Es total                           | 2%                 | 1%   |

The lowest current value that the trip units Ekip Touch/Hi-Touch can measure is 0,004 x I<sub>n</sub>

#### High Precision certified according to IEC 61557-12

Available only for factory assembled circuit-breakers, this accuracy is available as default on the Ekip Hi-Touch and Ekip G Hi-Touch trip units, anyway it is always possible to have this accuracy for the other Ekip Touch trip units by adding when ordering the dedicated commercial codes.

For XT2 Ekip Touch trip units the High Precision is available in general for I<sub>n</sub> ≥ 100A

# Ekip Touch/Hi-Touch

## Measurement functions and data

| Network Analyzer  |   | Interval                             |
|---|---|--------------------------------------|
| Hourly average voltage value  | [V] [no] - Umin= 0.75...0.95 x Un<br>- Umax= 1.05...1.25 x Un<br>- Events counter <sup>(1)</sup>  | t = 5...120min                       |
| Short voltage interruptions   | [no] - Umin= 0.75...0.95 x Un<br>- Events counter <sup>(1)</sup>  | t <40ms                              |
| Short voltage spikes  | [no] - Umax= 1.05...1.25 x Un<br>- Events counter <sup>(1)</sup>  | t <40ms                              |
| Slow voltage sags and swells  | [no] - Umin1= 0.75...0.95 x Un<br>- Umin2= 0.75...0.95 x Un<br>- Umin3= 0.75...0.95 x Un<br>- Umax1= 1.05...1.25 x Un<br>- Umax2= 1.05...1.25 x Un<br>- Events counter <sup>(1)</sup> | t = 0.02s...60s                      |
| Voltage unbalance   | [V] [no] - U neg. seq.= 0.02...0.10 x Un<br>- Events counter <sup>(1)</sup>   | t = 5...120min                       |
| Harmonic analysis   | Current and Voltage<br>- up to 50°<br>- Alarm THD: 5...20%<br>- Single harmonic alarm:<br>3...10% plus a count of minutes the harmonic has been exceeded                              |                                      |
| Record of values: for each interval with time-stamping              | Parameters  | Window & interval                    |
| Current: minimum and maximum  | [A] I Min, I Max  | Fixed synchronizable by remote       |
| Phase-to-phase voltage: minimum and maximum                         | [V] U Min, U max  | Duration: 5...120min                 |
| Active power: average and maximum                                   | [kW] P Mean, P Max  | Number of intervals: 24              |
| Reactive power: average and maximum                                 | [kVAR] Q Mean, Q Max  |                                      |
| Apparent power: average and maximum                                 | [KVA] S Mean, S Max   |                                      |
| Data logger: high rate sampling record of parameters                | Parameters  |                                      |
| Currents  | [A] L1, L2, L3, Ne, Ig  | Fixed synchronizable by remote       |
| Voltages  | [V] U12, U23, U31   |                                      |
| Sampling rate   | [Hz] 1200-9600  | Duration: 5...120min                 |
| Maximum recording duration  | [s] 18  | Number of intervals: 24              |
| Recording stop delay  | [s] 0-10s   |                                      |
| Number of registers   | [no] 2 independent  |                                      |
| Info on trip & opening data: after a fault without auxiliary supply | Parameters  |                                      |
| Type of protection tripped  | eg. L, S, I, G, UV, OV  |                                      |
| Fault values per phase  | [A/V/Hz w/VAR] eg. I1, I2, I3, neutral for S protection<br>V12, V23, V32 for UV protection  |                                      |
| Time-stamping   | Date, time and progressive number   |                                      |
| Maintenance indicators  | Parameters  |                                      |
| Information on last 30 trips  | Type of protection, fault values and time-stamping  |                                      |
| Information on last 200 events                                      | Type of event, time-stamping  |                                      |
| Number of mechanical operations                                     | can be associated to alarm  |                                      |
| Total number of trips   | [no]  |                                      |
| Total operating time  | [no]  |                                      |
| Wear of contacts  | [h] Pre-alarm >80%<br>Alarm = 100%  |                                      |
| Date of maintenance operations performed                            | [%] Last  |                                      |
| Indication of maintenance operation needed                          |   |                                      |
| Circuit-breaker I.D.  | Type of circuit-breaker, assigned device name, serial number  |                                      |
| Self-diagnosis  | Parameters  |                                      |
| Check of continuity of internal connections                         | Alarm due to disconnection: rating plug, sensors, trip coil   | Note: Opening of the circuit-breaker |
| Failure of circuit-breaker to open (ANSI 50BF)                      | Alarm following non-tripping of protection functions  | can be set in the event of alarm     |
| Temperature (OT)  | Pre-alarm and alarm for abnormal temperature  |                                      |

● Available as standard

○ Available as software package to be ordered via ABB Ability Marketplace™ or during the circuit-breaker ordering phase. To add this function, the Measuring package must be installed first.

1) No. of events day by day in the last year plus the total events in the breaker's lifetime  
2) Not available for Ekip Touch and Ekip Touch Measuring for XT2 and XT4





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# Communication and connectivity

- 4/2**      **Introduction**
- 4/4**      **Switchgear compartment**
  - Electrical switchgear**
- 4/6**      Remote communication
  - Electrical system**
- 4/8**      Software applications
- 4/10**     Ekip Connect
- 4/12**     Ekip view
- 4/14**     **Software and web application**
- 4/16**     **Accessories for Ekip Touch trip units**
- 4/25**     **Accessories for electronic trip units**
- 4/26**     **Accessories for XT2-XT4 Ekip trip units**

## Introduction

The Tmax XT circuit-breakers are fully ready for Industry 4.0 requirements. The increasing number of connected objects and people is transforming electrical installation systems, bringing forward new potential in efficiency and productivity.

The Ekip Touch trip unit series can be connected in several ways to different networks and systems. According to their complexity, the supervision of low-voltage systems may involve different levels. Depending on where the supervision is needed, different communication configurations are available.

**Switchgear compartment:** control of the main electrical values of the circuit-breaker and set the protection functions, thanks to:

- embedded display of the trip units
- Ekip Multimeter display connected to the trip unit
- smartphone connection via embedded Bluetooth.

**Electrical switchgear:** display of the data of all circuit-breakers installed in the switchgear from a single point remotely via several communication protocols.

**Electrical system:** management of complex systems in which the devices must be integrated in automated industrial processes or in intelligent electrical networks, better known as smart grids. The system can be supervised by:

- Ekip View software
- Internet with the ABB Ability™ Electrical Distribution Control System webapp.





For all the possible supervision modes, connectivity modules are necessary. Two mounting solutions are possible, one excluding the other:

- **Internally**, it is possible to mount the Ekip Com modules in the circuit-breaker.

This solution can be used on XT2, XT4 and XT5 circuit-breakers. The module is mounted directly inside the circuit-breaker with no additional space needed in the switchboard.

For this configuration, dedicated internal module codes are available.

- **Externally**, through the Ekip Cartridge. The modules can be installed inside the cartridge, which is directly connected to the trip unit by a cable. Available with the XT2, XT4 and XT5 sizes. The Ekip cartridge is available in two versions depending on how many modules are needed.

The solution with the external cartridge permits a double or even triple communication channel, as well as redundant communication. Besides, the cartridge solution makes it possible the use of advanced functions, such as Synchro Reclosing, embedded ATS and more.

When an internal module is used, the Ekip Cartridge cannot be used and vice versa.

To be highlighted that, for the XT7 and XT7 M sizes, the modules must be installed directly on the terminal box available on the upper part of the circuit-breaker. The modules are the same of the Ekip Cartridge. On the upper part of the circuit-breaker it is possible to install one Ekip Sup- plus maximum two additional modules.

# Switchgear compartment

## Display solutions

—  
For the list of information available for each trip unit, see Chapter 3.

—  
SACE Tmax XT circuit-breakers equipped with Ekip Touch electronic trip units enable electrical measurements and diagnostic data to be displayed on the front of the switchgear.

### **Solution with Ekip Touch trip units display**

The Ekip Touch electronic trip units are the ideal solution for supervision and control of the compartments inside a switchgear. In detail:

- their use is simple and intuitive thanks to an embedded front display with push buttons on XT2 and XT4 sizes and a high resolution color touch screen display on XT5, XT7 and XT7 M sizes
- they do not require an auxiliary power supply for safety; the Ekip Touch trip units are directly supplied by the current sensors integrated in the circuit-breaker, thereby avoiding the use of external power supplies.

—  
The Ekip Multimeter is a display unit to be installed on the front of the switchgear for SACE Tmax XT molded case circuit-breakers equipped with Ekip Touch electronic trip units.

### **Solution with Ekip Multimeter Display on the front of the switchgear**

This device displays information about the system available in the trip unit to which it is connected and enables the adjustment of the parameters and protection thresholds.

The main characteristics of the Ekip Multimeter unit are:

- **Graphical and functional uniformity with the Ekip Touch trip units:** the Ekip Multimeter uses the same display as the trip unit to which it is connected, ensuring perfect continuity between the graphic display and the menu items.
- **Reduced dimensions:** the Ekip Multimeter guarantees the precision of the trip unit to which it is connected and performs the function of a measuring instrument without requiring the installation of external current and voltage transformers.
- **Flexible installation:** the Ekip Multimeter can be installed at a distance from the trip unit, enabling access to information from the most convenient point.
- **Simultaneous reading of the various electrical values:** the advanced connection system used allows several Ekip Multimeter devices to be connected to the same protection trip unit.

—  
Embedded Bluetooth for a quick and wireless connection to your smartphone.

### **Solution with a smartphone connected via Bluetooth to the trip unit thanks to EPiC**

Via the EPiC App, it is possible to:

- check and modify the protection functions settings
- read the measurements available on the trip unit
- buy the functions to upgrade the trip unit from the ABB Ability Marketplace™ and enable them directly on the trip unit
- download and share test reports of the trip unit.



— 01 Ekip Touch

— 02 Ekip Multimeter

— 03 EPiC

| Ekip Touch trip unit                      | Integrated display | Ekip Multimeter | Smartphone with EPiC |
|---|--------------------|-----------------|----------------------|
| <b>Measurement functions</b>              |                    |                 |                      |
| Currents                                  | ●                  | ●               | ●                    |
| Voltages                                  | ○                  | ○               | ○                    |
| Powers                                    | ○                  | ○               | ○                    |
| Energies                                  | ○                  | ○               | ○                    |
| Harmonics                                 | ○                  | ○               | ○                    |
| Network analyzer                          | ○                  | ○               | ○                    |
| <b>Adjustment functions</b>               |                    |                 |                      |
| Setting of thresholds                     | ●                  | ●               | ●                    |
| Setting second set thresholds             | ○                  | ○               | ○                    |
| Resetting of alarms                       | ●                  | ●               | ●                    |
| <b>Upgrade of the trip unit functions</b> |                    |                 |                      |
| Purchase of functions                     |                    |                 | ●                    |
| Installation of function                  |                    |                 | ●                    |
| <b>Diagnostics</b>                        |                    |                 |                      |
| Protection function alarms                | ●                  | ●               | ●                    |
| Device alarms                             | ●                  | ●               | ●                    |
| Protection unit tripping details          | ●                  | ●               | ●                    |
| Events log                                | ●                  | ●               | ●                    |
| Protection unit tripping log              | ●                  | ●               | ●                    |
| <b>Maintenance</b>                        |                    |                 |                      |
| Number of operations                      | ●                  | ●               | ●                    |
| Number of trips                           | ●                  | ●               | ●                    |
| Contact wear                              | ●                  | ●               | ●                    |
| <b>Other data</b>                         |                    |                 |                      |
| Status of circuit-breaker                 | ●                  | ●               | ●                    |
| Local/remote mode                         | ●                  | ●               | ●                    |

● Default available

○ Available depending on the trip unit

# Electrical switchgear

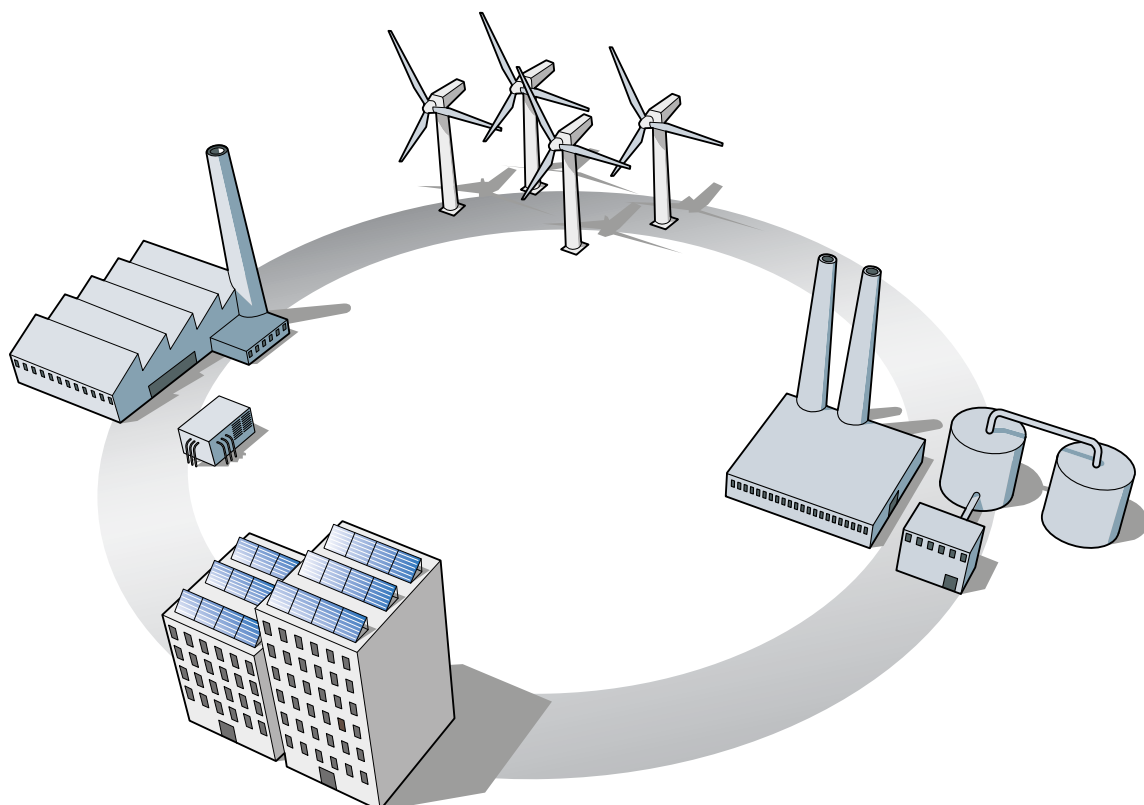
## Remote communication

The integration of low-voltage devices in communication networks is required in particular for: automated industrial processes, industrial and petrochemical sites, modern data centers and intelligent electricity networks, better known as smart grids.

### Ekip Com Modules

Thanks to the wide range of communication protocols supported, SACE Tmax XT circuit-breakers equipped with Ekip Touch electronic trip units can be integrated into communication networks without the need for external interface devices. The distinctive characteristics of the SACE Tmax XT circuit-breakers offering for industrial communication are:

- A wide range of protocols are supported; the Ekip Com communication modules enable integration with the most common communication protocols based on RS485 serial lines and the most modern communication systems based on EtherNet™ infrastructures, which guarantee an exchange of data in the order of 100 Mbit/s.
- Installation times are reduced to a minimum due to the plug & play technology of the communication modules, which are connected directly to the circuit-breaker terminal box for XT7 and XT7 M and to the Ekip Cartridge with XT2, XT4 and XT5.
- Installation space is reduced thanks to the ability to install the communication modules directly inside the circuit-breaker for XT2, XT4 and XT5.
- Redundancy of communication for greater reliability of the system; the circuit-breaker can be equipped with two communication modules at the same time, allowing the information on the buses to be exchanged simultaneously.
- Ready for the smart grid; the Ekip Com 61850 module is the solution for integrating SACE Tmax XT circuit-breakers into the automated systems of electrical substations based on the IEC 61850 Standard without the need for complex external devices.
- Complete supervision of Modbus RTU or Modbus TCP/IP networks via the software for PC Ekip View.



| <b>Supervision of the electrical installation</b>  |  |
|--|--|
| <b>Electronic trip unit</b>                        | <b>Ekip Touch trip units</b>             |
| <b>Solution</b>                                    | Ekip Touch trip units + Ekip com modules |
| Protocols supported:                               |  |
| Modbus RTU   | Ekip com Modbus RTU                      |
| Profibus-DP  | Ekip com Profibus                        |
| DeviceNet™   | Ekip com DeviceNet™                      |
| Modbus TCP/IP                                      | Ekip com Modbus TCP                      |
| Profinet   | Ekip com Profinet                        |
| EtherNet/IP™                                       | Ekip com EtherNet™                       |
| IEC61850   | Ekip com IEC61850                        |
| Hub  | Ekip com Hub                             |
| <b>Control functions</b>                           |  |
| Circuit-breakers opening and closing <sup>1)</sup> | ●  |
| <b>Measurement functions</b>                       |  |
| Currents   | ●  |
| Voltages   | ○  |
| Powers   | ○  |
| Energies   | ○  |
| Harmonics  | ○  |
| Network analyzer                                   | ○  |
| Data logger  | ○  |
| <b>Adjustment functions</b>                        |  |
| Setting thresholds                                 | ●  |
| Resetting of alarms                                | ●  |
| <b>Diagnostics</b>                                 |  |
| Protection function alarms                         | ●  |
| Device alarms                                      | ●  |
| Protection unit tripping details                   | ●  |
| Events log   | ●  |
| Protection unit tripping log                       | ●  |
| <b>Maintenance</b>                                 |  |
| Number of operations                               | ●  |
| Number of trips                                    | ●  |
| Contact wear                                       | ●  |
| <b>Other data</b>                                  |  |
| Status of circuit-breaker                          | ●  |
| Local/remote mode                                  | ●  |

1) Circuit-breakers equipped with MOE-E for the XT2-XT4-XT5 or the Ekip Com Actuator module, or electrical accessories, opening and closing coils and spring charging motor in the case of the XT7-XT7 M. For details, ask ABB.

● Default available

○ Available depending on the trip unit

### Ekip E-Hub

This is a DIN-rail mounted communication module for cloud-connectivity. The Ekip E-Hub can collect data throughout the system from air circuit-breakers to molded case circuit-breakers, multimeters, miniature circuit-breakers.

Moreover, it is possible to connect sensors for environmental parameters (temperature, water, gas) via both analog and digital I/O. Modules for Wi-Fi or GPRS connection are provided as optional features.



# Electrical system

## Software applications

ABB SACE offers software applications that allow the potential of the Ekip electronic trip units to be fully utilized in terms of the management of power, acquisition and analysis of the electrical values, and testing of the protection, maintenance in addition to carrying out diagnostic functions.

### Overview of the software

An overview of the software available and the main characteristics are given below:

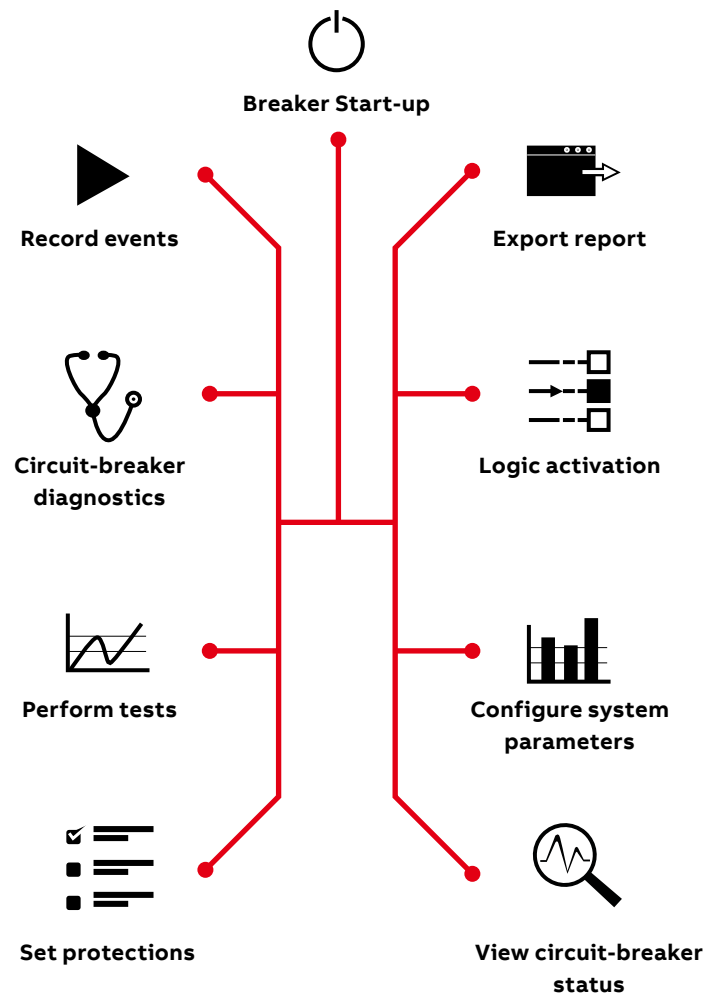
| Software  | Functions  | Distinctive characteristics   |
|---|--|---|
| Ekip Connect  | <ul style="list-style-type: none"> <li>- commissioning of circuit-breakers</li> <li>- fault analysis</li> <li>- communication bus testing</li> </ul>                                 | <ul style="list-style-type: none"> <li>- simple and intuitive use</li> <li>- integrated with DOC electrical design software</li> <li>- useable via EtherNet™</li> <li>- automatic updating from the Internet</li> <li>- off-line mode</li> <li>- multi-media (smart phone, tablet or PC)</li> </ul> |
| Ekip View   | <ul style="list-style-type: none"> <li>- supervision and control of communication networks</li> <li>- analysis of electrical value trends</li> <li>- condition monitoring</li> </ul> | <ul style="list-style-type: none"> <li>- engineering free</li> <li>- analysis of past trends</li> <li>- customizable reports</li> <li>- access via Internet to the installation</li> <li>- possibility of integrating third party devices</li> </ul>  |
| ABB Ability™<br>Electrical Distribution<br>Control System | <ul style="list-style-type: none"> <li>- monitoring of plants</li> <li>- optimization of the plant</li> <li>- control center</li> </ul>  | <ul style="list-style-type: none"> <li>- alerts notification via mail</li> <li>- automatic report for energy efficiency</li> <li>- asset management</li> </ul>  |

### Ekip Connect

Ekip Connect is the ABB programming and commissioning software tool that allows the user to unlock the full potential of circuit-breakers, improving the efficiency of the electrical plant. A circuit-breaker is an essential part of any electrical system guaranteeing that day-to-day processes can be performed safely and continuously. For this reason, it is vital that the installation and use of the circuit-breaker is made as error-free and simple as possible.

From commissioning to implementation, through monitoring, testing and analysis, Ekip Connect is the perfect tool for guiding the user in the management of ABB circuit-breakers throughout the entire product life cycle.

Ekip Connect is the ABB commissioning and programming software that allows the potential of Ekip electronic trip units to be fully realized. Using Ekip Connect, the user can manage power, acquire and analyze electrical values and test protection, maintenance and diagnostic functions. Just as SACE EMAX 2 did before, SACE Tmax XT has evolved into a true power manager that has simplified the electrical plant, and the Ekip Connect software has become the user's key to accessing the full capabilities of the breakers.



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# Electrical system

## Ekip Connect

—  
Panel builders  
- 50% commissioning time

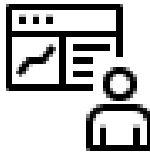


### Ease of use

Imagine you are a panel builder and you have to commission a circuit-breaker and you need to save time. Using Ekip Connect it is possible to cut commissioning time up to 50%. Providing a stress-free interaction with the device complexity, Ekip Connect easy-to-use software has all the answers.

Ekip Connect's simple and intuitive interface means that, from the very start, it is possible to easily navigate the tool and access every circuit-breaker operation. At a glance, the user can see all the required information, providing the ability to quickly and effectively assess any situation.

—  
Facility managers  
100% full exploitation  
of the device



### Full exploitation

Imagine you are a facility manager and you need to perform fast and precise diagnosis in order to keep everything under control and avoid failures. Using Ekip Connect you can exploit the full capabilities of your device and thanks to the customizable dashboard you can organize the functions displayed, just the way you want it. It is possible to manage all the circuit-breaker settings and specifications directly with Ekip Connect, making it the perfect instrument for exploring and using the breaker.

Diagnostics are easy too: it is possible to consult and download the log of events, alarms and unit trips, thereby facilitating the identification and understanding of any anomalies.

This software is able to manage all ABB low-voltage circuit-breakers equipped with an electronic trip unit, providing full integration of air and molded case circuit-breakers.

—  
Consultants/system  
integrators  
Complex logics at your  
fingertips



### Product enhancement

Imagine you are a consultant or a system integrator and you want to implement advanced features while avoiding the risk of errors. Using Ekip Connect it is possible to implement complex logic with a few clicks of your mouse.

Adding, setting and managing advanced functions has never been so easy.

Automatic transfer switch logic, load shedding, advanced protection and demand management can be managed and easily set via the Ekip Connect software.

Expand the software features by purchasing and downloading software packages for advanced functions directly using Ekip Connect.

Accessing the full potential of the circuit-breaker is finally possible. Thanks to Ekip Connect software, you can achieve complete utilization of the breaker and more with just a few clicks of your mouse.



#### Configuration

- Set protections
- Configure system and communication parameters
- Breaker start-up



#### Monitoring & analysis

- View circuit-breaker status and measurements
- Read events list
- Circuit-breaker diagnostic



#### Product implementation

- Set advanced protections
- Logic activation
- Enable advanced functions

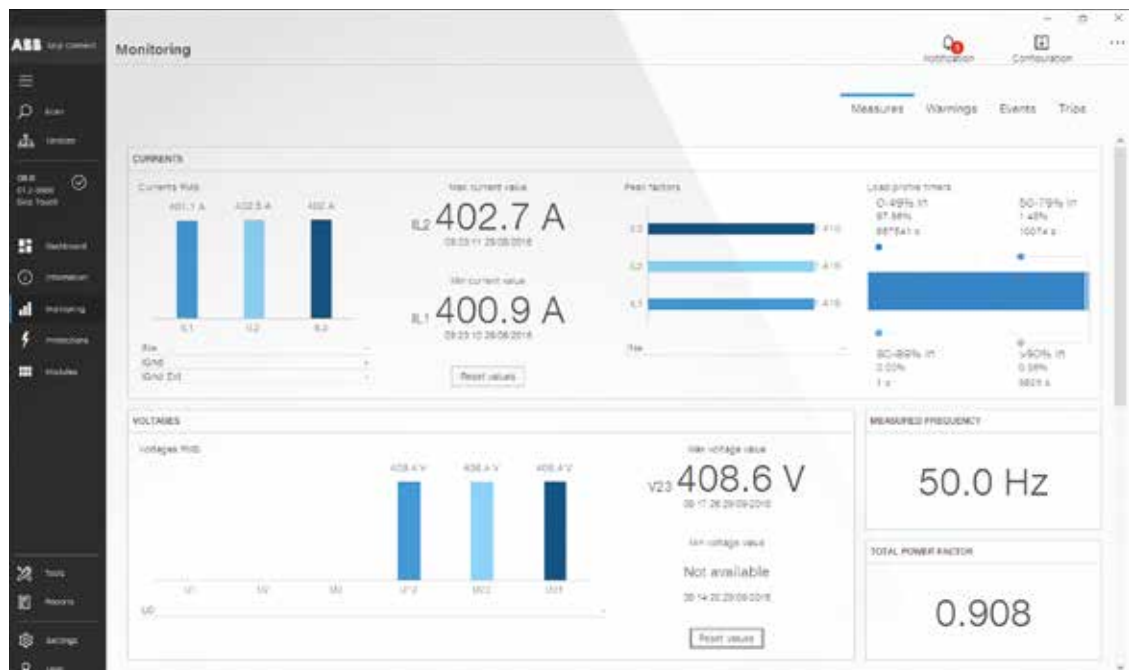
#### Test



#### Testing & reporting

- Check correct functionality
- Perform tests
- Export report

Ekip Connect is available for free download at <http://www.abb.com/abblibrary/DownloadCenter/>



#### EPiC

With Bluetooth embedded into the trip units it is possible to connect rapidly to the EPiC app. Buy additional protection functions or measures, register the product and configure your device. EPiC helps the customer during the commissioning of the system; all system parameters and protection thresholds can be set rapidly in the Ekip Touch trip units thanks to the easy and intuitive navigation pages of the app.

# Electrical system

## Ekip View

Ekip View is the software for supervising all the devices connected to a communication network that uses the Modbus RTU or Modbus TCP protocol.

Ekip View is the ideal tool for all the applications that require:

- remote control of the system,
- monitoring of power consumption,
- fault detection of the system,
- allocation of energy consumption to the different processes and departments,
- preventative maintenance planning.

The main characteristics of Ekip View are:

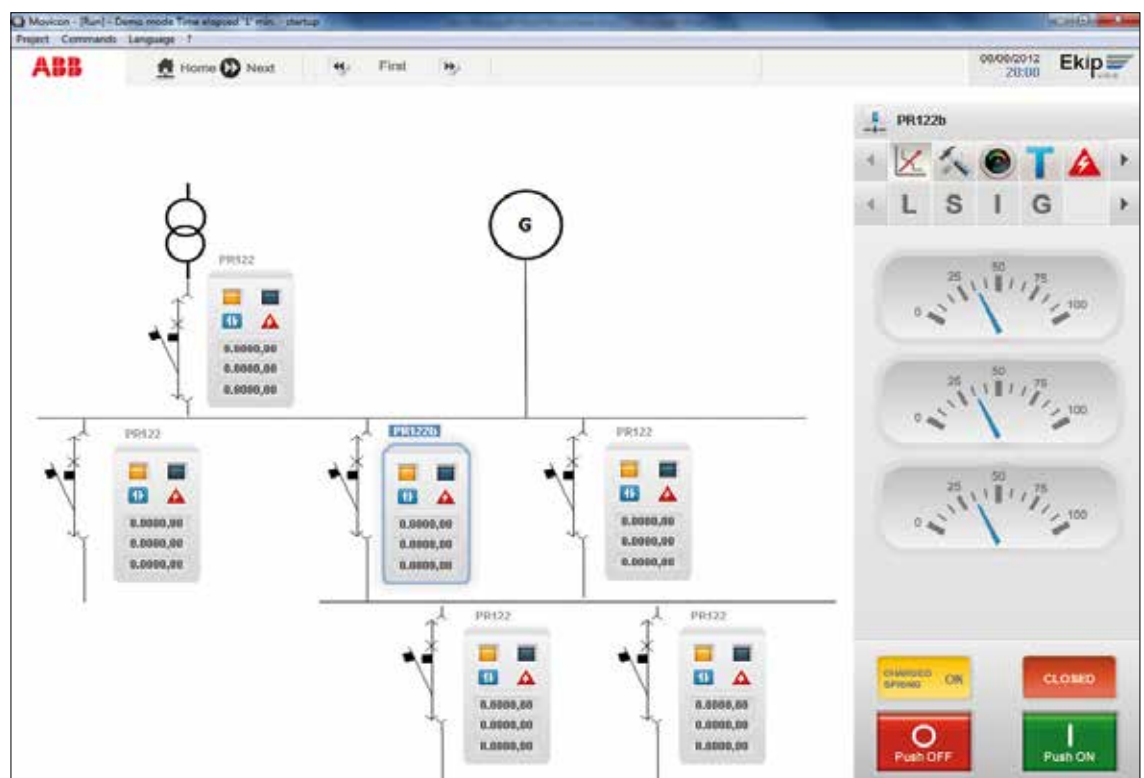
- **Free and ready to use** engineering software to guide the user in the recognition and configuration of the protection units without the need for any system engineering supervision.

- **Dynamic mimic panel:** after automatic scanning of the network, for each of the devices found, Ekip View proposes a dynamic symbol that summarizes the most important information (status, electrical measurements, alarms). The extensive library of electrical symbols enables the entire electrical system to be represented in detail.

- **Analysis of trends:** the instantaneous and past trends of currents, powers and power factors are represented graphically and can be exported into Microsoft Excel for detailed analysis.

- **Reports:** advanced reports can be created regarding system and communication network diagnostics. Using the Alarm Dispatcher option, the user can receive the most important notifications via text message.

- **Web access:** to the installation, thanks to Ekip View's Web Server function.



| Ekip View Software                                    |   |   |
|---|---|---|
| Communication characteristics                         |   |   |
| Protocol Supported                                    | Modbus RTU  | Modbus TCP  |
| Physical layer  | RS 485  | EtherNet™   |
| Maximum data exchange rate                            | 19200 bps   | 100 Mbps  |
| Operating system                                      | Windows XP, Windows 7, Windows Vista                  |   |
| Devices supported                                     |   |   |
| Tmax XT and Emax 2 trip units                         | Ekip com Modbus RS485                                 | Ekip com Modbus TCP                                   |
| Third party devices                                   | optional <sup>1)</sup>                                | optional <sup>1)</sup>                                |
| Licenses available                                    | - up to 30 <sup>2)</sup> controllable devices         | - up to 30 <sup>2)</sup> controllable devices         |
|   | - up to 60 <sup>2)</sup> controllable devices         | - up to 60 <sup>2)</sup> controllable devices         |
|   | - unlimited number <sup>3)</sup> controllable devices | - unlimited number <sup>3)</sup> controllable devices |
| Supervision and control functions                     |   |   |
| Opening and closing of circuit-breakers <sup>4)</sup> | ●   | ●   |
| Electrical value trends                               | ●   | ●   |
| Log of electrical value trends                        | ●   | ●   |
| Dynamic installation mimic panel                      | ●   | ●   |
| Automatic scanning                                    | ●   | ●   |
| Centralized time synchronization                      | ●   | ●   |
| Web server function <sup>6)</sup>                     | ● <sup>5)</sup>                                       | ● <sup>5)</sup>                                       |
| Measurement functions                                 |   |   |
| Currents  | ●   | ●   |
| Voltages  | ●   | ●   |
| Powers  | ●   | ●   |
| Energies  | ●   | ●   |
| Harmonics   | ●   | ●   |
| Network analyzer                                      | ●   | ●   |
| Data logger   | ●   | ●   |
| Adjustment functions                                  |   |   |
| Setting thresholds                                    | ●   | ●   |
| Resetting of alarms                                   | ●   | ●   |
| Diagnostics   |   |   |
| Protection function alarms                            | ●   | ●   |
| Device alarms   | ●   | ●   |
| Communication system alarms                           | ●   | ●   |
| Protection unit tripping details                      | ●   | ●   |
| Events log  | ●   | ●   |
| Protection unit tripping log                          | ●   | ●   |
| Generation of reports                                 | ●   | ●   |
| Maintenance   |   |   |
| Number of operations                                  | ●   | ●   |
| Number of trips                                       | ●   | ●   |
| Contact wear  | ●   | ●   |
| Other data  |   |   |
| Status of circuit-breaker                             | ●   | ●   |
| Local/remote mode                                     | ●   | ●   |

1) Contact ABB to integrate other devices in the Ekip View software

2) Can be increased

3) Within the physical limit of the protocol used

4) Circuit-breakers are equipped with MOE-E for the XT2-XT4-XT5 or Ekip Com Actuator module, electrical accessories, opening and closing coils and spring charging motor in the case of XT7-XT7 M

5) Two client web accesses included in the license

6) According to the values supported by the trip units

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## Software and web application

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The ABB Ability™ Electrical Distribution Control System is the innovative cloud-computing platform designed to monitor, optimize and control the electrical system.

Part of the ABB Ability™ offering, ABB Ability™ Electrical Distribution Control System, is built on a state-of-the-art cloud architecture for data collection, processing and storage. This cloud architecture has been developed together with Microsoft to enhance performance and guarantee the highest reliability and security. Through a compelling web app interface, ABB Ability™ Electrical Distribution Control System assists the user any-time and anywhere via smartphone, tablet or personal computer making the following operations possible:

- **Monitoring**  
Discover plant performance, supervise the electrical system and allocate costs.
- **Optimization**  
Schedule and analyze automatic reports, improve the use of assets and make the right business decisions.

- **Control**

Set up alerts, notify key personnel, and remotely implement an effective power management strategy to achieve energy savings in a simple way.

ABB Ability™ Electrical Distribution Control System also provides access to multi-site level monitoring and compares the performances of different facilities simultaneously. In addition, it allows profiling of the users' experience according to the level of access they require. According to the customer needs and application, users can choose between two configurations to connect their system to the ABB Ability™ Electrical Distribution Control System: embedded or external. The first configuration is the innovative Ekip Com Hub (a cartridge-type module) which needs to be installed on the Tmax XT circuit-breaker. The second, the Ekip E-Hub module, must be mounted on the DIN-rail.

### **Solution with Ekip Com Hub**

A SACE Tmax XT device equipped with the new Ekip Com Hub establishes the cloud connection for the whole switchboard.

This dedicated cartridge type communication module just needs to be inserted into the terminal box and connected to the Internet. For the XT2, XT4 and XT5 sizes, it is available also as an internal module in case of limited space.







#### An external solution with Ekip E-Hub

The Ekip E-Hub module can be mounted on a DIN-rail to collect data throughout the system. Moreover, it is possible to connect sensors for environmental parameters (temperature, water, gas) via both analog and digital I/O. Modules for Wi-Fi or GPRS connection are provided as optional features.

For any further information please visit our website : <http://new.abb.com/low-voltage/launches/abb-ability-edcs>.





## Accessories for Ekip Touch trip units

### Connectivity

Tmax XT circuit-breakers can be integrated perfectly into all automation and energy management systems to improve productivity and energy consumption and to carry out remote service.

They can be equipped with communication units available for use with Modbus, Profibus, and DeviceNet™ protocols as well as with the modern Modbus TCP, Profinet and EtherNet/IP™ protocols. Furthermore, the integrated IEC 61850 communication module enables connection to automation systems widely used in medium voltage power distribution to create intelligent networks (Smart Grids). The modules are available in both solutions, internally and externally mounted. The internal modules are installed directly inside the circuit-breaker and the external modules can be easily installed directly on the terminal box or in the Ekip cartridge, even at a later date.

Accurate measurements of current, voltage, power and energy are all available by means of the communication modules.

The trip units themselves can be used as multimeters that display the measurements available, or the Ekip Multimeter can be connected on the front of the switchgear without the need for external instruments. All the functions are also accessible via the Internet, in complete safety.

In addition, a full set of information on the plant and circuit-breaker can be made available throughout the cloud via ABB Ability™ Electrical Distribution Control System.

### Internal modules

Available with several different communication protocols, the Ekip Com internal module is installed directly inside the circuit-breaker. It allows the circuit-breaker to be integrated in a communication network for supervision and control. Ekip Com internal modules can be used for the XT2-XT4 and XT5. They can be connected to the trip unit when Ekip Touch is used. In other cases (for the Ekip Dip, thermal-magnetic trip unit, or switch-disconnector), the Modbus RTU and TCP, available in the STA version (Stand-Alone), can be still installed inside the circuit-breaker to provide information on the status of the circuit-breaker and remote control (adding the motor operator).



XT5 Ekip Com TCP  
internal module

| Protocols     | Ekip Touch | Ekip Dip, Thermal-magnetic unit,<br>Switch Disconnecter |
|---------------|------------|---|
| Modbus RTU    | ■          | ■   |
| Modbus TCP/IP | ■          | ■   |
| Profinet      | ■          | -   |
| EtherNet / IP | ■          | -   |
| IEC61850      | ■          | -   |



Communication module

**External modules**

These Ekip Com modules, as well as the internal modules, allow integration in any communication network. They can be used on the XT2, XT4 and XT5 with an Ekip Touch trip unit by using the Ekip Cartridge. On the XT7 and XT7 M with an Ekip Touch trip unit, they can be mounted directly on the terminal box. Several modules can be used simultaneously enabling systems with different protocols, but also, in case of high reliability requirements, Ekip Com R modules can be installed to guarantee system redundancy. The Modbus RTU, Profibus-DP and DeviceNet™ modules contain a terminating resistor and two dip switches for optional activation to terminate the serial network or bus. The Profibus-DP module also contains a polarization resistor and two dip switches for its activation. When used on the XT7 and XT7 M, communication can be maintained with withdrawable circuit-breakers, even while they remain in the racked-out position, by using Ekip AUP auxiliary position contacts and Ekip RTC ready to close circuit-breaker contacts.

| Protocols     | Ekip Touch |
|---------------|------------|
| Modbus RTU    | ■          |
| Modbus TCP    | ■          |
| Profibus-DP   | ■          |
| Profinet      | ■          |
| Ethernet / IP | ■          |
| DeviceNet     | ■          |
| IEC 61850     | ■          |



Ekip Cartridge

**Ekip Cartridge**

The external device connected directly to the Ekip Touch trip unit of XT2, XT4 and XT5 allows most of the connectivity modules to be used including: the Ekip Supply, Ekip Com, Ekip Link, Ekip Signaling 2K and Ekip Synchro check. It is always necessary to install the Ekip Supply module. The Ekip Cartridge is available in two different versions: with 2 slots (1 Ekip Supply + 1 module) or with 4 slots (1 Ekip Supply + 3 modules).

If needed, when circuit-breakers in the withdrawable version are used, it is possible to connect the position AUP contacts to the related pins of the cartridge to avoid failure messages on the communication channel. The cartridge can be installed on a DIN-rail everywhere in the panel. The cable that connects the trip unit with the Ekip Cartridge is 1m long.



Ekip Power Supply

**Ekip Power Supply**

The Ekip Supply module supplies all Ekip trip units and modules present on the Ekip Cartridge or terminal box of the circuit-breaker with several auxiliary power sources (in AC or DC) available in the switchgear. The module permits the installation of the other advanced modules. It can be field installed at any time. Two versions are available according to the control voltage:

- Ekip Supply 110-240V AC/DC
- Ekip Supply 24-48V DC

## Accessories for Ekip Touch trip units



Ekip Link

### Ekip Link

The Ekip Link module enables the Tmax XT circuit-breaker to be connected to an ABB communication system. It is available in both inside-breaker and external cartridge versions. It is available as:

- an inside-breaker version for XT2, XT4, and XT5 sizes
- a cartridge and terminal box mounted version for XT2, XT4, XT5, XT7 and XT7 M sizes.



Ekip Com Hub

### Ekip Com Hub

The Ekip Com Hub is the new communication module for cloud-connectivity. A circuit-breaker equipped with Ekip Com Hub can establish a connection with an ABB Ability™ Electrical Distribution Control System for the low-voltage power distribution panel.

This dedicated module is available in two versions: the inside-breaker (for XT2, XT4 and XT5 sizes) and the cartridge/ terminal box mounted versions (for XT2, XT4, XT5, XT7 and XT7 M sizes), even when other modules are present.

For further information related to the ABB Ability™ Electrical Distribution Control System, please visit the dedicated website at <http://new.abb.com/low-voltage/launches/ekip-smartvision>.



Ekip Com Actuator

### Ekip Com Actuator

The Ekip Com Actuator module enables the XT7 M circuit-breakers to be opened and closed remotely. The Ekip com Actuator is optional and can be ordered for all Ekip Touch trip units equipped with Ekip Com or Ekip Link modules. The Ekip Com Actuator is installed on the front of the circuit-breaker in the right-hand accessories area.

## Signaling

### Ekip 1K Signalling

The Ekip 1K Signalling module, available for the XT5, supplies one input contact and one output contact for control and remote signaling. It can be programmed from the trip unit display or through the Ekip Connect software and app. Furthermore, when using Ekip Connect, combinations of events can be freely configured. The Ekip 1K Signalling device is installed inside the circuit-breaker in the housing provided on the left down side of the circuit-breaker and it can be used when an Ekip Touch trip unit is present.



Ekip Signalling 1K



Ekip 2K Signalling modules

Ekip 2K Signalling modules

The Ekip 2K Signalling modules supply two input and two output contacts for control and remote signaling of alarms and circuit-breaker trips. They can be programmed from the trip unit display or via the Ekip Connect software and app. Furthermore, when using Ekip Connect, combinations of events can be freely configured. Three versions of the Ekip 2K Signalling modules are available: Ekip 2K 1, Ekip 2K-2, and Ekip 2K-3.

In this way, a maximum of three modules for XT2, XT4, XT5, XT7 and XT7 M can be installed at the same time into an Ekip Cartridge (for XT2, XT4 and XT5 sizes) or into the terminal box (for XT7 and XT7 M sizes).



Ekip 10K Signalling unit

Ekip 10K Signalling unit

The Ekip 10K Signalling unit is an external device designed for DIN-rail installation. The unit provides ten contacts for electrical signaling of timing and tripping of protection devices. If connected via the Ekip Connect software, the contacts can be freely configured in association with any event and alarm or combination of both. Several Ekip 10K Signalling units (max 4) can be used at the same time on the same Ekip trip unit. The Ekip 10K Signalling module can be powered either by direct or alternating current and can be connected to all the trip units via internal bus or Ekip Link modules.

| Output contacts characteristics       |                             | Number of contacts |                    |
|---------------------------------------|-----------------------------|--------------------|--------------------|
| Type                                  | Monostable                  | Ekip 1K            | Ekip 2K            |
| Maximum switching voltage             | 150V DC / 250V AC           |                    |                    |
| Maximum switching current             |                             |                    |                    |
| 30V DC                                | 2A                          | 1 output + 1 input | 2 output + 2 input |
| 50V DC                                | 0.8A                        |                    |                    |
| 150V DC                               | 0.2A                        |                    |                    |
| 250V AC                               | 4A                          |                    |                    |
| Contact/coil insulation               | 1000 Vrms (1min @50Hz)      |                    |                    |
|                                       |                             |                    |                    |
| Ekip 10K Signalling unit power supply |                             |                    |                    |
| Auxiliary supply                      | 24-48V DC, 110-240V AC/DC   |                    |                    |
| Voltage range                         | 21.5-53V DC, 105-265V AC/DC |                    |                    |
| Rated power                           | 10VA/W                      |                    |                    |
| Inrush current                        | 1A for 10ms                 |                    |                    |



Signaling contacts for Ekip trip units

Signaling contacts for the XT7 and XT7 M Ekip trip units

With XT7 and XT7 M circuit-breakers, the Ekip trip units can acquire the status of the circuit-breaker ready to close (RTC) and racked-in, test, or racked-out position through the optional Ekip RTC and Ekip AUP signaling contacts. These contacts, housed in the accessories area of the circuit-breakers, are available with the Ekip Dip and Ekip Touch.



# Accessories for Ekip Touch trip units



Ekip Synchrocheck

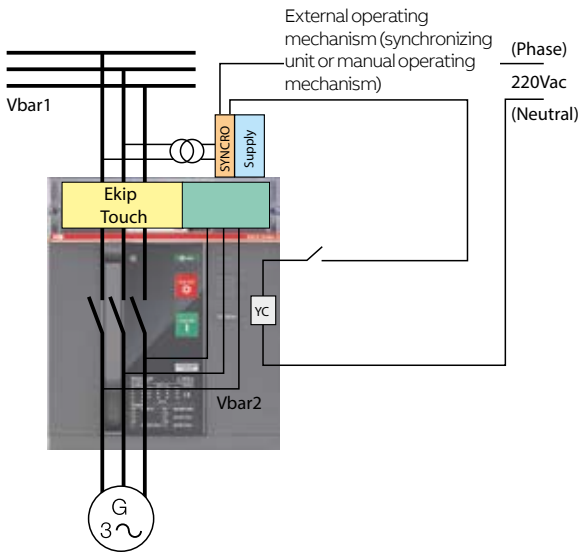
## Protection

### Ekip Synchrocheck

This module enables the control of the synchronism condition when placing two lines in parallel. The module can be used with the Ekip Touch trip units. Ekip Synchrocheck measures the voltages from two phases of one line through an external transformer and compares them to the voltage values measured at the circuit-breaker. An output contact is available, which is activated upon synchronism, and enables the circuit-breaker to be closed by means of wiring with the closing coil.

The Ekip Synchrocheck can be installed in the Ekip Cartridge (for XT2, XT4 and XT5) and in the terminal box (for XT7 and XT7 M).

| Output contacts characteristics |                        | Number of contacts |
|---------------------------------|------------------------|--------------------|
| Type                            | Monostable             | Ekip Synchrocheck  |
| Maximum switching voltage       | 150V DC / 250V AC      |                    |
| Maximum switching current       |                        |                    |
| 30V DC                          | 2A                     | 1<br>output        |
| 50V DC                          | 0.8A                   |                    |
| 150V DC                         | 0.2A                   |                    |
| 250V AC                         | 4A                     |                    |
| Contact/coil insulation         | 1000 Vrms (1min @50Hz) |                    |





Ekip CI

### Ekip CI

This module is an accessory for the Ekip M Touch LRIU trip unit and is needed when the circuit-breaker and the contactor must work in conjunction with each other. In this way the higher number of operations of the contactor are used instead of the circuit-breaker. When the trip unit is set in Normal mode (default mode) by means of the Ekip CI module the contactor is activated in one of the protection trips (excluding I and G protections); if the Heavy mode is set the trip unit directly opens the circuit-breaker. The auto-reset function allows the actuation status of the Ekip CI to reset automatically after the contactor has tripped owing to the L function, once an adjustable time from 1 to 1000s has elapsed. Auto-reset can occur only in Normal mode. The BACK UP function is available and deals with situations whereby an opening command transmitted to the contactor via module Ekip CI has not been successful. In this case, the Ekip M Touch LRIU trip unit sends an opening command to the circuit-breaker after waiting a set time  $T_x$ . The actuation time of the contactor given by the manufacturer must be considered when the  $T_x$  time delay setting is entered. The function is active with an auxiliary supply.



Rating Plug

### Rating Plug

The rating plugs are field interchangeable from the front on all the trip units and the protection thresholds can be adjusted according to the actual rated current of the system. This function is particularly advantageous in installations that may require future expansion or when the power supplied needs to be limited temporarily (e.g. mobile Gen Set). For the XT7 and XT7 M special rating plugs are also available for residual current protection against ground faults combined with a suitable external toroid. For the XT5, the following rating plugs are available for the two versions of Ekip Touch (400A and 630A).

On the Ekip Touch 400 it is not possible to install the 500A and 630A rating plugs.

| Nominal Value of the Rating Plug | Ekip Touch 400A | Ekip Touch 630A |
|----------------------------------|-----------------|-----------------|
| 250A                             | ■               | ■               |
| 320A                             | ■               | ■               |
| 400A                             | ■               | ■               |
| 500A                             | -               | ■               |
| 630A                             | -               | ■               |

■ compatible  
- not compatible

For XT7 and XT7 M the following rating plugs are available

| Ekip Dip LS/I, Ekip Dip LIG, Ekip M Dip I, Ekip G Dip LS/I |                      |
|--|----------------------|
| Nominal Value  | Standard Rating Plug |
| 630A   | ■                    |
| 800A   | ■                    |
| 1000A  | ■                    |
| 1250A  | ■                    |
| 1600A  | ■                    |

■ compatible

| Ekip Dip LSI, Ekip Dip LSIG, Ekip Touch all |                      |                               |
|---|----------------------|-------------------------------|
| Nominal Value                               | Standard Rating Plug | Rating Plug for RC protection |
| 800A  | ■                    | ■                             |
| 1000A                                       | ■                    | -                             |
| 1250A                                       | ■                    | ■                             |
| 1600A                                       | ■                    | -                             |

■ compatible  
- not available

# Accessories for Ekip Touch trip units

## Cables and connectors

### **XT2-XT4 default supply with Ekip Touch trip units**

The following items are always provided with the Ekip Touch trip units:

- A 24V DC supply / internal bus cable: that supplies the trip unit and connects the Ekip Cartridge and the Ekip Multimeter
- A Side Plug connector to connect the trip unit to the 24V DC/internal bus cable, selectivity cable, and the external neutral cable.

### **XT5 default supply with Ekip Touch trip units**

The following items are always provided with the Ekip Touch trip units:

- A 24V DC supply / internal bus cable: that supplies the trip unit, connect the Ekip Cartridge and the Ekip Multimeter.

When a circuit-breaker with the withdrawable version of the trip unit is required, the following accessories can be used:

- XT2-XT4 connection kit 24V/internal bus/external neutral/zone selectivity
- XT5 connection kit 24V/internal bus (mandatory with the withdrawable version)

## Zone Selectivity

To use the zone selectivity function for G and S protections, it's needed to order the zone selectivity cable.

To use the selectivity cable with XT2-XT4 it is mandatory to use the the Side Plug supplied with the trip unit.

## External neutral sensors



Current sensor for neutral conductor outside the circuit-breaker

### Ekip Dip

The external neutral current sensor (to protect the neutral conductor) is available for 3-pole circuit-breakers equipped with Ekip Dip LIG, Ekip Dip LSI, and Ekip Dip LSIG electronic trip units.

### Ekip Touch

With this trip unit it is possible to use both current and voltage sensors (to measure or protect the neutral conductor). The current sensor is available only for 3-pole circuit-breakers.

For the XT7 and XT7 M the current sensor is connected through the terminal box; moreover the voltage connection can also be added to the terminal box area by just connecting a cable to the right connection point. To use the external neutral with XT2-XT4 it is mandatory to use the the Side Plug supplied with the trip unit. For the XT2, XT4 and XT5 it possible to select one of the following solutions:

- a kit for external neutral voltage connections, to only measure the voltage
- a current sensor (CS) for external neutral, to only measure the current
- current sensor + voltage (CS+V) for external neutral, to measure both current and voltage.

The sensors are available with the following nominal currents:

| Circuit Breaker | In   | Ekip Dip |     |      |        | Ekip Touch |
|-----------------|------|----------|-----|------|--------|------------|
|                 |      | LIG      | LSI | LSIG | G-LS/I |            |
| XT2             | 10   | ■        | ■   | ■    | ■      | -          |
|                 | 25   | ■        | ■   | ■    | ■      | -          |
|                 | 40   | -        | -   | -    | -      | ■          |
|                 | 63   | ■        | ■   | ■    | ■      | ■          |
|                 | 100  | ■        | ■   | ■    | ■      | ■          |
|                 | 160  | ■        | ■   | ■    | ■      | ■          |
| XT4             | 40   | ■        | ■   | ■    | ■      | -          |
|                 | 63   | ■        | ■   | ■    | ■      | -          |
|                 | 100  | ■        | ■   | ■    | ■      | ■          |
|                 | 160  | ■        | ■   | ■    | ■      | ■          |
|                 | 250  | ■        | ■   | ■    | ■      | ■          |
| XT5             | 250  | ■        | ■   | ■    | ■      | ■          |
|                 | 320  | ■        | ■   | ■    | ■      | ■          |
|                 | 400  | ■        | ■   | ■    | ■      | ■          |
|                 | 630  | ■        | ■   | ■    | ■      | ■          |
| XT6             | 630  | ■        | ■   | ■    | ■      |            |
|                 | 800  | ■        | ■   | ■    | ■      |            |
|                 | 1000 | ■        | ■   | ■    | ■      |            |
| XT7             | 630  | ■        | ■   | ■    | ■      | ■          |
|                 | 800  | ■        | ■   | ■    | ■      | ■          |
|                 | 1000 | ■        | ■   | ■    | ■      | ■          |
|                 | 1250 | ■        | ■   | ■    | ■      | ■          |
|                 | 1600 | ■        | ■   | ■    | ■      | ■          |



Homopolar toroid for the earthing conductor of the main power supply

### Homopolar toroid for the earthing conductor of the main power supply

The Ekip Touch trip units can be used with an external toroid positioned, for example, on the conductor that connects the star center of the MV/LV transformer to earth (homopolar transformer): in this case, the earth protection is called Source Ground Return. Four sizes of the toroid are available: 100A, 250A, 400A, 800A. The homopolar toroid is an alternative to the toroid for differential protection.

This is for the XT7 and XT7 M only.

### Toroid for differential protection

Connected to the Ekip Touch trip units equipped with a rating plug for differential protection, this toroid enables earth fault currents of 3...30A to be monitored. This is an alternative to the homopolar toroid and should be installed on the busbar system. This is for the XT7 and XT7 M only.



Toroid for differential protection





# Accessories for Ekip Touch trip units

## Display and supervision

### Ekip Multimeter Display for the front of the switchgear

The Ekip Multimeter is a display unit which can be installed on the front of the switchgear for the Tmax XT circuit-breakers equipped with Ekip Touch trip units. The device is equipped with a large touch screen display and enables measurements to be displayed. If connected to trip units with a display, the Ekip Multimeter enables the adjustment of parameters and protection thresholds. Up to 4 Ekip Multimeter devices can be connected at the same time to the same Ekip protection trip unit to display currents, voltage, power and energy. The Ekip Multimeter can be connected to a single trip unit and can be powered either by direct current (24-48V DC or 110-240V DC) or alternating current (110-240V AC). It is equipped with a 24V DC output that supplies the trip unit to which it is connected.



An Ekip Multimeter Display for the front of the switchgear.

|                |                             |
|----------------|-----------------------------|
| Power supply   | 24-48V DC, 110-240V AC/DC   |
| Tolerance      | 21.5-53V DC, 105-265V AC/DC |
| Rated Power    | 10VA/W                      |
| Inrush current | 2A for 20ms                 |

## Accessories for electronic trip units



Ekip TT testing and power supply unit

### Testing and programming

#### Ekip TT testing and power supply unit

This unit is compatible with the Ekip Dip and Ekip Touch trip units and allows a trip unit to be supplied so that the last protection device tripped can be viewed directly on the display or identified as the corresponding LEDs light up. The Ekip TT is a device that verifies that the circuit-breaker trip mechanism is functioning correctly (trip test). This device can be connected to the front test connector of any Ekip trip unit.



Ekip T&P testing kit

#### Ekip T&P testing kit

The Ekip T&P is a kit that includes different components for programming and testing the electronic protection trip units.

The kit includes:

- The Ekip T&P unit;
- The Ekip TT unit;
- Adaptors for the Emax and Tmax trip units;
- A USB cable to connect the T&P unit to the Ekip trip units;
- An installation CD for the Ekip Connect and Ekip T&P interface software.

The Ekip T&P unit is easily connected from your PC (via USB) to the trip unit (via mini USB) with the cable provided. The Ekip T&P unit can perform simple manual or automatic tests of the trip unit functions. Additionally, the Ekip T&P provides the possibility to perform more advanced function testing that allows simulations of very critical applications: real conditions of a system can be accurately represented by considering additional harmonics and shifting of phases. It also generates a test report as well as monitor maintenance schedules.



Ekip Programming module

#### Ekip Programming module

The Ekip Programming module is used for programming Ekip trip units via PC using the Ekip Connect software that can be downloaded online. The Ekip Programming module, which is connected to the PC via USB, can be useful for uploading/downloading entire sets of parameters for more circuit-breakers both for set-up and maintenance.

## Accessories for XT2-XT4 Ekip trip units

Compatible with Ekip LSI and Ekip LSIG trip units for the XT2 and XT4 sizes



Ekip Display

### Ekip Display

The Ekip Display is a unit that can be applied on the front of the solid-state trip unit and shows the current values, alarms, and protection settings.

Main features:

- **Installation:** The Ekip Display can be easily installed on the front of the Ekip LSI and Ekip LSIG electronic trip units. It is connected by means of the test connector on the front of the trip unit, and fixing is simple and reliable thanks to a specially designed mechanism. This mechanism also provides a practical way of fastening the accessories to the circuit-breaker to prevent undesired access to the dip-switches. Installation can be carried out under any condition, even with the door closed and the electronic trip unit already on and functioning.
- **Functions:** The Ekip Display has four buttons for browsing through the menus. It functions in self-supply mode starting from a current of  $I > 0.2 \times I_n$  circulating through at least one phase. Backlighting is activated in the presence of higher loads, thereby allowing better legibility of the visualized information. Rear lighting comes on in self-supply for a current of  $I > 0.4 \times I_n$  and is always on when there is an electronic trip unit auxiliary power supply.

The Ekip Display:

- shows the current, voltage, power and energy values;
- shows the settings of the protection functions in Amperes or in  $I_n$ ;
- shows the protection that has caused the trip unit to trip and the fault current (only when there is 24V external voltage or the Ekip TT unit);
- allows the trip thresholds of the trip unit to be programmed and the communication parameters to be set on the bus system.
- **Compatibility:** The Ekip Display can be fitted even when the front accessories, such as the motor or direct and transmitted rotary handles etc. are already installed. It is possible to use Ekip TT or Ekip T&P without removing the Ekip Display.



Ekip LED Meter

### Ekip LED Meter

The Ekip LED Meter can be applied to the front of the electronic trip unit and displays the current values and alarms.

Main features:

- **Installation:** The Ekip LED Meter can be easily installed on the front of Ekip LSI and Ekip LSIG electronic trip units. It is connected by means of the test connector on the front of the trip unit and fixing is simple and reliable thanks to a specially designed mechanism. This mechanism also provides a practical way of fastening the accessories to the circuit-breaker to prevent undesired access to the dip-switches. The installation can be carried out under any condition, even with the door closed and the electronic trip unit already on and functioning;
- **Functions:** The Ekip LED Meter provides an accurate indication of the value of the current circulating in the trip unit by means of a scale of LED. Their different colors allow normal operation, pre-alarm and alarm states of the circuit-breaker to be recognized at a glance. It is active in self-supply mode from a current of  $I > 0.2 \times I_n$  circulating through at least one phase or when the auxiliary power is available for the electronic trip unit;
- **Compatibility:** The Ekip LED Meter can also be fitted when front accessories, such as the motor, direct and transmitted rotary handles etc. are already installed. It is possible to use the Ekip TT or Ekip T&P without removing the Ekip LED Meter. It is not possible to use the Ekip LED Meter with a withdrawable breaker version.

## Accessories for XT2-XT4 Ekip trip units



Ekip Com

### Ekip Com

The Ekip Com allows the MOE-E motor operator to be controlled, to determine the ON/OFF/TRIP state of the circuit-breaker and to connect an electronic trip unit to a Modbus communication line. The Ekip Com is available in two versions: one version for the circuit-breakers in the fixed/plug-in version and a version complete with a connector for the fixed moving parts for circuit-breakers in the withdrawable version.

Main characteristics:

- **Installation:** The Ekip Com module is inserted in the right-hand slot of the circuit-breaker and fixing is carried out without any need for screws or tools. Connection to the trip unit is done by using a special small cable which is fitted with a cable guide. The connection towards the Modbus line is made by means of the terminal box to which a 24V DC auxiliary power supply must also be connected, which activates both the module and the protection trip unit.
- **Functions:** The Ekip Com module can acquire the state of the circuit-breaker remotely and, in combination with the MOE-E motor operator, allows the circuit-breaker to be opened and closed. If combined with a trip unit fitted with a communication function (Ekip LSI or Ekip LSIg), the Ekip Com module allows the trip unit to be connected to a Modbus network, offering the possibility of programming the protections and acquiring the measurements and alarms when it is connected to a control and/or supervision system. When it is connected to the HMI030 unit, it is possible to have this data locally on the front of the switchboard.

## Accessories for XT2-XT4 Ekip trip units



—  
HMI030 interface on the front of the switchboard

### HMI030 interface on the front of the switchboard

The HMI030 is an interface on the front of the switchboard which is only usable with protection trip units fitted with the Ekip Com.

Main features:

- **Installation:** The HMI030 can be fitted into the hole in the door using an automatic click-in method. In situations where mechanical stress is particularly intense, it can also be installed by using the special clips supplied. It must be connected directly to the Ekip LSI and Ekip LSI<sup>2</sup>G protection trip units with Ekip Com via the serial communication line. The HMI030 requires a 24V DC power supply.
- **Functions:** The HMI030 consists of a graphic display and four buttons for browsing through the menus. This accessory allows you to view:
  - the measurements taken by the trip unit to which it is connected;
  - the alarms/events of the trip unit.

Thanks to its high level of accuracy, the device is a valid substitute for conventional instruments without any additional current transformer.

- **Communication:** The HMI030 is provided with two communication lines, to be used alternatively with:
  - Modbus
  - Local Bus

Connecting the Ekip LSI and Ekip LSI<sup>2</sup>G to the Local Bus allows the Modbus line of the Ekip Com module to connect to a different communication network.

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# Energy Measurements

**5/2**      **Introduction**

**5/4**      **Class 1 accuracy**

**Network Analyzer**

**5/5**      Applications

**5/7**      The first step towards better power quality: measurement

**5/8**      Operating principles

## Introduction

The Tmax XT circuit-breakers have been designed to manage all low voltage electrical installations with maximum efficiency: from industrial plants, naval applications, traditional and renewable power generation installations to buildings, shopping centers, data centers and communication networks.

Achieving maximum efficiency of an electrical installation in order to reduce consumption and waste requires intelligent management of power supplies and energy. For this reason, the new technologies used in the Tmax XT circuit-breakers

with Ekip Touch trip units allow the productivity and reliability of any installation to be optimized, and at the same time, power consumption to be reduced while fully respecting the environment.





**Class 1 in power and energy measurements**

Before starting to take any action on electrical systems and to analyze the available data, top accuracy on measurements must be guaranteed. Thanks to the Ekip Touch trip units, the SACE Tmax XT range of circuit-breakers guarantees extremely accurate measures, in compliance with the relevant IEC 61557-2 Standard.

**Network Analyzer**

The quality of the power supply is an important factor to consider in order to preserve the loads, to avoid equipment malfunctions, and to optimize energy consumption. The power quality of a power system is never a perfect sinusoidal waveform, distortions and harmonics are always present. Several parameters that cause reductions in power quality can be monitored and controlled thanks to the Network Analyzer embedded function. In this way, the use of expensive external devices can be avoided.



## Class 1 accuracy

With the Ekip Touch trip units the embedded measurement functionalities allow the measurement of power and energy to a Class 1 degree of accuracy, as specified by the IEC 61557-12 Standard, avoiding the need of additional device saving costs, space and installation time.

With the Ekip Touch trip units, measurements of power and energy to a IEC 61557-12 Standard compliant, Class 1 level of accuracy, are guaranteed by the embedded measurement functionalities. Thus, there is no need for additional devices, with consequent advantages in terms of cost savings, space reduction and installation time optimization.

When energy needs monitoring, even a minimal percentage of errors would result in a waste of money. Accuracy is everything and depends on the design and manufacturing quality of solution used. The Tmax XT with Ekip Touch trip units guarantee 1% accuracy for power and energy monitoring.



Thanks to the extremely accurate Rogowsky coil, ABB Ekip Touch trip units are able to guarantee Class 0.5 for voltage and current measurements and Class 1 for active power and energy measurements, complying with and certified by the IEC 61557-12 Standard (see Chapter 3 for more detailed information about the accuracy and the monitored parameters of the electrical system). IEC 61557-12 can be applied to both AC and DC electrical networks up to 1000 V AC or 1500V DC.

Moreover, an upgrade of the device is always guaranteed to be quick and easy: the measurement functions not included in an installed trip unit can be downloaded directly from the Market-Place via EPiC, thus allowing new system requirements to be met with ease.

Measurement data can be displayed in several ways:

- On the embedded display on the trip unit
- On a smartphone via Bluetooth (EPiC App)
- Using the Ekip Connect software on a PC
- On an Ekip Multimeter external display
- On a cloud-platform thanks to ABB Ability™ EDCS
- In the supervision system (ex SCADA) thanks to several communication protocols.

## Network Analyzer

Thanks to the Network Analyzer function available in all Ekip Touch trip units, the quality of energy based on harmonics, micro-interruptions or voltage dips is monitored without the need for dedicated instrumentation.

Thanks to Network Analyzer, effective preventive and corrective action can be implemented through accurate analysis of faults, thereby improving the efficiency of the system.

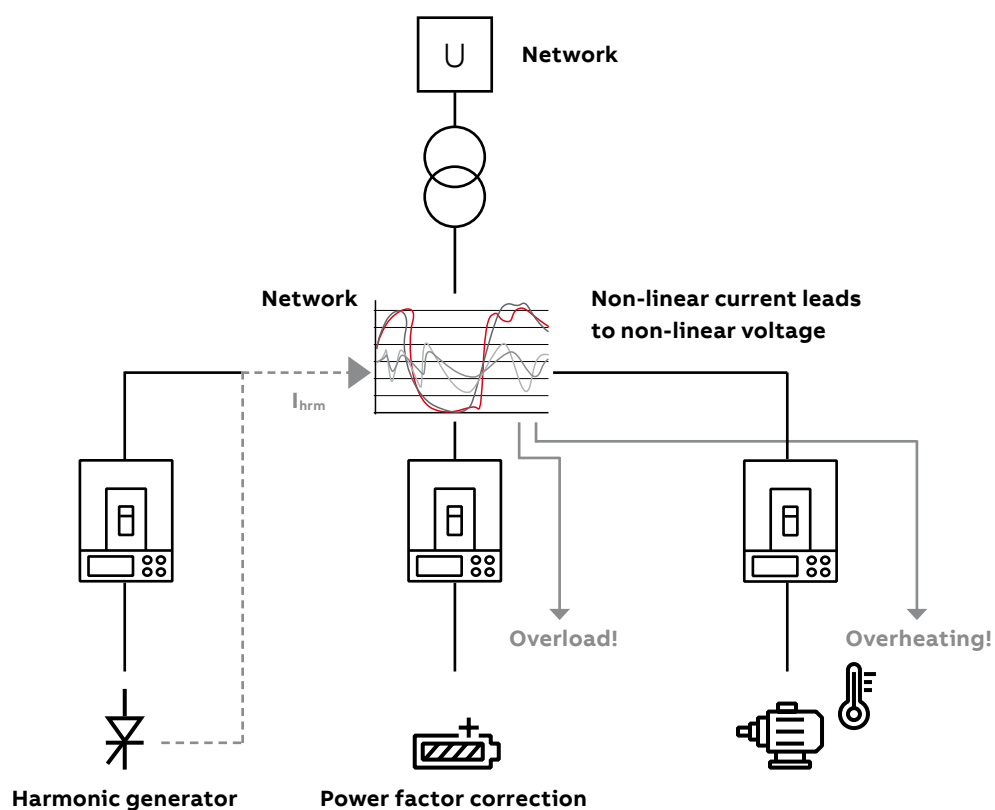
### Applications

Electrical equipment is designed for optimum operation under constant and uniform voltage level, as close as possible to the rated value. In addition, industrial equipment, working on a three phase supply, requires the three phase voltage levels to be balanced. Power quality is a description of how well a power system complies with the above ideal conditions. Power quality issues can have negative consequences on the components and on the energy efficiency of the network. Thus, power quality monitoring is becoming more important in modern power systems, and will be a key part of the smart grid of the future. In particular, power quality evaluation includes the following aspects:

- Deviations of voltage average value from the rated value
- Short decreases (sags) or increases (swells) of voltage value
- Voltage unbalance, i.e., difference in voltage values between different phases
- The presence of current and voltage harmonics.

Distortions of the voltage value (sags, swells) and/or frequency can have fatal consequences, especially for process industries, leading to possible production stoppages with consequently expensive downtime, damage to motor drives and damage to PLCs. Examples of process industries that can be badly hit by voltage instabilities include the plastics, petrochemicals, textiles, paper, semiconductor, and glass industries. Voltage sag is defined as when the value of the voltage is reduced below the rated one for a certain amount of time. Similarly, voltage swell is defined as when the voltage is increased above the rated value for a certain amount of time. RMS voltage values and frequency are two fundamental features of a voltage signal, but the “purity” of the voltage waveform is also an important point. An ideal voltage waveform should be a perfect sinusoid, but this is not something that is normally seen in the real world. Frequencies other than the fundamental are always present. These frequencies are called harmonics: a harmonic of a signal is a component frequency of the wave spectrum that is a multiple of the fundamental frequency. Harmonic content is an issue that is becoming increasingly debated: technological developments in the industrial and household field have led to the spread of electronic equipment which, due to their operating principles, absorb a non-sinusoidal current (non-linear load). Such current causes a non-sinusoidal voltage drop on the supply side of the network with the consequence that the linear loads are also supplied with a distorted voltage.

## Network Analyzer



Power electronics produce harmonic content that can affect other loads in the plant: the result can be an overheating of the asynchronous motor and an overload (that could lead to a trip of the protecting MCCB) on the power factor correction capacitors.

To get information about the harmonic content of voltage and current waveforms and to take measures if such values are high, a dedicated index has been defined. The total harmonic distortion (THD) of a signal is a measurement of the harmonic distortion present.

The first step towards better  
Power Quality: measurement

A Power Quality monitor is the most commonly used tool for detecting voltage sags and power quality issues. Measurement is the first step for checking the status of the installation and starting the root cause analysis. Power Quality measurements and related instrumentation are described in specific industrial Standards such as IEC61000-4-30 and IEEE 1250. For the first time, thanks to the Ekip Touch trip units for the Tmax XT, the power quality monitor is embedded in a low voltage molded case circuit-breaker. The Network Analyzer function complies with the prescriptions of IEC 61000-4-30 and IEEE 1250. The Network Analyzer function allows the user to set controls on the voltage in order to analyze the operation of the system: any time a control parameter exceeds a preset threshold, an alarm is generated. The accuracy of voltage measurements by the Tmax XT is excellent at 0.5%. The Tmax XT Network Analyzer complies with IEEE 1250-2011, Section 3 for the monitoring of the voltage value, unbalance and harmonic content, which is the equivalent of IEC61000-4-30 Class S for voltage values and unbalance and Class B for the harmonic content.

| Network Analyzer             |
|------------------------------|
| Hourly average voltage value |
| Short voltage interruption   |
| Short voltage spikes         |
| Slow voltage sags and swells |
| Voltage unbalance            |
| Armonic analysis             |

Referring to the voltage sag ambit, as an example, the Network Analyzer function has the ability to control three kinds of sag classes, defined by the user:

| Parameter                    | Description   |
|------------------------------|---|
| Sag Threshold (First Class)  | This defines the first alarm threshold. It is expressed as % Un.  |
| Sag Times (First Class)      | In the event of dropping under the first alarm threshold, this defines the time beyond which the alarm counter is increased.  |
| Sag Threshold (Second Class) | This defines the second alarm threshold. It is expressed as % Un.   |
| Sag Times (Second Class)     | In the event of dropping under the second alarm threshold, this defines the time beyond which the alarm counter is increased. |
| Sag Threshold (Third Class)  | This defines the third alarm threshold. It is expressed as % Un.  |
| Sag Times (Third Class)      | In the event of dropping under the third alarm threshold, this defines the time beyond which the alarm counter is increased.  |

Two different types of counters for each power quality monitoring function are made available directly on the trip unit touch screen: one is a cumulative counter, which stores all the alarms (for example, all the voltage sags) from the beginning, and one is a 24h counter, that shows the alarms in the last 24 hours.

With the optional communication module (Modbus, Profibus, Profinet, etc.) eight counters for each power quality monitoring function are available: one is the cumulative and the other seven are the daily counters of the last seven days of activity.

# Network Analyzer

## Operating Principle

The Network Analyzer function performs continuous monitoring of the quality of energy, and shows all results through a display or communication module. In particular:

- **Hourly average voltage value:** in accordance with international Standards, this must remain within 10% of the rated value, but different limits can be defined according to the needs of the installation. The positive sequence voltage is compared with the limits. If the limits are exceeded, the Ekip Hi-Touch generates a signaling event. The number of these events is stored in a suitable counter. The counter values are available for each of last 7 days, as well as the total. The measures available are the positive and negative sequence voltages and positive and negative sequence currents of the last interval monitored. The time of the calculation of the average values can be set between 5 minutes and 2 hours.
- **Interruptions / short dips in voltage:** if the voltage remains below a threshold for more than 40ms, the Ekip Hi-Touch generates an event that is counted in a dedicated log. The voltage is monitored on all lines.
- **Short voltage spikes** (voltage transients, spikes): if the voltage exceeds a threshold for 40ms, set for a pre-determined time, the Ekip Hi-Touch generates an event that is counted.
- **Slow voltage sags and swells:** when the voltage strays outside a range of acceptable limit values for a time greater than the one set, the Ekip Hi-Touch generates an event that is counted. Three values can be configured for voltage sags and two for voltage swells, each associated with a time limit: this enables verification of whether the voltage remains within a curve of values that are acceptable by equipment such as computers. The voltage is monitored on all lines.
- **Voltage unbalances:** if the voltage values are not equal or the phase displacements between them are not exactly 120°, an unbalance occurs, which is manifested with a negative sequence voltage value. If this limit exceeds the threshold value set, an event is stored which is counted.
- **Harmonic analysis:** the harmonic content of voltages and currents, measured to the 50th harmonic, as well as the value of the total harmonic distortion (THD), are available in real time on the display or through the communication modules. The Ekip Hi-Touch also generates an alarm if the THD value or a magnitude of at least one of the harmonics exceeds the values set. The voltage and current values are monitored on all phases.

All information can be displayed directly on the screen (for the XT5, XT7, XT7 M) or on a smartphone, a PC or in a network system with any of the communication modules. This is an embedded function of Ekip Touch trip units and analyzes important parameters of the distribution network including:

- The average Voltage value
- Short Voltage interruptions and spikes
- Slow Voltage sags and swells
- Voltage unbalance
- Harmonic analysis

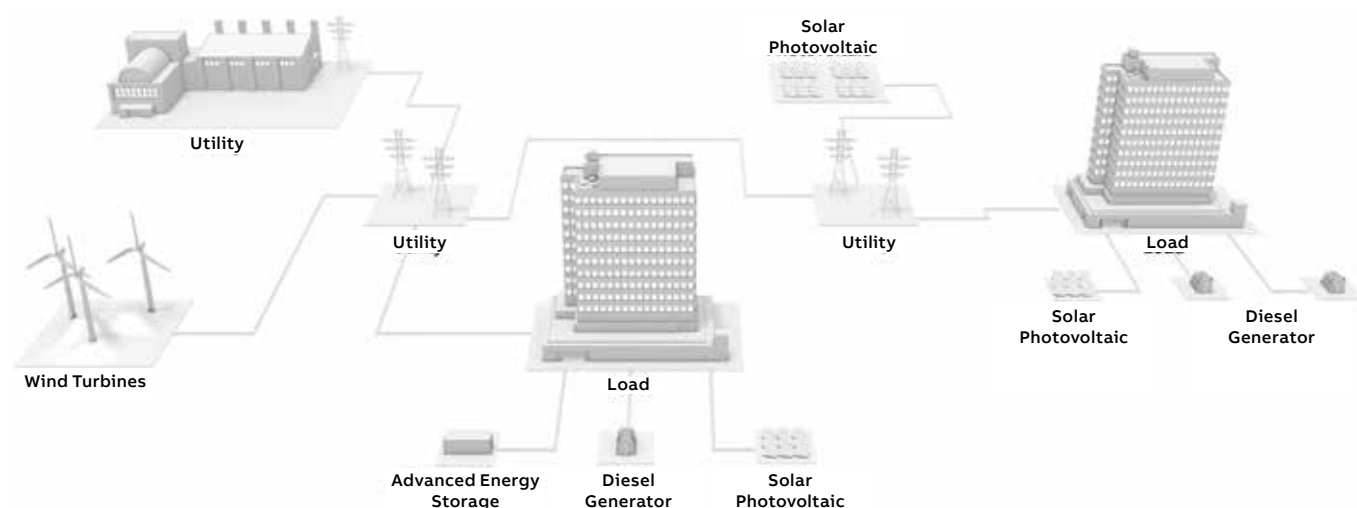
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# Solutions

|             |   |
|-------------|---|
| <b>6/2</b>  | <b>Introduction</b>                                     |
| <b>6/4</b>  | <b>Power Controller</b>                                 |
| <b>6/7</b>  | <b>Interface Protection System and Interface Device</b> |
| <b>6/9</b>  | <b>Adaptive protections</b>                             |
| <b>6/11</b> | <b>Load Shedding</b>                                    |
| <b>6/13</b> | <b>ATS function</b>                                     |
| <b>6/15</b> | <b>Synchro Reclosing</b>                                |

The use of renewables has been growing over the last 10 years reducing the polluting emission for a greener world. Due to environmental changes, people have started to think about ecology and sustainability, increasing their awareness of energy self-consumption and increasingly concerned about energy efficiency.

The Tmax XT is the first smart moulded case circuit-breaker enabling all-in-one solutions that combine advanced protection, programmable logic, full connectivity, easy integration and comprehensive energy management in a single revolutionary device or at the local generation side. Installed downstream the MV/LV transformer, Tmax XT works like a certified interface protection system in order to check the main grid conditions and disconnect the user's plant whenever the grid voltage and frequency are out of the ranges prescribed by the connection local standard. The Tmax XT and its adaptive protections recognize the network changes and automatically set new thresholds to guarantee protection and coordination in on-grid and off-grid conditions.



The Tmax XT is able to integrate programmable logic for protection features and Automatic Transfer Switching (ATS) in one device. This unique integrated solution avoids the usage of other external control units, guaranteeing a minimal switchgear footprint and saving commissioning time.

A strong reduction in the connection wiring simplifies the installation and commissioning phase. The load shedding embedded algorithm is able to manage the power system for comprehensive microgrid energy management.

Before the transfer from the main grid to the local line, selected loads are shed to support power balance. Using a frequency slope, the Tmax XT disconnects loads only in cases of emergency unbalanced conditions.

As the main grid is stable, thanks to the **Synchro Reclosing** logic, it is possible to synchronize the plant voltage and frequency to reconnect it. In grid-connected operations, the Tmax XT manages the **Power Controller** algorithm to shave peaks and shift loads in order to optimize system performance and productivity.

The advanced features of the Tmax XT are easily customized thanks to commissioning software tools which do not require high level engineering competencies. Ready to use templates enable the download of all the logic directly in the trip unit. The solutions are plug & play, increasing modularization and standardization for design and installation.

The advanced functionalities which have been developed and integrated in the Tmax XT are described in the following compatibility table.

|                           | Interface Protection | Load Shedding | Automatic Transfer Switch | Synchro Reclosing | Power Controller |
|---------------------------|----------------------|---------------|---------------------------|-------------------|------------------|
| Interface Protection      | ●                    | ●             |                           |                   | ●                |
| Load Shedding             | ●                    |               | ●                         | ●                 | ●                |
| Automatic Transfer Switch |                      | ●             | ●                         | ●                 | ●                |
| Synchro Reclosing         |                      | ●             | ●                         | ●                 | ●                |
| Power Controller          | ●                    | ●             | ●                         | ●                 | ●                |



## Power Controller

The Tmax XT is able to control loads and generators to ensure bill savings and enable demand response according to power management strategies.

### Purpose

Thanks to the Power Controller software, Tmax XT manages the power to shave the peaks and shift the loads. In this way, it is possible to cut electricity bills, increase energy efficiency by up to 20% and be ready for demand response programs.

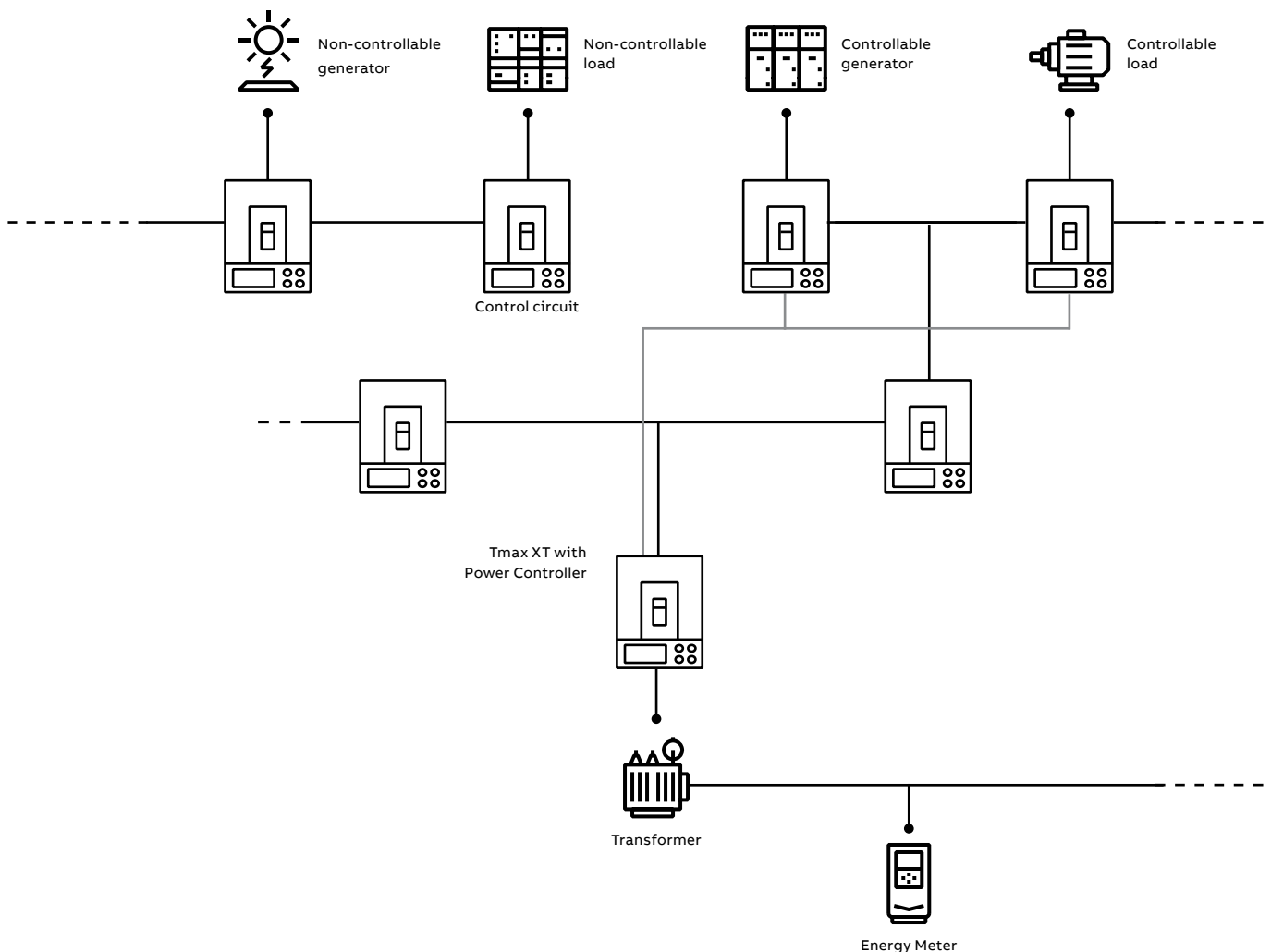
The Power Controller function is based on a patented calculation algorithm that allows a load list to be controlled via the remote command of relevant switching devices or control circuits according to a defined priority. The user (locally), or the load aggregator / utility (remotely) - define the load disconnection priority based on their own requirements and types of loads.

The algorithm is designed for the anticipated average power absorption which can be set by the user over a determined time interval.

Whenever this value exceeds the fixed power, the Power Controller function intervenes to bring it back within the limits.

This system can be realized with a single Tmax XT Control or Tmax XT Control+ Standard equipped with this function and installed as the low voltage plant controller.

Furthermore, the control unit, not only manages passive loads, but it can also manage a reserve generator.



The Ekip Power Controller can be used with all Ekip Touch trip units of the Tmax XT series and effectively helps to improve energy efficiency by managing the entire low-voltage electrical system. It is fully able to adapt the demand for power according to the availability of the energy source, the time of day and the costs indicated in the current pricing plan.

In this way the Ekip Power Controller is able to maintain power consumption within the limits defined, thereby optimizing the costs of managing the installation and reducing emissions.

Commands sent to downstream devices can be performed in two different ways:

- through the wired solution, by commanding the shunt opening/closing releases or acting on the motor operators of the loads to be managed;
- through a dedicated communication system.

The ability to control the loads according to a list of priorities already defined provides significant advantages from both the economic as well as technical points of view:

- **Economic:** energy consumption optimization is focused on the control of the costs linked in particular to penalties that are levied when the contractual power is exceeded or when the contractual power is increased by the Distribution System Operator (DSO) as a consequence of exceeding the limit repeatedly.
- **Technical:** the solution provides the ability to absorb power over the contractual limits for shorter periods and also the management and the control of the power consumption over long periods of time. Thus, it is possible to reduce the likelihood of malfunctioning due to overloads, or worse, complete inefficiency of the entire plant due to tripping of the LV main switching device.

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The exclusive Power Controller function available on the new Tmax XT units monitors the power, keeping it below the limits set by the user. As a result of this more effective use, the peak of power consumed can be limited allowing savings on electricity bills.

The Power Controller, patented by ABB, disconnects non-priority utilities, such as electric car charging stations, lighting or refrigeration units, during the times when consumption limits need to be respected, and connects them again as soon as it is appropriate. When required, it automatically activates auxiliary power supplies such as generator sets. No other supervision and control system is required: it is sufficient to set the required load limit on the Tmax XT, which can control any switching device located downstream, even if it is not equipped with a measurement function.

#### **Application examples**

Electricity bill savings, demand response, and avoiding power overloads are the typical scenarios where the Power Controller is used.

The Power Controller is commonly used in office buildings, shopping malls, hotels, campuses, waste and water industries or any plant that works like a low voltage microgrid.

# Power Controller

## Benefits

Thanks to the Tmax XT with embedded the Power Controller, the following benefits are guaranteed:

- **Reduction of energy costs with minimum impact**

The loads are disconnected from the power supply for short periods, in the minimum number necessary and in a fixed order of priority, enabling power consumption peaks to be limited. This allows the contract drawn up with the energy provider to be renegotiated, reducing the power allocated, with a consequent reduction in total energy costs.

- **Power limited only when necessary**

The Power Controller function manages up to four different time bands. It is therefore possible to respect a particular power limit according to whether it is during the day (peak) or night (off peak). In this way, consumption during the day when rates are at their highest can be limited.

- **Easy of use**

The Power Controller function allows the installation to be managed efficiently with a simple architecture. Thanks to a patented design, it is sufficient to measure the total power of the installation without having to measure the power consumed by each load. Installation costs and times are thereby reduced to a minimum.

The Power Controller function does not require the writing, implementation or testing of complicated programmes for PLC or computer because the logic has already been implemented in the protection unit and is ready to use. It is sufficient to set the installation parameters from a smartphone or directly from the switching device display.

Thanks to the integrated communication modules, the Power Controller can receive the maximum absorbable power directly from the medium voltage control system, determining consumption for the next 15 minutes. According to the information received, the Ekip Power Controller manages the switching off of non-priority loads or the switching on of reserve generators. The software gives maximum priority to non-programmable preferred energy sources, such as wind and solar, and they are therefore considered uninterruptable. In the event that the production of internal power to the controlled network is reduced, due, for example, to decreased production of solar power, the Power Controller will disconnect the necessary loads to respect the set consumption limit. This benefit is used, for example, in installations with a system of cogeneration. Indeed, the Power Controller controls the total consumption drawn from the electrical network, disconnecting non-priority loads when generation is reduced and reconnecting them when generator power is sufficient not to exceed limits. There are multiple advantages of the system including: reduction in energy costs, maximum use of local generation and greater overall energy efficiency.

# Interface Protection System

The Tmax XT embeds both the functions of the Interface Protection System and Interface Device in a single device.

## Purpose

The connection of active users to a power utility is always subject to Standard compliance. The Interface Protection System is a relay with dedicated protections that are able to satisfy these requirements. In particular, the generating units installed in the user's plant must be disconnected from the grid whenever the voltage and frequency values of the grid itself are out of the ranges prescribed by the Standards. This disconnection is usually carried out by means of an interface device that trips after receiving an opening command provided by an external interface protection system.

ABB has developed an integrated solution which embeds both the functions of ABB's Interface Protection System and Interface Device in a single device. This advanced feature is possible thanks to the integration of the several interface protections into the Ekip Hi-Touch trip unit installed on board the Tmax XT. Today the Tmax XT complies with the CEI 0-16 Standard, which is the most important Standard concerning the connection of active users. A lot of local Standards use the CEI 0-16 as a reference.

## Application examples

ABB has been able to integrate the following functions in a single device to be used in the scenarios described below. Thanks to these embedded functions, the number of devices to be installed is reduced, with consequent space saving inside the switchboard. The Tmax XT with its embedded Interface Protection System have been tested and certified in compliance with the CEI 0-16 Standard and are suitable for the following scenarios.

### The Tmax XT as the main protection unit for a microgrid

In such a scenario, the Tmax XT with its embedded functions can act as an Interface Protection System (IPS). In case of IPS tripping, the microgrid's main downstream Tmax XT unit remains active thanks to both the local generation and the load shedding feature also embedded in the main unit.

### The Tmax XT as local generation protection unit

In this scenario, there are non-operating loads under islanding conditions, so, when there is a utility outage, the Tmax XT detects that the voltage and frequency values are out of the prescribed range. According to the CEI 0-16 Standard, local generation must be disconnected from the utility, so the Tmax XT opens, acting as interface device, thanks to the embedded IPS. In this condition, loads do not operate as there is no voltage on the secondary of the MV/LV transformer and no local generation connected.

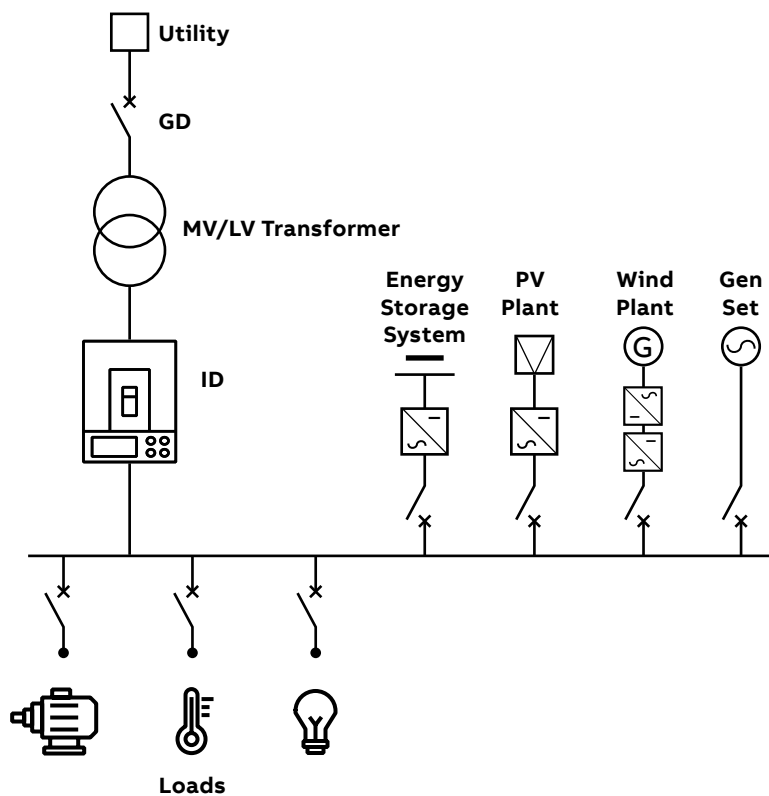
## Benefits

Thanks to the Tmax XT with the embedded Interface Protection System, the following benefits are guaranteed:

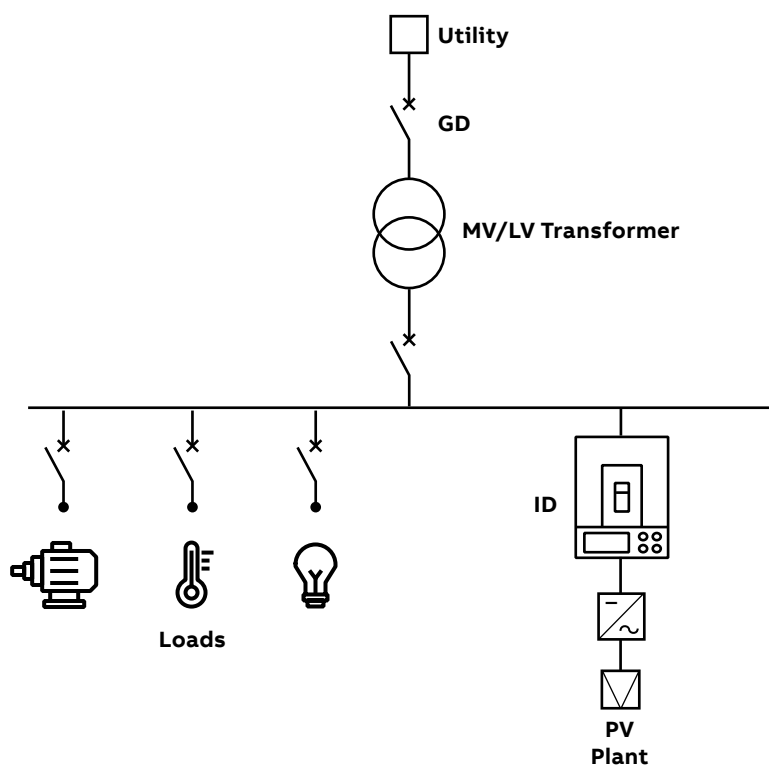
- The Tmax XT performs interface protection with any switching device, also ensuring reclosing operations.
- If the Tmax XT is installed on the generator feeder, the unit will be able to perform the dual function of an interface protection system and generator device thanks to the integrated Interface Protection System in the Ekip G Hi-Touch trip unit.
- Ease of use, thanks to the Ekip Connect software which allows an immediate and intuitive commissioning phase.

## Interface Protection System

—  
The Tmax XT as the  
main protection unit  
for a microgrid



—  
The Tmax XT as  
local generation  
protection unit



# Adaptive Protections

The Tmax XT adds a dual setting capability to the switching device to ensure continuous coordination

## Purpose

User's plants can work as an LV Microgrid thanks to the energy produced by renewable and local power sources, in particular as a consequence of the lack of a utility power supply, e.g. due to a fault on the MV voltage side. In order to still guarantee a high level of selectivity and continuity of service, it is important to take into account the variation of the short-circuit power when moving from on-grid to off-grid operation.

Indeed, during grid connected conditions the fault current on a microgrid feeder is also supplied by the utility, thus resulting higher than the one supplied only by local generation during islanded conditions. As a result, it is desirable that several protection thresholds of the units can be automatically changed during the transition to islanding conditions.

## Application example

A plant is connected to the MV utility by means of an MV/LV transformer. If the utility shuts down, the plant will become a microgrid supplied by a local generator G, which will feed priority loads by using the load shedding feature of the Tmax XT. In a grid-connected condition, the generator G is disconnected. With reference to Fig. 1:

- Circuit-breaker A is closed
- Circuit-breaker B is open
- Circuit-breakers at position C are closed. The protection of the circuit-breaker at C that supplies the feeders at D are adjusted using "Set A" of the Tmax XT unit.
- Circuit-breakers at position D are closed
- Circuit-breaker E is closed
- Switch-disconnector QS1 is closed
- All loads are supplied.

The circuit-breakers at position C are selectively coordinated with the upstream main circuit-breaker A, supplied by the utility, and the downstream load circuit-breakers at position D (see Fig. 2 at the following page).

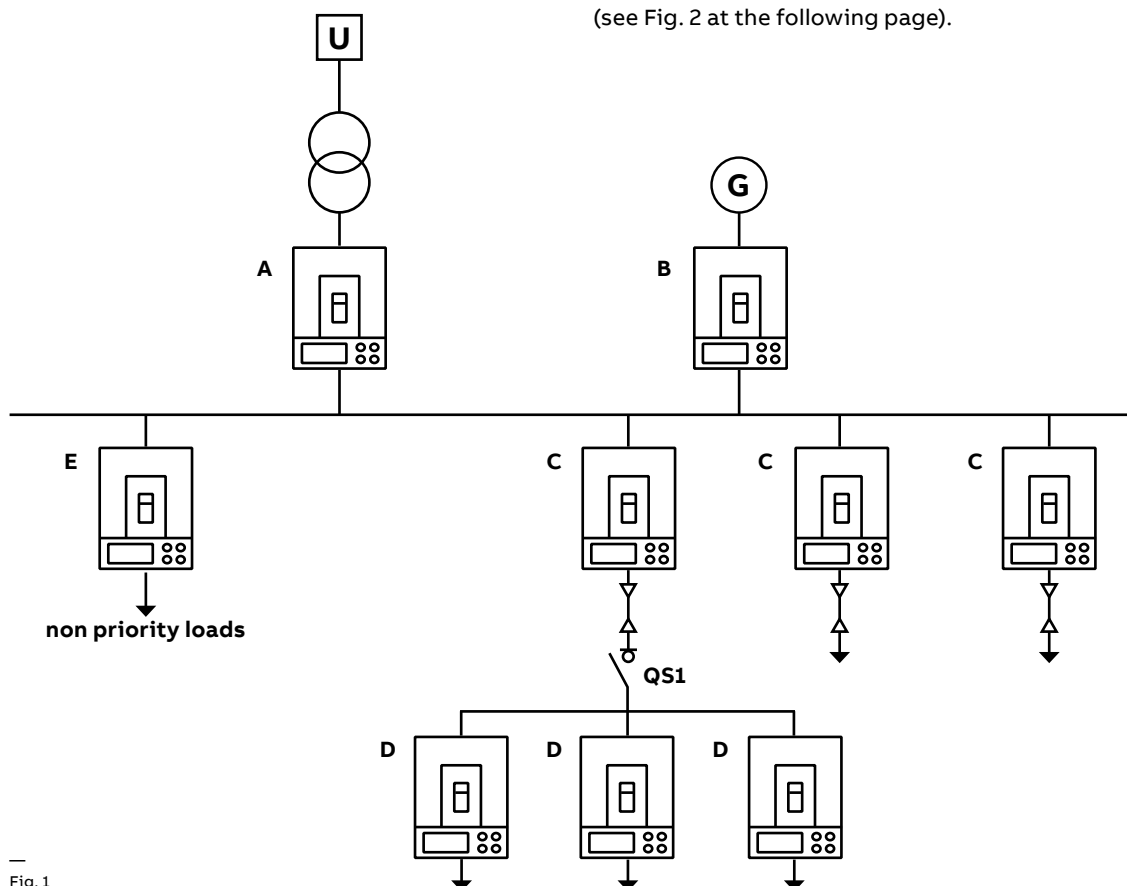


Fig. 1

# Adaptive Protections

With the adaptive protections, when there is an utility outage, circuit-breaker A opens and B closes in order to achieve an islanded condition. In order to still guarantee selectivity, another set of protection settings is required. Adding Tmax XT adaptive protections to the circuit-breaker C1 ensure this behaviour. The second protection setting is optimized for the characteristics of the local generator ensuring the incoming supply. Additionally, selective coordination with the load side switching devices is also guaranteed.

With reference to Fig. 1:

- Circuit-breaker A is open
- Circuit-breaker B is closed
- Circuit-breakers at position C are closed and the protection thresholds move automatically to “Set B”
- Circuit-breakers at position D are closed
- Circuit-breaker E is open
- Switch-disconnector QS1 is closed
- Non-priority loads can be disconnected using another functionality of the Tmax XT units (see next paragraph).

Fig. 3 shows how it is possible to switch to a set of parameters which guarantees selective coordination between circuit-breakers C and B by means of the Adaptive Protection function embedded in the trip unit of the C circuit-breakers.

## Benefits

Thanks to the Tmax XT it is possible to have two sets of settings implemented in a single device. As a result, the following benefits are guaranteed:

- Overcurrent protection and selectivity 100% guaranteed both in grid-connected and islanded conditions.
- Service continuity is guaranteed by just adding a single unit to the switchboard in every plant condition.
- Ease of use, thanks to the Ekip Connect software which allows an immediate and intuitive commissioning phase.

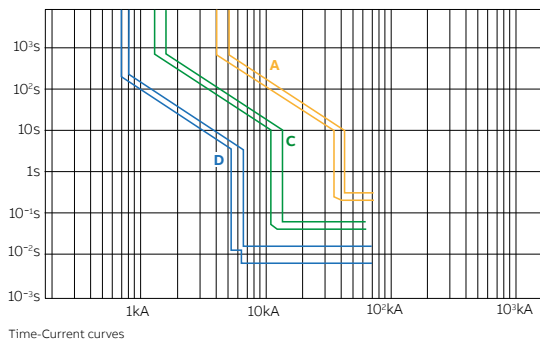


Fig. 2 - Protection thresholds during on-grid operation

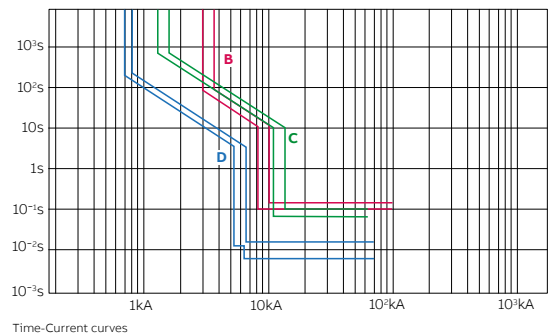


Fig. 3 - Protection thresholds during islanded operation

# Load Shedding

The Tmax XT has many load shedding algorithms to avoid power unbalance in low voltage plants and to reduce stress for all the components.

## Purpose

The Tmax XT embeds patented functions based on load shedding which reduce the microgrid stress in all situations. Typically, it is the main protection relay of the low voltage microgrid located at the interface point with the medium voltage grid, that is able to control the plant in all circumstances.

## A microgrid under islanding conditions

After the the Tmax XT circuit-breaker opens, due to the interface protection system intervention or external command, the microgrid should seamlessly transition from an on-grid to off-grid state. When it operates in a stand-alone capacity, the power absorption from the main grid ceases, so that the microgrid loads remains supplied by local generation, such as from a diesel GenSet or an energy storage system. This microgrid generation can be always active or started up by Automatic Transfer Switching (ATS) logic after the disconnection from the main grid, depending on the plant configuration. During the islanding transition, it is very important to avoid a frequency drop, otherwise the generation protections could trip and jeopardize the microgrid stability with a consequently long downtime. The Tmax XT employs current and voltage measurements, and integrates two different fast load shedding types of logic to reduce this blackout risk. This protects the microgrid during intentional or unintentional islanding operations:

- The Basic Load Shedding algorithm is a simple form of logic able to recognize the microgrid disconnection event and shed a group of not priority loads thus ensuring a fast time response and power balance.
- The Adaptive Load Shedding algorithm is an advanced algorithm available with the Tmax XT as an enhancement of the basic version. The intelligent software embedded in the unit sheds the non-priority loads very quickly according to the microgrid power consumption and frequency measurements. Moreover, the software has a dedicated configuration for backup generation related to Automatic Transfer Switching (ATS) and the software itself is even able to estimate the energy produced by a solar plant based on the plant geography settings.

## A microgrid in grid-connected conditions

Under normal circumstances, the microgrid is generally connected to the utility in order to inject/adsorb surplus or shortfalls of energy. In this situation, with the Tmax XT as the main circuit-breaker installed immediately downstream of the MV/LV transformer in a closed status, power overload should be avoided so as not to excessively stress the plant elements. In order to do this, the circuit-breaker embeds a patented load shedding algorithm:

- The Predictive Load Shedding algorithm is a slow disconnection of loads based on the limit of the average power flow towards the microgrid according to the transformer size designed for the power peak profile.

All three Load Shedding versions are available on the Tmax XT platform for both microgrid situations, sharing some information about the loads under control in the plant.

## Application examples

- **Grid-connected plants with running GenSets**  
These contribute to self-consumption together with potential renewable sources and support the load power supply in emergency conditions. This is the case for hybrid photovoltaic diesel remote communities connected to weak distribution grids where there are a lot of daily faults, or facilities located in geographical areas where there are frequent environmental events, for example hurricanes or earthquakes.
- **Grid-connected plants with back-up GenSets**  
These are started up after main generator transfer switching logics and require high reliability. For example, hospitals, banks or data centers.

## Benefits

Thanks to Tmax XT with the embedded Load Shedding innovations, the following benefits are guaranteed:

### Service continuity

- When a plant remains disconnected from the main grid, even if local generation is present, there is a significant stress that may mean the generators fail with a consequent blackout. Load Shedding logic embedded in the Tmax XT reduces the frequency drop that usually makes the local generation protection trip, maintaining a live plant.



# Load Shedding

## Space saving

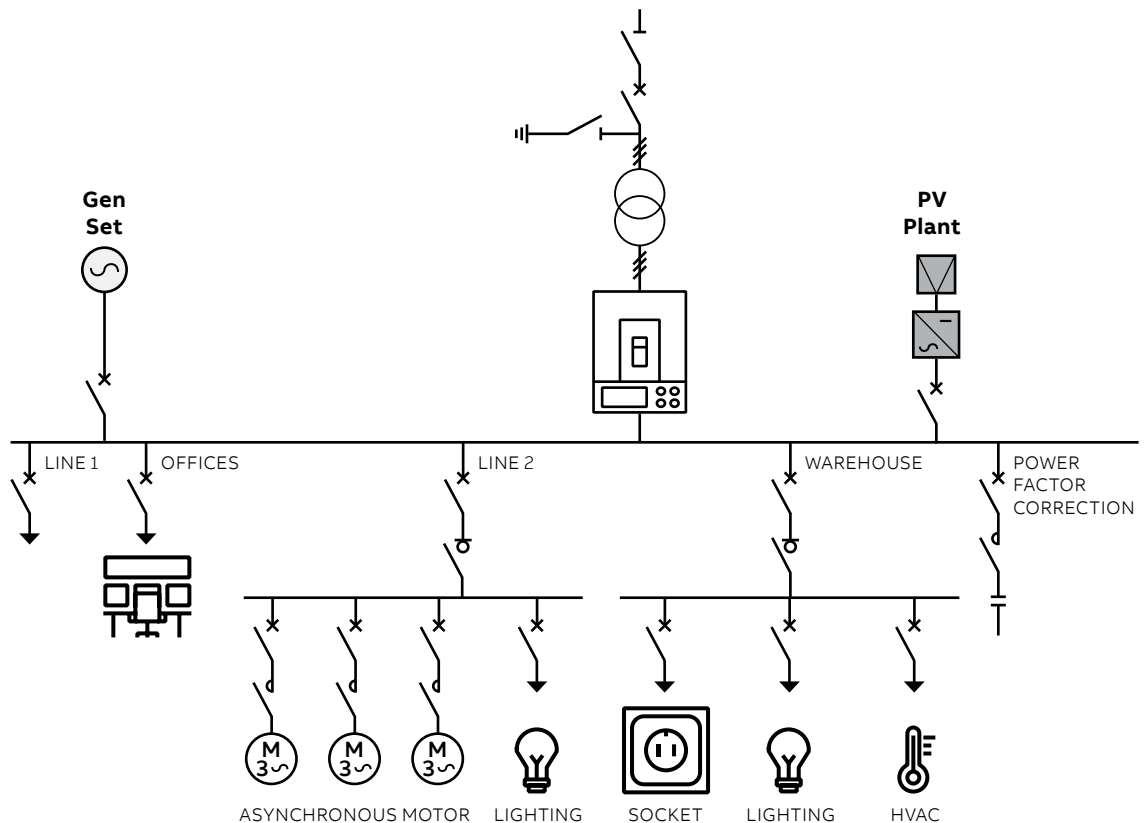
- No other programmable logic controllers (PLCs) are needed as the Tmax XT has embedded intelligence for the load shedding logics, taking advantage of the current and voltage sensors for electrical parameter measurements.
- In addition, static converters for low voltage photovoltaic production typically have anti-islanding protection: this implies another power deficit to be added to the main grid contribution during the microgrid islanding. The Tmax XT estimates solar production without additional sensors.
- The Load Shedding algorithm is suitable with ATS architectures like Main-Bus Tie-Gen used to distinguish priority and non-priority loads. Where feasible, a BusTie switching device is no longer required and this means:
  - Significant space and material savings of up to 50% in the power distribution switchgear for panel builders.

- The Load Shedding algorithm is self-tuned with specific power unbalance identification and dynamically chooses the controllable loads to be shed, reducing constraints for consultants during plant design.
- The ATS unit only manages two sources, without interlock, logic programming or wiring connections for the third circuit-breaker with less time required for installation.

## Ease of use

Load shedding logic is generally set using top engineering skills and customization efforts with devices as programmable logic controllers. The Tmax XT guarantees easy installation thanks to predefined templates and the user-friendly graphic interface in the software commissioning tool.

Typical Load Shedding application



# Automatic Transfer Switch

The Tmax XT is ready for transfer switching applications reducing time for logic programming and commissioning.

## The ATS solution

ABB Automatic Transfer Switch system (ATS) takes advantage of the new capabilities provided by the new Ekip Connect 3 Software with intelligent digital units such as the Tmax XT to deliver versatile and reliable solutions.

## Application example

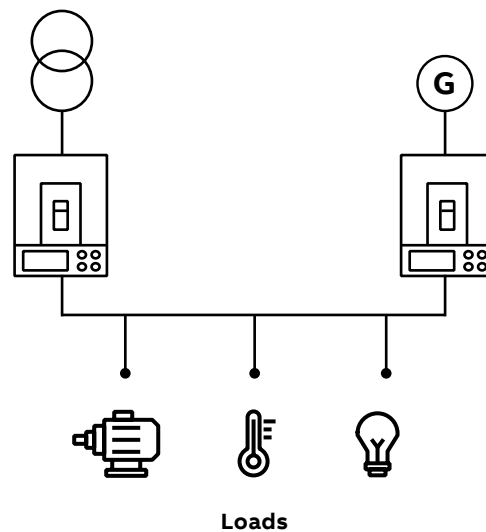
Automatic transfer switch systems are common in all applications where service continuity is essential and where there are multi source supplies.

The main applications are:

- Power supplies of UPS groups
- Oil & Gas
- Operating theatres and primary hospital services
- Emergency power supplies for civil buildings, hotels and airports
- Data banks and telecommunication systems
- Power supply of industrial line for continuous processes.

An ATS can be used also whenever a portion of a grid with local generation, known as a microgrid, can be disconnected from the main grid.

ATS application example



## Automatic Transfer Switch

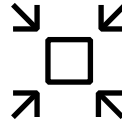
The ATS is a high-performing energy automation system, easy to install and program.



### Benefits

#### Ready-to-go programming

Estimated time and cost savings on the ATS engineering on a low voltage project: 95%.



### Tmax XT compactness

Space saving on the power switchboard: up to 30%.



### Simplify the connections

Estimated time and cost savings on cabling and commissioning of the power switchboard: 50%.



### Top rate reliability

With watchdog functions and fewer installed components.

# Synchro Reclosing

The Tmax XT is able to synchronize voltage waveforms from different power sources.

## Purpose

Thanks to its advanced electronics, the Tmax XT is a smart unit which is able to island the microgrid from disturbances such as in the presence of faults or power quality events and reconnect it to the distribution network once perfect conditions are guaranteed.

This feature is the Synchro Reclosing function. This consists of synchronization support of the microgrid reconnection operation or generator parallel procedures as described by ANSI protection Code 25A, with additional automatic reclosing capabilities based on synchronism status detection.

Using the Ekip Synchrocheck cartridge module, the Tmax XT monitors the voltage amplitude, frequency and phase displacement and implements simple logic to adapt the microgrid voltage and frequency to the main grid. This regulation is based on up and down signals sent to the local generator controllers and is implemented via the Ekip Signalling contacts. The circuit-breaker automatically recloses when it understands that the synchronism has been achieved using the Ekip Synchrocheck and the integrated closing coil.

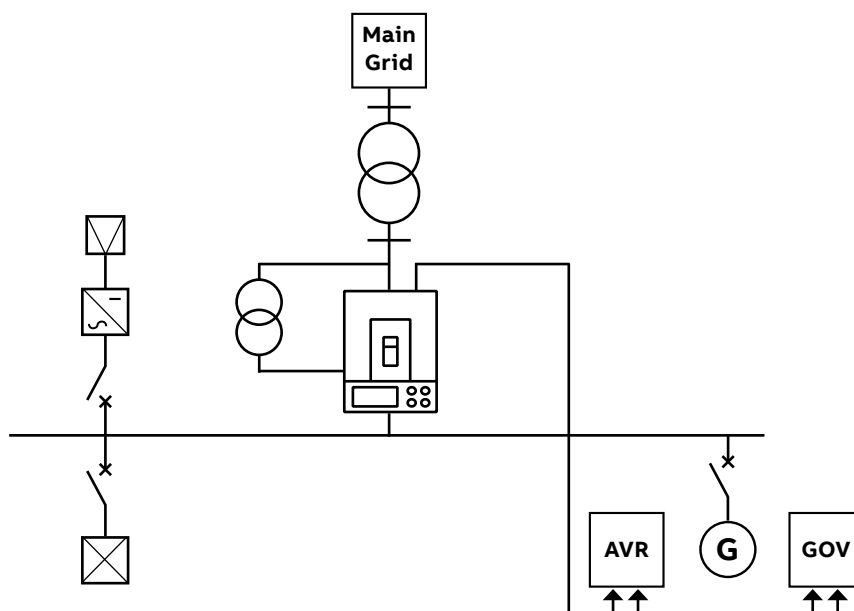
Sometimes this operation can be very critical because the current following during the transient of the reconnection must not reach values that can potentially cause the microgrid shut down. With the aim of avoiding complex analysis and customizations, the Ekip Connect 3.0 commissioning tool completes the Synchro Reclosing functionality and recommends the appropriate settings according to the plant configuration.

## Application examples

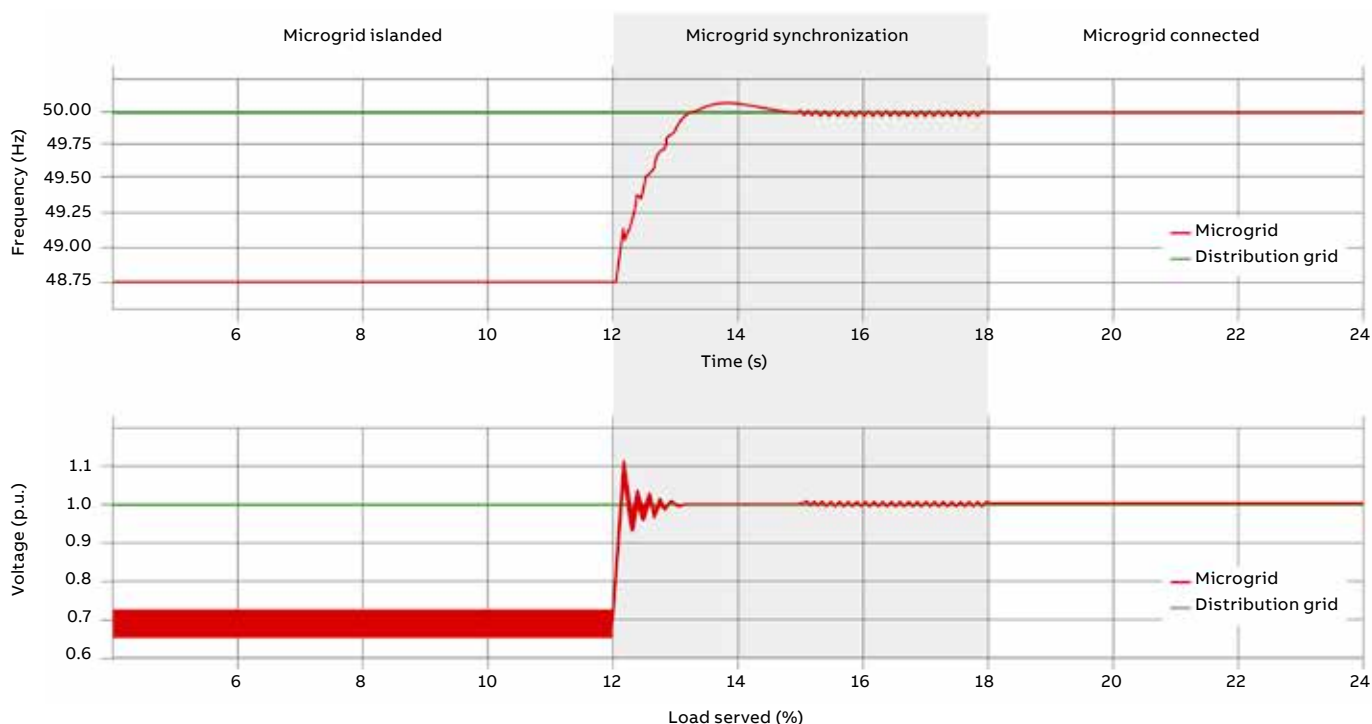
The Synchro Reclosing function is useful in the following plant-engineering situations:

- During a reconnection of the microgrid to the main grid, speeding up a parallel procedure between two systems with different steady states. This scenario comes after an islanding microgrid operation.
- When there is a closed transition of an automatic transfer switch, the main grid should be connected to the same busbar with backup microgrid generation in order to guarantee continuous load operation, with or without a bus-tie switching device.
- In addition to microgrid cases, it is possible to adopt this solution also for single GenSet parallel operations.

Synchro Reclosing  
application example



# Synchro Reclosing



## Benefits

Thanks to the Tmax XT with its embedded Synchro Reclosing function, the following benefits are guaranteed:

### Space saving

- Components reduction with no external synchronizer and less voltage transformers required compared to traditional approaches.
- Increased reliability and time saving during the installation with less cabling and related installation complexity.

## Ease of use

- The logic is embedded in the trip unit so there is no need for programming or engineering skills.
- Simplified configuration with Ekip Connect software offers predefined configuration templates with suggested values and a clear user interface for customization.

# Accessories

|      |  |
|------|--|
|      | <b>Execution and installation</b>                              |
| 7/2  | Fixed, plug-in and withdrawable version                        |
| 7/4  | Conversion kits  |
| 7/6  | Connectors for electrical accessories                          |
| 7/7  | Bracket for fixing on DIN-rail                                 |
| 7/7  | Motorizable version  |
|      | <b>Power connection</b>  |
| 7/8  | Connection terminals   |
|      | <b>Signaling</b>   |
| 7/17 | Auxiliary contacts - AUX                                       |
| 7/24 | Auxiliary Position Contacts - AUP                              |
| 7/26 | Early Auxiliary Contacts - AUE                                 |
| 7/27 | Ready to close signaling contacts - RTC                        |
| 7/27 | Contact signaling loaded springs - S33 M/2                     |
| 7/27 | Mechanical signaling of tripping the protection nit - TU Reset |
|      | <b>Operating mechanism</b>                                     |
| 7/28 | Rotary handle operating mechanism                              |
| 7/29 | Telescopic Rod - RHE_ST  |
| 7/30 | Front for the lever operating mechanism                        |
| 7/30 | Toggle extension   |
|      | <b>Remote control</b>  |
| 7/31 | Service releases   |
| 7/36 | Resetting from remote - YR                                     |
| 7/36 | Opening and closing release test unit - YO/YC Test Unit        |
| 7/37 | Electronic time-delay device for undervoltage release - UVD    |
| 7/37 | Motor Operators  |
| 7/37 | Direct action motor operator - MOD                             |
| 7/39 | Stored energy motor operators - MOE and MOE-E (XT2-XT4)        |
| 7/40 | Stored energy motor operators - MOE and MOE-E (XT5-XT6)        |
| 7/42 | Motor - M  |
|      | <b>Safety and protection</b>                                   |
| 7/43 | Terminal covers  |
| 7/43 | Phase separators   |
| 7/43 | Sealable screws for terminal covers                            |
| 7/44 | Padlocks and key locks   |
| 7/47 | IP Protection Kit  |
| 7/47 | IP54 Protection for transmitted rotary handle (RHE)            |
| 7/47 | IP54 Protection flange for direct rotary handle (RHD)          |
| 7/47 | IP54 Protection flange for MOE and XT7 M                       |
| 7/48 | Protection device for opening and closing pushbuttons - PBC    |
| 7/48 | Mechanical operation counter - MOC                             |
| 7/48 | Flanges  |
|      | <b>Interlocks and switching devices</b>                        |
| 7/49 | Rear mechanical interlock                                      |
| 7/50 | Cables interlocks  |
| 7/51 | Automatic network-generator transfer unit ATS021-ATS022        |
|      | <b>Residual current protection</b>                             |
| 7/53 | Residual current release                                       |
| 7/63 | <b>Compatibility of accessories</b>                            |

# Execution and installation

## Fixed, plug-in and withdrawable version

SACE Tmax XT circuit-breakers are available in the following versions:



Fixed circuit-breaker



Plug-in circuit-breaker



Withdrawable circuit-breaker

- **FIXED**

Fixed circuit-breakers consist of a current-interrupting part connected to the trip unit, to be installed on the back plate of the cubicle or on a DIN-rail;

- **PLUG-IN**

Plug-in circuit-breakers consist of a fixed part that must be installed on the back plate of the cubicle, and of a moving part, obtained from the fixed circuit-breaker plus the relative kit that converts it from the fixed version into the moving part of the plug-in version;

- **WITHDRAWABLE**

Withdrawable circuit-breakers consist of a fixed part that must be installed on the back plate of the cubicle equipped with side runners to allow the moving part to be easily racked -in and -out. Such a solution is obtained from the fixed circuit-breaker plus the relative kit that converts it from the fixed version to a withdrawable moving part. To obtain the withdrawable version, a front accessory to be applied to the front of the circuit-breaker must be ordered so as to maintain the IP40 degree of protection over the entire disconnection run of the circuit-breaker (except for the XT7). This mandatory accessory is a standard supply for circuit-breakers fitted with accessories in the factory.

If the plug-in circuit-breaker is fitted with electrical accessories, the appropriate connectors for disconnection of the relative auxiliary circuits must also be ordered. For the withdrawable version there are dedicated accessories, fitted with connectors, which allow automatic disconnection in the case of racking-out.

Starting from the fixed version, the SACE Tmax XT circuit-breakers can be easily converted into plug-in and withdrawable versions by using the relative conversion kits.

The moving parts can always be obtained for the required version, fully pre-engineered from the factory, by ordering the fixed circuit-breaker and the conversion kit at the same time.

|       | Version |         |                  |
|-------|---------|---------|------------------|
|       | Fixed   | Plug-in | Withdrawable     |
| XT1   | ■       | ■       | -                |
| XT2   | ■       | ■       | ■                |
| XT3   | ■       | ■       | -                |
| XT4   | ■       | ■       | ■                |
| XT5   | ■       | ■       | ■                |
| XT6   | ■       | -       | ■ <sup>(1)</sup> |
| XT7   | ■       | -       | ■                |
| XT7 M | ■       | -       | ■                |

(1) In max = 800A, not suitable for XT6 1000A

The fixed version, which is connected directly to the power system through the circuit-breaker terminals, is recommended for applications in which the need for space can be satisfied by compact products without affecting the performance.

The plug-in version is recommended for applications for which service continuity is a fundamental requirement: the replacement of the moving part with a new one does not require any intervention on the power supply connections.

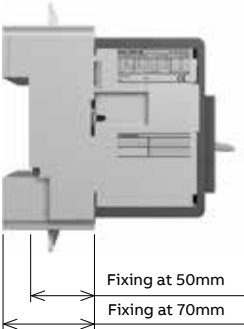
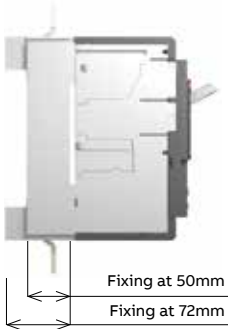


The withdrawable version, in addition to the advantages of the plug-in version, offers three different positions:

- connected: power and auxiliary circuits are connected
- test: power circuits are disconnected, while auxiliary circuits are connected (only for XT5, XT6 and XT7)
- disconnected: both power and auxiliary circuits are disconnected.

Fixed part of plug-in and withdrawable versions

The fixed part of the plug-in/withdrawable versions is available with front terminals (EF), with horizontal rear terminals (HR) or with vertical rear terminals (VR). The terminals are factory mounted in the horizontal position if the code is shared between HR and VR. In this case, it is possible to easily rotate the terminals into the vertical position. For the XT5 and XT6 circuit-breakers, the fixed part can be fully pre-engineered in the factory, with the required combination of terminals, by ordering the dedicated configurable fixed part code and the terminals at the same time.

These fixed parts can be equipped with the same terminals, terminal-covers and phase separator kits used for the fixed circuit-breakers, using the proper adapter (see the "Power connection" section). For the Tmax XT1, XT2, XT3, XT4, XT5 and XT6, the fixed part of a plug-in/withdrawable circuit-breaker can be installed at two different distances from the back of the panel, according to the picture below. For the XT1, XT2, XT3 and XT4, installation at 50mm is only compulsory in the case where rear horizontal or vertical terminals (HR/VR) are used.

| XT1-XT2-XT3-XT4   | XT5 400A  | XT5 630A   | XT6   |
|---|---|--|---|
|  |  |  |  |



# Execution and installation

## Conversion kits

The following conversion kits can be ordered for the different versions. This is applicable the whole Tmax XT family, up to Tmax XT6.



Conversion kit for converting a fixed circuit-breaker into the moving part of a plug-in circuit-breaker

### • Kit for converting a fixed circuit-breaker into the moving part of plug-in/withdrawable versions

The conversion kit converts a fixed circuit-breaker into a moving part of the plug-in/withdrawable versions. When withdrawable versions are required, it is essential to order an accessory for the front of the circuit-breaker to maintain the IP40 degree of protection along the entire insulation run. This accessory is made of the following options:

- front for the lever operating mechanism (FLD);
- motor operator (MOE);
- direct or transmitted rotary handle operating mechanisms (RHD or RHE).

In the case where no accessory to be applied onto the front is indicated, the front for the lever operating mechanism (FLD) is automatically included in the order.



Conversion kit for converting a fixed circuit-breaker into the moving part of a withdrawable circuit-breaker

### • Kit for converting a fixed part of a plug-in version into the fixed part of withdrawable versions

The kit comprises:

- a guide for transforming the fixed part of the plug-in circuit-breaker into a fixed part of a withdrawable circuit-breaker;
- a racking-out lever that allows the moving part to be inserted and withdrawn. The mechanism allows the circuit-breaker to be set to the disconnected position (with the power and auxiliary circuits disconnected) with the compartment door closed, which is an advantage for operator safety. The rotary handle can only be inserted when the circuit-breaker is open. Once it has been removed or withdrawn, the circuit-breaker can be set to the open/closed position;
- a flange for the compartment door, which replaces the one supplied with the fixed version of the circuit-breaker.

### • Kit for converting a fixed circuit-breaker into the plug-in version for RC Sel residual current devices for XT2-XT4-XT5

The RC Sel 4-pole residual current devices for the XT2, XT4 and XT5 can be converted from fixed versions to plug-in versions using the special kit.

### • Kit for converting plug-in circuit-breakers into withdrawable versions for RC Sel residual current devices for the XT2-XT4-XT5

The RC Sel 4-pole residual current devices for the XT2, XT4 and XT5 can be converted from the plug-in version to the withdrawable version using a special kit, which includes a component to apply to the front of the residual current device so as to allow it to be withdrawn when the panel door is closed. This kit can also be assembled on fixed circuit-breakers equipped with a front for a lever operating mechanism or the direct rotary handle, thus allowing the use of residual current devices.

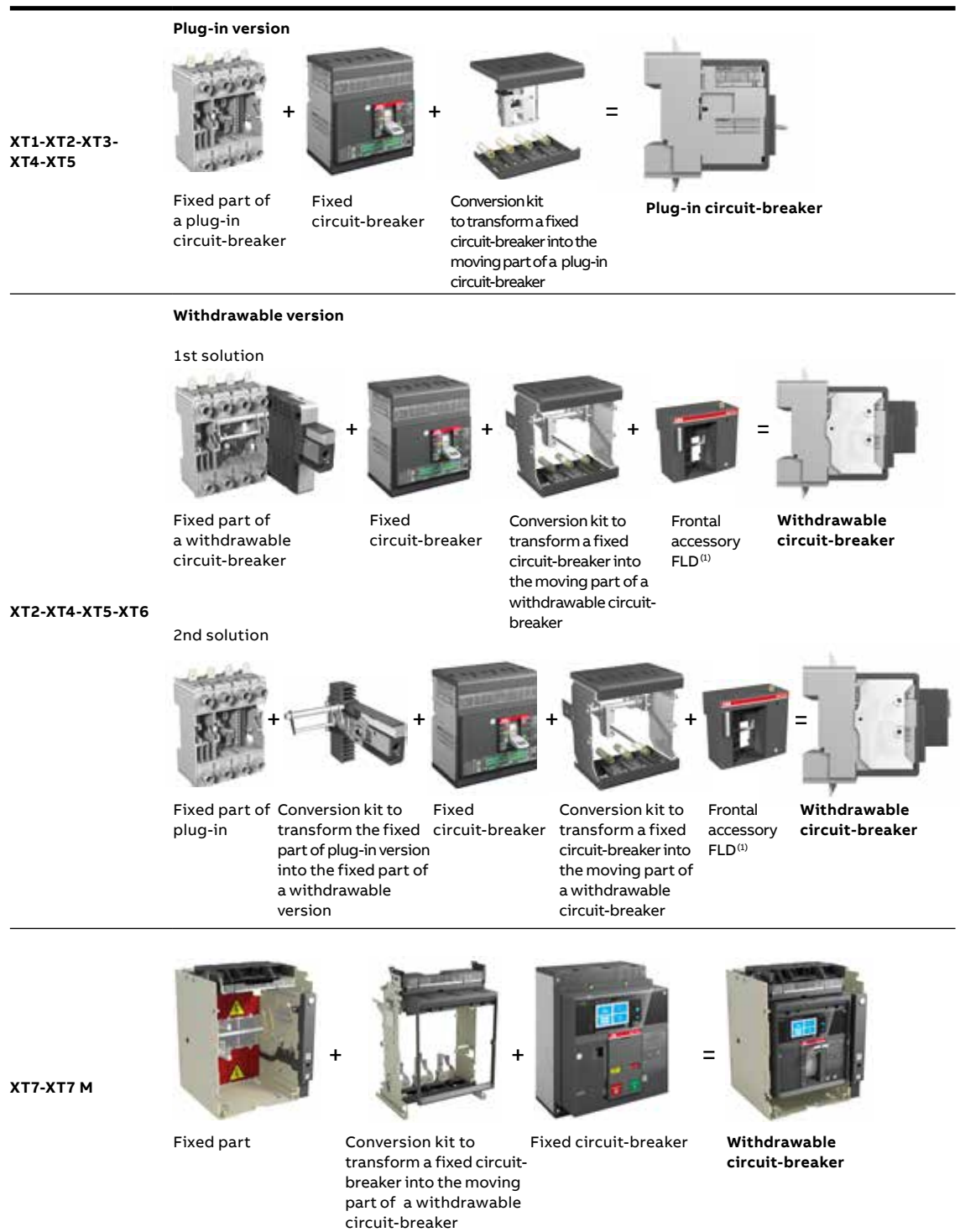
In the plug-in to withdrawable conversion kit, there are also PIN connectors to be applied onto the right side of the circuit-breaker to facilitate disconnection of the auxiliary circuits connected to the residual current device.

For the XT1, XT2, XT3 and XT4, this kit also contains the opening solenoid of the residual current device dedicated to the withdrawable version, which is fitted with a connector for the fixed part and the moving part.



Conversion kit for converting a fixed part of plug-in version into the fixed part of a withdrawable version

For the SACE Tmax XT7 and XT7 M there is a dedicated conversion kit to transform a fixed circuit-breaker into the moving part of the withdrawable version. No additional accessory is required.



(1) Frontal accessory mandatory. If not specified in the order, the FLD is supplied automatically

# Execution and installation

## Connectors for electrical accessories

### Plug-in circuit-breaker

In the plug-in version of the SACE Tmax XT circuit-breakers, the auxiliary circuits can be disconnected by means of two different types of adapter:

- a plug and socket to be fixed on the bottom of the panel: for the XT1, XT2, XT3, XT4 and XT5;
- a plug and socket installed on the rear of the circuit-breaker and in the fixed part of the plug-in devices: for the XT2, XT4 and XT5.



Plug and socket adapters on the back of the panel

### Plug and socket on the back of the panel

To make it easier to connect/disconnect the auxiliary circuits, wired electrical accessories can be connected to one or more plug and socket connectors on the back of the panel.

3, 6, 9 and 15 PIN connectors are available. The cables connect/disconnect the auxiliary circuits in a fast and simple way without the aid of any dedicated tools.

Consider the number of cables of each electrical accessory when calculating the number of connectors required.

| Number of cables | XT1-XT2-XT3-XT4 accessories   | XT5-XT6 accessories   |
|------------------|---|---|
| 2                | SOR, UVR / External Neutral Ekip Dip trip units / PTC for Ekip M-LRIU / Ekip Com Modbus RTU / Ekip Com Modbus TCP STA | YO, YU / Ekip Com Modbus RTU / Ekip Com Modbus TCP STA  |
| 3                | RC SA / 1 AUX   | 1 AUX   |
| 4                | 24V DC/Internal bus cable / Ekip Com Modbus RTU STA / AUE   | 24V DC/Internal bus cable / Ekip Signaling 1K / Ekip Com Modbus RTU STA / Ekip Maintenance Module / AUE |
| 5                | MOE-E / Selectivity cable   | Selectivity cable   |
| 6                | Ekip Com <sup>(1)</sup> / Residual current device   | Residual current device, MOE-E  |
| 7                | MOE (with AUX-MO) / MOD (with AUX-MO)   | -   |
| 8                | -   | MOE (with AUX-MO)   |

(1) Ekip Com for Ekip LSI, LSIG and M-LRIU



Plug and socket adapter placed on the back of the moving part

### Plug and socket adapters on the rear of the circuit-breaker and inside the fixed part

For the plug-in versions of the XT2, XT4 and XT5 circuit-breakers, the auxiliary circuits can be automatically disconnected by means of an adapter installed on the rear of the circuit-breaker and inside the fixed part of plug-in versions.

The 12 PIN connector can be used only with accessories functioning at a voltage lower than 250V AC/DC.

The cables connect/disconnect the auxiliary circuits in a fast and simple way without the aid of any dedicated tools. Wiring is to be carried out by the Customer.

| Circuit-breaker | Number of plugs and sockets installed on the rear of the circuit-breaker and inside the fixed part |
|-----------------|--|
| XT2-XT4         | 1  |
| XT5             | 2  |



Plug and socket adapter in the fixed part



—  
Cabling of withdrawable versions

### Withdrawable circuit-breaker

When withdrawable circuit-breakers are used, the codes of the electrical accessories specifically designed for this version must be ordered. These dedicated codes include the wired electrical accessory with a connector for the moving part and for the fixed part to be inserted on the side of the fixed part. If the MOE motor operator is ordered, connectors for the fixed part and moving part are always supplied since there is no dedicated code for the withdrawable version. This type of connection allows the auxiliary circuits to be disconnected automatically when the circuit-breaker is withdrawn from the fixed part. If cabling of the fixed part is required before wiring the moving part, the fixed part mounting connectors can be ordered as spare parts.

### XT7 and XT7 M

Two different areas for the auxiliary connection terminal boxes can be clearly identified on the top of the XT7 and XT7 M circuit-breakers:

- The terminal area housing the terminals for wiring the auxiliary connections. The terminals can be wired first and then installed in the circuit-breaker terminal box, thereby facilitating cable connection for the operator;
- The cartridge modules area, housing the Ekip modules. These are installed directly on the upper part of the circuit-breaker without removing the Ekip electronic trip unit, thereby minimizing the time required for the installation and commissioning of accessories.

These areas are the same also in case of withdrawable versions.

### Bracket for fixing on DIN-rail

This is a support designed to be installed on the back of the circuit-breakers to simplify assembly on standardized DIN EN 50022 rails.

The following circuit-breakers can be installed on the DIN EN 50022 rail:

- XT1, XT2, XT3 and XT4 circuit-breakers in the fixed 3-pole or 4-pole versions;
- XT1, XT3 circuit-breakers equipped with RC Sel 200; RC Inst, RC Sel for XT1 and XT3 residual current releases.



—  
Bracket for fixing on DIN-rail

### Motorizable version

The XT7 M can be equipped with a spring charging motor. To allow complete remote control with the XT7 M, the circuit-breaker must be fitted with:

- A shunt opening release (YO)
- A shunt closing release (YC)
- A spring charging motor (M)



—  
Tmax XT7 M

## Power connection

| Power connection                      |  | XT1 | XT2 | XT3 | XT4 | XT5 | XT6 | XT7 | XT7 M |
|---------------------------------------|--|-----|-----|-----|-----|-----|-----|-----|-------|
| Terminals for circuit-breaker         | F - Front  | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
|                                       | EF - Front extended  | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
|                                       | ES - Front extended spread <sup>(1)</sup>                      | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
|                                       | FCCu - Front for copper cables <sup>(1)</sup>                  | ■   | ■   | ■   | ■   | -   | -   | -   | -     |
|                                       | FCCuAl - Front for copper/aluminium cables <sup>(1)</sup>      | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
|                                       | FB - Flexible busbars <sup>(1)</sup>                           | ■   | ■   | ■   | ■   | -   | -   | -   | -     |
|                                       | MC - Multi-cable <sup>(1)</sup>                                | ■   | ■   | ■   | ■   | -   | -   | -   | -     |
|                                       | R - Rear orientated  | ■   | ■   | ■   | ■   | ■   | ■   | -   | -     |
|                                       | HR/VR - Rear orientable terminal                               | -   | -   | -   | -   | -   | -   | ■   | ■     |
| Terminals for fixed part              | EF - Extended front for fixed part                             | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
|                                       | HR/VR - Horizontal/vertical rear for fixed part <sup>(2)</sup> | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
|                                       | ES - Extended spread front for fixed part                      | -   | -   | -   | -   | -   | -   | ■   | ■     |
|                                       | SHR - horizontal rear spread terminals for fixed part          | -   | -   | -   | -   | -   | -   | ■   | ■     |
|                                       | FCCuAl - Front copper/aluminium cables for fixed part          | -   | -   | -   | -   | -   | -   | ■   | ■     |
| Terminals for Residual current Device | HR for RC - for residual current release                       | ■   | -   | ■   | -   | -   | -   | -   | -     |

(1) From the XT1 to XT6, the same terminals of fixed circuit-breakers can be mounted on the fixed part if the adapter is installed.

(2) For the XT5 630A fixed part, the HR and VR have different codes

### Connection terminals

Connection terminals allow the circuit-breaker to be connected to the system in the way most suitable for the installation requirements. They consist of:

- front terminals: for connecting cables or busbars directly from the front of the circuit-breaker;
- rear terminals: for installing circuit-breakers in segregated panels with rear access.

Where possible, the terminals have a laser marking on the surface indicating the tightening torques for the correct insulation of cables and bars.

### Fixed version

The standard fixed version of the SACE Tmax XT circuit-breakers are supplied with front terminals (F). However, they can be fitted with the following types of terminals as accessories thanks to the special kits:

- extended front (EF);
- extended spread front (ES);
- front for copper/aluminium cables (FCCuAl). A pitch adapter must be applied to the terminal zone of the circuit-breaker to ensure that copper and aluminium cables can be connected to all the circuit-breakers. The pitch adapter is automatically supplied when it is necessary;
- front for copper cables (FCCu);
- for flexible busbars (FB);
- multicable (MC);
- rear oriented (R).



Fixed part adapters

### Plug-in and withdrawable versions

The fixed part of the plug-in and withdrawable versions of the XT1, XT2, XT3 and XT4 circuit-breakers are normally supplied with extended front terminals (EF) or horizontal/vertical rear terminals (HR/VR).

The terminals are factory-mounted in the horizontal position. If needed, the customer can easily rotate the terminals into the vertical position.

A fixed part with front terminals (EF) can be converted into a fixed part with rear terminals (HR/VR) by ordering the appropriate terminal kit.

The fixed part of the plug-in and withdrawable versions of the XT5 and XT6 circuit-breakers can be accessorized directly when ordering with extended front terminals (EF) or horizontal/vertical rear terminals (HR/VR), that can be different from the top and bottom terminals.

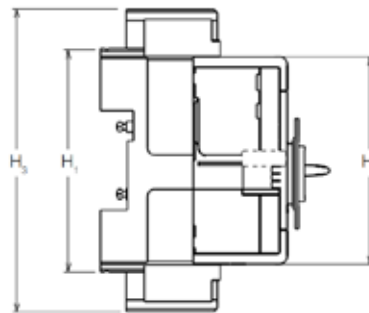
The terminals are factory-mounted in the horizontal position. If needed, the customer can easily rotate the terminals into the vertical position. For the XT5 630A fixed part, the HR and VR terminals are different and not interchangeable.

The fixed parts can also be fitted with the same types of terminals available on the fixed circuit-breaker after an adapter has been installed on the terminal area of the fixed part itself. Consequently, the following types of connection terminals are also available for the fixed part:

- extended spread front (ES);
- for copper-aluminium cables (FCCuAl);
- for copper cables (FCCu);
- for flexible busbars (FB);
- multi-cable (MC).

The adapter reproduces the terminal area of the fixed circuit-breaker. This means that the fixed parts can also be equipped with the same terminal covers and phase separators as those used for fixed circuit-breakers.

In order to mount terminals on the adapter, the front terminals "F" kit provided with the CB is needed.



### Fixed part adapter

| Circuit-breakers | H1 fixed part [mm] | H2 circuit-breaker [mm] | H3 fixed part with two adapters [mm] |
|------------------|--------------------|-------------------------|--------------------------------------|
| XT1              | 146                | 134                     | 181                                  |
| XT2              | 153                | 134                     | 188                                  |
| XT3              | 166                | 154                     | 225                                  |
| XT4              | 182                | 164                     | 228                                  |
| XT5 400A         | 209                | 209                     | 283                                  |
| XT5 630A         | 273                | 273                     | 347                                  |
| XT6              | 295                | 273                     | 408                                  |

For the XT7 and XT7 M, dedicated terminals for fixed part must be ordered.

# Power connection

## Terminals for circuit-breaker

### Front terminals - F



Front terminal - F



F terminal with cable lug



F terminal with busbar

| CB                 | Vers. | Busbars dimensions    |       |       |       |       |      |     | Cables terminals |      | Tightening                 | Terminal covers height |      |    |    |    |                 | Phase Separators height        |      |     |
|--------------------|-------|-----------------------|-------|-------|-------|-------|------|-----|------------------|------|----------------------------|------------------------|------|----|----|----|-----------------|--------------------------------|------|-----|
|                    |       | [mm]                  |       |       |       |       |      |     | [mm]             |      |                            | [Nm]                   | [mm] |    |    |    |                 |                                | [mm] |     |
|                    |       | Pieces <sup>(1)</sup> | W min | W max | D min | D max | Ø    | H   | W                | Ø    | Cable or busbar / Terminal |                        | 2    | 25 | 50 | 60 | 68              | 25                             | 100  | 200 |
| XT1                | F     | 1                     | 13    | 16    | 3.5   | 5     | 6.5  | 7.5 | 16               | 6.5  | M6                         | 6Nm                    | -    | -  | R  | -  | S <sub>CB</sub> | R                              | R    |     |
| XT2                | F     | 1                     | 13    | 20    | 2.5   | 5     | 6.5  | 7.5 | 20               | 6.5  | M6                         | 6Nm                    | -    | -  | R  | -  | S <sub>CB</sub> | R                              | R    |     |
| XT3                | F     | 1                     | 17    | 24    | 5     | 8     | 8.5  | 9.5 | 24               | 8.5  | M8                         | 8Nm                    | -    | -  | -  | R  | -               | S <sub>CB</sub>                | R    | R   |
| XT4                | F     | 1                     | 17    | 25    | 5     | 8     | 8.5  | 10  | 25               | 8.5  | M8                         | 8Nm                    | -    | -  | -  | R  | -               | S <sub>CB</sub>                | R    | R   |
| XT5                | F     | 1                     | 25    | 35    | 5     | 10    | 10.5 | 12  | 35               | 10.5 | M10                        | 36Nm                   | -    | R  | -  | R  | -               | S <sub>CB</sub> <sup>(2)</sup> | R    | R   |
| XT6 <sup>(3)</sup> | F     | 2                     | 40    | 40    | 5     | 5     | 2x7  | 12  | 50               | 2x7  | M6                         | 9Nm                    | R    | -  | -  | R  | -               | -                              | R    | R   |
| XT7 - XT7M         | F     | 2                     | 40    | 50    | 10    | 10    | 2x11 | 20  | 2x24             | 2x11 | M10                        | 18Nm                   | R    | -  | -  | -  | R               | -                              | R    | R   |

(1) Number of busbars considering W max and D max

(2) Phase barriers 25 mm are mandatory according indications on instructions sheet

(3) Not available for the XT6 1000A

### Extended front terminals - EF



Front extended terminal - F



EF terminal with cable lug



EF terminal with busbar

| CB         | Vers. | Busbars dimensions MAX |    |    |      |      | Cable terminals |     | Tightening  |                            |      |   | Terminal covers height |                |                |    |    | Phase Separators height |      |     |  |  |
|------------|-------|------------------------|----|----|------|------|-----------------|-----|-------------|----------------------------|------|---|------------------------|----------------|----------------|----|----|-------------------------|------|-----|--|--|
|            |       | [mm]                   |    |    |      |      | [mm]            |     | [Nm]        |                            |      |   |                        | [mm]           |                |    |    |                         | [mm] |     |  |  |
|            |       | Pieces                 | W  | D  | Ø    |      | W               | Ø   | Terminal/CB | Cable or busbar / terminal |      |   | 2                      | 25             | 50             | 60 | 68 | 25                      | 100  | 200 |  |  |
| XT1        | F     | 1                      | 20 | 4  | 8.5  | 20   | 8.5             | M6  | 6Nm         | M8                         | 9Nm  | - | -                      | R              | -              | -  | -  | S <sub>T</sub>          | R    |     |  |  |
| XT2        | F     | 1                      | 20 | 4  | 8.5  | 20   | 8.5             | M6  | 6Nm         | M8                         | 9Nm  | - | -                      | S <sub>T</sub> | -              | -  | -  | S <sub>T</sub>          | R    |     |  |  |
| XT3        | F     | 1                      | 20 | 6  | 10   | 20   | 10              | M8  | 8Nm         | M10                        | 18Nm | - | -                      | -              | R              | -  | -  | S <sub>T</sub>          | R    |     |  |  |
| XT4        | F     | 1                      | 20 | 10 | 10   | 20   | 10              | M8  | 8Nm         | M10                        | 18Nm | - | -                      | -              | S <sub>T</sub> | -  | -  | S <sub>T</sub>          | R    |     |  |  |
| XT5        | F     | 2                      | 32 | 8  | 11   | 32   | 11              | M10 | 36Nm        | M10                        | 18Nm | - | -                      | -              | R              | -  | -  | S <sub>T</sub>          | R    |     |  |  |
| XT6 800A   | F     | 2                      | 50 | 5  | 14   | 50   | 14              | M6  | 9Nm         | M12                        | 30Nm | - | -                      | -              | -              | -  | -  | S <sub>T</sub>          | R    |     |  |  |
| XT6 1000A  | F     | 2                      | 50 | 6  | 14   | 50   | 14              | M6  | 9Nm         | M12                        | 30Nm | - | -                      | -              | -              | -  | -  | S <sub>T</sub>          | R    |     |  |  |
| XT7 - XT7M | F     | 2                      | 50 | 10 | 4x11 | 4x20 | 11              | M10 | 18Nm        | M10                        | 40Nm | - | -                      | -              | -              | R  | -  | S <sub>T</sub>          | R    |     |  |  |

W Width

H Hole height

D Depth

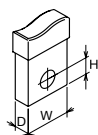
F Fixed

P Plug-in

W Withdrawable

Ø Diameter

R On Request

S<sub>CB</sub> Supplied as standard with circuit-breaker, not available in the loose terminals kitS<sub>T</sub> Supplied as standard with the terminals kit



Front extended spread terminal - F



ES terminal with cable lug



ES terminal with busbar



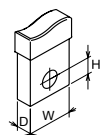
FCCu terminal



FCCu terminal with cable



FCCu terminal with busbar



#### Front extended spread terminals - ES

| CB         | Vers. | Busbars dimensions MAX |    |    |      | Cables terminals |      | Tightening   |                              |     |      | Extended spread terminal covers | Phase Separators height |     |                |
|------------|-------|------------------------|----|----|------|------------------|------|--------------|------------------------------|-----|------|---------------------------------|-------------------------|-----|----------------|
|            |       | [mm]                   |    |    |      | [mm]             |      | [Nm]         |                              |     |      |                                 | [mm]                    |     |                |
|            |       | Pieces                 | W  | D  | Ø    | W                | Ø    | Terminal/ CB | "Cable or busbar / Terminal" |     | 25   |                                 | 100                     | 200 |                |
| XT1        | F-P   | 1                      | 25 | 4  | 8.5  | 25               | 8.5  | M6           | 6Nm                          | M8  | 9Nm  | -                               | -                       | -   | S <sub>T</sub> |
| XT2        | F-P-W | 1                      | 30 | 4  | 10.5 | 30               | 10.5 | M6           | 6Nm                          | M10 | 18Nm | -                               | -                       | -   | S <sub>T</sub> |
| XT3        | F-P   | 1                      | 30 | 4  | 10.5 | 30               | 10.5 | M8           | 8Nm                          | M10 | 18Nm | -                               | -                       | -   | S <sub>T</sub> |
| XT4        | F-P-W | 1                      | 30 | 10 | 10.5 | 30               | 10.5 | M8           | 8Nm                          | M10 | 18Nm | -                               | -                       | -   | S <sub>T</sub> |
| XT5        | F-P-W | 1                      | 40 | 10 | 11   | 40               | 11   | M10          | 36Nm                         | M10 | 18Nm | R                               | -                       | -   | S <sub>T</sub> |
| XT6        | F-W   | 1                      | 80 | 10 | 3x13 | 3x45             | 13   | M6           | 9Nm                          | M12 | 30Nm | R                               | -                       | -   | S <sub>T</sub> |
| XT7 - XT7M | F     | 2                      | 90 | 10 | 3x13 | 4x45             | 13   | M10          | 18Nm                         | M12 | 40Nm | R                               | -                       | -   | S <sub>T</sub> |

#### Terminals for copper cables - FCCu

| CB  | Type of terminal | Vers. | Cable terminals [mm] |            | Tightening | L cable stripping [mm] | H Terminal covers [mm]    |   |   | Phase Separators height [mm] |                 |    |    |
|-----|------------------|-------|----------------------|------------|------------|------------------------|---------------------------|---|---|------------------------------|-----------------|----|----|
|     |                  |       | Rigid                | Flexible   |            |                        | Cable or busbar/ terminal |   |   | 2                            | 50              | 60 | 25 |
| XT1 | Internal         | F-P   | 1x2.5...70           | 1x2.5...50 | 12x12mm    | 7Nm                    | 12                        | - | R | -                            | S <sub>CB</sub> | R  | R  |
|     | Internal         | F-P   | -                    | 2x2.5...35 |            |                        |                           |   |   |                              |                 |    |    |
| XT2 | Internal         | F-P-W | 1x2.5...95           | 1x2.5...70 | 14x14mm    | 7Nm                    | 14                        | - | R | -                            | S <sub>CB</sub> | R  | R  |
|     | Internal         | F-P-W | -                    | 2x2.5...50 |            |                        |                           |   |   |                              |                 |    |    |
| XT3 | Internal         | F-P   | 1x6...185            | 1x6...150  | 20x18mm    | 14Nm20                 |                           | - | - | R                            | S <sub>CB</sub> | R  | R  |
|     | Internal         | F-P   | -                    | 2x6...70   |            |                        |                           |   |   |                              |                 |    |    |
| XT4 | Internal         | F-P-W | 1x6...185            | 1x6...150  | 20x18mm    | 14Nm20                 |                           | - | - | R                            | S <sub>CB</sub> | R  | R  |
|     | Internal         | F-P-W | -                    | 2x6...70   |            |                        |                           |   |   |                              |                 |    |    |

W Width

H Hole height

D Depth

F Fixed

P Plug-in

W Withdrawable

Ø Diameter

R On Request

S<sub>CB</sub> Supplied as standard with circuit-breaker, not available in the loose terminals kit

S<sub>T</sub> Supplied as standard with the terminals kit



# Power connection



Internal FCCuAl terminal for copper/aluminum cables



Internal FCCuAl terminal for copper and aluminum cable with take-up of auxiliary voltage



FCCuAl external terminal with cable



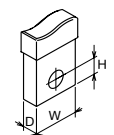
FCCuAl internal terminal with cable



FCCuAl external terminal with cables



Pitch adapter



## Terminals for copper/aluminium cables - FC CuAl

| CB          | Type of term.       | Vers.                | Cable [mm]  | Tightening [Nm] |          |              |                           | L cable stripping covers height [mm]                   | Terminal covers height [mm] |                |    |                | Separators height [mm] |                |                 |                |
|-------------|---------------------|----------------------|-------------|-----------------|----------|--------------|---------------------------|--|-----------------------------|----------------|----|----------------|------------------------|----------------|-----------------|----------------|
|             |                     |                      |             | Rigid           | Flexible | Terminal/ CB | Cable or busbar/ terminal |  | 2                           | 25             | 50 | 60             | 68                     | 25             | 100             | 200            |
| XT1         | int.                | F-P                  | 1x1.5...70  | 1x1.5...50      | M5       | 3Nm          | Ø 9.5mm                   | ≤10mm <sup>2</sup> - 2,5Nm<br>>10mm <sup>2</sup> - 5Nm | 16                          | -              | -  | R              | -                      | -              | S <sub>CB</sub> | R              |
|             | ext.                | F-P                  | 1x35...95   | NO              | M6       | 6Nm          | Ø 14mm                    | 13.5Nm   | 16                          | -              | -  | S <sub>T</sub> | -                      | -              | -               | -              |
|             | ext.                | F-P <sup>(1)</sup>   | 1x120...240 | NO              | M6       | 6Nm          | Ø 21mm                    | 31Nm   | 24                          | ADAPTER        |    |                |                        |                |                 |                |
| XT2         | int.                | F-P-W                | 1x1...95    | 1x2.5...70      | -        | -            | Ø 14mm                    | ≤25mm <sup>2</sup> - 4Nm<br>>25mm <sup>2</sup> - 6Nm   | 14                          | -              | -  | R              | -                      | -              | S <sub>CB</sub> | R              |
|             | ext.                | F-P-W <sup>(2)</sup> | 1x120...240 | NO              | M6       | 6Nm          | Ø 21mm                    | 31Nm   | 24                          | ADAPTER        |    |                |                        |                |                 |                |
|             | ext.                | F-P-W                | 1x70...185  | NO              | M6       | 6Nm          | Ø 18mm                    | 31Nm   | 20                          | -              | -  | S <sub>T</sub> | -                      | -              | -               | -              |
|             | ext.                | F-P-W                | 2x35...70   | NO              | M6       | 6Nm          | Ø 16mm                    | 12Nm   | 18/33                       | -              | -  | R              | -                      | -              | S <sub>CB</sub> | R              |
| XT3         | int.                | F-P                  | 1x35...150  | NO              | M8       | 9Nm          | Ø 17mm                    | 22.6Nm   | 20                          | -              | -  | -              | R                      | -              | S <sub>CB</sub> | R              |
|             | int.                | F-P                  | 1x95...185  | NO              | -        | -            | Ø 17mm                    | 16Nm   | 20                          | -              | -  | -              | R                      | -              | S <sub>CB</sub> | R              |
|             | ext.                | F-P <sup>(2)</sup>   | 1x120...240 | NO              | M8       | 8Nm          | Ø 21mm                    | 31Nm   | 24                          | ADAPTER        |    |                |                        |                |                 |                |
|             | ext.                | F-P                  | 2x35...120  | NO              | M8       | 8Nm          | Ø 18mm                    | 16Nm   | 22/42                       | -              | -  | -              | S <sub>T</sub>         | -              | -               | -              |
| XT4         | int.                | F-P-W                | 1x1...150   | NO              | -        | -            | Ø 17mm                    | 10Nm   | 20                          | -              | -  | -              | R                      | -              | S <sub>CB</sub> | R              |
|             | ext.                | F-P-W <sup>(2)</sup> | 1x120...240 | NO              | M8       | 8Nm          | Ø 21mm                    | 31Nm   | 24                          | ADAPTER        |    |                |                        |                |                 |                |
|             | ext.                | F-P-W                | 2x35...120  | NO              | M8       | 8Nm          | Ø 15mm                    | 16Nm   | 22/42                       | -              | -  | -              | S <sub>T</sub>         | -              | -               | -              |
| XT5         | int.                | F-P-W                | 1x35...185  | NO              | M10      | 23Nm         | Ø 17mm                    | 24-35Nm  | 24                          | -              | R  | -              | R                      | -              | S <sub>CB</sub> | R              |
|             | int.                | F-P-W                | 1x120...240 | NO              | M10      | 23Nm         | Ø 21.5mm                  | 43Nm   | 24                          | -              | R  | -              | R                      | -              | S <sub>CB</sub> | R              |
|             | int.                | F-P-W                | 1x185...300 | NO              | M10      | 23Nm         | Ø 24.5mm                  | 43Nm   | 24                          | -              | R  | -              | R                      | -              | S <sub>CB</sub> | R              |
|             | ext.                | F-P-W                | 2x70...240  | NO              | M10      | 36Nm         | Ø 24mm                    | 31Nm   | 24/46                       | -              | -  | -              | R                      | -              | S <sub>T</sub>  | R              |
| XT6         | int. <sup>(1)</sup> | F-W                  | 2x120...240 | NO              | M6       | 5Nm          | Ø 21.5mm                  | 31Nm   | -                           | -              | -  | S <sub>T</sub> | -                      | -              | -               | -              |
|             | ext. <sup>(1)</sup> | F-W                  | 3x70...185  | NO              | M6       | 9Nm          | Ø 19mm                    | ≤95mm <sup>2</sup> - 34Nm<br>>95mm <sup>2</sup> - 43Nm | -                           | -              | -  | S <sub>T</sub> | -                      | -              | -               | -              |
|             | ext.                | F-W                  | 4x70...150  | NO              | M6       | 9Nm          | Ø 19mm                    | 43Nm   | -                           | -              | -  | S <sub>T</sub> | -                      | -              | -               | -              |
| XT7 - XT7 M | int.                | F(630A)              | 2x185...240 | NO              | M10      | 18Nm         | Ø 21.5mm                  | 43Nm   | 30                          | S <sub>T</sub> | -  | -              | -                      | R              | -               | S <sub>T</sub> |
|             | ext.                | F(1250A)             | 4x70...240  | NO              | M10      | 18Nm         | Ø 21.5mm                  | 43Nm   | 30                          | -              | -  | -              | -                      | S <sub>T</sub> | -               | -              |
|             | ext.                | F(1600A)             | 3x240...380 | NO              | M10      | 18Nm         | Ø 21.5mm                  | 67Nm   | 30                          | -              | -  | -              | -                      | S <sub>T</sub> | -               | -              |

(1) Not available for the XT6 1000A

(2) Not installable on circuit-breakers mounted on DIN rail or on rear mechanical interlock

## Adapter for FCCuAl terminals up to 240mm<sup>2</sup>

| Circuit-breaker | Poles | Dimensions [mm] [WxHxD] |
|-----------------|-------|-------------------------|
| XT1             | 3     | 105x50x68               |
|                 | 4     | 140x50x68               |
| XT2             | 3     | 105x50x68               |
|                 | 4     | 140x50x68               |
| XT3             | 3     | 105x50x68               |
|                 | 4     | 140x50x68               |
| XT4             | 3     | 105x50x68               |
|                 | 4     | 140x50x68               |

With the XT1 and XT2 the adapter increases the width of the circuit-breaker

|   |             |   |              |                 |   |
|---|-------------|---|--------------|-----------------|---|
| W | Width       | P | Plug-in      | S <sub>CB</sub> | Supplied as standard with circuit-breaker, not available in the loose terminals kit |
| H | Hole height | W | Withdrawable | S <sub>T</sub>  | Supplied as standard with the terminals kit   |
| D | Depth       | Ø | Diameter     |                 |   |
| F | Fixed       | R | On Request   |                 |   |



—  
Terminal for flexible  
busbars (FB)



—  
FB terminal with flexible  
busbars



—  
Multi-cable terminals  
(MC)



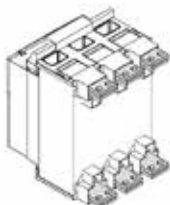
—  
Multi-cable terminals  
with cables



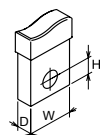
—  
Rear horizontal  
terminals (R)



—  
R terminal with  
horizontal busbar



—  
Rear orientable  
terminal - HR VR



#### Terminals for flexible busbars - FB

| CB  | Type of terminal | Vers. | Busbar dimensions MIN [mm] |     |    | Busbar dimensions MAX [mm] |     |    | Tightening [Nm] | H Terminal covers [mm] |    |    | H Separators [mm] |     |     |
|-----|------------------|-------|----------------------------|-----|----|----------------------------|-----|----|-----------------|------------------------|----|----|-------------------|-----|-----|
|     |                  |       | W                          | D   | Nr | W                          | D   | Nr |                 | 2                      | 50 | 60 | 25                | 100 | 200 |
| XT1 | internal         | F-P   | 10                         | 0.8 | 2  | 10                         | 0.8 | 9  | 7Nm             | —                      | R  | —  | S <sub>CB</sub>   | R   | R   |
| XT2 | internal         | F-P-W | 10                         | 0.8 | 2  | 10                         | 0.8 | 9  | 7Nm             | —                      | R  | —  | S <sub>CB</sub>   | R   | R   |
| XT3 | internal         | F-P   | 16                         | 0.8 | 2  | 16                         | 0.8 | 10 | 14Nm            | —                      | —  | R  | S <sub>CB</sub>   | R   | R   |
| XT4 | internal         | F-P-W | 16                         | 0.8 | 2  | 16                         | 0.8 | 10 | 14Nm            | —                      | —  | R  | S <sub>CB</sub>   | R   | R   |

#### Multi-cable terminals - MC

| CB                 | Vers. | Cable [mm²] |            | Tightening   |                           |     | L cable stripping [mm]       | H Terminal covers [mm] |    |                | H Separators [mm] |     |     |
|--------------------|-------|-------------|------------|--------------|---------------------------|-----|------------------------------|------------------------|----|----------------|-------------------|-----|-----|
|                    |       | Rigid       | Flexible   | Terminal/ CB | Cable or busbar/ terminal | Ø   |                              | 2                      | 50 | 60             | 25                | 100 | 200 |
| XT1                | F-P   | 6x2.5...35  | 6x2.5...35 | M6           | 6Nm                       | Ø 8 | ≤10mm² 2.5 Nm<br>>10mm² 4 Nm | 10, 20, 30             | —  | S <sub>T</sub> | —                 | —   | —   |
| XT2                | F-P-W | 6x2.5...35  | 6x2.5...35 | M6           | 6Nm                       | Ø 8 | ≤10mm² 2.5 Nm<br>>10mm² 4 Nm | 10, 20, 30             | —  | S <sub>T</sub> | —                 | —   | —   |
| XT3 <sup>(1)</sup> | F-P   | 6x2.5...35  | 6x2.5...25 | M8           | 8Nm                       | Ø 8 | 7Nm                          | 15, 30                 | —  | —              | S <sub>T</sub>    | —   | —   |
| XT4 <sup>(1)</sup> | F-P-W | 6x2.5...35  | 6x2.5...25 | M8           | 8Nm                       | Ø 8 | 7Nm                          | 15, 30                 | —  | —              | S <sub>T</sub>    | —   | —   |

(1) Take up auxiliary voltage device included

#### Rear horizontal terminals - R

| CB                 | Vers. | Busbar dimensions MAX [mm] |    |    |      |     | Tightening [Nm] |                           |     | Terminal covers height [mm] |                |                |    |    | Separators height [mm] |     |     |
|--------------------|-------|----------------------------|----|----|------|-----|-----------------|---------------------------|-----|-----------------------------|----------------|----------------|----|----|------------------------|-----|-----|
|                    |       | Pieces                     | W  | H  | D    | Ø   | Terminal / CB   | Cable or busbar/ terminal |     | 2                           | 25             | 50             | 60 | 68 | 25                     | 100 | 200 |
| XT1 <sup>(1)</sup> | F     | 1                          | 15 | 5  | 6.5  | 7.5 | M5              | 5Nm                       | M6  | 6Nm                         | S <sub>T</sub> | —              | —  | —  | —                      | —   | —   |
| XT2                | F     | 1                          | 20 | 4  | 8.5  | 9   | M6              | 6Nm                       | M8  | 6Nm                         | S <sub>T</sub> | —              | —  | —  | —                      | —   | —   |
| XT3                | F     | 1                          | 20 | 6  | 8.5  | 9   | M8              | 8Nm                       | M8  | 8Nm                         | S <sub>T</sub> | —              | —  | —  | —                      | —   | —   |
| XT4                | F     | 1                          | 20 | 6  | 8.5  | 9   | M8              | 8Nm                       | M8  | 8Nm                         | S <sub>T</sub> | —              | —  | —  | —                      | —   | —   |
| XT5                | F     | 2                          | 30 | 10 | 11   | 18  | M10             | 18Nm                      | M10 | 18Nm                        | —              | S <sub>T</sub> | —  | —  | —                      | —   | —   |
| XT6                | F     | 2                          | 50 | 10 | 14   | 18  | M6              | 18Nm                      | M12 | 30Nm                        | S <sub>T</sub> | —              | —  | —  | —                      | —   | —   |
| XT7 - XT7M         | F     | 2                          | 50 | 10 | 2x11 | 14  | M10             | 20Nm                      | M10 | 40Nm                        | S <sub>T</sub> | —              | —  | —  | —                      | —   | —   |

(1) Not suitable for MA trip units

W Width P Plug-in S<sub>CB</sub> Supplied as standard with circuit-breaker, not available in the loose terminals kit  
H Hole height W Withdrawable S<sub>T</sub> Supplied as standard with the terminals kit  
D Depth Ø Diameter  
F Fixed R On Request

# Power connection



— EF terminals for fixed part

## Terminals for fixed part

### Extended front terminals for fixed part - EF

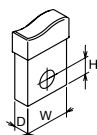
| CB            | Vers. | Busbar dimensions<br>MAX [mm] |    |    |     | Cable terminals<br>[mm] |     | Tightening<br>[Nm] |                              | Phase<br>Separators<br>height [mm] |      |                |   |
|---------------|-------|-------------------------------|----|----|-----|-------------------------|-----|--------------------|------------------------------|------------------------------------|------|----------------|---|
|               |       | Pieces                        | W  | D  | Ø   | W                       | Ø   | Terminal/CB        | Cable or busbar/<br>Terminal | 100                                | 200  |                |   |
| XT1           | P     | 1                             | 20 | 5  | 6.5 | 21                      | 6.5 | M6                 | 6Nm                          | M6                                 | 9Nm  | S <sub>T</sub> | R |
| XT2           | P-W   | 1                             | 20 | 5  | 6.5 | 21                      | 6.5 | M6                 | 6Nm                          | M6                                 | 9Nm  | S <sub>T</sub> | R |
| XT3           | P     | 1                             | 25 | 8  | 8.5 | 30                      | 8.5 | M6                 | 6Nm                          | M8                                 | 18Nm | S <sub>T</sub> | R |
| XT4           | P-W   | 1                             | 25 | 8  | 8.5 | 30                      | 8.5 | M6                 | 6Nm                          | M8                                 | 18Nm | S <sub>T</sub> | R |
| XT5           | P-W   | 1                             | 30 | 15 | 10  | 30                      | 10  |                    |                              | M10                                | 18Nm | S <sub>T</sub> | R |
| XT6           | W     | 2                             | 50 | 5  | 14  | 50                      | 14  |                    | 5Nm                          | M14                                | 30Nm | -              | - |
| XT7 -<br>XT7M | W     | 2                             | 50 | 10 | 11  | 4x20                    | 11  | M5                 | 12Nm                         | M10                                | 40Nm | -              | - |



— HR terminals for fixed part XT1...XT4

### Rear flat horizontal terminals for fixed part - HR

| CB            | Vers. | Busbar dimensions<br>MAX [mm] |    |    |      | Cable terminals<br>[mm] |     | Tightening  |                              | Rear<br>Separators<br>height [mm] |   |  |  |
|---------------|-------|-------------------------------|----|----|------|-------------------------|-----|-------------|------------------------------|-----------------------------------|---|--|--|
|               |       | Pieces                        | W  | D  | Ø    | W                       | Ø   | Terminal/CB | Cable or busbar/<br>Terminal | 90                                |   |  |  |
| XT1           | P     | 1                             | 20 | 4  | 8.5  | 20                      | 8.5 | 6           | 9Nm                          |                                   | R |  |  |
| XT2           | P-W   | 1                             | 20 | 4  | 8.5  | 20                      | 8.5 | 6           | 9Nm                          |                                   | R |  |  |
| XT3           | P     | 1                             | 25 | 6  | 8.5  | 25                      | 8.5 | 6           | 9Nm                          |                                   | R |  |  |
| XT4           | P-W   | 1                             | 25 | 10 | 8.5  | 25                      | 8.5 | 6           | 9Nm                          |                                   | R |  |  |
| XT5<br>400A   | P-W   | 1                             | 30 | 10 | 11   | 25                      | 11  |             | 18Nm                         |                                   | R |  |  |
| XT5<br>600A   | P-W   | 2                             | 40 | 8  | 11   | 40                      | 11  |             | 18Nm                         |                                   | R |  |  |
| XT6           | W     | 2                             | 50 | 8  | 14   | 50                      | 14  | 5           | 30Nm                         |                                   | - |  |  |
| XT7 -<br>XT7M | W     | 2                             | 50 | 10 | 2x11 | 4x20                    | 11  | 12          | 40Nm                         |                                   | - |  |  |



W Width  
H Hole height  
D Depth  
F Fixed

P Plug-in  
W Withdrawable  
Ø Diameter  
R On Request

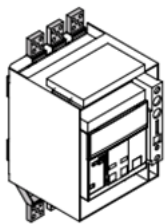
S<sub>CB</sub> Supplied as standard with circuit-breaker, not available in the loose terminals kit  
S<sub>T</sub> Supplied as standard with the terminals kit



VR terminals for fixed part XT1...XT4

#### Rear flat vertical terminals for fixed part - VR

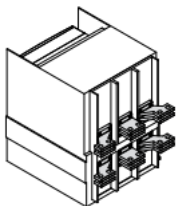
| CB         | Vers. | Busbar dimensions MAX |    |    |      | Cable terminals |     | Tightening  |                           | Rear Separators height [mm] |  |
|------------|-------|-----------------------|----|----|------|-----------------|-----|-------------|---------------------------|-----------------------------|--|
|            |       | Pieces                | W  | D  | Ø    | W               | Ø   | Terminal/CB | Cable or busbar/ Terminal | 90                          |  |
| XT1        | P     | 1                     | 20 | 4  | 8.5  | 20              | 8.5 | 6           | 9Nm                       | R                           |  |
| XT2        | P-W   | 1                     | 20 | 4  | 8.5  | 20              | 8.5 | 6           | 9Nm                       | R                           |  |
| XT3        | P     | 1                     | 25 | 6  | 8.5  | 25              | 8.5 | 6           | 9Nm                       | R                           |  |
| XT4        | P-W   | 1                     | 25 | 10 | 8.5  | 25              | 8.5 | 6           | 9Nm                       | R                           |  |
| XT5 400A   | P-W   | 1                     | 30 | 10 | 11   | 25              | 11  |             | 18Nm                      | R                           |  |
| XT5 600A   | P-W   | 2                     | 40 | 8  | 11   | 40              | 11  |             | 18Nm                      | R                           |  |
| XT6        | W     | 2                     | 50 | 8  | 14   | 50              | 14  | 5           | 30Nm                      | -                           |  |
| XT7 - XT7M | W     | 2                     | 50 | 10 | 2x11 | 4x20            | 11  | 12          | 40Nm                      | -                           |  |



Extended front terminal - HR VR

#### Front extended spread terminals for fixed part - ES

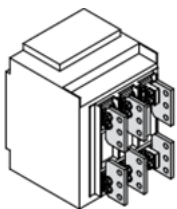
| CB         | Vers. | Busbar dimensions MAX |    |    |      | Cable terminals |    | Tightening  |                           | Phase Separators height [mm] |     |  |  |
|------------|-------|-----------------------|----|----|------|-----------------|----|-------------|---------------------------|------------------------------|-----|--|--|
|            |       | Pieces                | W  | D  | Ø    | W               | Ø  | Terminal/CB | Cable or busbar/ Terminal | 100                          | 200 |  |  |
| XT7 - XT7M | W     | 2                     | 80 | 10 | 3x13 | 4x45            | 13 | M6 12       | M12 40                    | R                            | R   |  |  |



Horizontal rear terminals - SHR

#### Horizontal rear spread terminals for fixed part - SHR

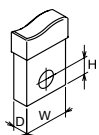
| CB         | Vers. | Busbar dimensions MAX |    |    |      | Cable terminals |    | Tightening  |                           | Phase Separators height [mm] |     |  |  |
|------------|-------|-----------------------|----|----|------|-----------------|----|-------------|---------------------------|------------------------------|-----|--|--|
|            |       | Pieces                | W  | D  | Ø    | W               | Ø  | Terminal/CB | Cable or busbar/ Terminal | 100                          | 200 |  |  |
| XT7 - XT7M | W     | 2                     | 60 | 10 | 2x11 | 4x30            | 11 | M10 40      | M10 40                    |                              |     |  |  |



Terminal for cable FcCuAl  
4x240mm<sup>2</sup> - FCCuAl

#### Front copper/aluminium cables for fixed part - FCCuAl

| CB         | Type of terminal | Vers. | Cable terminals [mm] |              | Tightening  |                          |
|------------|------------------|-------|----------------------|--------------|-------------|--------------------------|
|            |                  |       | Rigid                | Flexible     | Terminal/CB | Cable or busbar/terminal |
| XT7 - XT7M |                  | W     | 6x25<br>4x35         | 6x25<br>4x35 | M10 48Nm    | M12 70Nm<br>M14          |



W Width  
H Hole height  
D Depth  
F Fixed

P Plug-in  
W Withdrawable  
Ø Diameter  
R On Request

S<sub>CB</sub> Supplied as standard with circuit-breaker, not available in the loose terminals kit  
S<sub>T</sub> Supplied as standard with the terminals kit

# Signaling

| Signaling                            |   | XT1 | XT2 | XT3 | XT4 | XT5 | XT6 | XT7 | XT7 M |
|--------------------------------------|---|-----|-----|-----|-----|-----|-----|-----|-------|
| Auxiliary contact                    | 1Q + 1SY 24V DC   | ■   | ■   | ■   | ■   | ■   | ■   | -   | -     |
|                                      | 3Q + 1SY 24V DC   | -   | ■   | ■   | ■   | ■   | ■   | -   | -     |
| Q: open/close signaling contact      | 1Q + 1SY on the left 24V DC   | -   | -   | -   | -   | ■   | -   | -   | -     |
| SY: trip signaling contact           | 1S51 24V DC   | -   | ■   | -   | ■   | ■   | ■   | ■   | ■     |
|                                      | 1S52 24V DC   | -   | -   | -   | -   | ■   | ■   | ■   | -     |
| S51: trip unit signaling contact     | 1Q + 1SY 250V AC/DC   | ■   | ■   | ■   | ■   | ■   | ■   | -   | -     |
|                                      | 2Q + 1SY 250V AC/DC   | ■   | ■   | ■   | ■   | ■   | ■   | -   | -     |
| S52: YO or YU trip signaling contact | 2Q + 2SY + 1S51 250V AC/DC  | -   | ■   | -   | ■   | -   | -   | -   | -     |
|                                      | 3Q + 1SY 250V DC  | -   | ■   | ■   | ■   | ■   | ■   | -   | -     |
|                                      | 3Q + 2SY 250V AC/DC   | -   | ■   | ■   | ■   | ■   | ■   | -   | -     |
|                                      | 3Q on the left 250V AC/DC   | ■   | ■   | ■   | ■   | -   | -   | -   | -     |
|                                      | 1Q + 1SY on the left 250V AC/DC   | -   | -   | -   | -   | ■   | -   | -   | -     |
|                                      | 1S51 250V AC/DC   | -   | ■   | -   | ■   | ■   | ■   | ■   | ■     |
|                                      | 1S52 250V AC/DC   | -   | -   | -   | -   | ■   | ■   | ■   | -     |
|                                      | 1Q + 1SY 400V AC/DC   | -   | ■   | -   | ■   | ■   | -   | -   | -     |
|                                      | 2Q 400V AC/DC   | -   | ■   | -   | ■   | ■   | -   | -   | -     |
|                                      | 2Q 400V AC + 2Q 24V AC/DC   | -   | -   | -   | -   | -   | -   | ■   | ■     |
|                                      | 4Q 24V AC/DC  | -   | -   | -   | -   | -   | -   | ■   | ■     |
|                                      | 4Q 400V AC  | -   | -   | -   | -   | -   | -   | ■   | ■     |
| Position contacts                    | 15Q 24V AC/DC   | -   | -   | -   | -   | -   | -   | -   | ■     |
|                                      | 15Q 400V AC   | -   | -   | -   | -   | -   | -   | -   | ■     |
|                                      | AUP - Racked-in   | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
| Early auxiliary contacts             | AUP - Racked-out  | -   | ■   | -   | ■   | ■   | ■   | ■   | ■     |
|                                      | AUP - Test  | -   | -   | -   | -   | ■   | ■   | ■   | ■     |
| Ready to close contact               | AUE in closing  | ■   | ■   | ■   | ■   | -   | -   | -   | -     |
|                                      | AUE in opening  | ■   | ■   | ■   | ■   | ■   | -   | ■   | -     |
| Loaded springs                       | RTC - Ready to close signaling contact                                  | -   | -   | -   | -   | -   | -   | -   | ■     |
| TU Reset                             | S33 M/2 - Contact signaling loaded springs                              | -   | -   | -   | -   | -   | -   | -   | ■     |
|                                      | TU Reset - Mechanical signaling of the tripping of protection trip unit | -   | -   | -   | -   | -   | -   | -   | ■     |

## Auxiliary contacts - AUX

The SACE Tmax XT circuit-breakers can be equipped with auxiliary contacts that signal the status of the breaker and can be routed outside the circuit-breaker itself. The following information is available:

- **open/closed (Q):** indication of the status of the circuit-breaker power contacts;
- **trip (SY):** signals that the circuit-breaker is opening due to the intervention of the trip unit, or to the intervention residual current device, or to the opening of undervoltage releases, or to the use of the emergency opening pushbutton of the motor operator, or to the use of the test button;
- **trip unit tripping (S51):** indicates that one of the protection functions of the electronic or thermal-magnetic trip unit has tripped. In case of the Tmax XT5 equipped with thermal-magnetic trip unit and residual current device, S51 is activated also by the intervention of the residual current device.
- **YO/YU tripping (S52):** indicates that the under voltage or shunt opening release has been activated. The signaling depends on the service release used. For Tmax XT6 S52 can be used only with YU and is not available for YO. For Tmax XT5, in case of YO, shunt opening release must be permanently supplied to maintain the S52 signal.

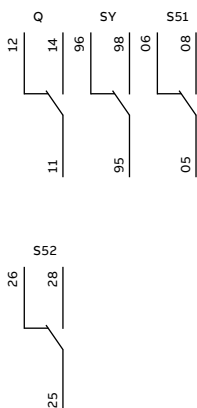
### AUX for XT1, XT2, XT3, XT4, XT5 and XT6

| Circuit -breakers | XT1-XT3 |    | XT2-XT4 |    |     | XT5 |    |     | XT6 |   |    |     |     |
|-------------------|---------|----|---------|----|-----|-----|----|-----|-----|---|----|-----|-----|
| AUX               | Q       | SY | Q       | SY | S51 | Q   | SY | S51 | S52 | Q | SY | S51 | S52 |
| 24V DC            | ■       | ■  | ■       | ■  | ■   | ■   | ■  | ■   | ■   | ■ | ■  | ■   | ■   |
| 250V AC/DC        | ■       | ■  | ■       | ■  | ■   | ■   | ■  | ■   | ■   | ■ | ■  | ■   | ■   |
| 400V AC           | -       | -  | ■       | ■  | -   | ■   | ■  | -   | -   | - | -  | -   | -   |

### 24V DC and 250V AC/DC auxiliary contacts

Auxiliary contacts Q (open/closed), SY (trip), S51 (trip unit tripping) and S52 (YO/YU tripping) status during sequences

| Actions                              |            | Q  | SY | S51 | S52 |
|--------------------------------------|------------|----|----|-----|-----|
| Normal Sequence                      | CB Opened  | 12 | 96 | 06  | 26  |
|                                      | CB Closed  | 14 | 96 | 06  | 26  |
| Trip sequence (caused by: Trip Test) | CB Opened  | 12 | 96 | 06  | 26  |
|                                      | CB Closed  | 14 | 96 | 06  | 26  |
|                                      | CB Tripped | 12 | 98 | 06  | 26  |
|                                      | CB Reset   | 12 | 96 | 06  | 26  |
| Trip sequence (caused by: trip unit) | CB Opened  | 12 | 96 | 06  | 26  |
|                                      | CB Closed  | 14 | 96 | 06  | 26  |
|                                      | CB Tripped | 12 | 98 | 08  | 26  |
|                                      | CB Reset   | 12 | 96 | 06  | 26  |
| Trip sequence (caused by: YU / YO)   | CB Opened  | 12 | 96 | 06  | 26  |
|                                      | CB Closed  | 14 | 96 | 06  | 26  |
|                                      | CB Tripped | 12 | 98 | 06  | 28  |
|                                      | CB Reset   | 12 | 96 | 06  | 26  |



# Signaling



Cabled auxiliary contact



Uncabled auxiliary contact



Cabled auxiliary contact for withdrawable circuit-breaker

250V AC/DC and 24V AC/DC auxiliary contacts are installed without the need for any screws. They are extremely easy to fit. Simply apply a slight pressure in the appropriate place. The following versions of auxiliary contacts are available:

- cabled (AWG20 cable section -0.5mm<sup>2</sup>):
  - for fixed/plug-in circuit-breakers with 1m long cables;
  - for withdrawable circuit-breakers with fixed part and moving part connector;
- not cabled:
  - for fixed/plug-in circuit-breakers with cables from 0.5 up to 1.5 mm<sup>2</sup> cross-section.

Auxiliary contacts are supplied for each circuit-breaker in the SACE XT family in various different combinations, as shown in the table. The following items can be ordered to make the installation even more flexible:

- an uncabled auxiliary contact can generate different signals (Q, SY or S52) according to the position that the circuit-breaker is installed at;
- an uncabled S51 auxiliary contact, which can be used for XT2, XT4, XT5 and XT6 circuit-breakers;
- a cabled auxiliary contact, with unnumbered cables. It can generate different signals (Q, SY or S52) according to the position where the circuit-breaker is installed.

| Combinations of cabled auxiliary contacts with numbered cables | XT1  | XT2   | XT3  | XT4   |
|--|------|-------|------|-------|
|  | 3/4p | 3/4p  | 3/4p | 3/4p  |
| 1Q 1SY 24V DC  | F-P  | F-P-W | F-P  | F-P-W |
| 3Q 1SY 24V DC  | –    | F-P-W | F-P  | F-P-W |
| 1S51 24V DC  | –    | F-P-W | –    | F-P-W |
| 1Q 1SY 250V AC/DC  | F-P  | F-P-W | F-P  | F-P-W |
| 2Q 2SY 1S51 250V AC/DC   | –    | F-P-W | –    | F-P-W |
| 3Q 2SY 250V AC/DC  | –    | F-P-W | –    | F-P-W |
| 3Q 1SY 250V AC/DC  | –    | F-P-W | F-P  | F-P-W |
| 1S51 250V AC/DC  | –    | F-P-W | –    | F-P-W |
| 2Q 1SY 250V AC/DC  | F-P  | F-P   | F-P  | F-P   |
| 3Q on the left 250V AC/DC                                      | F-P  | F-P   | F-P  | F-P   |

F = Fixed, P = Plug-in, W = Withdrawable

| Combinations of cabled auxiliary contacts with numbered cables | XT5                                     | XT6                               |     |
|--|---|-----------------------------------|-----|
|  | Thermal-magnetic and Ekip Dip trip unit | Ekip Touch and Hi-Touch trip unit |     |
| 1Q + 1SY on the left 24V DC                                    | F-P                                     | –                                 | –   |
| 1Q + 1SY 24V DC  | F-P-W                                   | F-P-W                             | F-W |
| 3Q + 1SY 24V DC  | F-P-W                                   | F-P-W                             | F-W |
| 1S51 24V DC  | F-P-W                                   | F-P-W                             | F-W |
| 1S52 24V DC  | F-P-W                                   | F-P-W                             | F-W |
| 1Q + 1SY on the left 250V AC/DC                                | F-P                                     | –                                 | –   |
| 1Q + 1SY 250V AC/DC  | F-P-W                                   | F-P-W                             | F-W |
| 2Q + 1SY 250V AC/DC  | F-P-W                                   | F-P-W                             | F-W |
| 3Q + 1SY 250V DC   | F-P-W                                   | F-P-W                             | F-W |
| 1S51 250V AC/DC  | F-P-W                                   | F-P-W                             | F-W |
| 1S52 250V AC/DC  | F-P-W                                   | F-P-W                             | F-W |

F = Fixed, P = Plug-in, W = Withdrawable

## Auxiliary contacts 24V DC - 250V AC/DC

|  | 3-pole circuit-breaker  | 4-pole circuit-breaker  |
|--|---|---|
| <b>XT1</b>   |    |    |
| <b>XT3</b>   |   |   |
| <b>XT2<br/>XT4</b>   |  |  |
| <b>XT2<br/>XT4<br/>with Ekip Touch<br/>and Hi-Touch<br/>trip units</b> |  |  |
| <b>XT5</b>   |  |  |
| <b>XT5<br/>with Ekip Touch<br/>and Hi-Touch<br/>trip units</b>         |  |  |
| <b>XT6</b>   |  |  |



# Signaling

## AUX 250V AC/DC - Electrical specifications

| Power supply voltage | Operating current according to the utilization category |       |       |        |        |       |
|----------------------|---|-------|-------|--------|--------|-------|
|                      | AC-15   | AC-14 | AC-13 | DC-14  | DC-13  | DC-12 |
| 250V AC              | 4 A   | 5 A   | 6 A   | -      | -      | -     |
| 125V AC              | 5 A   | 6 A   | 6 A   | -      | -      | -     |
| 250V DC              | -   | -     | -     | 0.03 A | 0.03 A | 0.3 A |
| 110V DC              | -   | -     | -     | 0.05 A | 0.05 A | 0.5 A |

## AUX 24V DC - Electrical specifications

| Power supply voltage | Operating current |
|----------------------|-------------------|
| 5 V DC               | 0.001 A           |
| 30 V DC              | 0.1 A             |

## 400V AC auxiliary contacts

400V AC auxiliary contacts are available only for the XT2, XT4 and XT5 circuit-breakers in the following versions:

- cabled (AWG17 cable section -1mm<sup>2</sup>):
  - for fixed/plug-in circuit-breakers with 1m long cables;
  - for withdrawable circuit-breakers with a fixed part and moving part connector.

With the XT2 and XT4, the 400V auxiliary contacts take up the whole right-hand slot of the circuit-breaker. For the XT5 1Q+1SY, the 400V auxiliary contacts are available only with thermal-magnetic or Ekip Dip trip units.





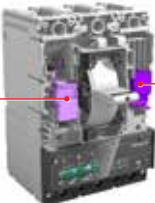
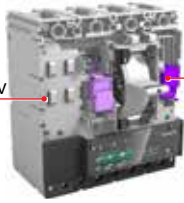
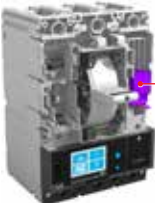

Cabled auxiliary contact

| Combinations | XT2   | XT4   | XT5                  |
|--------------|-------|-------|----------------------|
|              | 3/4p  | 3/4p  | 3/4p                 |
| 1Q 1SY 400V  | F-P-W | F-P-W | F-P-W <sup>(1)</sup> |
| 2Q 400V      | F-P-W | F-P-W | F-P-W                |

F = Fixed, P = Plug-in, W = Withdrawable

(1) Only for circuit-breakers with thermal-magnetic or Ekip Dip trip units.

400V AC auxiliary contacts

|   | 3-pole circuit-breaker  | 4-pole circuit-breaker  |
|---|---|---|
| XT2 <sup>(1)</sup><br>XT4 <sup>(1)</sup>    |    |    |
| XT5   |   |   |
| XT5 with Ekip Touch and Hi-Touch trip units |  |  |

(1) Not available with Ekip Touch and Hi-Touch trip units

AUX 400V AC - Electrical specifications

| Power supply voltage<br>[V] | Operating current [A] |     |
|-----------------------------|-----------------------|-----|
|                             | AC                    | DC  |
| 125 AC/DC                   | –                     | 0.5 |
| 250 AC/DC                   | 12                    | 0.3 |
| 400 AC <sup>(1)</sup>       | 3                     | –   |

(1) Only ENEC approved

# Signaling

## AUX for XT7 and XT7 M

| Circuit -breakers | XT7              |                  |     |     | XT7 M            |     |     |
|-------------------|------------------|------------------|-----|-----|------------------|-----|-----|
| AUX               | Q                | SY               | S51 | S52 | Q                | S51 | RTC |
| 24V DC            | ■                | ■                | ■   | ■   | ■                | ■   | ■   |
| 250V AC/DC        | ■ <sup>(1)</sup> | ■ <sup>(1)</sup> | ■   | ■   | ■ <sup>(1)</sup> | ■   | ■   |
| 400V AC           | ■                | ■                | -   | -   | ■                | -   | -   |

(1) Same commercial code of AUX 400V

## Open / closed auxiliary contacts - Q

The XT7 and XT7 M circuit-breakers can be equipped with auxiliary contacts that signal the open or closed status of the circuit-breaker. The contacts are available in the following configurations:

| Open / closed auxiliary contacts (AUX 4Q) |                           | XT7 | XT7 M |
|---|---------------------------|-----|-------|
| 4 auxiliary contacts                      | 4Q 400V AC/DC             | ■   | ■     |
|   | 4Q 24V DC                 | ■   | ■     |
|   | 2Q 400V AC/DC + 2Q 24V DC | ■   | ■     |
| 15 auxiliary contacts                     | 15Q 400V AC/DC            |     | ■     |
|   | 15Q 24V DC                |     | ■     |

|                          |      | 400V/250V AC/DC contact | 24V DC contact      |
|--------------------------|------|-------------------------|---------------------|
| Type                     |      | Changeover contacts     | Changeover contacts |
| Minimum load             |      | 100mA @ 24V             | 1mA @ 5V            |
| <b>Breaking capacity</b> |      |                         |                     |
| DC                       | 24V  | -                       | 0.1A                |
|                          | 125V | 0.3A @ 10ms             | -                   |
|                          | 250V | 0.15A @ 10ms            | -                   |
| AC                       | 250V | 5A @ cosφ 1             | -                   |
|                          |      | 5A @ cosφ 0.7           | -                   |
|                          |      | 5A @ cosφ 0.3           | -                   |
|                          | 400V | 3A @ cosφ 1             | -                   |
|                          |      | 2A @ cosφ 0.7           | -                   |
|                          |      | 1A @ cosφ 0.3           | -                   |
|                          |      |                         |                     |

The AUX 15Q is an alternative to the mechanical interlock (MI), the DLC for XT7 M lock or the DLP lock if mounted on the right side.



Open and close auxiliary contacts



15 auxiliary contacts

**Trip auxiliary contact - SY**

The XT7 circuit-breakers can be equipped with auxiliary contacts that signal that the circuit-breaker is opening due to the intervention of the trip unit, or to the opening of undervoltage/shunt opening releases, or to the use of the test button. The contacts are available in the following configurations:

|                          |      | 400V/250V AC/DC contact | 24V DC contact |
|--------------------------|------|-------------------------|----------------|
| Type                     |      | Switching               | Switching      |
| Minimum load             |      | 100mA @ 24V             | 1mA @ 5V       |
| <b>Breaking capacity</b> |      |                         |                |
| DC                       | 24V  | -                       | 0.1A           |
|                          | 125V | 0.3A                    | -              |
|                          | 250V | 0.15A                   | -              |
| AC                       | 250V | 12A                     | -              |
|                          | 400V | 3A                      | -              |

**Contact signaling the tripping of the protection unit Ekip – S51**

This contact signals the opening of the circuit-breaker after the Ekip protection trip unit has tripped. The contact is available for the XT7 and XT7 M.

For the XT7 M circuit-breaker, the closing operation can be carried out only after the “TU Reset” push-button has been restored to its normal operating position. The switching contact can also be associated with an optional accessory for remote resetting - YR.

|                          |      | 250V AC/DC contact       | 24V DC contact |
|--------------------------|------|--------------------------|----------------|
| Type                     |      | Switching                | Switching      |
| Minimum load             |      | 100mA @ 24V              | 1mA @ 5V       |
| <b>Breaking capacity</b> |      |                          |                |
| DC                       | 24V  | -                        | 0.1A           |
|                          | 250V | 0.5A @ 0ms / 0.2A @ 10ms | -              |
| AC                       | 250V | 3A @ cosφ 0.7            | -              |

**Contact signaling tripping of the YO/YU – S52**

This contact signals that the undervoltage (YU) or the shunt opening release (YO) have been activated. The contact is the same and depends on the service release mounted in the dedicated position.

It is available for the XT7 only.

|                          |      | 250V AC/DC contact       | 24V DC contact |
|--------------------------|------|--------------------------|----------------|
| Type                     |      | Switching                | Switching      |
| Minimum load             |      | 100mA @ 24V              | 1mA @ 5V       |
| <b>Breaking capacity</b> |      |                          |                |
| DC                       | 24V  | -                        | 0.1A           |
|                          | 250V | 0.5A @ 0ms / 0.2A @ 10ms | -              |
| AC                       | 250V | 3A @ cosφ 0.7            | -              |



— Contact signaling the tripping of the Ekip trip unit protection - S51

# Signaling

## Auxiliary Position Contacts – AUP

Auxiliary position contacts provide information about the position of the circuit-breaker in relation to the fixed part of plug-in or withdrawable versions.

Three types of position contacts (AUPs) are available:

- racked-in contact for all plug-in and withdrawable Tmax XT circuit-breakers;
- racked-out contact for all withdrawable Tmax XT circuit-breakers;
- test contact for withdrawable Tmax XT5, XT6, XT7 and XT7 M circuit-breakers.

| Circuit-breaker |           | Max number of<br>racked-in contacts | Max number of<br>test contacts | Max number of<br>racked-out contacts | Max number of AUP |
|-----------------|-----------|-------------------------------------|--------------------------------|--------------------------------------|-------------------|
| XT1             | 3/4 poles | 4                                   | -                              | -                                    | 4                 |
| XT2             | 3 poles   | 2                                   | -                              | 2                                    | 4                 |
|                 | 4 poles   | 4                                   | -                              | 2                                    | 6                 |
| XT3             | 3/4 poles | 4                                   | -                              | -                                    | 4                 |
| XT4             | 3/4 poles | 4                                   | -                              | 2                                    | 6                 |
| XT5             | 3/4 poles | 3                                   | 1                              | 1                                    | 5                 |
| XT6             | 3/4 poles | 3                                   | 1                              | 1                                    | 5                 |
| XT7             | 3/4 poles | 2                                   | 2                              | 2                                    | 6                 |
| XT7 M           | 3/4 poles | 2                                   | 2                              | 2                                    | 6                 |

Auxiliary position contacts, which provide electrical signaling of the circuit-breaker position in relation to the fixed part, are available in the following versions:

| AUP        | XT1 | XT2 | XT3 | XT4 | XT5 | XT6 | XT7              | XT7 M            |
|------------|-----|-----|-----|-----|-----|-----|------------------|------------------|
| 24V DC     | ■   | ■   | ■   | ■   | ■   | ■   | ■                | ■                |
| 250V AC/DC | ■   | ■   | ■   | ■   | ■   | ■   | ■ <sup>(1)</sup> | ■ <sup>(1)</sup> |
| 400V AC    | -   | -   | -   | -   | -   | -   | ■                | ■                |

(1) Same commercial code of AUX 400V

AUP for XT1, XT2, XT3 and XT4

AUX 250V AC - Electrical specifications

| Power supply voltage<br>[V] | Operating current according to the utilization category |       |       |        |        |       |
|-----------------------------|---|-------|-------|--------|--------|-------|
|                             | AC-15   | AC-14 | AC-13 | DC-14  | DC-13  | DC-12 |
| 250V AC                     | 4 A   | 5 A   | 6 A   | -      | -      | -     |
| 125V AC                     | 5 A   | 6 A   | 6 A   | -      | -      | -     |
| 250V DC                     | -   | -     | -     | 0.03 A | 0.03 A | 0.3 A |
| 110V DC                     | -   | -     | -     | 0.05 A | 0.05 A | 0.5 A |

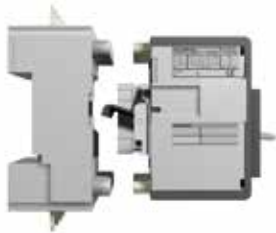
AUX 24V DC - Electrical specifications

| Power supply voltage | Operating current |
|----------------------|-------------------|
| 5V DC                | 0.001 A           |
| 24V DC               | 0.1 A             |

Plug-in circuit-breaker with racked-in contact



S75I=104

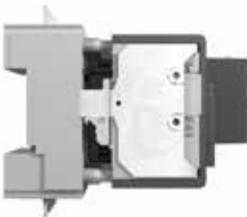


S75I=102

Withdrawable circuit-breaker with racked-in/racked-out contacts



S75I=102  
S75E=144



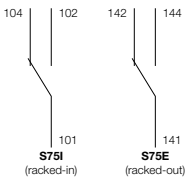
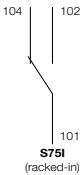
S75I=102  
S75E=142



S75I=104  
S75E=142



Auxiliary position  
contact



# Signaling



Auxiliary position contact

## AUP for XT5 and XT6

### AUX 25V AC/DC - Electrical specifications

| Power supply voltage | Operating current according to class of use |       |       |       |       |       |
|----------------------|---|-------|-------|-------|-------|-------|
|                      | AC-15                                       | AC-14 | AC-13 | DC-14 | DC-13 | DC-12 |
| 250V AC              | 4A  | 5A    | 6A    | -     | -     | -     |
| 125V AC              | 5A  | 6A    | 6A    | -     | -     | -     |
| 250V DC              | -   | -     | -     | 0.03A | -     | 0.3A  |
| 110V AC              | -   | -     | -     | 0.05A | -     | 0.5A  |

### AUX 25V DC - Electrical specifications

| Power supply voltage | Operating current |
|----------------------|-------------------|
| 5V DC                | 0.001A            |
| 24V DC               | 0.1A              |

## AUP for XT7 and XT7 M

|                          |      | 400V/250V AC/DC contact | 24V DC contact      |
|--------------------------|------|-------------------------|---------------------|
| Type                     |      | Changeover contacts     | Changeover contacts |
| Minimum load             |      | 100mA @ 24V             | 1mA @ 5V            |
| <b>Breaking capacity</b> |      |                         |                     |
| DC                       | 24V  | -                       | 0.1A                |
|                          | 125V | 0.3A @ 10ms             | -                   |
|                          | 250V | 0.15A @ 10ms            | -                   |
| AC                       | 250V | 5A @ cosφ 1             | -                   |
|                          |      | 5A @ cosφ 0.7           | -                   |
|                          |      | 5A @ cosφ 0.3           | -                   |
|                          | 400V | 3A @ cosφ 1             | -                   |
|                          |      | 2A @ cosφ 0.7           | -                   |
|                          |      | 1A @ cosφ 0.3           | -                   |
|                          |      |                         |                     |



Auxiliary position contacts - AUP

## Early Auxiliary Contacts – AUE

Early closing auxiliary contacts: these allow the undervoltage release to be supplied before the main contacts close, in accordance with IEC 60204-1 and VDE 0113 standards.

Early opening auxiliary contacts: these allow any electronic devices connected to the system to be disconnected in advance before the system is damaged by an overvoltage caused by the circuit-breaker opening.

The early opening/closing auxiliary contacts can be installed inside the direct and transmitted rotary handle operating mechanisms for all the SACE Tmax XT family circuit-breakers except for the XT7 (max two contacts @ 400V):

- the cabled version includes 1m long cables (AWG20 cable sections);
- a dedicated code is available in the withdrawable version which includes the connector for the moving and fixed parts;

For the XT7 with a lever operating mechanism, these are mounted directly on the circuit-breaker.

|             | XT1 | XT2 | XT3 | XT4 | XT5 | XT6 | XT7 | XT7 M |
|-------------|-----|-----|-----|-----|-----|-----|-----|-------|
| AUE closing | ■   | ■   | ■   | ■   | ■   | ■   | ■   | -     |
| AUE opening | ■   | ■   | ■   | ■   | -   | -   | -   | -     |



Early Auxiliary Contacts

### Early Auxiliary Contacts – AUE for XT7

| 400V/250V AC/DC contact |                     |       |
|-------------------------|---------------------|-------|
| Type                    | Switching           |       |
| Minimum load            | 100mA @ 24V         |       |
| Breaking capacity       |                     |       |
| DC                      | 125V                | 0.3A  |
|                         | 250V                | 0.15A |
| AC                      | 250V                | 12A   |
|                         | 400V <sup>(1)</sup> | 3A    |

(1) Only ENEC approved

### Ready to close signaling contact - RTC

The ready to close signaling contact – RTC – indicates that the circuit-breaker is ready to receive the closing command and is available only for the XT7 M. The circuit-breaker is ready to close when the following conditions are fulfilled:

- the circuit-breaker is open
- the springs are loaded
- there are no opening command or locks on the opening command
- the circuit-breaker is reset following tripping of the Ekip protection trip unit.

|                          |      | 250V AC/DC contact       | 24V DC contact |
|--------------------------|------|--------------------------|----------------|
| Type                     |      | Switching                | Switching      |
| Minimum load             |      | 100mA @ 24V              | 1mA @ 5V       |
| <b>Breaking capacity</b> |      |                          |                |
| DC                       | 24V  | -                        | 0.1A           |
|                          | 250V | 0.5A @ 0ms / 0.2A @ 10ms | -              |
| AC                       | 250V | 3A @ cosφ 0.7            | -              |

### Contact signaling loaded springs - S33 M/2

This contact is available for XT7 M only and signals the spring status of the circuit-breaker operating mechanism. It is available in both 400V AC/DC and 24V DC versions.

|                          |      | 400V AC/DC contact  | 24V DC contact      |
|--------------------------|------|---------------------|---------------------|
| Type                     |      | Changeover contacts | Changeover contacts |
| Minimum load             |      | 100mA @ 24V         | 1mA @ 5V            |
| <b>Breaking capacity</b> |      |                     |                     |
| DC                       | 24V  | -                   | 0.1A                |
|                          | 125V | 0.3A @ 10ms         | -                   |
|                          | 250V | 0.15A @ 10ms        | -                   |
| AC                       | 250V | 5A @ cosφ 1         | -                   |
|                          |      | 5A @ cosφ 0.7       | -                   |
|                          |      | 5A @ cosφ 0.3       | -                   |
|                          | 400V | 3A @ cosφ 1         | -                   |
|                          |      | 2A @ cosφ 0.7       | -                   |
|                          |      | 1A @ cosφ 0.3       | -                   |

### Mechanical signaling of tripping the protection trip unit - TU Reset

XT7 M circuit-breakers are always equipped with a mechanical device that signals the tripping status of the protection trip units. After the Ekip trip unit has been tripped due to an electrical fault, the signaling device clearly indicates the tripping status on the front of the circuit-breaker. The circuit-breaker can be reset only after the signaling pushbutton has been restored to its normal operating position.



Ready to close signaling contact



TU Reset



## Operating mechanism

| Operating mechanism               |  | XT1 | XT2 | XT3 | XT4 | XT5 | XT6 | XT7 | XT7 M |
|-----------------------------------|--|-----|-----|-----|-----|-----|-----|-----|-------|
| Rotary handle operating mechanism | RHD - Direct rotary handle                     | ■   | ■   | ■   | ■   | ■   | ■   | ■   | -     |
|                                   | RHE - Transmitted rotary handle                | ■   | ■   | ■   | ■   | ■   | ■   | ■   | -     |
|                                   | RHE_LH - Wide transmitted rotary handle        | ■   | ■   | ■   | ■   | -   | -   | -   | -     |
|                                   | RHS - Side rotary handle                       | ■   | ■   | ■   | ■   | ■   | -   | -   | -     |
|                                   | Conversion kit for telescopic rod              | -   | -   | -   | ■   | ■   | ■   | ■   | -     |
| Front lever op. mech.             | FLD - Front for locks                          | -   | ■   | -   | ■   | ■   | ■   | -   | -     |
| Toggle extension                  | Toggle extension for operating circuit-breaker | -   | -   | -   | -   | ■   | ■   | ■   | -     |

### Rotary handle operating mechanism

This is an operating device that allows the circuit-breaker to be operated by means of a rotary handle, which makes the circuit-breaker easier to open and close thanks to its ergonomic handgrip.

Different types of handles are available:

- direct (RHD): installed on the front of the circuit-breaker for frontal operation;
- transmitted (RHE): installed on the panel door. It allows the circuit-breaker to be operated by means of a rod which acts on a base installed on the front of the circuit-breaker;
- lateral (RHS): installed directly on the front of the circuit-breaker for side operations.

For the XT1, XT2, XT3 and XT4 a large handle grip (LH) is also available, which can be combined with the transmitted handle (RHE) and with the lateral handle (RHS).



(1) Available for XT5 only

All rotary handles are available in two versions:

- standard: grey color;
- emergency color: red on a yellow background. Suitable for operating machine tools.

Transmitted rotary handles can be ordered in the following ways:

- by one single commercial code (for RHD, RHE, RHS L/R);
- by listing the commercial codes of the following three components (for RHE only):
  - the base of the rotary handle to be fixed onto the circuit-breaker (RHE\_B);
  - a 500mm transmission rod (RHE\_S). The minimum and maximum distances between the fixing plate and the door are 60.5mm and 470.5mm respectively;
  - a rotary handle on the compartment door with a normal standard handgrip (RHE\_H, RHE\_H LH) or emergency handgrip (RHE\_H\_EM, RHE\_H\_EM LH).

To install the lateral rotary handle (RHS) on the XT5, the transmitted rotary handle (RHE code) and the conversion kit (from RHE to RHS) must be ordered.

The use of the rotary handle is an alternative to the motor operator and to all accessories mounted on the front of the circuit-breaker.

The rotary handles can be locked by means of a wide range of key locks and padlocks (see the Chapter "Safety and Protection" - section on "Locks").

The direct and transmitted rotary handle operating mechanisms allow early closing auxiliary contacts to be used when closing to supply the undervoltage release before the circuit-breaker closes.

For the XT5, XT6 and XT7 there is a special version of the RHD and RHE with an additional padlock (2PLL). For XT1 and XT4 there is a special version of RHE with an additional padlock on the base (2PLL).

Fig. 1  
RHD XT5 additional padlock

Fig. 2  
RHE XT5 additional padlock

Fig. 3  
RHD XT7 additional padlock

Fig. 4  
RHE XT7 additional padlock



Fig. 1



Fig. 3



Fig. 2



Fig. 4

#### Conversion kit for telescopic rod

This device must be installed on the rod of the extended rotary handle (RHE) and allows the panel door to be closed even with the withdrawable circuit-breaker in the racked-out position.

# Operating mechanism



Flange handle

## Flange handle

Installed on the panel door. It allows fixed circuit breakers to be operated in accordance with NFPA and UL508A Standards by means of cables of different length (4',6',10'), which act on a base installed on the front of the circuit breaker. Two different versions of handles are available in order to fully meet the Standard prescriptions required by the application: NEMA 1, 3, 12, 4 metallic and NEMA 1, 3, 12, 4, 4X non-metallic.



NFPA handle

## NFPA handle

Thanks to this handle mounted on the shaft of the RHE mechanism, the operator is allowed to operate the circuit breaker and to lock it in OFF position by means of an embedded padlock device also in case of panel door open, as prescribed by the Standards NFPA 79 and UL508A.



Front for the operating lever mechanism

## Front for the lever operating mechanism

This device can be installed on the front of the circuit-breaker and for withdrawable circuit-breakers inside switchboards, it allows the IP40 degree of protection to be maintained for the whole insulation run of the circuit-breaker.

It is always fitted with a compartment door lock and with a slot for a padlock device in the open position (6 mm Ø stem up to three padlocks - not supplied) which prevents closing the circuit-breaker and the compartment door.

The front for the lever operating mechanism can only be installed on the XT2, XT4, XT5 and XT6 circuit-breakers. The front for the lever operating mechanism can be fitted with a wide range of key locks and padlocks (see the Chapter "Safety and Protection" - section "Locks").

The use of the front for the lever operating mechanism is an alternative to the motor operator and to all of the front type accessories.

## Toggle extension

This device can be used to easily operate the toggle of the circuit-breaker, during manual closing and opening operations.

The device is removable and does not need screws in order to mount and operate it.

# Remote control

| Remote control           |                                | XT1 | XT2 | XT3 | XT4 | XT5 | XT6 | XT7 | XT7 M |
|--------------------------|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-------|
| Service release          | SOR - Shunt opening release    | ■   | ■   | ■   | ■   | -   | -   | -   | -     |
|                          | UVR - Undervoltage release     | ■   | ■   | ■   | ■   | -   | -   | -   | -     |
|                          | YO - Shunt opening release     | -   | -   | -   | -   | ■   | ■   | ■   | ■     |
|                          | YU - Undervoltage release      | -   | -   | -   | -   | ■   | ■   | ■   | ■     |
|                          | YC - Shunt closing release     | -   | -   | -   | -   | -   | -   | -   | ■     |
| Remote reset             | YR - Resetting remotely        | -   | -   | -   | -   | -   | -   | -   | ■     |
| YO/YC Test Unit          | YO/YC Test Unit                | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
| Time delay device for YU | UVD - Time delay device for YU | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
| Motor operator           | MOD                            | ■   | -   | ■   | -   | -   | -   | -   | -     |
|                          | MOE                            | -   | ■   | -   | ■   | ■   | ■   | -   | -     |
|                          | MOE-E                          | -   | ■   | -   | ■   | ■   | -   | -   | -     |
|                          | M - Motor                      | -   | -   | -   | -   | -   | -   | -   | ■     |

## Service releases

The SACE Tmax XT circuit-breakers can be fitted with service releases (shunt opening release, shunt closing release for XT7M only and undervoltage release).

### XT1, XT2, XT3 and XT4

#### Shunt opening release – SOR

This allows the circuit-breaker to open by means of a non-permanent electrical control. Release operation is guaranteed for voltage between 70% and 110% of the rated power supply voltage  $U_n$ , in both alternating and direct current. The SOR is equipped with a built-in limit contact to shut-off the power supply in the open position with the trip unit tripped.

A remote-controlled emergency opening command can be generated by connecting an opening button to the SOR.



Cabled SOR - UVR

#### Undervoltage release – UVR

This allows the circuit-breaker to open when the release is subject either to a power failure or a voltage drop. As prescribed in the standards, opening is guaranteed when the voltage is between 70% to 35%  $U_n$ . After tripping, the circuit-breaker can be closed again if the voltage exceeds the 85%  $U_n$ . When the undervoltage release is not energized, neither the circuit-breaker or the main contacts can be closed. A remote-controlled emergency opening command can be generated by connecting an opening button to the UVR.



Cabled SOR - UVR for withdrawable circuit-breaker



Uncabled SOR - UVR

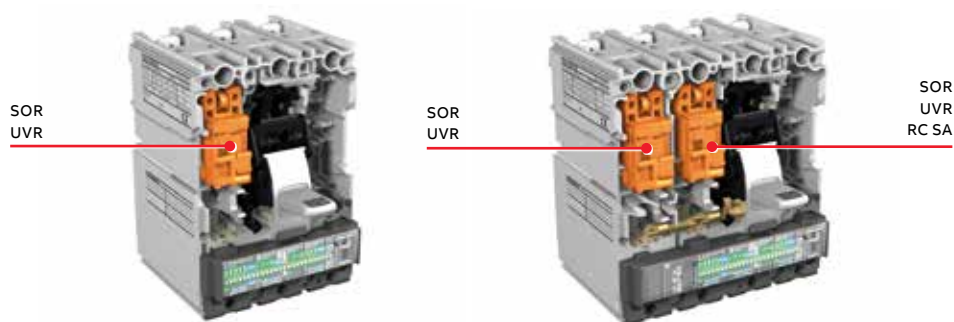
None of the service releases require screws for installation. They are extremely easy to fit. Just use slight pressure in the appropriate place. All service releases are available in two versions:

- cabled (AWG20 cable section - 0.5mm<sup>2</sup> up to 300V, AWG17 - 1mm<sup>2</sup> up to 525V):
  - for fixed/plug-in circuit-breakers with 1m long cables;
  - for withdrawable circuit-breakers with a fixed and moving part connector;
- not cabled:
  - for fixed/plug-in circuit-breakers with cables from 1.5 mm<sup>2</sup> in cross-section.

## Remote control

Installation in circuit-breakers:

- 3-pole: as an alternative, the SOR or UVR can be installed in the slot on the left of the operating lever;
- 4-pole: the SOR or UVR can be housed at the same time in the slot of the third and fourth pole. For withdrawable circuit-breakers, the connector for the fourth pole must be ordered to be able to install the SOR and UVR in the fourth pole. If there is a residual current release, the opening solenoid (RC SA) of the residual current device must be installed in the slot of the third pole on the left of the operating lever.



### SOR Electrical specifications

| Version                     | Max power absorbed on inrush |        | Resistance     |                |
|-----------------------------|------------------------------|--------|----------------|----------------|
|                             | AC [VA]                      | DC [W] | Internal [ohm] | External [ohm] |
| 12V DC                      |                              | 50     | 2.67           | 0              |
| 24-30V AC/DC                | 50                           | 50     | 11             | 0              |
| 48-60V AC/DC                | 60                           | 60     | 62             | 0              |
| 110...127V AC-110...125V DC | 50                           | 50     | 248            | 0              |
| 220...240V AC-220...250V DC | 50                           | 50     | 930            | 0              |
| 380-440V AC                 | 55                           |        | 2300           | 0              |
| 480-525V AC                 | 55                           |        | 5830           | 0              |

### UVR Electrical specification

| Version                     | Power absorbed during normal operation |        | Resistance     |                |
|-----------------------------|--|--------|----------------|----------------|
|                             | AC [VA]                                | DC [W] | Internal [ohm] | External [ohm] |
| 24-30V AC/DC                | 1.5                                    | 1.5    | 399            | 0              |
| 48V AC/DC                   | 1                                      | 1      | 1447           | 100            |
| 60V AC/DC                   | 1                                      | 1      | 2405           | 100            |
| 110...127V AC-110...125V DC | 2                                      | 2      | 8351           | 390            |
| 220...240V AC-220...250V DC | 2.5                                    | 2.5    | 20502          | 9000           |
| 380-440V AC                 | 3                                      |        | 20502          | 39000          |
| 480-525V AC                 | 4                                      |        | 20502          | 59000          |

**XT5 and XT6****Shunt opening release – YO**

This allows the circuit-breaker to open by means of a permanent electrical control. Release operation is guaranteed for voltages between 70% and 110% of the rated power supply voltage  $U_n$ , in both alternating and direct current. The YO can be permanently supplied. A remote-controlled emergency opening command can be created by connecting an opening button to the YO.

**Undervoltage release – YU**

This allows the circuit-breaker to open when the release is subject either to a power failure or a voltage drop. As prescribed in the standards, opening is guaranteed when the voltage is between 70% to 35%  $U_n$ . After tripping, the circuit-breaker can be closed again if the voltage exceeds 85%  $U_n$ . When the undervoltage release is not energized, neither the circuit-breaker nor the main contacts can be closed. A remote-controlled emergency opening command can be generated by connecting an opening button to the YU.

None of the service releases require screws to be installed. They are extremely easy to fit: just use a slight pressure on the part indicated in the installation manual. All service releases are available in two versions:

- cabled (AWG16 - minimum cable section 1,25mm<sup>2</sup>):
  - for fixed/plug-in circuit-breakers with 1m long cables;
  - for withdrawable circuit-breakers with fixed and moving part connectors;
- not cabled:
  - for fixed/plug-in circuit-breakers (suggested cables section 1.5 mm<sup>2</sup>).

For the fixed version of Tmax XT5, the YO and the YU can be mounted as an alternative in the slot on the left (third pole) or in the slot on the right (first pole) of the operating lever. For the withdrawable version of Tmax XT5, the YO and YU are installed as standard in the first pole. If two different coils are needed in the same circuit-breakers or the YO or YU are required in the third pole (on the left), an uncabled coil and the dedicated cables and connectors for the withdrawable version must be ordered.

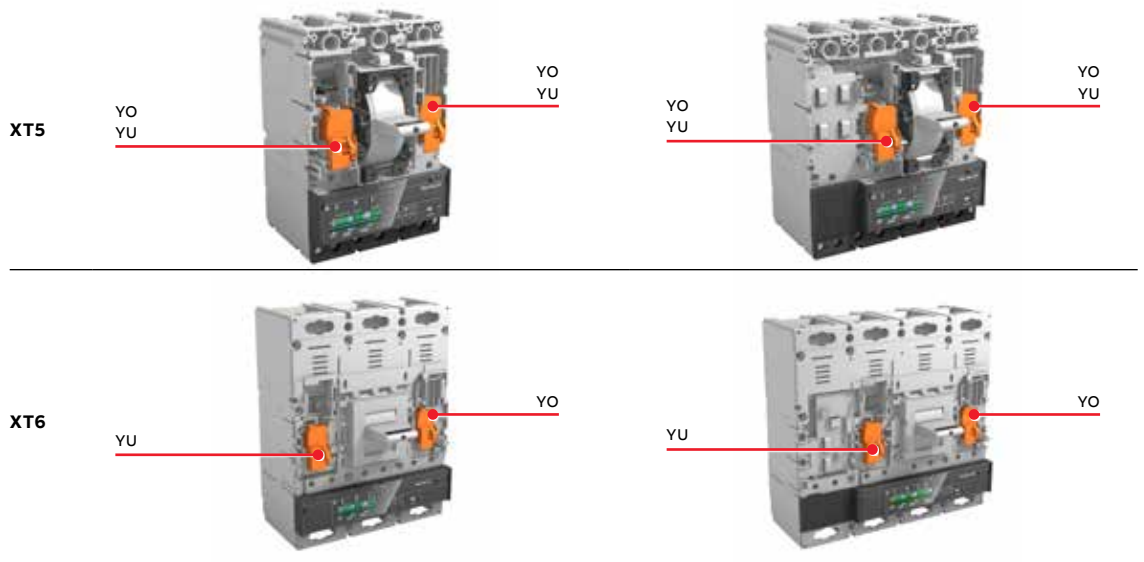
Instead, for Tmax XT6 in each versions (withdrawable or fixed) YU can be mounted only in the third pole (on the left) and YO can be mounted only in the first pole (on the right).



—  
Shunt opening  
release - YO



—  
Undervoltage  
release - YU



# Remote control

## Shunt opening release – YO

| Version          | Max power absorbed on inrush |          | Current<br>I <sub>pk</sub> Pull [A] | Power                         |                              |
|------------------|------------------------------|----------|-------------------------------------|-------------------------------|------------------------------|
|                  | AC [VA]                      | DC [W]   |                                     | P <sub>avg</sub> Holding [VA] | P <sub>avg</sub> Holding [W] |
| 12V DC           | -                            | 132      | 11                                  |                               | 3,5                          |
| 24-60V AC/DC     | 264@24V                      | 264@24V  | 11                                  | 5                             | 3,5                          |
|                  | 660@60V                      | 660@60V  |                                     |                               |                              |
| 110...250V AC/DC | 363@110V                     | 363@110V | 3.3                                 | 2,5                           | 2                            |
|                  | 825@250V                     | 825@250V |                                     |                               |                              |
| 380-440V AC      | 304@380V                     | 304@380V | 0.8                                 | 4,7                           |                              |
|                  | 352@440V                     | 352@440V |                                     |                               |                              |
| 480-525V AC      | 384@480V                     | 384@480V | 0.8                                 | 6                             |                              |
|                  | 420@525V                     | 420@525V |                                     |                               |                              |

## Undervoltage release – YU

| Version                     | Max power absorbed on inrush |        | Current<br>I <sub>pk</sub> Pull [A] | Power                         |                              |
|-----------------------------|------------------------------|--------|-------------------------------------|-------------------------------|------------------------------|
|                             | AC [VA]                      | DC [W] |                                     | P <sub>avg</sub> Holding [VA] | P <sub>avg</sub> Holding [W] |
| 12V DC                      | -                            | 132    | 11                                  |                               | 3,5                          |
| 24-30V AC/DC                | 330                          | 330    | 11                                  | 6,5                           | 4,5                          |
| 48-60V AC/DC                | 660                          | 660    |                                     | 6,5                           | 5,5                          |
| 110...127V AC-110...125V DC | 419                          | 419    | 3.3                                 | 5,2                           | 3,7                          |
| 220...240V AC-220...250V DC | 825                          | 825    |                                     | 5,2                           | 2,6                          |
| 380-440V AC                 | 352                          | 352    | 0.8                                 | 4,7                           |                              |
| 480-525V AC                 | 440                          | 440    |                                     | 6                             |                              |

## XT7 and XT7 M

### Shunt opening and shunt closing releases - YO/YC

These opening and closing releases enable the circuit-breaker to be controlled remotely. Opening is always possible, while closing is available only for the XT7 M when the closing springs of the operating mechanism are loaded and the circuit-breakers are ready to close. The releases operate by means of minimum impulse current duration time of 100 ms. Furthermore, they can operate in permanent service. In this case, if the opening command is given by means of the opening release, the circuit-breaker can be closed by de-energizing the opening release and, after a time of at least 30 ms, by controlling the closing. A second open release is an alternative to an undervoltage release.

#### General characteristics

| Power supply (Un)                       | AC   | DC   |
|---|--|------|
| 24V                                     | ■  | ■    |
| 30V                                     | ■  | ■    |
| 48V                                     | ■  | ■    |
| 60V                                     | ■  | ■    |
| 110V...120V                             | ■  | ■    |
| 120V...127V                             | ■  | ■    |
| 220V...240V                             | ■  | ■    |
| 240V...250V                             | ■  | ■    |
| 380V...400V                             | ■  | -    |
| 415V...440V                             | ■  | -    |
| 480V...500V                             | ■  | -    |
| Operating limits (IEC60947-2 standards) | YO/YO2: 70%...110% Un<br>YC/YC2: 85%...110% Un |      |
| Inrush power (Ps)                       | 300VA  | 300W |
| Continuous power (Pc)                   | 3.5VA  | 3.5W |
| Opening time (YO/YO2)                   |  |      |
| XT7-XT7 M                               | 20 ms  |      |
| Closing time (YC/YC2)                   |  |      |
| XT7-XT7 M                               | 50 ms  |      |



Shunt opening release



Undervoltage release

### Undervoltage release – YU

The undervoltage release opens the circuit-breaker when there is a significant voltage drop or power failure. It can be used for safe remote tripping, for blocking closing or to control the voltage in the primary and secondary circuits. The power supply for the release is therefore obtained from the supply side of the circuit-breaker or from an independent source.

Circuit-breaker closing is permitted only when the release is powered. The undervoltage release is an alternative to the second shunt opening release or to the anti-racking out device.

As prescribed in the standards, opening is guaranteed when the voltage is between 70% to 35%  $U_n$ . After tripping, the circuit-breaker can be closed again if the voltage exceeds the 85%  $U_n$ .

#### General characteristics

| Power supply ( $U_n$ )                         | AC               | DC   |
|--|------------------|------|
| 24V  | ■                | ■    |
| 30V  | ■                | ■    |
| 48V  | ■                | ■    |
| 60V  | ■                | ■    |
| 110V...120V                                    | ■                | ■    |
| 120V...127V                                    | ■                | ■    |
| 220V...240V                                    | ■                | ■    |
| 240V...250V                                    | ■                | ■    |
| 380V...400V                                    | ■                | -    |
| 415V...440V                                    | ■                | -    |
| 480V...500V                                    | ■                | -    |
| <b>Operating limits (IEC60947-2 standards)</b> | 70%...100% $U_n$ |      |
| <b>Inrush power (<math>P_s</math>)</b>         | 300VA            | 300W |
| <b>Continuous power (<math>P_c</math>)</b>     | 3.5VA            | 3.5W |
| <b>Opening time (YU)</b>                       |                  |      |
| XT7-XT7 M                                      | 30 ms            |      |



# Remote control



Remote resetting

## Remote resetting - YR

Available on the XT7 M only, the YR reset coil permits the remote resetting of the circuit- breaker after a release has tripped due to an overcurrent condition.

### General characteristics

| Power supply (Un) | AC            | DC |
|-------------------|---------------|----|
| 24V               | ■             | ■  |
| 110V              | ■             | ■  |
| 220V              | ■             | ■  |
| Operating limits  | 90%...110% Un |    |

## Opening and closing release test unit - YO/YC Test Unit

The opening and closing release test unit helps ensure that the releases are running smoothly, to guarantee a high level of reliability in controlling circuit-breaker opening. The test unit ensures the service continuity of the opening and closing releases with a rated operating voltage between 24V and 250V (AC and DC), in addition to verifying the functioning of the opening and closing coils electronic circuit. Continuity is checked cyclically at an interval of 30s between tests. The unit has optic signals via LEDs on the front, which provide the following information:

**POWER ON:** correct power supply of the YO/YC Test Unit;

**OPEN ON:** coil switch absent, power supply absent or insufficient, interrupted cables;

**SHORT ON:** coil switch failure, short-circuited cables;

**OPEN and SHORT FLASHING:** faulty coil switch or incorrect supply;

**OPEN and SHORT OFF:** correct operation of the coil switch.

Two relays with one change-over area are also available on board the unit, to allow remote signaling of the following events:

**Test failure** - resetting takes place automatically when the alarm stops;

**Failure of three tests** - resetting occurs only by pressing the manual RESET on the unit.

### Devices characteristics

|   |                 |
|---|-----------------|
| Auxiliary power supply                        | 24...250V AC/DC |
| <b>Specifications of the signaling relays</b> |                 |
| Maximum interrupted current                   | 6A              |
| Maximum interrupted voltage                   | 250V AC         |



—  
Time delay device for  
undervoltage release

## Electronic time-delay device for undervoltage release - UVD

The undervoltage release can be combined with an electronic time-delay device for the circuit-breaker, allowing for delayed external tripping with adjustable preset times. Use of the delayed undervoltage trip unit is recommended to prevent tripping when the power supply network for the trip unit is subject to brief voltage drops or power supply failures. Circuit-breaker closing is inhibited when the UVD is not powered. The time-delay device must be used with an undervoltage release with the same voltage.

| Circuit-breaker            | Power supply voltage [V AC/DC]             |
|----------------------------|--|
| XT1...XT4                  | 24...30                                    |
| XT1...XT4                  | 48...60                                    |
| XT1...XT4                  | 110...125                                  |
| XT1...XT4                  | 220...250                                  |
| Delay which can be set [s] | 0.25 - 0.5 - 0.75 - 1 - 1.25 - 2 - 2.5 - 3 |
| XT5 - XT6                  | 24...30                                    |
| XT5 - XT6                  | 48...60                                    |
| XT5 - XT6                  | 110...125                                  |
| XT5 - XT6                  | 220...250                                  |
| Delay which can be set [s] | 0.5 - 1 - 1.5 - 2 - 3                      |
| XT7                        | 24...30                                    |
| XT7                        | 48   |
| XT7                        | 60   |
| XT7                        | 110...125                                  |
| XT7                        | 220...250                                  |
| Delay which can be set [s] | 0.5 - 1 - 1.5 - 2 - 3                      |

## Motor Operators

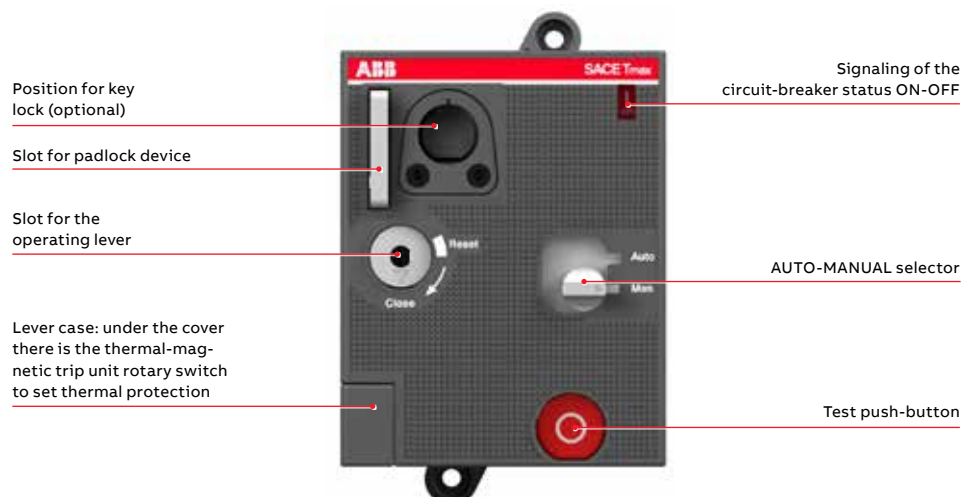
These are devices that allow circuit-breaker opening and closing:

- in remote mode, by means of electric controls;
- locally, directly from the front, by means of a special mechanism.

### Direct action motor operator - MOD



—  
Direct action motor  
operator (MOD)



# Remote control

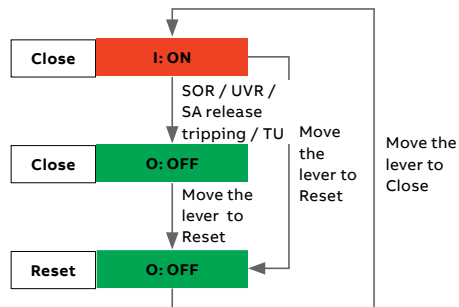
The direct action motor operator available for XT1 and XT3 is supplied:

- with 1m long cables;
- with a flange, to replace the standard one supplied with the circuit-breaker;
- with a padlock device, only removable when the motor is in the open position. The padlock device accepts up to three 8 mm padlocks;
- auxiliary contacts (AU-MO), which allow the motor control mode (manual or auto) signal to be routed outside;
- (on request) the motor operator can be fitted with a key lock (see the Chapter "Accessories" - section "Locks").

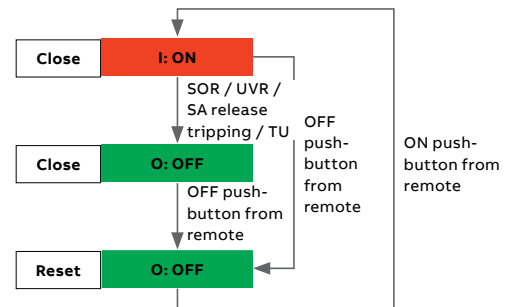
Operating principles:

- a selector on the front of the MOD, is used for selecting the operating mode:
  - **AUTO**: when the selector is in this position, the circuit-breaker closing is commanded remotely only by means of an electric impulse, whereas opening is allowed both remotely and from the front of the motor;
  - **MANUAL**: when the selector is in this position, the circuit-breaker can only be opened/closed from the front of the motor by means of the relative lever housed in a slot made in the motor itself;
- via remote control, guaranteed by permanent electrical opening/closing impulses.

Operating mode: Manual



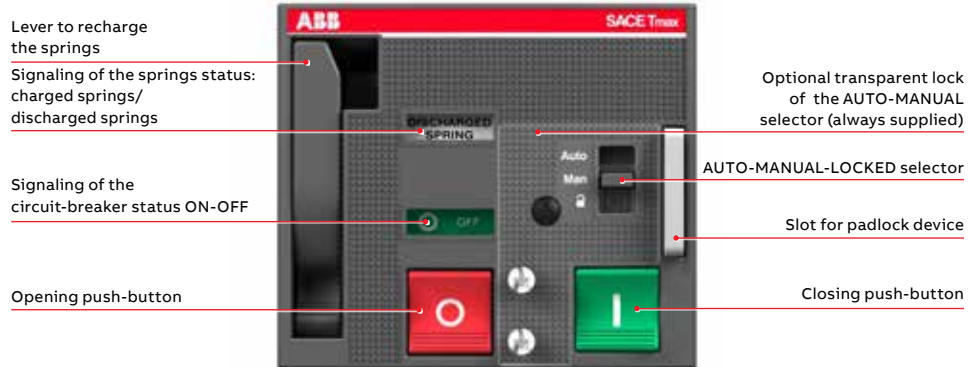
Operating mode: Auto



### Stored energy motor operators - MOE and MOE-E XT2-XT4



—  
Stored energy motor operators (MOE)



The MOE or MOE-E stored energy motor operator available for XT2 and XT4 is supplied:

- with 1m long cables;
- with connectors for the fixed part and moving part of withdrawable devices. If the motor operator is used with fixed or plug-in circuit-breakers, the connector can be easily removed;
- with a flange, to be used instead of the standard one supplied with the circuit-breaker;
- with a padlock device, which is only removable when the motor is in the open position. The padlock device accepts up to three 8mm padlocks;
- with a lock for the AUTO-MANUAL selector;
- with auxiliary contacts (AUX-MO) that allow the motor control mode (manual or remote) signal to be routed outside;
- (on request) the motor operator can be equipped with a key lock (see the Chapter "Accessories" - section "Locks");
- (on request) the motor operator can be equipped with a key lock to safeguard against manual operation (MOL-M) (see the Chapter "Accessories" - section "Locks").

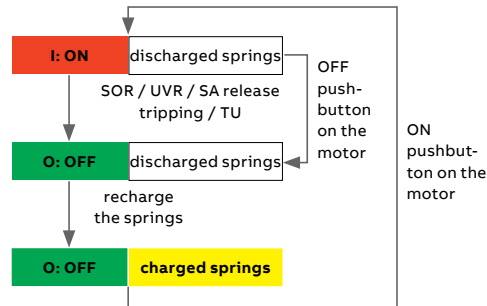
Operating principles:

- a selector on the front of the MOE, is used for selecting the operating mode:
  - AUTO: when the selector is in this position, the push-buttons on the front of the motor are locked. Circuit-breaker closing is commanded remotely only by means of an electric impulse, whereas opening is allowed both remotely and from the front of the motor;
  - MANUAL: the circuit-breaker can only be opened/closed from the front of the motor using the relative push-buttons;
  - LOCKED: when the selector is in this position, the circuit-breaker is in the open position. The padlock device can be withdrawn and the motor can be locked in the open position;
- operation of the motor operator via remote control is also guaranteed by permanent electrical opening/closing impulses. Once an opening command has been given, the next closing command (permanent) is taken over by the motor operator once the opening has been completed. In the same way, an opening command is taken over once the previous closing operation has been completed;

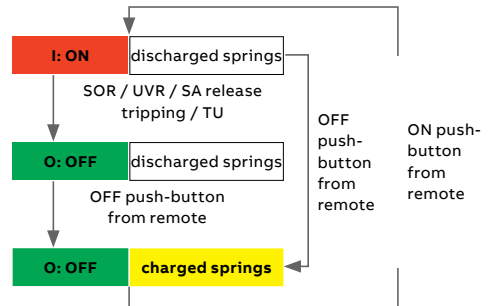
When the Ekip Com module is used, the MOE-E motor operator must be used instead of the MOE motor operator. The MOE-E allows the digital signals from the supervision and monitoring system to be used by means of the release and Ekip Com contacts and to be converted into power signals to command the motor operator. All the features described above for the MOE motor operator are available also on the MOE-E version.

# Remote control

## Operating mode: Manual



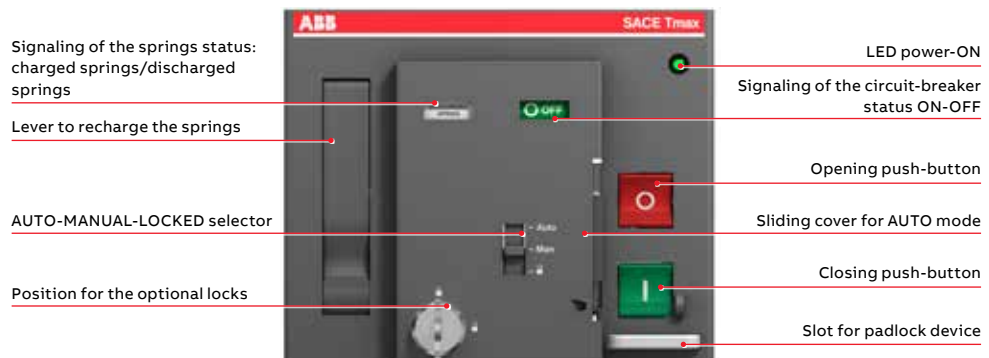
## Operating mode: Auto



## Stored energy motor operators - MOE and MOE-E XT5 and MOE XT6



Stored energy motor operator (MOE)



The MOE or MOE-E stored energy motor operator available for the XT5 and XT6 is supplied:

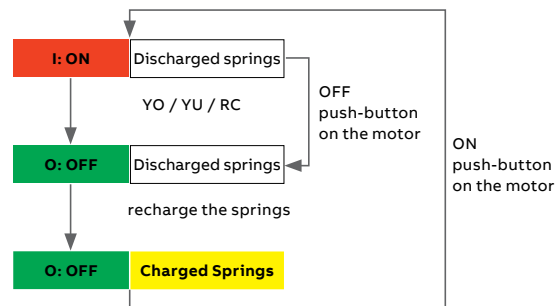
- with 1m long cables;
- with connectors for the fixed part and moving part of withdrawable devices. If the motor operator is used with fixed or plug-in circuit-breakers, the connector can be easily removed;
- with a flange, to use instead of the standard one supplied with the circuit-breaker;
- with a padlock device, only removable when the motor is in the open position. The padlock device accepts up to three 8mm padlocks;
- with a lock for the AUTO-MANUAL selector;
- with auxiliary contacts that allow the motor control mode (manual or remote) signal to be routed outside;
- (on request) the motor operator can be equipped with a key lock (see the Chapter "Accessories" - section "Locks");
- (on request) the motor operator can be equipped with a key lock to safeguard against manual operation (MOL-M) (see the Chapter "Accessories" - section "Locks").

### Operating principles:

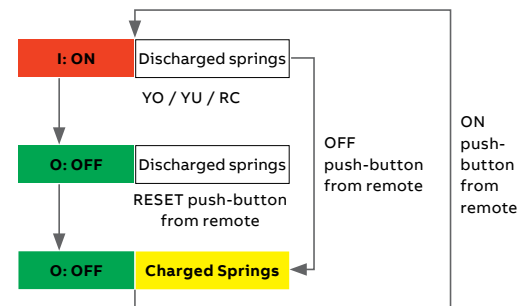
- a selector on the front of the MOE, is used to select the operating mode:
  - **AUTO:** when the selector is in this position, the push-buttons on the front of the motor are locked and covered by a sliding cover. It is possible to seal the sliding cover to avoid mode changing. Circuit-breaker closing is commanded remotely only by means of an electric impulse, whereas opening is allowed both remotely and from the front of the motor using a tool;
  - **MANUAL:** the circuit-breaker can only be opened/closed from the front of the motor using the relevant push-buttons. It is possible to seal the sliding cover to avoid mode changing;
  - **LOCKED:** the device can be used only if the motor is in the open position and the springs are charged. The padlock device can be withdrawn and the can be motor locked in the open position;
- operation of the motor operator via remote control is also guaranteed by permanent electrical opening/closing impulses. Once an opening command has been given, the next closing command (permanent) is taken over by the motor operator once the opening has been completed. In the same way, an opening command is taken over once the previous closing operation has been completed;

When the Ekip Com module is used, the MOE-E motor operator must be used instead of the MOE motor operator. The MOE-E allows digital signals from the supervision and monitoring system to be used by means of the release and Ekip Com contacts and to be converted into power signals to command the motor operator. All the features described above for the MOE motor operator are also available on the MOE-E version.

#### Operating mode: Manual



#### Operating mode: Auto

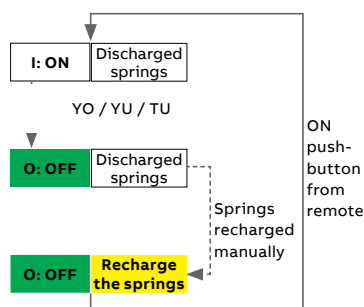


With the XT5 MOE and MOE-E and the XT6 MOE, it is possible to define some reset logic in order to charge the springs automatically once the circuit-breaker has tripped depending on the reset wiring diagram chosen. Three different options are available:

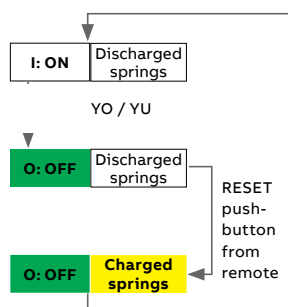
- **Auto Reset:** the circuit-breaker is automatically reset after a trip (not due to the trip unit) and the springs are charged;
- **Remote Reset:** it is possible to connect a push-button in order to charge the springs after a trip (not due to the trip unit);
- **Manual Reset:** charging springs must be done manually after a trip.

As explained in the motor circuit diagram, the auxiliary contact S51 must be properly connected to enable remote or automatic resetting. After a trip due to an overload or a short-circuit (trip unit), only a manual reset is permitted.

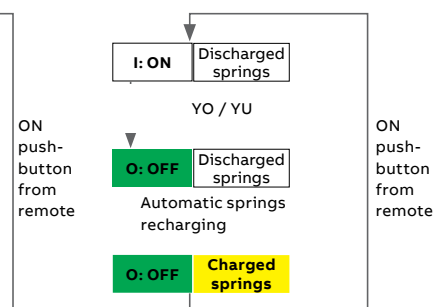
#### Manual Reset



#### Remote Reset



#### Auto Reset



## Remote control

| Electrical specifications                                  | MOD           |                            | MOE and MOE-E   |                 | MOE             |
|--|---------------|----------------------------|-----------------|-----------------|-----------------|
|  | XT1 – XT3     |                            | XT2 – XT4       | XT5             | XT6             |
| Rated voltage, Un  | [V]           | 24 DC                      | 24 DC           | 24 DC           | 24 DC           |
|  | [V]           | 48...60 DC                 | 48...60 DC      | 48...60 DC      | 48...60 DC      |
|  | [V]           | 110...125 AC/DC            | 110...125 AC/DC | 110...125 AC/DC | 110...125 AC/DC |
|  | [V]           | 220...250 AC/DC            | 220...250 AC/DC | 220...250 AC/DC | 220...250 AC/DC |
|  | [V]           | 380...440 AC               | 380...440 AC    | 380 AC          | 380 AC          |
|  | [V]           | 480...525 AC               | 480...525 AC    | -               | -               |
| Operating voltage  | [% Un]        | MIN=85% Un;<br>MAX=110% Un |                 |                 |                 |
| Power absorbed on inrush Ps                                | [VA - W]      | ≤ 500                      | ≤ 300           | ≤ 300           | ≤ 400           |
| Power absorbed on continuing PC service                    | [VA - W]      | ≤ 300                      | ≤ 150           | ≤ 150           | ≤ 150           |
| Operating frequency  | [Hz]          | 50..60                     | 50..60          |                 |                 |
| Duration   | CL → OP [s]   | < 0.1                      | < 1.5           | 1.5             | 3               |
|  | OP → CL [s]   | < 0.1                      | < 0.1           | < 0.08          | < 0.08          |
|  | TR → OP [s]   | < 0.1                      | < 3             | < 3             | < 5             |
| Mechanical life  | N° operations | 25000                      | 25000           | 20000           | 10000           |
| Minimum duration of electrical opening and closing command | [ms]          | ≥ 150                      | ≥ 150           | ≥ 100           | ≥ 100           |

### Motor – M

Available on SACE Tmax XT7 M only, this motor automatically loads the closing springs of the circuit-breaker. The device automatically reloads the springs of the operating device when they are discharged and energized. In the event of a lack of power, the springs can be manually charged by using a dedicated lever on the operating device. The motor of the XT7 M can be equipped with an S33/M contact which signals the status of the springs that must be ordered separately.



Motor operator

| Electrical specifications             | Motor Operator XT7 M |                         |
|---------------------------------------|----------------------|-------------------------|
|                                       | [V]                  | 24...30 AC/DC           |
| Rated voltage, Un                     | [V]                  | 48...60 AC/DC           |
|                                       | [V]                  | 100...130 AC/DC         |
|                                       | [V]                  | 220...250 AC/DC         |
|                                       | [V]                  | 380...415 AC            |
| Operating voltage                     | [% Un]               | MIN=85% Un; MAX=110% Un |
| Power absorbed on inrush Ps           | [VA - W]             | 300                     |
| Inrush time                           | [ms]                 | 200                     |
| Power absorbed on continue Pc service | [VA - W]             | 100                     |
| Operating frequency                   | [Hz]                 | 50..60                  |
| Charging time                         | [s]                  | 8                       |

# Safety and protection



Terminal covers

## Terminal covers

Terminal covers are applied to the circuit-breaker to prevent accidental contact with live parts, thus providing protection against direct contact. The terminal covers are pre-punched to facilitate the installation of busbars and/or cables, guaranteeing the correct insulation. The terminal covers are able to guarantee adequate circuit-breaker installation and correct insulation and are listed in the Chapter "Power Connection".

There are different types of terminal covers:

- High terminal covers (HTC)
- Low terminal covers (LTC)
- Extended high terminal covers (HTC-ES), for front extended terminals
- High terminal covers with back shield (HTC\_BS), with a back plate in order to guarantee insulation with the rear zone of the switchboard.

The table below shows the terminal covers available for each frame:

|   | XT1 |    | XT2 |    | XT3 |    | XT4 |    | XT5              |                  | XT6 |    | XT7/XT7 M |    |
|---|-----|----|-----|----|-----|----|-----|----|------------------|------------------|-----|----|-----------|----|
|   | 3p  | 4p | 3p  | 4p | 3p  | 4p | 3p  | 4p | 3p               | 4p               | 3p  | 4p | 3p        | 4p |
| HTC - High terminal covers  | ■   | ■  | ■   | ■  | ■   | ■  | ■   | ■  | ■                | ■                | ■   | ■  | ■         | ■  |
| LTC - Low terminal covers   | ■   | ■  | ■   | ■  | ■   | ■  | ■   | ■  | ■ <sup>(1)</sup> | ■ <sup>(1)</sup> | ■   | ■  | ■         | ■  |
| HTC-ES - Extended high terminal covers                                    | -   | -  | -   | -  | -   | -  | -   | -  | ■                | ■                | ■   | ■  | ■         | ■  |
| HTC_BS - High terminal cover with back shield <sup>(2)</sup>              | -   | -  | -   | -  | -   | -  | -   | -  | ■                | ■                | ■   | ■  | ■         | ■  |
| HTC-ES_BS - Extended high terminal covers with back shield <sup>(2)</sup> | -   | -  | -   | -  | -   | -  | -   | -  | ■                | ■                | ■   | ■  | ■         | ■  |

(1) LTC height for XT5 is equal to 25 mm

(2) Not compatible with XT5 Fixed Part

## Phase separators

Phase separators increase the insulation characteristics between phases at the connection level. They are mounted from the front, even when the circuit-breaker has already been installed, by inserting them into the corresponding slots. The phase separators guarantee adequate circuit-breaker installation and correct insulation and are listed in the Chapter "Power connection".

The following versions of phase separators are available:

- Low phase separators
- Medium phase separators
- High phase separators
- Rear phase separators for fixed part only

|                             | XT1      | XT2 | XT3 | XT4 | XT5 | XT6 | XT7/XT7 M |
|-----------------------------|----------|-----|-----|-----|-----|-----|-----------|
| Phase separator - low       | [mm] 25  | 25  | 25  | 25  | 25  | -   | -         |
| Phase separator - medium    | [mm] 100 | 100 | 100 | 100 | 100 | 100 | 100       |
| Phase separator - high      | [mm] 200 | 200 | 200 | 200 | 200 | 200 | 200       |
| Rear phase separator for FP | [mm] 90  | 90  | 90  | 90  | 90  | -   | -         |

## Sealable screws for terminal covers

The lead sealing kit consists of screws which prevent the removal of the terminal covers, providing protection against direct contacts and tampering. The screws can be locked with wire and lead seals. Each sealing kit consists of two screws. The maximum number of sealable screws that can be used for each circuit-breaker is given in the table below.

|  | XT1     |    | XT2 |    | XT3 |    | XT4 |    |
|--|---------|----|-----|----|-----|----|-----|----|
|  | 3p      | 4p | 3p  | 4p | 3p  | 4p | 3p  | 4p |
| Max number sealable screws for each terminal cover | [No.] 1 | 1  | 1   | 1  | 1   | 2  | 1   | 1  |



Sealable screws



# Safety and protection

## Padlocks and key locks

Padlocks or key locks prevent the circuit-breaker from being closed and/or opened. They can be fitted:

- directly on the front of the circuit-breaker;
- on the rotary handle operating mechanism;
- on the front for lever operating mechanism;
- on the motor;
- to the fixed part of withdrawable version, to prevent a moving part from being inserted;
- on the front of the thermal-magnetic trip unit, to prevent the adjuster of the thermal part from being tampered with;
- on the shutters of the fixed part.

All locks that hold the circuit-breaker in the open position ensure circuit insulation in accordance with the IEC 60947-2 standard. In the closed position, the locks do not prevent the mechanism from tripping due to the trip unit or a service release.

### Padlocks and keylock for circuit-breaker

| Type of lock  | Circuit-breaker | Optional/standard supply | Position of circuit-breaker lock | Type of lock  | Removability of key |
|---|-----------------|--------------------------|----------------------------------|---|---------------------|
| PLL<br>Fixed padlock device   | XT1...XT4       | Optional                 | OPEN/CLOSE                       | Padlocks max 3 padlocks Ø 7mm stem (not supplied)   | -                   |
|   |                 |                          | OPEN                             | Padlocks max 3 padlocks Ø 7mm stem (not supplied)   | -                   |
|   |                 | Optional                 | OPEN/CLOSE                       | Padlocks max 3 padlocks Ø 8mm stem (not supplied)   | -                   |
|   |                 |                          | OPEN                             | Padlocks max 3 padlocks Ø 8mm stem (not supplied)   | -                   |
|   |                 | Optional                 | OPEN                             | Padlocks max 3 padlocks Ø 8mm stem (not supplied)   | -                   |
| PLC<br>Fixed padlock device   | XT7 M           | Optional                 | OPEN                             | Padlocks max 3 padlocks Ø 4mm stem (not supplied)   | -                   |
|   |                 |                          |                                  | Padlocks max 2 padlocks Ø 8mm stem (not supplied)   | -                   |
|   |                 |                          |                                  | Padlocks max 1 padlocks Ø 7mm stem (not supplied)   | -                   |
|   |                 |                          |                                  |   |                     |
|   |                 |                          |                                  |   |                     |
| Circuit-breaker<br>PLL<br>Removable padlock device                                    | XT1, XT3        | Optional                 | OPEN                             | Padlocks max 3 padlocks Ø 7mm stem (not supplied)   | -                   |
|   |                 |                          | OPEN                             | Padlocks max 3 padlocks Ø 8mm stem (not supplied)   | -                   |
|   | XT5, XT6        | Optional                 | OPEN                             |   |                     |
|   |                 |                          |                                  |   |                     |
|   |                 |                          |                                  |   |                     |
| KLC<br>Key lock <sup>(2)</sup>  | XT1...XT7       | Optional                 | OPEN                             | Ronis 1228 Same key (A, B, C, D type)   | OPEN                |
|   |                 |                          | OPEN                             | Ronis 1228 Different key  | OPEN                |
|   |                 |                          | OPEN                             | Ronis 1228 Same key   | OPEN/CLOSE          |
|   | XT7 M           | Optional                 | OPEN                             | Giussani Same key (20005/6/7/8/9)   | OPEN                |
|   | XT7 M           | Optional                 | OPEN                             | Giussani Different key  | OPEN                |
| KLC<br>Arrangement key lock   | XT5...XT6       | Optional                 | OPEN                             | Kirk, Ronis 1104 and STI key lock   | OPEN                |
|   |                 |                          |                                  | Kirk, Ronis 1104, STI and Castell key lock  | OPEN                |
|   | XT7 M           | Optional                 | OPEN                             | Kirk, Ronis 1104, STI and Castell <sup>(3)</sup> key lock   | OPEN                |
| DLC - Lock to prevent door opening when the circuit-breaker is in the closed position | XT7, XT7 M      | Optional                 | -                                | This prevents the compartment door from being opened when the circuit-breaker is in the closed position (and with the circuit-breaker racked-in in case of withdrawable circuit-breakers). It also blocks the circuit-breaker from closing when the compartment door is open. | -                   |

(1) For XT7, the PLL is directly integrated in the plastic cover of the circuit-breaker

(2) For the XT1, XT2, XT3 and XT4, the KLC is incompatible with the electrical accessories mounted on the third pole.

(3) Factory mounted only



Fixed padlock in open position



Fixed padlock in the open/closed position



Removable padlock in the open position - PLL



Key lock



Padlock in the open position - PLC



Keylock - KLC



Lock to prevent door opening - DLC

### Padlocks and keylocks for handles



— RHD with key lock



— RHE with key lock

| Type of lock                          |  | Circuit-breaker | Optional/<br>standard<br>supply       | Position<br>of circuit-<br>breaker lock | Type of lock   | Removability<br>of key |
|---------------------------------------|--|-----------------|---------------------------------------|---|--|------------------------|
| Rotary<br>handle<br>(RHD/<br>RHE/RHS) | RHL<br>Key lock <sup>(1)</sup>             | XT1...XT7       | Optional                              | OPEN                                    | Ronis 1228 Same key (A, B, C, D type)                | OPEN                   |
|                                       |  | XT1...XT7       | Optional                              | OPEN                                    | Ronis 1228 Different key                             | OPEN                   |
|                                       |  | XT1...XT7       | Optional                              | OPEN                                    | Ronis 1228 Same key                                  | OPEN/CLOSE             |
|                                       | RHL Key lock<br>for panel door<br>with RHE | XT1...XT7       | Optional                              | OPEN                                    | Ronis 1228 Different key                             | OPEN/CLOSE             |
|                                       | Padlock device                             | XT1...XT4       | standard                              | OPEN                                    | Padlocks max 3 padlocks Ø 6mm stem<br>(not supplied) | -                      |
|                                       | Padlock device                             | XT5...XT7       | standard                              | OPEN                                    | Padlocks max 3 padlocks Ø 8mm stem<br>(not supplied) | -                      |
|                                       | Additional<br>padlock device               | XT5...XT7       | standard with<br>dedicated RH<br>code | OPEN                                    | Padlocks max 3 padlocks Ø 8mm stem<br>(not supplied) | -                      |
|                                       | Door lock <sup>(2)</sup>                   | XT1...XT7       | standard                              | Door locked<br>when CB is<br>closed     | -  | -                      |

(1) On the transmitted rotary handle (RHE), the lock is mounted on the base. The key lock is not available on the lateral handle (RHS).

(2) When the handle is assembled, this function can be totally inhibited by the customer with a simple operation that can be reversed if needed. Moreover, if the door lock function is not disabled by the customer during the assembly phase, the door lock can be temporarily excluded with a tool in exceptional cases, so that the door can be opened without opening the circuit-breaker.

### Padlocks and keylocks for front for the lever operating mechanism



— FLD with key lock

| Type of lock   |                 | Circuit-breaker    | Optional/<br>standard<br>supply | Position<br>of circuit-<br>breaker lock | Type of lock                                      | Removability<br>of key |
|--|-----------------|--------------------|---------------------------------|---|---|------------------------|
| Front for the lever<br>operating<br>mechanism<br>(FLD) | KLC<br>Key lock | XT1...XT6          | Optional                        | OPEN                                    | Ronis 1228 Same key (A, B, C, D type)             | OPEN                   |
|  |                 | XT1...XT6          | Optional                        | OPEN                                    | Ronis 1228 Different key                          | OPEN                   |
|  |                 | XT1...XT6          | Optional                        | OPEN                                    | Ronis 1228 Same key                               | OPEN/CLOSE             |
|  | Padlock device  | XT1...XT4          | standard                        | OPEN                                    | Padlocks max 3 padlocks Ø 6mm stem (not supplied) | -                      |
|  | Padlock device  | XT5...XT6          | standard                        | OPEN                                    | Padlocks max 3 padlocks Ø 8mm stem (not supplied) | -                      |
|  | Door lock       | XT2, XT4, XT5, XT6 | standard                        | Door locked when CB is closed           | -   | -                      |

# Safety and protection

## Padlocks and keylocks for motors



MOD with key lock



MOE with key lock

| Type of lock            |  | Circuit-breaker | Optional/standard supply | Position of circuit-breaker lock | Type of lock                                      | Removability of key |
|-------------------------|--|-----------------|--------------------------|----------------------------------|---|---------------------|
| Motor (MOD, MOE, MOE-E) | Key lock on motor MOL-D MOL-S                          | XT1...XT6       | Optional                 | OPEN                             | Ronis 1228 Same key (A, B, C, D type)             | OPEN                |
|                         |  | XT1...XT6       | Optional                 | OPEN                             | Ronis 1228 Different key                          | OPEN                |
|                         | Key lock against manual operation MOL-M <sup>(1)</sup> | XT2-XT4-XT5-XT6 | Optional                 | MANUAL                           | Ronis 1228 Different key                          | WITH LOCK INSERTED  |
|                         | Padlock device   | XT1...XT6       | standard                 | OPEN                             | Padlocks max 3 padlocks Ø 8mm stem (not supplied) | -                   |

(1) For MOE and MOE-E only.

## Padlocks and keylock for fixed parts



Key lock/padlock for withdrawable fixed part



Withdrawable fixed part with key lock/padlock



| Type of lock   |  | Circuit-breaker    | Optional/standard supply | Position of circuit-breaker lock                                 | Type of lock  | Removability of key |
|--|--|--------------------|--------------------------|--|---|---------------------|
| Fixed part of withdrawable                           | KLF-FP Key lock / padlock for fixed part of withdrawable device <sup>(1)</sup> | XT2, XT4, XT5, XT6 | Optional                 | Key WITHDRAWN/ INSERTED/TEST (if available)<br>Padlock WITHDRAWN | Ronis key 1228 Different + padlocks max 3 padlocks Ø 6mm stem (not supplied)            | -                   |
|  |  | XT2, XT4, XT5, XT6 | Optional                 | Key WITHDRAWN/ INSERTED/TEST (if available)<br>Padlock WITHDRAWN | Ronis key 1228 Same + padlocks max 3 padlocks Ø 6mm stem (not supplied)                 | -                   |
|  | KLP Key lock in racked-in/ racked-out position - KLP                           | XT2, XT4           | Optional                 | Key WITHDRAWN/ INSERTED<br>Padlock WITHDRAWN                     | Giussani key Different + padlocks max 3 padlocks Ø 6mm stem (not supplied)              | -                   |
|  |  | XT2, XT4           | Optional                 | Key WITHDRAWN/ INSERTED<br>Padlock WITHDRAWN                     | Giussani key Same + padlocks max 3 padlocks Ø 6mm stem (not supplied)                   | -                   |
|  |  | XT5, XT6           | Optional                 | Key WITHDRAWN/ INSERTED/TEST (if available)<br>Padlock WITHDRAWN | Arrangement for STI, Ronis 1104 key + padlocks max 3 padlocks Ø 6mm stem (not supplied) | -                   |
| Padlock in racked-in/ test/racked-out position - PLP | KLP Key lock in racked-in/ racked-out position - KLP                           | XT7, XT7 M         | Optional                 | Key WITHDRAWN/ INSERTED/ TEST                                    | Giussani Same key (20005/6/7/8/9)   | -                   |
|  |  | XT7, XT7 M         | Optional                 | Key WITHDRAWN/ INSERTED/TEST                                     | Giussani Different key  | -                   |
|  | Arrangement KLP Key lock in racked-in/ racked-out position - KLP               | XT7, XT7 M         | Optional                 | Key WITHDRAWN/ INSERTED/TEST                                     | Kirk, Ronis 1104, STI and Castell key lock  | -                   |
|  | PLP Padlock in racked-in / test / racked-out position                          | XT7, XT7 M         | Optional                 | Key WITHDRAWN / INSERTED / TEST                                  | Padlocks max 3 padlocks Ø 8mm stem (not supplied)                                       | -                   |

(1) For the XT5 and XT6 this lock/padlock can not be used with rear mechanical interlock

Lock for thermal regulation

| Type of lock |  | Circuit-breaker    | Optional/<br>standard<br>supply | Position<br>of circuit-<br>breaker lock | Type of lock | Removability<br>of key |
|--------------|--|--------------------|---------------------------------|---|--------------|------------------------|
| Trip Unit    | Lock for thermal regulation <sup>(1)</sup> | XT1, XT3           | Optional                        | -                                       | -            | -                      |
|              |  | XT2, XT4, XT5, XT6 | standard                        | -                                       | -            | -                      |

(1) This is applied to the cover of the circuit-breakers on level with the regulator of the thermal element of the thermal-magnetic release TMD and prevents it from being tampered with.

Lock for shutters of fixed parts

| Type of lock |                   | Circuit-breaker | Optional/<br>standard<br>supply | Position<br>of circuit-<br>breaker lock | Type of lock                                      | Removability<br>of key |
|--------------|-------------------|-----------------|---------------------------------|---|---|------------------------|
| Fixed Part   | Shutter lock - SL | XT7, XT7 M      | Optional                        | -                                       | Padlocks max 3 padlocks Ø 8mm stem (not supplied) | -                      |

IP Protection Kit

In order to improve the IP protection degree, some additional kits can be used.

IP54 Protection flange for direct rotary handle (RHD)

This flange can be mounted with the direct rotary handle of the XT5, XT6 and XT7 to guarantee an IP54 degree of protection.

With this flange is not possible to open the panel door when the circuit-breaker is in the closed position.



IP54 protection

IP54 Protection for transmitted rotary handle (RHE)

This device can be fixed onto the transmitted rotary and lateral handle of the XT1, XT2, XT3 and XT4 allowing an IP54 degree of protection to be achieved. The IP degree of the transmitted rotary handle for the XT5, XT6 and XT7 is IP65 as standard without an additional accessory.



IP54 protection for XT7 M

IP54 Protection flange for the MOE and XT7 M

This transparent cover completely protects the front of the circuit-breaker, guaranteeing an IP54 degree of protection. This accessory is provided with a double key lock (same or different keys).

This cover is available for the XT5 MOE/MOE-E, XT6 MOE and for the XT7 M circuit-breaker.

# Safety and protection



Protection device for opening and closing pushbuttons - PBC

## Protection device for opening and closing pushbuttons - PBC

This accessory is applied to the safety cover of the XT7 M and is available in two versions.

The push-button protection device blocks the operations on both the opening and closing push-buttons unless a special key is used.

The padlockable push-button protection device makes it possible to block either or both push-buttons and to lock the covers in place. It does not trip the breaker as a standard "Padlock device" would. The protection device for opening and closing push-buttons is an alternative to PLC padlocks.



Mechanical operation counter - MOC

## Mechanical operation counter - MOC

The mechanical operation counter is available on the Tmax XT7 M only. This mechanical operation counter is visible on the front of the circuit-breaker and allows the user to see how many mechanical operations the device has performed.



Circuit-breaker with optional flange

## Flange

This is a plastic plate that acts as an interface between the circuit-breaker and the hole in the panel door. All the Tmax XT flanges are newly designed and do not require screws for installation. The flanges can be applied:

- around the front part of the fixed/plug-in circuit-breaker;
- around the operating lever for all fixed/plug-in/withdrawable version circuit-breakers;
- around the MOD or MOE motor operator;
- around the front of FLD locks;
- around the direct rotary handle operating mechanism;
- around the RC Inst, RC Sel for the XT1 and XT3, and around the RC Sel for the XT2, XT4 and XT5.



Rotary handle with flange



MOE with flange



XT1-XT3 circuit-breaker with standard flange



XT7 and XT7 M flanges



MOD with flange



XT2-XT4 circuit-breaker with standard flange

# Interlocks and switching devices

| Operating mechanism       |                         | XT1 | XT2 | XT3 | XT4 | XT5 | XT6 | XT7 | XT7 M |
|---------------------------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-------|
| Rear mechanical interlock | MIR Horizontal          | ■   | ■   | ■   | ■   | ■   | ■   | -   | -     |
|                           | MIR Vertical            | ■   | ■   | ■   | ■   | ■   | ■   | -   | -     |
| Cables interlocks         | Type A (2 CBs)          | -   | -   | -   | -   | -   | -   | ■   | ■     |
|                           | Type B, C and D (3 CBs) | -   | -   | -   | -   | -   | -   | ■   | ■     |
| Automatic transfer switch | ATS021                  | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |
|                           | ATS022                  | ■   | ■   | ■   | ■   | ■   | ■   | ■   | ■     |

## Rear mechanical interlock

This is a support designed for installation on the rear of two circuit-breakers to be interlocked. It prevents the two circuit-breakers it is installed on from closing simultaneously by linking components. Tmax XT circuit-breakers can be interlocked two-by-two (IO-OI-OO) by means of a chassis and special plates. Interlocked circuit-breakers can be in fixed, plug-in or withdrawable versions. Both circuit-breakers and switch-disconnectors in the 3 and 4 pole versions can be interlocked.

The allowed combinations are:

|     | XT1 | XT2 | XT3 | XT4 | XT5 | XT6 |
|-----|-----|-----|-----|-----|-----|-----|
| XT1 | ■   | ■   | ■   | ■   |     |     |
| XT2 | ■   | ■   | ■   | ■   |     |     |
| XT3 | ■   | ■   | ■   | ■   |     |     |
| XT4 | ■   | ■   | ■   | ■   | ■   |     |
| XT5 |     |     |     | ■   | ■   | ■   |
| XT6 |     |     |     |     | ■   | ■   |

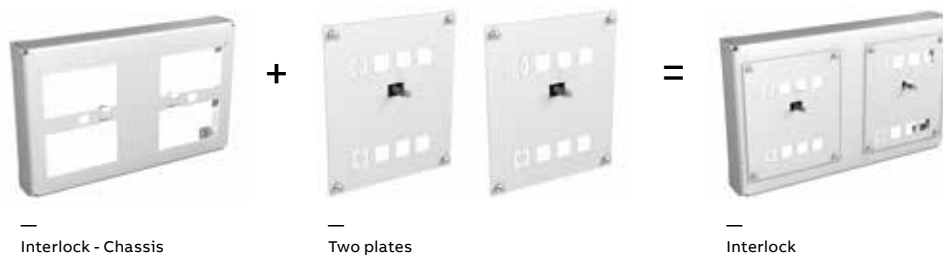
The following equipment must be ordered to make a rear interlock:

- a vertical or horizontal chassis;
- a plate for each circuit-breaker to be interlocked.

For using an XT4 on an XT5 chassis and an XT5 on an XT6 chassis, dedicated plates are necessary.

Please note that remote closing commands sent to interlocked circuit-breakers in the open position must be prevented in order to ensure the correct functioning of the mechanical interlock. If this is not possible, key locks in the open position for the MOE are necessary.

With the XT5 and XT6 interlock chassis, for withdrawable version circuit-breakers, the use of the key-lock/padlock for fixed parts (KLF) is not allowed.



Interlock

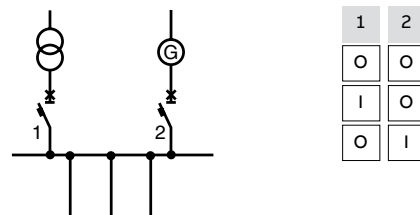
# Interlocks and switching devices

## Cables interlocks

These interlock systems, for the Tmax XT7 and XT7 M, enable various opening and closing configurations to be obtained between two or three circuit-breakers. Four types of interlock configuration are available:

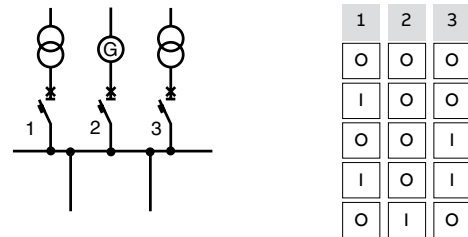
### Type A

Excludes the possibility of having two circuit-breakers in the closed position at the same time.



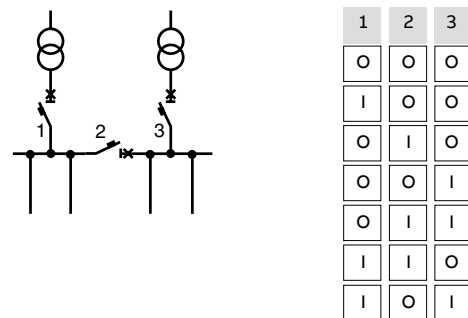
### Type B

Permits a pair of circuit-breakers to be closed if the third is open. The latter can only be closed when the paired circuit-breakers are open.



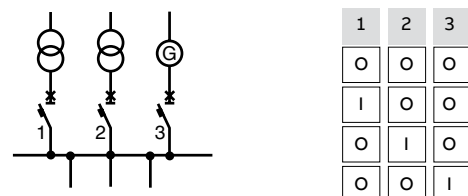
### Type C

Permits two out of three circuit-breakers to be closed at the same time.



### Type D

Permits one out of three interlocked circuit-breakers to be closed.





ATS021



ATS022

## Automatic network-generator transfer unit ATS021-ATS022

The ATS (Automatic Transfer Switch) is a network-generator transfer unit used in installations where switching the main power line to an emergency line is required to ensure power supply to the loads in case of anomalies in the main line.

The unit is able to manage the entire transfer procedure automatically and prepares the commands for carrying out the procedure manually as well.

In the case of an anomaly in the main line voltage, in accordance with parameters set by the user, the opening of the circuit-breaker of the main line, the starting of the generator set (when provided) and the closing of the emergency line can be carried out. In the same way, when the line is supplied back, the procedure of reverse transfer is controlled automatically.

The new generation of the ATS (ATS021 and ATS022) offers the most advanced and complete solutions to guarantee service continuity. The ATS021 and ATS022 can be used with all the circuit-breakers as well as the switch-disconnectors of the SACE Tmax XT family. The ATS021 and ATS022 devices have been designed to operate with a self-supply. The ATS022 unit also prepares the connection for the auxiliary power supply, which allows additional functions to be used.

The ATS021 and ATS022 devices carry out the control of both the power supply lines and analyze:

- phase unbalance;
- frequency unbalance;
- phase loss.

Apart from the standard control functions, the ATS022 enables the following operations:

- selection of the priority line;
- control of a third circuit-breaker;
- integration of the device in a supervision system with Modbus communication (an auxiliary power supply is needed);
- reading and setting parameters, and displaying measurements and alarms, by means of a graphic display.

Typical applications include: power supply to UPS (Uninterrupted Power Supply) units, operating theaters and primary hospital services, emergency power supplies for civil buildings, airports, hotels, data banks and telecommunication systems, and the power supply of industrial lines for continuous processes.

For the correct configuration, each circuit-breaker connected to the ATS021 or ATS022 must be fitted with the following accessories:

- a mechanical interlock;
- a motorized control for opening and closing;
- a key lock against manual operation for the motor operator;
- a signaling contact for the status (open/closed) and a signaling contact for tripping;
- a contact for the racked-in position (in the case of a withdrawable version circuit-breaker).



# Interlocks and switching devices

|   | ATS021                             | ATS022   |
|---|------------------------------------|--|
| <b>General</b>                                    |                                    |  |
| Auxiliary Power Supply                            | Not Required                       | Not Required<br>(24-110V DC is required only for Modbus dialogue and 16 2/3 Hz system) |
| Rated Voltage, Un [VAC]                           | Max 480                            | Max 480  |
| Frequency [Hz]                                    | 50, 60                             | 16 2/3, 50, 60, 400  |
| Dimensions (HxLxD) [mm]                           | 96x144x170                         | 96x144x170   |
| Type of installation                              | Door mounting<br>DIN-rail mounting | Door mounting<br>DIN-rail mounting   |
| Operating Mode                                    | Auto/Manual                        | Auto/Manual  |
| <b>Features</b>                                   |                                    |  |
| Monitoring of the Normal and Emergency lines      | ■                                  | ■  |
| Controlling CBs of the Normal and Emergency lines | ■                                  | ■  |
| Generator set start-up                            | ■                                  | ■  |
| Generator set shutdown with adjustable delay      | ■                                  | ■  |
| Bus-tie   | -                                  | ■  |
| No-priority Line                                  | -                                  | ■  |
| Modbus RS485                                      | -                                  | ■  |
| Display   | -                                  | ■  |
| <b>Ambient conditions</b>                         |                                    |  |
| Operating temperature                             | -20...+60 °C                       | -20...+60 °C   |
| Humidity  | 5% - 90% without condensation      | 5% - 90% without condensation  |
| <b>Operating thresholds</b>                       |                                    |  |
| Minimum voltage                                   | -30%...-5%Un                       | -30%...-5%Un   |
| Maximum voltage                                   | +5%...+30%Un                       | +5%...+30%Un   |
| Fixed frequency thresholds                        | -10%...+10%fn                      | -10%...+10%fn  |
| <b>Test</b>                                       |                                    |  |
| Test Mode   | ■                                  | ■  |
| <b>Compliance with standards</b>                  |                                    |  |
| Electronic equipment for power installations      | EN-IEC 50178                       | EN-IEC 50178   |
| Electromagnetic compatibility                     | EN 50081-2                         | EN 50081-2   |
|   | EN 50082-2                         | EN 50082-2   |
| Environmental conditions                          | IEC 68-2-1                         | IEC 68-2-1   |
|   | IEC 68-2-2                         | IEC 68-2-2   |
|   | IEC 68-2-3                         | IEC 68-2-3   |

# Residual current protection

## Residual current release

Both circuit-breakers and switch-disconnectors are pre-engineered for assembly combined with residual current releases.

Residual current circuit-breakers derived from the circuit-breaker are known as “mixed”, meaning that, besides protection against the typical overloads and short-circuits, they also provide protection for people and against earth fault currents, thus protecting against direct, indirect contacts and risk of fire. Residual current circuit-breakers derived from switch-disconnectors are “pure” residual current circuit-breakers, i.e. they only provide residual current protection and not the protection typical of circuit-breakers. “Pure” residual current circuit-breakers are only sensitive to earth fault currents and are generally used as main switches in small panels for distribution to end users.

Use of “pure” and “mixed” residual current circuit-breakers allows the insulation state of the installation to be continuously monitored. It ensures efficient protection against the risk of fire and explosions and also protects people against indirect and direct contacts, thereby integrating the compulsory measures established by the accident prevention standards and Regulations.

The residual current releases comply with the following standards:

- IEC 60947-2 Annex B;
- IEC 61000 for protection against unwanted tripping.

The table gives all the residual current devices that can be used in combination with SACE Tmax XT family:

|                                       |                | XT1 |    | XT2 |       | XT3 |    | XT4 |       | XT5 |       |
|---------------------------------------|----------------|-----|----|-----|-------|-----|----|-----|-------|-----|-------|
|                                       |                | 3p  | 4p | 3p  | 4p    | 3p  | 4p | 3p  | 4p    | 3p  | 4p    |
| Instantaneous residual current device | RC Inst        | F   | F  |     |       | F   | F  |     |       |     |       |
| Selective residual current device     | RC Sel XT1-XT3 | F   | F  |     |       | F   | F  |     |       |     |       |
|                                       | RC Sel 200     |     | F  |     |       |     |    |     |       |     |       |
|                                       | RC Sel XT2-XT4 |     |    |     | F-P-W |     |    |     | F-P-W |     |       |
|                                       | RC Sel XT5     |     |    |     |       |     |    |     |       |     | F-P-W |
| Type B residual current device        | RC Type B XT3  |     |    |     |       |     | F  |     |       |     |       |

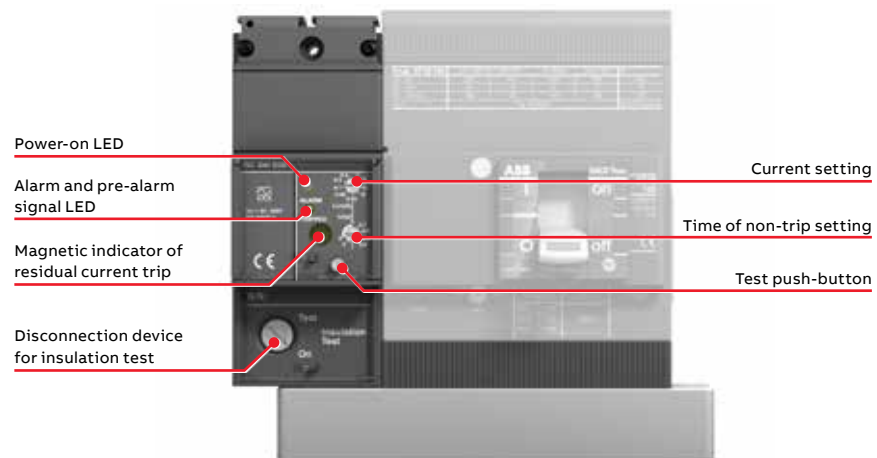
Tmax XT residual current devices:

- are designed for XT1, XT2, XT3 and XT4 microprocessor technology and act directly on the circuit-breaker by means of a dedicated opening solenoid (supplied with the residual current release and also available as a spare part) which must be housed in the relevant slot formed in the third pole on the left of the operating lever;
- are designed for XT5 feature microprocessor technology and act directly on the circuit-breaker by means of a dedicated mechanism integrated in the residual current itself;
- do not need an auxiliary supply as they are powered directly from the mains;
- can be supplied either from above or below;
- provide guaranteed functionality even with a single phase plus neutral or just two live phases and in the presence of pulsating unidirectional currents with direct components (minimum auxiliary voltage PHASE-NEUTRAL 85 Vrms);
- permit all possible connection combinations, as long as the neutral connection to the first pole on the left in the four-pole version is guaranteed.

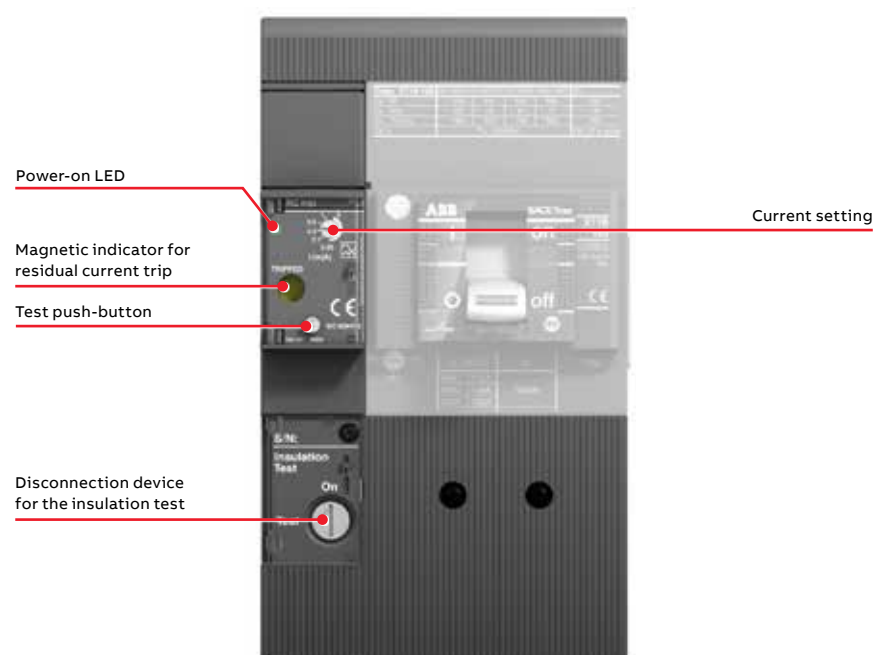
## Residual current protection

### RC Sel residual current releases (type A) XT1

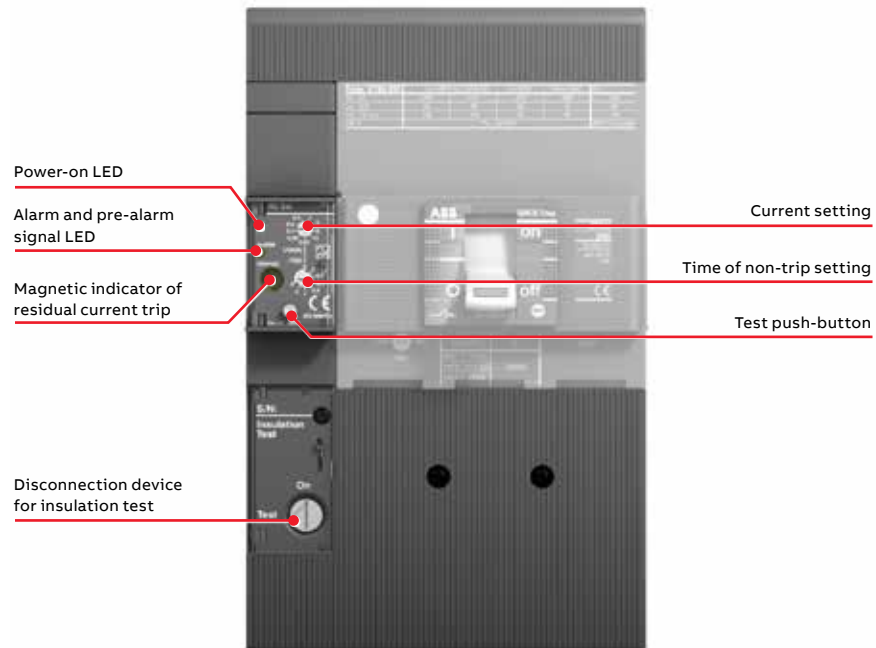
Thanks to its low height, the RC Sel 200 residual current release can be installed in 200mm modules. Moreover, its special shape reduces the overall size of the installation if two or more units are installed side by side.



### RC Inst residual current releases for XT1 and XT3

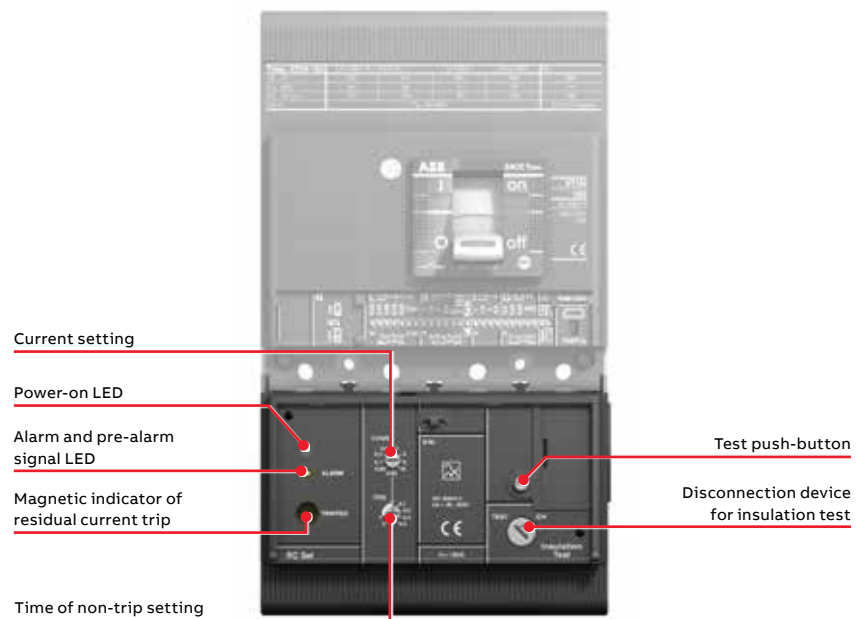


### RC Sel current releases (type A) for XT1 and XT3



With the RC Inst and RC Sel residual current releases for the XT1 - XT3 available in fixed versions only, it is possible to make rear terminal connections by ordering the RC Rear terminal 4p kits.

### RC Sel residual current releases for XT2 and XT4



## Residual current protection

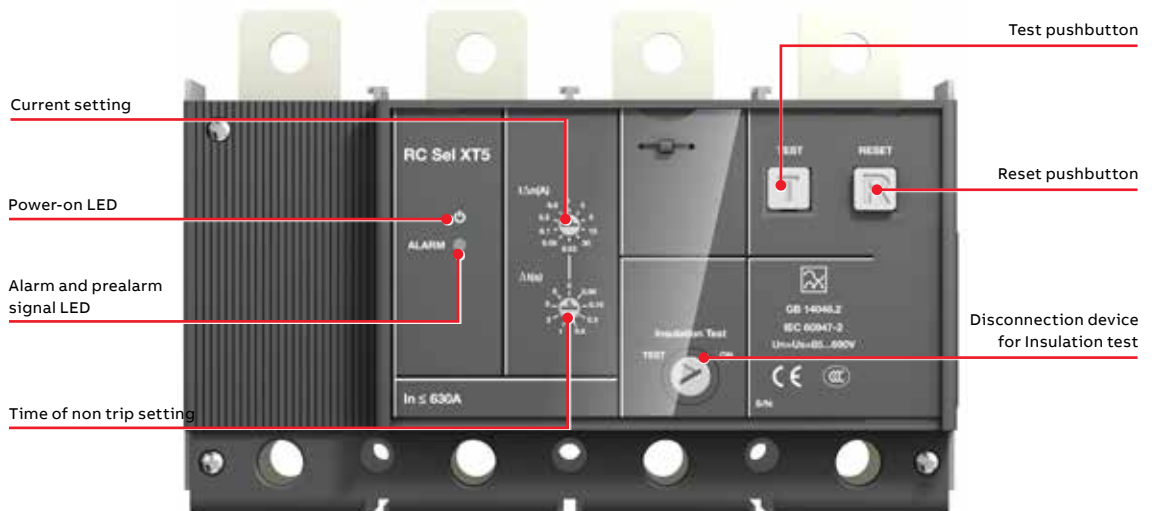
The fixed version of the RC Sel residual current release can be easily converted:

- into a plug-in type of release:
  - by ordering the kit for converting the residual current release from the fixed to the plug-in version
- into a withdrawable type of release:
  - by ordering the kit for converting the residual current release from the plug-in to the withdrawable version. This kit contains the shunt opening release of the withdrawable residual current device to replace the shunt opening release supplied with the fixed version. The shunt opening release of the withdrawable residual current device contains both the connector for the moving part and the connector for the fixed part.

With the RC Sel residual current release for the XT2-XT4, it is possible to use the same terminals for the fixed circuit-breaker and for the fixed parts of the plug-in and withdrawable circuit-breakers.

With the withdrawable and plug-in versions, frame 160A with RC can be used up to a maximum current of 135A, whereas frame 250A can be used up to 210A.

### RC Sel current releases (type A) for XT5



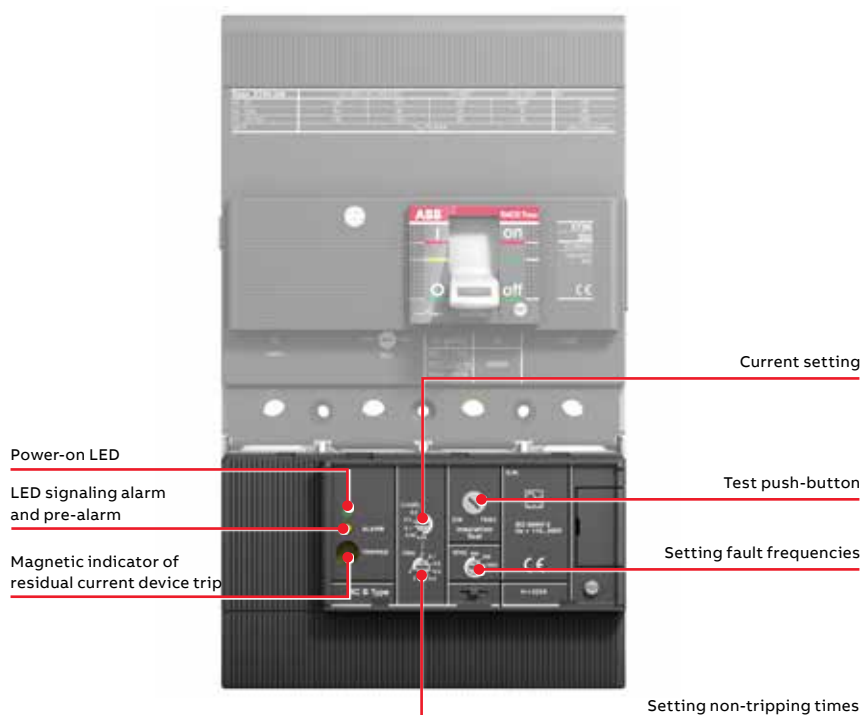
The fixed version of the RC Sel residual current release can easily be converted:

- into a plug-in type of release:
  - by ordering the kit for converting the residual current release from the fixed to the plug-in version
- into a withdrawable type of release:
  - by ordering the kit for converting the residual current release from the plug-in to the withdrawable version. This kit contains the shunt opening release of the withdrawable residual current device to replace the shunt opening release supplied with the fixed version. The shunt opening release of the withdrawable residual current device contains both the connector for the moving part and the connector for the fixed part.

With the RC Sel residual current release for the XT5, it is possible to use the same terminals for the fixed circuit-breaker and for the fixed parts of the plug-in and withdrawable circuit-breakers.

RC Sel for XT5 is always a four poles version that can be mounted also on a three-pole circuit breakers using the dedicated cover supplied in the RC kit.

### RC B Type residual current releases (type B) for XT3



The RC residual current release type B, to be used in conjunction with the XT3 circuit-breaker, has the following features:

- it complies with type B operation, which guarantees sensitivity to residual fault currents with alternating, pulsating alternating and direct current components (in compliance with the standards 60947-1, IEC 60947-2 Annex B, IEC/TR 60755);
- the maximum frequency band of the residual fault current detection can be selected (3 steps: 400 - 700 - 1000Hz). The residual current device can therefore be adapted to suit various industrial installation requirements according to the prospective fault frequencies generated on the load side of the release. Typical installations that may require different frequency thresholds from the standard ones (50 - 60Hz) include welding systems for the automobile industry (1000Hz), the textile industry (700Hz), airports and three-phase drives (400Hz).

## Residual current protection

| Electrical characteristics  | Residual current devices                   |                                |  |  |  |
|---|--|--------------------------------|--|--|--|
|   | RC Sel 200 XT1                             | RC Inst XT1-XT3                | RC Sel XT1-XT3                             | RC Sel XT2-XT4   | RC Sel XT5 <sup>(3)</sup>                      |
| Primary power supply voltage [V]  | 85...690                                   | 85...690                       | 85...690                                   | 85...690   | 85...500                                       |
| Operating frequency [Hz]  | 45...66                                    | 45...66                        | 45...66                                    | 45...66  | 45...66  |
| Fault frequency [Hz]  | 50-60                                      | 50-60                          | 50-60                                      | 50-60  | 50-60  |
| Test operating range [V]  | 85...690                                   | 85...690                       | 85...690                                   | 85...690   | 85...500                                       |
| Rated operating current [A]   | up to 160                                  | XT1 up to 160<br>XT3 up to 250 | up to 160 XT1<br>up to 250 XT3             | up to 160 XT2 <sup>(2)</sup><br>up to 250 XT4 <sup>(2)</sup> | up to 550 <sup>(2)</sup>                       |
| Adjustable trip thresholds [A]  | 0.03-0.05-0.1-<br>0.3-0.5-1-3-5-10         | 0.03-0.1-0.3<br>0.5-1-3        | 0.03-0.05-0.1-<br>0.3-0.5-1-3-5-10         | 0.03-0.05-0.1-<br>0.3-0.5-1-3-5-10                           | 0.03-0.05-0.1-0.3<br>0.5-1-3-5-10-30           |
| Selective type S  | ■  | -                              | ■  | ■  | ■  |
| Adjustable NON-trip time settings [s] at 2xI <sub>Δn</sub>                                | Instantaneous<br>0.1-0.2-0.3-<br>0.5-1-2-3 | Instantaneous                  | Instantaneous<br>0.1-0.2-0.3-<br>0.5-1-2-3 | Instantaneous<br>0.1-0.2-0.3-<br>0.5-1-2-3                   | Instantaneous<br>0.06-0.15-0.3-<br>0.5-1-2-3-5 |
| Power input   | <5 W at 690V AC                            | <5 W at 690V AC                | <5 W at 690V AC                            | <5 W at 690V AC  | <5 W at 500V AC                                |
| Trip Coil with switch contact for trip signal   | ■  | ■                              | ■  | ■  | ■  |
| Input for remote controlled opening command   | ■  | -                              | ■  | ■  | ■  |
| NO contact for pre-alarm signal   | ■  | -                              | ■  | ■  | ■  |
| NO contact for alarm signal   | ■  | -                              | ■  | ■  | ■  |
| Pre-alarm indication from 25% I <sub>Δn</sub> . Steady yellow LED light                   | ■  | -                              | ■  | ■  | ■  |
| Alarm timing indication at 75% I <sub>Δn</sub> . Flashing yellow LED light <sup>(1)</sup> | ■  | -                              | ■  | ■  | ■  |
| Type A for pulsating alternating current  | ■  | ■                              | ■  | ■  | ■  |
| Type AC for alternating current   | ■  | ■                              | ■  | ■  | ■  |

(1) Indication of alarm timing at 90% I<sub>Δn</sub> for 30mA for XT1, XT2, XT3 and XT4. Indication of alarm timing at 75% I<sub>Δn</sub> for 30mA for XT5

(2) Plug-in and withdrawable version: the 160 frame can be used with a max I<sub>n</sub> = 135A  
the 250 frame can be used with a max I<sub>n</sub> = 210A  
the 630 frame can be used with a max I<sub>n</sub> = 500A

(3) Only for circuit-breakers with I<sub>cu</sub> up to 100kA@415V (N-S-H-L versions)

| Electrical characteristics  | Residual current devices              |
|---|---------------------------------------|
|   | RC B Type XT3                         |
| Primary power supply voltage [V]  | 110...500                             |
| Operating frequency [Hz]  | 45...66                               |
| Fault frequency [Hz]  | 400-700-1000                          |
| Test operating range [V]  | 110...500                             |
| Rated operating current [A]   | up to 225                             |
| Adjustable trip thresholds [A]  | 0.03-0.05-0.1-0.3-0.5-1               |
| Selective type S  | ■                                     |
| Adjustable NON-trip time settings [s] at 2xI <sub>Δn</sub>                | Instantaneous 0-0.1-0.2-0.3-0.5-1-2-3 |
| Power input   | <10 W at 500V AC                      |
| Trip Coil with switch contact for trip signal                             | ■                                     |
| Input for remote controlled opening command                               | ■                                     |
| NO contact for pre-alarm signal   | ■                                     |
| NO contact for alarm signal   | ■                                     |
| Steady yellow LED light   | ■                                     |
| Flashing yellow LED light <sup>(1)</sup>                                  | ■                                     |
| Type A for pulsating alternating current, Type AC for alternating current | ■                                     |
| Type B for pulsating current and direct current                           | ■                                     |

(1) Indication of alarm timing at 90% I<sub>Δn</sub> for 30mA



## Residual current protection

### **SACE RCQ020 panel type residual current release**

SACE Tmax XT circuit-breakers can also be used in conjunction with RCQ020 panel type residual current releases with a separate toroid to be installed on the line conductors ("A" indicates the necessity for an auxiliary power supply).

Thanks to its wide range of settings, the panel release is suitable for:

- applications where the installation conditions are particularly restrictive, such as for circuit-breakers that are already installed or where there is limited space in a compartment where the circuit-breaker is installed;
- creating a residual current protection system coordinated at various distribution levels, from the main switchboard to the end user;
- where residual current protection with low sensitivity is required, e.g. in partial (current) or total (time) selective chains;
- highly sensitive applications (physiological sensitivity) for protecting people against direct contacts.

Thanks to the 115-230...415V external auxiliary power supply, the RCQ020 panel type residual current device is able to detect current leakages from 30mA to 30A and to act with a trip time that can be adjusted from instantaneous to a delay of 5s. The opening mechanism is an indirect action type and acts on the circuit-breaker release mechanism by means of the shunt opening or an undervoltage release of the circuit-breaker itself.

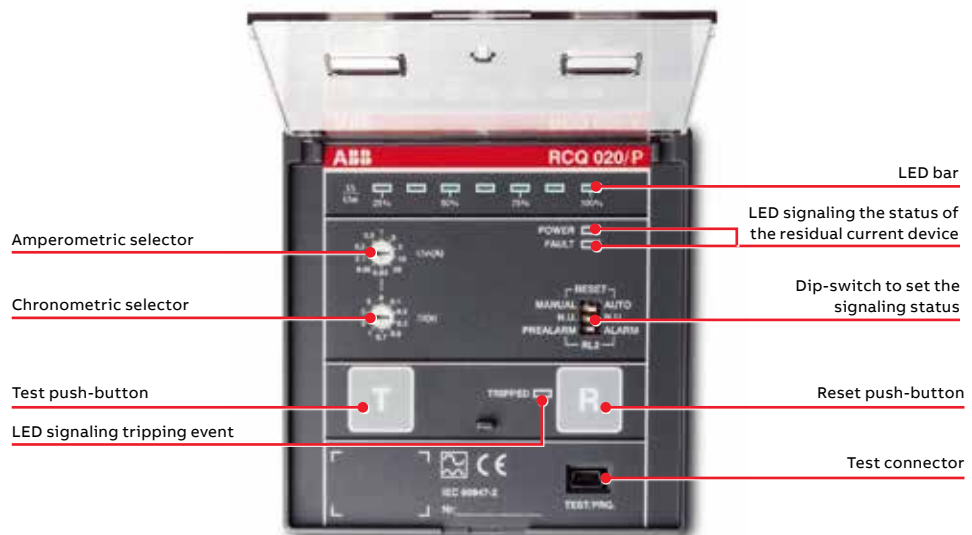
The opening command to the circuit-breaker (trip delay) can be temporarily inhibited, and the circuit-breaker can be opened by remote control by means of the RCQ020 device.

The following equipment must be requested when ordering:

- the RCQ020 device itself;
- an opening coil (SOR) or an undervoltage release (UVR) of the circuit-breaker to be housed in the relative slot made in the left pole of the circuit-breaker itself;
- a closed toroid, which can be used for both cables and busbars, with a diameter from 60mm to 185mm.

Signals available:

- LED to indicate the status of the residual current device (supplied or not supplied). The RCQ020 is equipped with a positive safety function thanks to which the RCQ020 sends an automatic circuit-breaker opening command in the absence of auxiliary voltage;
- LED for fault signaling;
- LED for signaling tripping of the residual current device;
- electrical pre-alarm/alarm/trip signals.



## Residual current protection

|   |    |                |   |
|---|----|----------------|---|
| Power supply Voltage  | /A | AC [V]         | 115-230...415   |
|   | /P | AC [V]         | 110...690   |
|   | /P | DC [V]         | 110...125   |
| Operating frequency   |    | [Hz]           | 45÷66   |
| Inrush current  | /A | @115 V AC      | 500 mA for 50 ms  |
|   | /A | @230 V AC      | 150 mA for 50 ms  |
|   | /A | @415 V AC      | 100 mA for 50 ms  |
|   | /P | @110 V AC      | 300 mA for 50 ms  |
|   | /P | @690 V AC      | 2 A for 50 ms   |
|   | /P | @125 V DC      | 500 mA for 50 ms  |
| Rated Power   | /A |                | 2 [VA] / 2 [W]  |
|   | /P | @115 V AC      | max 3 W   |
|   | /P | @230 V AC      | max 3 W   |
|   | /P | @690 V AC      | max 4 W   |
|   | /P | @125 V DC      | max 2 W   |
| Trip threshold adjustment I $\Delta$ n                      |    | [A]            | 0.03-0.05-0.1-0.3-0.5-1-3-5-10-30   |
| No trip time adjustment                                     |    | [s]            | instantaneous 0.1-0.2-0.3-0.5-0.7-1-2-3-5                                       |
| Pre-alarm threshold   |    | x I $\Delta$ n | 25%   |
| A type for pulsing alternate current                        |    |                | ■   |
| <b>Signals</b>  |    |                |   |
| Device powered visual signaling                             |    |                | ■   |
| Visual signaling of device not functioning / not configured |    |                | ■   |
| Visual signaling of residual current protection             |    |                | ■   |
| Electrical alarm/pre-alarm signal                           |    |                | ■   |
| Electric trip signal  |    |                | ■   |
| <b>Controls</b>   |    |                |   |
| Remotely controlled opening command                         |    |                | ■   |
| Remotely controlled reset command                           |    |                | ■   |
| <b>Operating range of closed transformers</b>               |    |                |   |
| Ø 60 [mm] toroidal transformer                              |    | [A]            | In max = 250 A - Use 0.03...30 A  |
| Ø 110 [mm] toroidal transformer                             |    | [A]            | In max = 400 A - Use 0.03...30 A  |
| Ø 185 [mm] toroidal transformer                             |    | [A]            | In max = 800 A - Use 0.1...30 A   |
| Connection to toroidal transformer                          |    |                | By means of 4 shielded or twisted conductors.<br>Maximum tolerated length: 15 m |
| Dimensions W x H x D  |    | [mm]           | 96 x 96 x 77  |
| Drilling for assembly on door                               |    | [mm]           | 92 x 92   |
| standard  |    |                | IEC 60947-2 annex M   |

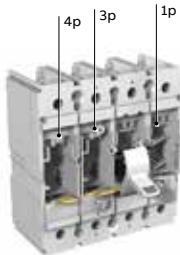
# Compatibility of accessories

## Fixed and plug-in versions

Check whether the different devices are compatible/incompatible with each other when ordering accessories. The following table provides a simple check of the compatibility between mechanical and electrical accessories. To understand the abbreviations used to identify the accessories more easily, refer to the "Glossary" at the end of the section.



Three-pole circuit-breaker



Four-pole circuit-breaker

### How to read compatibility tables - an example

Fixed/plug-in circuit-breaker compatibility XT1-XT3

|                     | SOR 3p | UVR 3p | 3Q 3p | SOR 4p         | UVR 4p         | ..... |
|---------------------|--------|--------|-------|----------------|----------------|-------|
| SOR 3p              | ↑      | ↑      | ↑     | ✓              | ✓              |       |
| UVR 3p <sup>1</sup> | →      | →      | →     | ✓ <sup>5</sup> | ✓ <sup>6</sup> |       |
| 3Q sx 3p            |        |        |       | ✓              | ✓              |       |
| SOR 4p              | ✓      | ✓      | ✓     |                | ✓              |       |
| UVR 4p              | ✓      | ✓      | ✓     | ✓ [...]        |                |       |
| [...]               |        |        |       |                |                |       |

The UVR positioned in the slot of the 3rd pole<sup>(1)</sup> is:

- incompatible with the SOR positioned on the 3<sup>rd</sup> pole<sup>(2)</sup>;
- incompatible with the UVR positioned on the 3<sup>rd</sup> pole<sup>(3)</sup>;
- incompatible with the 3Q contacts on the left of the 3<sup>rd</sup> pole<sup>(4)</sup>;
- compatible with the SOR positioned in the slot of the 4<sup>th</sup> pole<sup>(5)</sup>;
- compatible with the UVR positioned in the slot of the 4<sup>th</sup> pole<sup>(6)</sup>.
- [...]

Tmax XT1-XT3

|              | RHD | RHE | RHS | FLD | MOD              | PLL on CB | KLC on CB | RHL | MOL on motor | SOR/UVR 3p | 3Q left 3p | RC SA 3p | SOR/UVR 4p | 3Q left 4p | 1Q+1SY | 2Q+1SY           | 3Q+1SY           | AUE |
|--------------|-----|-----|-----|-----|------------------|-----------|-----------|-----|--------------|------------|------------|----------|------------|------------|--------|------------------|------------------|-----|
| RHD          |     |     |     |     |                  |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓                | ✓                | ✓   |
| RHE          |     |     |     |     |                  |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓                | ✓                | ✓   |
| RHS          |     |     |     |     |                  |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓                | ✓                | ✓   |
| FLD          |     |     |     |     |                  |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓                | ✓                | ✓   |
| MOD          |     |     |     |     |                  |           |           |     | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓ <sup>(1)</sup> | ✓ <sup>(2)</sup> |     |
| PLL on CB    |     |     |     |     |                  |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓                | ✓                |     |
| KLC on CB    |     |     |     |     |                  |           |           |     |              |            |            |          | ✓          | ✓          | ✓      | ✓                | ✓                |     |
| RHL          | ✓   | ✓   |     | ✓   |                  |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓                | ✓                | ✓   |
| MOL on motor |     |     |     |     | ✓                |           |           |     |              | ✓          | ✓          |          | ✓          | ✓          | ✓      | ✓                | ✓                |     |
| SOR/UVR 3p   | ✓   | ✓   | ✓   | ✓   | ✓                | ✓         |           | ✓   | ✓            |            |            |          | ✓          | ✓          | ✓      | ✓                | ✓                | ✓   |
| 3Q left 3p   | ✓   | ✓   | ✓   | ✓   | ✓                | ✓         |           | ✓   | ✓            |            |            |          | ✓          | ✓          | ✓      | ✓                | ✓                | ✓   |
| RC SA 3p     | ✓   | ✓   | ✓   | ✓   | ✓                | ✓         |           | ✓   |              |            |            |          | ✓          | ✓          | ✓      | ✓                | ✓                | ✓   |
| SOR/UVR 4p   | ✓   | ✓   | ✓   | ✓   | ✓                | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        |            |            | ✓      | ✓                | ✓                | ✓   |
| 3Q left 4p   | ✓   | ✓   | ✓   | ✓   | ✓                | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        |            |            | ✓      | ✓                | ✓                | ✓   |
| 1Q+1SY       | ✓   | ✓   | ✓   | ✓   | ✓                | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |                  |                  | ✓   |
| 2Q+1SY       | ✓   | ✓   | ✓   | ✓   | ✓                | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |                  |                  | ✓   |
| 3Q+1SY       | ✓   | ✓   | ✓   | ✓   | ✓ <sup>(2)</sup> | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |                  |                  | ✓   |
| AUE          | ✓   | ✓   |     |     |                  |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓                | ✓                |     |

✓ Compatible; (1) Not valid for XT1; (2) Not valid for XT3

# Compatibility of accessories

## Tmax XT2-XT4

### Circuit-breakers with thermal-magnetic or electronic Ekip Dip trip units

|  | RHD | RHE | RHS | FLD | MOE/MOE-E | PLL on CB | KLC on CB | RHL | MOL on motor | SOR/UVR 3p | 3Q left 3p | RC SA 3p | SOR/UVR 4p | 3Q left 4p | 1Q+1SY | 2Q+1SY | 3Q+1SY | 3Q+2SY | 2Q+2SY+1S51 | 1S51 | 400V 2Q | 400V 1Q+1SY | AUE | Ekip COM | STA RTU /<br>Ekip COM | LSI-LSIG <sup>(1)</sup> | Ekip COM | STA TCP |
|--|-----|-----|-----|-----|-----------|-----------|-----------|-----|--------------|------------|------------|----------|------------|------------|--------|--------|--------|--------|-------------|------|---------|-------------|-----|----------|-----------------------|-------------------------|----------|---------|
| RHD  |     |     |     |     |           |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           | ✓   |          | ✓                     |                         | ✓        | ✓       |
| RHE  |     |     |     |     |           |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           | ✓   |          | ✓                     |                         | ✓        | ✓       |
| RHS  |     |     |     |     |           |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           |     |          | ✓                     |                         | ✓        | ✓       |
| FLD  |     |     |     |     |           |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           |     |          | ✓                     |                         | ✓        | ✓       |
| MOE/MOE-E  |     |     |     |     |           |           |           |     | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           |     |          | ✓                     |                         | ✓        | ✓       |
| PLL on CB  |     |     |     |     |           |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           |     |          | ✓                     |                         | ✓        | ✓       |
| KLC on CB  |     |     |     |     |           |           |           |     |              |            |            |          | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           |     |          | ✓                     |                         | ✓        | ✓       |
| RHL  | ✓   | ✓   |     | ✓   |           |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           | ✓   |          | ✓                     |                         | ✓        | ✓       |
| MOL on motor   |     |     |     |     | ✓         |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           |     |          | ✓                     |                         | ✓        | ✓       |
| SOR/UVR 3p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         |           | ✓   | ✓            |            |            |          | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           | ✓   |          | ✓                     |                         | ✓        | ✓       |
| 3Q left 3p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         |           | ✓   | ✓            |            |            |          | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           | ✓   |          | ✓                     |                         | ✓        | ✓       |
| RC SA 3p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         |           | ✓   | ✓            |            |            |          | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           | ✓   |          | ✓                     |                         | ✓        | ✓       |
| SOR/UVR 4p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        |            | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           | ✓   |          | ✓                     |                         | ✓        | ✓       |
| 3Q left 4p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        |            |            | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           | ✓   |          | ✓                     |                         | ✓        | ✓       |
| 1Q+1SY   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             |      | ✓       |             | ✓   |          |                       |                         |          |         |
| 2Q+1SY   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             |      | ✓       |             | ✓   |          |                       |                         |          |         |
| 3Q+1SY   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             |      | ✓       |             | ✓   |          |                       |                         |          |         |
| 3Q+2SY   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             |      |         |             | ✓   |          |                       |                         |          |         |
| 2Q+2SY+1S51  | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             |      |         |             | ✓   |          |                       |                         |          |         |
| 1S51   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      |        |             |      |         |             | ✓   |          | ✓                     |                         | ✓        | ✓       |
| 400V 2Q  | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             |      |         |             | ✓   |          |                       |                         |          |         |
| 400V 1Q+1SY  | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             |      |         |             | ✓   |          |                       |                         |          |         |
| AUE  | ✓   | ✓   |     |     |           |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓      | ✓      | ✓      | ✓      | ✓           | ✓    | ✓       | ✓           |     |          | ✓                     |                         | ✓        | ✓       |
| Ekip COM<br>STA RTU /<br>Ekip COM<br>LSI-LSIG <sup>(1)</sup> | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             | ✓    |         |             | ✓   |          |                       |                         |          |         |
| Ekip COM<br>STA TCP  | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |        |        |        |        |             |      |         |             | ✓   |          |                       |                         |          |         |

✓ Compatible

(1) Ekip COM LSI-LSIG is only available with Ekip LSI and LSIG trip units

## Circuit-breakers with electronic Ekip Touch and Ekip Hi-Touch trip units

|              | RHD | RHE | RHS | FLD | MOE/MOE-E | PLL on CB | KLC on CB | RHL | MOL on motor | SOR/UVR 3P | 3Q left 3p | RC SA 3p | SOR/UVR 4p | 3Q left 4p | AUE | EKIP COM |
|--------------|-----|-----|-----|-----|-----------|-----------|-----------|-----|--------------|------------|------------|----------|------------|------------|-----|----------|
| RHD          |     |     |     |     |           |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓   | ✓        |
| RHE          |     |     |     |     |           |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓   | ✓        |
| RHS          |     |     |     |     |           |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          |     | ✓        |
| FLD          |     |     |     |     |           |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          |     | ✓        |
| MOE/MOE-E    |     |     |     |     |           |           |           |     | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          |     | ✓        |
| PLL on CB    |     |     |     |     |           |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          |     | ✓        |
| KLC on CB    |     |     |     |     |           |           |           |     |              |            |            |          | ✓          | ✓          |     | ✓        |
| RHL          | ✓   | ✓   |     | ✓   |           |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          | ✓   | ✓        |
| MOL on motor |     |     |     |     | ✓         |           |           |     |              | ✓          | ✓          | ✓        | ✓          | ✓          |     | ✓        |
| SOR/UVR 3p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         |           | ✓   | ✓            |            |            |          | ✓          | ✓          | ✓   | ✓        |
| 3Q left 3p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         |           | ✓   | ✓            |            |            |          | ✓          | ✓          | ✓   | ✓        |
| RC SA 3p     | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         |           | ✓   | ✓            |            |            |          | ✓          | ✓          | ✓   | ✓        |
| SOR/UVR 4p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        |            |            | ✓   | ✓        |
| 3Q left 4p   | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        |            |            | ✓   | ✓        |
| AUE          | ✓   | ✓   |     |     |           |           |           | ✓   |              | ✓          | ✓          | ✓        | ✓          | ✓          |     | ✓        |
| Ekip COM     | ✓   | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓          | ✓          | ✓        | ✓          | ✓          | ✓   |          |

✓ Compatible

# Compatibility of accessories

## Tmax XT5

### Circuit-breakers with thermal-magnetic or electronic Ekip Dip trip units

|                         | RHD | RHE | CK RHE->RHS | FLD | MOE/MOE-E | PLL on CB | KLC on CB | RHL | MOL on motor | YO/YU 3p | YO/YU 1p | 1Q+1SY | 1Q+1SY left | 2Q+1SY | 3Q+1SY | 1S51 | 1S52 | 400V 2Q | 400V 1Q+1SY | AUE | Ekip COM STA<br>RTU/TCP |
|-------------------------|-----|-----|-------------|-----|-----------|-----------|-----------|-----|--------------|----------|----------|--------|-------------|--------|--------|------|------|---------|-------------|-----|-------------------------|
| RHD                     |     |     |             |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           | ✓   | ✓                       |
| RHE                     |     |     | ✓           |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           | ✓   | ✓                       |
| CK RHE->RHS             |     | ✓   |             |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           |     | ✓                       |
| FLD                     |     |     |             |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           |     | ✓                       |
| MOE/MOE-E               |     |     |             |     |           |           |           |     | ✓            | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           |     | ✓                       |
| PLL on CB               |     |     |             |     |           |           |           |     |              | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           |     | ✓                       |
| KLC on CB               |     |     |             |     |           |           |           |     |              |          | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    |      | ✓       |             |     | ✓                       |
| RHL                     | ✓   | ✓   | ✓           | ✓   |           |           |           |     |              | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           | ✓   | ✓                       |
| MOL on motor            |     |     |             |     | ✓         |           |           |     |              | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           |     | ✓                       |
| YO/YU 3p                | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         |           | ✓   | ✓            |          | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       |             | ✓   | ✓                       |
| YO/YU 1p                | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        |          | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    |         | ✓           | ✓   | ✓                       |
| 1Q+1SY                  | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        |        | ✓           |        |        | ✓    | ✓    | ✓       | ✓           | ✓   | ✓                       |
| 1Q+1SY left             | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        | ✓      |             | ✓      | ✓      | ✓    | ✓    | ✓       |             | ✓   |                         |
| 2Q+1SY                  | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        |        | ✓           |        |        | ✓    | ✓    | ✓       | ✓           | ✓   | ✓                       |
| 3Q+1SY                  | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        |        | ✓           |        |        | ✓    | ✓    | ✓       | ✓           | ✓   | ✓                       |
| 1S51                    | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        | ✓      | ✓           | ✓      |        | ✓    | ✓    | ✓       | ✓           | ✓   | ✓                       |
| 1S52                    | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         |           | ✓   | ✓            | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    |      | ✓       | ✓           | ✓   | ✓                       |
| 400V 2Q                 | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        |          | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    |         | ✓           | ✓   | ✓                       |
| 400V 1Q+1SY             | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         |           | ✓   | ✓            |          | ✓        | ✓      |             | ✓      | ✓      | ✓    | ✓    | ✓       |             | ✓   |                         |
| AUE                     | ✓   | ✓   |             |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓           | ✓      | ✓      | ✓    | ✓    | ✓       | ✓           |     | ✓                       |
| Ekip COM STA<br>RTU/TCP | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        | ✓      |             | ✓      | ✓      | ✓    | ✓    | ✓       |             | ✓   |                         |

✓ Compatible

## Circuit-breakers with electronic Ekip Touch and Ekip Hi-Touch trip units

|              | RHD | RHE | CK RHE->RHS | FLD | MOE/MOE-E | PLL on CB | KLC on CB | RHL | MOL on motor | YO/YU 3p | YO/YU 1p | 1Q+1SY | 2Q+1SY | 3Q+1SY | 1S51 | 1S52 | 400V 2Q | AUE | Ekip COM | Ekip 1K |
|--------------|-----|-----|-------------|-----|-----------|-----------|-----------|-----|--------------|----------|----------|--------|--------|--------|------|------|---------|-----|----------|---------|
| RHD          |     |     |             |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       | ✓   | ✓        | ✓       |
| RHE          |     |     | ✓           |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       | ✓   | ✓        | ✓       |
| CK RHE->RHS  |     | ✓   |             |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       |     | ✓        | ✓       |
| FLD          |     |     |             |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       |     | ✓        | ✓       |
| MOE/MOE-E    |     |     |             |     |           |           |           |     | ✓            | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       |     | ✓        | ✓       |
| PLL on CB    |     |     |             |     |           |           |           |     |              | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       |     | ✓        | ✓       |
| KLC on CB    |     |     |             |     |           |           |           |     |              |          | ✓        | ✓      | ✓      | ✓      | ✓    |      | ✓       |     | ✓        |         |
| RHL          | ✓   | ✓   | ✓           | ✓   |           |           |           |     |              | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       | ✓   | ✓        | ✓       |
| MOL on motor |     |     |             |     | ✓         |           |           |     |              | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       |     | ✓        | ✓       |
| YO/YU 3p     | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         |           | ✓   | ✓            |          | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    |         | ✓   | ✓        |         |
| YO/YU 1p     | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        |          | ✓      | ✓      | ✓      | ✓    | ✓    |         | ✓   | ✓        | ✓       |
| 1Q+1SY       | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        |        |        |        | ✓    | ✓    | ✓       | ✓   | ✓        | ✓       |
| 2Q+1SY       | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        |        |        |        | ✓    | ✓    | ✓       | ✓   | ✓        | ✓       |
| 3Q+1SY       | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        |        |        |        | ✓    | ✓    | ✓       | ✓   | ✓        | ✓       |
| 1S51         | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        | ✓      | ✓      | ✓      |      | ✓    | ✓       | ✓   | ✓        | ✓       |
| 1S52         | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         |           | ✓   | ✓            | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    |      | ✓       | ✓   | ✓        | ✓       |
| 400V 2Q      | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        |          | ✓      | ✓      | ✓      | ✓    | ✓    |         | ✓   | ✓        | ✓       |
| AUE          | ✓   | ✓   |             |     |           |           |           | ✓   |              | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       |     | ✓        | ✓       |
| Ekip COM     | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓        | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       | ✓   |          | ✓       |
| Ekip 1K      | ✓   | ✓   | ✓           | ✓   | ✓         | ✓         |           | ✓   | ✓            |          | ✓        | ✓      | ✓      | ✓      | ✓    | ✓    | ✓       | ✓   | ✓        |         |

✓ Compatible



## Compatibility of accessories

## Tmax XT6

|              | RHD | RHE | FLD | MOE/MOE-E | PLL on CB | KLC on CB | RHL | MOL on motor | YU 3p | YO 1p | 1Q+1SY | 2Q+1SY | 3Q+1SY | 1S51 | 1S52 |
|--------------|-----|-----|-----|-----------|-----------|-----------|-----|--------------|-------|-------|--------|--------|--------|------|------|
| RHD          |     |     |     |           |           |           | ✓   |              | ✓     | ✓     | ✓      | ✓      | ✓      | ✓    | ✓    |
| RHE          |     |     |     |           |           |           | ✓   |              | ✓     | ✓     | ✓      | ✓      | ✓      | ✓    | ✓    |
| FLD          |     |     |     |           |           |           | ✓   |              | ✓     | ✓     | ✓      | ✓      | ✓      | ✓    | ✓    |
| MOE/MOE-E    |     |     |     |           |           |           |     | ✓            | ✓     | ✓     | ✓      | ✓      | ✓      | ✓    | ✓    |
| PLL on CB    |     |     |     |           |           |           |     |              | ✓     | ✓     | ✓      | ✓      | ✓      | ✓    | ✓    |
| KLC on CB    |     |     |     |           |           |           |     |              |       | ✓     | ✓      | ✓      | ✓      | ✓    |      |
| RHL          | ✓   | ✓   | ✓   |           |           |           |     |              | ✓     | ✓     | ✓      | ✓      | ✓      | ✓    | ✓    |
| MOL on motor |     |     |     | ✓         |           |           |     |              | ✓     | ✓     | ✓      | ✓      | ✓      | ✓    | ✓    |
| YU 3p        | ✓   | ✓   | ✓   | ✓         | ✓         |           | ✓   | ✓            |       | ✓     | ✓      | ✓      | ✓      | ✓    | ✓    |
| YO 1p        | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓     |       | ✓      | ✓      | ✓      | ✓    | ✓    |
| 1Q+1SY       | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓     | ✓     |        |        |        | ✓    | ✓    |
| 2Q+1SY       | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓     | ✓     |        |        |        | ✓    | ✓    |
| 3Q+1SY       | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓     | ✓     |        |        |        | ✓    | ✓    |
| 1S51         | ✓   | ✓   | ✓   | ✓         | ✓         | ✓         | ✓   | ✓            | ✓     | ✓     | ✓      | ✓      |        |      |      |
| 1S52         | ✓   | ✓   | ✓   | ✓         | ✓         |           | ✓   | ✓            | ✓     | ✓     | ✓      |        | ✓      |      |      |

✓ Compatible

**Tmax XT7**

In addition to the accessories listed in the table below, it is always possible to complement the XT7 circuit-breakers with the Ekip Supply module and up to other two modules. Alternatives to the Ekip supply, 24V and CAN modules can be directly connected by using appropriate terminal blocks.

|           | RHD | RHE | PLC on CB | KLC on CB | RHL | YO | YU / YO2 | 4Q | 1SY | 1S51 | 1S52 | AUE |
|-----------|-----|-----|-----------|-----------|-----|----|----------|----|-----|------|------|-----|
| RHD       |     |     |           |           | ✓   | ✓  | ✓        | ✓  | ✓   | ✓    | ✓    | ✓   |
| RHE       |     |     |           |           | ✓   | ✓  | ✓        | ✓  | ✓   | ✓    | ✓    | ✓   |
| PLC on CB |     |     |           | ✓         |     | ✓  | ✓        | ✓  | ✓   | ✓    | ✓    |     |
| KLC on CB |     |     | ✓         |           |     | ✓  | ✓        | ✓  | ✓   | ✓    | ✓    |     |
| RHL       | ✓   | ✓   |           |           |     | ✓  | ✓        | ✓  | ✓   | ✓    | ✓    | ✓   |
| YO        | ✓   | ✓   | ✓         | ✓         | ✓   |    | ✓        | ✓  | ✓   | ✓    | ✓    | ✓   |
| YU / YO2  | ✓   | ✓   | ✓         | ✓         | ✓   | ✓  |          | ✓  | ✓   | ✓    | ✓    | ✓   |
| 4Q        | ✓   | ✓   | ✓         | ✓         | ✓   | ✓  | ✓        |    | ✓   | ✓    | ✓    | ✓   |
| 1SY       | ✓   | ✓   | ✓         | ✓         | ✓   | ✓  | ✓        | ✓  |     | ✓    | ✓    | ✓   |
| 1S51      | ✓   | ✓   | ✓         | ✓         | ✓   | ✓  | ✓        | ✓  | ✓   |      | ✓    | ✓   |
| 1S52      | ✓   | ✓   | ✓         | ✓         | ✓   | ✓  | ✓        | ✓  | ✓   | ✓    |      | ✓   |
| AUE       | ✓   | ✓   |           |           | ✓   | ✓  | ✓        | ✓  | ✓   | ✓    | ✓    |     |

✓ Compatible

**Tmax XT7 M**

In addition to the accessories listed in the table below, it is always possible to complement the XT7 M circuit-breakers with the Ekip Supply module and up to other two modules. Alternatives to the Ekip supply, 24V and CAN modules can be directly connected by using appropriate terminal blocks.

|               | PLC on CB | KLC on CB | PBC | MOC | YO | YU / YO2 | YC | YR | RTC | 4Q | 1S51 | S33M/2 | M | Ekip COM act. | RTC Ekip |
|---------------|-----------|-----------|-----|-----|----|----------|----|----|-----|----|------|--------|---|---------------|----------|
| PLC on CB     |           | ✓         |     | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| KLC on CB     | ✓         |           | ✓   | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| PBC           |           | ✓         |     | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| MOC           | ✓         | ✓         | ✓   |     | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| YO            | ✓         | ✓         | ✓   | ✓   |    | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| YU / YO2      | ✓         | ✓         | ✓   | ✓   | ✓  |          | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| YC            | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        |    | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| YR            | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        | ✓  |    | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| RTC           | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        | ✓  | ✓  |     | ✓  | ✓    | ✓      | ✓ | ✓             | ✓        |
| 4Q            | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   |    | ✓    | ✓      | ✓ | ✓             | ✓        |
| 1S51          | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  |      | ✓      | ✓ | ✓             | ✓        |
| S33M/2        | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    |        | ✓ | ✓             | ✓        |
| M             | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      |   | ✓             | ✓        |
| Ekip COM act. | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ |               | ✓        |
| RTC Ekip      | ✓         | ✓         | ✓   | ✓   | ✓  | ✓        | ✓  | ✓  | ✓   | ✓  | ✓    | ✓      | ✓ | ✓             |          |

✓ Compatible

# Compatibility of accessories

## Withdrawable versions

### Tmax XT2-XT4

|   | 1S51 | 1Q+1SY | 3Q+1SY | 3Q+2SY | 2Q+2SY+1S51 | 2Q 400V | 1Q+1SY 400V | Ekip COM /<br>Ekip COM<br>STA TCP | Ekip COM<br>STARTU /<br>Ekip COM<br>LSI-LSIG <sup>(1)</sup> | NE | MOE | MOE-E | AUX-MO | AUE | SOR/UVR 3p | RC SA 3p | SOR/UVR 4p |
|---|------|--------|--------|--------|-------------|---------|-------------|-----------------------------------|---|----|-----|-------|--------|-----|------------|----------|------------|
| 1S51  |      | ✓      |        |        |             |         |             |                                   | ✓   | ✓  | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| 1Q+1SY  | ✓    |        |        |        |             |         |             |                                   |   | ✓  | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| 3Q+1SY  |      |        |        |        |             |         |             |                                   |   | ✓  | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| 3Q+2SY  |      |        |        |        |             |         |             |                                   |   |    | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| 2Q+2SY+1S51   |      |        |        |        |             |         |             |                                   |   |    | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| 2Q 400V   |      |        |        |        |             |         |             |                                   |   | ✓  | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| 1Q+1SY 400V   |      |        |        |        |             |         |             |                                   |   | ✓  | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| Ekip COM / Ekip<br>COM STA TCP                            |      |        |        |        |             |         |             |                                   |   | ✓  | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| Ekip COM STA<br>RTU / Ekip COM<br>LSI-LSIG <sup>(1)</sup> | ✓    |        |        |        |             |         |             |                                   |   | ✓  | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| NE  | ✓    | ✓      | ✓      |        |             | ✓       | ✓           | ✓                                 | ✓   |    | ✓   | ✓     | ✓      | ✓   | ✓          | ✓        | ✓          |
| MOE   | ✓    | ✓      | ✓      | ✓      | ✓           | ✓       | ✓           | ✓                                 | ✓   | ✓  |     |       | ✓      |     | ✓          | ✓        | ✓          |
| MOE-E   | ✓    | ✓      | ✓      | ✓      | ✓           | ✓       | ✓           | ✓                                 | ✓   | ✓  |     |       | ✓      |     | ✓          | ✓        | ✓          |
| AUX-MO  | ✓    | ✓      | ✓      | ✓      | ✓           | ✓       | ✓           | ✓                                 | ✓   | ✓  | ✓   | ✓     |        |     | ✓          | ✓        |            |
| AUE   | ✓    | ✓      | ✓      | ✓      | ✓           | ✓       | ✓           | ✓                                 | ✓   | ✓  |     |       |        |     | ✓          | ✓        | ✓          |
| SOR/UVR 3p  | ✓    | ✓      | ✓      | ✓      | ✓           | ✓       | ✓           | ✓                                 | ✓   | ✓  | ✓   | ✓     | ✓      | ✓   |            |          | ✓          |
| RC SA 3p  | ✓    | ✓      | ✓      | ✓      | ✓           | ✓       | ✓           | ✓                                 | ✓   | ✓  | ✓   | ✓     | ✓      | ✓   |            |          | ✓          |
| SOR/UVR 4p  | ✓    | ✓      | ✓      | ✓      | ✓           | ✓       | ✓           | ✓                                 | ✓   | ✓  | ✓   | ✓     |        | ✓   | ✓          | ✓        |            |

✓ Compatible

(1) Ekip COM LSI-LSIG is only available with Ekip LSI and LSIG trip units

With the Ekip Touch and Hi-Touch trip units there is always an additional connector for 24V and CAN modules to be mounted on the left side of the moving part.

## Tmax XT5

|                  | 1S52 | 1S51 | 1Q+1SY           | 2Q+1SY           | 3Q+1SY           | 2Q 400V | 1Q+1SY 400V | Ekip COM         | Ekip COM<br>STARTU | Ekip COM<br>STATCP | MOE | MOE-E | AUE | YO/YU 3p | YO/YU 1p | Ekip 1K |
|------------------|------|------|------------------|------------------|------------------|---------|-------------|------------------|--------------------|--------------------|-----|-------|-----|----------|----------|---------|
| 1S52             |      | ✓    | ✓                | ✓                | ✓                | ✓       |             |                  |                    |                    | ✓   | ✓     | ✓   | ✓        | ✓        |         |
| 1S51             | ✓    |      | ✓                | ✓                | ✓                | ✓       | ✓           | ✓                | ✓                  | ✓                  | ✓   | ✓     | ✓   | ✓        | ✓        | ✓       |
| 1Q+1SY           | ✓    | ✓    |                  |                  |                  | ✓       | ✓           | ✓ <sup>(1)</sup> |                    | ✓                  | ✓   | ✓     | ✓   | ✓        | ✓        | ✓       |
| 2Q+1SY           | ✓    | ✓    |                  |                  |                  |         | ✓           | ✓ <sup>(1)</sup> |                    | ✓                  | ✓   | ✓     | ✓   | ✓        | ✓        |         |
| 3Q+1SY           | ✓    | ✓    |                  |                  |                  |         | ✓           | ✓ <sup>(1)</sup> |                    | ✓                  | ✓   | ✓     | ✓   | ✓        | ✓        |         |
| 2Q 400V          | ✓    | ✓    | ✓                |                  |                  |         | ✓           | ✓                | ✓                  | ✓                  | ✓   | ✓     | ✓   | ✓        |          |         |
| 1Q+1SY 400V      |      | ✓    | ✓                | ✓                | ✓                | ✓       |             |                  |                    |                    | ✓   | ✓     | ✓   |          | ✓        |         |
| Ekip COM         |      | ✓    | ✓ <sup>(1)</sup> | ✓ <sup>(1)</sup> | ✓ <sup>(1)</sup> | ✓       |             |                  |                    |                    | ✓   | ✓     | ✓   |          | ✓        | ✓       |
| Ekip COM STA RTU |      | ✓    |                  |                  |                  | ✓       |             |                  |                    |                    | ✓   | ✓     | ✓   |          | ✓        | ✓       |
| Ekip COM STA TCP |      | ✓    | ✓                | ✓                | ✓                | ✓       |             |                  |                    |                    | ✓   | ✓     | ✓   | ✓        | ✓        | ✓       |
| MOE              | ✓    | ✓    | ✓                | ✓                | ✓                | ✓       | ✓           | ✓                | ✓                  | ✓                  |     |       |     | ✓        | ✓        | ✓       |
| MOE-E            | ✓    | ✓    | ✓                | ✓                | ✓                | ✓       | ✓           | ✓                | ✓                  | ✓                  |     |       |     | ✓        | ✓        | ✓       |
| AUE              | ✓    | ✓    | ✓                | ✓                | ✓                | ✓       | ✓           | ✓                | ✓                  | ✓                  |     |       |     | ✓        | ✓        | ✓       |
| YO/YU 3p         | ✓    | ✓    | ✓                | ✓                | ✓                | ✓       |             |                  | ✓                  | ✓                  | ✓   | ✓     | ✓   |          | ✓        |         |
| YO/YU 1p         | ✓    | ✓    | ✓                | ✓                | ✓                |         | ✓           | ✓                | ✓                  | ✓                  | ✓   | ✓     | ✓   | ✓        |          | ✓       |
| Ekip 1K          |      | ✓    | ✓                |                  |                  |         |             | ✓                | ✓                  | ✓                  | ✓   | ✓     | ✓   |          | ✓        |         |

✓ Compatible

(1) In case of the Ekip COM Modbus, RTU, the tick must be disregarded.

## Tmax XT6

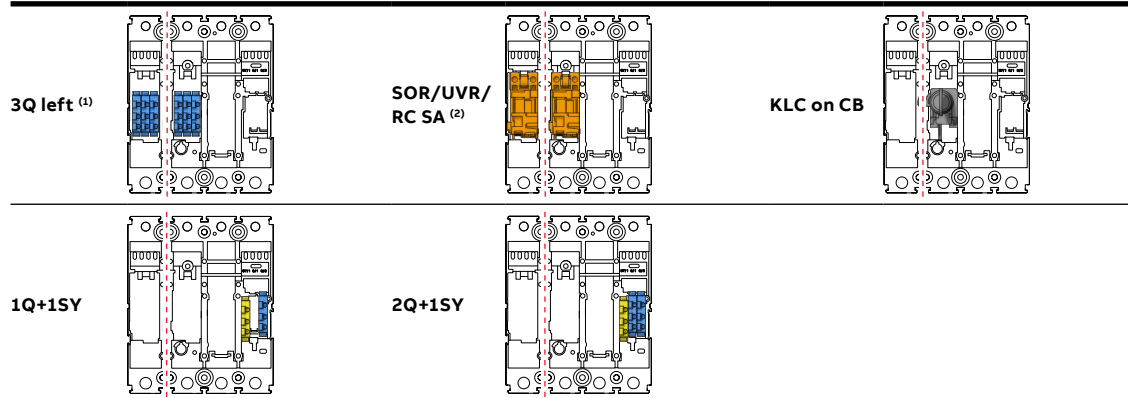
|        | 1S52 | 1S51 | 1Q+1SY | 2Q+1SY | 3Q+1SY | MOE | MOE-E | YU 3p | YO 1p |
|--------|------|------|--------|--------|--------|-----|-------|-------|-------|
| 1S52   |      | ✓    | ✓      | ✓      | ✓      | ✓   | ✓     |       | ✓     |
| 1S51   | ✓    |      | ✓      | ✓      | ✓      | ✓   | ✓     | ✓     | ✓     |
| 1Q+1SY | ✓    | ✓    |        |        |        | ✓   | ✓     | ✓     | ✓     |
| 2Q+1SY | ✓    | ✓    |        |        |        | ✓   | ✓     | ✓     | ✓     |
| 3Q+1SY | ✓    | ✓    |        |        |        | ✓   | ✓     | ✓     | ✓     |
| MOE    | ✓    | ✓    | ✓      | ✓      | ✓      |     |       | ✓     | ✓     |
| MOE-E  | ✓    | ✓    | ✓      | ✓      | ✓      |     |       | ✓     | ✓     |
| YU 3p  |      | ✓    | ✓      | ✓      | ✓      | ✓   | ✓     |       | ✓     |
| YO 1p  | ✓    | ✓    | ✓      | ✓      | ✓      | ✓   | ✓     | ✓     |       |

✓ Compatible

# Compatibility of accessories

## Position of internal accessories for the Tmax XT1

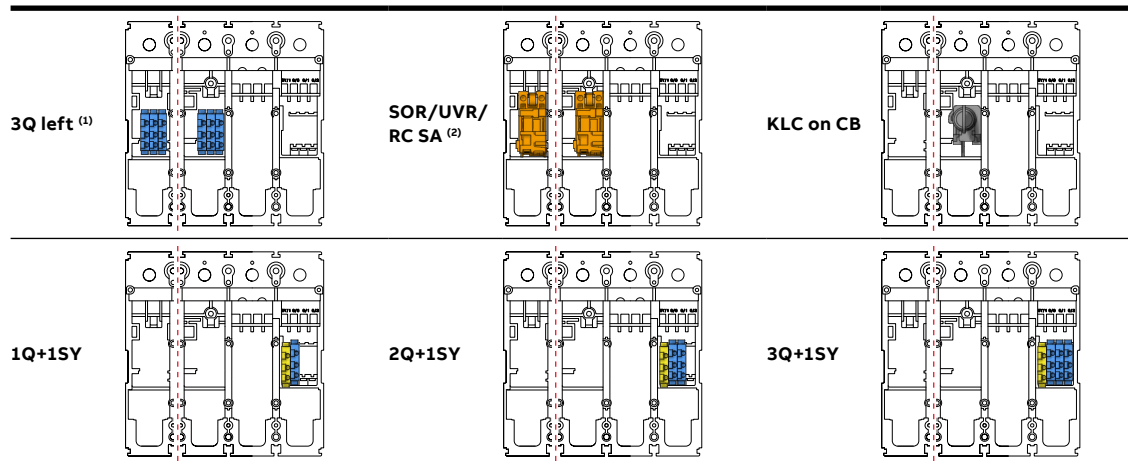
### Tmax XT1



(1) For 4-pole version, 3Q left on the fourth pole only.  
(2) RC SA on the third pole only.

## Position of internal accessories for the Tmax XT3

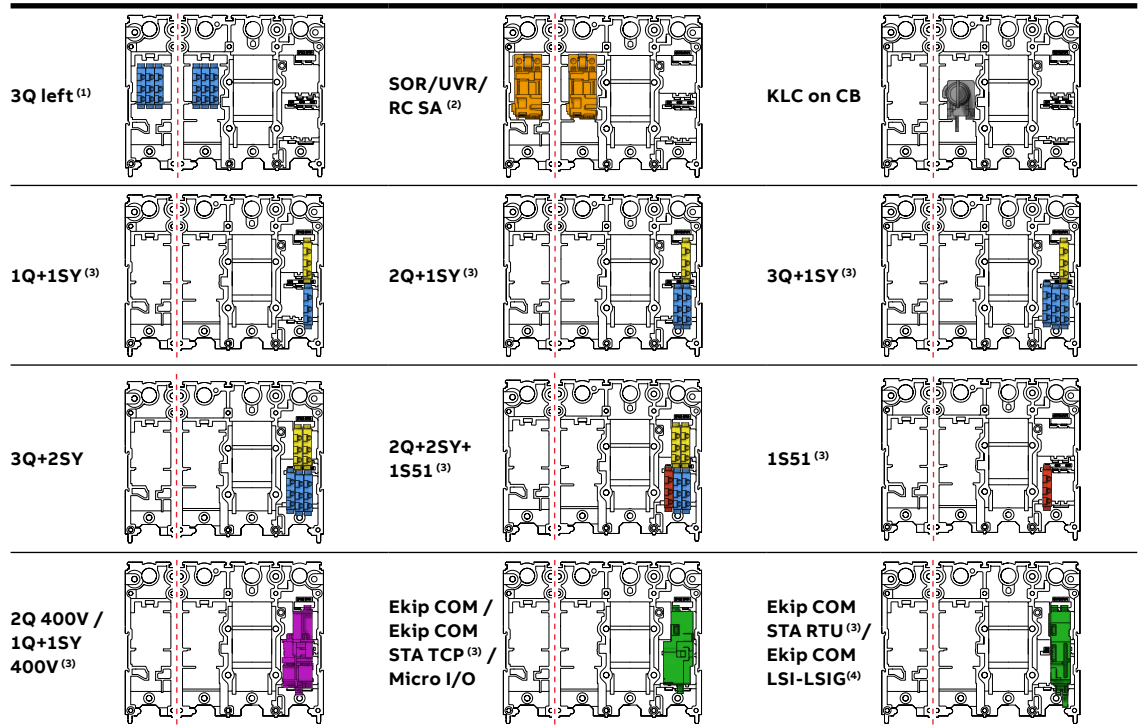
### Tmax XT3



(1) For 4-pole version, 3Q left on the fourth pole only.  
(2) RC SA on the third pole only.

## Position of internal accessories for the Tmax XT2-XT4

### Tmax XT2-XT4



(1) For 4-pole version, 3Q left on the fourth pole only.

(2) RC SA on the third pole only.

(3) Not available for the Ekip Touch and Hi-Touch trip units.

(4) Available only on Ekip LSI and Ekip LSIG.

# Compatibility of accessories

## Position of internal accessories for the Tmax XT5

### Tmax XT5

With 4-pole circuit-breakers, it is not possible to add accessories to the fourth pole.



(1) YO or YU must be mounted on the third pole to make S52 signaling available.

(2) Ekip COM or stand-alone module, depending on the trip unit.

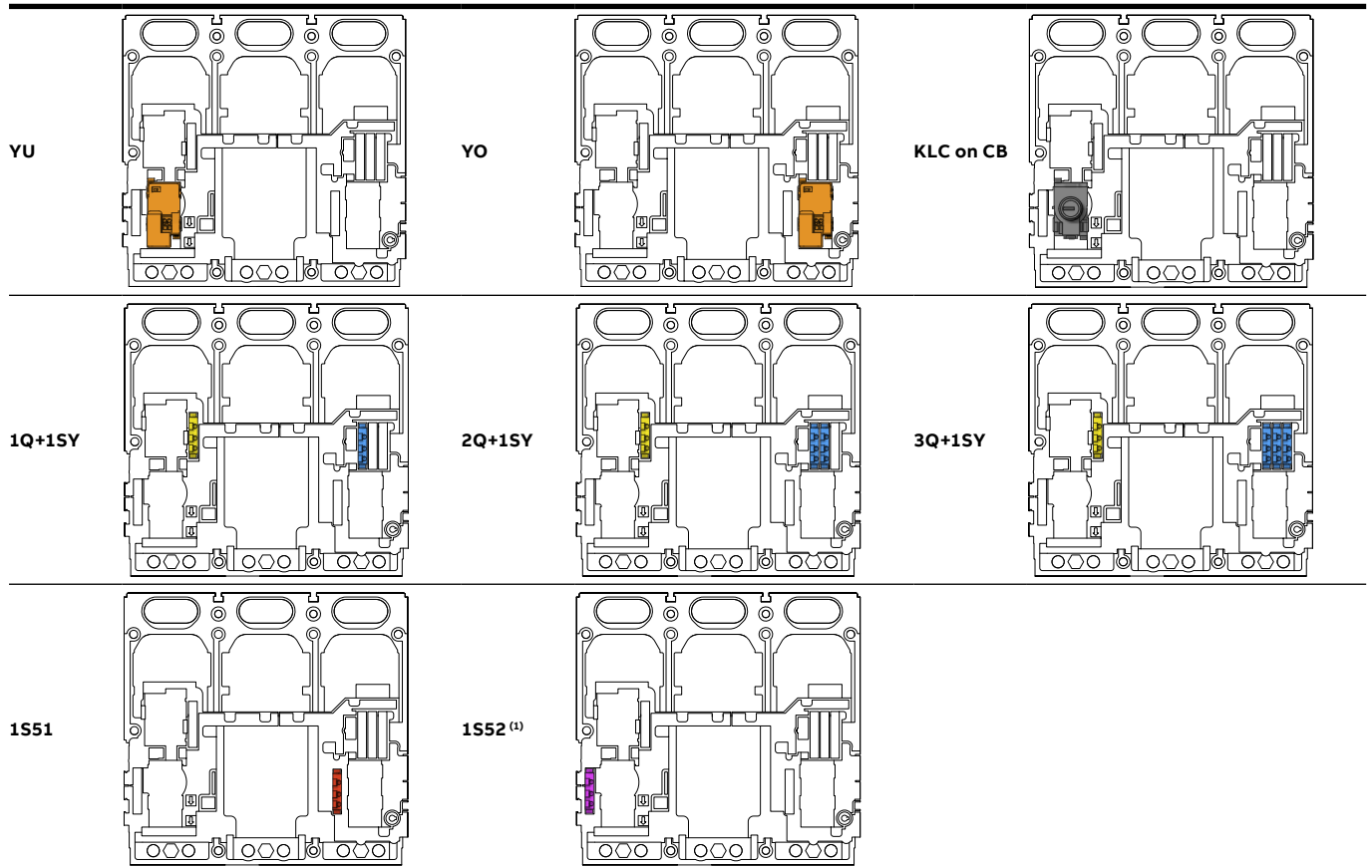
(3) Available for the Ekip Touch and Ekip Hi-Touch only.

(4) Available for the TM trip unit, Ekip Dip trip unit and switch-disconnector only.

## Position of internal accessories for the Tmax XT6

### Tmax XT6

With 4-pole circuit-breakers, it is not possible to add accessories to the fourth pole.



(1) The YO or YU must be mounted on the third pole to make S52 signaling available.

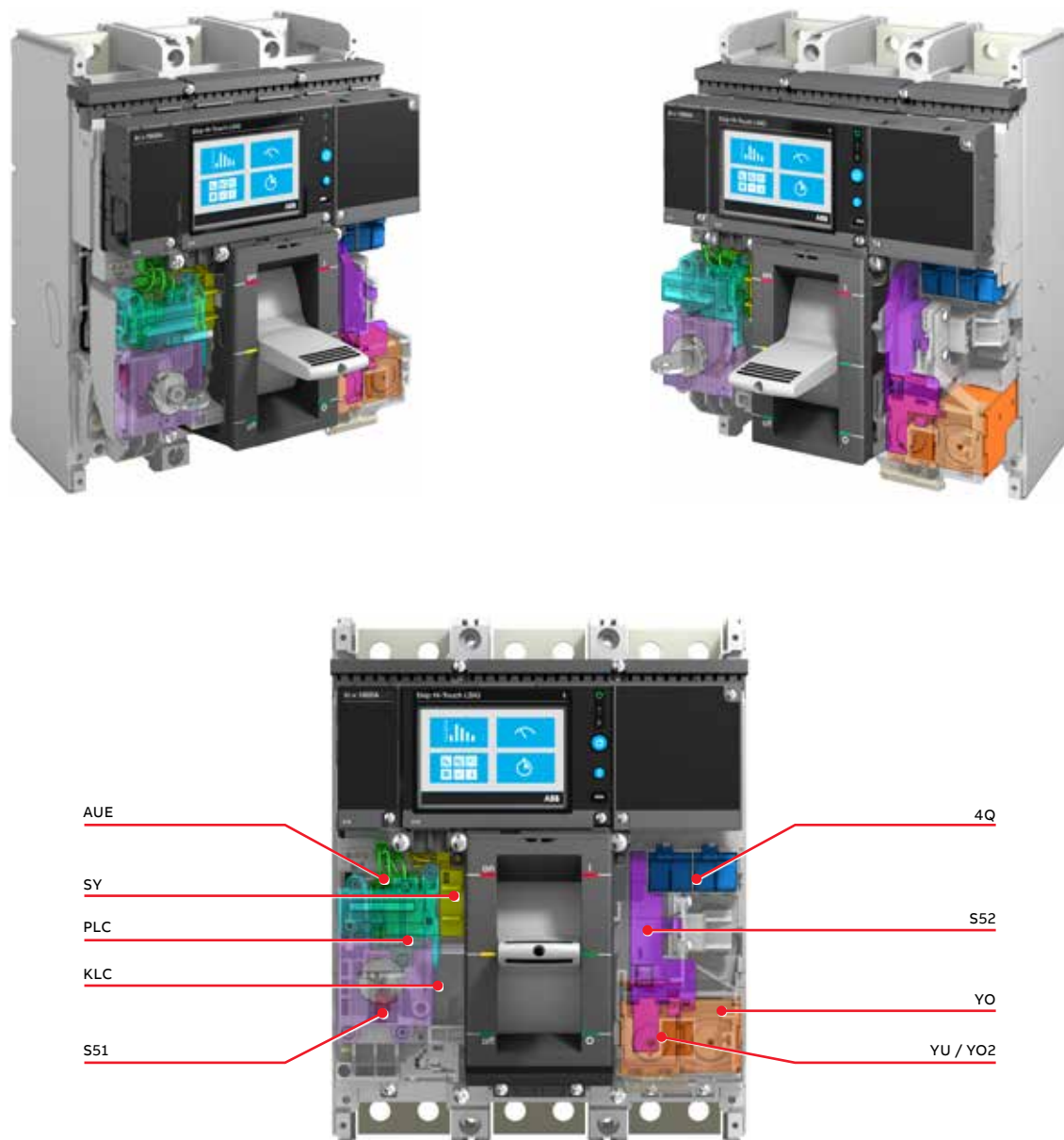


## Compatibility of accessories

### Position of internal accessories for the Tmax XT7

#### Tmax XT7

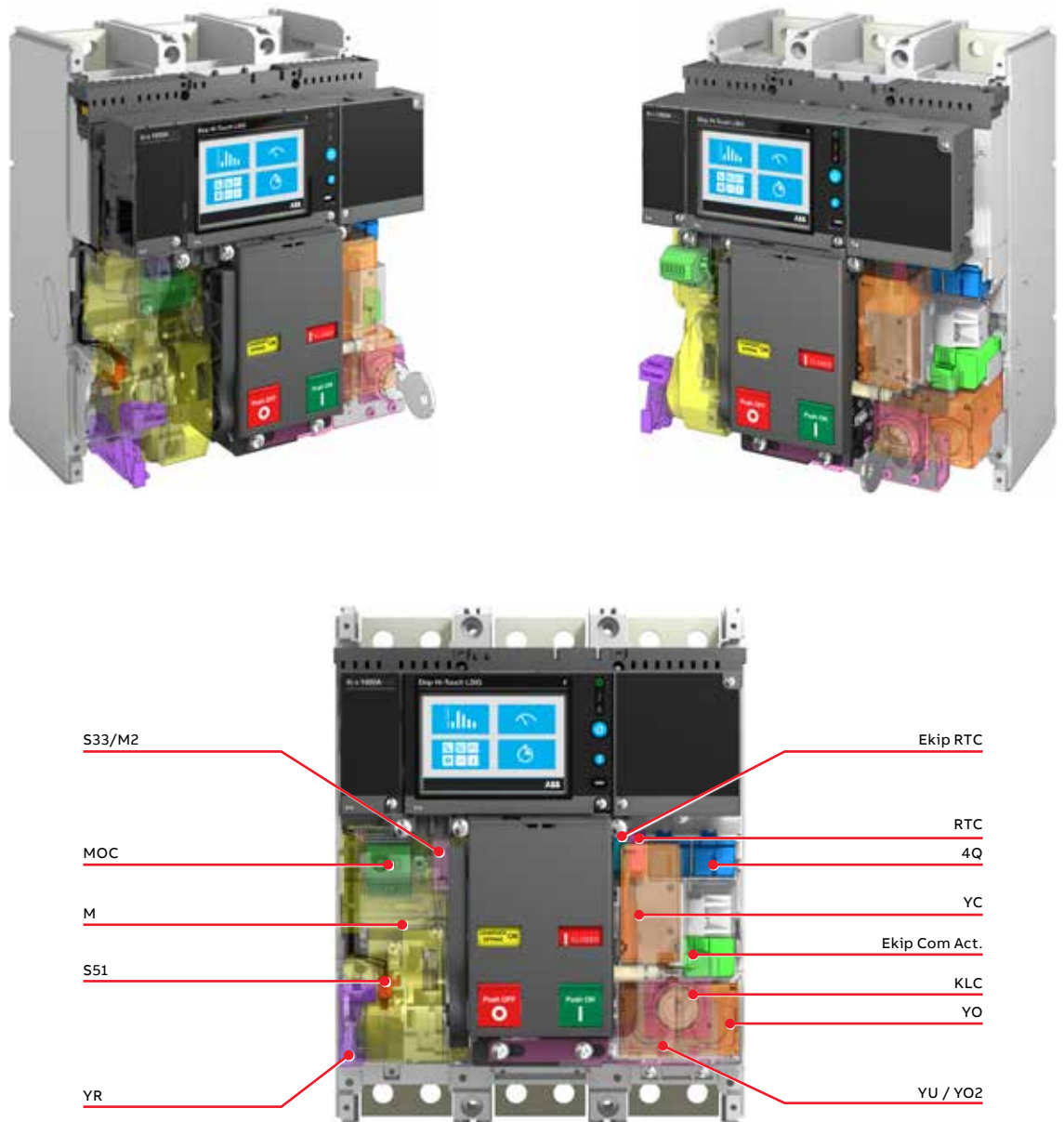
All internal accessories for the XT7 can be mounted at the same time without any restriction concerning their compatibility. To guarantee proper operation of all accessories, please refer to the relevant tables (see previous pages).



## Position of internal accessories for the Tmax XT7 M

### Tmax XT7 M

All internal accessories for the XT7 M can be mounted at the same time without any restriction concerning their compatibility. To guarantee proper operation of all accessories, please refer to the relevant tables (see previous pages).



# Compatibility of accessories

## Reading information

### Glossary

|              |   |                   |   |
|--------------|---|-------------------|---|
| RHD          | = Direct rotary handle  | S51               | = Contact signaling tripping due to trip unit           |
| RHE          | = Transmitted rotary handle   |                   |   |
| RHS          | = Lateral transmitted rotary handle                                 | S52               | = Contact signaling YO/YU tripping                      |
| CK RHE->RHS  | = Conversion kit for converting an RHE into an RHS                  | S33M/2            | = Contact signaling loaded springs                      |
| FLD          | = Front for lever operating mechanism                               | AUE               | = Early auxiliary contacts                              |
| MOD          | = Direct action motor operator                                      | RTC               | = Ready to close signaling contact                      |
| MOE/MOE-E    | = Stored energy motor operator                                      | PBC               | = Protection device for opening and closing pushbuttons |
| M            | = Motor operator  | MOC               | = Mechanical operation counter                          |
| PLL on CB    | = Padlock device on circuit-breaker                                 | NE                | = Neutral external                                      |
| KLC on CB    | = Keylock device on circuit-breaker                                 | AUX-MO            | = Auxiliary contacts for stored energy motor operator   |
| RHL          | = Keylock for rotary handle and front for lever operating mechanism | Micro I/O         | = Module for Touch and Hi-Touch trip unit               |
| MOL on motor | = Keylock for motor operator  | Ekip COM STA      | = Communication module stand-alone                      |
| SOR          | = Shunt opening release   | Ekip COM STA RTU  | = Communication module stand-alone Modbus RTU           |
| UVR          | = Undervoltage release  | Ekip COM STA TCP  | = Communication module stand-alone Modbus TCP           |
| YO           | = Shunt opening release   | Ekip COM          | = Communication module                                  |
| YU           | = Undervoltage release  | Ekip COM act.     | = Ekip COM actuator                                     |
| YC           | = Closing release   | Ekip 1K           | = Ekip 1K signaling                                     |
| YR           | = Remote resetting  | Ekip MM           | = Ekip Maintenance Module                               |
| RC SA        | = Coil for residual current device                                  | Ekip COM LSI-LSIG | = Communication module for Ekip LSI and LSIG XT2-XT4    |
| Q            | = Contact signaling open/closed                                     |                   |   |
| SY           | = Contact signaling tripping  |                   |   |

# Ordering codes

## Ordering codes for XT1

- 8/3 Automatic circuit-breakers
- 8/6 Switch-disconnectors

## Ordering codes for XT2

- 8/7 Automatic circuit-breakers
- 8/22 Breaking part
- 8/23 Trip units
- 8/25 Breaking part + trip unit solution

## Ordering codes for XT3

- 8/26 Automatic circuit-breakers
- 8/28 Switch-disconnectors

## Ordering codes for XT4

- 8/29 Automatic circuit-breakers
- 8/44 Switch-disconnectors
- 8/45 Breaking part
- 8/46 Trip units
- 8/49 Breaking part + trip unit solution

## Ordering codes for XT5

- 8/50 Automatic circuit-breakers
- 8/62 Switch-disconnectors
- 8/63 Breaking part
- 8/64 Trip units
- 8/66 Breaking part + trip unit solution

## Ordering codes for XT6

- 8/67 Automatic circuit-breakers
- 8/70 Switch-disconnectors
- 8/71 Breaking part
- 8/72 Trip units
- 8/73 Breaking part + trip unit solution

## Ordering codes for XT7/XT7 M

- 8/74 Automatic circuit-breakers – XT7
- 8/86 Automatic circuit-breakers – XT7 M
- 8/98 Switch-disconnectors – XT7/XT7 M
- 8/99 Trip units – XT7/XT7 M

## Ordering codes for accessories

- 8/100 Execution and installation
- 8/100 Fixed parts
- 8/101 Conversion kits
- 8/102 Plug and socket adapters
- 8/102 Bracket for fixing on DIN-rail
- 8/102 Floor fixing plate
- 8/102 Cable rack
- 8/103 Power connection
- 8/103 Terminals for circuit-breaker
- 8/105 Terminals for fixed part
- 8/105 Fixed part adapters

|              |  |
|--------------|--|
| <b>8/106</b> | Signaling  |
| <b>8/106</b> | Auxiliary contacts - AUX   |
| <b>8/109</b> | Auxiliary position contacts – AUP  |
| <b>8/109</b> | Early auxiliary contacts – AUE   |
| <b>8/110</b> | Operating mechanism  |
| <b>8/110</b> | Rotary handle operating mechanism  |
| <b>8/112</b> | Front for operating lever mechanism - FLD                                      |
| <b>8/113</b> | Remote control   |
| <b>8/113</b> | Shunt opening release  |
| <b>8/114</b> | Undervoltage release   |
| <b>8/117</b> | Delay device for undervoltage release - UVD                                    |
| <b>8/117</b> | Connectors for shunt opening and undervoltage release for withdrawable version |
| <b>8/118</b> | Resetting remotely - YR  |
| <b>8/118</b> | Motor operator   |
| <b>8/120</b> | Safety and protection  |
| <b>8/120</b> | Terminals covers and phase separators  |
| <b>8/122</b> | IP Protections   |
| <b>8/122</b> | MOC  |
| <b>8/123</b> | Keylocks and padlocks  |
| <b>8/128</b> | Flanges  |
| <b>8/129</b> | Interlocks and switching devices   |
| <b>8/129</b> | Automatic transfer devices   |
| <b>8/130</b> | Residual current devices   |
| <b>8/131</b> | Accessories for electronic Ekip LSI, Ekip LSIg and Ekip M-LRIU trip units      |
| <b>8/132</b> | Accessories for electronic Ekip Touch trip units                               |
| <b>8/132</b> | Ekip cartridge   |
| <b>8/132</b> | Power supply modules   |
| <b>8/132</b> | Connectivity modules   |
| <b>8/134</b> | Signaling modules  |
| <b>8/134</b> | Other modules  |
| <b>8/136</b> | Advanced functionality   |
| <b>8/137</b> | Displaying and supervision systems   |
| <b>8/138</b> | Other accessories for trip units   |
| <b>8/138</b> | Test and configuration   |
| <b>8/138</b> | Current sensors  |
| <b>8/139</b> | Rating plug for Ekip trip units  |

# Ordering codes for XT1

## Automatic circuit-breakers



—  
XT1 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT1B (18kA) TMD - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-------------------------------|--------------|--------------|
|         |     |            |     |                               | Code         | Code         |
| XT1 160 | TMD |            | 16  | XT1B 160 TMD 16-450           | 1SDA066799R1 | 1SDA066810R1 |
|         |     |            | 20  | XT1B 160 TMD 20-450           | 1SDA066800R1 | 1SDA066811R1 |
|         |     |            | 25  | XT1B 160 TMD 25-450           | 1SDA066801R1 | 1SDA066812R1 |
|         |     |            | 32  | XT1B 160 TMD 32-450           | 1SDA066802R1 | 1SDA066813R1 |
|         |     |            | 40  | XT1B 160 TMD 40-450           | 1SDA066803R1 | 1SDA066814R1 |
|         |     |            | 50  | XT1B 160 TMD 50-500           | 1SDA066804R1 | 1SDA066815R1 |
|         |     |            | 63  | XT1B 160 TMD 63-630           | 1SDA066805R1 | 1SDA066816R1 |
|         |     |            | 80  | XT1B 160 TMD 80-800           | 1SDA066806R1 | 1SDA066817R1 |
|         |     |            | 100 | XT1B 160 TMD 100-1000         | 1SDA066807R1 | 1SDA066818R1 |
|         |     |            | 125 | XT1B 160 TMD 125-1250         | 1SDA066808R1 | 1SDA066821R1 |
|         |     |            | 160 | XT1B 160 TMD 160-1600         | 1SDA066809R1 | 1SDA066888R1 |
|         |     |            | 125 | XT1B 160 TMD 125-1250 InN=50% |              | 1SDA066819R1 |
|         |     |            | 160 | XT1B 160 TMD 160-1600 InN=50% |              | 1SDA066820R1 |

#### SACE XT1C (25kA) TMD - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-------------------------------|--------------|--------------|
|         |     |            |     |                               | Code         | Code         |
| XT1 160 | TMD |            | 16  | XT1C 160 TMD 16-450           | 1SDA080825R1 | 1SDA080840R1 |
|         |     |            | 20  | XT1C 160 TMD 20-450           | 1SDA080826R1 | 1SDA080841R1 |
|         |     |            | 25  | XT1C 160 TMD 25-450           | 1SDA067391R1 | 1SDA067400R1 |
|         |     |            | 32  | XT1C 160 TMD 32-450           | 1SDA067392R1 | 1SDA067401R1 |
|         |     |            | 40  | XT1C 160 TMD 40-450           | 1SDA067393R1 | 1SDA067402R1 |
|         |     |            | 50  | XT1C 160 TMD 50-500           | 1SDA067394R1 | 1SDA067403R1 |
|         |     |            | 63  | XT1C 160 TMD 63-630           | 1SDA067395R1 | 1SDA067404R1 |
|         |     |            | 80  | XT1C 160 TMD 80-800           | 1SDA067396R1 | 1SDA067405R1 |
|         |     |            | 100 | XT1C 160 TMD 100-1000         | 1SDA067397R1 | 1SDA067406R1 |
|         |     |            | 125 | XT1C 160 TMD 125-1250         | 1SDA067398R1 | 1SDA067409R1 |
|         |     |            | 160 | XT1C 160 TMD 160-1600         | 1SDA067399R1 | 1SDA067410R1 |
|         |     |            | 125 | XT1C 160 TMD 125-1250 InN=50% |              | 1SDA067407R1 |
|         |     |            | 160 | XT1C 160 TMD 160-1600 InN=50% |              | 1SDA067408R1 |



# Ordering codes for XT1

## Automatic circuit-breakers



XT1 - circuit-breaker

| SACE XT1N (36kA) TMF/TMD - Front terminals (F) |     |            |     |                               |              |              |
|--|-----|------------|-----|-------------------------------|--------------|--------------|
| Size   | Iu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|  |     |            |     |                               | Code         | Code         |
| XT1  | 160 | TMF        | 16  | XT1N 160 TMF 16-450           | 1SDA080827R1 | 1SDA080842R1 |
|  |     |            | 20  | XT1N 160 TMF 20-450           | 1SDA080828R1 | 1SDA080843R1 |
| XT1  | 160 | TMD        | 25  | XT1N 160 TMD 25-450           | 1SDA080829R1 | 1SDA080844R1 |
|  |     |            | 32  | XT1N 160 TMD 32-450           | 1SDA067411R1 | 1SDA067419R1 |
|  |     |            | 40  | XT1N 160 TMD 40-450           | 1SDA067412R1 | 1SDA067420R1 |
|  |     |            | 50  | XT1N 160 TMD 50-500           | 1SDA067413R1 | 1SDA067421R1 |
|  |     |            | 63  | XT1N 160 TMD 63-630           | 1SDA067414R1 | 1SDA067422R1 |
|  |     |            | 80  | XT1N 160 TMD 80-800           | 1SDA067415R1 | 1SDA067423R1 |
|  |     |            | 100 | XT1N 160 TMD 100-1000         | 1SDA067416R1 | 1SDA067424R1 |
|  |     |            | 125 | XT1N 160 TMD 125-1250         | 1SDA067417R1 | 1SDA067427R1 |
|  |     |            | 160 | XT1N 160 TMD 160-1600         | 1SDA067418R1 | 1SDA067428R1 |
|  |     |            | 125 | XT1N 160 TMD 125-1250 InN=50% |              | 1SDA067425R1 |
|  |     |            | 160 | XT1N 160 TMD 160-1600 InN=50% |              | 1SDA067426R1 |

## Distribution circuit-breakers

**SACE XT1S (50kA) TMF/TMD - Front terminals (F)**—  
XT1 - circuit-breaker

| Size | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT1  | 160 | TMF        | 16  | XT1S 160 TMF 16-450           | 1SDA080830R1 | 1SDA080845R1 |
|      |     |            | 20  | XT1S 160 TMF 20-450           | 1SDA080831R1 | 1SDA080846R1 |
| XT1  | 160 | TMD        | 25  | XT1S 160 TMD 25-450           | 1SDA080832R1 | 1SDA080847R1 |
|      |     |            | 32  | XT1S 160 TMD 32-450           | 1SDA080833R1 | 1SDA080848R1 |
|      |     |            | 40  | XT1S 160 TMD 40-450           | 1SDA080834R1 | 1SDA080849R1 |
|      |     |            | 50  | XT1S 160 TMD 50-500           | 1SDA067431R1 | 1SDA067439R1 |
|      |     |            | 63  | XT1S 160 TMD 63-630           | 1SDA067432R1 | 1SDA067440R1 |
|      |     |            | 80  | XT1S 160 TMD 80-800           | 1SDA067433R1 | 1SDA067441R1 |
|      |     |            | 100 | XT1S 160 TMD 100-1000         | 1SDA067434R1 | 1SDA067442R1 |
|      |     |            | 125 | XT1S 160 TMD 125-1250         | 1SDA067435R1 | 1SDA067445R1 |
|      |     |            | 160 | XT1S 160 TMD 160-1600         | 1SDA067436R1 | 1SDA067446R1 |
|      |     |            | 125 | XT1S 160 TMD 125-1250 InN=50% |              | 1SDA067443R1 |
|      |     |            | 160 | XT1S 160 TMD 160-1600 InN=50% |              | 1SDA067444R1 |

## Distribution circuit-breakers

**SACE XT1H (70kA) TMF/TMD - Front terminals (F)**—  
XT1 - circuit-breaker

| Size | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT1  | 160 | TMF        | 16  | XT1H 160 TMF 16-450           | 1SDA080835R1 | 1SDA080850R1 |
|      |     |            | 20  | XT1H 160 TMF 20-450           | 1SDA080836R1 | 1SDA080851R1 |
| XT1  | 160 | TMD        | 25  | XT1H 160 TMD 25-450           | 1SDA080837R1 | 1SDA080852R1 |
|      |     |            | 32  | XT1H 160 TMD 32-450           | 1SDA080838R1 | 1SDA080853R1 |
|      |     |            | 40  | XT1H 160 TMD 40-450           | 1SDA080839R1 | 1SDA080854R1 |
|      |     |            | 50  | XT1H 160 TMD 50-500           | 1SDA067449R1 | 1SDA067457R1 |
|      |     |            | 63  | XT1H 160 TMD 63-630           | 1SDA067450R1 | 1SDA067458R1 |
|      |     |            | 80  | XT1H 160 TMD 80-800           | 1SDA067451R1 | 1SDA067459R1 |
|      |     |            | 100 | XT1H 160 TMD 100-1000         | 1SDA067452R1 | 1SDA067460R1 |
|      |     |            | 125 | XT1H 160 TMD 125-1250         | 1SDA067453R1 | 1SDA067463R1 |
|      |     |            | 160 | XT1H 160 TMD 160-1600         | 1SDA067454R1 | 1SDA067464R1 |
|      |     |            | 125 | XT1H 160 TMD 125-1250 InN=50% |              | 1SDA067461R1 |
|      |     |            | 160 | XT1H 160 TMD 160-1600 InN=50% |              | 1SDA067462R1 |





# Ordering codes for XT1

## Switch-disconnectors



XT1 -  
switch-disconnector

| SACE XT1D - Switch-disconnectors |     |          |              |              |
|----------------------------------|-----|----------|--------------|--------------|
| Size                             | lu  | Type     | 3 poles      | 4 poles      |
|                                  |     |          | Code         | Code         |
| XT1                              | 160 | XT1D 160 | 1SDA068208R1 | 1SDA068209R1 |

# Ordering codes for XT2

## Automatic circuit-breakers



—  
XT2 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT2N (36 kA) TMD/TMA - Front terminals (F)

| Size    | lu  | Trip units | In   | Type                          | 3 poles      | 4 poles      |
|---------|-----|------------|------|-------------------------------|--------------|--------------|
|         |     |            |      |                               | Code         | Code         |
| XT2 160 | TMD |            | 1.6  | XT2N 160 TMD 1,6-16           | 1SDA067000R1 | 1SDA067021R1 |
|         |     |            | 2    | XT2N 160 TMD 2-20             | 1SDA067001R1 | 1SDA067022R1 |
|         |     |            | 2.5  | XT2N 160 TMD 2,5-25           | 1SDA067002R1 | 1SDA067023R1 |
|         |     |            | 3.2  | XT2N 160 TMD 3,2-32           | 1SDA067003R1 | 1SDA067024R1 |
|         |     |            | 4    | XT2N 160 TMD 4-40             | 1SDA067004R1 | 1SDA067025R1 |
|         |     |            | 5    | XT2N 160 TMD 5-50             | 1SDA067005R1 | 1SDA067026R1 |
|         |     |            | 6.3  | XT2N 160 TMD 6,3-63           | 1SDA067006R1 | 1SDA067027R1 |
|         |     |            | 8    | XT2N 160 TMD 8-80             | 1SDA067007R1 | 1SDA067028R1 |
|         |     |            | 10   | XT2N 160 TMD 10-100           | 1SDA067008R1 | 1SDA067029R1 |
|         |     |            | 12.5 | XT2N 160 TMD 12,5-125         | 1SDA067009R1 | 1SDA067030R1 |
|         |     |            | 16   | XT2N 160 TMD 16-300           | 1SDA067010R1 | 1SDA067031R1 |
|         |     |            | 20   | XT2N 160 TMD 20-300           | 1SDA067011R1 | 1SDA067032R1 |
|         |     |            | 25   | XT2N 160 TMD 25-300           | 1SDA067012R1 | 1SDA067033R1 |
|         |     |            | 32   | XT2N 160 TMD 32-320           | 1SDA067013R1 | 1SDA067034R1 |
|         |     |            | 40   | XT2N 160 TMA 40-400           | 1SDA067014R1 | 1SDA067035R1 |
|         |     |            | 50   | XT2N 160 TMA 50-500           | 1SDA067015R1 | 1SDA067036R1 |
| XT2 160 | TMA |            | 63   | XT2N 160 TMA 63-630           | 1SDA067016R1 | 1SDA067037R1 |
|         |     |            | 80   | XT2N 160 TMA 80-800           | 1SDA067017R1 | 1SDA067038R1 |
|         |     |            | 100  | XT2N 160 TMA 100-1000         | 1SDA067018R1 | 1SDA067039R1 |
|         |     |            | 125  | XT2N 160 TMA 125-1250         | 1SDA067019R1 | 1SDA067042R1 |
|         |     |            | 160  | XT2N 160 TMA 160-1600         | 1SDA067020R1 | 1SDA067043R1 |
|         |     |            | 125  | XT2N 160 TMA 125-1250 InN=50% |              | 1SDA067040R1 |
|         |     |            | 160  | XT2N 160 TMA 160-1600 InN=50% |              | 1SDA067041R1 |

#### SACE XT2N (36 kA) Ekip LS/I - Front terminals (F)

| Size    | lu        | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|---------|-----------|------------|-----|----------------------------|--------------|--------------|
|         |           |            |     |                            | Code         | Code         |
| XT2 160 | Ekip LS/I |            | 10  | XT2N 160 Ekip LS/I In=10A  | 1SDA067054R1 | 1SDA067090R1 |
|         |           |            | 25  | XT2N 160 Ekip LS/I In=25A  | 1SDA067055R1 | 1SDA067091R1 |
|         |           |            | 63  | XT2N 160 Ekip LS/I In=63A  | 1SDA067056R1 | 1SDA067092R1 |
|         |           |            | 100 | XT2N 160 Ekip LS/I In=100A | 1SDA067057R1 | 1SDA067093R1 |
|         |           |            | 160 | XT2N 160 Ekip LS/I In=160A | 1SDA067058R1 | 1SDA067095R1 |

#### SACE XT2N (36 kA) Ekip I - Front terminals (F)

| Size    | lu     | Trip units | In  | Type                    | 3 poles      | 4 poles      |
|---------|--------|------------|-----|-------------------------|--------------|--------------|
|         |        |            |     |                         | Code         | Code         |
| XT2 160 | Ekip I |            | 10  | XT2N 160 Ekip I In=10A  | 1SDA067059R1 | 1SDA067096R1 |
|         |        |            | 25  | XT2N 160 Ekip I In=25A  | 1SDA067060R1 | 1SDA067097R1 |
|         |        |            | 63  | XT2N 160 Ekip I In=63A  | 1SDA067061R1 | 1SDA067098R1 |
|         |        |            | 100 | XT2N 160 Ekip I In=100A | 1SDA067062R1 | 1SDA067099R1 |
|         |        |            | 160 | XT2N 160 Ekip I In=160A | 1SDA067063R1 | 1SDA067101R1 |

# Ordering codes for XT2

## Automatic circuit-breakers



—  
XT2 - circuit-breaker

### SACE XT2N (36 kA) Ekip LSI - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                      | 3 poles      | 4 poles      |
|------|-----|------------|-----|---------------------------|--------------|--------------|
|      |     |            |     |                           | Code         | Code         |
| XT2  | 160 | Ekip LSI   | 10  | XT2N 160 Ekip LSI In=10A  | 1SDA067067R1 | 1SDA067102R1 |
|      |     |            | 25  | XT2N 160 Ekip LSI In=25A  | 1SDA067068R1 | 1SDA067103R1 |
|      |     |            | 63  | XT2N 160 Ekip LSI In=63A  | 1SDA067069R1 | 1SDA067104R1 |
|      |     |            | 100 | XT2N 160 Ekip LSI In=100A | 1SDA067070R1 | 1SDA067105R1 |
|      |     |            | 160 | XT2N 160 Ekip LSI In=160A | 1SDA067071R1 | 1SDA067107R1 |

### SACE XT2N (36 kA) Ekip LSIG - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------------|--------------|--------------|
|      |     |            |     |                            | Code         | Code         |
| XT2  | 160 | Ekip LSIG  | 10  | XT2N 160 Ekip LSIG In=10A  | 1SDA067072R1 | 1SDA067108R1 |
|      |     |            | 25  | XT2N 160 Ekip LSIG In=25A  | 1SDA067073R1 | 1SDA067109R1 |
|      |     |            | 63  | XT2N 160 Ekip LSIG In=63A  | 1SDA067074R1 | 1SDA067110R1 |
|      |     |            | 100 | XT2N 160 Ekip LSIG In=100A | 1SDA067075R1 | 1SDA067111R1 |
|      |     |            | 160 | XT2N 160 Ekip LSIG In=160A | 1SDA067076R1 | 1SDA100024R1 |

### SACE XT2N (36 kA) Ekip Dip LIG - Front terminals (F)

| Size | Iu  | Trip units   | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|--------------|-----|-------------------------------|--------------|--------------|
|      |     |              |     |                               | Code         | Code         |
| XT2  | 160 | Ekip Dip LIG | 10  | XT2N 160 Ekip Dip LIG In=10A  | 1SDA100010R1 | 1SDA100025R1 |
|      |     |              | 25  | XT2N 160 Ekip Dip LIG In=25A  | 1SDA100011R1 | 1SDA100026R1 |
|      |     |              | 63  | XT2N 160 Ekip Dip LIG In=63A  | 1SDA100012R1 | 1SDA100027R1 |
|      |     |              | 100 | XT2N 160 Ekip Dip LIG In=100A | 1SDA100013R1 | 1SDA100028R1 |
|      |     |              | 160 | XT2N 160 Ekip Dip LIG In=160A | 1SDA100014R1 | 1SDA100029R1 |

Motor protection circuit-breakers

SACE XT2N (36 kA) MF/MA - Front terminals (F)



XT2 - circuit-breaker

| Size | Iu  | Trip units | In   | Type                          | 3 poles      | 4 poles |
|------|-----|------------|------|-------------------------------|--------------|---------|
|      |     |            |      |                               | Code         | Code    |
| XT2  | 160 | MF         | 1    | XT2N 160 MF 1 Im=14           | 1SDA067044R1 |         |
|      |     |            | 2    | XT2N 160 MF 2 Im=28           | 1SDA067045R1 |         |
|      |     |            | 4    | XT2N 160 MF 4 Im=56           | 1SDA067046R1 |         |
|      |     |            | 8.5  | XT2N 160 MF 8,5 Im=120        | 1SDA067047R1 |         |
|      |     |            | 12.5 | XT2N 160 MF 12,5 Im=175       | 1SDA067048R1 |         |
| XT2  | 160 | MA         | 20   | XT2N 160 MA 20 Im=120...280   | 1SDA067049R1 |         |
|      |     |            | 32   | XT2N 160 MA 32 Im=192...448   | 1SDA067050R1 |         |
|      |     |            | 52   | XT2N 160 MA 52 Im=314...728   | 1SDA067051R1 |         |
|      |     |            | 80   | XT2N 160 MA 80 Im=480...1120  | 1SDA067052R1 |         |
|      |     |            | 100  | XT2N 160 MA 100 Im=600...1400 | 1SDA067053R1 |         |
|      |     |            | 160  | XT2N 160 MA 160 Im=960...2240 | 1SDA076529R1 |         |

# Ordering codes for XT2

## Automatic circuit-breakers

### Generator protection circuit-breakers

#### SACE XT2N (36 kA) TMG - Front terminals (F)



—  
XT2 - circuit-breaker

| Size | lu  | Trip units | In  | Type                 | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------|--------------|--------------|
|      |     |            |     |                      | Code         | Code         |
| XT2  | 160 | TMG        | 16  | XT2N 160 TMG 16-160  | 1SDA067716R1 | 1SDA067727R1 |
|      |     |            | 20  | XT2N 160 TMG 20-160  | 1SDA067717R1 | 1SDA067728R1 |
|      |     |            | 25  | XT2N 160 TMG 25-160  | 1SDA067718R1 | 1SDA067729R1 |
|      |     |            | 32  | XT2N 160 TMG 32-160  | 1SDA067719R1 | 1SDA067730R1 |
|      |     |            | 40  | XT2N 160 TMG 40-200  | 1SDA067720R1 | 1SDA067731R1 |
|      |     |            | 50  | XT2N 160 TMG 50-200  | 1SDA067721R1 | 1SDA067732R1 |
|      |     |            | 63  | XT2N 160 TMG 63-200  | 1SDA067722R1 | 1SDA067733R1 |
|      |     |            | 80  | XT2N 160 TMG 80-240  | 1SDA067723R1 | 1SDA067734R1 |
|      |     |            | 100 | XT2N 160 TMG 100-300 | 1SDA067724R1 | 1SDA067735R1 |
|      |     |            | 125 | XT2N 160 TMG 125-375 | 1SDA067725R1 | 1SDA067736R1 |
|      |     |            | 160 | XT2N 160 TMG 160-480 | 1SDA067726R1 | 1SDA067737R1 |

### Distribution circuit-breakers

#### SACE XT2S (50 kA) TMD/TMA - Front terminals (F)



—  
XT2 - circuit-breaker

| Size | lu  | Trip units | In   | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|------|-------------------------------|--------------|--------------|
|      |     |            |      |                               | Code         | Code         |
| XT2  | 160 | TMD        | 1.6  | XT2S 160 TMD 1,6-16           | 1SDA067540R1 | 1SDA067561R1 |
|      |     |            | 2    | XT2S 160 TMD 2-20             | 1SDA067541R1 | 1SDA067562R1 |
|      |     |            | 2.5  | XT2S 160 TMD 2,5-25           | 1SDA067542R1 | 1SDA067563R1 |
|      |     |            | 3.2  | XT2S 160 TMD 3,2-32           | 1SDA067543R1 | 1SDA067564R1 |
|      |     |            | 4    | XT2S 160 TMD 4-40             | 1SDA067544R1 | 1SDA067565R1 |
|      |     |            | 5    | XT2S 160 TMD 5-50             | 1SDA067545R1 | 1SDA067566R1 |
|      |     |            | 6.3  | XT2S 160 TMD 6,3-63           | 1SDA067546R1 | 1SDA067567R1 |
|      |     |            | 8    | XT2S 160 TMD 8-80             | 1SDA067547R1 | 1SDA067568R1 |
|      |     |            | 10   | XT2S 160 TMD 10-100           | 1SDA067548R1 | 1SDA067569R1 |
|      |     |            | 12.5 | XT2S 160 TMD 12,5-125         | 1SDA067549R1 | 1SDA067570R1 |
|      |     |            | 16   | XT2S 160 TMD 16-300           | 1SDA067550R1 | 1SDA067571R1 |
|      |     |            | 20   | XT2S 160 TMD 20-300           | 1SDA067551R1 | 1SDA067572R1 |
|      |     |            | 25   | XT2S 160 TMD 25-300           | 1SDA067552R1 | 1SDA067573R1 |
|      |     |            | 32   | XT2S 160 TMD 32-320           | 1SDA067553R1 | 1SDA067574R1 |
| XT2  | 160 | TMA        | 40   | XT2S 160 TMA 40-400           | 1SDA067554R1 | 1SDA067575R1 |
|      |     |            | 50   | XT2S 160 TMA 50-500           | 1SDA067555R1 | 1SDA067576R1 |
|      |     |            | 63   | XT2S 160 TMA 63-630           | 1SDA067556R1 | 1SDA067577R1 |
|      |     |            | 80   | XT2S 160 TMA 80-800           | 1SDA067557R1 | 1SDA067578R1 |
|      |     |            | 100  | XT2S 160 TMA 100-1000         | 1SDA067558R1 | 1SDA067579R1 |
|      |     |            | 125  | XT2S 160 TMA 125-1250         | 1SDA067559R1 | 1SDA067582R1 |
|      |     |            | 160  | XT2S 160 TMA 160-1600         | 1SDA067560R1 | 1SDA067583R1 |
|      |     |            | 125  | XT2S 160 TMA 125-1250 InN=50% |              | 1SDA067580R1 |
|      |     |            | 160  | XT2S 160 TMA 160-1600 InN=50% |              | 1SDA067581R1 |



XT2 - circuit-breaker

**SACE XT2S (50 kA) Ekip LS/I - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------------|--------------|--------------|
|      |     |            |     |                            | Code         | Code         |
| XT2  | 160 | Ekip LS/I  | 10  | XT2S 160 Ekip LS/I In=10A  | 1SDA067800R1 | 1SDA067833R1 |
|      |     |            | 25  | XT2S 160 Ekip LS/I In=25A  | 1SDA067801R1 | 1SDA067834R1 |
|      |     |            | 63  | XT2S 160 Ekip LS/I In=63A  | 1SDA067802R1 | 1SDA067835R1 |
|      |     |            | 100 | XT2S 160 Ekip LS/I In=100A | 1SDA067803R1 | 1SDA067836R1 |
|      |     |            | 160 | XT2S 160 Ekip LS/I In=160A | 1SDA067804R1 | 1SDA067838R1 |

**SACE XT2S (50 kA) Ekip I - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                    | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------|--------------|--------------|
|      |     |            |     |                         | Code         | Code         |
| XT2  | 160 | Ekip I     | 10  | XT2S 160 Ekip I In=10A  | 1SDA067805R1 | 1SDA067839R1 |
|      |     |            | 25  | XT2S 160 Ekip I In=25A  | 1SDA067806R1 | 1SDA067840R1 |
|      |     |            | 63  | XT2S 160 Ekip I In=63A  | 1SDA067807R1 | 1SDA067841R1 |
|      |     |            | 100 | XT2S 160 Ekip I In=100A | 1SDA067808R1 | 1SDA067842R1 |
|      |     |            | 160 | XT2S 160 Ekip I In=160A | 1SDA067809R1 | 1SDA067844R1 |

**SACE XT2S (50 kA) Ekip LSI - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                      | 3 poles      | 4 poles      |
|------|-----|------------|-----|---------------------------|--------------|--------------|
|      |     |            |     |                           | Code         | Code         |
| XT2  | 160 | Ekip LSI   | 10  | XT2S 160 Ekip LSI In=10A  | 1SDA067810R1 | 1SDA067845R1 |
|      |     |            | 25  | XT2S 160 Ekip LSI In=25A  | 1SDA067811R1 | 1SDA067846R1 |
|      |     |            | 63  | XT2S 160 Ekip LSI In=63A  | 1SDA067812R1 | 1SDA067847R1 |
|      |     |            | 100 | XT2S 160 Ekip LSI In=100A | 1SDA067813R1 | 1SDA067848R1 |
|      |     |            | 160 | XT2S 160 Ekip LSI In=160A | 1SDA067814R1 | 1SDA067850R1 |

**SACE XT2S (50 kA) Ekip LSIG - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------------|--------------|--------------|
|      |     |            |     |                            | Code         | Code         |
| XT2  | 160 | Ekip LSIG  | 10  | XT2S 160 Ekip LSIG In=10A  | 1SDA067815R1 | 1SDA067851R1 |
|      |     |            | 25  | XT2S 160 Ekip LSIG In=25A  | 1SDA067816R1 | 1SDA067852R1 |
|      |     |            | 63  | XT2S 160 Ekip LSIG In=63A  | 1SDA067817R1 | 1SDA067853R1 |
|      |     |            | 100 | XT2S 160 Ekip LSIG In=100A | 1SDA067818R1 | 1SDA067854R1 |
|      |     |            | 160 | XT2S 160 Ekip LSIG In=160A | 1SDA067819R1 | 1SDA067856R1 |

**SACE XT2S (50 kA) Ekip Dip LIG - Front terminals (F)**

| Size | Iu  | Trip units   | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|--------------|-----|-------------------------------|--------------|--------------|
|      |     |              |     |                               | Code         | Code         |
| XT2  | 160 | Ekip Dip LIG | 10  | XT2S 160 Ekip Dip LIG In=10A  | 1SDA100040R1 | 1SDA100055R1 |
|      |     |              | 25  | XT2S 160 Ekip Dip LIG In=25A  | 1SDA100041R1 | 1SDA100056R1 |
|      |     |              | 63  | XT2S 160 Ekip Dip LIG In=63A  | 1SDA100042R1 | 1SDA100057R1 |
|      |     |              | 100 | XT2S 160 Ekip Dip LIG In=100A | 1SDA100043R1 | 1SDA100058R1 |
|      |     |              | 160 | XT2S 160 Ekip Dip LIG In=160A | 1SDA100044R1 | 1SDA100059R1 |

# Ordering codes for XT2

## Automatic circuit-breakers

### Motor protection circuit-breakers



XT2 - circuit-breaker

#### SACE XT2S (50 kA) MF/MA - Front terminals (F)

| Size    | lu | Trip units | In   | Type                         | 3 poles      | 4 poles |
|---------|----|------------|------|------------------------------|--------------|---------|
|         |    |            |      |                              | Code         | Code    |
| XT2 160 | MF |            | 1    | XT2S 160 MF 1 Im=14          | 1SDA067760R1 |         |
|         |    |            | 2    | XT2S 160 MF 2 Im=28          | 1SDA067761R1 |         |
|         |    |            | 4    | XT2S 160 MF 4 Im=56          | 1SDA067762R1 |         |
|         |    |            | 8.5  | XT2S 160 MF 8,5 Im=120       | 1SDA067763R1 |         |
|         |    |            | 12.5 | XT2S 160 MF 12,5 Im=175      | 1SDA067764R1 |         |
| XT2 160 | MA |            | 20   | XT2S 160 MA 20 Im=120...280  | 1SDA067765R1 |         |
|         |    |            | 32   | XT2S 160 MA 32 Im=192...448  | 1SDA067766R1 |         |
|         |    |            | 52   | XT2S 160 MA 52 Im=314...728  | 1SDA067767R1 |         |
|         |    |            | 80   | XT2S 160 MA 80 Im=480...1120 | 1SDA067768R1 |         |
|         |    |            | 100  | XT2S 160 MA 100Im=600...1400 | 1SDA067769R1 |         |
|         |    |            | 160  | XT2S 160 MA Im=960...2240    | 1SDA076530R1 |         |

### Generator protection circuit-breakers



XT2 - circuit-breaker

#### SACE XT2S (50 kA) TMG - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                 | 3 poles      | 4 poles      |
|---------|-----|------------|-----|----------------------|--------------|--------------|
|         |     |            |     |                      | Code         | Code         |
| XT2 160 | TMG |            | 16  | XT2S 160 TMG 16-160  | 1SDA067738R1 | 1SDA067749R1 |
|         |     |            | 20  | XT2S 160 TMG 20-160  | 1SDA067739R1 | 1SDA067750R1 |
|         |     |            | 25  | XT2S 160 TMG 25-160  | 1SDA067740R1 | 1SDA067751R1 |
|         |     |            | 32  | XT2S 160 TMG 32-160  | 1SDA067741R1 | 1SDA067752R1 |
|         |     |            | 40  | XT2S 160 TMG 40-200  | 1SDA067742R1 | 1SDA067753R1 |
|         |     |            | 50  | XT2S 160 TMG 50-200  | 1SDA067743R1 | 1SDA067754R1 |
|         |     |            | 63  | XT2S 160 TMG 63-200  | 1SDA067744R1 | 1SDA067755R1 |
|         |     |            | 80  | XT2S 160 TMG 80-240  | 1SDA067745R1 | 1SDA067756R1 |
|         |     |            | 100 | XT2S 160 TMG 100-300 | 1SDA067746R1 | 1SDA067757R1 |
|         |     |            | 125 | XT2S 160 TMG 125-375 | 1SDA067747R1 | 1SDA067758R1 |
|         |     |            | 160 | XT2S 160 TMG 160-480 | 1SDA067748R1 | 1SDA067759R1 |

## Distribution circuit-breakers



XT2 - circuit-breaker

**SACE XT2H (70 kA) TMD/TMA - Front terminals (F)**

| Size | lu  | Trip units | In   | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|------|-------------------------------|--------------|--------------|
|      |     |            |      |                               | Code         | Code         |
| XT2  | 160 | TMD        | 1.6  | XT2H 160 TMD 1,6-16           | 1SDA067584R1 | 1SDA067605R1 |
|      |     |            | 2    | XT2H 160 TMD 2-20             | 1SDA067585R1 | 1SDA067606R1 |
|      |     |            | 2.5  | XT2H 160 TMD 2,5-25           | 1SDA067586R1 | 1SDA067607R1 |
|      |     |            | 3.2  | XT2H 160 TMD 3,2-32           | 1SDA067587R1 | 1SDA067608R1 |
|      |     |            | 4    | XT2H 160 TMD 4-40             | 1SDA067588R1 | 1SDA067609R1 |
|      |     |            | 5    | XT2H 160 TMD 5-50             | 1SDA067589R1 | 1SDA067610R1 |
|      |     |            | 6.3  | XT2H 160 TMD 6,3-63           | 1SDA067590R1 | 1SDA067611R1 |
|      |     |            | 8    | XT2H 160 TMD 8-80             | 1SDA067591R1 | 1SDA067612R1 |
|      |     |            | 10   | XT2H 160 TMD 10-100           | 1SDA067592R1 | 1SDA067613R1 |
|      |     |            | 12.5 | XT2H 160 TMD 12,5-125         | 1SDA067593R1 | 1SDA067614R1 |
|      |     |            | 16   | XT2H 160 TMD 16-300           | 1SDA067594R1 | 1SDA067615R1 |
|      |     |            | 20   | XT2H 160 TMD 20-300           | 1SDA067595R1 | 1SDA067616R1 |
|      |     |            | 25   | XT2H 160 TMD 25-300           | 1SDA067596R1 | 1SDA067617R1 |
|      |     |            | 32   | XT2H 160 TMD 32-320           | 1SDA067597R1 | 1SDA067618R1 |
| XT2  | 160 | TMA        | 40   | XT2H 160 TMA 40-400           | 1SDA067598R1 | 1SDA067619R1 |
|      |     |            | 50   | XT2H 160 TMA 50-500           | 1SDA067599R1 | 1SDA067620R1 |
|      |     |            | 63   | XT2H 160 TMA 63-630           | 1SDA067600R1 | 1SDA067621R1 |
|      |     |            | 80   | XT2H 160 TMA 80-800           | 1SDA067601R1 | 1SDA067622R1 |
|      |     |            | 100  | XT2H 160 TMA 100-1000         | 1SDA067602R1 | 1SDA067623R1 |
|      |     |            | 125  | XT2H 160 TMA 125-1250         | 1SDA067603R1 | 1SDA067626R1 |
|      |     |            | 160  | XT2H 160 TMA 160-1600         | 1SDA067604R1 | 1SDA067627R1 |
|      |     |            | 125  | XT2H 160 TMA 125-1250 InN=50% |              | 1SDA067624R1 |
|      |     |            | 160  | XT2H 160 TMA 160-1600 InN=50% |              | 1SDA067625R1 |

**SACE XT2H (70 kA) Ekip LS/I - Front terminals (F)**

| Size | lu  | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------------|--------------|--------------|
|      |     |            |     |                            | Code         | Code         |
| XT2  | 160 | Ekip LS/I  | 10  | XT2H 160 Ekip LS/I In=10A  | 1SDA067857R1 | 1SDA067890R1 |
|      |     |            | 25  | XT2H 160 Ekip LS/I In=25A  | 1SDA067858R1 | 1SDA067891R1 |
|      |     |            | 63  | XT2H 160 Ekip LS/I In=63A  | 1SDA067859R1 | 1SDA067892R1 |
|      |     |            | 100 | XT2H 160 Ekip LS/I In=100A | 1SDA067860R1 | 1SDA067893R1 |
|      |     |            | 160 | XT2H 160 Ekip LS/I In=160A | 1SDA067861R1 | 1SDA067895R1 |



# Ordering codes for XT2

## Automatic circuit-breakers



—  
XT2 - circuit-breaker

### SACE XT2H (70 kA) Ekip I - Front terminals (F)

| Size    | Iu     | Trip units | In  | Type                    | 3 poles      | 4 poles      |
|---------|--------|------------|-----|-------------------------|--------------|--------------|
|         |        |            |     |                         | Code         | Code         |
| XT2 160 | Ekip I |            | 10  | XT2H 160 Ekip I In=10A  | 1SDA067862R1 | 1SDA067896R1 |
|         |        |            | 25  | XT2H 160 Ekip I In=25A  | 1SDA067863R1 | 1SDA067897R1 |
|         |        |            | 63  | XT2H 160 Ekip I In=63A  | 1SDA067864R1 | 1SDA067898R1 |
|         |        |            | 100 | XT2H 160 Ekip I In=100A | 1SDA067865R1 | 1SDA067899R1 |
|         |        |            | 160 | XT2H 160 Ekip I In=160A | 1SDA067866R1 | 1SDA067901R1 |

### SACE XT2H (70 kA) Ekip LSI - Front terminals (F)

| Size    | Iu       | Trip units | In  | Type                      | 3 poles      | 4 poles      |
|---------|----------|------------|-----|---------------------------|--------------|--------------|
|         |          |            |     |                           | Code         | Code         |
| XT2 160 | Ekip LSI |            | 10  | XT2H 160 Ekip LSI In=10A  | 1SDA067867R1 | 1SDA067902R1 |
|         |          |            | 25  | XT2H 160 Ekip LSI In=25A  | 1SDA067868R1 | 1SDA067903R1 |
|         |          |            | 63  | XT2H 160 Ekip LSI In=63A  | 1SDA067869R1 | 1SDA067904R1 |
|         |          |            | 100 | XT2H 160 Ekip LSI In=100A | 1SDA067870R1 | 1SDA067905R1 |
|         |          |            | 160 | XT2H 160 Ekip LSI In=160A | 1SDA067871R1 | 1SDA067907R1 |

### SACE XT2H (70 kA) Ekip LSIG - Front terminals (F)

| Size    | Iu        | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|---------|-----------|------------|-----|----------------------------|--------------|--------------|
|         |           |            |     |                            | Code         | Code         |
| XT2 160 | Ekip LSIG |            | 10  | XT2H 160 Ekip LSIG In=10A  | 1SDA067872R1 | 1SDA067908R1 |
|         |           |            | 25  | XT2H 160 Ekip LSIG In=25A  | 1SDA067873R1 | 1SDA067909R1 |
|         |           |            | 63  | XT2H 160 Ekip LSIG In=63A  | 1SDA067874R1 | 1SDA067910R1 |
|         |           |            | 100 | XT2H 160 Ekip LSIG In=100A | 1SDA067875R1 | 1SDA067911R1 |
|         |           |            | 160 | XT2H 160 Ekip LSIG In=160A | 1SDA067876R1 | 1SDA067913R1 |

### SACE XT2H (70 kA) Ekip Dip LIG - Front terminals (F)

| Size    | Iu           | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|--------------|------------|-----|-------------------------------|--------------|--------------|
|         |              |            |     |                               | Code         | Code         |
| XT2 160 | Ekip Dip LIG |            | 10  | XT2H 160 Ekip Dip LIG In=10A  | 1SDA100070R1 | 1SDA100085R1 |
|         |              |            | 25  | XT2H 160 Ekip Dip LIG In=25A  | 1SDA100071R1 | 1SDA100086R1 |
|         |              |            | 63  | XT2H 160 Ekip Dip LIG In=63A  | 1SDA100072R1 | 1SDA100087R1 |
|         |              |            | 100 | XT2H 160 Ekip Dip LIG In=100A | 1SDA100073R1 | 1SDA100088R1 |
|         |              |            | 160 | XT2H 160 Ekip Dip LIG In=160A | 1SDA100074R1 | 1SDA100089R1 |



—  
XT2 - circuit-breaker

Motor protection circuit-breakers

SACE XT2H (70 kA) MF/MA - Front terminals (F)

| Size | Iu  | Trip units | In   | Type                          | 3 poles      | 4 poles |
|------|-----|------------|------|-------------------------------|--------------|---------|
|      |     |            |      |                               | Code         | Code    |
| XT2  | 160 | MF         | 1    | XT2H 160 MF 1 Im=14           | 1SDA067770R1 |         |
|      |     |            | 2    | XT2H 160 MF 2 Im=28           | 1SDA067771R1 |         |
|      |     |            | 4    | XT2H 160 MF 4 Im=56           | 1SDA067772R1 |         |
|      |     |            | 8.5  | XT2H 160 MF 8,5 Im=120        | 1SDA067773R1 |         |
|      |     |            | 12.5 | XT2H 160 MF 12,5 Im=175       | 1SDA067774R1 |         |
| XT2  | 160 | MA         | 20   | XT2H 160 MA 20 Im=120...280   | 1SDA067775R1 |         |
|      |     |            | 32   | XT2H 160 MA 32 Im=192...448   | 1SDA067776R1 |         |
|      |     |            | 52   | XT2H 160 MA 52 Im=314...728   | 1SDA067777R1 |         |
|      |     |            | 80   | XT2H 160 MA 80 Im=480...1120  | 1SDA067778R1 |         |
|      |     |            | 100  | XT2H 160 MA 100 Im=600...1400 | 1SDA067779R1 |         |
|      |     |            | 160  | XT2H 160 MA 160 Im=960...2240 | 1SDA076535R1 |         |

# Ordering codes for XT2

## Automatic circuit-breakers



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XT2 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT2L (120 kA) TMD/TMA - Front terminals (F)

| Size | Iu  | Trip units | In   | Type                          | 3 poles   | 4 poles      |
|------|-----|------------|------|-------------------------------|---|--------------|
|      |     |            |      |                               | Code  | Code         |
| XT2  | 160 | TMD        | 1.6  | XT2L 160 TMD 1,6-16           | 1SDA067628R1  | 1SDA067649R1 |
|      |     |            | 2    | XT2L 160 TMD 2-20             | 1SDA067629R1  | 1SDA067650R1 |
|      |     |            | 2.5  | XT2L 160 TMD 2,5-25           | 1SDA067630R1  | 1SDA067651R1 |
|      |     |            | 3.2  | XT2L 160 TMD 3,2-32           | 1SDA067631R1  | 1SDA067652R1 |
|      |     |            | 4    | XT2L 160 TMD 4-40             | 1SDA067632R1  | 1SDA067653R1 |
|      |     |            | 5    | XT2L 160 TMD 5-50             | 1SDA067633R1  | 1SDA067654R1 |
|      |     |            | 6.3  | XT2L 160 TMD 6,3-63           | 1SDA067634R1  | 1SDA067655R1 |
|      |     |            | 8    | XT2L 160 TMD 8-80             | 1SDA067635R1  | 1SDA067656R1 |
|      |     |            | 10   | XT2L 160 TMD 10-100           | 1SDA067636R1  | 1SDA067657R1 |
|      |     |            | 12.5 | XT2L 160 TMD 12,5-125         | 1SDA067637R1  | 1SDA067658R1 |
|      |     |            | 16   | XT2L 160 TMD 16-300           | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 20   | XT2L 160 TMD 20-300           |   |              |
|      |     |            | 25   | XT2L 160 TMD 25-300           |   |              |
|      |     |            | 32   | XT2L 160 TMD 32-320           |   |              |
| XT2  | 160 | TMA        | 40   | XT2L 160 TMA 40-400           | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 50   | XT2L 160 TMA 50-500           |   |              |
|      |     |            | 63   | XT2L 160 TMA 63-630           |   |              |
|      |     |            | 80   | XT2L 160 TMA 80-800           |   |              |
|      |     |            | 100  | XT2L 160 TMA 100-1000         |   |              |
|      |     |            | 125  | XT2L 160 TMA 125-1250         |   |              |
|      |     |            | 160  | XT2L 160 TMA 160-1600         |   |              |
|      |     |            | 125  | XT2L 160 TMA 125-1250 InN=50% |   |              |
|      |     |            | 160  | XT2L 160 TMA 160-1600 InN=50% |   |              |

#### SACE XT2L (120 kA) Ekip LS/I - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles   | 4 poles      |
|------|-----|------------|-----|----------------------------|---|--------------|
|      |     |            |     |                            | Code  | Code         |
| XT2  | 160 | Ekip LS/I  | 10  | XT2L 160 Ekip LS/I In=10A  | 1SDA067914R1  | 1SDA067947R1 |
|      |     |            | 25  | XT2L 160 Ekip LS/I In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 63  | XT2L 160 Ekip LS/I In=63A  |   |              |
|      |     |            | 100 | XT2L 160 Ekip LS/I In=100A |   |              |
|      |     |            | 160 | XT2L 160 Ekip LS/I In=160A |   |              |



XT2 - circuit-breaker

**SACE XT2L (120 kA) Ekip I - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                    | 3 poles   | 4 poles      |
|------|-----|------------|-----|-------------------------|---|--------------|
|      |     |            |     |                         | Code  | Code         |
| XT2  | 160 | Ekip I     | 10  | XT2L 160 Ekip I In=10A  | 1SDA067919R1  | 1SDA067953R1 |
|      |     |            | 25  | XT2L 160 Ekip I In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 63  | XT2L 160 Ekip I In=63A  |   |              |
|      |     |            | 100 | XT2L 160 Ekip I In=100A |   |              |
|      |     |            | 160 | XT2L 160 Ekip I In=160A |   |              |

**SACE XT2L (120 kA) Ekip LSI - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                      | 3 poles   | 4 poles      |
|------|-----|------------|-----|---------------------------|---|--------------|
|      |     |            |     |                           | Code  | Code         |
| XT2  | 160 | Ekip LSI   | 10  | XT2L 160 Ekip LSI In=10A  | 1SDA067924R1  | 1SDA067959R1 |
|      |     |            | 25  | XT2L 160 Ekip LSI In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 63  | XT2L 160 Ekip LSI In=63A  |   |              |
|      |     |            | 100 | XT2L 160 Ekip LSI In=100A |   |              |
|      |     |            | 160 | XT2L 160 Ekip LSI In=160A |   |              |

**SACE XT2L (120 kA) Ekip LSIG - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                       | 3 poles   | 4 poles      |
|------|-----|------------|-----|----------------------------|---|--------------|
|      |     |            |     |                            | Code  | Code         |
| XT2  | 160 | Ekip LSIG  | 10  | XT2L 160 Ekip LSIG In=10A  | 1SDA067929R1  | 1SDA067965R1 |
|      |     |            | 25  | XT2L 160 Ekip LSIG In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 63  | XT2L 160 Ekip LSIG In=63A  |   |              |
|      |     |            | 100 | XT2L 160 Ekip LSIG In=100A |   |              |
|      |     |            | 160 | XT2L 160 Ekip LSIG In=160A |   |              |

**SACE XT2L (120 kA) Ekip Dip LIG - Front terminals (F)**

| Size | Iu  | Trip units   | In  | Type                          | 3 poles   | 4 poles      |
|------|-----|--------------|-----|-------------------------------|---|--------------|
|      |     |              |     |                               | Code  | Code         |
| XT2  | 160 | Ekip Dip LIG | 10  | XT2L 160 Ekip Dip LIG In=10A  | 1SDA101950R1  | 1SDA101951R1 |
|      |     |              | 25  | XT2L 160 Ekip Dip LIG In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |              | 63  | XT2L 160 Ekip Dip LIG In=63A  |   |              |
|      |     |              | 100 | XT2L 160 Ekip Dip LIG In=100A |   |              |
|      |     |              | 160 | XT2L 160 Ekip Dip LIG In=160A |   |              |



# Ordering codes for XT2

## Automatic circuit-breakers

### Motor protection circuit-breakers

#### SACE XT2L (120 kA) MF/MA - Front terminals (F)



XT2 - circuit-breaker

| Size | Iu  | Trip units | In   | Type                           | 3 poles   | 4 poles |
|------|-----|------------|------|--------------------------------|---|---------|
|      |     |            |      |                                | Code  | Code    |
| XT2  | 160 | MF         | 1    | XT2L 160 MF 1 Im=14            | 1SDA067780R1  |         |
|      |     |            | 2    | XT2L 160 MF 2 Im=28            | 1SDA067781R1  |         |
|      |     |            | 4    | XT2L 160 MF 4 Im=56            | 1SDA067782R1  |         |
|      |     |            | 8.5  | XT2L 160 MF 8,5 Im=120         | 1SDA067783R1  |         |
|      |     |            | 12.5 | XT2L 160 MF 12,5 Im=175        | 1SDA067784R1  |         |
| XT2  | 160 | MA         | 20   | XT2L 160 MA 20 Im=120...280    | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 32   | XT2L 160 MA 32 Im=192...448    |   |         |
|      |     |            | 52   | XT2L 160 MA 52 Im=314...728    |   |         |
|      |     |            | 80   | XT2L 160 MA 80 Im=480...1120   |   |         |
|      |     |            | 100  | XT2L 160 MA 100 Im=600...1400  |   |         |
|      |     |            | 160  | XT2L 160 MA 160 Im=960....2240 |   |         |



XT2 - circuit-breaker

## Distribution circuit-breakers

**SACE XT2V (150 kA) TMD/TMA - Front terminals (F)**

| Size | lu  | Trip units | In   | Type                          | 3 poles   | 4 poles      |
|------|-----|------------|------|-------------------------------|---|--------------|
|      |     |            |      |                               | Code  | Code         |
| XT2  | 160 | TMD        | 1.6  | XT2V 160 TMD 1,6-16           | 1SDA067672R1  | 1SDA067693R1 |
|      |     |            | 2    | XT2V 160 TMD 2-20             | 1SDA067673R1  | 1SDA067694R1 |
|      |     |            | 2.5  | XT2V 160 TMD 2,5-25           | 1SDA067674R1  | 1SDA067695R1 |
|      |     |            | 3.2  | XT2V 160 TMD 3,2-32           | 1SDA067675R1  | 1SDA067696R1 |
|      |     |            | 4    | XT2V 160 TMD 4-40             | 1SDA067676R1  | 1SDA067697R1 |
|      |     |            | 5    | XT2V 160 TMD 5-50             | 1SDA067677R1  | 1SDA067698R1 |
|      |     |            | 6.3  | XT2V 160 TMD 6,3-63           | 1SDA067678R1  | 1SDA067699R1 |
|      |     |            | 8    | XT2V 160 TMD 8-80             | 1SDA067679R1  | 1SDA067700R1 |
|      |     |            | 10   | XT2V 160 TMD 10-100           | 1SDA067680R1  | 1SDA067701R1 |
|      |     |            | 12.5 | XT2V 160 TMD 12,5-125         | 1SDA067681R1  | 1SDA067702R1 |
|      |     |            | 16   | XT2V 160 TMD 16-300           | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 20   | XT2V 160 TMD 20-300           |   |              |
|      |     |            | 25   | XT2V 160 TMD 25-300           |   |              |
|      |     |            | 32   | XT2V 160 TMD 32-320           |   |              |
|      |     |            |      |                               |   |              |
| XT2  | 160 | TMA        | 40   | XT2V 160 TMA 40-400           | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 50   | XT2V 160 TMA 50-500           |   |              |
|      |     |            | 63   | XT2V 160 TMA 63-630           |   |              |
|      |     |            | 80   | XT2V 160 TMA 80-800           |   |              |
|      |     |            | 100  | XT2V 160 TMA 100-1000         |   |              |
|      |     |            | 125  | XT2V 160 TMA 125-1250         |   |              |
|      |     |            | 160  | XT2V 160 TMA 160-1600         |   |              |
|      |     |            | 125  | XT2V 160 TMA 125-1250 InN=50% |   |              |
|      |     |            | 160  | XT2V 160 TMA 160-1600 InN=50% |   |              |

**SACE XT2V (150 kA) Ekip LS/I - Front terminals (F)**

| Size | lu  | Trip units | In  | Type                       | 3 poles   | 4 poles      |
|------|-----|------------|-----|----------------------------|---|--------------|
|      |     |            |     |                            | Code  | Code         |
| XT2  | 160 | Ekip LS/I  | 10  | XT2V 160 Ekip LS/I In=10A  | 1SDA067971R1  | 1SDA068004R1 |
|      |     |            | 25  | XT2V 160 Ekip LS/I In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 63  | XT2V 160 Ekip LS/I In=63A  |   |              |
|      |     |            | 100 | XT2V 160 Ekip LS/I In=100A |   |              |
|      |     |            | 160 | XT2V 160 Ekip LS/I In=160A |   |              |

# Ordering codes for XT2

## Automatic circuit-breakers



XT2 - circuit-breaker

### SACE XT2V (150 kA) Ekip I - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                    | 3 poles   | 4 poles      |
|------|-----|------------|-----|-------------------------|---|--------------|
|      |     |            |     |                         | Code  | Code         |
| XT2  | 160 | Ekip I     | 10  | XT2V 160 Ekip I In=10A  | 1SDA067976R1  | 1SDA068010R1 |
|      |     |            | 25  | XT2V 160 Ekip I In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 63  | XT2V 160 Ekip I In=63A  |   |              |
|      |     |            | 100 | XT2V 160 Ekip I In=100A |   |              |
|      |     |            | 160 | XT2V 160 Ekip I In=160A |   |              |

### SACE XT2V (150 kA) Ekip LSI - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                      | 3 poles   | 4 poles      |
|------|-----|------------|-----|---------------------------|---|--------------|
|      |     |            |     |                           | Code  | Code         |
| XT2  | 160 | Ekip LSI   | 10  | XT2V 160 Ekip LSI In=10A  | 1SDA067981R1  | 1SDA068016R1 |
|      |     |            | 25  | XT2V 160 Ekip LSI In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 63  | XT2V 160 Ekip LSI In=63A  |   |              |
|      |     |            | 100 | XT2V 160 Ekip LSI In=100A |   |              |
|      |     |            | 160 | XT2V 160 Ekip LSI In=160A |   |              |

### SACE XT2V (150 kA) Ekip LSIG - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles   | 4 poles      |
|------|-----|------------|-----|----------------------------|---|--------------|
|      |     |            |     |                            | Code  | Code         |
| XT2  | 160 | Ekip LSIG  | 10  | XT2V 160 Ekip LSIG In=10A  | 1SDA067986R1  | 1SDA068022R1 |
|      |     |            | 25  | XT2V 160 Ekip LSIG In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |            | 63  | XT2V 160 Ekip LSIG In=63A  |   |              |
|      |     |            | 100 | XT2V 160 Ekip LSIG In=100A |   |              |
|      |     |            | 160 | XT2V 160 Ekip LSIG In=160A |   |              |

### SACE XT2V (150 kA) Ekip Dip LIG - Front terminals (F)

| Size | Iu  | Trip units   | In  | Type                          | 3 poles   | 4 poles      |
|------|-----|--------------|-----|-------------------------------|---|--------------|
|      |     |              |     |                               | Code  | Code         |
| XT2  | 160 | Ekip Dip LIG | 10  | XT2V 160 Ekip Dip LIG In=10A  | 1SDA101952R1  | 1SDA101953R1 |
|      |     |              | 25  | XT2V 160 Ekip Dip LIG In=25A  | Only available with the Breaking Part<br>+ Trip unit solution |              |
|      |     |              | 63  | XT2V 160 Ekip Dip LIG In=63A  |   |              |
|      |     |              | 100 | XT2V 160 Ekip Dip LIG In=100A |   |              |
|      |     |              | 160 | XT2V 160 Ekip Dip LIG In=160A |   |              |



—  
XT2 - circuit-breaker

Motor protection circuit-breakers

SACE XT2V (150 kA) MF/MA - Front terminals (F)

| Size | Iu  | Trip units | In   | Type                           | 3 poles   | 4 poles |
|------|-----|------------|------|--------------------------------|---|---------|
|      |     |            |      |                                | Code  | Code    |
| XT2  | 160 | MF         | 1    | XT2V 160 MF 1 Im=14            | 1SDA067790R1  |         |
|      |     |            | 2    | XT2V 160 MF 2 Im=28            | 1SDA067791R1  |         |
|      |     |            | 4    | XT2V 160 MF 4 Im=56            | 1SDA067792R1  |         |
|      |     |            | 8.5  | XT2V 160 MF 8,5 Im=120         | 1SDA067793R1  |         |
|      |     |            | 12.5 | XT2V 160 MF 12,5 Im=175        | 1SDA067794R1  |         |
| XT2  | 160 | MA         | 20   | XT2V 160 MA 20 Im=120...280    | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 32   | XT2V 160 MA 32 Im=192...448    |   |         |
|      |     |            | 52   | XT2V 160 MA 52 Im=314...728    |   |         |
|      |     |            | 80   | XT2V 160 MA 80 Im=480...1120   |   |         |
|      |     |            | 100  | XT2V 160 MA 100 Im=600...1400  |   |         |
|      |     |            | 160  | XT2V 160 MA 160 Im=960....2240 |   |         |



# Ordering codes for XT2

## Breaking part



XT2 - breaking part

| SACE XT2 - Breaking part |     |                |                        |              |              |  |
|--------------------------|-----|----------------|------------------------|--------------|--------------|--|
| Size                     | Iu  | Icu<br>(415 V) | Type                   | 3 poles      | 4 poles      |  |
|                          |     |                |                        | Code         | Code         |  |
| XT2                      | 160 | 36             | XT2N 160 Breaking part | 1SDA068163R1 | 1SDA068168R1 |  |
|                          | 160 | 50             | XT2S 160 Breaking part | 1SDA068164R1 | 1SDA068169R1 |  |
|                          | 160 | 70             | XT2H 160 Breaking part | 1SDA068165R1 | 1SDA068170R1 |  |
|                          | 160 | 120            | XT2L 160 Breaking part | 1SDA068166R1 | 1SDA068171R1 |  |
|                          | 160 | 150            | XT2V 160 Breaking part | 1SDA068167R1 | 1SDA068172R1 |  |

# Ordering codes for XT2

## Trip units

### Trip units - Distribution protection

| Size | Type                             | 3 poles      | 4 poles      |
|------|----------------------------------|--------------|--------------|
|      |                                  | Code         | Code         |
| XT2  | TMD 16-300                       | 1SDA067226R1 | 1SDA067247R1 |
|      | TMD 20-300                       | 1SDA067227R1 | 1SDA067248R1 |
|      | TMD 25-300                       | 1SDA067228R1 | 1SDA067249R1 |
|      | TMD 32-320                       | 1SDA067229R1 | 1SDA067250R1 |
|      | TMA 40-400                       | 1SDA067230R1 | 1SDA067251R1 |
|      | TMA 50-500                       | 1SDA067231R1 | 1SDA067252R1 |
|      | TMA 63-630                       | 1SDA067232R1 | 1SDA067253R1 |
|      | TMA 80-800                       | 1SDA067233R1 | 1SDA067254R1 |
|      | TMA 100-1000                     | 1SDA067234R1 | 1SDA067255R1 |
|      | TMA 125-1250                     | 1SDA067235R1 | 1SDA067258R1 |
|      | TMA 160-1600                     | 1SDA067236R1 | 1SDA067259R1 |
|      | TMA 125-1250 InN=50%             |              | 1SDA067256R1 |
|      | TMA 160-1600 InN=50%             |              | 1SDA067257R1 |
|      | Ekip LS/I In=25A                 | 1SDA067296R1 | 1SDA067329R1 |
|      | Ekip LS/I In=63A                 | 1SDA067297R1 | 1SDA067330R1 |
|      | Ekip LS/I In=100A                | 1SDA067298R1 | 1SDA067331R1 |
|      | Ekip LS/I In=160A                | 1SDA067299R1 | 1SDA067333R1 |
|      | Ekip I In=25A                    | 1SDA067301R1 | 1SDA067335R1 |
|      | Ekip I In=63A                    | 1SDA067302R1 | 1SDA067336R1 |
|      | Ekip I In=100A                   | 1SDA067303R1 | 1SDA067337R1 |
|      | Ekip I In=160A                   | 1SDA067304R1 | 1SDA067339R1 |
|      | Ekip LSI In=25A                  | 1SDA067306R1 | 1SDA067341R1 |
|      | Ekip LSI In=63A                  | 1SDA067307R1 | 1SDA067342R1 |
|      | Ekip LSI In=100A                 | 1SDA067308R1 | 1SDA067343R1 |
|      | Ekip LSI In=160A                 | 1SDA067309R1 | 1SDA067345R1 |
|      | Ekip LSIG In=25A                 | 1SDA067311R1 | 1SDA067347R1 |
|      | Ekip LSIG In=63A                 | 1SDA067312R1 | 1SDA067348R1 |
|      | Ekip LSIG In=100A                | 1SDA067313R1 | 1SDA068052R1 |
|      | Ekip LSIG In=160A                | 1SDA067314R1 | 1SDA067350R1 |
|      | Ekip Dip LIG In=25A              | 1SDA100128R1 | 1SDA100167R1 |
|      | Ekip Dip LIG In=63A              | 1SDA100129R1 | 1SDA100168R1 |
|      | Ekip Dip LIG In=100A             | 1SDA100130R1 | 1SDA100169R1 |
|      | Ekip Dip LIG In=160A             | 1SDA100131R1 | 1SDA100170R1 |
|      | Ekip Touch LSI In=40A            | 1SDA100100R1 | 1SDA100142R1 |
|      | Ekip Touch LSI In=63A            | 1SDA100101R1 | 1SDA100143R1 |
|      | Ekip Touch LSI In=100A           | 1SDA100102R1 | 1SDA100144R1 |
|      | Ekip Touch LSI In=160A           | 1SDA100103R1 | 1SDA100145R1 |
|      | Ekip Touch LSIG In=40A           | 1SDA100104R1 | 1SDA100146R1 |
|      | Ekip Touch LSIG In=63A           | 1SDA100105R1 | 1SDA100147R1 |
|      | Ekip Touch LSIG In=100A          | 1SDA100106R1 | 1SDA100148R1 |
|      | Ekip Touch LSIG In=160A          | 1SDA100107R1 | 1SDA100149R1 |
|      | Ekip Touch Measuring LSI In=40A  | 1SDA100108R1 | 1SDA100150R1 |
|      | Ekip Touch Measuring LSI In=63A  | 1SDA100109R1 | 1SDA100151R1 |
|      | Ekip Touch Measuring LSI In=100A | 1SDA100110R1 | 1SDA100153R1 |
|      | Ekip Touch Measuring LSI In=160A | 1SDA100111R1 | 1SDA100152R1 |



Thermal magnetic trip unit



Dip trip unit



Touch trip unit

# Ordering codes for XT2

## Trip units



Touch trip unit

### Trip units - Distribution protection

| Size | Type                              | 3 poles      | 4 poles      |
|------|-----------------------------------|--------------|--------------|
|      |                                   | Code         | Code         |
| XT2  | Ekip Touch Measuring LSIG In=40A  | 1SDA100112R1 | 1SDA100154R1 |
|      | Ekip Touch Measuring LSIG In=63A  | 1SDA100113R1 | 1SDA100155R1 |
|      | Ekip Touch Measuring LSIG In=100A | 1SDA100114R1 | 1SDA100156R1 |
|      | Ekip Touch Measuring LSIG In=160A | 1SDA100115R1 | 1SDA100157R1 |
|      | Ekip Hi-Touch LSI In=40A          | 1SDA100116R1 | 1SDA100158R1 |
|      | Ekip Hi-Touch LSI In=63A          | 1SDA100117R1 | 1SDA100159R1 |
|      | Ekip Hi-Touch LSI In=100A         | 1SDA100118R1 | 1SDA100160R1 |
|      | Ekip Hi-Touch LSI In=160A         | 1SDA100119R1 | 1SDA100161R1 |
|      | Ekip Hi-Touch LSIG In=40A         | 1SDA100120R1 | 1SDA100162R1 |
|      | Ekip Hi-Touch LSIG In=63A         | 1SDA100121R1 | 1SDA100163R1 |
|      | Ekip Hi-Touch LSIG In=100A        | 1SDA100122R1 | 1SDA100164R1 |
|      | Ekip Hi-Touch LSIG In=160A        | 1SDA100123R1 | 1SDA100165R1 |

### Trip units - Motor protection

| Size | Type                      | 3 poles      | 4 poles |
|------|---------------------------|--------------|---------|
|      |                           | Code         | Code    |
| XT2  | MA 20 Im=120...280        | 1SDA067290R1 |         |
|      | MA 32 Im=192...448        | 1SDA067291R1 |         |
|      | MA 52 Im=314...728        | 1SDA067292R1 |         |
|      | MA 80 Im=480...1120       | 1SDA067293R1 |         |
|      | MA 100 Im=600...1400      | 1SDA067294R1 |         |
|      | MA 160 Im=960...2240      | 1SDA076538R1 |         |
|      | Ekip M-LIU In=25A         | 1SDA067352R1 |         |
|      | Ekip M-LIU In=63A         | 1SDA067353R1 |         |
|      | Ekip M-LIU In=100A        | 1SDA067354R1 |         |
|      | Ekip M-LIU In=160A        | 1SDA067355R1 |         |
|      | Ekip M-LRIU In=25A        | 1SDA067357R1 |         |
|      | Ekip M-LRIU In=63A        | 1SDA067358R1 |         |
|      | Ekip M-LRIU In=100A       | 1SDA067359R1 |         |
|      | Ekip M Touch LRIU In=40A  | 1SDA100124R1 |         |
|      | Ekip M Touch LRIU In=63A  | 1SDA100125R1 |         |
|      | Ekip M Touch LRIU In=100A | 1SDA100126R1 |         |

### Trip units - Generator protection

| Size | Type                | 3 poles      | 4 poles      |
|------|---------------------|--------------|--------------|
|      |                     | Code         | Code         |
| XT2  | Ekip G-LS/I In=25A  | 1SDA067362R1 | 1SDA067368R1 |
|      | Ekip G-LS/I In=63A  | 1SDA067363R1 | 1SDA067369R1 |
|      | Ekip G-LS/I In=100A | 1SDA067364R1 | 1SDA067370R1 |
|      | Ekip G-LS/I In=160A | 1SDA067365R1 | 1SDA067372R1 |

# Ordering codes for XT2

## Breaking part + trip unit solution



XT2 - breaking part



TMA trip unit



Ekip Dip trip unit



Ekip Touch trip unit

| Breaking Part | Icu Poles | N (36 kA) |   | S (50 kA) |   | H (70 kA) |   | L (120 kA) |   | V (150 kA) |   |
|---------------|-----------|-----------|---|-----------|---|-----------|---|------------|---|------------|---|
|               |           | 3         | 4 | 3         | 4 | 3         | 4 | 3          | 4 | 3          | 4 |
|               | 3         | 068163    |   | 068164    |   | 068165    |   | 068166     |   | 068167     |   |
|               | 4         | 068168    |   | 068169    |   | 068170    |   | 068171     |   | 068172     |   |

| Trip units                | In Poles | 16     | 20     | 25     | 32     | 40     | 50     | 52     | 63     | 80     | 100    | 125     | 160     |
|---------------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
|                           |          | 3      | 4      | 3      | 4      | 3      | 4      | 3      | 4      | 3      | 4      | 3       | 4       |
| TMD                       | 3        | 067226 | 067227 | 067228 | 067229 |        |        |        |        |        |        |         |         |
|                           | 4        | 067247 | 067248 | 067249 | 067250 |        |        |        |        |        |        |         |         |
| TMA                       | 3        |        |        |        |        | 067230 | 067231 |        | 067232 | 067233 | 067234 | 067235  | 067236  |
|                           | 4        |        |        |        |        | 067251 | 067252 |        | 067253 | 067254 | 067255 | 067258* | 067259* |
| Ekip LS/I                 | 3        |        |        | 067296 |        |        |        |        | 067297 |        | 067298 |         | 067299  |
|                           | 4        |        |        | 067329 |        |        |        |        | 067330 |        | 067331 |         | 067333  |
| Ekip I                    | 3        |        |        | 067301 |        |        |        |        | 067302 |        | 067303 |         | 067304  |
|                           | 4        |        |        | 067335 |        |        |        |        | 067336 |        | 067337 |         | 067339  |
| Ekip LSI                  | 3        |        |        | 067306 |        |        |        |        | 067307 |        | 067308 |         | 067309  |
|                           | 4        |        |        | 067341 |        |        |        |        | 067342 |        | 067343 |         | 067345  |
| Ekip LSIG                 | 3        |        |        | 067311 |        |        |        |        | 067312 |        | 067313 |         | 067314  |
|                           | 4        |        |        | 067347 |        |        |        |        | 067348 |        | 068052 |         | 067350  |
| Ekip Dip LIG              | 3        |        |        | 100128 |        |        |        |        | 100129 |        | 100130 |         | 100131  |
|                           | 4        |        |        | 100167 |        |        |        |        | 100168 |        | 100169 |         | 100170  |
| Ekip Touch LSI            | 3        |        |        |        |        | 100100 |        |        | 100101 |        | 100102 |         | 100103  |
|                           | 4        |        |        |        |        | 100142 |        |        | 100143 |        | 100144 |         | 100145  |
| Ekip Touch LSIG           | 3        |        |        |        |        | 100104 |        |        | 100105 |        | 100106 |         | 100107  |
|                           | 4        |        |        |        |        | 100146 |        |        | 100147 |        | 100148 |         | 100149  |
| Ekip Touch Measuring LSI  | 3        |        |        |        |        | 100108 |        |        | 100109 |        | 100110 |         | 100111  |
|                           | 4        |        |        |        |        | 100150 |        |        | 100151 |        | 100153 |         | 100152  |
| Ekip Touch Measuring LSIG | 3        |        |        |        |        | 100112 |        |        | 100113 |        | 100114 |         | 100115  |
|                           | 4        |        |        |        |        | 100154 |        |        | 100155 |        | 100156 |         | 100157  |
| Ekip Hi-Touch LSI         | 3        |        |        |        |        | 100116 |        |        | 100117 |        | 100118 |         | 100119  |
|                           | 4        |        |        |        |        | 100158 |        |        | 100159 |        | 100160 |         | 100161  |
| Ekip Hi-Touch LSIG        | 3        |        |        |        |        | 100120 |        |        | 100121 |        | 100122 |         | 100123  |
|                           | 4        |        |        |        |        | 100162 |        |        | 100163 |        | 100164 |         | 100165  |
| MA                        | 3        |        | 067290 |        | 067291 |        |        | 067292 |        | 067293 | 067294 |         | 076538  |
| Ekip M LIU                | 3        |        |        | 067352 |        |        |        | 067353 |        | 067354 |        |         | 067355  |
| Ekip M-LRIU               |          |        |        | 067357 |        |        |        | 067358 |        | 067359 |        |         |         |
| Ekip M Touch LRIU         | 3        |        |        |        |        | 100124 |        |        | 100125 |        | 100126 |         |         |
| Ekip G LS/I               | 3        |        |        | 067362 |        |        |        | 067363 |        | 067364 |        |         | 067365  |
|                           | 4        |        |        | 067368 |        |        |        | 067369 |        | 067370 |        |         | 067372  |

\*InN=100%. Combinations available for InN=50% too. For ordering codes, please see in reference pages 'trip Units'

Note: when a single code for the complete circuit-breaker is not available, please configure the breaking part code with the trip unit code to order a factory-assembled circuit-breaker.

# Ordering codes for XT3

## Automatic circuit-breakers

### Distribution circuit-breakers

#### SACE XT3N (36kA) TMD - Front terminals (F)

| Size | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT3  | 250 | TMD        | 63  | XT3N 250 TMD 63-630           | 1SDA068053R1 | 1SDA068060R1 |
|      |     |            | 80  | XT3N 250 TMD 80-800           | 1SDA068054R1 | 1SDA068061R1 |
|      |     |            | 100 | XT3N 250 TMD 100-1000         | 1SDA068055R1 | 1SDA068062R1 |
|      |     |            | 125 | XT3N 250 TMD 125-1250         | 1SDA068056R1 | 1SDA068067R1 |
|      |     |            | 160 | XT3N 250 TMD 160-1600         | 1SDA068057R1 | 1SDA068068R1 |
|      |     |            | 125 | XT3N 250 TMD 125-1250 InN=50% |              | 1SDA068063R1 |
|      |     |            | 160 | XT3N 250 TMD 160-1600 InN=50% |              | 1SDA068064R1 |
|      |     |            | 200 | XT3N 250 TMD 200-2000         | 1SDA068058R1 | 1SDA068069R1 |
|      |     |            | 250 | XT3N 250 TMD 250-2500         | 1SDA068059R1 | 1SDA068070R1 |
|      |     |            | 200 | XT3N 250 TMD 200-2000 InN=50% |              | 1SDA068065R1 |
|      |     |            | 250 | XT3N 250 TMD 250-2500 InN=50% |              | 1SDA068066R1 |



XT3 - circuit-breaker

### Motor protection circuit-breakers

#### SACE XT3N (36kA) MA - Front terminals (F)

| Size | lu  | Trip units | In  | Type                           | 3 poles      | 4 poles |
|------|-----|------------|-----|--------------------------------|--------------|---------|
|      |     |            |     |                                | Code         | Code    |
| XT3  | 250 | MA         | 100 | XT3N 250 MA 100 Im=600...1200  | 1SDA068071R1 |         |
|      |     |            | 125 | XT3N 250 MA 125 Im=750...1500  | 1SDA068072R1 |         |
|      |     |            | 160 | XT3N 250 MA 160 Im=960...1920  | 1SDA068073R1 |         |
|      |     |            | 200 | XT3N 250 MA 200 Im=1200...2400 | 1SDA068074R1 |         |



XT3 - circuit-breaker

### Generator protection circuit-breakers

#### SACE XT3N (36kA) TMG - Front terminals (F)

| Size | lu  | Trip units | In  | Type                 | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------|--------------|--------------|
|      |     |            |     |                      | Code         | Code         |
| XT3  | 250 | TMG        | 63  | XT3N 250 TMG 63-400  | 1SDA068251R1 | 1SDA068258R1 |
|      |     |            | 80  | XT3N 250 TMG 80-400  | 1SDA068252R1 | 1SDA068259R1 |
|      |     |            | 100 | XT3N 250 TMG 100-400 | 1SDA068253R1 | 1SDA068260R1 |
|      |     |            | 125 | XT3N 250 TMG 125-400 | 1SDA068254R1 | 1SDA068261R1 |
|      |     |            | 160 | XT3N 250 TMG 160-480 | 1SDA068255R1 | 1SDA068262R1 |
|      |     |            | 200 | XT3N 250 TMG 200-600 | 1SDA068256R1 | 1SDA068263R1 |
|      |     |            | 250 | XT3N 250 TMG 250-750 | 1SDA068257R1 | 1SDA068264R1 |



XT3 - circuit-breaker

## Distribution circuit-breakers

**SACE XT3S (50kA) TMD - Front terminals (F)**

| Size | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT3  | 250 | TMD        | 63  | XT3S 250 TMD 63-630           | 1SDA068215R1 | 1SDA068222R1 |
|      |     |            | 80  | XT3S 250 TMD 80-800           | 1SDA068216R1 | 1SDA068223R1 |
|      |     |            | 100 | XT3S 250 TMD 100-1000         | 1SDA068217R1 | 1SDA068224R1 |
|      |     |            | 125 | XT3S 250 TMD 125-1250         | 1SDA068218R1 | 1SDA068229R1 |
|      |     |            | 160 | XT3S 250 TMD 160-1600         | 1SDA068219R1 | 1SDA068230R1 |
|      |     |            | 125 | XT3S 250 TMD 125-1250 InN=50% |              | 1SDA068225R1 |
|      |     |            | 160 | XT3S 250 TMD 160-1600 InN=50% |              | 1SDA068226R1 |
|      |     |            | 200 | XT3S 250 TMD 200-2000         | 1SDA068220R1 | 1SDA068231R1 |
|      |     |            | 250 | XT3S 250 TMD 250-2500         | 1SDA068221R1 | 1SDA068232R1 |
|      |     |            | 200 | XT3S 250 TMD 200-2000 InN=50% |              | 1SDA068227R1 |
|      |     |            | 250 | XT3S 250 TMD 250-2500 InN=50% |              | 1SDA068228R1 |



XT3 - circuit-breaker

## Motor protection circuit-breakers

**SACE XT3S (50kA) MA - Front terminals (F)**

| Size | lu  | Trip units | In  | Type                           | 3 poles      | 4 poles |
|------|-----|------------|-----|--------------------------------|--------------|---------|
|      |     |            |     |                                | Code         | Code    |
| XT3  | 250 | MA         | 100 | XT3S 250 MA 100 Im=600...1200  | 1SDA068279R1 |         |
|      |     |            | 125 | XT3S 250 MA 125 Im=750...1500  | 1SDA068280R1 |         |
|      |     |            | 160 | XT3S 250 MA 160 Im=960...1920  | 1SDA068281R1 |         |
|      |     |            | 200 | XT3S 250 MA 200 Im=1200...2400 | 1SDA068282R1 |         |



XT3 - circuit-breaker

## Generator protection circuit-breakers

**SACE XT3S (50kA) TMG - Front terminals (F)**

| Size | lu  | Trip units | In  | Type                 | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------|--------------|--------------|
|      |     |            |     |                      | Code         | Code         |
| XT3  | 250 | TMG        | 63  | XT3S 250 TMG 63-400  | 1SDA068265R1 | 1SDA068272R1 |
|      |     |            | 80  | XT3S 250 TMG 80-400  | 1SDA068266R1 | 1SDA068273R1 |
|      |     |            | 100 | XT3S 250 TMG 100-400 | 1SDA068267R1 | 1SDA068274R1 |
|      |     |            | 125 | XT3S 250 TMG 125-400 | 1SDA068268R1 | 1SDA068275R1 |
|      |     |            | 160 | XT3S 250 TMG 160-480 | 1SDA068269R1 | 1SDA068276R1 |
|      |     |            | 200 | XT3S 250 TMG 200-600 | 1SDA068270R1 | 1SDA068277R1 |
|      |     |            | 250 | XT3S 250 TMG 250-750 | 1SDA068271R1 | 1SDA068278R1 |



XT3 - circuit-breaker

# Ordering codes for XT3

## Switch-disconnectors



XT3D -  
switch-disconnector

| SACE XT3D - Switch-disconnectors |     |          |              |              |
|----------------------------------|-----|----------|--------------|--------------|
| Size                             | Iu  | Type     | 3 poles      | 4 poles      |
|                                  |     |          | Code         | Code         |
| XT3                              | 250 | XT3D 250 | 1SDA068210R1 | 1SDA068211R1 |

# Ordering codes for XT4

## Automatic circuit-breakers



XT4 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT4N (36 kA) TMD/TMA - Front terminals (F)

| Size    | Iu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-------------------------------|--------------|--------------|
|         |     |            |     |                               | Code         | Code         |
| XT4 160 | TMD |            | 16  | XT4N 160 TMD 16-300           | 1SDA068076R1 | 1SDA068093R1 |
|         |     |            | 20  | XT4N 160 TMD 20-300           | 1SDA068080R1 | 1SDA068094R1 |
|         |     |            | 25  | XT4N 160 TMD 25-300           | 1SDA068081R1 | 1SDA068095R1 |
|         |     |            | 32  | XT4N 160 TMD 32-320           | 1SDA068082R1 | 1SDA068096R1 |
| XT4 160 | TMA |            | 40  | XT4N 160 TMA 40-400           | 1SDA068083R1 | 1SDA068097R1 |
|         |     |            | 50  | XT4N 160 TMA 50-500           | 1SDA068084R1 | 1SDA068098R1 |
|         |     |            | 63  | XT4N 160 TMA 63-630           | 1SDA068085R1 | 1SDA068099R1 |
|         |     |            | 80  | XT4N 160 TMA 80-800           | 1SDA068086R1 | 1SDA068100R1 |
|         |     |            | 100 | XT4N 160 TMA 100-1000         | 1SDA068087R1 | 1SDA068101R1 |
|         |     |            | 125 | XT4N 160 TMA 125-1250         | 1SDA068088R1 | 1SDA068107R1 |
|         |     |            | 160 | XT4N 160 TMA 160-1600         | 1SDA068089R1 | 1SDA068108R1 |
|         |     |            | 125 | XT4N 160 TMA 125-1250 InN=50% |              | 1SDA068102R1 |
|         |     |            | 160 | XT4N 160 TMA 160-1600 InN=50% |              | 1SDA068103R1 |
|         |     |            |     |                               |              |              |
| XT4 250 | TMA |            | 200 | XT4N 250 TMA 200-2000         | 1SDA068090R1 | 1SDA068109R1 |
|         |     |            | 225 | XT4N 250 TMA 225-2250         | 1SDA068091R1 | 1SDA068110R1 |
|         |     |            | 250 | XT4N 250 TMA 250-2500         | 1SDA068092R1 | 1SDA068111R1 |
|         |     |            | 200 | XT4N 250 TMA 200-2000 InN=50% |              | 1SDA068104R1 |
|         |     |            | 225 | XT4N 250 TMA 225-2250 InN=50% |              | 1SDA068105R1 |
|         |     |            | 250 | XT4N 250 TMA 250-2500 InN=50% |              | 1SDA068106R1 |

#### SACE XT4N (36 kA) Ekip LS/I - Front terminals (F)

| Size    | Iu        | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|---------|-----------|------------|-----|----------------------------|--------------|--------------|
|         |           |            |     |                            | Code         | Code         |
| XT4 160 | Ekip LS/I |            | 40  | XT4N 160 Ekip LS/I In=40A  | 1SDA068122R1 | 1SDA068142R1 |
|         |           |            | 63  | XT4N 160 Ekip LS/I In=63A  | 1SDA068123R1 | 1SDA068144R1 |
|         |           |            | 100 | XT4N 160 Ekip LS/I In=100A | 1SDA068124R1 | 1SDA068145R1 |
|         |           |            | 160 | XT4N 160 Ekip LS/I In=160A | 1SDA068125R1 | 1SDA068146R1 |
| XT4 250 | Ekip LS/I |            | 250 | XT4N 250 Ekip LS/I In=250A | 1SDA068126R1 | 1SDA068147R1 |

#### SACE XT4N (36 kA) Ekip I - Front terminals (F)

| Size    | Iu     | Trip units | In  | Type                    | 3 poles      | 4 poles      |
|---------|--------|------------|-----|-------------------------|--------------|--------------|
|         |        |            |     |                         | Code         | Code         |
| XT4 160 | Ekip I |            | 40  | XT4N 160 Ekip I In=40A  | 1SDA068127R1 | 1SDA068148R1 |
|         |        |            | 63  | XT4N 160 Ekip I In=63A  | 1SDA068128R1 | 1SDA068149R1 |
|         |        |            | 100 | XT4N 160 Ekip I In=100A | 1SDA068129R1 | 1SDA068150R1 |
|         |        |            | 160 | XT4N 160 Ekip I In=160A | 1SDA068130R1 | 1SDA068151R1 |
| XT4 250 | Ekip I |            | 250 | XT4N 250 Ekip I In=250A | 1SDA068131R1 | 1SDA068152R1 |



# Ordering codes for XT4

## Automatic circuit-breakers



XT4 - circuit-breaker

### SACE XT4N (36 kA) Ekip LSI - Front terminals (F)

| Size    | Iu       | Trip units | In  | Type                      | 3 poles      | 4 poles      |
|---------|----------|------------|-----|---------------------------|--------------|--------------|
|         |          |            |     |                           | Code         | Code         |
| XT4 160 | Ekip LSI |            | 40  | XT4N 160 Ekip LSI In=40A  | 1SDA068132R1 | 1SDA068153R1 |
|         |          |            | 63  | XT4N 160 Ekip LSI In=63A  | 1SDA068133R1 | 1SDA068154R1 |
|         |          |            | 100 | XT4N 160 Ekip LSI In=100A | 1SDA068134R1 | 1SDA068155R1 |
|         |          |            | 160 | XT4N 160 Ekip LSI In=160A | 1SDA068135R1 | 1SDA068156R1 |
| XT4 250 | Ekip LSI |            | 250 | XT4N 250 Ekip LSI In=250A | 1SDA068136R1 | 1SDA068157R1 |

### SACE XT4N (36 kA) Ekip LSIG - Front terminals (F)

| Size    | Iu        | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|---------|-----------|------------|-----|----------------------------|--------------|--------------|
|         |           |            |     |                            | Code         | Code         |
| XT4 160 | Ekip LSIG |            | 40  | XT4N 160 Ekip LSIG In=40A  | 1SDA068137R1 | 1SDA068158R1 |
|         |           |            | 63  | XT4N 160 Ekip LSIG In=63A  | 1SDA068138R1 | 1SDA068159R1 |
|         |           |            | 100 | XT4N 160 Ekip LSIG In=100A | 1SDA068139R1 | 1SDA068160R1 |
|         |           |            | 160 | XT4N 160 Ekip LSIG In=160A | 1SDA068140R1 | 1SDA068161R1 |
| XT4 250 | Ekip LSIG |            | 250 | XT4N 250 Ekip LSIG In=250A | 1SDA068141R1 | 1SDA068162R1 |

### SACE XT4N (36 kA) Ekip Dip LIG - Front terminals (F)

| Size    | Iu           | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|--------------|------------|-----|-------------------------------|--------------|--------------|
|         |              |            |     |                               | Code         | Code         |
| XT4 160 | Ekip Dip LIG |            | 40  | XT4N 160 Ekip Dip LIG In=40A  | 1SDA100181R1 | 1SDA100196R1 |
|         |              |            | 63  | XT4N 160 Ekip Dip LIG In=63A  | 1SDA100182R1 | 1SDA100197R1 |
|         |              |            | 100 | XT4N 160 Ekip Dip LIG In=100A | 1SDA100183R1 | 1SDA100198R1 |
|         |              |            | 160 | XT4N 160 Ekip Dip LIG In=160A | 1SDA100184R1 | 1SDA100199R1 |
| XT4 250 | Ekip Dip LIG |            | 250 | XT4N 250 Ekip Dip LIG In=250A | 1SDA100185R1 | 1SDA100200R1 |

## Motor protection circuit-breakers

### SACE XT4N (36 kA) MA - Front terminals (F)



XT4 - circuit-breaker

| Size    | lu | Trip units | In   | Type                           | 3 poles      | 4 poles |
|---------|----|------------|------|--------------------------------|--------------|---------|
|         |    |            |      |                                | Code         | Code    |
| XT4 160 | MA |            | 10   | XT4N 160 MA 10 Im=50...100     | 1SDA068112R1 |         |
|         |    |            | 12,5 | XT4N 160 MA 12,5 Im=62,5...125 | 1SDA068113R1 |         |
|         |    |            | 20   | XT4N 160 MA 20 Im=100...200    | 1SDA068114R1 |         |
|         |    |            | 32   | XT4N 160 MA 32 Im=160...320    | 1SDA068115R1 |         |
|         |    |            | 52   | XT4N 160 MA 52 Im=260...520    | 1SDA068116R1 |         |
|         |    |            | 80   | XT4N 160 MA 80 Im=400...800    | 1SDA068117R1 |         |
|         |    |            | 100  | XT4N 160 MA 100 Im=500...1000  | 1SDA068118R1 |         |
|         |    |            | 125  | XT4N 160 MA 125 Im=625...1160  | 1SDA068119R1 |         |
|         |    |            | 160  | XT4N 160 MA 160 Im=800...1600  | 1SDA068120R1 |         |
|         |    |            |      |                                |              |         |
| XT4 250 | MA |            | 200  | XT4N 250 MA 200 Im=1000...2000 | 1SDA068121R1 |         |

## Distribution circuit-breakers

### SACE XT4S (50 kA) TMD/TMA - Front terminals (F)



XT4 - circuit-breaker

| Size    | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-------------------------------|--------------|--------------|
|         |     |            |     |                               | Code         | Code         |
| XT4 160 | TMD |            | 16  | XT4S 160 TMD 16-300           | 1SDA068299R1 | 1SDA068313R1 |
|         |     |            | 20  | XT4S 160 TMD 20-300           | 1SDA068300R1 | 1SDA068314R1 |
|         |     |            | 25  | XT4S 160 TMD 25-300           | 1SDA068301R1 | 1SDA068315R1 |
|         |     |            | 32  | XT4S 160 TMD 32-320           | 1SDA068302R1 | 1SDA068316R1 |
| XT4 160 | TMA |            | 40  | XT4S 160 TMA 40-400           | 1SDA068303R1 | 1SDA068317R1 |
|         |     |            | 50  | XT4S 160 TMA 50-500           | 1SDA068304R1 | 1SDA068318R1 |
|         |     |            | 63  | XT4S 160 TMA 63-630           | 1SDA068305R1 | 1SDA068319R1 |
|         |     |            | 80  | XT4S 160 TMA 80-800           | 1SDA068306R1 | 1SDA068320R1 |
|         |     |            | 100 | XT4S 160 TMA 100-1000         | 1SDA068307R1 | 1SDA068321R1 |
|         |     |            | 125 | XT4S 160 TMA 125-1250         | 1SDA068308R1 | 1SDA068327R1 |
|         |     |            | 160 | XT4S 160 TMA 160-1600         | 1SDA068309R1 | 1SDA068328R1 |
|         |     |            | 125 | XT4S 160 TMA 125-1250 InN=50% |              | 1SDA068322R1 |
|         |     |            | 160 | XT4S 160 TMA 160-1600 InN=50% |              | 1SDA068323R1 |
|         |     |            |     |                               |              |              |
| XT4 250 | TMA |            | 200 | XT4S 250 TMA 200-2000         | 1SDA068310R1 | 1SDA068329R1 |
|         |     |            | 225 | XT4S 250 TMA 225-2250         | 1SDA068311R1 | 1SDA068330R1 |
|         |     |            | 250 | XT4S 250 TMA 250-2500         | 1SDA068312R1 | 1SDA068331R1 |
|         |     |            | 200 | XT4S 250 TMA 200-2000 InN=50% |              | 1SDA068324R1 |
|         |     |            | 225 | XT4S 250 TMA 225-2250 InN=50% |              | 1SDA068325R1 |
|         |     |            | 250 | XT4S 250 TMA 250-2500 InN=50% |              | 1SDA068326R1 |

# Ordering codes for XT4

## Automatic circuit-breakers



XT4 - circuit-breaker

### SACE XT4S (50 kA) Ekip LS/I - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------------|--------------|--------------|
|      |     |            |     |                            | Code         | Code         |
| XT4  | 160 | Ekip LS/I  | 40  | XT4S 160 Ekip LS/I In=40A  | 1SDA068471R1 | 1SDA068491R1 |
|      |     |            | 63  | XT4S 160 Ekip LS/I In=63A  | 1SDA068472R1 | 1SDA068492R1 |
|      |     |            | 100 | XT4S 160 Ekip LS/I In=100A | 1SDA068473R1 | 1SDA068493R1 |
|      |     |            | 160 | XT4S 160 Ekip LS/I In=160A | 1SDA068474R1 | 1SDA068494R1 |
| XT4  | 250 | Ekip LS/I  | 250 | XT4S 250 Ekip LS/I In=250A | 1SDA068475R1 | 1SDA068495R1 |

### SACE XT4S (50 kA) Ekip I - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                    | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------|--------------|--------------|
|      |     |            |     |                         | Code         | Code         |
| XT4  | 160 | Ekip I     | 40  | XT4S 160 Ekip I In=40A  | 1SDA068476R1 | 1SDA068496R1 |
|      |     |            | 63  | XT4S 160 Ekip I In=63A  | 1SDA068477R1 | 1SDA068497R1 |
|      |     |            | 100 | XT4S 160 Ekip I In=100A | 1SDA068478R1 | 1SDA068498R1 |
|      |     |            | 160 | XT4S 160 Ekip I In=160A | 1SDA068479R1 | 1SDA068499R1 |
| XT4  | 250 | Ekip I     | 250 | XT4S 250 Ekip I In=250A | 1SDA068480R1 | 1SDA068500R1 |

### SACE XT4S (50 kA) Ekip LSI - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                      | 3 poles      | 4 poles      |
|------|-----|------------|-----|---------------------------|--------------|--------------|
|      |     |            |     |                           | Code         | Code         |
| XT4  | 160 | Ekip LSI   | 40  | XT4S 160 Ekip LSI In=40A  | 1SDA068481R1 | 1SDA068501R1 |
|      |     |            | 63  | XT4S 160 Ekip LSI In=63A  | 1SDA068482R1 | 1SDA068502R1 |
|      |     |            | 100 | XT4S 160 Ekip LSI In=100A | 1SDA068483R1 | 1SDA068503R1 |
|      |     |            | 160 | XT4S 160 Ekip LSI In=160A | 1SDA068484R1 | 1SDA068504R1 |
| XT4  | 250 | Ekip LSI   | 250 | XT4S 250 Ekip LSI In=250A | 1SDA068485R1 | 1SDA068505R1 |

### SACE XT4S (50 kA) Ekip LSIG - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------------|--------------|--------------|
|      |     |            |     |                            | Code         | Code         |
| XT4  | 160 | Ekip LSIG  | 40  | XT4S 160 Ekip LSIG In=40A  | 1SDA068486R1 | 1SDA068506R1 |
|      |     |            | 63  | XT4S 160 Ekip LSIG In=63A  | 1SDA068487R1 | 1SDA068507R1 |
|      |     |            | 100 | XT4S 160 Ekip LSIG In=100A | 1SDA068488R1 | 1SDA068508R1 |
|      |     |            | 160 | XT4S 160 Ekip LSIG In=160A | 1SDA068489R1 | 1SDA068509R1 |
| XT4  | 250 | Ekip LSIG  | 250 | XT4S 250 Ekip LSIG In=250A | 1SDA068490R1 | 1SDA068510R1 |

### SACE XT4S (50 kA) Ekip Dip LIG - Front terminals (F)

| Size | Iu  | Trip units   | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|--------------|-----|-------------------------------|--------------|--------------|
|      |     |              |     |                               | Code         | Code         |
| XT4  | 160 | Ekip Dip LIG | 40  | XT4S 160 Ekip Dip LIG In=40A  | 1SDA100211R1 | 1SDA100226R1 |
|      |     |              | 63  | XT4S 160 Ekip Dip LIG In=63A  | 1SDA100212R1 | 1SDA100227R1 |
|      |     |              | 100 | XT4S 160 Ekip Dip LIG In=100A | 1SDA100213R1 | 1SDA100228R1 |
|      |     |              | 160 | XT4S 160 Ekip Dip LIG In=160A | 1SDA100214R1 | 1SDA100229R1 |
| XT4  | 250 | Ekip Dip LIG | 250 | XT4S 250 Ekip Dip LIG In=250A | 1SDA100215R1 | 1SDA100230R1 |

Motor protection circuit-breakers

SACE XT4S (50 kA) MA - Front terminals (F)



XT4 - circuit-breaker

| Size | Iu  | Trip units | In   | Type                           | 3 poles      | 4 poles |
|------|-----|------------|------|--------------------------------|--------------|---------|
|      |     |            |      |                                | Code         | Code    |
| XT4  | 160 | MA         | 10   | XT4S 160 MA 10 Im=50...100     | 1SDA068431R1 |         |
|      |     |            | 12,5 | XT4S 160 MA 12,5 Im=62,5...125 | 1SDA068432R1 |         |
|      |     |            | 20   | XT4S 160 MA 20 Im=100...200    | 1SDA068433R1 |         |
|      |     |            | 32   | XT4S 160 MA 32 Im=160...320    | 1SDA068434R1 |         |
|      |     |            | 52   | XT4S 160 MA 52 Im=260...520    | 1SDA068435R1 |         |
|      |     |            | 80   | XT4S 160 MA 80 Im=400...800    | 1SDA068436R1 |         |
|      |     |            | 100  | XT4S 160 MA 100 Im=500...1000  | 1SDA068437R1 |         |
|      |     |            | 125  | XT4S 160 MA 125 Im=625...1160  | 1SDA068438R1 |         |
|      |     |            | 160  | XT4S 160 MA 160 Im=800...1600  | 1SDA068439R1 |         |
| XT4  | 250 | MA         | 200  | XT4S 250 MA 200 Im=1000...2000 | 1SDA068440R1 |         |

# Ordering codes for XT4

## Automatic circuit-breakers



XT4 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT4H (70 kA) TMD/TMA - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT4  | 160 | TMD        | 16  | XT4H 160 TMD 16-300           | 1SDA068332R1 | 1SDA068346R1 |
|      |     |            | 20  | XT4H 160 TMD 20-300           | 1SDA068333R1 | 1SDA068347R1 |
|      |     |            | 25  | XT4H 160 TMD 25-300           | 1SDA068334R1 | 1SDA068348R1 |
|      |     |            | 32  | XT4H 160 TMD 32-320           | 1SDA068335R1 | 1SDA068349R1 |
| XT4  | 160 | TMA        | 40  | XT4H 160 TMA 40-400           | 1SDA068336R1 | 1SDA068350R1 |
|      |     |            | 50  | XT4H 160 TMA 50-500           | 1SDA068337R1 | 1SDA068351R1 |
|      |     |            | 63  | XT4H 160 TMA 63-630           | 1SDA068338R1 | 1SDA068352R1 |
|      |     |            | 80  | XT4H 160 TMA 80-800           | 1SDA068339R1 | 1SDA068353R1 |
|      |     |            | 100 | XT4H 160 TMA 100-1000         | 1SDA068340R1 | 1SDA068354R1 |
|      |     |            | 125 | XT4H 160 TMA 125-1250         | 1SDA068341R1 | 1SDA068360R1 |
|      |     |            | 160 | XT4H 160 TMA 160-1600         | 1SDA068342R1 | 1SDA068361R1 |
|      |     |            | 125 | XT4H 160 TMA 125-1250 InN=50% |              | 1SDA068355R1 |
|      |     |            | 160 | XT4H 160 TMA 160-1600 InN=50% |              | 1SDA068356R1 |
|      |     |            |     |                               |              |              |
| XT4  | 250 | TMA        | 200 | XT4H 250 TMA 200-2000         | 1SDA068343R1 | 1SDA068362R1 |
|      |     |            | 225 | XT4H 250 TMA 225-2250         | 1SDA068344R1 | 1SDA068363R1 |
|      |     |            | 250 | XT4H 250 TMA 250-2500         | 1SDA068345R1 | 1SDA068364R1 |
|      |     |            | 200 | XT4H 250 TMA 200-2000 InN=50% |              | 1SDA068357R1 |
|      |     |            | 225 | XT4H 250 TMA 225-2250 InN=50% |              | 1SDA068358R1 |
|      |     |            | 250 | XT4H 250 TMA 250-2500 InN=50% |              | 1SDA068359R1 |

#### SACE XT4H (70 kA) Ekip LS/I - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------------|--------------|--------------|
|      |     |            |     |                            | Code         | Code         |
| XT4  | 160 | Ekip LS/I  | 40  | XT4H 160 Ekip LS/I In=40A  | 1SDA068511R1 | 1SDA068531R1 |
|      |     |            | 63  | XT4H 160 Ekip LS/I In=63A  | 1SDA068512R1 | 1SDA068532R1 |
|      |     |            | 100 | XT4H 160 Ekip LS/I In=100A | 1SDA068513R1 | 1SDA068533R1 |
|      |     |            | 160 | XT4H 160 Ekip LS/I In=160A | 1SDA068514R1 | 1SDA068534R1 |
| XT4  | 250 | Ekip LS/I  | 250 | XT4H 250 Ekip LS/I In=250A | 1SDA068515R1 | 1SDA068535R1 |

#### SACE XT4H (70 kA) Ekip I - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                    | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------|--------------|--------------|
|      |     |            |     |                         | Code         | Code         |
| XT4  | 160 | Ekip I     | 40  | XT4H 160 Ekip I In=40A  | 1SDA068516R1 | 1SDA068536R1 |
|      |     |            | 63  | XT4H 160 Ekip I In=63A  | 1SDA068517R1 | 1SDA068537R1 |
|      |     |            | 100 | XT4H 160 Ekip I In=100A | 1SDA068518R1 | 1SDA068538R1 |
|      |     |            | 160 | XT4H 160 Ekip I In=160A | 1SDA068519R1 | 1SDA068539R1 |
| XT4  | 250 | Ekip I     | 250 | XT4H 250 Ekip I In=250A | 1SDA068520R1 | 1SDA068540R1 |



XT4 - circuit-breaker

**SACE XT4H (70 kA) Ekip LSI - Front terminals (F)**

| Size | lu  | Trip units | In  | Type                      | 3 poles      | 4 poles      |
|------|-----|------------|-----|---------------------------|--------------|--------------|
|      |     |            |     |                           | Code         | Code         |
| XT4  | 160 | Ekip LSI   | 40  | XT4H 160 Ekip LSI In=40A  | 1SDA068521R1 | 1SDA068541R1 |
|      |     |            | 63  | XT4H 160 Ekip LSI In=63A  | 1SDA068522R1 | 1SDA068542R1 |
|      |     |            | 100 | XT4H 160 Ekip LSI In=100A | 1SDA068523R1 | 1SDA068543R1 |
|      |     |            | 160 | XT4H 160 Ekip LSI In=160A | 1SDA068524R1 | 1SDA068544R1 |
| XT4  | 250 | Ekip LSI   | 250 | XT4H 250 Ekip LSI In=250A | 1SDA068525R1 | 1SDA068545R1 |

**SACE XT4H (70 kA) Ekip LSIG - Front terminals (F)**

| Size | lu  | Trip units | In  | Type                       | 3 poles      | 4 poles      |
|------|-----|------------|-----|----------------------------|--------------|--------------|
|      |     |            |     |                            | Code         | Code         |
| XT4  | 160 | Ekip LSIG  | 40  | XT4H 160 Ekip LSIG In=40A  | 1SDA068526R1 | 1SDA068546R1 |
|      |     |            | 63  | XT4H 160 Ekip LSIG In=63A  | 1SDA068527R1 | 1SDA068547R1 |
|      |     |            | 100 | XT4H 160 Ekip LSIG In=100A | 1SDA068528R1 | 1SDA068548R1 |
|      |     |            | 160 | XT4H 160 Ekip LSIG In=160A | 1SDA068529R1 | 1SDA068549R1 |
| XT4  | 250 | Ekip LSIG  | 250 | XT4H 250 Ekip LSIG In=250A | 1SDA068530R1 | 1SDA068550R1 |

**SACE XT4H (70 kA) Ekip Dip LIG - Front terminals (F)**

| Size | lu  | Trip units   | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|--------------|-----|-------------------------------|--------------|--------------|
|      |     |              |     |                               | Code         | Code         |
| XT4  | 160 | Ekip Dip LIG | 40  | XT4H 160 Ekip Dip LIG In=40A  | 1SDA100241R1 | 1SDA100256R1 |
|      |     |              | 63  | XT4H 160 Ekip Dip LIG In=63A  | 1SDA100242R1 | 1SDA100257R1 |
|      |     |              | 100 | XT4H 160 Ekip Dip LIG In=100A | 1SDA100243R1 | 1SDA100258R1 |
|      |     |              | 160 | XT4H 160 Ekip Dip LIG In=160A | 1SDA100244R1 | 1SDA100259R1 |
| XT4  | 250 | Ekip Dip LIG | 250 | XT4H 250 Ekip Dip LIG In=250A | 1SDA100245R1 | 1SDA100260R1 |

# Ordering codes for XT4

## Automatic circuit-breakers

### Motor protection circuit-breakers



XT4 - circuit-breaker

#### SACE XT4H (70 kA) MA - Front terminals (F)

| Size | Iu  | Trip units | In   | Type                           | 3 poles      | 4 poles |
|------|-----|------------|------|--------------------------------|--------------|---------|
|      |     |            |      |                                | Code         | Code    |
| XT4  | 160 | MA         | 10   | XT4H 160 MA 10 Im=50...100     | 1SDA068441R1 |         |
|      |     |            | 12,5 | XT4H 160 MA 12,5 Im=62,5...125 | 1SDA068442R1 |         |
|      |     |            | 20   | XT4H 160 MA 20 Im=100...200    | 1SDA068443R1 |         |
|      |     |            | 32   | XT4H 160 MA 32 Im=160...320    | 1SDA068444R1 |         |
|      |     |            | 52   | XT4H 160 MA 52 Im=260...520    | 1SDA068445R1 |         |
|      |     |            | 80   | XT4H 160 MA 80 Im=400...800    | 1SDA068446R1 |         |
|      |     |            | 100  | XT4H 160 MA 100 Im=500...1000  | 1SDA068447R1 |         |
|      |     |            | 125  | XT4H 160 MA 125 Im=625...1160  | 1SDA068448R1 |         |
|      |     |            | 160  | XT4H 160 MA 160 Im=800...1600  | 1SDA068449R1 |         |
| XT4  | 250 | MA         | 200  | XT4H 250 MA 200 Im=1000...2000 | 1SDA068450R1 |         |

### Distribution circuit-breakers



XT4 - circuit-breaker

#### SACE XT4L (120 kA) TMD - Front terminals (F)

| Size | Iu  | Trip units | In | Type                | 3 poles   | 4 poles |
|------|-----|------------|----|---------------------|---|---------|
|      |     |            |    |                     | Code  | Code    |
| XT4  | 160 | TMD        | 16 | XT4L 160 TMD 16-300 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 20 | XT4L 160 TMD 20-300 |   |         |
|      |     |            | 25 | XT4L 160 TMD 25-300 |   |         |
|      |     |            | 32 | XT4L 160 TMD 32-320 |   |         |

#### SACE XT4L (120 kA) TMA - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                          | 3 poles   | 4 poles |
|------|-----|------------|-----|-------------------------------|---|---------|
|      |     |            |     |                               | Code  | Code    |
| XT4  | 160 | TMA        | 40  | XT4L 160 TMA 40-400           | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 50  | XT4L 160 TMA 50-500           |   |         |
|      |     |            | 63  | XT4L 160 TMA 63-630           |   |         |
|      |     |            | 80  | XT4L 160 TMA 80-800           |   |         |
|      |     |            | 100 | XT4L 160 TMA 100-1000         |   |         |
|      |     |            | 125 | XT4L 160 TMA 125-1250         |   |         |
|      |     |            | 160 | XT4L 160 TMA 160-1600         |   |         |
|      |     |            | 125 | XT4L 160 TMA 125-1250 InN=50% |   |         |
|      |     |            | 160 | XT4L 160 TMA 160-1600 InN=50% |   |         |
| XT4  | 250 | TMA        | 200 | XT4L 250 TMA 200-2000         | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 225 | XT4L 250 TMA 225-2250         |   |         |
|      |     |            | 250 | XT4L 250 TMA 250-2500         |   |         |
|      |     |            | 200 | XT4L 250 TMA 200-2000 InN=50% |   |         |
|      |     |            | 225 | XT4L 250 TMA 225-2250 InN=50% |   |         |
|      |     |            | 250 | XT4L 250 TMA 250-2500 InN=50% |   |         |

—  
XT4 - circuit-breaker**SACE XT4L (120 kA) Ekip LS/I - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                       | 3 poles   | 4 poles |
|------|-----|------------|-----|----------------------------|---|---------|
|      |     |            |     |                            | Code  | Code    |
| XT4  | 160 | Ekip LS/I  | 40  | XT4L 160 Ekip LS/I In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 63  | XT4L 160 Ekip LS/I In=63A  |   |         |
|      |     |            | 100 | XT4L 160 Ekip LS/I In=100A |   |         |
|      |     |            | 160 | XT4L 160 Ekip LS/I In=160A |   |         |
| XT4  | 250 | Ekip LS/I  | 250 | XT4L 250 Ekip LS/I In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

**SACE XT4L (120 kA) Ekip I - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                    | 3 poles | 4 poles   |
|------|-----|------------|-----|-------------------------|---------|---|
|      |     |            |     |                         | Code    | Code  |
| XT4  | 160 | Ekip I     | 40  | XT4L 160 Ekip I In=40A  |         | Only available with the Breaking Part<br>+ Trip unit solution |
|      |     |            | 63  | XT4L 160 Ekip I In=63A  |         |   |
|      |     |            | 100 | XT4L 160 Ekip I In=100A |         |   |
|      |     |            | 160 | XT4L 160 Ekip I In=160A |         |   |
| XT4  | 250 | Ekip I     | 250 | XT4L 250 Ekip I In=250A |         | Only available with the Breaking Part<br>+ Trip unit solution |

**SACE XT4L (120 kA) Ekip LSI - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                      | 3 poles | 4 poles   |
|------|-----|------------|-----|---------------------------|---------|---|
|      |     |            |     |                           | Code    | Code  |
| XT4  | 160 | Ekip LSI   | 40  | XT4L 160 Ekip LSI In=40A  |         | Only available with the Breaking Part<br>+ Trip unit solution |
|      |     |            | 63  | XT4L 160 Ekip LSI In=63A  |         |   |
|      |     |            | 100 | XT4L 160 Ekip LSI In=100A |         |   |
|      |     |            | 160 | XT4L 160 Ekip LSI In=160A |         |   |
| XT4  | 250 | Ekip LSI   | 250 | XT4L 250 Ekip LSI In=250A |         | Only available with the Breaking Part<br>+ Trip unit solution |

**SACE XT4L (120 kA) Ekip LSIG - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                       | 3 poles   | 4 poles |
|------|-----|------------|-----|----------------------------|---|---------|
|      |     |            |     |                            | Code  | Code    |
| XT4  | 160 | Ekip LSIG  | 40  | XT4L 160 Ekip LSIG In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 63  | XT4L 160 Ekip LSIG In=63A  |   |         |
|      |     |            | 100 | XT4L 160 Ekip LSIG In=100A |   |         |
|      |     |            | 160 | XT4L 160 Ekip LSIG In=160A |   |         |
| XT4  | 250 | Ekip LSIG  | 250 | XT4L 250 Ekip LSIG In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |



## Ordering codes for XT4

### Automatic circuit-breakers



XT4 - circuit-breaker

#### SACE XT4L (120 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu  | Trip units   | In  | Type                          | 3 poles   | 4 poles |
|------|-----|--------------|-----|-------------------------------|---|---------|
|      |     |              |     |                               | Code  | Code    |
| XT4  | 160 | Ekip Dip LIG | 40  | XT4L 160 Ekip Dip LIG In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |              | 63  | XT4L 160 Ekip Dip LIG In=63A  |   |         |
|      |     |              | 100 | XT4L 160 Ekip Dip LIG In=100A |   |         |
|      |     |              | 160 | XT4L 160 Ekip Dip LIG In=160A |   |         |
| XT4  | 250 | Ekip Dip LIG | 250 | XT4L 250 Ekip Dip LIG In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

### Motor protection circuit-breakers



XT4 - circuit-breaker

#### SACE XT4L (120 kA) MA - Front terminals (F)

| Size | lu  | Trip units | In   | Type                           | 3 poles   | 4 poles   |
|------|-----|------------|------|--------------------------------|---|---|
|      |     |            |      |                                | Code  | Code  |
| XT4  | 160 | MA         | 10   | XT4L 160 MA 10 Im=50...100     | 1SDA068451R1  | Only available with the Breaking Part<br>+ Trip unit solution |
|      |     |            | 12,5 | XT4L 160 MA 12,5 Im=62,5...125 | 1SDA068452R1  |   |
|      |     |            | 20   | XT4L 160 MA 20 Im=100...200    | 1SDA068453R1  |   |
|      |     |            | 32   | XT4L 160 MA 32 Im=160...320    | 1SDA068454R1  |   |
|      |     |            | 52   | XT4L 160 MA 52 Im=260...520    | 1SDA068455R1  |   |
|      |     |            | 80   | XT4L 160 MA 80 Im=400...800    |   |   |
|      |     |            | 100  | XT4L 160 MA 100 Im=500...1000  |   |   |
|      |     |            | 125  | XT4L 160 MA 125 Im=625...1160  |   |   |
|      |     |            | 160  | XT4L 160 MA 160 Im=800...1600  |   |   |
| XT4  | 250 | MA         | 200  | XT4L 250 MA 200 Im=1000...2000 | Only available with the Breaking Part<br>+ Trip unit solution |   |

## Distribution circuit-breakers



XT4 - circuit-breaker

**SACE XT4V (150 kA) TMD/TMA - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                          | 3 poles   | 4 poles |
|------|-----|------------|-----|-------------------------------|---|---------|
|      |     |            |     |                               | Code  | Code    |
| XT4  | 160 | TMD        | 16  | XT4V 160 TMD 16-300           | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 20  | XT4V 160 TMD 20-300           |   |         |
|      |     |            | 25  | XT4V 160 TMD 25-300           |   |         |
|      |     |            | 32  | XT4V 160 TMD 32-320           |   |         |
| XT4  | 160 | TMA        | 40  | XT4V 160 TMA 40-400           | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 50  | XT4V 160 TMA 50-500           |   |         |
|      |     |            | 63  | XT4V 160 TMA 63-630           |   |         |
|      |     |            | 80  | XT4V 160 TMA 80-800           |   |         |
|      |     |            | 100 | XT4V 160 TMA 100-1000         |   |         |
|      |     |            | 125 | XT4V 160 TMA 125-1250         |   |         |
|      |     |            | 160 | XT4V 160 TMA 160-1600         |   |         |
|      |     |            | 125 | XT4V 160 TMA 125-1250 InN=50% |   |         |
| XT4  | 250 | TMA        | 160 | XT4V 160 TMA 160-1600 InN=50% | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 200 | XT4V 250 TMA 200-2000         |   |         |
|      |     |            | 225 | XT4V 250 TMA 225-2250         |   |         |
|      |     |            | 250 | XT4V 250 TMA 250-2500         |   |         |
|      |     |            | 200 | XT4V 250 TMA 200-2000 InN=50% |   |         |
|      |     |            | 225 | XT4V 250 TMA 225-2250 InN=50% |   |         |
|      |     |            | 250 | XT4V 250 TMA 250-2500 InN=50% |   |         |

**SACE XT4V (150 kA) Ekip LS/I - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                       | 3 poles   | 4 poles |
|------|-----|------------|-----|----------------------------|---|---------|
|      |     |            |     |                            | Code  | Code    |
| XT4  | 160 | Ekip LS/I  | 40  | XT4V 160 Ekip LS/I In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 63  | XT4V 160 Ekip LS/I In=63A  |   |         |
|      |     |            | 100 | XT4V 160 Ekip LS/I In=100A |   |         |
|      |     |            | 160 | XT4V 160 Ekip LS/I In=160A |   |         |
| XT4  | 250 | Ekip LS/I  | 250 | XT4V 250 Ekip LS/I In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

**SACE XT4V (150 kA) Ekip I - Front terminals (F)**

| Size | Iu  | Trip units | In  | Type                    | 3 poles   | 4 poles |
|------|-----|------------|-----|-------------------------|---|---------|
|      |     |            |     |                         | Code  | Code    |
| XT4  | 160 | Ekip I     | 40  | XT4V 160 Ekip I In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 63  | XT4V 160 Ekip I In=63A  |   |         |
|      |     |            | 100 | XT4V 160 Ekip I In=100A |   |         |
|      |     |            | 160 | XT4V 160 Ekip I In=160A |   |         |
| XT4  | 250 | Ekip I     | 250 | XT4V 250 Ekip I In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

# Ordering codes for XT4

## Automatic circuit-breakers



XT4 - circuit-breaker

### SACE XT4V (150 kA) Ekip LSI - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                      | 3 poles   | 4 poles |
|------|-----|------------|-----|---------------------------|---|---------|
|      |     |            |     |                           | Code  | Code    |
| XT4  | 160 | Ekip LSI   | 40  | XT4V 160 Ekip LSI In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 63  | XT4V 160 Ekip LSI In=63A  |   |         |
|      |     |            | 100 | XT4V 160 Ekip LSI In=100A |   |         |
|      |     |            | 160 | XT4V 160 Ekip LSI In=160A |   |         |
| XT4  | 250 | Ekip LSI   | 250 | XT4V 250 Ekip LSI In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

### SACE XT4V (150 kA) Ekip LSIG - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles   | 4 poles |
|------|-----|------------|-----|----------------------------|---|---------|
|      |     |            |     |                            | Code  | Code    |
| XT4  | 160 | Ekip LSIG  | 40  | XT4V 160 Ekip LSIG In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 63  | XT4V 160 Ekip LSIG In=63A  |   |         |
|      |     |            | 100 | XT4V 160 Ekip LSIG In=100A |   |         |
|      |     |            | 160 | XT4V 160 Ekip LSIG In=160A |   |         |
| XT4  | 250 | Ekip LSIG  | 250 | XT4V 250 Ekip LSIG In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

### SACE XT4V (150 kA) Ekip Dip LIG - Front terminals (F)

| Size | Iu  | Trip units   | In  | Type                          | 3 poles   | 4 poles |
|------|-----|--------------|-----|-------------------------------|---|---------|
|      |     |              |     |                               | Code  | Code    |
| XT4  | 160 | Ekip Dip LIG | 40  | XT4V 160 Ekip Dip LIG In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |              | 63  | XT4V 160 Ekip Dip LIG In=63A  |   |         |
|      |     |              | 100 | XT4V 160 Ekip Dip LIG In=100A |   |         |
|      |     |              | 160 | XT4V 160 Ekip Dip LIG In=160A |   |         |
| XT4  | 250 | Ekip Dip LIG | 250 | XT4V 250 Ekip Dip LIG In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

## Motor protection circuit-breakers

### SACE XT4V (150 kA) MA - Front terminals (F)



XT4 - circuit-breaker

| Size | Iu  | Trip units | In   | Type                           | 3 poles      | 4 poles   |
|------|-----|------------|------|--------------------------------|--------------|---|
|      |     |            |      |                                | Code         | Code  |
| XT4  | 160 | MA         | 10   | XT4V 160 MA 10 Im=50...100     | 1SDA101954R1 |   |
|      |     |            | 12,5 | XT4V 160 MA 12,5 Im=62,5...125 | 1SDA101955R1 |   |
|      |     |            | 20   | XT4V 160 MA 20 Im=100...200    | 1SDA107704R1 |   |
|      |     |            | 32   | XT4V 160 MA 32 Im=160...320    | 1SDA107705R1 |   |
|      |     |            | 52   | XT4V 160 MA 52 Im=260...520    | 1SDA107706R1 |   |
|      |     |            | 80   | XT4V 160 MA 80 Im=400...800    |              |   |
|      |     |            | 100  | XT4V 160 MA 100 Im=500...1000  |              | Only available with the Breaking Part<br>+ Trip unit solution |
|      |     |            | 125  | XT4V 160 MA 125 Im=625...1160  |              |   |
|      |     |            | 160  | XT4V 160 MA 160 Im=800...1600  |              |   |
| XT4  | 250 | MA         | 200  | XT4V 250 MA 200 Im=1000...2000 |              | Only available with the Breaking Part<br>+ Trip unit solution |

## Distribution circuit-breakers

### SACE XT4X (200 kA) TMD/TMA - Front terminals (F)



XT4 - circuit-breaker

| Size | Iu  | Trip units | In  | Type                          | 3 poles | 4 poles   |
|------|-----|------------|-----|-------------------------------|---------|---|
|      |     |            |     |                               | Code    | Code  |
| XT4  | 160 | TMD        | 32  | XT4X 160 TMD 32-320           |         | Only available with the Breaking Part<br>+ Trip unit solution |
| XT4  | 160 | TMA        | 40  | XT4X 160 TMA 40-400           |         | Only available with the Breaking Part<br>+ Trip unit solution |
|      |     |            | 50  | XT4X 160 TMA 50-500           |         |   |
|      |     |            | 63  | XT4X 160 TMA 63-630           |         |   |
|      |     |            | 80  | XT4X 160 TMA 80-800           |         |   |
|      |     |            | 100 | XT4X 160 TMA 100-1000         |         |   |
|      |     |            | 125 | XT4X 160 TMA 125-1250         |         |   |
|      |     |            | 160 | XT4X 160 TMA 160-1600         |         |   |
|      |     |            | 125 | XT4X 160 TMA 125-1250 InN=50% |         |   |
|      |     |            | 160 | XT4X 160 TMA 160-1600 InN=50% |         |   |
| XT4  | 250 | TMA        | 200 | XT4X 250 TMA 200-2000         |         | Only available with the Breaking Part<br>+ Trip unit solution |
|      |     |            | 225 | XT4X 250 TMA 225-2250         |         |   |
|      |     |            | 250 | XT4X 250 TMA 250-2500         |         |   |
|      |     |            | 200 | XT4X 250 TMA 200-2000 InN=50% |         |   |
|      |     |            | 225 | XT4X 250 TMA 225-2250 InN=50% |         |   |
|      |     |            | 250 | XT4X 250 TMA 250-2500 InN=50% |         |   |

# Ordering codes for XT4

## Automatic circuit-breakers



XT4 - circuit-breaker

### SACE XT4X (200 kA) Ekip LS/I - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles | 4 poles   |
|------|-----|------------|-----|----------------------------|---------|---|
|      |     |            |     |                            | Code    | Code  |
| XT4  | 160 | Ekip LS/I  | 40  | XT4X 160 Ekip LS/I In=40A  |         | Only available with the Breaking Part<br>+ Trip unit solution |
|      |     |            | 63  | XT4X 160 Ekip LS/I In=63A  |         |   |
|      |     |            | 100 | XT4X 160 Ekip LS/I In=100A |         |   |
|      |     |            | 160 | XT4X 160 Ekip LS/I In=160A |         |   |
| XT4  | 250 | Ekip LS/I  | 250 | XT4X 250 Ekip LS/I In=250A |         | Only available with the Breaking Part<br>+ Trip unit solution |

### SACE XT4X (200 kA) Ekip I - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                    | 3 poles   | 4 poles |
|------|-----|------------|-----|-------------------------|---|---------|
|      |     |            |     |                         | Code  | Code    |
| XT4  | 160 | Ekip I     | 40  | XT4X 160 Ekip I In=40A  | Only available with the Breaking Part<br>+Trip unit solution  |         |
|      |     |            | 63  | XT4X 160 Ekip I In=63A  |   |         |
|      |     |            | 100 | XT4X 160 Ekip I In=100A |   |         |
|      |     |            | 160 | XT4X 160 Ekip I In=160A |   |         |
| XT4  | 250 | Ekip I     | 250 | XT4X 250 Ekip I In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

### SACE XT4X (200 kA) Ekip LSI - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                      | 3 poles   | 4 poles |
|------|-----|------------|-----|---------------------------|---|---------|
|      |     |            |     |                           | Code  | Code    |
| XT4  | 160 | Ekip LSI   | 40  | XT4X 160 Ekip LSI In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 63  | XT4X 160 Ekip LSI In=63A  |   |         |
|      |     |            | 100 | XT4X 160 Ekip LSI In=100A |   |         |
|      |     |            | 160 | XT4X 160 Ekip LSI In=160A |   |         |
| XT4  | 250 | Ekip LSI   | 250 | XT4X 250 Ekip LSI In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

### SACE XT4X (200 kA) Ekip LSIG - Front terminals (F)

| Size | Iu  | Trip units | In  | Type                       | 3 poles   | 4 poles |
|------|-----|------------|-----|----------------------------|---|---------|
|      |     |            |     |                            | Code  | Code    |
| XT4  | 160 | Ekip LSIG  | 40  | XT4X 160 Ekip LSIG In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 63  | XT4X 160 Ekip LSIG In=63A  |   |         |
|      |     |            | 100 | XT4X 160 Ekip LSIG In=100A |   |         |
|      |     |            | 160 | XT4X 160 Ekip LSIG In=160A |   |         |
| XT4  | 250 | Ekip LSIG  | 250 | XT4X 250 Ekip LSIG In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |



—  
XT4 - circuit-breaker

#### SACE XT4X (200 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu  | Trip units   | In  | Type                          | 3 poles   | 4 poles |
|------|-----|--------------|-----|-------------------------------|---|---------|
|      |     |              |     |                               | Code  | Code    |
| XT4  | 160 | Ekip Dip LIG | 40  | XT4X 160 Ekip Dip LIG In=40A  | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |              | 63  | XT4X 160 Ekip Dip LIG In=63A  |   |         |
|      |     |              | 100 | XT4X 160 Ekip Dip LIG In=100A |   |         |
|      |     |              | 160 | XT4X 160 Ekip Dip LIG In=160A |   |         |
| XT4  | 250 | Ekip Dip LIG | 250 | XT4X 250 Ekip Dip LIG In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |

### Motor protection circuit-breakers

#### SACE XT4X(200 kA) MA - Front terminals (F)

| Size | lu  | Trip units | In   | Type                           | 3 poles   | 4 poles   |
|------|-----|------------|------|--------------------------------|---|---|
|      |     |            |      |                                | Code  | Code  |
| XT4  | 160 | MA         | 10   | XT4X 160 MA 10 Im=50...100     | 1SDA101956R1  | Only available with the Breaking Part<br>+ Trip unit solution |
|      |     |            | 12,5 | XT4X 160 MA 12,5 Im=62,5...125 | 1SDA101957R1  |   |
|      |     |            | 20   | XT4X 160 MA 20 Im=100...200    | 1SDA107707R1  |   |
|      |     |            | 32   | XT4X 160 MA 32 Im=160...320    | 1SDA107708R1  |   |
|      |     |            | 52   | XT4X 160 MA 52 Im=260...520    | 1SDA107709R1  |   |
|      |     |            | 80   | XT4X 160 MA 80 Im=400...800    |   |   |
|      |     |            | 100  | XT4X 160 MA 100 Im=500...1000  |   |   |
|      |     |            | 125  | XT4X 160 MA 125 Im=625...1160  |   |   |
|      |     |            | 160  | XT4X 160 MA 160 Im=800...1600  |   |   |
| XT4  | 250 | MA         | 200  | XT4X 250 MA 200 Im=1000...2000 | Only available with the Breaking Part<br>+ Trip unit solution |   |



—  
XT4 - circuit-breaker

# Ordering codes for XT4

## Switch-disconnectors



—  
XT4D -  
switch-disconnector

| SACE XT4 - Switch-disconnectors |     |          |              |              |
|---------------------------------|-----|----------|--------------|--------------|
| Size                            | Iu  | Type     | 3 poles      | 4 poles      |
|                                 |     |          | Code         | Code         |
| XT4D                            | 250 | XT4D 250 | 1SDA068212R1 | 1SDA068213R1 |

# Ordering codes for XT4

## Breaking part



XT4 - breaking part

| SACE XT4 - Breaking part |     |                |                        |              |              |
|--------------------------|-----|----------------|------------------------|--------------|--------------|
| Size                     | Iu  | Icu<br>(415 V) | Type                   | 3 poles      | 4 poles      |
|                          |     |                |                        | Code         | Code         |
| XT4                      | 160 | 36             | XT4N 160 Breaking part | 1SDA068289R1 | 1SDA068294R1 |
|                          | 250 | 36             | XT4N 250 Breaking part | 1SDA068173R1 | 1SDA068178R1 |
|                          | 160 | 50             | XT4S 160 Breaking part | 1SDA068290R1 | 1SDA068295R1 |
|                          | 250 | 50             | XT4S 250 Breaking part | 1SDA068174R1 | 1SDA068179R1 |
|                          | 160 | 70             | XT4H 160 Breaking part | 1SDA068291R1 | 1SDA068296R1 |
|                          | 250 | 70             | XT4H 250 Breaking part | 1SDA068175R1 | 1SDA068180R1 |
|                          | 160 | 120            | XT4L 160 Breaking part | 1SDA068292R1 | 1SDA068297R1 |
|                          | 250 | 120            | XT4L 250 Breaking part | 1SDA068176R1 | 1SDA068181R1 |
|                          | 160 | 150            | XT4V 160 Breaking part | 1SDA100261R1 | 1SDA100263R1 |
|                          | 250 | 150            | XT4V 250 Breaking part | 1SDA100262R1 | 1SDA100264R1 |
|                          | 160 | 200            | XT4X 160 Breaking part | 1SDA100265R1 | 1SDA100267R1 |
|                          | 250 | 200            | XT4X 250 Breaking part | 1SDA100266R1 | 1SDA100268R1 |

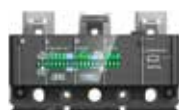


# Ordering codes for XT4

## Trip units



—  
Thermal magnetic  
trip unit



—  
Dip trip unit

### Trip units - Distribution protection

| Size | Type                 | 3 poles      | 4 poles      |
|------|----------------------|--------------|--------------|
|      |                      | Code         | Code         |
| XT4  | TMD 16-300           | 1SDA067377R1 | 1SDA067465R1 |
|      | TMD 20-300           | 1SDA067378R1 | 1SDA067468R1 |
|      | TMD 25-300           | 1SDA067379R1 | 1SDA067469R1 |
|      | TMD 32-320           | 1SDA067380R1 | 1SDA067470R1 |
|      | TMA 40-400           | 1SDA067381R1 | 1SDA067471R1 |
|      | TMA 50-500           | 1SDA067382R1 | 1SDA067472R1 |
|      | TMA 63-630           | 1SDA067383R1 | 1SDA067473R1 |
|      | TMA 80-800           | 1SDA067384R1 | 1SDA067474R1 |
|      | TMA 100-1000         | 1SDA067385R1 | 1SDA067475R1 |
|      | TMA 125-1250         | 1SDA067386R1 | 1SDA067481R1 |
|      | TMA 160-1600         | 1SDA067387R1 | 1SDA067482R1 |
|      | TMA 125-1250 InN=50% |              | 1SDA067476R1 |
|      | TMA 160-1600 InN=50% |              | 1SDA067477R1 |
|      | TMA 200-2000         | 1SDA067388R1 | 1SDA067483R1 |
|      | TMA 225-2250         | 1SDA067389R1 | 1SDA067484R1 |
|      | TMA 250-2500         | 1SDA067390R1 | 1SDA067485R1 |
|      | TMA 200-2000 InN=50% |              | 1SDA067478R1 |
|      | TMA 225-2250 InN=50% |              | 1SDA067479R1 |
|      | TMA 250-2500 InN=50% |              | 1SDA067480R1 |
|      | Ekip LS/I In=40A     | 1SDA067498R1 | 1SDA067518R1 |
|      | Ekip LS/I In=63A     | 1SDA067499R1 | 1SDA067519R1 |
|      | Ekip LS/I In=100A    | 1SDA067500R1 | 1SDA067520R1 |
|      | Ekip LS/I In=160A    | 1SDA067501R1 | 1SDA067521R1 |
|      | Ekip LS/I In=250A    | 1SDA067502R1 | 1SDA067522R1 |
|      | Ekip LSI In=40A      | 1SDA067508R1 | 1SDA067528R1 |
|      | Ekip LSI In=63A      | 1SDA067509R1 | 1SDA067529R1 |
|      | Ekip LSI In=100A     | 1SDA067510R1 | 1SDA067530R1 |
|      | Ekip LSI In=160A     | 1SDA067511R1 | 1SDA067531R1 |
|      | Ekip LSI In=250A     | 1SDA067512R1 | 1SDA067532R1 |
|      | Ekip LSIG In=40A     | 1SDA067513R1 | 1SDA067533R1 |
|      | Ekip LSIG In=63A     | 1SDA067514R1 | 1SDA067534R1 |
|      | Ekip LSIG In=100A    | 1SDA067515R1 | 1SDA067535R1 |
|      | Ekip LSIG In=160A    | 1SDA067516R1 | 1SDA067536R1 |
|      | Ekip LSIG In=250A    | 1SDA067517R1 | 1SDA067537R1 |
|      | Ekip Dip LIG In=40A  | 1SDA100303R1 | 1SDA100339R1 |
|      | Ekip Dip LIG In=63A  | 1SDA100304R1 | 1SDA100340R1 |
|      | Ekip Dip LIG In=100A | 1SDA100305R1 | 1SDA100341R1 |
|      | Ekip Dip LIG In=160A | 1SDA100306R1 | 1SDA100342R1 |
|      | Ekip Dip LIG In=250A | 1SDA100307R1 | 1SDA100343R1 |



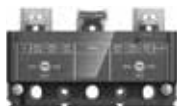
Touch trip unit

Trip units - Distribution protection

| Size | Type                              | 3 poles      | 4 poles      |
|------|-----------------------------------|--------------|--------------|
|      |                                   | Code         | Code         |
| XT4  | Ekip Touch LSI In=100A            | 1SDA100279R1 | 1SDA100318R1 |
|      | Ekip Touch LSI In=160A            | 1SDA100280R1 | 1SDA100319R1 |
|      | Ekip Touch LSI In=250A            | 1SDA100281R1 | 1SDA100320R1 |
|      | Ekip Touch LSIG In=100A           | 1SDA100282R1 | 1SDA100321R1 |
|      | Ekip Touch LSIG In=160A           | 1SDA100283R1 | 1SDA100322R1 |
|      | Ekip Touch LSIG In=250A           | 1SDA100284R1 | 1SDA100323R1 |
|      | Ekip Touch Measuring LSI In=100A  | 1SDA100285R1 | 1SDA100324R1 |
|      | Ekip Touch Measuring LSI In=160A  | 1SDA100286R1 | 1SDA100325R1 |
|      | Ekip Touch Measuring LSI In=250A  | 1SDA100287R1 | 1SDA100326R1 |
|      | Ekip Touch Measuring LSIG In=100A | 1SDA100288R1 | 1SDA100327R1 |
|      | Ekip Touch Measuring LSIG In=160A | 1SDA100289R1 | 1SDA100328R1 |
|      | Ekip Touch Measuring LSIG In=250A | 1SDA100290R1 | 1SDA100329R1 |
|      | Ekip Hi-Touch LSI In=100A         | 1SDA100291R1 | 1SDA100330R1 |
|      | Ekip Hi-Touch LSI In=160A         | 1SDA100292R1 | 1SDA100331R1 |
|      | Ekip Hi-Touch LSI In=250A         | 1SDA100293R1 | 1SDA100332R1 |
|      | Ekip Hi-Touch LSIG In=100A        | 1SDA100294R1 | 1SDA100333R1 |
|      | Ekip Hi-Touch LSIG In=160A        | 1SDA100295R1 | 1SDA100334R1 |
|      | Ekip Hi-Touch LSIG In=250A        | 1SDA100296R1 | 1SDA100335R1 |

# Ordering codes for XT4

## Trip units



—  
Thermal magnetic  
trip unit



—  
Touch trip unit

### Trip units - Motor protection

| Size | Type                             | 3 poles      | 4 poles |
|------|----------------------------------|--------------|---------|
|      |                                  | Code         | Code    |
| XT4  | MA 80 Im=400...800               | 1SDA067493R1 |         |
|      | MA 100 Im=600...1000             | 1SDA067494R1 |         |
|      | MA 125 Im=625...1250             | 1SDA067495R1 |         |
|      | MA 160 Im=800...1600             | 1SDA067496R1 |         |
|      | MA 200 Im=1000...2000            | 1SDA067497R1 |         |
|      | Ekip I In=40A                    | 1SDA067503R1 |         |
|      | Ekip I In=63A                    | 1SDA067504R1 |         |
|      | Ekip I In=100A                   | 1SDA067505R1 |         |
|      | Ekip I In=160A                   | 1SDA067506R1 |         |
|      | Ekip I In=250A                   | 1SDA067507R1 |         |
|      | Ekip M-LIU In=40A                | 1SDA068028R1 |         |
|      | Ekip M-LIU In=63A                | 1SDA068029R1 |         |
|      | Ekip M-LIU In=100A               | 1SDA068030R1 |         |
|      | Ekip M-LIU In=160A               | 1SDA068031R1 |         |
|      | Ekip M-LRIU In=40A               | 1SDA068033R1 |         |
|      | Ekip M-LRIU In=63A               | 1SDA068034R1 |         |
|      | Ekip M-LRIU In=100A              | 1SDA068035R1 |         |
|      | Ekip M-LRIU In=160A              | 1SDA068036R1 |         |
|      | Ekip M-LRIU In=200A              | 1SDA068037R1 |         |
|      | Ekip M Touch LRIU In=100A XT4 3p | 1SDA100297R1 |         |
|      | Ekip M Touch LRIU In=160A XT4 3p | 1SDA100298R1 |         |
|      | Ekip M Touch LRIU In=250A XT4 3p | 1SDA100299R1 |         |

### Trip units - Generator protection

| Size | Type                | 3 poles      | 4 poles      |
|------|---------------------|--------------|--------------|
|      |                     | Code         | Code         |
| XT4  | Ekip G-LS/I In=40A  | 1SDA068038R1 | 1SDA068043R1 |
|      | Ekip G-LS/I In=63A  | 1SDA068039R1 | 1SDA068044R1 |
|      | Ekip G-LS/I In=100A | 1SDA068040R1 | 1SDA068045R1 |
|      | Ekip G-LS/I In=160A | 1SDA068041R1 | 1SDA068046R1 |
|      | Ekip G-LS/I In=250A | 1SDA068042R1 | 1SDA068047R1 |

# Ordering codes for XT4

## Breaking part + trip unit solution



XT4 Breaking part



Thermal-Magnetic Trip unit



Ekip Dip Trip Unit



Thermal-Magnetic Trip unit

| Breaking Part | Icu   |     | N (36 kA) | S (50 kA) | H (70 kA) | L (120 kA) | V (150 kA) | X (200 kA) |
|---------------|-------|-----|-----------|-----------|-----------|------------|------------|------------|
|               | Poles | Iu  |           |           |           |            |            |            |
|               | 3     | 160 | 068289    | 068290    | 068291    | 068292     | 100261     | 100265     |
|               | 3     | 250 | 068173    | 068174    | 068175    | 068176     | 100262     | 100266     |
|               | 4     | 160 | 068178    | 068179    | 068296    | 068181     | 100263     | 100267     |
|               | 4     | 250 | 068294    | 068295    | 068180    | 068297     | 100264     | 100268     |

| Trip units    | In    | 16                             | 20 | 25 | 32 | 40     | 50     | 52 | 63     | 80     | 100    | 125     | 160     | 200     | 225     | 250     |
|---------------|-------|--------------------------------|----|----|----|--------|--------|----|--------|--------|--------|---------|---------|---------|---------|---------|
|               | Poles |                                |    |    |    |        |        |    |        |        |        |         |         |         |         |         |
| TMD           | 3     | 067377**067378**067379**067380 |    |    |    |        |        |    |        |        |        |         |         |         |         |         |
|               | 4     | 067465**067468**067469**067470 |    |    |    |        |        |    |        |        |        |         |         |         |         |         |
| TMA           | 3     |                                |    |    |    | 067381 | 067382 |    | 067383 | 067384 | 067385 | 067386  | 067387  | 067388  | 067389  | 067390  |
|               | 4     |                                |    |    |    | 067471 | 067472 |    | 067473 | 067474 | 067475 | 067481* | 067482* | 067483* | 067484* | 067485* |
| Ekip LS/I     | 3     |                                |    |    |    | 067498 |        |    | 067499 |        | 067500 |         | 067501  |         |         | 067502  |
|               | 4     |                                |    |    |    | 067518 |        |    | 067519 |        | 067520 |         | 067521  |         |         | 067522  |
| Ekip I        | 3     |                                |    |    |    | 067503 |        |    | 067504 |        | 067505 |         | 067506  |         |         | 067507  |
|               | 4     |                                |    |    |    | 067523 |        |    | 067524 |        | 067525 |         | 067526  |         |         | 067527  |
| Ekip LSI      | 3     |                                |    |    |    | 067508 |        |    | 067509 |        | 067510 |         | 067511  |         |         | 067512  |
|               | 4     |                                |    |    |    | 067528 |        |    | 067529 |        | 067530 |         | 067531  |         |         | 067532  |
| Ekip LSIG     | 3     |                                |    |    |    | 067513 |        |    | 067514 |        | 067515 |         | 067516  |         |         | 067517  |
|               | 4     |                                |    |    |    | 067533 |        |    | 067534 |        | 067535 |         | 067536  |         |         | 067537  |
| Ekip Dip      | 3     |                                |    |    |    | 100303 |        |    | 100304 |        | 100305 |         | 100306  |         |         | 100307  |
| LIG           | 4     |                                |    |    |    | 100339 |        |    | 100340 |        | 100341 |         | 100342  |         |         | 100343  |
| Ekip Touch    | 3     |                                |    |    |    |        |        |    |        |        | 100279 |         | 100280  |         |         | 100281  |
| LSI           | 4     |                                |    |    |    |        |        |    |        |        | 100318 |         | 100319  |         |         | 100320  |
| Ekip Touch    | 3     |                                |    |    |    |        |        |    |        |        | 100282 |         | 100283  |         |         | 100284  |
| LSIG          | 4     |                                |    |    |    |        |        |    |        |        | 100321 |         | 100322  |         |         | 100323  |
| Ekip Touch    | 3     |                                |    |    |    |        |        |    |        |        | 100285 |         | 100286  |         |         | 100287  |
| Measuring     | 4     |                                |    |    |    |        |        |    |        |        | 100324 |         | 100325  |         |         | 100326  |
| LSI           |       |                                |    |    |    |        |        |    |        |        |        |         |         |         |         |         |
| Ekip Touch    | 3     |                                |    |    |    |        |        |    |        |        | 100288 |         | 100289  |         |         | 100290  |
| Measuring     | 4     |                                |    |    |    |        |        |    |        |        | 100327 |         | 100328  |         |         | 100329  |
| LSIG          |       |                                |    |    |    |        |        |    |        |        |        |         |         |         |         |         |
| Ekip Hi-Touch | 3     |                                |    |    |    |        |        |    |        |        | 100291 |         | 100292  |         |         | 100293  |
| LSI           | 4     |                                |    |    |    |        |        |    |        |        | 100330 |         | 100331  |         |         | 100332  |
| Ekip Hi-Touch | 3     |                                |    |    |    |        |        |    |        |        | 100294 |         | 100295  |         |         | 100296  |
| LSIG          | 4     |                                |    |    |    |        |        |    |        |        | 100333 |         | 100334  |         |         | 100335  |
| MA            | 3     |                                |    |    |    |        |        |    | 067493 | 067494 | 067495 |         | 067496  | 067497  |         |         |
| Ekip M LIU    | 3     |                                |    |    |    | 068028 |        |    | 068029 |        | 068030 |         | 068031  |         |         |         |
| Ekip M LRIU   |       |                                |    |    |    | 068033 |        |    | 068034 |        | 068035 |         | 068036  | 068037  |         |         |
| Ekip M Touch  | 3     |                                |    |    |    |        |        |    |        |        | 100297 |         | 100298  |         |         | 100299  |
| LRIU          |       |                                |    |    |    |        |        |    |        |        |        |         |         |         |         |         |
| Ekip          | 3     |                                |    |    |    | 068038 |        |    | 068039 |        | 068040 |         | 068041  |         |         | 068042  |
| G-LS/I        | 4     |                                |    |    |    | 068043 |        |    | 068044 |        | 068045 |         | 068046  |         |         | 068047  |

\* InN=100%. Combinations available for InN=50% too. For ordering codes, please see in reference pages 'trip Units'

\*\* Not available with breaking part X

Note: when a single code for the complete circuit-breaker is not available, please configure the breaking part code with the trip unit code to order a factory-assembled circuit-breaker.

# Ordering codes for XT5

## Automatic circuit-breakers



XT5 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT5N (36 kA) TMA - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-------------------------------|--------------|--------------|
|         |     |            |     |                               | Code         | Code         |
| XT5 400 | TMA |            | 320 | XT5N 400 TMA 320-3200         | 1SDA100344R1 | 1SDA100383R1 |
|         |     |            | 400 | XT5N 400 TMA 400-4000         | 1SDA100345R1 | 1SDA100385R1 |
|         |     |            | 320 | XT5N 400 TMA 320-3200 InN=50% |              | 1SDA100382R1 |
|         |     |            | 400 | XT5N 400 TMA 400-4000 InN=50% |              | 1SDA100384R1 |
| XT5 630 | TMA |            | 500 | XT5N 630 TMA 500-5000         | 1SDA100346R1 | 1SDA100387R1 |
|         |     |            | 630 | XT5N 630 TMA 630-6300         | 1SDA100347R1 | 1SDA100389R1 |
|         |     |            | 500 | XT5N 630 TMA 500-5000 InN=50% |              | 1SDA100386R1 |
|         |     |            | 630 | XT5N 630 TMA 630-6300 InN=50% |              | 1SDA100388R1 |

#### SACE XT5N (36 kA) Ekip Dip LS/I - Front terminals (F)

| Size    | lu            | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|---------------|------------|-----|-------------------------------|--------------|--------------|
|         |               |            |     |                               | Code         | Code         |
| XT5 400 | Ekip Dip LS/I |            | 250 | XT5N 400 Ekip Dip LS/I In=250 | 1SDA100352R1 | 1SDA100394R1 |
|         |               |            | 320 | XT5N 400 Ekip Dip LS/I In=320 | 1SDA100353R1 | 1SDA100395R1 |
|         |               |            | 400 | XT5N 400 Ekip Dip LS/I In=400 | 1SDA100354R1 | 1SDA100396R1 |
| XT5 630 | Ekip Dip LS/I |            | 630 | XT5N 630 Ekip Dip LS/I In=630 | 1SDA100355R1 | 1SDA100397R1 |

#### SACE XT5N (36 kA) Ekip Dip LSI - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                         | 3 poles      | 4 poles      |
|---------|--------------|------------|-----|------------------------------|--------------|--------------|
|         |              |            |     |                              | Code         | Code         |
| XT5 400 | Ekip Dip LSI |            | 250 | XT5N 400 Ekip Dip LSI In=250 | 1SDA100356R1 | 1SDA100398R1 |
|         |              |            | 320 | XT5N 400 Ekip Dip LSI In=320 | 1SDA100357R1 | 1SDA100399R1 |
|         |              |            | 400 | XT5N 400 Ekip Dip LSI In=400 | 1SDA100358R1 | 1SDA100400R1 |
| XT5 630 | Ekip Dip LSI |            | 630 | XT5N 630 Ekip Dip LSI In=630 | 1SDA100359R1 | 1SDA100401R1 |

#### SACE XT5N (36 kA) Ekip Dip LSIG - Front terminals (F)

| Size    | lu            | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|---------------|------------|-----|-------------------------------|--------------|--------------|
|         |               |            |     |                               | Code         | Code         |
| XT5 400 | Ekip Dip LSIG |            | 250 | XT5N 400 Ekip Dip LSIG In=250 | 1SDA100360R1 | 1SDA100402R1 |
|         |               |            | 320 | XT5N 400 Ekip Dip LSIG In=320 | 1SDA100361R1 | 1SDA100403R1 |
|         |               |            | 400 | XT5N 400 Ekip Dip LSIG In=400 | 1SDA100362R1 | 1SDA100404R1 |
| XT5 630 | Ekip Dip LSIG |            | 630 | XT5N 630 Ekip Dip LSIG In=630 | 1SDA100363R1 | 1SDA100405R1 |

#### SACE XT5N (36 kA) Ekip Dip LIG - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                         | 3 poles      | 4 poles      |
|---------|--------------|------------|-----|------------------------------|--------------|--------------|
|         |              |            |     |                              | Code         | Code         |
| XT5 400 | Ekip Dip LIG |            | 250 | XT5N 400 Ekip Dip LIG In=250 | 1SDA100378R1 | 1SDA100410R1 |
|         |              |            | 320 | XT5N 400 Ekip Dip LIG In=320 | 1SDA100379R1 | 1SDA100411R1 |
|         |              |            | 400 | XT5N 400 Ekip Dip LIG In=400 | 1SDA100380R1 | 1SDA100412R1 |
| XT5 630 | Ekip Dip LIG |            | 630 | XT5N 630 Ekip Dip LIG In=630 | 1SDA100381R1 | 1SDA100413R1 |

## Motor protection circuit-breakers

### SACE XT5N (36 kA) MA - Front terminals (F)

| Size    | Iu | Trip units | In  | Type                 | 3 poles      | 4 poles |
|---------|----|------------|-----|----------------------|--------------|---------|
|         |    |            |     |                      | Code         | Code    |
| XT5 400 | MA |            | 320 | XT5N 400 MA 320-3200 | 1SDA100364R1 |         |
|         |    |            | 400 | XT5N 400 MA 400-4000 | 1SDA100365R1 |         |
| XT5 630 | MA |            | 500 | XT5N 630 MA 500-5000 | 1SDA100366R1 |         |

### SACE XT5N (36 kA) Ekip M Dip I - Front terminals (F)

| Size    | Iu           | Trip units | In  | Type                          | 3 poles      | 4 poles |
|---------|--------------|------------|-----|-------------------------------|--------------|---------|
|         |              |            |     |                               | Code         | Code    |
| XT5 400 | Ekip M Dip I |            | 320 | XT5N 400 Ekip M Dip I In=320A | 1SDA100367R1 |         |
|         |              |            | 400 | XT5N 400 Ekip M Dip I In=400A | 1SDA100368R1 |         |
| XT5 630 | Ekip M Dip I |            | 630 | XT5N 630 Ekip M Dip I In=630A | 1SDA100369R1 |         |

### SACE XT5N (36 kA) Ekip M Dip LIU - Front terminals (F)

| Size    | Iu             | Trip units | In  | Type                            | 3 poles      | 4 poles |
|---------|----------------|------------|-----|---------------------------------|--------------|---------|
|         |                |            |     |                                 | Code         | Code    |
| XT5 400 | Ekip M Dip LIU |            | 250 | XT5N 400 Ekip M Dip LIU In=250A | 1SDA100370R1 |         |
|         |                |            | 320 | XT5N 400 Ekip M Dip LIU In=320A | 1SDA100371R1 |         |
|         |                |            | 400 | XT5N 400 Ekip M Dip LIU In=400A | 1SDA100372R1 |         |
| XT5 630 | Ekip M Dip LIU |            | 500 | XT5N 630 Ekip M Dip LIU In=500A | 1SDA100373R1 |         |

## Generator protection circuit-breakers

### SACE XT5N (36 kA) TMG - Front terminals (F)

| Size    | Iu  | Trip units | In  | Type                  | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-----------------------|--------------|--------------|
|         |     |            |     |                       | Code         | Code         |
| XT5 400 | TMG |            | 320 | XT5N 400 TMG 320-1600 | 1SDA100374R1 | 1SDA100406R1 |
|         |     |            | 400 | XT5N 400 TMG 400-2000 | 1SDA100375R1 | 1SDA100407R1 |
| XT5 630 | TMG |            | 500 | XT5N 630 TMG 500-2500 | 1SDA100376R1 | 1SDA100408R1 |
|         |     |            | 630 | XT5N 630 TMG 630-3150 | 1SDA100377R1 | 1SDA100409R1 |



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XT5 - circuit-breaker



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XT5 - circuit-breaker

# Ordering codes for XT5

## Automatic circuit-breakers

### Distribution circuit-breakers



XT5 - circuit-breaker

#### SACE XT5S (50 kA) TMA - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-------------------------------|--------------|--------------|
|         |     |            |     |                               | Code         | Code         |
| XT5 400 | TMA |            | 320 | XT5S 400 TMA 320-3200         | 1SDA100414R1 | 1SDA100453R1 |
|         |     |            | 400 | XT5S 400 TMA 400-4000         | 1SDA100415R1 | 1SDA100455R1 |
|         |     |            | 320 | XT5S 400 TMA 320-3200 InN=50% |              | 1SDA100452R1 |
|         |     |            | 400 | XT5S 400 TMA 400-4000 InN=50% |              | 1SDA100454R1 |
| XT5 630 | TMA |            | 500 | XT5S 630 TMA 500-5000         | 1SDA100416R1 | 1SDA100457R1 |
|         |     |            | 630 | XT5S 630 TMA 630-6300         | 1SDA100417R1 | 1SDA100459R1 |
|         |     |            | 500 | XT5S 630 TMA 500-5000 InN=50% |              | 1SDA100456R1 |
|         |     |            | 630 | XT5S 630 TMA 630-6300 InN=50% |              | 1SDA100458R1 |

#### SACE XT5S (50 kA) Ekip Dip LS/I - Front terminals (F)

| Size    | lu            | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|---------------|------------|-----|-------------------------------|--------------|--------------|
|         |               |            |     |                               | Code         | Code         |
| XT5 400 | Ekip Dip LS/I |            | 250 | XT5S 400 Ekip Dip LS/I In=250 | 1SDA100422R1 | 1SDA100464R1 |
|         |               |            | 320 | XT5S 400 Ekip Dip LS/I In=320 | 1SDA100423R1 | 1SDA100465R1 |
|         |               |            | 400 | XT5S 400 Ekip Dip LS/I In=400 | 1SDA100424R1 | 1SDA100466R1 |
| XT5 630 | Ekip Dip LS/I |            | 630 | XT5S 630 Ekip Dip LS/I In=630 | 1SDA100425R1 | 1SDA100467R1 |

#### SACE XT5S (50 kA) Ekip Dip LSI - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                         | 3 poles      | 4 poles      |
|---------|--------------|------------|-----|------------------------------|--------------|--------------|
|         |              |            |     |                              | Code         | Code         |
| XT5 400 | Ekip Dip LSI |            | 250 | XT5S 400 Ekip Dip LSI In=250 | 1SDA100426R1 | 1SDA100468R1 |
|         |              |            | 320 | XT5S 400 Ekip Dip LSI In=320 | 1SDA100427R1 | 1SDA100469R1 |
|         |              |            | 400 | XT5S 400 Ekip Dip LSI In=400 | 1SDA100428R1 | 1SDA100470R1 |
| XT5 630 | Ekip Dip LSI |            | 630 | XT5S 630 Ekip Dip LSI In=630 | 1SDA100429R1 | 1SDA100471R1 |

#### SACE XT5S (50 kA) Ekip Dip LSIG - Front terminals (F)

| Size    | lu            | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|---------|---------------|------------|-----|-------------------------------|--------------|--------------|
|         |               |            |     |                               | Code         | Code         |
| XT5 400 | Ekip Dip LSIG |            | 250 | XT5S 400 Ekip Dip LSIG In=250 | 1SDA100430R1 | 1SDA100472R1 |
|         |               |            | 320 | XT5S 400 Ekip Dip LSIG In=320 | 1SDA100431R1 | 1SDA100473R1 |
|         |               |            | 400 | XT5S 400 Ekip Dip LSIG In=400 | 1SDA100432R1 | 1SDA100474R1 |
| XT5 630 | Ekip Dip LSIG |            | 630 | XT5S 630 Ekip Dip LSIG In=630 | 1SDA100433R1 | 1SDA100475R1 |

#### SACE XT5S (50 kA) Ekip Dip LIG - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                         | 3 poles      | 4 poles      |
|---------|--------------|------------|-----|------------------------------|--------------|--------------|
|         |              |            |     |                              | Code         | Code         |
| XT5 400 | Ekip Dip LIG |            | 250 | XT5S 400 Ekip Dip LIG In=250 | 1SDA100448R1 | 1SDA100480R1 |
|         |              |            | 320 | XT5S 400 Ekip Dip LIG In=320 | 1SDA100449R1 | 1SDA100481R1 |
|         |              |            | 400 | XT5S 400 Ekip Dip LIG In=400 | 1SDA100450R1 | 1SDA100482R1 |
| XT5 630 | Ekip Dip LIG |            | 630 | XT5S 630 Ekip Dip LIG In=630 | 1SDA100451R1 | 1SDA100483R1 |

## Motor protection circuit-breakers

### SACE XT5S (50 kA) MA - Front terminals (F)

| Size    | Iu | Trip units | In  | Type                 | 3 poles      | 4 poles |
|---------|----|------------|-----|----------------------|--------------|---------|
|         |    |            |     |                      | Code         | Code    |
| XT5 400 | MA |            | 320 | XT5S 400 MA 320-3200 | 1SDA100434R1 |         |
|         |    |            | 400 | XT5S 400 MA 400-4000 | 1SDA100435R1 |         |
| XT5 630 | MA |            | 500 | XT5S 630 MA 500-5000 | 1SDA100436R1 |         |

### SACE XT5S (50 kA) Ekip M Dip I - Front terminals (F)

| Size    | Iu           | Trip units | In  | Type                          | 3 poles      | 4 poles |
|---------|--------------|------------|-----|-------------------------------|--------------|---------|
|         |              |            |     |                               | Code         | Code    |
| XT5 400 | Ekip M Dip I |            | 320 | XT5S 400 Ekip M Dip I In=320A | 1SDA100437R1 |         |
|         |              |            | 400 | XT5S 400 Ekip M Dip I In=400A | 1SDA100438R1 |         |
| XT5 630 | Ekip M Dip I |            | 630 | XT5S 630 Ekip M Dip I In=630A | 1SDA100439R1 |         |

### SACE XT5S (50 kA) Ekip M Dip LIU - Front terminals (F)

| Size    | Iu             | Trip units | In  | Type                            | 3 poles      | 4 poles |
|---------|----------------|------------|-----|---------------------------------|--------------|---------|
|         |                |            |     |                                 | Code         | Code    |
| XT5 400 | Ekip M Dip LIU |            | 250 | XT5S 400 Ekip M Dip LIU In=250A | 1SDA100440R1 |         |
|         |                |            | 320 | XT5S 400 Ekip M Dip LIU In=320A | 1SDA100441R1 |         |
|         |                |            | 400 | XT5S 400 Ekip M Dip LIU In=400A | 1SDA100442R1 |         |
| XT5 630 | Ekip M Dip LIU |            | 500 | XT5S 630 Ekip M Dip LIU In=500A | 1SDA100443R1 |         |

## Generator protection circuit-breakers

### SACE XT5S (50 kA) TMG - Front terminals (F)

| Size    | Iu  | Trip units | In  | Type                  | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-----------------------|--------------|--------------|
|         |     |            |     |                       | Code         | Code         |
| XT5 400 | TMG |            | 320 | XT5S 400 TMG 320-1600 | 1SDA100444R1 | 1SDA100476R1 |
|         |     |            | 400 | XT5S 400 TMG 400-2000 | 1SDA100445R1 | 1SDA100477R1 |
| XT5 630 | TMG |            | 500 | XT5S 630 TMG 500-2500 | 1SDA100446R1 | 1SDA100478R1 |
|         |     |            | 630 | XT5S 630 TMG 630-3150 | 1SDA100447R1 | 1SDA100479R1 |



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XT5 - circuit-breaker



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XT5 - circuit-breaker



# Ordering codes for XT5

## Automatic circuit-breakers



XT5 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT5H (70 kA) TMA - Front terminals (F)

| Size | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT5  | 400 | TMA        | 320 | XT5H 400 TMA 320-3200         | 1SDA100484R1 | 1SDA100519R1 |
|      |     |            | 400 | XT5H 400 TMA 400-4000         | 1SDA100485R1 | 1SDA100521R1 |
|      |     |            | 320 | XT5H 400 TMA 320-3200 InN=50% |              | 1SDA100518R1 |
|      |     |            | 400 | XT5H 400 TMA 400-4000 InN=50% |              | 1SDA100520R1 |
| XT5  | 630 | TMA        | 500 | XT5H 630 TMA 500-5000         | 1SDA100486R1 | 1SDA100523R1 |
|      |     |            | 630 | XT5H 630 TMA 630-6300         | 1SDA100487R1 | 1SDA100525R1 |
|      |     |            | 500 | XT5H 630 TMA 500-5000 InN=50% |              | 1SDA100522R1 |
|      |     |            | 630 | XT5H 630 TMA 630-6300 InN=50% |              | 1SDA100524R1 |

#### SACE XT5H (70 kA) Ekip Dip LS/I - Front terminals (F)

| Size | lu  | Trip units    | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|---------------|-----|-------------------------------|--------------|--------------|
|      |     |               |     |                               | Code         | Code         |
| XT5  | 400 | Ekip Dip LS/I | 250 | XT5H 400 Ekip Dip LS/I In=250 | 1SDA100488R1 | 1SDA100526R1 |
|      |     |               | 320 | XT5H 400 Ekip Dip LS/I In=320 | 1SDA100489R1 | 1SDA100527R1 |
|      |     |               | 400 | XT5H 400 Ekip Dip LS/I In=400 | 1SDA100490R1 | 1SDA100528R1 |
| XT5  | 630 | Ekip Dip LS/I | 630 | XT5H 630 Ekip Dip LS/I In=630 | 1SDA100491R1 | 1SDA100529R1 |

#### SACE XT5H (70 kA) Ekip Dip LSI - Front terminals (F)

| Size | lu  | Trip units   | In  | Type                         | 3 poles      | 4 poles      |
|------|-----|--------------|-----|------------------------------|--------------|--------------|
|      |     |              |     |                              | Code         | Code         |
| XT5  | 400 | Ekip Dip LSI | 250 | XT5H 400 Ekip Dip LSI In=250 | 1SDA100492R1 | 1SDA100530R1 |
|      |     |              | 320 | XT5H 400 Ekip Dip LSI In=320 | 1SDA100493R1 | 1SDA100531R1 |
|      |     |              | 400 | XT5H 400 Ekip Dip LSI In=400 | 1SDA100494R1 | 1SDA100532R1 |
| XT5  | 630 | Ekip Dip LSI | 630 | XT5H 630 Ekip Dip LSI In=630 | 1SDA100495R1 | 1SDA100533R1 |

#### SACE XT5H (70 kA) Ekip Dip LSIG - Front terminals (F)

| Size | lu  | Trip units    | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|---------------|-----|-------------------------------|--------------|--------------|
|      |     |               |     |                               | Code         | Code         |
| XT5  | 400 | Ekip Dip LSIG | 250 | XT5H 400 Ekip Dip LSIG In=250 | 1SDA100496R1 | 1SDA100534R1 |
|      |     |               | 320 | XT5H 400 Ekip Dip LSIG In=320 | 1SDA100497R1 | 1SDA100535R1 |
|      |     |               | 400 | XT5H 400 Ekip Dip LSIG In=400 | 1SDA100498R1 | 1SDA100536R1 |
| XT5  | 630 | Ekip Dip LSIG | 630 | XT5H 630 Ekip Dip LSIG In=630 | 1SDA100499R1 | 1SDA100537R1 |

#### SACE XT5H (70 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu  | Trip units   | In  | Type                         | 3 poles      | 4 poles      |
|------|-----|--------------|-----|------------------------------|--------------|--------------|
|      |     |              |     |                              | Code         | Code         |
| XT5  | 400 | Ekip Dip LIG | 250 | XT5H 400 Ekip Dip LIG In=250 | 1SDA100514R1 | 1SDA100542R1 |
|      |     |              | 320 | XT5H 400 Ekip Dip LIG In=320 | 1SDA100515R1 | 1SDA100543R1 |
|      |     |              | 400 | XT5H 400 Ekip Dip LIG In=400 | 1SDA100516R1 | 1SDA100544R1 |
| XT5  | 630 | Ekip Dip LIG | 630 | XT5H 630 Ekip Dip LIG In=630 | 1SDA100517R1 | 1SDA100545R1 |

## Motor protection circuit-breakers

### SACE XT5H (70 kA) MA - Front terminals (F)

| Size    | Iu | Trip units | In  | Type                 | 3 poles      | 4 poles |
|---------|----|------------|-----|----------------------|--------------|---------|
|         |    |            |     |                      | Code         | Code    |
| XT5 400 | MA |            | 320 | XT5H 400 MA 320-3200 | 1SDA100500R1 |         |
|         |    |            | 400 | XT5H 400 MA 400-4000 | 1SDA100501R1 |         |
| XT5 630 | MA |            | 500 | XT5H 630 MA 500-5000 | 1SDA100502R1 |         |

### SACE XT5H (70 kA) Ekip M Dip I - Front terminals (F)

| Size    | Iu           | Trip units | In  | Type                          | 3 poles      | 4 poles |
|---------|--------------|------------|-----|-------------------------------|--------------|---------|
|         |              |            |     |                               | Code         | Code    |
| XT5 400 | Ekip M Dip I |            | 320 | XT5H 400 Ekip M Dip I In=320A | 1SDA100503R1 |         |
|         |              |            | 400 | XT5H 400 Ekip M Dip I In=400A | 1SDA100504R1 |         |
| XT5 630 | Ekip M Dip I |            | 630 | XT5H 630 Ekip M Dip I In=630A | 1SDA100505R1 |         |

### SACE XT5H (70 kA) Ekip M Dip LIU - Front terminals (F)

| Size    | Iu             | Trip units | In  | Type                            | 3 poles      | 4 poles |
|---------|----------------|------------|-----|---------------------------------|--------------|---------|
|         |                |            |     |                                 | Code         | Code    |
| XT5 400 | Ekip M Dip LIU |            | 250 | XT5H 400 Ekip M Dip LIU In=250A | 1SDA100506R1 |         |
|         |                |            | 320 | XT5H 400 Ekip M Dip LIU In=320A | 1SDA100507R1 |         |
|         |                |            | 400 | XT5H 400 Ekip M Dip LIU In=400A | 1SDA100508R1 |         |
| XT5 630 | Ekip M Dip LIU |            | 500 | XT5H 630 Ekip M Dip LIU In=500A | 1SDA100509R1 |         |

## Generator protection circuit-breakers

### SACE XT5H (70 kA) TMG - Front terminals (F)

| Size    | Iu  | Trip units | In  | Type                  | 3 poles      | 4 poles      |
|---------|-----|------------|-----|-----------------------|--------------|--------------|
|         |     |            |     |                       | Code         | Code         |
| XT5 400 | TMG |            | 320 | XT5H 400 TMG 320-1600 | 1SDA100510R1 | 1SDA100538R1 |
|         |     |            | 400 | XT5H 400 TMG 400-2000 | 1SDA100511R1 | 1SDA100539R1 |
| XT5 630 | TMG |            | 500 | XT5H 630 TMG 500-2500 | 1SDA100512R1 | 1SDA100540R1 |
|         |     |            | 630 | XT5H 630 TMG 630-3150 | 1SDA100513R1 | 1SDA100541R1 |



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XT5 - circuit-breaker



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XT5 - circuit-breaker

# Ordering codes for XT5

## Automatic circuit-breakers



XT5 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT5L (120 kA) TMA - Front terminals (F)

| Size | lu  | Trip units | In  | Type                          | 3 poles   | 4 poles |
|------|-----|------------|-----|-------------------------------|---|---------|
|      |     |            |     |                               | Code  | Code    |
| XT5  | 400 | TMA        | 320 | XT5L 400 TMA 320-3200         | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |            | 400 | XT5L 400 TMA 400-4000         |   |         |
|      |     |            | 320 | XT5L 400 TMA 320-3200 InN=50% |   |         |
|      |     |            | 400 | XT5L 400 TMA 400-4000 InN=50% |   |         |
| XT5  | 630 | TMA        | 500 | XT5L 630 TMA 500-5000         |   |         |
|      |     |            | 630 | XT5L 630 TMA 630-6300         |   |         |
|      |     |            | 500 | XT5L 630 TMA 500-5000 InN=50% |   |         |
|      |     |            | 630 | XT5L 630 TMA 630-6300 InN=50% |   |         |

#### SACE XT5L (120 kA) Ekip Dip LS/I - Front terminals (F)

| Size | lu  | Trip units    | In  | Type                          | 3 poles   | 4 poles |
|------|-----|---------------|-----|-------------------------------|---|---------|
|      |     |               |     |                               | Code  | Code    |
| XT5  | 400 | Ekip Dip LS/I | 250 | XT5L 400 Ekip Dip LS/I In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |               | 320 | XT5L 400 Ekip Dip LS/I In=320 |   |         |
|      |     |               | 400 | XT5L 400 Ekip Dip LS/I In=400 |   |         |
| XT5  | 630 | Ekip Dip LS/I | 630 | XT5L 630 Ekip Dip LS/I In=630 |   |         |

#### SACE XT5L (120 kA) Ekip Dip LSI - Front terminals (F)

| Size | lu  | Trip units   | In  | Type                         | 3 poles   | 4 poles |
|------|-----|--------------|-----|------------------------------|---|---------|
|      |     |              |     |                              | Code  | Code    |
| XT5  | 400 | Ekip Dip LSI | 250 | XT5L 400 Ekip Dip LSI In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |              | 320 | XT5L 400 Ekip Dip LSI In=320 |   |         |
|      |     |              | 400 | XT5L 400 Ekip Dip LSI In=400 |   |         |
| XT5  | 630 | Ekip Dip LSI | 630 | XT5L 630 Ekip Dip LSI In=630 |   |         |

#### SACE XT5L (120 kA) Ekip Dip LSIG - Front terminals (F)

| Size | lu  | Trip units    | In  | Type                          | 3 poles   | 4 poles |
|------|-----|---------------|-----|-------------------------------|---|---------|
|      |     |               |     |                               | Code  | Code    |
| XT5  | 400 | Ekip Dip LSIG | 250 | XT5L 400 Ekip Dip LSIG In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |               | 320 | XT5L 400 Ekip Dip LSIG In=320 |   |         |
|      |     |               | 400 | XT5L 400 Ekip Dip LSIG In=400 |   |         |
| XT5  | 630 | Ekip Dip LSIG | 630 | XT5L 630 Ekip Dip LSIG In=630 |   |         |

#### SACE XT5L (120 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu  | Trip units   | In  | Type                         | 3 poles   | 4 poles |
|------|-----|--------------|-----|------------------------------|---|---------|
|      |     |              |     |                              | Code  | Code    |
| XT5  | 400 | Ekip Dip LIG | 250 | XT5L 400 Ekip Dip LIG In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|      |     |              | 320 | XT5L 400 Ekip Dip LIG In=320 |   |         |
|      |     |              | 400 | XT5L 400 Ekip Dip LIG In=400 |   |         |
| XT5  | 630 | Ekip Dip LIG | 630 | XT5L 630 Ekip Dip LIG In=630 |   |         |

## Motor protection circuit-breakers

### SACE XT5L (120 kA) MA - Front terminals (F)

| Size    | lu | Trip units | In  | Type                 | 3 poles   | 4 poles |
|---------|----|------------|-----|----------------------|---|---------|
|         |    |            |     |                      | Code  | Code    |
| XT5 400 | MA |            | 320 | XT5L 400 MA 320-3200 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |    |            | 400 | XT5L 400 MA 400-4000 |   |         |
| XT5 630 | MA |            | 500 | XT5L 630 MA 500-5000 |   |         |

### SACE XT5L (120 kA) Ekip M Dip I - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|--------------|------------|-----|-------------------------------|---|---------|
|         |              |            |     |                               | Code  | Code    |
| XT5 400 | Ekip M Dip I |            | 320 | XT5L 400 Ekip M Dip I In=320A | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |              |            | 400 | XT5L 400 Ekip M Dip I In=400A |   |         |
| XT5 630 | Ekip M Dip I |            | 630 | XT5L 630 Ekip M Dip I In=630A |   |         |

### SACE XT5L (120 kA) Ekip M Dip LIU - Front terminals (F)

| Size    | lu             | Trip units | In  | Type                            | 3 poles   | 4 poles |
|---------|----------------|------------|-----|---------------------------------|---|---------|
|         |                |            |     |                                 | Code  | Code    |
| XT5 400 | Ekip M Dip LIU |            | 250 | XT5L 400 Ekip M Dip LIU In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |                |            | 320 | XT5L 400 Ekip M Dip LIU In=320A |   |         |
|         |                |            | 400 | XT5L 400 Ekip M Dip LIU In=400A |   |         |
| XT5 630 | Ekip M Dip LIU |            | 500 | XT5L 630 Ekip M Dip LIU In=500A |   |         |

## Generator protection circuit-breakers

### SACE XT5L (120 kA) TMG - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                  | 3 poles   | 4 poles |
|---------|-----|------------|-----|-----------------------|---|---------|
|         |     |            |     |                       | Code  | Code    |
| XT5 400 | TMG |            | 320 | XT5L 400 TMG 320-1600 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |     |            | 400 | XT5L 400 TMG 400-2000 |   |         |
| XT5 630 | TMG |            | 500 | XT5L 630 TMG 500-2500 |   |         |
|         |     |            | 630 | XT5L 630 TMG 630-3150 |   |         |



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XT5 - circuit-breaker



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XT5 - circuit-breaker

# Ordering codes for XT5

## Automatic circuit-breakers



XT5 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT5V (200 kA) TMA - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|-----|------------|-----|-------------------------------|---|---------|
|         |     |            |     |                               | Code  | Code    |
| XT5 400 | TMA |            | 320 | XT5V 400 TMA 320-3200         | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |     |            | 400 | XT5V 400 TMA 400-4000         |   |         |
|         |     |            | 320 | XT5V 400 TMA 320-3200 InN=50% |   |         |
|         |     |            | 400 | XT5V 400 TMA 400-4000 InN=50% |   |         |
| XT5 630 | TMA |            | 500 | XT5V 630 TMA 500-5000         |   |         |
|         |     |            | 630 | XT5V 630 TMA 630-6300         |   |         |
|         |     |            | 500 | XT5V 630 TMA 500-5000 InN=50% |   |         |
|         |     |            | 630 | XT5V 630 TMA 630-6300 InN=50% |   |         |

#### SACE XT5V (200 kA) Ekip Dip LS/I - Front terminals (F)

| Size    | lu            | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|---------------|------------|-----|-------------------------------|---|---------|
|         |               |            |     |                               | Code  | Code    |
| XT5 400 | Ekip Dip LS/I |            | 250 | XT5V 400 Ekip Dip LS/I In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |               |            | 320 | XT5V 400 Ekip Dip LS/I In=320 |   |         |
|         |               |            | 400 | XT5V 400 Ekip Dip LS/I In=400 |   |         |
| XT5 630 | Ekip Dip LS/I |            | 630 | XT5V 630 Ekip Dip LS/I In=630 |   |         |

#### SACE XT5V (200 kA) Ekip Dip LSI - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                         | 3 poles   | 4 poles |
|---------|--------------|------------|-----|------------------------------|---|---------|
|         |              |            |     |                              | Code  | Code    |
| XT5 400 | Ekip Dip LSI |            | 250 | XT5V 400 Ekip Dip LSI In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |              |            | 320 | XT5V 400 Ekip Dip LSI In=320 |   |         |
|         |              |            | 400 | XT5V 400 Ekip Dip LSI In=400 |   |         |
| XT5 630 | Ekip Dip LSI |            | 630 | XT5V 630 Ekip Dip LSI In=630 |   |         |

#### SACE XT5V (200 kA) Ekip Dip LSIG - Front terminals (F)

| Size    | lu            | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|---------------|------------|-----|-------------------------------|---|---------|
|         |               |            |     |                               | Code  | Code    |
| XT5 400 | Ekip Dip LSIG |            | 250 | XT5V 400 Ekip Dip LSIG In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |               |            | 320 | XT5V 400 Ekip Dip LSIG In=320 |   |         |
|         |               |            | 400 | XT5V 400 Ekip Dip LSIG In=400 |   |         |
| XT5 630 | Ekip Dip LSIG |            | 630 | XT5V 630 Ekip Dip LSIG In=630 |   |         |

#### SACE XT5V (200 kA) Ekip Dip LIG - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                         | 3 poles   | 4 poles |
|---------|--------------|------------|-----|------------------------------|---|---------|
|         |              |            |     |                              | Code  | Code    |
| XT5 400 | Ekip Dip LIG |            | 250 | XT5V 400 Ekip Dip LIG In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |              |            | 320 | XT5V 400 Ekip Dip LIG In=320 |   |         |
|         |              |            | 400 | XT5V 400 Ekip Dip LIG In=400 |   |         |
| XT5 630 | Ekip Dip LIG |            | 630 | XT5V 630 Ekip Dip LIG In=630 |   |         |

## Motor protection circuit-breakers

### SACE XT5V (200 kA) MA - Front terminals (F)

| Size    | lu | Trip units | In  | Type                 | 3 poles   | 4 poles |
|---------|----|------------|-----|----------------------|---|---------|
|         |    |            |     |                      | Code  | Code    |
| XT5 400 | MA |            | 320 | XT5V 400 MA 320-3200 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |    |            | 400 | XT5V 400 MA 400-4000 |   |         |
| XT5 630 | MA |            | 500 | XT5V 630 MA 500-5000 |   |         |

### SACE XT5V (200 kA) Ekip M Dip I - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|--------------|------------|-----|-------------------------------|---|---------|
|         |              |            |     |                               | Code  | Code    |
| XT5 400 | Ekip M Dip I |            | 320 | XT5V 400 Ekip M Dip I In=320A | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |              |            | 400 | XT5V 400 Ekip M Dip I In=400A |   |         |
| XT5 630 | Ekip M Dip I |            | 630 | XT5V 630 Ekip M Dip I In=630A |   |         |

### SACE XT5V (200 kA) Ekip M Dip LIU - Front terminals (F)

| Size    | lu             | Trip units | In  | Type                            | 3 poles   | 4 poles |
|---------|----------------|------------|-----|---------------------------------|---|---------|
|         |                |            |     |                                 | Code  | Code    |
| XT5 400 | Ekip M Dip LIU |            | 250 | XT5V 400 Ekip M Dip LIU In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |                |            | 320 | XT5V 400 Ekip M Dip LIU In=320A |   |         |
|         |                |            | 400 | XT5V 400 Ekip M Dip LIU In=400A |   |         |
| XT5 630 | Ekip M Dip LIU |            | 500 | XT5V 630 Ekip M Dip LIU In=500A |   |         |

## Generator protection circuit-breakers

### SACE XT5V (200 kA) TMG - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                  | 3 poles   | 4 poles |
|---------|-----|------------|-----|-----------------------|---|---------|
|         |     |            |     |                       | Code  | Code    |
| XT5 400 | TMG |            | 320 | XT5V 400 TMG 320-1600 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |     |            | 400 | XT5V 400 TMG 400-2000 |   |         |
| XT5 630 | TMG |            | 500 | XT5V 630 TMG 500-2500 |   |         |
|         |     |            | 630 | XT5V 630 TMG 630-3150 |   |         |



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XT5 - circuit-breaker



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XT5 - circuit-breaker

# Ordering codes for XT5

## Automatic circuit-breakers



XT5 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT5X (200 kA) TMA - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|-----|------------|-----|-------------------------------|---|---------|
|         |     |            |     |                               | Code  | Code    |
| XT5 400 | TMA |            | 320 | XT5X 400 TMA 320-3200         | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |     |            | 400 | XT5X 400 TMA 400-4000         |   |         |
|         |     |            | 320 | XT5X 400 TMA 320-3200 InN=50% |   |         |
|         |     |            | 400 | XT5X 400 TMA 400-4000 InN=50% |   |         |
| XT5 630 | TMA |            | 500 | XT5X 630 TMA 500-5000         |   |         |
|         |     |            | 630 | XT5X 630 TMA 630-6300         |   |         |
|         |     |            | 500 | XT5X 630 TMA 500-5000 InN=50% |   |         |
|         |     |            | 630 | XT5X 630 TMA 630-6300 InN=50% |   |         |

#### SACE XT5X (200 kA) Ekip Dip LS/I - Front terminals (F)

| Size    | lu            | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|---------------|------------|-----|-------------------------------|---|---------|
|         |               |            |     |                               | Code  | Code    |
| XT5 400 | Ekip Dip LS/I |            | 250 | XT5X 400 Ekip Dip LS/I In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |               |            | 320 | XT5X 400 Ekip Dip LS/I In=320 |   |         |
|         |               |            | 400 | XT5X 400 Ekip Dip LS/I In=400 |   |         |
| XT5 630 | Ekip Dip LS/I |            | 630 | XT5X 630 Ekip Dip LS/I In=630 |   |         |

#### SACE XT5X (200 kA) Ekip Dip LSI - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                         | 3 poles   | 4 poles |
|---------|--------------|------------|-----|------------------------------|---|---------|
|         |              |            |     |                              | Code  | Code    |
| XT5 400 | Ekip Dip LSI |            | 250 | XT5X 400 Ekip Dip LSI In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |              |            | 320 | XT5X 400 Ekip Dip LSI In=320 |   |         |
|         |              |            | 400 | XT5X 400 Ekip Dip LSI In=400 |   |         |
| XT5 630 | Ekip Dip LSI |            | 630 | XT5X 630 Ekip Dip LSI In=630 |   |         |

#### SACE XT5X (200 kA) Ekip Dip LSIG - Front terminals (F)

| Size    | lu            | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|---------------|------------|-----|-------------------------------|---|---------|
|         |               |            |     |                               | Code  | Code    |
| XT5 400 | Ekip Dip LSIG |            | 250 | XT5X 400 Ekip Dip LSIG In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |               |            | 320 | XT5X 400 Ekip Dip LSIG In=320 |   |         |
|         |               |            | 400 | XT5X 400 Ekip Dip LSIG In=400 |   |         |
| XT5 630 | Ekip Dip LSIG |            | 630 | XT5X 630 Ekip Dip LSIG In=630 |   |         |

#### SACE XT5X (200 kA) Ekip Dip LIG - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                         | 3 poles   | 4 poles |
|---------|--------------|------------|-----|------------------------------|---|---------|
|         |              |            |     |                              | Code  | Code    |
| XT5 400 | Ekip Dip LIG |            | 250 | XT5X 400 Ekip Dip LIG In=250 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |              |            | 320 | XT5X 400 Ekip Dip LIG In=320 |   |         |
|         |              |            | 400 | XT5X 400 Ekip Dip LIG In=400 |   |         |
| XT5 630 | Ekip Dip LIG |            | 630 | XT5X 630 Ekip Dip LIG In=630 |   |         |

## Motor protection circuit-breakers

### SACE XT5X (200 kA) MA - Front terminals (F)

| Size    | lu | Trip units | In  | Type                 | 3 poles   | 4 poles |
|---------|----|------------|-----|----------------------|---|---------|
|         |    |            |     |                      | Code  | Code    |
| XT5 400 | MA |            | 320 | XT5X 400 MA 320-3200 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |    |            | 400 | XT5X 400 MA 400-4000 |   |         |
| XT5 630 | MA |            | 500 | XT5X 630 MA 500-5000 |   |         |

### SACE XT5X (200 kA) Ekip M Dip I - Front terminals (F)

| Size    | lu           | Trip units | In  | Type                          | 3 poles   | 4 poles |
|---------|--------------|------------|-----|-------------------------------|---|---------|
|         |              |            |     |                               | Code  | Code    |
| XT5 400 | Ekip M Dip I |            | 320 | XT5X 400 Ekip M Dip I In=320A | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |              |            | 400 | XT5X 400 Ekip M Dip I In=400A |   |         |
| XT5 630 | Ekip M Dip I |            | 630 | XT5X 630 Ekip M Dip I In=630A |   |         |

### SACE XT5X (200 kA) Ekip M Dip LIU - Front terminals (F)

| Size    | lu             | Trip units | In  | Type                            | 3 poles   | 4 poles |
|---------|----------------|------------|-----|---------------------------------|---|---------|
|         |                |            |     |                                 | Code  | Code    |
| XT5 400 | Ekip M Dip LIU |            | 250 | XT5X 400 Ekip M Dip LIU In=250A | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |                |            | 320 | XT5X 400 Ekip M Dip LIU In=320A |   |         |
|         |                |            | 400 | XT5X 400 Ekip M Dip LIU In=400A |   |         |
| XT5 630 | Ekip M Dip LIU |            | 500 | XT5X 630 Ekip M Dip LIU In=500A |   |         |

## Generator protection circuit-breakers

### SACE XT5X (200 kA) TMG - Front terminals (F)

| Size    | lu  | Trip units | In  | Type                  | 3 poles   | 4 poles |
|---------|-----|------------|-----|-----------------------|---|---------|
|         |     |            |     |                       | Code  | Code    |
| XT5 400 | TMG |            | 320 | XT5X 400 TMG 320-1600 | Only available with the Breaking Part<br>+ Trip unit solution |         |
|         |     |            | 400 | XT5X 400 TMG 400-2000 |   |         |
| XT5 630 | TMG |            | 500 | XT5X 630 TMG 500-2500 |   |         |
|         |     |            | 630 | XT5X 630 TMG 630-3150 |   |         |



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XT5 - circuit-breaker



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XT5 - circuit-breaker



# Ordering codes for XT5

## Switch-disconnectors



XT5D -  
switch-disconnector

| SACE XT5D - Switch-disconnectors |     |          |              |              |
|----------------------------------|-----|----------|--------------|--------------|
| Size                             | Iu  | Type     | 3 poles      | 4 poles      |
|                                  |     |          | Code         | Code         |
| XT5                              | 400 | XT5D 400 | 1SDA100546R1 | 1SDA100548R1 |
|                                  | 630 | XT5D 630 | 1SDA100547R1 | 1SDA100549R1 |

# Ordering codes for XT5

## Breaking part



XT5 - breaking part

| SACE XT5 - Breaking part |     |                |                        |              |              |
|--------------------------|-----|----------------|------------------------|--------------|--------------|
| Size                     | Iu  | Icu<br>(415 V) | Type                   | 3 poles      | 4 poles      |
|                          |     |                |                        | Code         | Code         |
| XT5                      | 400 | 36             | XT5N 400 Breaking part | 1SDA100550R1 | 1SDA100552R1 |
|                          | 630 | 36             | XT5N 630 Breaking part | 1SDA100551R1 | 1SDA100553R1 |
|                          | 400 | 50             | XT5S 400 Breaking part | 1SDA100554R1 | 1SDA100556R1 |
|                          | 630 | 50             | XT5S 630 Breaking part | 1SDA100555R1 | 1SDA100557R1 |
|                          | 400 | 70             | XT5H 400 Breaking part | 1SDA100558R1 | 1SDA100560R1 |
|                          | 630 | 70             | XT5H 630 Breaking part | 1SDA100559R1 | 1SDA100561R1 |
|                          | 400 | 120            | XT5L 400 Breaking part | 1SDA100562R1 | 1SDA100564R1 |
|                          | 630 | 120            | XT5L 630 Breaking part | 1SDA100563R1 | 1SDA100565R1 |
|                          | 400 | 150            | XT5V 400 Breaking part | 1SDA100566R1 | 1SDA100568R1 |
|                          | 630 | 150            | XT5V 630 Breaking part | 1SDA100567R1 | 1SDA100569R1 |
|                          | 400 | 200            | XT5X 400 Breaking part | 1SDA100571R1 | 1SDA100573R1 |
|                          | 630 | 200            | XT5X 630 Breaking part | 1SDA100570R1 | 1SDA100572R1 |

# Ordering codes for XT5

## Trip units

### Trip units - Distribution protection

| Size | Type                             | 3 poles      | 4 poles      |
|------|----------------------------------|--------------|--------------|
|      |                                  | Code         | Code         |
| XT5  | TMA 320-3200                     | 1SDA100574R1 | 1SDA100655R1 |
|      | TMA 400-4000                     | 1SDA100575R1 | 1SDA100656R1 |
|      | TMA 500-5000                     | 1SDA100576R1 | 1SDA100657R1 |
|      | TMA 630-6300                     | 1SDA100577R1 | 1SDA100658R1 |
|      | TMA 320-3200 InN=50%             |              | 1SDA100651R1 |
|      | TMA 400-4000 InN=50%             |              | 1SDA100652R1 |
|      | TMA 500-5000 InN=50%             |              | 1SDA100653R1 |
|      | TMA 630-6300 InN=50%             |              | 1SDA100654R1 |
|      | Ekip Dip LS/I In=250             | 1SDA100578R1 | 1SDA100659R1 |
|      | Ekip Dip LS/I In=320             | 1SDA100579R1 | 1SDA100660R1 |
|      | Ekip Dip LS/I In=400             | 1SDA100580R1 | 1SDA100661R1 |
|      | Ekip Dip LS/I In=630             | 1SDA100581R1 | 1SDA100662R1 |
|      | Ekip Dip LSI In=250              | 1SDA100582R1 | 1SDA100663R1 |
|      | Ekip Dip LSI In=320              | 1SDA100583R1 | 1SDA100664R1 |
|      | Ekip Dip LSI In=400              | 1SDA100584R1 | 1SDA100665R1 |
|      | Ekip Dip LSI In=630              | 1SDA100585R1 | 1SDA100666R1 |
|      | Ekip Dip LSIG In=250             | 1SDA100586R1 | 1SDA100667R1 |
|      | Ekip Dip LSIG In=320             | 1SDA100587R1 | 1SDA100668R1 |
|      | Ekip Dip LSIG In=400             | 1SDA100588R1 | 1SDA100669R1 |
|      | Ekip Dip LSIG In=630             | 1SDA100589R1 | 1SDA100670R1 |
|      | Ekip Dip LIG In=250              | 1SDA100647R1 | 1SDA100714R1 |
|      | Ekip Dip LIG In=320              | 1SDA100648R1 | 1SDA100715R1 |
|      | Ekip Dip LIG In=400              | 1SDA100649R1 | 1SDA100716R1 |
|      | Ekip Dip LIG In=630              | 1SDA100650R1 | 1SDA100717R1 |
|      | Ekip Touch LSI In=250            | 1SDA100590R1 | 1SDA100671R1 |
|      | Ekip Touch LSI In=320            | 1SDA100591R1 | 1SDA100672R1 |
|      | Ekip Touch LSI In=400            | 1SDA100592R1 | 1SDA100673R1 |
|      | Ekip Touch LSI In=630            | 1SDA100593R1 | 1SDA100674R1 |
|      | Ekip Touch LSIG In=250           | 1SDA100594R1 | 1SDA100675R1 |
|      | Ekip Touch LSIG In=320           | 1SDA100595R1 | 1SDA100676R1 |
|      | Ekip Touch LSIG In=400           | 1SDA100596R1 | 1SDA100677R1 |
|      | Ekip Touch LSIG In=630           | 1SDA100597R1 | 1SDA100678R1 |
|      | Ekip Touch Measuring LSI In=250  | 1SDA100598R1 | 1SDA100679R1 |
|      | Ekip Touch Measuring LSI In=320  | 1SDA100599R1 | 1SDA100680R1 |
|      | Ekip Touch Measuring LSI In=400  | 1SDA100600R1 | 1SDA100681R1 |
|      | Ekip Touch Measuring LSI In=630  | 1SDA100601R1 | 1SDA100682R1 |
|      | Ekip Touch Measuring LSIG In=250 | 1SDA100602R1 | 1SDA100683R1 |
|      | Ekip Touch Measuring LSIG In=320 | 1SDA100603R1 | 1SDA100684R1 |
|      | Ekip Touch Measuring LSIG In=400 | 1SDA100604R1 | 1SDA100685R1 |
|      | Ekip Touch Measuring LSIG In=630 | 1SDA100605R1 | 1SDA100686R1 |
|      | Ekip Hi-Touch LSI In=250         | 1SDA100606R1 | 1SDA100687R1 |
|      | Ekip Hi-Touch LSI In=320         | 1SDA100607R1 | 1SDA100688R1 |
|      | Ekip Hi-Touch LSI In=400         | 1SDA100608R1 | 1SDA100689R1 |
|      | Ekip Hi-Touch LSI In=630         | 1SDA100609R1 | 1SDA100690R1 |
|      | Ekip Hi-Touch LSIG In=250        | 1SDA100610R1 | 1SDA100691R1 |
|      | Ekip Hi-Touch LSIG In=320        | 1SDA100611R1 | 1SDA100692R1 |
|      | Ekip Hi-Touch LSIG In=400        | 1SDA100612R1 | 1SDA100693R1 |
|      | Ekip Hi-Touch LSIG In=630        | 1SDA100613R1 | 1SDA100694R1 |



Thermal magnetic  
trip unit



Dip trip unit



Touch trip unit

**Trip units - Motor protection**

| Size | Type                     | 3 poles      | 4 poles |
|------|--------------------------|--------------|---------|
|      |                          | Code         | Code    |
| XT5  | MA 320 Im=2240...4160    | 1SDA100614R1 |         |
|      | MA 400 Im=2800...5200    | 1SDA100615R1 |         |
|      | MA 500 Im=3500...6500    | 1SDA100616R1 |         |
|      | Ekip M Dip I In=320      | 1SDA100617R1 |         |
|      | Ekip M Dip I In=400      | 1SDA100618R1 |         |
|      | Ekip M Dip I In=630      | 1SDA100619R1 |         |
|      | Ekip M Dip LIU In=250    | 1SDA100620R1 |         |
|      | Ekip M Dip LIU In=320    | 1SDA100621R1 |         |
|      | Ekip M Dip LIU In=400    | 1SDA100622R1 |         |
|      | Ekip M Dip LIU In=500    | 1SDA100623R1 |         |
|      | Ekip M Touch LRIU In=250 | 1SDA100624R1 |         |
|      | Ekip M Touch LRIU In=320 | 1SDA100625R1 |         |
|      | Ekip M Touch LRIU In=400 | 1SDA100626R1 |         |
|      | Ekip M Touch LRIU In=500 | 1SDA100627R1 |         |

**Trip units - Generator protection**

| Size | Type                          | 3 poles      | 4 poles      |
|------|-------------------------------|--------------|--------------|
|      |                               | Code         | Code         |
| XT5  | TMG 320-1600                  | 1SDA100628R1 | 1SDA100695R1 |
|      | TMG 400-2000                  | 1SDA100629R1 | 1SDA100696R1 |
|      | TMG 500-2500                  | 1SDA100630R1 | 1SDA100697R1 |
|      | TMG 630-3150                  | 1SDA100631R1 | 1SDA100698R1 |
|      | Ekip G Dip LS/I In=250 3p XT5 | 1SDA100632R1 | 1SDA100699R1 |
|      | Ekip G Dip LS/I In=320 3p XT5 | 1SDA100633R1 | 1SDA100700R1 |
|      | Ekip G Dip LS/I In=400 3p XT5 | 1SDA100634R1 | 1SDA100701R1 |
|      | Ekip G Dip LS/I In=630 3p XT5 | 1SDA100635R1 | 1SDA100702R1 |
|      | Ekip G Touch LSIG In=250      | 1SDA100636R1 | 1SDA100703R1 |
|      | Ekip G Touch LSIG In=320      | 1SDA100637R1 | 1SDA100704R1 |
|      | Ekip G Touch LSIG In=400      | 1SDA100638R1 | 1SDA100705R1 |
|      | Ekip G Touch LSIG In=630      | 1SDA100639R1 | 1SDA100706R1 |
|      | Ekip G Hi-Touch LSIG In=250   | 1SDA100640R1 | 1SDA100707R1 |
|      | Ekip G Hi-Touch LSIG In=320   | 1SDA100641R1 | 1SDA100708R1 |
|      | Ekip G Hi-Touch LSIG In=400   | 1SDA100642R1 | 1SDA100709R1 |
|      | Ekip G Hi-Touch LSIG In=630   | 1SDA100643R1 | 1SDA100710R1 |

# Ordering codes for XT5

## Breaking part + trip unit solution



XT5 Breaking part



Thermal-Magnetic trip unit



Ekip Dip Trip Unit



Ekip Touch trip unit

| Breaking Part | Icu   |     | N (36 kA) | S (50 kA) | H (70 kA) | L (120 kA) | V (200 kA) | X (200 kA) |
|---------------|-------|-----|-----------|-----------|-----------|------------|------------|------------|
|               | Poles | Iu  |           |           |           |            |            |            |
|               | 3     | 400 | 100550    | 100554    | 100558    | 100562     | 100566     | 100570     |
|               | 3     | 630 | 100551    | 100555    | 100559    | 100563     | 100567     | 100571     |
|               | 4     | 400 | 100552    | 100556    | 100560    | 100564     | 100568     | 100572     |
|               | 4     | 630 | 100553    | 100557    | 100561    | 100565     | 100569     | 100573     |

| Trip units                | In    |  | 250     | 320     | 400     | 500     | 630    |
|---------------------------|-------|--|---------|---------|---------|---------|--------|
|                           | Poles |  |         |         |         |         |        |
| TMA                       | 3     |  | 100574  | 100575  | 100576  | 100577  |        |
|                           | 4     |  | 100655* | 100656* | 100657* | 100658* |        |
| Ekip Dip LS/I             | 3     |  | 100578  | 100579  | 100580  |         | 100581 |
|                           | 4     |  | 100659  | 100660  | 100661  |         | 100662 |
| Ekip Dip LSI              | 3     |  | 100582  | 100583  | 100584  |         | 100585 |
|                           | 4     |  | 100663  | 100664  | 100665  |         | 100666 |
| Ekip Dip LSIG             | 3     |  | 100586  | 100587  | 100588  |         | 100589 |
|                           | 4     |  | 100667  | 100668  | 100669  |         | 100670 |
| Ekip Dip LIG              | 3     |  | 100647  | 100648  | 100649  |         | 100650 |
|                           | 4     |  | 100714  | 100715  | 100716  |         | 100717 |
| Ekip Touch LSI            | 3     |  | 100590  | 100591  | 100592  |         | 100593 |
|                           | 4     |  | 100671  | 100672  | 100673  |         | 100674 |
| Ekip Touch LSIG           | 3     |  | 100594  | 100595  | 100596  |         | 100597 |
|                           | 4     |  | 100675  | 100676  | 100677  |         | 100678 |
| Ekip Touch Measuring LSI  | 3     |  | 100598  | 100599  | 100600  |         | 100601 |
|                           | 4     |  | 100679  | 100680  | 100681  |         | 100682 |
| Ekip Touch Measuring LSIG | 3     |  | 100602  | 100603  | 100604  |         | 100605 |
|                           | 4     |  | 100683  | 100684  | 100685  |         | 100686 |
| Ekip Hi-Touch LSI         | 3     |  | 100606  | 100607  | 100608  |         | 100609 |
|                           | 4     |  | 100687  | 100688  | 100689  |         | 100690 |
| Ekip Hi-Touch LSIG        | 3     |  | 100610  | 100611  | 100612  |         | 100613 |
|                           | 4     |  | 100691  | 100692  | 100693  |         | 100694 |
| MA                        | 3     |  | 100614  | 100615  | 100616  |         |        |
| Ekip M Dip I              | 3     |  | 100617  | 100618  |         | 100619  |        |
| Ekip M Dip LIU            | 3     |  | 100620  | 100621  | 100622  | 100623  |        |
| Ekip M Touch LRIU         | 3     |  | 100624  | 100625  | 100626  | 100627  |        |
| TMG                       | 3     |  | 100628  | 100629  | 100630  | 100631  |        |
|                           | 4     |  | 100695  | 100696  | 100697  | 100698  |        |
| Ekip G Dip LS/I           | 3     |  | 100632  | 100633  | 100634  |         | 100635 |
|                           | 4     |  | 100699  | 100700  | 100701  |         | 100702 |
| Ekip G Touch LSIG         | 3     |  | 100636  | 100637  | 100638  |         | 100639 |
|                           | 4     |  | 100703  | 100704  | 100705  |         | 100706 |
| Ekip G Hi-Touch LSIG      | 3     |  | 100640  | 100641  | 100642  |         | 100643 |
|                           | 4     |  | 100707  | 100708  | 100709  |         | 100710 |

\* InN= 100%. Combinations available for InN=50% too. For ordering codes, please see in reference pages 'trip Units'

Note: When a single code for the complete circuit-breaker is not available, please configure the breaking part code with the trip unit code to order a factory-assembled circuit-breaker

# Ordering codes for XT6

## Automatic circuit-breakers



XT6 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT6N (36 kA) TMA - Front terminals (F)

| Size | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT6  | 800 | TMA        | 630 | XT6N 800 TMA 630-6300         | 1SDA107561R1 | 1SDA107569R1 |
|      |     |            | 630 | XT6N 800 TMA 630-6300 InN=50% |              | 1SDA107568R1 |
|      |     |            | 800 | XT6N 800 TMA 800-8000         | 1SDA100718R1 | 1SDA100731R1 |
|      |     |            | 800 | XT6N 800 TMA 800-8000 InN=50% |              | 1SDA100730R1 |

#### SACE XT6N (36 kA) Ekip Dip LS/I - Front terminals (F)

| Size | lu   | Trip units    | In                  | Type                            | 3 poles      | 4 poles      |
|------|------|---------------|---------------------|---------------------------------|--------------|--------------|
|      |      |               |                     |                                 | Code         | Code         |
| XT6  | 800  | Ekip Dip LS/I | 630                 | XT6N 800 Ekip Dip LS/I In=630   | 1SDA107562R1 | 1SDA107570R1 |
|      |      |               | 800                 | XT6N 800 Ekip Dip LS/I In=800   | 1SDA100719R1 | 1SDA100732R1 |
| XT6  | 1000 | Ekip Dip LS/I | 1000 <sup>(1)</sup> | XT6N 1000 Ekip Dip LS/I In=1000 | 1SDA100720R1 | 1SDA100733R1 |

#### SACE XT6N (36 kA) Ekip Dip LSI - Front terminals (F)

| Size | lu   | Trip units   | In                  | Type                           | 3 poles      | 4 poles      |
|------|------|--------------|---------------------|--------------------------------|--------------|--------------|
|      |      |              |                     |                                | Code         | Code         |
| XT6  | 800  | Ekip Dip LSI | 630                 | XT6N 800 Ekip Dip LSI In=630   | 1SDA107563R1 | 1SDA107571R1 |
|      |      |              | 800                 | XT6N 800 Ekip Dip LSI In=800   | 1SDA100721R1 | 1SDA100734R1 |
| XT6  | 1000 | Ekip Dip LSI | 1000 <sup>(1)</sup> | XT6N 1000 Ekip Dip LSI In=1000 | 1SDA100722R1 | 1SDA100735R1 |

#### SACE XT6N (36 kA) Ekip Dip LSIG - Front terminals (F)

| Size | lu   | Trip units    | In                  | Type                            | 3 poles      | 4 poles      |
|------|------|---------------|---------------------|---------------------------------|--------------|--------------|
|      |      |               |                     |                                 | Code         | Code         |
| XT6  | 800  | Ekip Dip LSIG | 630                 | XT6N 800 Ekip Dip LSIG In=630   | 1SDA107564R1 | 1SDA107572R1 |
|      |      |               | 800                 | XT6N 800 Ekip Dip LSIG In=800   | 1SDA100723R1 | 1SDA100736R1 |
| XT6  | 1000 | Ekip Dip LSIG | 1000 <sup>(1)</sup> | XT6N 1000 Ekip Dip LSIG In=1000 | 1SDA100724R1 | 1SDA100737R1 |

#### SACE XT6N (36 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu   | Trip units   | In                  | Type                           | 3 poles      | 4 poles      |
|------|------|--------------|---------------------|--------------------------------|--------------|--------------|
|      |      |              |                     |                                | Code         | Code         |
| XT6  | 800  | Ekip Dip LIG | 630                 | XT6N 800 Ekip Dip LIG In=630   | 1SDA107567R1 | 1SDA107573R1 |
|      |      |              | 800                 | XT6N 800 Ekip Dip LIG In=800   | 1SDA100728R1 | 1SDA100738R1 |
| XT6  | 1000 | Ekip Dip LIG | 1000 <sup>(1)</sup> | XT6N 1000 Ekip Dip LIG In=1000 | 1SDA100729R1 | 1SDA100739R1 |

### Motor protection circuit-breakers

#### SACE XT6N (36 kA) Ekip M Dip I - Front terminals (F)

| Size | lu   | Trip units   | In                  | Type                            | 3 poles      | 4 poles |
|------|------|--------------|---------------------|---------------------------------|--------------|---------|
|      |      |              |                     |                                 | Code         | Code    |
| XT6  | 800  | Ekip M Dip I | 630                 | XT6N 800 Ekip M Dip I In=630    | 1SDA107565R1 |         |
|      |      |              | 800                 | XT6N 800 Ekip M Dip I In=800A   | 1SDA100725R1 |         |
| XT6  | 1000 | Ekip M Dip I | 1000 <sup>(1)</sup> | XT6N 1000 Ekip M Dip I In=1000A | 1SDA100726R1 |         |

#### SACE XT6N (36 kA) Ekip M Dip LIU - Front terminals (F)

| Size | lu  | Trip units     | In  | Type                            | 3 poles      | 4 poles |
|------|-----|----------------|-----|---------------------------------|--------------|---------|
|      |     |                |     |                                 | Code         | Code    |
| XT6  | 800 | Ekip M Dip LIU | 630 | XT6N 800 Ekip M Dip LIU In=630  | 1SDA107566R1 |         |
|      |     |                | 800 | XT6N 800 Ekip M Dip LIU In=800A | 1SDA100727R1 |         |



XT6 - circuit-breaker

(1) 1000A only with EF, ES, R and FCCuAl terminals. EF terminals are supplied as standard if no other terminals are ordered

# Ordering codes for XT6

## Automatic circuit-breakers



XT6 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT6S (50 kA) TMA - Front terminals (F)

| Size | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT6  | 800 | TMA        | 630 | XT6S 800 TMA 630-6300         | 1SDA107574R1 | 1SDA107582R1 |
|      |     |            | 630 | XT6S 800 TMA 630-6300 InN=50% |              | 1SDA107581R1 |
|      |     |            | 800 | XT6S 800 TMA 800-8000         | 1SDA100740R1 | 1SDA100753R1 |
|      |     |            | 800 | XT6S 800 TMA 800-8000 InN=50% |              | 1SDA100752R1 |

#### SACE XT6S (50 kA) Ekip Dip LS/I - Front terminals (F)

| Size | lu   | Trip units    | In                  | Type                            | 3 poles      | 4 poles      |
|------|------|---------------|---------------------|---------------------------------|--------------|--------------|
|      |      |               |                     |                                 | Code         | Code         |
| XT6  | 800  | Ekip Dip LS/I | 630                 | XT6S 800 Ekip Dip LS/I In=630   | 1SDA107575R1 | 1SDA107583R1 |
|      |      |               | 800                 | XT6S 800 Ekip Dip LS/I In=800   | 1SDA100741R1 | 1SDA100754R1 |
| XT6  | 1000 | Ekip Dip LS/I | 1000 <sup>(1)</sup> | XT6S 1000 Ekip Dip LS/I In=1000 | 1SDA100742R1 | 1SDA100755R1 |

#### SACE XT6S (50 kA) Ekip Dip LSI - Front terminals (F)

| Size | lu   | Trip units   | In                  | Type                           | 3 poles      | 4 poles      |
|------|------|--------------|---------------------|--------------------------------|--------------|--------------|
|      |      |              |                     |                                | Code         | Code         |
| XT6  | 800  | Ekip Dip LSI | 630                 | XT6S 800 Ekip Dip LSI In=630   | 1SDA107576R1 | 1SDA107584R1 |
|      |      |              | 800                 | XT6S 800 Ekip Dip LSI In=800   | 1SDA100743R1 | 1SDA100756R1 |
| XT6  | 1000 | Ekip Dip LSI | 1000 <sup>(1)</sup> | XT6S 1000 Ekip Dip LSI In=1000 | 1SDA100744R1 | 1SDA100757R1 |

#### SACE XT6S (50 kA) Ekip Dip LSIG - Front terminals (F)

| Size | lu   | Trip units    | In                  | Type                            | 3 poles      | 4 poles      |
|------|------|---------------|---------------------|---------------------------------|--------------|--------------|
|      |      |               |                     |                                 | Code         | Code         |
| XT6  | 800  | Ekip Dip LSIG | 630                 | XT6S 800 Ekip Dip LSIG In=630   | 1SDA107577R1 | 1SDA107585R1 |
|      |      |               | 800                 | XT6S 800 Ekip Dip LSIG In=800   | 1SDA100745R1 | 1SDA100758R1 |
| XT6  | 1000 | Ekip Dip LSIG | 1000 <sup>(1)</sup> | XT6S 1000 Ekip Dip LSIG In=1000 | 1SDA100746R1 | 1SDA100759R1 |

#### SACE XT6S (50 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu   | Trip units   | In                  | Type                           | 3 poles      | 4 poles      |
|------|------|--------------|---------------------|--------------------------------|--------------|--------------|
|      |      |              |                     |                                | Code         | Code         |
| XT6  | 800  | Ekip Dip LIG | 630                 | XT6S 800 Ekip Dip LIG In=630   | 1SDA107580R1 | 1SDA107586R1 |
|      |      |              | 800                 | XT6S 800 Ekip Dip LIG In=800   | 1SDA100750R1 | 1SDA100760R1 |
| XT6  | 1000 | Ekip Dip LIG | 1000 <sup>(1)</sup> | XT6S 1000 Ekip Dip LIG In=1000 | 1SDA100751R1 | 1SDA100761R1 |

### Motor protection circuit-breakers

#### SACE XT6S (50 kA) Ekip M Dip I - Front terminals (F)

| Size | lu   | Trip units   | In                  | Type                           | 3 poles      | 4 poles |
|------|------|--------------|---------------------|--------------------------------|--------------|---------|
|      |      |              |                     |                                | Code         | Code    |
| XT6  | 800  | Ekip M Dip I | 630                 | XT6S 800 Ekip M Dip I In=630   | 1SDA107578R1 |         |
|      |      |              | 800                 | XT6S 800 Ekip M Dip I In=800   | 1SDA100747R1 |         |
| XT6  | 1000 | Ekip M Dip I | 1000 <sup>(1)</sup> | XT6S 1000 Ekip M Dip I In=1000 | 1SDA100748R1 |         |

#### SACE XT6S (50 kA) Ekip M Dip LIU - Front terminals (F)

| Size | lu  | Trip units     | In  | Type                            | 3 poles      | 4 poles |
|------|-----|----------------|-----|---------------------------------|--------------|---------|
|      |     |                |     |                                 | Code         | Code    |
| XT6  | 800 | Ekip M Dip LIU | 630 | XT6S 800 Ekip M Dip LIU In=630  | 1SDA107579R1 |         |
|      |     |                | 800 | XT6S 800 Ekip M Dip LIU In=800A | 1SDA100749R1 |         |

(1) 1000A only with EF, ES, R and FCCuAl terminals. EF terminals are supplied as standard if no other terminals are ordered



XT6 - circuit-breaker



XT6 - circuit-breaker

## Distribution circuit-breakers

**SACE XT6H (70 kA) TMA - Front terminals (F)**

| Size | lu  | Trip units | In  | Type                          | 3 poles      | 4 poles      |
|------|-----|------------|-----|-------------------------------|--------------|--------------|
|      |     |            |     |                               | Code         | Code         |
| XT6  | 800 | TMA        | 630 | XT6H 800 TMA 630-6300         | 1SDA107587R1 | 1SDA107595R1 |
|      |     |            | 630 | XT6H 800 TMA 630-6300 InN=50% |              | 1SDA107594R1 |
|      |     |            | 800 | XT6H 800 TMA 800-8000         | 1SDA100762R1 | 1SDA100775R1 |
|      |     |            | 800 | XT6H 800 TMA 800-8000 InN=50% |              | 1SDA100774R1 |

**SACE XT6H (70 kA) Ekip Dip LS/I - Front terminals (F)**

| Size | lu   | Trip units    | In                  | Type                            | 3 poles      | 4 poles      |
|------|------|---------------|---------------------|---------------------------------|--------------|--------------|
|      |      |               |                     |                                 | Code         | Code         |
| XT6  | 800  | Ekip Dip LS/I | 630                 | XT6H 800 Ekip Dip LS/I In=630   | 1SDA107588R1 | 1SDA107596R1 |
|      |      |               | 800                 | XT6H 800 Ekip Dip LS/I In=800   | 1SDA100763R1 | 1SDA100776R1 |
| XT6  | 1000 | Ekip Dip LS/I | 1000 <sup>(1)</sup> | XT6H 1000 Ekip Dip LS/I In=1000 | 1SDA100764R1 | 1SDA100777R1 |

**SACE XT6H (70 kA) Ekip Dip LSI - Front terminals (F)**

| Size | lu   | Trip units   | In                  | Type                           | 3 poles      | 4 poles      |
|------|------|--------------|---------------------|--------------------------------|--------------|--------------|
|      |      |              |                     |                                | Code         | Code         |
| XT6  | 800  | Ekip Dip LSI | 630                 | XT6H 800 Ekip Dip LSI In=630   | 1SDA107589R1 | 1SDA107597R1 |
|      |      |              | 800                 | XT6H 800 Ekip Dip LSI In=800   | 1SDA100765R1 | 1SDA100778R1 |
| XT6  | 1000 | Ekip Dip LSI | 1000 <sup>(1)</sup> | XT6H 1000 Ekip Dip LSI In=1000 | 1SDA100766R1 | 1SDA100779R1 |

**SACE XT6H (70 kA) Ekip Dip LSIG - Front terminals (F)**

| Size | lu   | Trip units    | In                  | Type                            | 3 poles      | 4 poles      |
|------|------|---------------|---------------------|---------------------------------|--------------|--------------|
|      |      |               |                     |                                 | Code         | Code         |
| XT6  | 800  | Ekip Dip LSIG | 630                 | XT6H 800 Ekip Dip LSIG In=630   | 1SDA107590R1 | 1SDA107598R1 |
|      |      |               | 800                 | XT6H 800 Ekip Dip LSIG In=800   | 1SDA100767R1 | 1SDA100780R1 |
| XT6  | 1000 | Ekip Dip LSIG | 1000 <sup>(1)</sup> | XT6H 1000 Ekip Dip LSIG In=1000 | 1SDA100768R1 | 1SDA100781R1 |

**SACE XT6H (70 kA) Ekip Dip LIG - Front terminals (F)**

| Size | lu   | Trip units   | In                  | Type                            | 3 poles      | 4 poles      |
|------|------|--------------|---------------------|---------------------------------|--------------|--------------|
|      |      |              |                     |                                 | Code         | Code         |
| XT6  | 800  | Ekip Dip LIG | 630                 | XT6H 800 Ekip Dip LIG In=630    | 1SDA107593R1 | 1SDA107599R1 |
|      |      |              | 800                 | XT6H 800 Ekip Dip LSIG In=800   | 1SDA100772R1 | 1SDA100782R1 |
| XT6  | 1000 | Ekip Dip LIG | 1000 <sup>(1)</sup> | XT6H 1000 Ekip Dip LSIG In=1000 | 1SDA100773R1 | 1SDA100783R1 |

## Motor protection circuit-breakers

**SACE XT6H (70 kA) Ekip M Dip I - Front terminals (F)**

| Size | lu   | Trip units   | In                  | Type                           | 3 poles      | 4 poles |
|------|------|--------------|---------------------|--------------------------------|--------------|---------|
|      |      |              |                     |                                | Code         | Code    |
| XT6  | 800  | Ekip M Dip I | 630                 | XT6H 800 Ekip M Dip I In=630   | 1SDA107591R1 |         |
|      |      |              | 800                 | XT6H 800 Ekip M Dip I In=800   | 1SDA100769R1 |         |
| XT6  | 1000 | Ekip M Dip I | 1000 <sup>(1)</sup> | XT6H 1000 Ekip M Dip I In=1000 | 1SDA100770R1 |         |

**SACE XT6H (70 kA) Ekip M Dip LIU - Front terminals (F)**

| Size | lu  | Trip units     | In  | Type                            | 3 poles      | 4 poles |
|------|-----|----------------|-----|---------------------------------|--------------|---------|
|      |     |                |     |                                 | Code         | Code    |
| XT6  | 800 | Ekip M Dip LIU | 630 | XT6H 800 Ekip M Dip LIU In=630  | 1SDA107592R1 |         |
|      |     |                | 800 | XT6H 800 Ekip M Dip LIU In=800A | 1SDA100771R1 |         |

(1) 1000A only with EF, ES, R and FCCuAl terminals. EF terminals are supplied as standard if no other terminals are ordered



XT6 - circuit-breaker



# Ordering codes for XT6

## Switch-disconnectors



XT6 -  
switch-disconnector

| SACE XT6D - Switch-disconnectors |                     |           |              |              |
|----------------------------------|---------------------|-----------|--------------|--------------|
| Size                             | Iu                  | Type      | 3 poles      | 4 poles      |
|                                  |                     |           | Code         | Code         |
| XT6                              | 630                 | XT6D 630  | 1SDA107600R1 | 1SDA107601R1 |
|                                  | 800                 | XT6D 800  | 1SDA100784R1 | 1SDA100786R1 |
|                                  | 1000 <sup>(1)</sup> | XT6D 1000 | 1SDA100785R1 | 1SDA100787R1 |

(1) 1000A only with EF, ES, R and FCCuAl terminals. EF terminals are supplied as standard if no other terminals are ordered

# Ordering codes for XT6

## Breaking part



XT6 - breaking part

| SACE XT6 - Breaking part |                     |                |                         |              |              |
|--------------------------|---------------------|----------------|-------------------------|--------------|--------------|
| Size                     | Iu                  | Icu<br>(415 V) | Type                    | 3 poles      | 4 poles      |
|                          |                     |                |                         | Code         | Code         |
| XT6                      | 800                 | 36             | XT6N 800 Breaking part  | 1SDA100788R1 | 1SDA100790R1 |
|                          | 1000 <sup>(1)</sup> | 36             | XT6N 1000 Breaking part | 1SDA100789R1 | 1SDA100791R1 |
|                          | 800                 | 50             | XT6S 800 Breaking part  | 1SDA100792R1 | 1SDA100794R1 |
|                          | 1000 <sup>(1)</sup> | 50             | XT6S 1000 Breaking part | 1SDA100793R1 | 1SDA100795R1 |
|                          | 800                 | 70             | XT6H 800 Breaking part  | 1SDA100796R1 | 1SDA100798R1 |
|                          | 1000 <sup>(1)</sup> | 70             | XT6H 1000 Breaking part | 1SDA100797R1 | 1SDA100799R1 |

(1) 1000A only with EF, ES, R and FCCuAl terminals. EF terminals are supplied as standard if no other terminals are ordered

# Ordering codes for XT6

## Trip units



Thermal magnetic  
trip unit



Dip trip unit

### Trip units - Distribution protection

| Size | Type                   | 3 poles      | 4 poles      |
|------|------------------------|--------------|--------------|
|      |                        | Code         | Code         |
| XT6  | TMA 630-6300           | 1SDA107602R1 | 1SDA107611R1 |
|      | TMA 630-6300 InN=50%In |              | 1SDA107610R1 |
|      | TMA 800-8000           | 1SDA100800R1 | 1SDA100815R1 |
|      | TMA 800-8000 InN=50%   |              | 1SDA100814R1 |
|      | Ekip Dip LS/I In=630   | 1SDA107603R1 | 1SDA107612R1 |
|      | Ekip Dip LS/I In=800   | 1SDA100801R1 | 1SDA100816R1 |
|      | Ekip Dip LS/I In=1000  | 1SDA100802R1 | 1SDA100817R1 |
|      | Ekip Dip LSI In=630    | 1SDA107604R1 | 1SDA107613R1 |
|      | Ekip Dip LSI In=800    | 1SDA100803R1 | 1SDA100818R1 |
|      | Ekip Dip LSI In=1000   | 1SDA100804R1 | 1SDA100819R1 |
|      | Ekip Dip LSIG In=630   | 1SDA107605R1 | 1SDA107614R1 |
|      | Ekip Dip LSIG In=800   | 1SDA100805R1 | 1SDA100820R1 |
|      | Ekip Dip LSIG In=1000  | 1SDA100806R1 | 1SDA100821R1 |
|      | Ekip Dip LIG In=630    | 1SDA107609R1 | 1SDA107616R1 |
|      | Ekip Dip LIG In=800    | 1SDA100812R1 | 1SDA100824R1 |
|      | Ekip Dip LIG In=1000   | 1SDA100813R1 | 1SDA100825R1 |

### Trip units - Motor protection

| Size | Type                  | 3 poles      | 4 poles |
|------|-----------------------|--------------|---------|
|      |                       | Code         | Code    |
| XT6  | Ekip M Dip I In=630   | 1SDA107606R1 |         |
|      | Ekip M Dip I In=800   | 1SDA100807R1 |         |
|      | Ekip M Dip I In=1000  | 1SDA100808R1 |         |
|      | Ekip M Dip LIU In=630 | 1SDA107607R1 |         |
|      | Ekip M Dip LIU In=800 | 1SDA100809R1 |         |

### Trip units - Generator protection

| Size | Type                    | 3 poles      | 4 poles      |
|------|-------------------------|--------------|--------------|
|      |                         | Code         | Code         |
| XT6  | Ekip G Dip LS/I In=630  | 1SDA107608R1 | 1SDA107615R1 |
|      | Ekip G Dip LS/I In=800  | 1SDA100810R1 | 1SDA100822R1 |
|      | Ekip G Dip LS/I In=1000 | 1SDA100811R1 | 1SDA100823R1 |

# Ordering codes for XT6

## Breaking part + trip unit solution



XT6 Breaking Part



XT6 Breaking Part



XT6 Breaking Part

| Breaking Part | Icu   |                     | N (36 kA) | S (50 kA) | H (70 kA) |
|---------------|-------|---------------------|-----------|-----------|-----------|
|               | Poles | Iu                  |           |           |           |
|               | 3     | 800                 | 100788    | 100792    | 100796    |
|               | 3     | 1000 <sup>(1)</sup> | 100789    | 100793    | 100797    |
|               | 4     | 800                 | 100790    | 100794    | 100798    |
|               | 4     | 1000 <sup>(1)</sup> | 100791    | 100795    | 100799    |

(1) 1000A only with EF, ES, R and FCCuAl terminals. EF terminals are supplied as standard if no other terminals are ordered

| Trip units      | In | 630    | 800     | 1000   |
|-----------------|----|--------|---------|--------|
|                 |    | Poles  |         |        |
| TMA             | 3  | 107602 | 100800  |        |
|                 | 4  | 107611 | 100815* |        |
| Ekip Dip LS/I   | 3  | 107603 | 100801  | 100802 |
|                 | 4  | 107612 | 100816  | 100817 |
| Ekip Dip LSI    | 3  | 107604 | 100803  | 100804 |
|                 | 4  | 107613 | 100818  | 100819 |
| Ekip Dip LSIG   | 3  | 107605 | 100805  | 100806 |
|                 | 4  | 107614 | 100820  | 100821 |
| Ekip Dip LIG    | 3  | 107609 | 100812  | 100813 |
|                 | 4  | 107616 | 100824  | 100825 |
| Ekip M Dip I    | 3  | 107606 | 100807  | 100808 |
| Ekip M Dip LIU  | 3  | 107607 | 100809  |        |
| Ekip G Dip LS/I | 3  | 107608 | 100810  | 100811 |
|                 | 4  | 107615 | 100822  | 100823 |

\* InN=100%. Combinations available for InN=50% too. For ordering codes, please see in reference pages 'trip Units'

Note: When a single code for the complete circuit-breaker is not available, please configure the breaking part code with the trip unit code to order a factory-assembled circuit-breaker

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7



XT7 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT7S (50 kA) Ekip Dip LS/I - Front terminals (F)

| Size | lu   | Trip units    | In   | Type                             | 3 poles      | 4 poles      |
|------|------|---------------|------|----------------------------------|--------------|--------------|
|      |      |               |      |                                  | Code         | Code         |
| XT7  | 800  | Ekip Dip LS/I | 800  | XT7S 800 Ekip Dip LS/I In=800A   | 1SDA100826R1 | 1SDA101114R1 |
|      | 1000 | Ekip Dip LS/I | 1000 | XT7S 1000 Ekip Dip LS/I In=1000A | 1SDA100827R1 | 1SDA101115R1 |
|      | 1250 | Ekip Dip LS/I | 1250 | XT7S 1250 Ekip Dip LS/I In=1250A | 1SDA100828R1 | 1SDA101116R1 |
|      | 1600 | Ekip Dip LS/I | 1600 | XT7S 1600 Ekip Dip LS/I In=1600A | 1SDA100829R1 | 1SDA101117R1 |

#### SACE XT7S (50 kA) Ekip Dip LSI - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                            | 3 poles      | 4 poles      |
|------|------|--------------|------|---------------------------------|--------------|--------------|
|      |      |              |      |                                 | Code         | Code         |
| XT7  | 800  | Ekip Dip LSI | 800  | XT7S 800 Ekip Dip LSI In=800A   | 1SDA100830R1 | 1SDA101118R1 |
|      | 1000 | Ekip Dip LSI | 1000 | XT7S 1000 Ekip Dip LSI In=1000A | 1SDA100831R1 | 1SDA101119R1 |
|      | 1250 | Ekip Dip LSI | 1250 | XT7S 1250 Ekip Dip LSI In=1250A | 1SDA100832R1 | 1SDA101120R1 |
|      | 1600 | Ekip Dip LSI | 1600 | XT7S 1600 Ekip Dip LSI In=1600A | 1SDA100833R1 | 1SDA101121R1 |

#### SACE XT7S (50 kA) Ekip Dip LSIG - Front terminals (F)

| Size | lu   | Trip units    | In   | Type                             | 3 poles      | 4 poles      |
|------|------|---------------|------|----------------------------------|--------------|--------------|
|      |      |               |      |                                  | Code         | Code         |
| XT7  | 800  | Ekip Dip LSIG | 800  | XT7S 800 Ekip Dip LSIG In=800A   | 1SDA100834R1 | 1SDA101122R1 |
|      | 1000 | Ekip Dip LSIG | 1000 | XT7S 1000 Ekip Dip LSIG In=1000A | 1SDA100835R1 | 1SDA101123R1 |
|      | 1250 | Ekip Dip LSIG | 1250 | XT7S 1250 Ekip Dip LSIG In=1250A | 1SDA100836R1 | 1SDA101124R1 |
|      | 1600 | Ekip Dip LSIG | 1600 | XT7S 1600 Ekip Dip LSIG In=1600A | 1SDA100837R1 | 1SDA101125R1 |

#### SACE XT7S (50 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                            | 3 poles      | 4 poles      |
|------|------|--------------|------|---------------------------------|--------------|--------------|
|      |      |              |      |                                 | Code         | Code         |
| XT7  | 800  | Ekip Dip LIG | 800  | XT7S 800 Ekip Dip LIG In=800A   | 1SDA100886R1 | 1SDA101166R1 |
|      | 1000 | Ekip Dip LIG | 1000 | XT7S 1000 Ekip Dip LIG In=1000A | 1SDA100887R1 | 1SDA101167R1 |
|      | 1250 | Ekip Dip LIG | 1250 | XT7S 1250 Ekip Dip LIG In=1250A | 1SDA100888R1 | 1SDA101168R1 |
|      | 1600 | Ekip Dip LIG | 1600 | XT7S 1600 Ekip Dip LIG In=1600A | 1SDA100889R1 | 1SDA101169R1 |

#### SACE XT7S (50 kA) Ekip Touch LSI - Front terminals (F)

| Size | lu   | Trip units     | In   | Type                              | 3 poles      | 4 poles      |
|------|------|----------------|------|-----------------------------------|--------------|--------------|
|      |      |                |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Touch LSI | 800  | XT7S 800 Ekip Touch LSI In=800A   | 1SDA100838R1 | 1SDA101126R1 |
|      | 1000 | Ekip Touch LSI | 1000 | XT7S 1000 Ekip Touch LSI In=1000A | 1SDA100839R1 | 1SDA101127R1 |
|      | 1250 | Ekip Touch LSI | 1250 | XT7S 1250 Ekip Touch LSI In=1250A | 1SDA100840R1 | 1SDA101128R1 |
|      | 1600 | Ekip Touch LSI | 1600 | XT7S 1600 Ekip Touch LSI In=1600A | 1SDA100841R1 | 1SDA101129R1 |



XT7 - circuit-breaker

**SACE XT7S (50 kA) Ekip Touch LSIg - Front terminals (F)**

| Size | lu   | Trip units      | In   | Type                              | 3 poles      | 4 poles      |
|------|------|-----------------|------|-----------------------------------|--------------|--------------|
|      |      |                 |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Touch LSIg | 800  | XT7S 800 Ekip Touch LSIg In=800A  | 1SDA100842R1 | 1SDA101130R1 |
|      | 1000 | Ekip Touch LSIg | 1000 | XT7S 1000 Ekip Touch LSIg In1000A | 1SDA100843R1 | 1SDA101131R1 |
|      | 1250 | Ekip Touch LSIg | 1250 | XT7S 1250 Ekip Touch LSIg In1250A | 1SDA100844R1 | 1SDA101132R1 |
|      | 1600 | Ekip Touch LSIg | 1600 | XT7S 1600 Ekip Touch LSIg In1600A | 1SDA100845R1 | 1SDA101133R1 |

**SACE XT7S (50 kA) Ekip Touch Measuring LSI - Front terminals (F)**

| Size | lu   | Trip units          | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------------|------|------------------------------------|--------------|--------------|
|      |      |                     |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSI | 800  | XT7S 800 Ekip Touch Meas.LSI In800 | 1SDA100846R1 | 1SDA101134R1 |
|      | 1000 | Ekip Touch Meas.LSI | 1000 | XT7S 1000 Ekip Touch Meas.LSI 1000 | 1SDA100847R1 | 1SDA101135R1 |
|      | 1250 | Ekip Touch Meas.LSI | 1250 | XT7S 1250 Ekip Touch Meas.LSI 1250 | 1SDA100848R1 | 1SDA101136R1 |
|      | 1600 | Ekip Touch Meas.LSI | 1600 | XT7S 1600 Ekip Touch Meas.LSI 1600 | 1SDA100849R1 | 1SDA101137R1 |

**SACE XT7S (50 kA) Ekip Touch Measuring LSIg - Front terminals (F)**

| Size | lu   | Trip units           | In   | Type                                | 3 poles      | 4 poles      |
|------|------|----------------------|------|-------------------------------------|--------------|--------------|
|      |      |                      |      |                                     | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSIg | 800  | XT7S 800 Ekip Touch Meas.LSIg In800 | 1SDA100850R1 | 1SDA101138R1 |
|      | 1000 | Ekip Touch Meas.LSIg | 1000 | XT7S 1000 Ekip Touch Meas.LSIg 1000 | 1SDA100851R1 | 1SDA101139R1 |
|      | 1250 | Ekip Touch Meas.LSIg | 1250 | XT7S 1250 Ekip Touch Meas.LSIg 1250 | 1SDA100852R1 | 1SDA101140R1 |
|      | 1600 | Ekip Touch Meas.LSIg | 1600 | XT7S 1600 Ekip Touch Meas.LSIg 1600 | 1SDA100853R1 | 1SDA101141R1 |

**SACE XT7S (50 kA) Ekip Hi-Touch LSI - Front terminals (F)**

| Size | lu   | Trip units        | In   | Type                              | 3 poles      | 4 poles      |
|------|------|-------------------|------|-----------------------------------|--------------|--------------|
|      |      |                   |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSI | 800  | XT7S 800 Ekip Hi-Touch LSI In800A | 1SDA100854R1 | 1SDA101142R1 |
|      | 1000 | Ekip Hi-Touch LSI | 1000 | XT7S 1000 Ekip Hi-Touch LSI 1000A | 1SDA100855R1 | 1SDA101143R1 |
|      | 1250 | Ekip Hi-Touch LSI | 1250 | XT7S 1250 Ekip Hi-Touch LSI 1250A | 1SDA100856R1 | 1SDA101144R1 |
|      | 1600 | Ekip Hi-Touch LSI | 1600 | XT7S 1600 Ekip Hi-Touch LSI 1600A | 1SDA100857R1 | 1SDA101145R1 |

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7



XT7 - circuit-breaker

### SACE XT7S (50 kA) Ekip Hi-Touch LSIG - Front terminals (F)

| Size | lu   | Trip units         | In   | Type                               | 3 poles      | 4 poles      |
|------|------|--------------------|------|------------------------------------|--------------|--------------|
|      |      |                    |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSIG | 800  | XT7S 800 Ekip Hi-Touch LSIG In800A | 1SDA100858R1 | 1SDA101146R1 |
|      | 1000 | Ekip Hi-Touch LSIG | 1000 | XT7S 1000 Ekip Hi-Touch LSIG 1000A | 1SDA100859R1 | 1SDA101147R1 |
|      | 1250 | Ekip Hi-Touch LSIG | 1250 | XT7S 1250 Ekip Hi-Touch LSIG 1250A | 1SDA100860R1 | 1SDA101148R1 |
|      | 1600 | Ekip Hi-Touch LSIG | 1600 | XT7S 1600 Ekip Hi-Touch LSIG 1600A | 1SDA100861R1 | 1SDA101149R1 |

## Motor protection circuit-breakers

### SACE XT7S (50 kA) Ekip M Dip I - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                            | 3 poles      | 4 poles |
|------|------|--------------|------|---------------------------------|--------------|---------|
|      |      |              |      |                                 | Code         | Code    |
| XT7  | 800  | Ekip M Dip I | 800  | XT7S 800 Ekip M Dip I In=800A   | 1SDA100862R1 |         |
|      | 1000 | Ekip M Dip I | 1000 | XT7S 1000 Ekip M Dip I In=1000A | 1SDA100863R1 |         |
|      | 1250 | Ekip M Dip I | 1250 | XT7S 1250 Ekip M Dip I In=1250A | 1SDA100864R1 |         |
|      | 1600 | Ekip M Dip I | 1600 | XT7S 1600 Ekip M Dip I In=1600A | 1SDA100865R1 |         |

### SACE XT7S (50 kA) Ekip M Touch LRIU - Front terminals (F)

| Size | lu   | Trip units        | In   | Type                               | 3 poles      | 4 poles |
|------|------|-------------------|------|------------------------------------|--------------|---------|
|      |      |                   |      |                                    | Code         | Code    |
| XT7  | 800  | Ekip M Touch LRIU | 800  | XT7S 800 Ekip M Touch LRIU In800A  | 1SDA100866R1 |         |
|      | 1000 | Ekip M Touch LRIU | 1000 | XT7S 1000 Ekip M Touch LRIU In1000 | 1SDA100867R1 |         |
|      | 1250 | Ekip M Touch LRIU | 1250 | XT7S 1250 Ekip M Touch LRIU In1250 | 1SDA100868R1 |         |
|      | 1600 | Ekip M Touch LRIU | 1600 | XT7S 1600 Ekip M Touch LRIU In1600 | 1SDA100869R1 |         |



XT7 - circuit-breaker

## Generator protection circuit-breakers

**SACE XT7S (50 kA) Ekip G Dip LS/I - Front terminals (F)**

| Size | lu   | Trip units      | In   | Type                              | 3 poles      | 4 poles      |
|------|------|-----------------|------|-----------------------------------|--------------|--------------|
|      |      |                 |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip G Dip LS/I | 800  | XT7S 800 Ekip G Dip LS/I In=800A  | 1SDA100870R1 | 1SDA101150R1 |
|      | 1000 | Ekip G Dip LS/I | 1000 | XT7S 1000 Ekip G Dip LS/I In1000A | 1SDA100871R1 | 1SDA101151R1 |
|      | 1250 | Ekip G Dip LS/I | 1250 | XT7S 1250 Ekip G Dip LS/I In1250A | 1SDA100872R1 | 1SDA101152R1 |
|      | 1600 | Ekip G Dip LS/I | 1600 | XT7S 1600 Ekip G Dip LS/I In1600A | 1SDA100873R1 | 1SDA101153R1 |

**SACE XT7S (50 kA) Ekip G Touch LSIG- Front terminals (F)**

| Size | lu   | Trip units        | In   | Type                               | 3 poles      | 4 poles      |
|------|------|-------------------|------|------------------------------------|--------------|--------------|
|      |      |                   |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip G Touch LSIG | 800  | XT7S 800 Ekip G Touch LSIG In800A  | 1SDA100874R1 | 1SDA101154R1 |
|      | 1000 | Ekip G Touch LSIG | 1000 | XT7S 1000 Ekip G Touch LSIG In1000 | 1SDA100875R1 | 1SDA101155R1 |
|      | 1250 | Ekip G Touch LSIG | 1250 | XT7S 1250 Ekip G Touch LSIG In1250 | 1SDA100876R1 | 1SDA101156R1 |
|      | 1600 | Ekip G Touch LSIG | 1600 | XT7S 1600 Ekip G Touch LSIG In1600 | 1SDA100877R1 | 1SDA101157R1 |

**SACE XT7S (50 kA) Ekip G Hi-Touch LSIG - Front terminals (F)**

| Size | lu   | Trip units           | In   | Type                               | 3 poles      | 4 poles      |
|------|------|----------------------|------|------------------------------------|--------------|--------------|
|      |      |                      |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip G Hi-Touch LSIG | 800  | XT7S 800 Ekip G Hi-Touch LSIG 800A | 1SDA100878R1 | 1SDA101158R1 |
|      | 1000 | Ekip G Hi-Touch LSIG | 1000 | XT7S 1000 Ekip G Hi-TouchLSIG 1000 | 1SDA100879R1 | 1SDA101159R1 |
|      | 1250 | Ekip G Hi-Touch LSIG | 1250 | XT7S 1250 Ekip G Hi-TouchLSIG 1250 | 1SDA100880R1 | 1SDA101160R1 |
|      | 1600 | Ekip G Hi-Touch LSIG | 1600 | XT7S 1600 Ekip G Hi-TouchLSIG 1600 | 1SDA100881R1 | 1SDA101161R1 |



# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7



XT7 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT7H (70 kA) Ekip Dip LS/I - Front terminals (F)

| Size | lu   | Trip units    | In   | Type                             | 3 poles      | 4 poles      |
|------|------|---------------|------|----------------------------------|--------------|--------------|
|      |      |               |      |                                  | Code         | Code         |
| XT7  | 800  | Ekip Dip LS/I | 800  | XT7H 800 Ekip Dip LS/I In=800A   | 1SDA100890R1 | 1SDA101170R1 |
|      | 1000 | Ekip Dip LS/I | 1000 | XT7H 1000 Ekip Dip LS/I In=1000A | 1SDA100891R1 | 1SDA101171R1 |
|      | 1250 | Ekip Dip LS/I | 1250 | XT7H 1250 Ekip Dip LS/I In=1250A | 1SDA100892R1 | 1SDA101172R1 |
|      | 1600 | Ekip Dip LS/I | 1600 | XT7H 1600 Ekip Dip LS/I In=1600A | 1SDA100893R1 | 1SDA101173R1 |

#### SACE XT7H (70 kA) Ekip Dip LSI - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                            | 3 poles      | 4 poles      |
|------|------|--------------|------|---------------------------------|--------------|--------------|
|      |      |              |      |                                 | Code         | Code         |
| XT7  | 800  | Ekip Dip LSI | 800  | XT7H 800 Ekip Dip LSI In=800A   | 1SDA100894R1 | 1SDA101174R1 |
|      | 1000 | Ekip Dip LSI | 1000 | XT7H 1000 Ekip Dip LSI In=1000A | 1SDA100895R1 | 1SDA101175R1 |
|      | 1250 | Ekip Dip LSI | 1250 | XT7H 1250 Ekip Dip LSI In=1250A | 1SDA100896R1 | 1SDA101176R1 |
|      | 1600 | Ekip Dip LSI | 1600 | XT7H 1600 Ekip Dip LSI In=1600A | 1SDA100897R1 | 1SDA101177R1 |

#### SACE XT7H (70 kA) Ekip Dip LSIG - Front terminals (F)

| Size | lu   | Trip units    | In   | Type                             | 3 poles      | 4 poles      |
|------|------|---------------|------|----------------------------------|--------------|--------------|
|      |      |               |      |                                  | Code         | Code         |
| XT7  | 800  | Ekip Dip LSIG | 800  | XT7H 800 Ekip Dip LSIG In=800A   | 1SDA100898R1 | 1SDA101178R1 |
|      | 1000 | Ekip Dip LSIG | 1000 | XT7H 1000 Ekip Dip LSIG In=1000A | 1SDA100899R1 | 1SDA101179R1 |
|      | 1250 | Ekip Dip LSIG | 1250 | XT7H 1250 Ekip Dip LSIG In=1250A | 1SDA100900R1 | 1SDA101180R1 |
|      | 1600 | Ekip Dip LSIG | 1600 | XT7H 1600 Ekip Dip LSIG In=1600A | 1SDA100901R1 | 1SDA101181R1 |

#### SACE XT7H (70 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                            | 3 poles      | 4 poles      |
|------|------|--------------|------|---------------------------------|--------------|--------------|
|      |      |              |      |                                 | Code         | Code         |
| XT7  | 800  | Ekip Dip LIG | 800  | XT7H 800 Ekip Dip LIG In=800A   | 1SDA100950R1 | 1SDA101222R1 |
|      | 1000 | Ekip Dip LIG | 1000 | XT7H 1000 Ekip Dip LIG In=1000A | 1SDA100951R1 | 1SDA101223R1 |
|      | 1250 | Ekip Dip LIG | 1250 | XT7H 1250 Ekip Dip LIG In=1250A | 1SDA100952R1 | 1SDA101224R1 |
|      | 1600 | Ekip Dip LIG | 1600 | XT7H 1600 Ekip Dip LIG In=1600A | 1SDA100953R1 | 1SDA101225R1 |

#### SACE XT7H (70 kA) Ekip Touch LSI - Front terminals (F)

| Size | lu   | Trip units     | In   | Type                              | 3 poles      | 4 poles      |
|------|------|----------------|------|-----------------------------------|--------------|--------------|
|      |      |                |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Touch LSI | 800  | XT7H 800 Ekip Touch LSI In=800A   | 1SDA100902R1 | 1SDA101182R1 |
|      | 1000 | Ekip Touch LSI | 1000 | XT7H 1000 Ekip Touch LSI In=1000A | 1SDA100903R1 | 1SDA101183R1 |
|      | 1250 | Ekip Touch LSI | 1250 | XT7H 1250 Ekip Touch LSI In=1250A | 1SDA100904R1 | 1SDA101184R1 |
|      | 1600 | Ekip Touch LSI | 1600 | XT7H 1600 Ekip Touch LSI In=1600A | 1SDA100905R1 | 1SDA101185R1 |



XT7 - circuit-breaker

**SACE XT7H (70 kA) Ekip Touch LSIG - Front terminals (F)**

| Size | Iu   | Trip units      | In   | Type                              | 3 poles      | 4 poles      |
|------|------|-----------------|------|-----------------------------------|--------------|--------------|
|      |      |                 |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Touch LSIG | 800  | XT7H 800 Ekip Touch LSIG In=800A  | 1SDA100906R1 | 1SDA101186R1 |
|      | 1000 | Ekip Touch LSIG | 1000 | XT7H 1000 Ekip Touch LSIG In1000A | 1SDA100907R1 | 1SDA101187R1 |
|      | 1250 | Ekip Touch LSIG | 1250 | XT7H 1250 Ekip Touch LSIG In1250A | 1SDA100908R1 | 1SDA101188R1 |
|      | 1600 | Ekip Touch LSIG | 1600 | XT7H 1600 Ekip Touch LSIG In1600A | 1SDA100909R1 | 1SDA101189R1 |

**SACE XT7H (70 kA) Ekip Touch Measuring LSI - Front terminals (F)**

| Size | Iu   | Trip units          | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------------|------|------------------------------------|--------------|--------------|
|      |      |                     |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSI | 800  | XT7H 800 Ekip Touch Meas.LSI In800 | 1SDA100910R1 | 1SDA101190R1 |
|      | 1000 | Ekip Touch Meas.LSI | 1000 | XT7H 1000 Ekip Touch Meas.LSI 1000 | 1SDA100911R1 | 1SDA101191R1 |
|      | 1250 | Ekip Touch Meas.LSI | 1250 | XT7H 1250 Ekip Touch Meas.LSI 1250 | 1SDA100912R1 | 1SDA101192R1 |
|      | 1600 | Ekip Touch Meas.LSI | 1600 | XT7H 1600 Ekip Touch Meas.LSI 1600 | 1SDA100913R1 | 1SDA101193R1 |

**SACE XT7H (70 kA) Ekip Touch Measuring LSIG - Front terminals (F)**

| Size | Iu   | Trip units           | In   | Type                                | 3 poles      | 4 poles      |
|------|------|----------------------|------|-------------------------------------|--------------|--------------|
|      |      |                      |      |                                     | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSIG | 800  | XT7H 800 Ekip Touch Meas.LSIG In800 | 1SDA100914R1 | 1SDA101194R1 |
|      | 1000 | Ekip Touch Meas.LSIG | 1000 | XT7H 1000 Ekip Touch Meas.LSIG 1000 | 1SDA100915R1 | 1SDA101195R1 |
|      | 1250 | Ekip Touch Meas.LSIG | 1250 | XT7H 1250 Ekip Touch Meas.LSIG 1250 | 1SDA100916R1 | 1SDA101196R1 |
|      | 1600 | Ekip Touch Meas.LSIG | 1600 | XT7H 1600 Ekip Touch Meas.LSIG 1600 | 1SDA100917R1 | 1SDA101197R1 |

**SACE XT7H (70 kA) Ekip Hi-Touch LSI - Front terminals (F)**

| Size | Iu   | Trip units        | In   | Type                              | 3 poles      | 4 poles      |
|------|------|-------------------|------|-----------------------------------|--------------|--------------|
|      |      |                   |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSI | 800  | XT7H 800 Ekip Hi-Touch LSI In800A | 1SDA100918R1 | 1SDA101198R1 |
|      | 1000 | Ekip Hi-Touch LSI | 1000 | XT7H 1000 Ekip Hi-Touch LSI 1000A | 1SDA100919R1 | 1SDA101199R1 |
|      | 1250 | Ekip Hi-Touch LSI | 1250 | XT7H 1250 Ekip Hi-Touch LSI 1250A | 1SDA100920R1 | 1SDA101200R1 |
|      | 1600 | Ekip Hi-Touch LSI | 1600 | XT7H 1600 Ekip Hi-Touch LSI 1600A | 1SDA100921R1 | 1SDA101201R1 |

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7



XT7 - circuit-breaker

### SACE XT7H (70 kA) Ekip Hi-Touch LSIG - Front terminals (F)

| Size | Iu   | Trip units         | In   | Type                               | 3 poles      | 4 poles      |
|------|------|--------------------|------|------------------------------------|--------------|--------------|
|      |      |                    |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSIG | 800  | XT7H 800 Ekip Hi-Touch LSIG In800A | 1SDA100922R1 | 1SDA101202R1 |
|      | 1000 | Ekip Hi-Touch LSIG | 1000 | XT7H 1000 Ekip Hi-Touch LSIG 1000A | 1SDA100923R1 | 1SDA101203R1 |
|      | 1250 | Ekip Hi-Touch LSIG | 1250 | XT7H 1250 Ekip Hi-Touch LSIG 1250A | 1SDA100924R1 | 1SDA101204R1 |
|      | 1600 | Ekip Hi-Touch LSIG | 1600 | XT7H 1600 Ekip Hi-Touch LSIG 1600A | 1SDA100925R1 | 1SDA101205R1 |

## Motor protection circuit-breakers

### SACE XT7H (70 kA) Ekip M Dip I - Front terminals (F)

| Size | Iu   | Trip units   | In   | Type                            | 3 poles      | 4 poles |
|------|------|--------------|------|---------------------------------|--------------|---------|
|      |      |              |      |                                 | Code         | Code    |
| XT7  | 800  | Ekip M Dip I | 800  | XT7H 800 Ekip M Dip I In=800A   | 1SDA100926R1 |         |
|      | 1000 | Ekip M Dip I | 1000 | XT7H 1000 Ekip M Dip I In=1000A | 1SDA100927R1 |         |
|      | 1250 | Ekip M Dip I | 1250 | XT7H 1250 Ekip M Dip I In=1250A | 1SDA100928R1 |         |
|      | 1600 | Ekip M Dip I | 1600 | XT7H 1600 Ekip M Dip I In=1600A | 1SDA100929R1 |         |



XT7 - circuit-breaker

### SACE XT7H (70 kA) Ekip M Touch LRIU - Front terminals (F)

| Size | Iu   | Trip units        | In   | Type                               | 3 poles      | 4 poles |
|------|------|-------------------|------|------------------------------------|--------------|---------|
|      |      |                   |      |                                    | Code         | Code    |
| XT7  | 800  | Ekip M Touch LRIU | 800  | XT7H 800 Ekip M Touch LRIU In800A  | 1SDA100930R1 |         |
|      | 1000 | Ekip M Touch LRIU | 1000 | XT7H 1000 Ekip M Touch LRIU In1000 | 1SDA100931R1 |         |
|      | 1250 | Ekip M Touch LRIU | 1250 | XT7H 1250 Ekip M Touch LRIU In1250 | 1SDA100932R1 |         |
|      | 1600 | Ekip M Touch LRIU | 1600 | XT7H 1600 Ekip M Touch LRIU In1600 | 1SDA100933R1 |         |



XT7 - circuit-breaker

## Generator protection circuit-breakers

**SACE XT7H (70 kA) Ekip G Dip LS/I - Front terminals (F)**

| Size | Iu   | Trip units      | In   | Type                              | 3 poles      | 4 poles      |
|------|------|-----------------|------|-----------------------------------|--------------|--------------|
|      |      |                 |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip G Dip LS/I | 800  | XT7H 800 Ekip G Dip LS/I In=800A  | 1SDA100934R1 | 1SDA101206R1 |
|      | 1000 | Ekip G Dip LS/I | 1000 | XT7H 1000 Ekip G Dip LS/I In1000A | 1SDA100935R1 | 1SDA101207R1 |
|      | 1250 | Ekip G Dip LS/I | 1250 | XT7H 1250 Ekip G Dip LS/I In1250A | 1SDA100936R1 | 1SDA101208R1 |
|      | 1600 | Ekip G Dip LS/I | 1600 | XT7H 1600 Ekip G Dip LS/I In1600A | 1SDA100937R1 | 1SDA101209R1 |

**SACE XT7H (70 kA) Ekip G Touch LSIG- Front terminals (F)**

| Size | Iu   | Trip units        | In   | Type                               | 3 poles      | 4 poles      |
|------|------|-------------------|------|------------------------------------|--------------|--------------|
|      |      |                   |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip G Touch LSIG | 800  | XT7H 800 Ekip G Touch LSIG In800A  | 1SDA100938R1 | 1SDA101210R1 |
|      | 1000 | Ekip G Touch LSIG | 1000 | XT7H 1000 Ekip G Touch LSIG In1000 | 1SDA100939R1 | 1SDA101211R1 |
|      | 1250 | Ekip G Touch LSIG | 1250 | XT7H 1250 Ekip G Touch LSIG In1250 | 1SDA100940R1 | 1SDA101212R1 |
|      | 1600 | Ekip G Touch LSIG | 1600 | XT7H 1600 Ekip G Touch LSIG In1600 | 1SDA100941R1 | 1SDA101213R1 |

**SACE XT7H (70 kA) Ekip G Hi-Touch LSIG - Front terminals (F)**

| Size | Iu   | Trip units           | In   | Type                               | 3 poles      | 4 poles      |
|------|------|----------------------|------|------------------------------------|--------------|--------------|
|      |      |                      |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip G Hi-Touch LSIG | 800  | XT7H 800 Ekip G Hi-Touch LSIG 800A | 1SDA100942R1 | 1SDA101214R1 |
|      | 1000 | Ekip G Hi-Touch LSIG | 1000 | XT7H 1000 Ekip G Hi-TouchLSIG 1000 | 1SDA100943R1 | 1SDA101215R1 |
|      | 1250 | Ekip G Hi-Touch LSIG | 1250 | XT7H 1250 Ekip G Hi-TouchLSIG 1250 | 1SDA100944R1 | 1SDA101216R1 |
|      | 1600 | Ekip G Hi-Touch LSIG | 1600 | XT7H 1600 Ekip G Hi-TouchLSIG 1600 | 1SDA100945R1 | 1SDA101217R1 |

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7



XT7 - circuit-breaker

### Distribution circuit-breakers

#### SACE XT7L (120 kA) Ekip Dip LS/I - Front terminals (F)

| Size | lu   | Trip units    | In   | Type                             | 3 poles      | 4 poles      |
|------|------|---------------|------|----------------------------------|--------------|--------------|
|      |      |               |      |                                  | Code         | Code         |
| XT7  | 800  | Ekip Dip LS/I | 800  | XT7L 800 Ekip Dip LS/I In=800A   | 1SDA100954R1 | 1SDA101226R1 |
|      | 1000 | Ekip Dip LS/I | 1000 | XT7L 1000 Ekip Dip LS/I In=1000A | 1SDA100955R1 | 1SDA101227R1 |
|      | 1250 | Ekip Dip LS/I | 1250 | XT7L 1250 Ekip Dip LS/I In=1250A | 1SDA100956R1 | 1SDA101228R1 |
|      | 1600 | Ekip Dip LS/I | 1600 | XT7L 1600 Ekip Dip LS/I In=1600A | 1SDA100957R1 | 1SDA101229R1 |

#### SACE XT7L (120 kA) Ekip Dip LSI - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                            | 3 poles      | 4 poles      |
|------|------|--------------|------|---------------------------------|--------------|--------------|
|      |      |              |      |                                 | Code         | Code         |
| XT7  | 800  | Ekip Dip LSI | 800  | XT7L 800 Ekip Dip LSI In=800A   | 1SDA100958R1 | 1SDA101230R1 |
|      | 1000 | Ekip Dip LSI | 1000 | XT7L 1000 Ekip Dip LSI In=1000A | 1SDA100959R1 | 1SDA101231R1 |
|      | 1250 | Ekip Dip LSI | 1250 | XT7L 1250 Ekip Dip LSI In=1250A | 1SDA100960R1 | 1SDA101232R1 |
|      | 1600 | Ekip Dip LSI | 1600 | XT7L 1600 Ekip Dip LSI In=1600A | 1SDA100961R1 | 1SDA101233R1 |

#### SACE XT7L (120 kA) Ekip Dip LSIG - Front terminals (F)

| Size | lu   | Trip units    | In   | Type                             | 3 poles      | 4 poles      |
|------|------|---------------|------|----------------------------------|--------------|--------------|
|      |      |               |      |                                  | Code         | Code         |
| XT7  | 800  | Ekip Dip LSIG | 800  | XT7L 800 Ekip Dip LSIG In=800A   | 1SDA100962R1 | 1SDA101234R1 |
|      | 1000 | Ekip Dip LSIG | 1000 | XT7L 1000 Ekip Dip LSIG In=1000A | 1SDA100963R1 | 1SDA101235R1 |
|      | 1250 | Ekip Dip LSIG | 1250 | XT7L 1250 Ekip Dip LSIG In=1250A | 1SDA100964R1 | 1SDA101236R1 |
|      | 1600 | Ekip Dip LSIG | 1600 | XT7L 1600 Ekip Dip LSIG In=1600A | 1SDA100965R1 | 1SDA101237R1 |

#### SACE XT7L (120 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                            | 3 poles      | 4 poles      |
|------|------|--------------|------|---------------------------------|--------------|--------------|
|      |      |              |      |                                 | Code         | Code         |
| XT7  | 800  | Ekip Dip LIG | 800  | XT7L 800 Ekip Dip LIG In=800A   | 1SDA101014R1 | 1SDA101278R1 |
|      | 1000 | Ekip Dip LIG | 1000 | XT7L 1000 Ekip Dip LIG In=1000A | 1SDA101015R1 | 1SDA101279R1 |
|      | 1250 | Ekip Dip LIG | 1250 | XT7L 1250 Ekip Dip LIG In=1250A | 1SDA101016R1 | 1SDA101280R1 |
|      | 1600 | Ekip Dip LIG | 1600 | XT7L 1600 Ekip Dip LIG In=1600A | 1SDA101017R1 | 1SDA101281R1 |

#### SACE XT7L (120 kA) Ekip Touch LSI - Front terminals (F)

| Size | lu   | Trip units     | In   | Type                              | 3 poles      | 4 poles      |
|------|------|----------------|------|-----------------------------------|--------------|--------------|
|      |      |                |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Touch LSI | 800  | XT7L 800 Ekip Touch LSI In=800A   | 1SDA100966R1 | 1SDA101238R1 |
|      | 1000 | Ekip Touch LSI | 1000 | XT7L 1000 Ekip Touch LSI In=1000A | 1SDA100967R1 | 1SDA101239R1 |
|      | 1250 | Ekip Touch LSI | 1250 | XT7L 1250 Ekip Touch LSI In=1250A | 1SDA100968R1 | 1SDA101240R1 |
|      | 1600 | Ekip Touch LSI | 1600 | XT7L 1600 Ekip Touch LSI In=1600A | 1SDA100969R1 | 1SDA101241R1 |



XT7 - circuit-breaker

**SACE XT7L (120 kA) Ekip Touch LSI - Front terminals (F)**

| Size | lu   | Trip units     | In   | Type                             | 3 poles      | 4 poles      |
|------|------|----------------|------|----------------------------------|--------------|--------------|
|      |      |                |      |                                  | Code         | Code         |
| XT7  | 800  | Ekip Touch LSI | 800  | XT7L 800 Ekip Touch LSI In=800A  | 1SDA100970R1 | 1SDA101242R1 |
|      | 1000 | Ekip Touch LSI | 1000 | XT7L 1000 Ekip Touch LSI In1000A | 1SDA100971R1 | 1SDA101243R1 |
|      | 1250 | Ekip Touch LSI | 1250 | XT7L 1250 Ekip Touch LSI In1250A | 1SDA100972R1 | 1SDA101244R1 |
|      | 1600 | Ekip Touch LSI | 1600 | XT7L 1600 Ekip Touch LSI In1600A | 1SDA100973R1 | 1SDA101245R1 |

**SACE XT7L (120 kA) Ekip Touch Measuring LSI - Front terminals (F)**

| Size | lu   | Trip units          | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------------|------|------------------------------------|--------------|--------------|
|      |      |                     |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSI | 800  | XT7L 800 Ekip Touch Meas.LSI In800 | 1SDA100974R1 | 1SDA101246R1 |
|      | 1000 | Ekip Touch Meas.LSI | 1000 | XT7L 1000 Ekip Touch Meas.LSI 1000 | 1SDA100975R1 | 1SDA101247R1 |
|      | 1250 | Ekip Touch Meas.LSI | 1250 | XT7L 1250 Ekip Touch Meas.LSI 1250 | 1SDA100976R1 | 1SDA101248R1 |
|      | 1600 | Ekip Touch Meas.LSI | 1600 | XT7L 1600 Ekip Touch Meas.LSI 1600 | 1SDA100977R1 | 1SDA101249R1 |

**SACE XT7L (120 kA) Ekip Touch Measuring LSI - Front terminals (F)**

| Size | lu   | Trip units          | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------------|------|------------------------------------|--------------|--------------|
|      |      |                     |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSI | 800  | XT7L 800 Ekip Touch Meas.LSI In800 | 1SDA100978R1 | 1SDA101250R1 |
|      | 1000 | Ekip Touch Meas.LSI | 1000 | XT7L 1000 Ekip Touch Meas.LSI 1000 | 1SDA100979R1 | 1SDA101251R1 |
|      | 1250 | Ekip Touch Meas.LSI | 1250 | XT7L 1250 Ekip Touch Meas.LSI 1250 | 1SDA100980R1 | 1SDA101252R1 |
|      | 1600 | Ekip Touch Meas.LSI | 1600 | XT7L 1600 Ekip Touch Meas.LSI 1600 | 1SDA100981R1 | 1SDA101253R1 |

**SACE XT7L (120 kA) Ekip Hi-Touch LSI - Front terminals (F)**

| Size | lu   | Trip units        | In   | Type                              | 3 poles      | 4 poles      |
|------|------|-------------------|------|-----------------------------------|--------------|--------------|
|      |      |                   |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSI | 800  | XT7L 800 Ekip Hi-Touch LSI In800A | 1SDA100982R1 | 1SDA101254R1 |
|      | 1000 | Ekip Hi-Touch LSI | 1000 | XT7L 1000 Ekip Hi-Touch LSI 1000A | 1SDA100983R1 | 1SDA101255R1 |
|      | 1250 | Ekip Hi-Touch LSI | 1250 | XT7L 1250 Ekip Hi-Touch LSI 1250A | 1SDA100984R1 | 1SDA101256R1 |
|      | 1600 | Ekip Hi-Touch LSI | 1600 | XT7L 1600 Ekip Hi-Touch LSI 1600A | 1SDA100985R1 | 1SDA101257R1 |

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7



XT7 - circuit-breaker

### SACE XT7L (120 kA) Ekip Hi-Touch LSIG - Front terminals (F)

| Size | lu   | Trip units         | In   | Type                               | 3 poles      | 4 poles      |
|------|------|--------------------|------|------------------------------------|--------------|--------------|
|      |      |                    |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSIG | 800  | XT7L 800 Ekip Hi-Touch LSIG In800A | 1SDA100986R1 | 1SDA101258R1 |
|      | 1000 | Ekip Hi-Touch LSIG | 1000 | XT7L 1000 Ekip Hi-Touch LSIG 1000A | 1SDA100987R1 | 1SDA101259R1 |
|      | 1250 | Ekip Hi-Touch LSIG | 1250 | XT7L 1250 Ekip Hi-Touch LSIG 1250A | 1SDA100988R1 | 1SDA101260R1 |
|      | 1600 | Ekip Hi-Touch LSIG | 1600 | XT7L 1600 Ekip Hi-Touch LSIG 1600A | 1SDA100989R1 | 1SDA101261R1 |

## Motor protection circuit-breakers



XT7 - circuit-breaker

### SACE XT7L (120 kA) Ekip M Dip I - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                            | 3 poles      | 4 poles |
|------|------|--------------|------|---------------------------------|--------------|---------|
|      |      |              |      |                                 | Code         | Code    |
| XT7  | 800  | Ekip M Dip I | 800  | XT7L 800 Ekip M Dip I In=800A   | 1SDA100990R1 |         |
|      | 1000 | Ekip M Dip I | 1000 | XT7L 1000 Ekip M Dip I In=1000A | 1SDA100991R1 |         |
|      | 1250 | Ekip M Dip I | 1250 | XT7L 1250 Ekip M Dip I In=1250A | 1SDA100992R1 |         |
|      | 1600 | Ekip M Dip I | 1600 | XT7L 1600 Ekip M Dip I In=1600A | 1SDA100993R1 |         |

### SACE XT7L (120 kA) Ekip M Touch LRIU - Front terminals (F)

| Size | lu   | Trip units        | In   | Type                               | 3 poles      | 4 poles |
|------|------|-------------------|------|------------------------------------|--------------|---------|
|      |      |                   |      |                                    | Code         | Code    |
| XT7  | 800  | Ekip M Touch LRIU | 800  | XT7L 800 Ekip M Touch LRIU In800A  | 1SDA100994R1 |         |
|      | 1000 | Ekip M Touch LRIU | 1000 | XT7L 1000 Ekip M Touch LRIU In1000 | 1SDA100995R1 |         |
|      | 1250 | Ekip M Touch LRIU | 1250 | XT7L 1250 Ekip M Touch LRIU In1250 | 1SDA100996R1 |         |
|      | 1600 | Ekip M Touch LRIU | 1600 | XT7L 1600 Ekip M Touch LRIU In1600 | 1SDA100997R1 |         |



XT7 - circuit-breaker

## Generator protection circuit-breakers

**SACE XT7L (120 kA) Ekip G Dip LS/I - Front terminals (F)**

| Size | lu   | Trip units      | In   | Type                              | 3 poles      | 4 poles      |
|------|------|-----------------|------|-----------------------------------|--------------|--------------|
|      |      |                 |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip G Dip LS/I | 800  | XT7L 800 Ekip G Dip LS/I In=800A  | 1SDA100998R1 | 1SDA101262R1 |
|      | 1000 | Ekip G Dip LS/I | 1000 | XT7L 1000 Ekip G Dip LS/I In1000A | 1SDA100999R1 | 1SDA101263R1 |
|      | 1250 | Ekip G Dip LS/I | 1250 | XT7L 1250 Ekip G Dip LS/I In1250A | 1SDA101000R1 | 1SDA101264R1 |
|      | 1600 | Ekip G Dip LS/I | 1600 | XT7L 1600 Ekip G Dip LS/I In1600A | 1SDA101001R1 | 1SDA101265R1 |

**SACE XT7L (120 kA) Ekip G Touch LSIG- Front terminals (F)**

| Size | lu   | Trip units        | In   | Type                               | 3 poles      | 4 poles      |
|------|------|-------------------|------|------------------------------------|--------------|--------------|
|      |      |                   |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip G Touch LSIG | 800  | XT7L 800 Ekip G Touch LSIG In800A  | 1SDA101002R1 | 1SDA101266R1 |
|      | 1000 | Ekip G Touch LSIG | 1000 | XT7L 1000 Ekip G Touch LSIG In1000 | 1SDA101003R1 | 1SDA101267R1 |
|      | 1250 | Ekip G Touch LSIG | 1250 | XT7L 1250 Ekip G Touch LSIG In1250 | 1SDA101004R1 | 1SDA101268R1 |
|      | 1600 | Ekip G Touch LSIG | 1600 | XT7L 1600 Ekip G Touch LSIG In1600 | 1SDA101005R1 | 1SDA101269R1 |

**SACE XT7L (120 kA) Ekip G Hi-Touch LSIG - Front terminals (F)**

| Size | lu   | Trip units           | In   | Type                               | 3 poles      | 4 poles      |
|------|------|----------------------|------|------------------------------------|--------------|--------------|
|      |      |                      |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip G Hi-Touch LSIG | 800  | XT7L 800 Ekip G Hi-Touch LSIG 800A | 1SDA101006R1 | 1SDA101270R1 |
|      | 1000 | Ekip G Hi-Touch LSIG | 1000 | XT7L 1000 Ekip G Hi-TouchLSIG 1000 | 1SDA101007R1 | 1SDA101271R1 |
|      | 1250 | Ekip G Hi-Touch LSIG | 1250 | XT7L 1250 Ekip G Hi-TouchLSIG 1250 | 1SDA101008R1 | 1SDA101272R1 |
|      | 1600 | Ekip G Hi-Touch LSIG | 1600 | XT7L 1600 Ekip G Hi-TouchLSIG 1600 | 1SDA101009R1 | 1SDA101273R1 |



# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7 M



XT7 M - circuit-breaker

### Distribution circuit-breakers

#### SACE XT7S M (50 kA) Ekip Dip LS/I - Front terminals (F)

| Size | lu   | Trip units    | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------|------|------------------------------------|--------------|--------------|
|      |      |               |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Dip LS/I | 800  | XT7S M 800 Ekip Dip LS/I In=800A   | 1SDA101366R1 | 1SDA101654R1 |
|      | 1000 | Ekip Dip LS/I | 1000 | XT7S M 1000 Ekip Dip LS/I In=1000A | 1SDA101367R1 | 1SDA101655R1 |
|      | 1250 | Ekip Dip LS/I | 1250 | XT7S M 1250 Ekip Dip LS/I In=1250A | 1SDA101368R1 | 1SDA101656R1 |
|      | 1600 | Ekip Dip LS/I | 1600 | XT7S M 1600 Ekip Dip LS/I In=1600A | 1SDA101369R1 | 1SDA101657R1 |

#### SACE XT7S M (50 kA) Ekip Dip LSI - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                              | 3 poles      | 4 poles      |
|------|------|--------------|------|-----------------------------------|--------------|--------------|
|      |      |              |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Dip LSI | 800  | XT7S M 800 Ekip Dip LSI In=800A   | 1SDA101370R1 | 1SDA101658R1 |
|      | 1000 | Ekip Dip LSI | 1000 | XT7S M 1000 Ekip Dip LSI In=1000A | 1SDA101371R1 | 1SDA101659R1 |
|      | 1250 | Ekip Dip LSI | 1250 | XT7S M 1250 Ekip Dip LSI In=1250A | 1SDA101372R1 | 1SDA101660R1 |
|      | 1600 | Ekip Dip LSI | 1600 | XT7S M 1600 Ekip Dip LSI In=1600A | 1SDA101373R1 | 1SDA101661R1 |

#### SACE XT7S M (50 kA) Ekip Dip LSIG - Front terminals (F)

| Size | lu   | Trip units    | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------|------|------------------------------------|--------------|--------------|
|      |      |               |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Dip LSIG | 800  | XT7S M 800 Ekip Dip LSIG In=800A   | 1SDA101374R1 | 1SDA101662R1 |
|      | 1000 | Ekip Dip LSIG | 1000 | XT7S M 1000 Ekip Dip LSIG In=1000A | 1SDA101375R1 | 1SDA101663R1 |
|      | 1250 | Ekip Dip LSIG | 1250 | XT7S M 1250 Ekip Dip LSIG In=1250A | 1SDA101376R1 | 1SDA101664R1 |
|      | 1600 | Ekip Dip LSIG | 1600 | XT7S M 1600 Ekip Dip LSIG In=1600A | 1SDA101377R1 | 1SDA101665R1 |

#### SACE XT7S M (50 kA) Ekip Dip LIG - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                              | 3 poles      | 4 poles      |
|------|------|--------------|------|-----------------------------------|--------------|--------------|
|      |      |              |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Dip LIG | 800  | XT7S M 800 Ekip Dip LIG In=800A   | 1SDA101426R1 | 1SDA101706R1 |
|      | 1000 | Ekip Dip LIG | 1000 | XT7S M 1000 Ekip Dip LIG In=1000A | 1SDA101427R1 | 1SDA101707R1 |
|      | 1250 | Ekip Dip LIG | 1250 | XT7S M 1250 Ekip Dip LIG In=1250A | 1SDA101428R1 | 1SDA101708R1 |
|      | 1600 | Ekip Dip LIG | 1600 | XT7S M 1600 Ekip Dip LIG In=1600A | 1SDA101429R1 | 1SDA101709R1 |

#### SACE XT7S M (50 kA) Ekip Touch LSI - Front terminals (F)

| Size | lu   | Trip units     | In   | Type                                | 3 poles      | 4 poles      |
|------|------|----------------|------|-------------------------------------|--------------|--------------|
|      |      |                |      |                                     | Code         | Code         |
| XT7  | 800  | Ekip Touch LSI | 800  | XT7S M 800 Ekip Touch LSI In=800A   | 1SDA101378R1 | 1SDA101666R1 |
|      | 1000 | Ekip Touch LSI | 1000 | XT7S M 1000 Ekip Touch LSI In=1000A | 1SDA101379R1 | 1SDA101667R1 |
|      | 1250 | Ekip Touch LSI | 1250 | XT7S M 1250 Ekip Touch LSI In=1250A | 1SDA101380R1 | 1SDA101668R1 |
|      | 1600 | Ekip Touch LSI | 1600 | XT7S M 1600 Ekip Touch LSI In=1600A | 1SDA101381R1 | 1SDA101669R1 |



XT7 M - circuit-breaker

**SACE XT7S M (50 kA) Ekip Touch LSIg - Front terminals (F)**

| Size | Iu   | Trip units      | In   | Type                                 | 3 poles      | 4 poles      |
|------|------|-----------------|------|--------------------------------------|--------------|--------------|
|      |      |                 |      |                                      | Code         | Code         |
| XT7  | 800  | Ekip Touch LSIg | 800  | XT7S M 800 Ekip Touch LSIg In=800A   | 1SDA101382R1 | 1SDA101670R1 |
|      | 1000 | Ekip Touch LSIg | 1000 | XT7S M 1000 Ekip Touch LSIg In=1000A | 1SDA101383R1 | 1SDA101671R1 |
|      | 1250 | Ekip Touch LSIg | 1250 | XT7S M 1250 Ekip Touch LSIg In=1250A | 1SDA101384R1 | 1SDA101672R1 |
|      | 1600 | Ekip Touch LSIg | 1600 | XT7S M 1600 Ekip Touch LSIg In=1600A | 1SDA101385R1 | 1SDA101673R1 |

**SACE XT7S M (50 kA) Ekip Touch Measuring LSI - Front terminals (F)**

| Size | Iu   | Trip units          | In   | Type                                     | 3 poles      | 4 poles      |
|------|------|---------------------|------|--|--------------|--------------|
|      |      |                     |      |  | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSI | 800  | XT7S M 800 Ekip Touch Meas.LSI In=800A   | 1SDA101386R1 | 1SDA101674R1 |
|      | 1000 | Ekip Touch Meas.LSI | 1000 | XT7S M 1000 Ekip Touch Meas.LSI In=1000A | 1SDA101387R1 | 1SDA101675R1 |
|      | 1250 | Ekip Touch Meas.LSI | 1250 | XT7S M 1250 Ekip Touch Meas.LSI In=1250A | 1SDA101388R1 | 1SDA101676R1 |
|      | 1600 | Ekip Touch Meas.LSI | 1600 | XT7S M 1600 Ekip Touch Meas.LSI In=1600A | 1SDA101389R1 | 1SDA101677R1 |

**SACE XT7S M (50 kA) Ekip Touch Measuring LSIg - Front terminals (F)**

| Size | Iu   | Trip units           | In   | Type                                      | 3 poles      | 4 poles      |
|------|------|----------------------|------|---|--------------|--------------|
|      |      |                      |      |   | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSIg | 800  | XT7S M 800 Ekip Touch Meas.LSIg In=800A   | 1SDA101390R1 | 1SDA101678R1 |
|      | 1000 | Ekip Touch Meas.LSIg | 1000 | XT7S M 1000 Ekip Touch Meas.LSIg In=1000A | 1SDA101391R1 | 1SDA101679R1 |
|      | 1250 | Ekip Touch Meas.LSIg | 1250 | XT7S M 1250 Ekip Touch Meas.LSIg In=1250A | 1SDA101392R1 | 1SDA101680R1 |
|      | 1600 | Ekip Touch Meas.LSIg | 1600 | XT7S M 1600 Ekip Touch Meas.LSIg In=1600A | 1SDA101393R1 | 1SDA101681R1 |

**SACE XT7S M (50 kA) Ekip Hi-Touch LSI - Front terminals (F)**

| Size | Iu   | Trip units        | In   | Type                                   | 3 poles      | 4 poles      |
|------|------|-------------------|------|--|--------------|--------------|
|      |      |                   |      |  | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSI | 800  | XT7S M 800 Ekip Hi-Touch LSI In=800A   | 1SDA101394R1 | 1SDA101682R1 |
|      | 1000 | Ekip Hi-Touch LSI | 1000 | XT7S M 1000 Ekip Hi-Touch LSI In=1000A | 1SDA101395R1 | 1SDA101683R1 |
|      | 1250 | Ekip Hi-Touch LSI | 1250 | XT7S M 1250 Ekip Hi-Touch LSI In=1250A | 1SDA101396R1 | 1SDA101684R1 |
|      | 1600 | Ekip Hi-Touch LSI | 1600 | XT7S M 1600 Ekip Hi-Touch LSI In=1600A | 1SDA101397R1 | 1SDA101685R1 |

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7 M



XT7 M - circuit-breaker

### SACE XT7S M (50 kA) Ekip Hi-Touch LSIG - Front terminals (F)

| Size | Iu   | Trip units         | In   | Type                                    | 3 poles      | 4 poles      |
|------|------|--------------------|------|---|--------------|--------------|
|      |      |                    |      |   | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSIG | 800  | XT7S M 800 Ekip Hi-Touch LSIG In=800A   | 1SDA101398R1 | 1SDA101686R1 |
|      | 1000 | Ekip Hi-Touch LSIG | 1000 | XT7S M 1000 Ekip Hi-Touch LSIG In=1000A | 1SDA101399R1 | 1SDA101687R1 |
|      | 1250 | Ekip Hi-Touch LSIG | 1250 | XT7S M 1250 Ekip Hi-Touch LSIG In=1250A | 1SDA101400R1 | 1SDA101688R1 |
|      | 1600 | Ekip Hi-Touch LSIG | 1600 | XT7S M 1600 Ekip Hi-Touch LSIG In=1600A | 1SDA101401R1 | 1SDA101689R1 |

## Motor protection circuit-breakers



XT7 M - circuit-breaker

### SACE XT7S M (50 kA) Ekip M Dip I - Front terminals (F)

| Size | Iu   | Trip units   | In   | Type                              | 3 poles      | 4 poles |
|------|------|--------------|------|-----------------------------------|--------------|---------|
|      |      |              |      |                                   | Code         | Code    |
| XT7  | 800  | Ekip M Dip I | 800  | XT7S M 800 Ekip M Dip I In=800A   | 1SDA101402R1 |         |
|      | 1000 | Ekip M Dip I | 1000 | XT7S M 1000 Ekip M Dip I In=1000A | 1SDA101403R1 |         |
|      | 1250 | Ekip M Dip I | 1250 | XT7S M 1250 Ekip M Dip I In=1250A | 1SDA101404R1 |         |
|      | 1600 | Ekip M Dip I | 1600 | XT7S M 1600 Ekip M Dip I In=1600A | 1SDA101405R1 |         |

### SACE XT7S M (50 kA) Ekip M Touch LRIU - Front terminals (F)

| Size | Iu   | Trip units        | In   | Type                                   | 3 poles      | 4 poles |
|------|------|-------------------|------|--|--------------|---------|
|      |      |                   |      |  | Code         | Code    |
| XT7  | 800  | Ekip M Touch LRIU | 800  | XT7S M 800 Ekip M Touch LRIU In=800A   | 1SDA101406R1 |         |
|      | 1000 | Ekip M Touch LRIU | 1000 | XT7S M 1000 Ekip M Touch LRIU In=1000A | 1SDA101407R1 |         |
|      | 1250 | Ekip M Touch LRIU | 1250 | XT7S M 1250 Ekip M Touch LRIU In=1250A | 1SDA101408R1 |         |
|      | 1600 | Ekip M Touch LRIU | 1600 | XT7S M 1600 Ekip M Touch LRIU In=1600A | 1SDA101409R1 |         |



XT7 M - circuit-breaker

## Generator protection circuit-breakers

**SACE XT7S M (50 kA) Ekip G Dip LS/I - Front terminals (F)**

| Size | lu   | Trip units      | In   | Type                                    | 3 poles      | 4 poles      |
|------|------|-----------------|------|---|--------------|--------------|
|      |      |                 |      |   | Code         | Code         |
| XT7  | 800  | Ekip G Dip LS/I | 800  | XT7S M 800 Ekip G Dip LS/I<br>In=800A   | 1SDA101410R1 | 1SDA101690R1 |
|      | 1000 | Ekip G Dip LS/I | 1000 | XT7S M 1000 Ekip G Dip LS/I<br>In=1000A | 1SDA101411R1 | 1SDA101691R1 |
|      | 1250 | Ekip G Dip LS/I | 1250 | XT7S M 1250 Ekip G Dip LS/I<br>In=1250A | 1SDA101412R1 | 1SDA101692R1 |
|      | 1600 | Ekip G Dip LS/I | 1600 | XT7S M 1600 Ekip G Dip LS/I<br>In=1600A | 1SDA101413R1 | 1SDA101693R1 |

**SACE XT7S M (50 kA) Ekip G Touch LSIG- Front terminals (F)**

| Size | lu   | Trip units        | In   | Type                                     | 3 poles      | 4 poles      |
|------|------|-------------------|------|--|--------------|--------------|
|      |      |                   |      |  | Code         | Code         |
| XT7  | 800  | Ekip G Touch LSIG | 800  | XT7S M 800 Ekip G Touch LSIG<br>In=800A  | 1SDA101414R1 | 1SDA101694R1 |
|      | 1000 | Ekip G Touch LSIG | 1000 | XT7S M 1000 Ekip G Touch LSIG<br>In=1000 | 1SDA101415R1 | 1SDA101695R1 |
|      | 1250 | Ekip G Touch LSIG | 1250 | XT7S M 1250 Ekip G Touch LSIG<br>In=1250 | 1SDA101416R1 | 1SDA101696R1 |
|      | 1600 | Ekip G Touch LSIG | 1600 | XT7S M 1600 Ekip G Touch LSIG<br>In=1600 | 1SDA101417R1 | 1SDA101697R1 |

**SACE XT7S M (50 kA) Ekip G Hi-Touch LSIG - Front terminals (F)**

| Size | lu   | Trip units           | In   | Type  | 3 poles      | 4 poles      |
|------|------|----------------------|------|---|--------------|--------------|
|      |      |                      |      |   | Code         | Code         |
| XT7  | 800  | Ekip G Hi-Touch LSIG | 800  | XT7S M 800 Ekip G Hi-Touch LSIG<br>In=800A  | 1SDA101418R1 | 1SDA101698R1 |
|      | 1000 | Ekip G Hi-Touch LSIG | 1000 | XT7S M 1000 Ekip G Hi-TouchLSIG<br>In=1000A | 1SDA101419R1 | 1SDA101699R1 |
|      | 1250 | Ekip G Hi-Touch LSIG | 1250 | XT7S M 1250 Ekip G Hi-TouchLSIG<br>In=1250A | 1SDA101420R1 | 1SDA101700R1 |
|      | 1600 | Ekip G Hi-Touch LSIG | 1600 | XT7S M 1600 Ekip G Hi-TouchLSIG<br>In=1600A | 1SDA101421R1 | 1SDA101701R1 |

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7 M



XT7 M - circuit-breaker

### Distribution circuit-breakers

#### SACE XT7H M (70 kA) Ekip Dip LS/I - Front terminals (F)

| Size | Iu   | Trip units    | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------|------|------------------------------------|--------------|--------------|
|      |      |               |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Dip LS/I | 800  | XT7H M 800 Ekip Dip LS/I In=800A   | 1SDA101430R1 | 1SDA101710R1 |
|      | 1000 | Ekip Dip LS/I | 1000 | XT7H M 1000 Ekip Dip LS/I In=1000A | 1SDA101431R1 | 1SDA101711R1 |
|      | 1250 | Ekip Dip LS/I | 1250 | XT7H M 1250 Ekip Dip LS/I In=1250A | 1SDA101432R1 | 1SDA101712R1 |
|      | 1600 | Ekip Dip LS/I | 1600 | XT7H M 1600 Ekip Dip LS/I In=1600A | 1SDA101433R1 | 1SDA101713R1 |

#### SACE XT7H M (70 kA) Ekip Dip LSI - Front terminals (F)

| Size | Iu   | Trip units   | In   | Type                              | 3 poles      | 4 poles      |
|------|------|--------------|------|-----------------------------------|--------------|--------------|
|      |      |              |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Dip LSI | 800  | XT7H M 800 Ekip Dip LSI In=800A   | 1SDA101434R1 | 1SDA101714R1 |
|      | 1000 | Ekip Dip LSI | 1000 | XT7H M 1000 Ekip Dip LSI In=1000A | 1SDA101435R1 | 1SDA101715R1 |
|      | 1250 | Ekip Dip LSI | 1250 | XT7H M 1250 Ekip Dip LSI In=1250A | 1SDA101436R1 | 1SDA101716R1 |
|      | 1600 | Ekip Dip LSI | 1600 | XT7H M 1600 Ekip Dip LSI In=1600A | 1SDA101437R1 | 1SDA101717R1 |

#### SACE XT7H M (70 kA) Ekip Dip LSIG - Front terminals (F)

| Size | Iu   | Trip units    | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------|------|------------------------------------|--------------|--------------|
|      |      |               |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Dip LSIG | 800  | XT7H M 800 Ekip Dip LSIG In=800A   | 1SDA101438R1 | 1SDA101718R1 |
|      | 1000 | Ekip Dip LSIG | 1000 | XT7H M 1000 Ekip Dip LSIG In=1000A | 1SDA101439R1 | 1SDA101719R1 |
|      | 1250 | Ekip Dip LSIG | 1250 | XT7H M 1250 Ekip Dip LSIG In=1250A | 1SDA101440R1 | 1SDA101720R1 |
|      | 1600 | Ekip Dip LSIG | 1600 | XT7H M 1600 Ekip Dip LSIG In=1600A | 1SDA101441R1 | 1SDA101721R1 |

#### SACE XT7H M (70 kA) Ekip Dip LIG - Front terminals (F)

| Size | Iu   | Trip units   | In   | Type                              | 3 poles      | 4 poles      |
|------|------|--------------|------|-----------------------------------|--------------|--------------|
|      |      |              |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Dip LIG | 800  | XT7H M 800 Ekip Dip LIG In=800A   | 1SDA101490R1 | 1SDA101762R1 |
|      | 1000 | Ekip Dip LIG | 1000 | XT7H M 1000 Ekip Dip LIG In=1000A | 1SDA101491R1 | 1SDA101763R1 |
|      | 1250 | Ekip Dip LIG | 1250 | XT7H M 1250 Ekip Dip LIG In=1250A | 1SDA101492R1 | 1SDA101764R1 |
|      | 1600 | Ekip Dip LIG | 1600 | XT7H M 1600 Ekip Dip LIG In=1600A | 1SDA101493R1 | 1SDA101765R1 |

#### SACE XT7H M (70 kA) Ekip Touch LSI - Front terminals (F)

| Size | Iu   | Trip units     | In   | Type                                | 3 poles      | 4 poles      |
|------|------|----------------|------|-------------------------------------|--------------|--------------|
|      |      |                |      |                                     | Code         | Code         |
| XT7  | 800  | Ekip Touch LSI | 800  | XT7H M 800 Ekip Touch LSI In=800A   | 1SDA101442R1 | 1SDA101722R1 |
|      | 1000 | Ekip Touch LSI | 1000 | XT7H M 1000 Ekip Touch LSI In=1000A | 1SDA101443R1 | 1SDA101723R1 |
|      | 1250 | Ekip Touch LSI | 1250 | XT7H M 1250 Ekip Touch LSI In=1250A | 1SDA101444R1 | 1SDA101724R1 |
|      | 1600 | Ekip Touch LSI | 1600 | XT7H M 1600 Ekip Touch LSI In=1600A | 1SDA101445R1 | 1SDA101725R1 |



XT7 M - circuit-breaker

**SACE XT7H M (70 kA) Ekip Touch LSIg - Front terminals (F)**

| Size | lu   | Trip units      | In   | Type                                    | 3 poles      | 4 poles      |
|------|------|-----------------|------|---|--------------|--------------|
|      |      |                 |      |   | Code         | Code         |
| XT7  | 800  | Ekip Touch LSIg | 800  | XT7H M 800 Ekip Touch LSIg<br>In=800A   | 1SDA101446R1 | 1SDA101726R1 |
|      | 1000 | Ekip Touch LSIg | 1000 | XT7H M 1000 Ekip Touch LSIg<br>In=1000A | 1SDA101447R1 | 1SDA101727R1 |
|      | 1250 | Ekip Touch LSIg | 1250 | XT7H M 1250 Ekip Touch LSIg<br>In=1250A | 1SDA101448R1 | 1SDA101728R1 |
|      | 1600 | Ekip Touch LSIg | 1600 | XT7H M 1600 Ekip Touch LSIg<br>In=1600A | 1SDA101449R1 | 1SDA101729R1 |

**SACE XT7H M (70 kA) Ekip Touch Measuring LSI - Front terminals (F)**

| Size | lu   | Trip units          | In   | Type  | 3 poles      | 4 poles      |
|------|------|---------------------|------|---|--------------|--------------|
|      |      |                     |      |   | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSI | 800  | XT7H M 800 Ekip Touch Meas.LSI<br>In=800A   | 1SDA101450R1 | 1SDA101730R1 |
|      | 1000 | Ekip Touch Meas.LSI | 1000 | XT7H M 1000 Ekip Touch Meas.LSI<br>In=1000A | 1SDA101451R1 | 1SDA101731R1 |
|      | 1250 | Ekip Touch Meas.LSI | 1250 | XT7H M 1250 Ekip Touch Meas.LSI<br>In=1250A | 1SDA101452R1 | 1SDA101732R1 |
|      | 1600 | Ekip Touch Meas.LSI | 1600 | XT7H M 1600 Ekip Touch Meas.LSI<br>In=1600A | 1SDA101453R1 | 1SDA101733R1 |

**SACE XT7H M (70 kA) Ekip Touch Measuring LSIg - Front terminals (F)**

| Size | lu   | Trip units           | In   | Type   | 3 poles      | 4 poles      |
|------|------|----------------------|------|--|--------------|--------------|
|      |      |                      |      |  | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSIg | 800  | XT7H M 800 Ekip Touch Meas.LSIg<br>In=800A   | 1SDA101454R1 | 1SDA101734R1 |
|      | 1000 | Ekip Touch Meas.LSIg | 1000 | XT7H M 1000 Ekip Touch Meas.LSIg<br>In=1000A | 1SDA101455R1 | 1SDA101735R1 |
|      | 1250 | Ekip Touch Meas.LSIg | 1250 | XT7H M 1250 Ekip Touch Meas.LSIg<br>In=1250A | 1SDA101456R1 | 1SDA101736R1 |
|      | 1600 | Ekip Touch Meas.LSIg | 1600 | XT7H M 1600 Ekip Touch Meas.LSIg<br>In=1600A | 1SDA101457R1 | 1SDA101737R1 |

**SACE XT7H M (70 kA) Ekip Hi-Touch LSI - Front terminals (F)**

| Size | lu   | Trip units        | In   | Type                                      | 3 poles      | 4 poles      |
|------|------|-------------------|------|---|--------------|--------------|
|      |      |                   |      |   | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSI | 800  | XT7H M 800 Ekip Hi-Touch LSI<br>In=800A   | 1SDA101458R1 | 1SDA101738R1 |
|      | 1000 | Ekip Hi-Touch LSI | 1000 | XT7H M 1000 Ekip Hi-Touch LSI<br>In=1000A | 1SDA101459R1 | 1SDA101739R1 |
|      | 1250 | Ekip Hi-Touch LSI | 1250 | XT7H M 1250 Ekip Hi-Touch LSI<br>In=1250A | 1SDA101460R1 | 1SDA101740R1 |
|      | 1600 | Ekip Hi-Touch LSI | 1600 | XT7H M 1600 Ekip Hi-Touch LSI<br>In=1600A | 1SDA101461R1 | 1SDA101741R1 |

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7 M



XT7 M - circuit-breaker

### SACE XT7H M (70 kA) Ekip Hi-Touch LSIG - Front terminals (F)

| Size | Iu   | Trip units         | In   | Type                                    | 3 poles      | 4 poles      |
|------|------|--------------------|------|---|--------------|--------------|
|      |      |                    |      |   | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSIG | 800  | XT7H M 800 Ekip Hi-Touch LSIG In=800A   | 1SDA101462R1 | 1SDA101742R1 |
|      | 1000 | Ekip Hi-Touch LSIG | 1000 | XT7H M 1000 Ekip Hi-Touch LSIG In=1000A | 1SDA101463R1 | 1SDA101743R1 |
|      | 1250 | Ekip Hi-Touch LSIG | 1250 | XT7H M 1250 Ekip Hi-Touch LSIG In=1250A | 1SDA101464R1 | 1SDA101744R1 |
|      | 1600 | Ekip Hi-Touch LSIG | 1600 | XT7H M 1600 Ekip Hi-Touch LSIG In=1600A | 1SDA101465R1 | 1SDA101745R1 |

## Motor protection circuit-breakers

### SACE XT7H M (70 kA) Ekip M Dip I - Front terminals (F)

| Size | Iu   | Trip units   | In   | Type                              | 3 poles      | 4 poles |
|------|------|--------------|------|-----------------------------------|--------------|---------|
|      |      |              |      |                                   | Code         | Code    |
| XT7  | 800  | Ekip M Dip I | 800  | XT7H M 800 Ekip M Dip I In=800A   | 1SDA101466R1 |         |
|      | 1000 | Ekip M Dip I | 1000 | XT7H M 1000 Ekip M Dip I In=1000A | 1SDA101467R1 |         |
|      | 1250 | Ekip M Dip I | 1250 | XT7H M 1250 Ekip M Dip I In=1250A | 1SDA101468R1 |         |
|      | 1600 | Ekip M Dip I | 1600 | XT7H M 1600 Ekip M Dip I In=1600A | 1SDA101469R1 |         |



XT7 M - circuit-breaker

### SACE XT7H M (70 kA) Ekip M Touch LRIU - Front terminals (F)

| Size | Iu   | Trip units        | In   | Type                                   | 3 poles      | 4 poles |
|------|------|-------------------|------|--|--------------|---------|
|      |      |                   |      |  | Code         | Code    |
| XT7  | 800  | Ekip M Touch LRIU | 800  | XT7H M 800 Ekip M Touch LRIU In=800A   | 1SDA101470R1 |         |
|      | 1000 | Ekip M Touch LRIU | 1000 | XT7H M 1000 Ekip M Touch LRIU In=1000A | 1SDA101471R1 |         |
|      | 1250 | Ekip M Touch LRIU | 1250 | XT7H M 1250 Ekip M Touch LRIU In=1250A | 1SDA101472R1 |         |
|      | 1600 | Ekip M Touch LRIU | 1600 | XT7H M 1600 Ekip M Touch LRIU In=1600A | 1SDA101473R1 |         |



XT7 M - circuit-breaker

## Generator protection circuit-breakers

**SACE XT7H M (70 kA) Ekip G Dip LS/I - Front terminals (F)**

| Size | Iu   | Trip units      | In   | Type                                    | 3 poles      | 4 poles      |
|------|------|-----------------|------|---|--------------|--------------|
|      |      |                 |      |   | Code         | Code         |
| XT7  | 800  | Ekip G Dip LS/I | 800  | XT7H M 800 Ekip G Dip LS/I<br>In=800A   | 1SDA101474R1 | 1SDA101746R1 |
|      | 1000 | Ekip G Dip LS/I | 1000 | XT7H M 1000 Ekip G Dip LS/I<br>In=1000A | 1SDA101475R1 | 1SDA101747R1 |
|      | 1250 | Ekip G Dip LS/I | 1250 | XT7H M 1250 Ekip G Dip LS/I<br>In=1250A | 1SDA101476R1 | 1SDA101748R1 |
|      | 1600 | Ekip G Dip LS/I | 1600 | XT7H M 1600 Ekip G Dip LS/I<br>In=1600A | 1SDA101477R1 | 1SDA101749R1 |

**SACE XT7H M (70 kA) Ekip G Touch LSIG - Front terminals (F)**

| Size | Iu   | Trip units        | In   | Type                                      | 3 poles      | 4 poles      |
|------|------|-------------------|------|---|--------------|--------------|
|      |      |                   |      |   | Code         | Code         |
| XT7  | 800  | Ekip G Touch LSIG | 800  | XT7H M 800 Ekip G Touch LSIG<br>In=800A   | 1SDA101478R1 | 1SDA101750R1 |
|      | 1000 | Ekip G Touch LSIG | 1000 | XT7H M 1000 Ekip G Touch LSIG<br>In=1000A | 1SDA101479R1 | 1SDA101751R1 |
|      | 1250 | Ekip G Touch LSIG | 1250 | XT7H M 1250 Ekip G Touch LSIG<br>In=1250A | 1SDA101480R1 | 1SDA101752R1 |
|      | 1600 | Ekip G Touch LSIG | 1600 | XT7H M 1600 Ekip G Touch LSIG<br>In=1600A | 1SDA101481R1 | 1SDA101753R1 |

**SACE XT7H M (70 kA) Ekip G Hi-Touch LSIG - Front terminals (F)**

| Size | Iu   | Trip units           | In   | Type  | 3 poles      | 4 poles      |
|------|------|----------------------|------|---|--------------|--------------|
|      |      |                      |      |   | Code         | Code         |
| XT7  | 800  | Ekip G Hi-Touch LSIG | 800  | XT7H M 800 Ekip G Hi-Touch LSIG<br>In=800A  | 1SDA101482R1 | 1SDA101754R1 |
|      | 1000 | Ekip G Hi-Touch LSIG | 1000 | XT7H M 1000 Ekip G Hi-TouchLSIG<br>In=1000A | 1SDA101483R1 | 1SDA101755R1 |
|      | 1250 | Ekip G Hi-Touch LSIG | 1250 | XT7H M 1250 Ekip G Hi-TouchLSIG<br>In=1250A | 1SDA101484R1 | 1SDA101756R1 |
|      | 1600 | Ekip G Hi-Touch LSIG | 1600 | XT7H M 1600 Ekip G Hi-TouchLSIG<br>In=1600A | 1SDA101485R1 | 1SDA101757R1 |



# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7 M



XT7 M - circuit-breaker

### Distribution circuit-breakers

#### SACE XT7L M (120 kA) Ekip Dip LS/I - Front terminals (F)

| Size | Iu   | Trip units    | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------|------|------------------------------------|--------------|--------------|
|      |      |               |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Dip LS/I | 800  | XT7L M 800 Ekip Dip LS/I In=800A   | 1SDA101494R1 | 1SDA101766R1 |
|      | 1000 | Ekip Dip LS/I | 1000 | XT7L M 1000 Ekip Dip LS/I In=1000A | 1SDA101495R1 | 1SDA101767R1 |
|      | 1250 | Ekip Dip LS/I | 1250 | XT7L M 1250 Ekip Dip LS/I In=1250A | 1SDA101496R1 | 1SDA101768R1 |
|      | 1600 | Ekip Dip LS/I | 1600 | XT7L M 1600 Ekip Dip LS/I In=1600A | 1SDA101497R1 | 1SDA101769R1 |

#### SACE XT7L M (120 kA) Ekip Dip LSI - Front terminals (F)

| Size | Iu   | Trip units   | In   | Type                              | 3 poles      | 4 poles      |
|------|------|--------------|------|-----------------------------------|--------------|--------------|
|      |      |              |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Dip LSI | 800  | XT7L M 800 Ekip Dip LSI In=800A   | 1SDA101498R1 | 1SDA101770R1 |
|      | 1000 | Ekip Dip LSI | 1000 | XT7L M 1000 Ekip Dip LSI In=1000A | 1SDA101499R1 | 1SDA101771R1 |
|      | 1250 | Ekip Dip LSI | 1250 | XT7L M 1250 Ekip Dip LSI In=1250A | 1SDA101500R1 | 1SDA101772R1 |
|      | 1600 | Ekip Dip LSI | 1600 | XT7L M 1600 Ekip Dip LSI In=1600A | 1SDA101501R1 | 1SDA101773R1 |

#### SACE XT7L M (120 kA) Ekip Dip LSIG - Front terminals (F)

| Size | Iu   | Trip units    | In   | Type                               | 3 poles      | 4 poles      |
|------|------|---------------|------|------------------------------------|--------------|--------------|
|      |      |               |      |                                    | Code         | Code         |
| XT7  | 800  | Ekip Dip LSIG | 800  | XT7L M 800 Ekip Dip LSIG In=800A   | 1SDA101502R1 | 1SDA101774R1 |
|      | 1000 | Ekip Dip LSIG | 1000 | XT7L M 1000 Ekip Dip LSIG In=1000A | 1SDA101503R1 | 1SDA101775R1 |
|      | 1250 | Ekip Dip LSIG | 1250 | XT7L M 1250 Ekip Dip LSIG In=1250A | 1SDA101504R1 | 1SDA101776R1 |
|      | 1600 | Ekip Dip LSIG | 1600 | XT7L M 1600 Ekip Dip LSIG In=1600A | 1SDA101505R1 | 1SDA101777R1 |

#### SACE XT7L M (120 kA) Ekip Dip LIG - Front terminals (F)

| Size | Iu   | Trip units   | In   | Type                              | 3 poles      | 4 poles      |
|------|------|--------------|------|-----------------------------------|--------------|--------------|
|      |      |              |      |                                   | Code         | Code         |
| XT7  | 800  | Ekip Dip LIG | 800  | XT7L M 800 Ekip Dip LIG In=800A   | 1SDA101554R1 | 1SDA101818R1 |
|      | 1000 | Ekip Dip LIG | 1000 | XT7L M 1000 Ekip Dip LIG In=1000A | 1SDA101555R1 | 1SDA101819R1 |
|      | 1250 | Ekip Dip LIG | 1250 | XT7L M 1250 Ekip Dip LIG In=1250A | 1SDA101556R1 | 1SDA101820R1 |
|      | 1600 | Ekip Dip LIG | 1600 | XT7L M 1600 Ekip Dip LIG In=1600A | 1SDA101557R1 | 1SDA101821R1 |

#### SACE XT7L M (120 kA) Ekip Touch LSI - Front terminals (F)

| Size | Iu   | Trip units     | In   | Type                                | 3 poles      | 4 poles      |
|------|------|----------------|------|-------------------------------------|--------------|--------------|
|      |      |                |      |                                     | Code         | Code         |
| XT7  | 800  | Ekip Touch LSI | 800  | XT7L M 800 Ekip Touch LSI In=800A   | 1SDA101506R1 | 1SDA101778R1 |
|      | 1000 | Ekip Touch LSI | 1000 | XT7L M 1000 Ekip Touch LSI In=1000A | 1SDA101507R1 | 1SDA101779R1 |
|      | 1250 | Ekip Touch LSI | 1250 | XT7L M 1250 Ekip Touch LSI In=1250A | 1SDA101508R1 | 1SDA101780R1 |
|      | 1600 | Ekip Touch LSI | 1600 | XT7L M 1600 Ekip Touch LSI In=1600A | 1SDA101509R1 | 1SDA101781R1 |



XT7 M - circuit-breaker

**SACE XT7L M (120 kA) Ekip Touch LSI - Front terminals (F)**

| Size | lu   | Trip units     | In   | Type                                   | 3 poles      | 4 poles      |
|------|------|----------------|------|--|--------------|--------------|
|      |      |                |      |  | Code         | Code         |
| XT7  | 800  | Ekip Touch LSI | 800  | XT7L M 800 Ekip Touch LSI<br>In=800A   | 1SDA101510R1 | 1SDA101782R1 |
|      | 1000 | Ekip Touch LSI | 1000 | XT7L M 1000 Ekip Touch LSI<br>In=1000A | 1SDA101511R1 | 1SDA101783R1 |
|      | 1250 | Ekip Touch LSI | 1250 | XT7L M 1250 Ekip Touch LSI<br>In=1250A | 1SDA101512R1 | 1SDA101784R1 |
|      | 1600 | Ekip Touch LSI | 1600 | XT7L M 1600 Ekip Touch LSI<br>In=1600A | 1SDA101513R1 | 1SDA101785R1 |

**SACE XT7L M (120 kA) Ekip Touch Measuring LSI - Front terminals (F)**

| Size | lu   | Trip units          | In   | Type  | 3 poles      | 4 poles      |
|------|------|---------------------|------|---|--------------|--------------|
|      |      |                     |      |   | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSI | 800  | XT7L M 800 Ekip Touch Meas.LSI<br>In=800A   | 1SDA101514R1 | 1SDA101786R1 |
|      | 1000 | Ekip Touch Meas.LSI | 1000 | XT7L M 1000 Ekip Touch Meas.LSI<br>In=1000A | 1SDA101515R1 | 1SDA101787R1 |
|      | 1250 | Ekip Touch Meas.LSI | 1250 | XT7L M 1250 Ekip Touch Meas.LSI<br>In=1250A | 1SDA101516R1 | 1SDA101788R1 |
|      | 1600 | Ekip Touch Meas.LSI | 1600 | XT7L M 1600 Ekip Touch Meas.LSI<br>In=1600A | 1SDA101517R1 | 1SDA101789R1 |

**SACE XT7L M (120 kA) Ekip Touch Measuring LSI - Front terminals (F)**

| Size | lu   | Trip units          | In   | Type  | 3 poles      | 4 poles      |
|------|------|---------------------|------|---|--------------|--------------|
|      |      |                     |      |   | Code         | Code         |
| XT7  | 800  | Ekip Touch Meas.LSI | 800  | XT7L M 800 Ekip Touch Meas.LSI<br>In=800A   | 1SDA101518R1 | 1SDA101790R1 |
|      | 1000 | Ekip Touch Meas.LSI | 1000 | XT7L M 1000 Ekip Touch Meas.LSI<br>In=1000A | 1SDA101519R1 | 1SDA101791R1 |
|      | 1250 | Ekip Touch Meas.LSI | 1250 | XT7L M 1250 Ekip Touch Meas.LSI<br>In=1250A | 1SDA101520R1 | 1SDA101792R1 |
|      | 1600 | Ekip Touch Meas.LSI | 1600 | XT7L M 1600 Ekip Touch Meas.LSI<br>In=1600A | 1SDA101521R1 | 1SDA101793R1 |

**SACE XT7L M (120 kA) Ekip Hi-Touch LSI - Front terminals (F)**

| Size | lu   | Trip units        | In   | Type                                      | 3 poles      | 4 poles      |
|------|------|-------------------|------|---|--------------|--------------|
|      |      |                   |      |   | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSI | 800  | XT7L M 800 Ekip Hi-Touch LSI<br>In=800A   | 1SDA101522R1 | 1SDA101794R1 |
|      | 1000 | Ekip Hi-Touch LSI | 1000 | XT7L M 1000 Ekip Hi-Touch LSI<br>In=1000A | 1SDA101523R1 | 1SDA101795R1 |
|      | 1250 | Ekip Hi-Touch LSI | 1250 | XT7L M 1250 Ekip Hi-Touch LSI<br>In=1250A | 1SDA101524R1 | 1SDA101796R1 |
|      | 1600 | Ekip Hi-Touch LSI | 1600 | XT7L M 1600 Ekip Hi-Touch LSI<br>In=1600A | 1SDA101525R1 | 1SDA101797R1 |

# Ordering codes for XT7/XT7 M

## Automatic circuit-breakers – XT7 M



XT7 M - circuit-breaker

### SACE XT7L M (120 kA) Ekip Hi-Touch LSIG - Front terminals (F)

| Size | lu   | Trip units         | In   | Type                                    | 3 poles      | 4 poles      |
|------|------|--------------------|------|---|--------------|--------------|
|      |      |                    |      |   | Code         | Code         |
| XT7  | 800  | Ekip Hi-Touch LSIG | 800  | XT7L M 800 Ekip Hi-Touch LSIG In=800A   | 1SDA101526R1 | 1SDA101798R1 |
|      | 1000 | Ekip Hi-Touch LSIG | 1000 | XT7L M 1000 Ekip Hi-Touch LSIG In=1000A | 1SDA101527R1 | 1SDA101799R1 |
|      | 1250 | Ekip Hi-Touch LSIG | 1250 | XT7L M 1250 Ekip Hi-Touch LSIG In=1250A | 1SDA101528R1 | 1SDA101800R1 |
|      | 1600 | Ekip Hi-Touch LSIG | 1600 | XT7L M 1600 Ekip Hi-Touch LSIG In=1600A | 1SDA101529R1 | 1SDA101801R1 |

## Motor protection circuit-breakers

### SACE XT7L M (120 kA) Ekip M Dip I - Front terminals (F)

| Size | lu   | Trip units   | In   | Type                              | 3 poles      | 4 poles |
|------|------|--------------|------|-----------------------------------|--------------|---------|
|      |      |              |      |                                   | Code         | Code    |
| XT7  | 800  | Ekip M Dip I | 800  | XT7L M 800 Ekip M Dip I In=800A   | 1SDA101530R1 |         |
|      | 1000 | Ekip M Dip I | 1000 | XT7L M 1000 Ekip M Dip I In=1000A | 1SDA101531R1 |         |
|      | 1250 | Ekip M Dip I | 1250 | XT7L M 1250 Ekip M Dip I In=1250A | 1SDA101532R1 |         |
|      | 1600 | Ekip M Dip I | 1600 | XT7L M 1600 Ekip M Dip I In=1600A | 1SDA101533R1 |         |

### SACE XT7L M (120 kA) Ekip M Touch LRIU - Front terminals (F)

| Size | lu   | Trip units        | In   | Type                                   | 3 poles      | 4 poles |
|------|------|-------------------|------|--|--------------|---------|
|      |      |                   |      |  | Code         | Code    |
| XT7  | 800  | Ekip M Touch LRIU | 800  | XT7L M 800 Ekip M Touch LRIU In=800A   | 1SDA101534R1 |         |
|      | 1000 | Ekip M Touch LRIU | 1000 | XT7L M 1000 Ekip M Touch LRIU In=1000A | 1SDA101535R1 |         |
|      | 1250 | Ekip M Touch LRIU | 1250 | XT7L M 1250 Ekip M Touch LRIU In=1250A | 1SDA101536R1 |         |
|      | 1600 | Ekip M Touch LRIU | 1600 | XT7L M 1600 Ekip M Touch LRIU In=1600A | 1SDA101537R1 |         |



XT7 M - circuit-breaker



XT7 M - circuit-breaker

## Generator protection circuit-breakers

**SACE XT7L M (120 kA) Ekip G Dip LS/I - Front terminals (F)**

| Size | lu   | Trip units      | In   | Type                                   | 3 poles      | 4 poles      |
|------|------|-----------------|------|--|--------------|--------------|
|      |      |                 |      |  | Code         | Code         |
| XT7  | 800  | Ekip G Dip LS/I | 800  | XT7L M 800 Ekip G Dip LS/I<br>In=800A  | 1SDA101538R1 | 1SDA101802R1 |
|      | 1000 | Ekip G Dip LS/I | 1000 | XT7L M 1000 Ekip G Dip LS/I<br>In1000A | 1SDA101539R1 | 1SDA101803R1 |
|      | 1250 | Ekip G Dip LS/I | 1250 | XT7L M 1250 Ekip G Dip LS/I<br>In1250A | 1SDA101540R1 | 1SDA101804R1 |
|      | 1600 | Ekip G Dip LS/I | 1600 | XT7L M 1600 Ekip G Dip LS/I<br>In1600A | 1SDA101541R1 | 1SDA101805R1 |

**SACE XT7L M (120 kA) Ekip G Touch LSIG- Front terminals (F)**

| Size | lu   | Trip units        | In   | Type                                     | 3 poles      | 4 poles      |
|------|------|-------------------|------|--|--------------|--------------|
|      |      |                   |      |  | Code         | Code         |
| XT7  | 800  | Ekip G Touch LSIG | 800  | XT7L M 800 Ekip G Touch LSIG<br>In=800A  | 1SDA101542R1 | 1SDA101806R1 |
|      | 1000 | Ekip G Touch LSIG | 1000 | XT7L M 1000 Ekip G Touch LSIG<br>In=1000 | 1SDA101543R1 | 1SDA101807R1 |
|      | 1250 | Ekip G Touch LSIG | 1250 | XT7L M 1250 Ekip G Touch LSIG<br>In=1250 | 1SDA101544R1 | 1SDA101808R1 |
|      | 1600 | Ekip G Touch LSIG | 1600 | XT7L M 1600 Ekip G Touch LSIG<br>In=1600 | 1SDA101545R1 | 1SDA101809R1 |

**SACE XT7L M (120 kA) Ekip G Hi-Touch LSIG - Front terminals (F)**

| Size | lu   | Trip units           | In   | Type  | 3 poles      | 4 poles      |
|------|------|----------------------|------|---|--------------|--------------|
|      |      |                      |      |   | Code         | Code         |
| XT7  | 800  | Ekip G Hi-Touch LSIG | 800  | XT7L M 800 Ekip G Hi-Touch LSIG<br>In=800A  | 1SDA101546R1 | 1SDA101810R1 |
|      | 1000 | Ekip G Hi-Touch LSIG | 1000 | XT7L M 1000 Ekip G Hi-TouchLSIG<br>In=1000A | 1SDA101547R1 | 1SDA101811R1 |
|      | 1250 | Ekip G Hi-Touch LSIG | 1250 | XT7L M 1250 Ekip G Hi-TouchLSIG<br>In=1250A | 1SDA101548R1 | 1SDA101812R1 |
|      | 1600 | Ekip G Hi-Touch LSIG | 1600 | XT7L M 1600 Ekip G Hi-TouchLSIG<br>In=1600A | 1SDA101549R1 | 1SDA101813R1 |



# Ordering codes for XT7/XT7 M

## Switch-disconnectors – XT7/XT7 M



XT7 -  
switch-disconnector

| SACE XT7/XT7 M - Switch-disconnectors |      |             |              |              |
|---------------------------------------|------|-------------|--------------|--------------|
| Size                                  | Iu   | Type        | 3 poles      | 4 poles      |
|                                       |      |             | Code         | Code         |
| XT7                                   | 1000 | XT7D 1000   | 1SDA101906R1 | 1SDA101909R1 |
|                                       | 1250 | XT7D 1250   | 1SDA101907R1 | 1SDA101910R1 |
|                                       | 1600 | XT7D 1600   | 1SDA101908R1 | 1SDA101911R1 |
| XT7 M                                 | 1000 | XT7D M 1000 | 1SDA101912R1 | 1SDA101915R1 |
|                                       | 1250 | XT7D M 1250 | 1SDA101913R1 | 1SDA101916R1 |
|                                       | 1600 | XT7D M 1600 | 1SDA101914R1 | 1SDA101917R1 |

# Ordering codes for XT7/XT7 M

## Trip units – XT7/XT7 M



Ekip Dip Trip unit

### Trip Units - BASIC\*

#### Trip units - Distribution protection

| Size      | Type          | 3/4 poles    |
|-----------|---------------|--------------|
|           |               | Code         |
| XT7/XT7 M | Ekip Dip LS/I | 1SDA101918R1 |
|           | Ekip Dip LIG  | 1SDA101933R1 |

#### Trip units - Motor protection

| Size      | Type         | 3 poles      |
|-----------|--------------|--------------|
|           |              | Code         |
| XT7/XT7 M | Ekip M Dip I | 1SDA101927R1 |

#### Trip units - Generator protection

| Size    | Type            | 3/4 poles    |
|---------|-----------------|--------------|
|         |                 | Code         |
| XT7/XTM | Ekip G Dip LS/I | 1SDA101929R1 |

### Trip Units - OTHERS\*

#### Trip units - Distribution protection

| Size      | Type                      | 3/4 poles    |
|-----------|---------------------------|--------------|
|           |                           | Code         |
| XT7/XT7 M | Ekip Dip LSI              | 1SDA101919R1 |
|           | Ekip Dip LSIG             | 1SDA101920R1 |
|           | Ekip Touch LSI            | 1SDA101921R1 |
|           | Ekip Touch LSIG           | 1SDA101922R1 |
|           | Ekip Touch Measuring LSI  | 1SDA101923R1 |
|           | Ekip Touch Measuring LSIG | 1SDA101924R1 |
|           | Ekip Hi-Touch LSI         | 1SDA101925R1 |
|           | Ekip Hi-Touch LSIG        | 1SDA101926R1 |

#### Trip units - Motor protection

| Size      | Type              | 3 poles      |
|-----------|-------------------|--------------|
|           |                   | Code         |
| XT7/XT7 M | Ekip M Touch LRIU | 1SDA101928R1 |

#### Trip units - Generator protection

| Size    | Type                 | 3/4 poles    |
|---------|----------------------|--------------|
|         |                      | Code         |
| XT7/XTM | Ekip G Touch LSIG    | 1SDA101930R1 |
|         | Ekip G Hi-Touch LSIG | 1SDA101931R1 |

\* All the trip units can be interchanged only if are part of the same family: BASIC trip unit can not be upgraded with the others, the others can not be replaced with the basic. Dedicated rating plug are available (see table pag.8/132)



Ekip Dip Trip unit



Ekip Touch Trip unit

# Ordering codes for accessories

## Execution and installation



Fixed part of plug-in circuit-breaker

### Fixed parts

#### Fixed part of plug-in (P) circuit-breaker

| Size | Type                           | 3 poles      | 4 poles      |
|------|--------------------------------|--------------|--------------|
| XT1  | P FP EF                        | 1SDA068183R1 | 1SDA068185R1 |
| XT1  | P FP HR/VR <sup>(1)</sup>      | 1SDA068184R1 | 1SDA068186R1 |
| XT2  | P FP EF                        | 1SDA068187R1 | 1SDA068190R1 |
| XT2  | P FP HR/VR <sup>(1)</sup>      | 1SDA068189R1 | 1SDA068191R1 |
| XT3  | P FP EF                        | 1SDA068192R1 | 1SDA068194R1 |
| XT3  | P FP HR/VR <sup>(1)</sup>      | 1SDA068193R1 | 1SDA068195R1 |
| XT4  | P FP EF                        | 1SDA068196R1 | 1SDA068198R1 |
| XT4  | P FP HR/VR <sup>(1)</sup>      | 1SDA068197R1 | 1SDA068199R1 |
| XT5  | P FP 400A EF                   | 1SDA104668R1 | 1SDA104672R1 |
| XT5  | P FP 400A HR/VR <sup>(1)</sup> | 1SDA104670R1 | 1SDA104674R1 |
| XT5  | P FP 400A VR/VR                | 1SDA112961R1 | 1SDA112963R1 |
| XT5  | P FP 630A EF                   | 1SDA104676R1 | 1SDA104679R1 |
| XT5  | P FP 630A HR                   | 1SDA104677R1 | 1SDA104680R1 |
| XT5  | P FP 630A VR                   | 1SDA104678R1 | 1SDA104681R1 |

(1) The terminals are factory-mounted in the horizontal position (HR)

#### Fixed part of plug-in (P) frame configurable

| Size | Type                         | 3 poles      | 4 poles      |
|------|------------------------------|--------------|--------------|
| XT5  | P FP 400A frame configurable | 1SDA112953R1 | 1SDA112954R1 |
| XT5  | P FP 630A frame configurable | 1SDA112955R1 | 1SDA112956R1 |

#### Fixed part of withdrawable (W) circuit-breaker

| Size               | Type                           | 3 poles      | 4 poles      |
|--------------------|--------------------------------|--------------|--------------|
| XT2                | W FP EF                        | 1SDA068200R1 | 1SDA068202R1 |
| XT2                | W FP HR/VR <sup>(1)</sup>      | 1SDA068201R1 | 1SDA068203R1 |
| XT4                | W FP EF                        | 1SDA068204R1 | 1SDA068206R1 |
| XT4                | W FP HR/VR <sup>(1)</sup>      | 1SDA068205R1 | 1SDA068207R1 |
| XT5                | W FP 400A EF                   | 1SDA104682R1 | 1SDA104686R1 |
| XT5                | W FP 400A HR/VR <sup>(1)</sup> | 1SDA104684R1 | 1SDA104688R1 |
| XT5                | W FP 400A VR/VR                | 1SDA112965R1 | 1SDA112967R1 |
| XT5                | W FP 630A EF                   | 1SDA104690R1 | 1SDA104693R1 |
| XT5                | W FP 630A HR                   | 1SDA104691R1 | 1SDA104694R1 |
| XT5                | W FP 630A VR                   | 1SDA104692R1 | 1SDA104695R1 |
| XT6 <sup>(2)</sup> | W FP EF                        | 1SDA104696R1 | 1SDA104699R1 |
| XT6 <sup>(2)</sup> | W FP HR                        | 1SDA104697R1 | 1SDA104700R1 |
| XT6 <sup>(2)</sup> | W FP VR                        | 1SDA104698R1 | 1SDA104701R1 |
| XT7-XT7 M          | W FP EF                        | 1SDA104702R1 | 1SDA104704R1 |
| XT7-XT7 M          | W FP HR                        | 1SDA104703R1 | 1SDA104705R1 |

(1) The terminals are factory-mounted in the horizontal position (HR)

(2) In max = 800A, not suitable for XT6 1000A



Fixed part of withdrawable circuit-breaker



Fixed part of withdrawable XT7-XT7 M

#### Fixed part of withdrawable (W) frame configurable

| Size | Type                             | 3 poles      | 4 poles      |
|------|----------------------------------|--------------|--------------|
| XT5  | XT5 W FP 400A frame configurable | 1SDA112957R1 | 1SDA112958R1 |
| XT5  | XT5 W FP 630A frame configurable | 1SDA112959R1 | 1SDA112960R1 |
| XT6  | XT6 W FP frame configurable      | 1SDA112969R1 | 1SDA112970R1 |

## Conversion kits



Conversion kit for turning a fixed circuit-breaker into the moving part of a plug-in circuit-breaker

### Conversion kit to convert circuit-breaker from fixed to moving part of a plug-in unit

| Size | Type          | 3 poles      | 4 poles      |
|------|---------------|--------------|--------------|
| XT1  | P MP Kit      | 1SDA066276R1 | 1SDA066277R1 |
| XT2  | P MP Kit      | 1SDA066278R1 | 1SDA066279R1 |
| XT3  | P MP Kit      | 1SDA066280R1 | 1SDA066281R1 |
| XT4  | P MP Kit      | 1SDA066282R1 | 1SDA066283R1 |
| XT5  | P MP Kit 400A | 1SDA104707R1 | 1SDA104708R1 |
| XT5  | P MP Kit 630A | 1SDA104709R1 | 1SDA104710R1 |



Conversion kit for turning a fixed circuit-breaker into the moving part of a withdrawable circuit-breaker

### Conversion kit to convert circuit-breaker from fixed to moving part of a withdrawable unit

| Size      | Type          | 3 poles      | 4 poles      |
|-----------|---------------|--------------|--------------|
| XT2       | W MP Kit      | 1SDA066284R1 | 1SDA066285R1 |
| XT4       | W MP Kit      | 1SDA066286R1 | 1SDA066287R1 |
| XT5       | W MP Kit 400A | 1SDA104711R1 | 1SDA104712R1 |
| XT5       | W MP Kit 630A | 1SDA104713R1 | 1SDA104714R1 |
| XT6       | W MP Kit      | 1SDA104715R1 | 1SDA104716R1 |
| XT7-XT7 M | W MP Kit      | 1SDA104717R1 | 1SDA104718R1 |

### Conversion kit to convert circuit-breaker fixed part from plug-in to a withdrawable unit

| Size | Type           | Code         |
|------|----------------|--------------|
| XT2  | XT2 FP P>W Kit | 1SDA066288R1 |
| XT4  | XT4 FP P>W Kit | 1SDA066289R1 |
| XT5  | XT5 FP P>W Kit | 1SDA104706R1 |



Conversion kit for turning a fixed part of plug-in version into a fixed part of withdrawable version circuit-breaker

### Conversion kit to convert an RC from fixed to a plug-in unit

| Size | Type                        | Code         |
|------|-----------------------------|--------------|
| XT2  | XT2 P MP RC Sel 4p Kit      | 1SDA066290R1 |
| XT4  | XT4 P MP RC Sel 4p Kit      | 1SDA066291R1 |
| XT5  | XT5 400A P MP RC Sel 4p Kit | 1SDA104719R1 |
| XT5  | XT5 630A P MP RC Sel 4p Kit | 1SDA104720R1 |

### Conversion kit to convert an RC from a plug-in into a withdrawable unit

| Size | Type                        | Code         |
|------|-----------------------------|--------------|
| XT2  | XT2 W MP RC Sel 4p Kit      | 1SDA066292R1 |
| XT4  | XT4 W MP RC Sel 4p Kit      | 1SDA067115R1 |
| XT5  | XT5 400A W MP RC Sel 4p Kit | 1SDA104721R1 |
| XT5  | XT5 630A W MP RC Sel 4p Kit | 1SDA104722R1 |



# Ordering codes for accessories

## Execution and installation



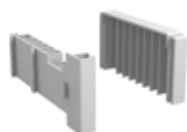
Fixed part socket-plug connector



Socket-plug panel connector



DIN guide



Cable rack

### Plug and socket adapters

#### Socket plug connector on rear of the panel

| Size      | Type                                    | Code         |
|-----------|---|--------------|
| XT1...XT6 | Socket-plug panel connector with 3PINS  | 1SDA066409R1 |
| XT1...XT6 | Socket-plug panel connector with 6PINS  | 1SDA066410R1 |
| XT1...XT6 | Socket-plug panel connector with 9PINS  | 1SDA066411R1 |
| XT1...XT6 | Socket-plug panel connector with 15PINS | 1SDA066412R1 |

#### Fixed part socket-plug connector

| Size            | Type   | Code         |
|-----------------|--|--------------|
| XT2-XT4-XT5-XT6 | Socket-plug connector for Moving Part 12PINS | 1SDA066413R1 |
| XT2-XT4-XT5-XT6 | Socket-plug connector for Fixed Part 12PINS  | 1SDA066414R1 |

### Bracket for fixing on DIN-rail

#### Bracket for fixing onto DIN-rail

| Size | Type                            | 3 poles      | 4 poles      |
|------|---------------------------------|--------------|--------------|
| XT1  | KIT DIN50022                    | 1SDA066652R1 | 1SDA066419R1 |
| XT1  | KIT DIN50022 + RC Low 200mm     |              | 1SDA067134R1 |
| XT1  | KIT DIN50022 +RC Sel/RC Inst    | 1SDA067135R1 | 1SDA067135R1 |
| XT2  | KIT DIN50022                    | 1SDA080704R1 | 1SDA080325R1 |
| XT3  | KIT DIN50022                    | 1SDA066420R1 | 1SDA066421R1 |
| XT3  | KIT DIN50022 + RC Inst / RC Sel | 1SDA067139R1 | 1SDA067139R1 |
| XT4  | KIT DIN50022                    | 1SDA080326R1 | 1SDA080327R1 |

### Floor fixing plate

#### Cable rack

| Size      | Type                              | Code         |
|-----------|-----------------------------------|--------------|
| XT7-XT7 M | Floor fixing plate for fixed unit | 1SDA076020R1 |

### Cable rack

#### Cable rack

| Size    | Type   | Code         |
|---------|--|--------------|
| XT5-XT6 | Cable rack for fixed and plug-in circuit-breaker | 1SDA104729R1 |

# Ordering codes for accessories

## Power connection

### Terminals for circuit-breaker

#### Terminals for circuit-breaker



Front extended terminal - EF



Front extended spread terminal - ES



FCCu terminal



FCCuAl external terminal



FCCuAl internal terminal

| Size | Type   | pcs<br>(1/2 kit for 3p)     | pcs<br>(1/2 kit for 4p)     |
|------|--|-----------------------------|-----------------------------|
| XT1  | F Front terminals  | 1SDA066849R1                | 1SDA066850R1                |
| XT1  | EF Extended front terminals  | 1SDA066865R1                | 1SDA066866R1                |
| XT1  | ES Extended spread front terminals                                 | 1SDA066889R1                | 1SDA066890R1                |
| XT1  | FC CuAl terminals for CuAl cables 1x1.5...70mm <sup>2</sup>        | 1SDA067151R1                | 1SDA067152R1                |
| XT1  | FC CuAl terminals for CuAl cables 1x35...95mm <sup>2</sup>         | 1SDA067155R1                | 1SDA067156R1                |
| XT1  | FC CuAl terminals for CuAl cables 1x120...240mm <sup>2</sup> + ADP | 1SDA067159R1 <sup>(1)</sup> | 1SDA067160R1 <sup>(1)</sup> |
| XT1  | FC Cu terminals for Cu cables                                      | 1SDA066905R1                | 1SDA066906R1                |
| XT1  | MC Multi-cable terminals 6x2.5...35mm <sup>2</sup>                 | 1SDA066921R1                | 1SDA066922R1                |
| XT1  | R Rear adjustable terminals  | 1SDA066937R1                | 1SDA066938R1                |
| XT1  | R-RC Rear terminals for residual current                           |                             | 1SDA066953R1                |
| XT1  | FB Flexible busbar terminals                                       | 1SDA066957R1                | 1SDA066958R1                |
| XT2  | F Front terminals  | 1SDA066853R1                | 1SDA066854R1                |
| XT2  | EF Extended front terminals  | 1SDA066869R1                | 1SDA066870R1                |
| XT2  | ES Extended spread front terminals                                 | 1SDA066893R1                | 1SDA066894R1                |
| XT2  | FC CuAl terminals for CuAl cables 1x1...95mm <sup>2</sup>          | 1SDA067163R1                | 1SDA067164R1                |
| XT2  | FC CuAl terminals for CuAl cables 1x70...185mm <sup>2</sup>        | 1SDA067167R1                | 1SDA067168R1                |
| XT2  | FC CuAl terminals for CuAl cables 1x120...240mm <sup>2</sup> + ADP | 1SDA067171R1 <sup>(1)</sup> | 1SDA067172R1 <sup>(1)</sup> |
| XT2  | FC CuAl terminals for CuAl cables 2x35... 70 mm <sup>2</sup>       | 1SDA067175R1                | 1SDA067176R1                |
| XT2  | FC Cu terminals for Cu cables                                      | 1SDA066909R1                | 1SDA066910R1                |
| XT2  | MC Multi-cable terminals 6x2.5...35mm <sup>2</sup>                 | 1SDA066925R1                | 1SDA066926R1                |
| XT2  | R Rear adjustable terminals  | 1SDA066941R1                | 1SDA066942R1                |
| XT2  | FB Flexible busbar terminals                                       | 1SDA066961R1                | 1SDA066962R1                |
| XT3  | F Front terminals  | 1SDA066857R1                | 1SDA066858R1                |
| XT3  | EF Extended front terminals  | 1SDA066873R1                | 1SDA066874R1                |
| XT3  | ES Extended spread front terminals                                 | 1SDA066897R1                | 1SDA066898R1                |
| XT3  | FC CuAl terminals for CuAl cables 1x185mm <sup>2</sup>             | 1SDA067179R1                | 1SDA067180R1                |
| XT3  | FC CuAl terminals for CuAl cables 1x120...240mm <sup>2</sup> + ADP | 1SDA067183R1 <sup>(1)</sup> | 1SDA067184R1 <sup>(1)</sup> |
| XT3  | FC CuAl terminals for CuAl cables 2x35...120mm <sup>2</sup>        | 1SDA067187R1                | 1SDA067188R1                |
| XT3  | FC CuAl terminals for CuAl cables 1x35...150mm <sup>2</sup>        | 1SDA066274R1                | 1SDA066275R1                |
| XT3  | FC Cu terminals for Cu cables                                      | 1SDA066913R1                | 1SDA066914R1                |
| XT3  | MC Multi-cable terminals 6x2.5...35mm <sup>2</sup>                 | 1SDA066929R1                | 1SDA066930R1                |
| XT3  | R Rear adjustable terminals  | 1SDA066945R1                | 1SDA066946R1                |
| XT3  | FB Flexible busbar terminals                                       | 1SDA066965R1                | 1SDA066966R1                |
| XT3  | R-RC Rear terminal for RC Inst-Sel                                 |                             | 1SDA066954R1                |
| XT4  | F Front terminals  | 1SDA066861R1                | 1SDA066862R1                |
| XT4  | EF Extended front terminals  | 1SDA066877R1                | 1SDA066878R1                |
| XT4  | ES Extended spread front terminals                                 | 1SDA066901R1                | 1SDA066902R1                |
| XT4  | FC CuAl terminals for CuAl cables 1x1...150mm <sup>2</sup>         | 1SDA067191R1                | 1SDA067192R1                |
| XT4  | FC CuAl terminals for CuAl cables 1x120...240mm <sup>2</sup> + ADP | 1SDA067195R1 <sup>(1)</sup> | 1SDA067196R1 <sup>(1)</sup> |
| XT4  | FC CuAl terminals for CuAl cables 2x35...120mm <sup>2</sup>        | 1SDA067199R1                | 1SDA067200R1                |
| XT4  | FC Cu terminals for Cu cables                                      | 1SDA066917R1                | 1SDA066918R1                |
| XT4  | MC Multi-cable terminals 6x2.5...35mm <sup>2</sup>                 | 1SDA066933R1                | 1SDA066934R1                |
| XT4  | R Rear adjustable terminals  | 1SDA066949R1                | 1SDA066950R1                |
| XT4  | FB Flexible busbar terminals                                       | 1SDA066969R1                | 1SDA066970R1                |

(1) Not installable on circuit-breakers mounted on DIN rail or with rear mechanical interlock

# Ordering codes for accessories

## Power connection



Multi-cable  
terminal (MC)



Rear horizontal  
terminals (R)

### Terminals for circuit-breaker

| Size | Type   | pcs<br>(1/2 kit for 3p) | pcs<br>(1/2 kit for 4p) |
|------|--|-------------------------|-------------------------|
| XT5  | F Front terminals                            | 1SDA104730R1            | 1SDA104731R1            |
| XT5  | EF Extended front terminals                  | 1SDA104734R1            | 1SDA104735R1            |
| XT5  | ES Extended spread front terminals           | 1SDA104738R1            | 1SDA104739R1            |
| XT5  | XT5 FC CuAl 1x35...185mm <sup>2</sup>        | 1SDA104746R1            | 1SDA104747R1            |
| XT5  | FC CuAl 1x120...240mm <sup>2</sup>           | 1SDA104742R1            | 1SDA104743R1            |
| XT5  | FC CuAl 1x185...300mm <sup>2</sup>           | 1SDA104744R1            | 1SDA104745R1            |
| XT5  | XT5 FC CuAl 2x70...240mm <sup>2</sup>        | 1SDA104748R1            | 1SDA104749R1            |
| XT5  | R Rear adjustable terminals                  | 1SDA104760R1            | 1SDA104761R1            |
| XT6  | F Front terminals                            | 1SDA104732R1            | 1SDA104733R1            |
| XT6  | EF Extended front terminals 800A             | 1SDA104736R1            | 1SDA104737R1            |
| XT6  | EF Extended front terminals 1000A            | 1SDA104738R1            | 1SDA104740R1            |
| XT6  | XT6 ES Extended spread front terminals Upper | 1SDA104740R1            | 1SDA104741R1            |
| XT6  | XT6 ES Extended spread front terminals Lower | 1SDA113127R1            | 1SDA104741R1            |
| XT6  | FC CuAl 2x120...240mm <sup>2</sup>           | 1SDA104750R1            | 1SDA104751R1            |
| XT6  | FC CuAl 3x70...185mm <sup>2</sup>            | 1SDA104752R1            | 1SDA104753R1            |
| XT6  | FC CuAl 4x70...150mm <sup>2</sup>            | 1SDA104754R1            | 1SDA104755R1            |
| XT6  | R Rear adjustable terminals                  | 1SDA104762R1            | 1SDA104763R1            |

### Terminals loose supply for fixed circuit-breaker

| Size      | Type                                     | 3 pcs<br>(1/2 kit for 3p) | 4 pcs<br>(1/2 kit for 4p) |
|-----------|--|---------------------------|---------------------------|
| XT7-XT7 M | F Front terminals                        | 1SDA073973R1              | 1SDA073974R1              |
| XT7-XT7 M | EF Extended front terminals              | 1SDA073967R1              | 1SDA073968R1              |
| XT7-XT7 M | ES Extended spread front terminals Upper | 1SDA073979R1              | 1SDA073980R1              |
| XT7-XT7 M | ES Extended spread front terminals Lower | 1SDA076076R1              | 1SDA073980R1              |
| XT7-XT7 M | FC CuAl 2x240mm <sup>2</sup>             | 1SDA104756R1              | 1SDA104757R1              |
| XT7-XT7 M | FC CuAl 4x240mm <sup>2</sup>             | 1SDA104758R1              | 1SDA104759R1              |
| XT7-XT7 M | XT7-XT7 M FC CuAl 3x380mm <sup>2</sup>   | 1SDA113119R1              | 1SDA113120R1              |
| XT7-XT7 M | HR/VR – Rear terminals                   | 1SDA073989R1              | 1SDA073990R1              |

### Terminals installed for fixed circuit-breaker

| Size      | Type  | 3 pcs<br>(1/2 kit for 3p) | 4 pcs<br>(1/2 kit for 4p) |
|-----------|---|---------------------------|---------------------------|
| XT7-XT7 M | EF Extended front terminals Upper                 | 1SDA073963R1              | 1SDA073964R1              |
| XT7-XT7 M | EF Extended front terminals Lower                 | 1SDA073965R1              | 1SDA073966R1              |
| XT7-XT7 M | ES Extended spread front terminals Upper          | 1SDA073975R1              | 1SDA073976R1              |
| XT7-XT7 M | ES Extended spread front terminals Lower          | 1SDA073977R1              | 1SDA073978R1              |
| XT7-XT7 M | HR-Rear horizontal terminals Upper                | 1SDA073981R1              | 1SDA073982R1              |
| XT7-XT7 M | HR-Rear horizontal terminals Lower                | 1SDA073983R1              | 1SDA073984R1              |
| XT7-XT7 M | VR-Rear vertical terminals Upper                  | 1SDA073985R1              | 1SDA073986R1              |
| XT7-XT7 M | VR-Rear vertical terminals Lower                  | 1SDA073987R1              | 1SDA073988R1              |
| XT7-XT7 M | FC CuAl 4x120...240mm <sup>2</sup> Upper          | 1SDA073997R1              | 1SDA073998R1              |
| XT7-XT7 M | FC CuAl 4x120...240mm <sup>2</sup> Lower          | 1SDA073999R1              | 1SDA074000R1              |
| XT7-XT7 M | FC CuAl 2x185...240mm <sup>2</sup> XT7 Upper INST | 1SDA107753R1              | 1SDA107755R1              |
| XT7-XT7 M | FC CuAl 2x185...240mm <sup>2</sup> XT7 Lower INST | 1SDA107754R1              | 1SDA107756R1              |
| XT7-XT7 M | FC CuAl 3x240...380mm <sup>2</sup> Upper          | 1SDA113121R1              | 1SDA113122R1              |
| XT7-XT7 M | FC CuAl 3x240...380mm <sup>2</sup> Lower          | 1SDA113123R1              | 1SDA113124R1              |

## Terminals for fixed parts

### Terminals for the fixed parts



EF terminal for fixed part



HR terminals for fixed part

| Size | Type                                      | pcs (1/2 kit for 3p) | pcs (1/2 kit for 4p) |
|------|---|----------------------|----------------------|
| XT1  | EF – Front extended terminals             | 1SDA066260R1         | 1SDA066261R1         |
| XT1  | HR/VR – Rear terminals                    | 1SDA066268R1         | 1SDA066269R1         |
| XT2  | EF – Front extended terminals             | 1SDA066262R1         | 1SDA066263R1         |
| XT2  | HR/VR – Rear terminals                    | 1SDA066270R1         | 1SDA066271R1         |
| XT3  | EF – Front extended terminals             | 1SDA066264R1         | 1SDA066265R1         |
| XT3  | HR/VR – Rear terminals                    | 1SDA066272R1         | 1SDA066273R1         |
| XT4  | EF – Front extended terminals             | 1SDA066266R1         | 1SDA066267R1         |
| XT4  | HR/VR – Rear terminals                    | 1SDA066272R1         | 1SDA066273R1         |
| XT5  | EF – Front extended terminals 400A        | 1SDA104764R1         | 1SDA104765R1         |
| XT5  | HR/VR – Rear terminals IEC 400A           | 1SDA104775R1         | 1SDA104778R1         |
| XT5  | HR/VR – Rear terminals (same length) 400A | 1SDA104774R1         | 1SDA104777R1         |
| XT5  | EF – Front extended terminals 630A        | 1SDA104766R1         | 1SDA104767R1         |
| XT5  | HR – Rear horizontal terminals 630A       | 1SDA104770R1         | 1SDA104771R1         |
| XT5  | VR – Rear vertical terminals 630A         | 1SDA104780R1         | 1SDA104781R1         |
| XT6  | EF – Front extended terminals             | 1SDA104768R1         | 1SDA104769R1         |
| XT6  | HR – Rear horizontal terminals            | 1SDA104772R1         | 1SDA104773R1         |
| XT6  | VR – Rear vertical terminals              | 1SDA104782R1         | 1SDA104783R1         |

### Terminals loose supply for fixed parts

| Size      | Type                                   | 3 pcs (1/2 kit for 3p) | 4 pcs (1/2 kit for 4p) |
|-----------|--|------------------------|------------------------|
| XT7-XT7 M | EF – Front extended terminals          | 1SDA073943R1           | 1SDA073944R1           |
| XT7-XT7 M | ES – Front extended spread terminals   | 1SDA073955R1           | 1SDA073956R1           |
| XT7-XT7 M | HR/VR – Rear terminals                 | 1SDA107715R1           | 1SDA107716R1           |
| XT7-XT7 M | SHR – Rear spread horizontal terminals | 1SDA073961R1           | 1SDA073962R1           |
| XT7-XT7 M | FC CuAl 4x240mm <sup>2</sup> terminals | 1SDA073995R1           | 1SDA073996R1           |

### Terminals installed for fixed parts

| Size      | Type                                       | 3 pcs (1/2 kit for 3p) | 4 pcs (1/2 kit for 4p) |
|-----------|--|------------------------|------------------------|
| XT7-XT7 M | EF Extended front terminals Upper          | 1SDA073939R1           | 1SDA073940R1           |
| XT7-XT7 M | EF Extended front terminals Lower          | 1SDA073941R1           | 1SDA073942R1           |
| XT7-XT7 M | ES Extended spread front terminals Upper   | 1SDA073951R1           | 1SDA073952R1           |
| XT7-XT7 M | ES Extended spread front terminals Lower   | 1SDA073953R1           | 1SDA073954R1           |
| XT7-XT7 M | SHR-Rear spread horizontal terminals Upper | 1SDA073957R1           | 1SDA073958R1           |
| XT7-XT7 M | SHR-Rear spread horizontal terminals Lower | 1SDA073959R1           | 1SDA073960R1           |
| XT7-XT7 M | FC CuAl 4x4/0 AWG - 500kcmil Upper         | 1SDA073991R1           | 1SDA073993R1           |
| XT7-XT7 M | FC CuAl 4x4/0 AWG - 500kcmil Lower         | 1SDA073992R1           | 1SDA073994R1           |

## Fixed part adapters



Fixed part adapter

### Adapter for mounting the terminals of the fixed circuit-breaker on the fixed part

| Size | Type                                       | 3 poles      | 4 poles      |
|------|--|--------------|--------------|
| XT1  | XT1 ADP adapter fixed part (2 pieces)      | 1SDA066305R1 | 1SDA066306R1 |
| XT2  | XT2 ADP adapter fixed part (2 pieces)      | 1SDA066307R1 | 1SDA066308R1 |
| XT3  | XT3 ADP adapter fixed part (2 pieces)      | 1SDA066309R1 | 1SDA066310R1 |
| XT4  | XT4 ADP adapter fixed part (2 pieces)      | 1SDA066311R1 | 1SDA066312R1 |
| XT5  | XT5 400A ADP adapter fixed part (2 pieces) | 1SDA104723R1 | 1SDA104724R1 |
| XT5  | XT5 630A ADP adapter fixed part (2 pieces) | 1SDA104725R1 | 1SDA104726R1 |
| XT6  | XT6 ADP adapter fixed part (2 pieces)      | 1SDA104727R1 | 1SDA104728R1 |

Note: when using an ADP with the F/EF/MC terminal, also order the "Kit F Front Terminals"

# Ordering codes for accessories

## Signaling

### Auxiliary contacts - AUX

#### Auxiliary contacts - AUX

| Size                    | Type                  | Fixed/Plug-in |
|-------------------------|-----------------------|---------------|
| <b>Uncabled version</b> |                       |               |
| XT1-XT3                 | AUX 250V AC           | 1SDA066422R1  |
| XT1-XT3                 | AUX 24V DC            | 1SDA066423R1  |
| <b>Cabled version</b>   |                       |               |
| XT1                     | AUX-C 3Q 250V AC Left | 1SDA066426R1  |
| XT1-XT3                 | AUX-C 1Q+1SY 250V     | 1SDA066431R1  |
| XT1-XT3                 | AUX-C 2Q+1SY 250V     | 1SDA066433R1  |
| XT1-XT3                 | AUX-C 1Q+1SY 24V DC   | 1SDA066446R1  |
| XT3                     | AUX-C 3Q+1SY 250V     | 1SDA066434R1  |
| XT3                     | AUX-C 3Q+1SY 24V DC   | 1SDA066448R1  |
| XT3                     | AUX-C 3Q 250V AC Left | 1SDA066428R1  |



AUX uncabled

#### Auxiliary contacts - AUX

| Size                    | Type                     | Fixed/Plug-in | Withdrawable |
|-------------------------|--------------------------|---------------|--------------|
| <b>Uncabled version</b> |                          |               |              |
| XT2-XT4                 | AUX 250V AC              | 1SDA066422R1  |              |
| XT2-XT4                 | AUX-S51 250V AC          | 1SDA066424R1  |              |
| XT2-XT4                 | AUX 24V DC               | 1SDA066423R1  |              |
| XT2-XT4                 | AUX-S51 24V DC           | 1SDA066425R1  |              |
| <b>Cabled version</b>   |                          |               |              |
| XT2-XT4                 | AUX-C 3Q 250V AC Left    | 1SDA066427R1  |              |
| XT2-XT4                 | AUX-C 1Q+1SY 250V AC     | 1SDA066431R1  | 1SDA066432R1 |
| XT2-XT4                 | AUX-C 2Q+1SY 250V AC     | 1SDA066433R1  |              |
| XT2-XT4                 | AUX-C 2Q+2SY+1SA 250V AC | 1SDA066438R1  | 1SDA066439R1 |
| XT2-XT4                 | AUX-C 3Q+1SY 250V AC     | 1SDA066434R1  | 1SDA066435R1 |
| XT2-XT4                 | AUX-C 3Q+2SY 250V AC     | 1SDA066436R1  | 1SDA066437R1 |
| XT2-XT4                 | AUX-S51-C 250V AC        | 1SDA066429R1  | 1SDA066430R1 |
| XT2-XT4                 | AUX-C 1Q+1SY 24V DC      | 1SDA066446R1  | 1SDA066447R1 |
| XT2-XT4                 | AUX-C 3Q+1SY 24V DC      | 1SDA066448R1  | 1SDA066449R1 |
| XT2-XT4                 | AUX-S51-C 24V DC         | 1SDA067116R1  | 1SDA067117R1 |
| XT2-XT4                 | AUX-C 1Q+1SY 400V AC     | 1SDA066444R1  | 1SDA066445R1 |
| XT2-XT4                 | AUX-C 2Q 400V AC         | 1SDA066440R1  | 1SDA066443R1 |



AUX cabled



AUX for withdrawable version

### Auxiliary contacts - AUX

| Size                    | Type                      | Fixed/Plug-in | Withdrawable |
|-------------------------|---------------------------|---------------|--------------|
| <b>Uncabled version</b> |                           |               |              |
| XT5                     | AUX 250V AC               | 1SDA066422R1  |              |
| XT5                     | AUX 24V DC                | 1SDA066423R1  |              |
| <b>Cabled version</b>   |                           |               |              |
| XT5                     | AUX-C 1Q+1SY 250V AC left | 1SDA104787R1  |              |
| XT5                     | AUX-C 1Q+1SY 250V AC      | 1SDA066431R1  | 1SDA104789R1 |
| XT5                     | AUX-C 2Q+1SY 250V AC      | 1SDA066433R1  | 1SDA104796R1 |
| XT5                     | AUX-C 3Q+1SY 250V AC      | 1SDA066434R1  | 1SDA104798R1 |
| XT5                     | AUX-S51-C 250V AC         | 1SDA066429R1  | 1SDA104791R1 |
| XT5                     | AUX-S52-C 250V AC         | 1SDA104800R1  | 1SDA104793R1 |
| XT5                     | AUX-C 1Q+1SY 24V DC left  | 1SDA104786R1  |              |
| XT5                     | AUX-C 1Q+1SY 24V DC       | 1SDA066446R1  | 1SDA104788R1 |
| XT5                     | AUX-C 3Q+1SY 24V DC       | 1SDA066448R1  | 1SDA104797R1 |
| XT5                     | AUX-S51-C 24V DC          | 1SDA067116R1  | 1SDA104790R1 |
| XT5                     | AUX-S52-C 24V DC          | 1SDA104799R1  | 1SDA104792R1 |
| XT5                     | AUX-C 1Q+1SY 400V AC      | 1SDA104784R1  | 1SDA104785R1 |
| XT5                     | AUX-C 2Q 400V AC          | 1SDA104795R1  | 1SDA104794R1 |

### Auxiliary contacts - AUX

| Size                    | Type                 | Fixed/Plug-in | Withdrawable |
|-------------------------|----------------------|---------------|--------------|
| <b>Uncabled version</b> |                      |               |              |
| XT6                     | AUX 250V AC          | 1SDA066422R1  |              |
| XT6                     | AUX 24V DC           | 1SDA066423R1  |              |
| <b>Cabled version</b>   |                      |               |              |
| XT6                     | AUX-C 1Q+1SY 250V AC | 1SDA066431R1  | 1SDA104802R1 |
| XT6                     | AUX-C 2Q+1SY 250V AC | 1SDA066433R1  | 1SDA104807R1 |
| XT6                     | AUX-C 3Q+1SY 250V AC | 1SDA066434R1  | 1SDA104809R1 |
| XT6                     | AUX-S51-C 250V AC    | 1SDA066429R1  | 1SDA104804R1 |
| XT6                     | AUX-S52-C 250V AC    | 1SDA104800R1  | 1SDA104806R1 |
| XT6                     | AUX-C 1Q+1SY 24V DC  | 1SDA066446R1  | 1SDA104801R1 |
| XT6                     | AUX-C 3Q+1SY 24V DC  | 1SDA066448R1  | 1SDA104808R1 |
| XT6                     | AUX-S51-C 24V DC     | 1SDA067116R1  | 1SDA104803R1 |
| XT6                     | AUX-S52-C 24V DC     | 1SDA104799R1  | 1SDA104805R1 |

# Ordering codes for accessories

## Signaling



Open/close auxiliary contacts - AUX



Terminal for auxiliary connection

### Auxiliary contacts - AUX

| Size      | Type                     | Fixed/ Withdrawable |
|-----------|--------------------------|---------------------|
| XT7-XT7 M | AUX 4Q 400V              | 1SDA073750R1        |
| XT7-XT7 M | AUX 4Q 24Vdc             | 1SDA073751R1        |
| XT7-XT7 M | AUX 2Q 400VAC + 2Q 24VDC | 1SDA073752R1        |
| XT7-XT7 M | AUX S51 250V             | 1SDA073776R1        |
| XT7-XT7 M | AUX S51 24V              | 1SDA073777R1        |
| XT7       | AUX 1SY 400V             | 1SDA104813R1        |
| XT7       | AUX 1SY 24V              | 1SDA104812R1        |
| XT7       | AUX 1S52 250V            | 1SDA104811R1        |
| XT7       | AUX 1S52 24V             | 1SDA104810R1        |
| XT7 M     | AUX 15Q 400V             | 1SDA073758R1        |
| XT7 M     | AUX 15Q 24V              | 1SDA073759R1        |
| XT7 M     | RTC 250V                 | 1SDA073770R1        |
| XT7 M     | RTC 24V                  | 1SDA073771R1        |
| XT7 M     | AUX S33 M/2 250V         | 1SDA104825R1        |
| XT7 M     | AUX S33 M/2 24V          | 1SDA104824R1        |

### Terminals for auxiliary connection

| Size      | Type             | Code         |
|-----------|------------------|--------------|
| XT7-XT7 M | Terminals 10 pcs | 1SDA073906R1 |

## Auxiliary position contacts - AUP

### Auxiliary position contacts -AUP

| Size      | Type                                     | Code         |
|-----------|--|--------------|
| XT1-XT3   | AUP-I – Four racked-in contacts 250V AC  | 1SDA066450R1 |
| XT1-XT3   | AUP-I – Four racked-in contacts 24V DC   | 1SDA066451R1 |
| XT2-XT4   | AUP-I – Four racked-in contacts 250V AC  | 1SDA066450R1 |
| XT2-XT4   | AUP-I – Four racked-in contacts 24V DC   | 1SDA066451R1 |
| XT2-XT4   | AUP-R – Two racked-out contacts 250V AC  | 1SDA066452R1 |
| XT2-XT4   | AUP-R – Two racked-out contacts 24V DC   | 1SDA066453R1 |
| XT5-XT6   | AUP-I – Three Racked-in contacts 250V AC | 1SDA104815R1 |
| XT5-XT6   | AUP-I – Three Racked-in contacts 24V DC  | 1SDA104816R1 |
| XT5-XT6   | AUP-T – One Test contact 250V AC         | 1SDA104820R1 |
| XT5-XT6   | AUP-T – One Test contact 24V DC          | 1SDA104819R1 |
| XT5-XT6   | AUP-R – One Racked-out contact 250V AC   | 1SDA104817R1 |
| XT5-XT6   | AUP-R – One Racked-out contact 24V DC    | 1SDA104818R1 |
| XT7-XT7 M | AUP 6 contacts 24V                       | 1SDA073763R1 |
| XT7-XT7 M | AUP 6 contacts 400V                      | 1SDA073762R1 |



—  
Auxiliary position  
contact - AUP

## Early auxiliary contacts - AUE

### Auxiliary contacts - AUX

| Size    | Type  | Fixed/Plug-in | Withdrawable |
|---------|---|---------------|--------------|
| XT1-XT3 | AUE - Two contacts in rotary handle RHx (closed)              | 1SDA066454R1  |              |
| XT1-XT3 | AUE - Two contacts in rotary handle RHx (open)                | 1SDA067118R1  |              |
| XT2-XT4 | AUE - Two contacts in rotary handle RHx (closed)              | 1SDA066454R1  | 1SDA066455R1 |
| XT2-XT4 | AUE - Two contacts in rotary handle RHx (open)                | 1SDA067118R1  | 1SDA067119R1 |
| XT5-XT6 | AUE - Two contacts in rotary handle RHx (closed)              | 1SDA104821R1  | 1SDA104822R1 |
| XT7     | AUE - Two contacts in circuit-breaker (closed) <sup>(1)</sup> | 1SDA104823R1  | 1SDA104823R1 |

(1) Contacts that can work only with a rotary handle



—  
Early auxiliary contacts  
in the handle - AUE



# Ordering codes for accessories

## Operating mechanism

### Rotary handle operating mechanism

#### Rotary handles XT1-XT3



— Direct rotary handle - RHD



— Transmitted rotary handle - RHE



— Flange handle

| Size                                      | Type                                 | Fixed/Plug-in |
|---|--------------------------------------|---------------|
| XT1-XT3                                   | RHD Normal direct handle             | 1SDA066475R1  |
| XT1-XT3                                   | RHD Direct emergency handle          | 1SDA066477R1  |
| XT1-XT3                                   | RHE Normal transmitted handle        | 1SDA066479R1  |
| XT1-XT3                                   | RHE Emergency transmitted handle     | 1SDA066481R1  |
| XT1-XT3                                   | RHS-L Normal left lateral handle     | 1SDA066579R1  |
| XT1-XT3                                   | RHS-L Emergency left lateral handle  | 1SDA066580R1  |
| XT1-XT3                                   | RHS-R Normal right lateral handle    | 1SDA066581R1  |
| XT1-XT3                                   | RHS-R Emergency right lateral handle | 1SDA066582R1  |
| <b>Spare parts for transmitted handle</b> |                                      |               |
| XT1-XT3                                   | RHE_B Base for transmitted Handle    | 1SDA066483R1  |
| XT1-XT3                                   | RHE_S Rod of 500mm                   | 1SDA066576R1  |
| XT1-XT3                                   | RHE_H Normal transmitted handle      | 1SDA066577R1  |
| XT1-XT3                                   | RHE_H Emergency transmitted handle   | 1SDA066578R1  |
| XT1-XT3                                   | LH Normal large handle               | 1SDA066583R1  |
| XT1-XT3                                   | LH Large emergency handle            | 1SDA066585R1  |

#### Flange Handle XT1

| Size                                 | Type                                     | Fixed        |
|--------------------------------------|--|--------------|
| XT1                                  | Flange handle kit L=4' NEMA 1, 3, 12, 4  | 1SDA080330R1 |
| XT1                                  | Flange handle kit L=6' NEMA 1, 3, 12, 4  | 1SDA080331R1 |
| XT1                                  | Flange handle kit L=10' NEMA 1, 3, 12, 4 | 1SDA080333R1 |
| XT1                                  | Flange handle kit L=4' NEMA 4X           | 1SDA082007R1 |
| XT1                                  | Flange handle kit L=6' NEMA 4X           | 1SDA082008R1 |
| XT1                                  | Flange handle kit L=10' NEMA 4X          | 1SDA082009R1 |
| <b>Spare parts for flange handle</b> |  |              |
| XT1                                  | FH_H handle NEMA 1, 3, 12, 4             | 1SDA080346R1 |
| XT1                                  | FH_H handle NEMA 4X                      | 1SDA082022R1 |

#### Flange Handle XT3

| Size                                 | Type   | Fixed        |
|--------------------------------------|--|--------------|
| XT3                                  | Flange handle kit L=4' NEMA 1, 3, 12, 4      | 1SDA080338R1 |
| XT3                                  | XT4 Flange handle kit L=6' NEMA 1, 3, 12, 4  | 1SDA080339R1 |
| XT3                                  | XT4 Flange handle kit L=10' NEMA 1, 3, 12, 4 | 1SDA080341R1 |
| XT3                                  | XT4 Flange handle kit L=4' NEMA 4X           | 1SDA082013R1 |
| XT3                                  | XT4 Flange handle kit L=6' NEMA 4X           | 1SDA082014R1 |
| XT3                                  | XT4 Flange handle kit L=10' NEMA 4X          | 1SDA082015R1 |
| <b>Spare parts for flange handle</b> |  |              |
| XT3                                  | XT4 FH_H handle NEMA 1, 3, 12, 4             | 1SDA080346R1 |
| XT3                                  | XT4 FH_H handle NEMA 4X                      | 1SDA082022R1 |



Large handle - LH



Lateral handle - RHS

**Rotary handles XT2-XT4**

| Size                                       | Type   | Fixed/Plug-in | Withdrawable |
|--|--|---------------|--------------|
| XT2-XT4                                    | XT2-XT4 RHD Normal direct handle             | 1SDA069053R1  | 1SDA066476R1 |
| XT2-XT4                                    | XT2-XT4 RHD Direct emergency handle          | 1SDA069054R1  | 1SDA066478R1 |
| XT2-XT4                                    | XT2-XT4 RHE Normal transmitted handle        | 1SDA069055R1  | 1SDA066480R1 |
| XT2-XT4                                    | XT2-XT4 RHE Emergency transmitted handle     | 1SDA069056R1  | 1SDA066482R1 |
| XT2-XT4                                    | XT2-XT4 RHS-L Normal left lateral handle     | 1SDA069058R1  |              |
| XT2-XT4                                    | XT2-XT4 RHS-L Emergency left lateral handle  | 1SDA069059R1  |              |
| XT2-XT4                                    | XT2-XT4 RHS-R Normal right lateral handle    | 1SDA069060R1  |              |
| XT2-XT4                                    | XT2-XT4 RHS-R Emergency right lateral handle | 1SDA069061R1  |              |
| <b>Spare parts for transmitted handles</b> |  |               |              |
| XT2-XT4                                    | RHE_B Base for transmitted handle            | 1SDA069057R1  | 1SDA066484R1 |
| XT2-XT4                                    | RHE_S Rod of 500mm                           | 1SDA066576R1  |              |
| XT2-XT4                                    | Telescopic Rod kit                           | 1SDA104869R1  |              |
| XT2-XT4                                    | RHE_H Normal transmitted handle              | 1SDA066577R1  |              |
| XT2-XT4                                    | RHE_H Emergency transmitted handle           | 1SDA066578R1  |              |
| XT2-XT4                                    | LH Normal large handle                       | 1SDA066583R1  |              |
| XT2-XT4                                    | LH Large emergency handle                    | 1SDA066585R1  |              |

**Flange Handle XT2**

| Size                                 | Type                                     | Fixed        |
|--------------------------------------|--|--------------|
| XT2                                  | Flange handle kit L=4' NEMA 1, 3, 12, 4  | 1SDA080334R1 |
| XT2                                  | Flange handle kit L=6' NEMA 1, 3, 12, 4  | 1SDA080335R1 |
| XT2                                  | Flange handle kit L=10' NEMA 1, 3, 12, 4 | 1SDA080337R1 |
| XT2                                  | Flange handle kit L=4' NEMA 4X           | 1SDA082010R1 |
| XT2                                  | Flange handle kit L=6' NEMA 4X           | 1SDA082011R1 |
| XT2                                  | Flange handle kit L=10' NEMA 4X          | 1SDA082012R1 |
| <b>Spare parts for flange handle</b> |  |              |
| XT2                                  | FH_H handle NEMA 1, 3, 12, 4             | 1SDA080346R1 |
| XT2                                  | FH_H handle NEMA 4X                      | 1SDA082022R1 |

**Flange Handle XT4**

| Size                                 | Type                                     | Fixed        |
|--------------------------------------|--|--------------|
| XT4                                  | Flange handle kit L=4' NEMA 1, 3, 12, 4  | 1SDA080342R1 |
| XT4                                  | Flange handle kit L=6' NEMA 1, 3, 12, 4  | 1SDA080343R1 |
| XT4                                  | Flange handle kit L=10' NEMA 1, 3, 12, 4 | 1SDA080345R1 |
| XT4                                  | Flange handle kit L=4' NEMA 4X           | 1SDA082016R1 |
| XT4                                  | Flange handle kit L=6' NEMA 4X           | 1SDA082017R1 |
| XT4                                  | Flange handle kit L=10' NEMA 4X          | 1SDA082018R1 |
| <b>Spare parts for flange handle</b> |  |              |
| XT4                                  | FH_H handle NEMA 1, 3, 12, 4             | 1SDA080346R1 |
| XT4                                  | FH_H handle NEMA 4X                      | 1SDA082022R1 |

# Ordering codes for accessories

## Operating mechanism



Direct rotary handle - RHD



Transmitted rotary handle - RHE



Conversion kit RHE -> RHS

### Rotary handles XT5

| Size                                      | Type                                     | Fixed/Plug-in | Withdrawable |
|---|--|---------------|--------------|
| XT5                                       | RHD Normal direct handle                 | 1SDA104826R1  | 1SDA104828R1 |
| XT5                                       | RHD Normal direct handle + 2PLL          | 1SDA104827R1  | 1SDA104829R1 |
| XT5                                       | RHD Direct emergency handle              | 1SDA104830R1  | 1SDA104831R1 |
| XT5                                       | RHE Normal transmitted handle            | 1SDA104843R1  | 1SDA104844R1 |
| XT5                                       | RHE Emergency transmitted handle         | 1SDA104849R1  | 1SDA104850R1 |
| <b>Spare parts for transmitted handle</b> |  |               |              |
| XT5                                       | RHE_B Base for transmitted handle        | 1SDA104845R1  | 1SDA104847R1 |
| XT5                                       | RHE_B Base for transmitted handle + 2PLL | 1SDA104846R1  | 1SDA104848R1 |
| XT5                                       | RHE_S Rod of 500mm                       | 1SDA113118R1  |              |
| XT5                                       | Telescopic Rod kit                       | 1SDA104869R1  |              |
| XT5                                       | RHE_H Normal transmitted handle          | 1SDA104851R1  |              |
| XT5                                       | RHE_H Emergency transmitted handle       | 1SDA104852R1  |              |
| XT5                                       | Conversion kit RHE->RHS                  | 1SDA104870R1  |              |

### Rotary handles XT6

| Size                                      | Type                                     | Fixed/Plug-in | Withdrawable |
|---|--|---------------|--------------|
| XT6                                       | RHD Normal direct handle                 | 1SDA104832R1  | 1SDA104834R1 |
| XT6                                       | RHD Normal direct handle + 2PLL          | 1SDA104833R1  | 1SDA104835R1 |
| XT6                                       | RHD Direct emergency handle              | 1SDA104836R1  | 1SDA104837R1 |
| XT6                                       | RHE Normal transmitted handle            | 1SDA104853R1  | 1SDA104854R1 |
| XT6                                       | RHE Emergency transmitted handle         | 1SDA104859R1  | 1SDA104860R1 |
| <b>Spare parts for transmitted handle</b> |  |               |              |
| XT6                                       | RHE_B Base for transmitted handle        | 1SDA104855R1  | 1SDA104857R1 |
| XT6                                       | RHE_B Base for transmitted handle + 2PLL | 1SDA104856R1  | 1SDA104858R1 |
| XT6                                       | RHE_S Rod of 500mm                       | 1SDA113118R1  |              |
| XT6                                       | Telescopic Rod kit                       | 1SDA104869R1  |              |
| XT6                                       | RHE_H Normal transmitted handle          | 1SDA104867R1  |              |
| XT6                                       | RHE_H Emergency transmitted handle       | 1SDA104868R1  |              |



—  
Direct rotary handle  
+ 2PLL XT7 - RHD



—  
Transmitted rotary  
handle + 2PLL XT7 - RHE

### Rotary handles XT7

| Size                                      | Type                                     | Fixed        | Withdrawable |
|---|--|--------------|--------------|
| XT7                                       | RHD Normal direct handle                 | 1SDA104838R1 | 1SDA104838R1 |
| XT7                                       | RHD Normal direct handle + 2PLL          | 1SDA104839R1 | 1SDA104839R1 |
| XT7                                       | RHD Direct emergency handle              | 1SDA104840R1 | 1SDA104840R1 |
| XT7                                       | RHE Normal transmitted handle            | 1SDA104863R1 | 1SDA104863R1 |
| XT7                                       | RHE Emergency transmitted handle         | 1SDA104866R1 | 1SDA104866R1 |
| <b>Spare parts for transmitted handle</b> |  |              |              |
| XT7                                       | RHE_B Base for transmitted handle        | 1SDA104864R1 | 1SDA104864R1 |
| XT7                                       | RHE_B Base for transmitted handle + 2PLL | 1SDA104865R1 | 1SDA104865R1 |
| XT7                                       | RHE_S Rod of 500mm                       | 1SDA113118R1 |              |
| XT7                                       | Telescopic Rod kit                       | 1SDA104869R1 |              |
| XT7                                       | RHE_H Normal transmitted handle          | 1SDA104867R1 |              |
| XT7                                       | RHE_H Emergency transmitted handle       | 1SDA104868R1 |              |

### Front for operating lever mechanism - FLD



—  
Front for operating  
lever mechanism - FLD

#### Front for operating lever mechanism - FLD

| Size    | Type                  | Fixed/Plug-in | Withdrawable |
|---------|-----------------------|---------------|--------------|
| XT2-XT4 | Front for locks - FLD | 1SDA066635R1  | 1SDA066636R1 |
| XT5     | Front for locks - FLD | 1SDA104871R1  | 1SDA104872R1 |
| XT6     | Front for locks - FLD | 1SDA104873R1  | 1SDA104874R1 |

# Ordering codes for accessories

## Remote control

### Shunt Opening Release

#### Shunt opening release - SOR



SOR uncabled



SOR cabled



SOR for withdrawable version



YO uncabled

| Size                    | Type                              | Fixed/Plug-in | Withdrawable |
|-------------------------|-----------------------------------|---------------|--------------|
| <b>Uncabled version</b> |                                   |               |              |
| XT1...XT4               | SOR 12V DC                        | 1SDA066313R1  |              |
| XT1...XT4               | SOR 24-30V AC/DC                  | 1SDA066314R1  |              |
| XT1...XT4               | SOR 48-60V AC/DC                  | 1SDA066315R1  |              |
| XT1...XT4               | SOR 110...127V AC / 110...125V DC | 1SDA066316R1  |              |
| XT1...XT4               | SOR 220...240V AC / 220...250V DC | 1SDA066317R1  |              |
| XT1...XT4               | SOR 380-440V AC                   | 1SDA066318R1  |              |
| XT1...XT4               | SOR 480-525V AC                   | 1SDA066319R1  |              |
| <b>Cabled version</b>   |                                   |               |              |
| XT1-XT3                 | SOR-C 12V DC                      | 1SDA066321R1  |              |
| XT1-XT3                 | SOR-C 24-30V AC/DC                | 1SDA066322R1  |              |
| XT1-XT3                 | SOR-C 48-60V AC/DC                | 1SDA066323R1  |              |
| XT1-XT3                 | SOR-C 110-127V AC / 110-125V DC   | 1SDA066324R1  |              |
| XT1-XT3                 | SOR-C 220-240V AC / 220-250V DC   | 1SDA066325R1  |              |
| XT1-XT3                 | SOR-C 380-440V AC                 | 1SDA066326R1  |              |
| XT1-XT3                 | SOR-C 480-525V AC                 | 1SDA066327R1  |              |
| XT2-XT4                 | SOR-C 12V DC                      | 1SDA066321R1  | 1SDA066328R1 |
| XT2-XT4                 | SOR-C 24-30V AC/DC                | 1SDA066322R1  | 1SDA066329R1 |
| XT2-XT4                 | SOR-C 48-60V AC/DC                | 1SDA066323R1  | 1SDA066330R1 |
| XT2-XT4                 | SOR-C 110-127V AC / 110-125V DC   | 1SDA066324R1  | 1SDA066331R1 |
| XT2-XT4                 | SOR-C 220-240V AC / 220-250V DC   | 1SDA066325R1  | 1SDA066332R1 |
| XT2-XT4                 | SOR-C 380-440V AC                 | 1SDA066326R1  | 1SDA066333R1 |
| XT2-XT4                 | SOR-C 480-525V AC                 | 1SDA066327R1  | 1SDA066334R1 |

#### Shunt opening release -YO

| Size                    | Type                             | Fixed/Plug-in | Withdrawable |
|-------------------------|----------------------------------|---------------|--------------|
| <b>Uncabled version</b> |                                  |               |              |
| XT5-XT6                 | YO 12V DC                        | 1SDA104924R1  |              |
| XT5-XT6                 | YO 24...60V AC/DC                | 1SDA104925R1  |              |
| XT5-XT6                 | YO 110...240V AC - 110...250V DC | 1SDA104926R1  |              |
| XT5-XT6                 | YO 380...440V AC                 | 1SDA104927R1  |              |
| XT5-XT6                 | YO 480...525V AC                 | 1SDA114081R1  |              |
| <b>Cabled version</b>   |                                  |               |              |
| XT5                     | YO 12V DC                        | 1SDA104932R1  | 1SDA104928R1 |
| XT5                     | YO 24...60V AC/DC                | 1SDA104933R1  | 1SDA104929R1 |
| XT5                     | YO 110...240V AC - 110...250V DC | 1SDA104934R1  | 1SDA104930R1 |
| XT5                     | YO 380...440V AC                 | 1SDA104935R1  | 1SDA104931R1 |
| XT5                     | YO 480...525V AC                 | 1SDA114083R1  | 1SDA114082R1 |
| XT6                     | YO 12V DC                        | 1SDA104932R1  | 1SDA104936R1 |
| XT6                     | YO 24...60V AC/DC                | 1SDA104933R1  | 1SDA104937R1 |
| XT6                     | YO 110...240 Vac - 110...250V DC | 1SDA104934R1  | 1SDA104938R1 |
| XT6                     | YO 380...440V AC                 | 1SDA104935R1  | 1SDA104939R1 |
| XT6                     | YO 480...525V AC                 | 1SDA114083R1  | 1SDA114084R1 |



—  
Shunt opening  
release - YO

### Shunt opening release -YO

| Size      | Type              | Code         |
|-----------|-------------------|--------------|
| XT7-XT7 M | YO 24V AC/DC      | 1SDA073668R1 |
| XT7-XT7 M | YO 30V AC/DC      | 1SDA073669R1 |
| XT7-XT7 M | YO 48V AC/DC      | 1SDA073670R1 |
| XT7-XT7 M | YO 60V AC/DC      | 1SDA073671R1 |
| XT7-XT7 M | YO 110-120V AC/DC | 1SDA073672R1 |
| XT7-XT7 M | YO 120-127V AC/DC | 1SDA073673R1 |
| XT7-XT7 M | YO 220-240V AC/DC | 1SDA073674R1 |
| XT7-XT7 M | YO 240-250V AC/DC | 1SDA073675R1 |
| XT7-XT7 M | YO 380-400V AC    | 1SDA073677R1 |
| XT7-XT7 M | YO 415-440V AC    | 1SDA073678R1 |
| XT7-XT7 M | YO 480-500V AC    | 1SDA073679R1 |

## Undervoltage release

### Undervoltage release - UVR

| Size                    | Type                              | Fixed/Plug-in | Withdrawable |
|-------------------------|-----------------------------------|---------------|--------------|
| <b>Uncabled version</b> |                                   |               |              |
| XT1...XT4               | UVR 24-30V AC/DC                  | 1SDA066389R1  |              |
| XT1...XT4               | UVR 48V AC/DC                     | 1SDA069064R1  |              |
| XT1...XT4               | UVR 60V AC/DC                     | 1SDA066390R1  |              |
| XT1...XT4               | UVR 110...127V AC / 110...125V DC | 1SDA066391R1  |              |
| XT1...XT4               | UVR 220...240V AC / 220...250V DC | 1SDA066392R1  |              |
| XT1...XT4               | UVR 380-440V AC                   | 1SDA066393R1  |              |
| XT1...XT4               | UVR 480-525V AC                   | 1SDA066394R1  |              |
| <b>Cabled version</b>   |                                   |               |              |
| XT1-XT3                 | UVR-C 24-30V AC/DC                | 1SDA066396R1  |              |
| XT1-XT3                 | UVR 48V AC/DC                     | 1SDA069065R1  |              |
| XT1-XT3                 | UVR 60V AC/DC                     | 1SDA066397R1  |              |
| XT1-XT3                 | UVR 110...127V AC / 110...125V DC | 1SDA066398R1  |              |
| XT1-XT3                 | UVR 220...240V AC / 220...250V DC | 1SDA066399R1  |              |
| XT1-XT3                 | UVR 380-440V AC                   | 1SDA066400R1  |              |
| XT1-XT3                 | UVR 480-525V AC                   | 1SDA066401R1  |              |
| XT2-XT4                 | UVR-C 24-30V AC/DC                | 1SDA066396R1  | 1SDA066403R1 |
| XT2-XT4                 | UVR 48V AC/DC                     | 1SDA069065R1  | 1SDA069066R1 |
| XT2-XT4                 | UVR 60V AC/DC                     | 1SDA066397R1  | 1SDA066404R1 |
| XT2-XT4                 | UVR 110...127V AC / 110...125V DC | 1SDA066398R1  | 1SDA066405R1 |
| XT2-XT4                 | UVR 220...240V AC / 220...250V DC | 1SDA066399R1  | 1SDA066406R1 |
| XT2-XT4                 | UVR 380-440V AC                   | 1SDA066400R1  | 1SDA066407R1 |
| XT2-XT4                 | UVR 480-525V AC                   | 1SDA066401R1  | 1SDA066408R1 |



—  
UVR uncabled



—  
UVR cabled



—  
UVR for withdrawable

# Ordering codes for accessories

## Remote control



YU uncabled

### Undervoltage release -YU

| Size                    | Type                             | Fixed/Plug-in | Withdrawable |
|-------------------------|----------------------------------|---------------|--------------|
| <b>Uncabled version</b> |                                  |               |              |
| XT5-XT6                 | YU 12V DC                        | 1SDA104940R1  |              |
| XT5-XT6                 | YU 24...30V AC/DC                | 1SDA104941R1  |              |
| XT5-XT6                 | YU 48...60V AC/DC                | 1SDA104942R1  |              |
| XT5-XT6                 | YU 110..127V AC - 110..125V DC   | 1SDA104943R1  |              |
| XT5-XT6                 | YU 220..240V AC - 220..250V DC   | 1SDA104944R1  |              |
| XT5-XT6                 | YU 380...440V AC                 | 1SDA104945R1  |              |
| XT5-XT6                 | YU 480...525V AC                 | 1SDA104946R1  |              |
| <b>Cabled version</b>   |                                  |               |              |
| XT5                     | YU-C 12V DC                      | 1SDA104954R1  | 1SDA104947R1 |
| XT5                     | YU-C 24...30V AC/DC              | 1SDA104955R1  | 1SDA104948R1 |
| XT5                     | YU-C 48...60V AC/DC              | 1SDA104956R1  | 1SDA104949R1 |
| XT5                     | YU-C 110..127V AC - 110..125V DC | 1SDA104957R1  | 1SDA104950R1 |
| XT5                     | YU-C 220..240V AC - 220..250V DC | 1SDA104958R1  | 1SDA104951R1 |
| XT5                     | YU-C 380...440V AC               | 1SDA104959R1  | 1SDA104952R1 |
| XT5                     | YU-C 480...525V AC               | 1SDA104960R1  | 1SDA104953R1 |
| XT6                     | YU-C 12V DC                      | 1SDA104954R1  | 1SDA104961R1 |
| XT6                     | YU-C 24...30V AC/DC              | 1SDA104955R1  | 1SDA104962R1 |
| XT6                     | YU-C 48...60V AC/DC              | 1SDA104956R1  | 1SDA104963R1 |
| XT6                     | YU-C 110..127V AC - 110..125V DC | 1SDA104957R1  | 1SDA104964R1 |
| XT6                     | YU-C 220..240V AC - 220..250V DC | 1SDA104958R1  | 1SDA104965R1 |
| XT6                     | YU-C 380...440V AC               | 1SDA104959R1  | 1SDA104966R1 |
| XT6                     | YU-C 480...525V AC               | 1SDA104960R1  | 1SDA104967R1 |



Undervoltage release - YU

### Undervoltage release -YU

| Size      | Type              | Code         |
|-----------|-------------------|--------------|
| XT7-XT7 M | YU 24V AC/DC      | 1SDA073694R1 |
| XT7-XT7 M | YU 30V AC/DC      | 1SDA073695R1 |
| XT7-XT7 M | YU 48V AC/DC      | 1SDA073696R1 |
| XT7-XT7 M | YU 60V AC/DC      | 1SDA073697R1 |
| XT7-XT7 M | YU 110-120V AC/DC | 1SDA073698R1 |
| XT7-XT7 M | YU 120-127V AC/DC | 1SDA073699R1 |
| XT7-XT7 M | YU 220-240V AC/DC | 1SDA073700R1 |
| XT7-XT7 M | YU 240-250V AC/DC | 1SDA073701R1 |
| XT7-XT7 M | YU 380-400V AC    | 1SDA073703R1 |
| XT7-XT7 M | YU 415-440V AC    | 1SDA073704R1 |
| XT7-XT7 M | YU 480-500V AC    | 1SDA073705R1 |



Closing release - YC

**Closing release -YC**

| Size      | Type              | Code         |
|-----------|-------------------|--------------|
| XT7-XT7 M | YC 24V AC/DC      | 1SDA073681R1 |
| XT7-XT7 M | YC 30V AC/DC      | 1SDA073682R1 |
| XT7-XT7 M | YC 48V AC/DC      | 1SDA073683R1 |
| XT7-XT7 M | YC 60V AC/DC      | 1SDA073684R1 |
| XT7-XT7 M | YC 110-120V AC/DC | 1SDA073685R1 |
| XT7-XT7 M | YC 120-127V AC/DC | 1SDA073686R1 |
| XT7-XT7 M | YC 220-240V AC/DC | 1SDA073687R1 |
| XT7-XT7 M | YC 240-250V AC/DC | 1SDA073688R1 |
| XT7-XT7 M | YC 380-400V AC    | 1SDA073690R1 |
| XT7-XT7 M | YC 415-440V AC    | 1SDA073691R1 |
| XT7-XT7 M | YC 480-500V AC    | 1SDA073692R1 |

**Shunt opening test unit****SOR/YO test unit**

| Size       | Type            | Code         |
|------------|-----------------|--------------|
| XT1...XT7M | YO/YC test unit | 1SDA082751R1 |

**Delay device for undervoltage release - UVD****Delay device for undervoltage release -UVD**

Time delay device for undervoltage release - UVD

| Size        | Type                 | Code         |
|-------------|----------------------|--------------|
| XT1...XT4   | UVD 24...30V AC/DC   | 1SDA051357R1 |
| XT1...XT4   | UVD 48...60V AC/DC   | 1SDA051358R1 |
| XT1...XT4   | UVD 110...125V AC/DC | 1SDA051360R1 |
| XT1...XT4   | UVD 220...250V AC/DC | 1SDA051361R1 |
| XT5-XT6     | UVD 24..30V          | 1SDA101983R1 |
| XT5-XT6     | UVD 48..60V          | 1SDA101984R1 |
| XT5-XT6     | UVD 110..125V        | 1SDA101981R1 |
| XT5-XT6     | UVD 220..250V        | 1SDA101982R1 |
| XT7 - XT7 M | UVD 24/30V           | 1SDA038316R1 |
| XT7 - XT7 M | UVD 48V              | 1SDA038317R1 |
| XT7 - XT7 M | UVD 60V              | 1SDA038318R1 |
| XT7 - XT7 M | UVD 110/127V         | 1SDA038319R1 |
| XT7 - XT7 M | UVD 220/250V         | 1SDA038320R1 |

**Connectors for shunt opening and undervoltage release for withdrawable version****Connectors for shunt opening and undervoltage release for withdrawable version**

Fixed/Moving part connector for withdrawable

| Size  | Type                   | Code         |
|---|------------------------|--------------|
| <b>Connector of 4th pole for withdrawable version</b> |                        |              |
| XT2-XT4   | Connector 4th pole SOR | 1SDA066415R1 |
| XT2-XT4   | Connector 4th pole UVR | 1SDA066418R1 |
| <b>Connector of 3rd pole for withdrawable version</b> |                        |              |
| XT5   | Connector 3rd pole YO  | 1SDA104968R1 |
| XT5   | Connector 3rd pole YU  | 1SDA104970R1 |



# Ordering codes for accessories

## Remote control



Remote reset - YR

### Remote reset - YR

#### Remote reset - YR

| Size  | Type          | Code         |
|-------|---------------|--------------|
| XT7 M | YR 24V DC     | 1SDA073744R1 |
| XT7 M | YR 110V AC/DC | 1SDA073745R1 |
| XT7 M | YR 220V AC/DC | 1SDA073746R1 |

## Motor operator

### Direct action motor operator - MOD

| Size    | Type                 | Code         |
|---------|----------------------|--------------|
| XT1-XT3 | MOD 24V DC           | 1SDA066457R1 |
| XT1-XT3 | MOD 48...60V DC      | 1SDA066458R1 |
| XT1-XT3 | MOD 110...125V AC/DC | 1SDA066459R1 |
| XT1-XT3 | MOD 220...250V AC/DC | 1SDA066460R1 |
| XT1-XT3 | MOD 380...440V AC    | 1SDA066461R1 |
| XT1-XT3 | MOD 480...525V AC    | 1SDA066462R1 |



Motor operator - MOD

### Stored energy motor operator - MOE

| Size    | Type                         | Code         |
|---------|------------------------------|--------------|
| XT2-XT4 | XT2-XT4 MOE 24V DC           | 1SDA066463R1 |
| XT2-XT4 | XT2-XT4 MOE 48...60V DC      | 1SDA066464R1 |
| XT2-XT4 | XT2-XT4 MOE 110...125V AC/DC | 1SDA066465R1 |
| XT2-XT4 | XT2-XT4 MOE 220...250V AC/DC | 1SDA066466R1 |
| XT2-XT4 | XT2-XT4 MOE 380...440V AC    | 1SDA066467R1 |
| XT2-XT4 | XT2-XT4 MOE 480...525V AC    | 1SDA066468R1 |
| XT5     | XT5 MOE 24V DC               | 1SDA104879R1 |
| XT5     | XT5 MOE 48...60V DC          | 1SDA104881R1 |
| XT5     | XT5 MOE 110...125V AC/DC     | 1SDA104883R1 |
| XT5     | XT5 MOE 220...250V AC/DC     | 1SDA104885R1 |
| XT5     | XT5 MOE 380V AC              | 1SDA104887R1 |
| XT6     | XT6 MOE 24V DC               | 1SDA104889R1 |
| XT6     | XT6 MOE 48...60V DC          | 1SDA104891R1 |
| XT6     | XT6 MOE 110...125V AC/DC     | 1SDA104893R1 |
| XT6     | XT6 MOE 220...250V AC/DC     | 1SDA104895R1 |
| XT6     | XT6 MOE 380V AC              | 1SDA104897R1 |



Motor operator - MOE



— Motor operator - MOE

### Electronic stored energy motor operator - MOE-E

| Size    | Type                           | Code         |
|---------|--------------------------------|--------------|
| XT2-XT4 | XT2-XT4 MOE-E 24V DC           | 1SDA066469R1 |
| XT2-XT4 | XT2-XT4 MOE-E 48...60V DC      | 1SDA066470R1 |
| XT2-XT4 | XT2-XT4 MOE-E 110...125V AC/DC | 1SDA066471R1 |
| XT2-XT4 | XT2-XT4 MOE-E 220...250V AC/DC | 1SDA066472R1 |
| XT2-XT4 | XT2-XT4 MOE-E 380...440V AC    | 1SDA066473R1 |
| XT2-XT4 | XT2-XT4 MOE-E 480...525V AC    | 1SDA066474R1 |
| XT5     | XT5 MOE-E 24V DC               | 1SDA104899R1 |
| XT5     | XT5 MOE-E 48...60V DC          | 1SDA104901R1 |
| XT5     | XT5 MOE-E 110...125V AC/DC     | 1SDA104903R1 |
| XT5     | XT5 MOE-E 220...250V AC/DC     | 1SDA104905R1 |
| XT5     | XT5 MOE-E 380V AC              | 1SDA104907R1 |



— Spring charging motor - M

### Spring charging motor - M

| Size  | Type              | Code         |
|-------|-------------------|--------------|
| XT7 M | M 24-30 V AC/DC   | 1SDA104919R1 |
| XT7 M | M 48-60 V AC/DC   | 1SDA104920R1 |
| XT7 M | M 100-130 V AC/DC | 1SDA104921R1 |
| XT7 M | M 220-250 V AC/DC | 1SDA104922R1 |
| XT7 M | M 380-415 V AC/DC | 1SDA104923R1 |

# Ordering codes for accessories

## Safety and protection



Terminal cover

### Terminals covers and phase separators

#### Insulating terminal covers

| Size      | Type   | 3 poles      | 4 poles      |
|-----------|--|--------------|--------------|
| XT1       | LTC Low terminal covers                                | 1SDA066655R1 | 1SDA066656R1 |
| XT1       | HTC High terminal covers                               | 1SDA066664R1 | 1SDA066665R1 |
| XT2       | LTC Low terminal covers                                | 1SDA066657R1 | 1SDA066659R1 |
| XT2       | HTC High terminal covers                               | 1SDA066666R1 | 1SDA066667R1 |
| XT3       | LTC Low terminal covers                                | 1SDA066660R1 | 1SDA066661R1 |
| XT3       | HTC High terminal covers                               | 1SDA066668R1 | 1SDA066669R1 |
| XT4       | LTC Low terminal covers                                | 1SDA066662R1 | 1SDA066663R1 |
| XT4       | HTC High terminal covers                               | 1SDA066670R1 | 1SDA066671R1 |
| XT5       | LTC Low terminal covers                                | 1SDA105018R1 | 1SDA105019R1 |
| XT5       | HTC High terminal covers                               | 1SDA105025R1 | 1SDA105026R1 |
| XT5       | HTC_BS High terminal covers with back shield           | 1SDA105043R1 | 1SDA105044R1 |
| XT5       | HTC_ES High terminal covers for ES                     | 1SDA105031R1 | 1SDA105032R1 |
| XT5       | HTC_ES_BS High terminal covers for ES with back shield | 1SDA105037R1 | 1SDA105038R1 |
| XT5       | HTC - XT5 FP RC 4p                                     |              | 1SDA105024R1 |
| XT6       | LTC Low terminal covers                                | 1SDA105020R1 | 1SDA105021R1 |
| XT6       | HTC High terminal covers                               | 1SDA105027R1 | 1SDA105028R1 |
| XT7-XT7 M | LTC Low terminal covers                                | 1SDA107475R1 | 1SDA107476R1 |
| XT7-XT7 M | LTC Low terminal covers for W                          | 1SDA105022R1 | 1SDA105023R1 |
| XT7-XT7 M | HTC High terminal covers                               | 1SDA105029R1 | 1SDA105030R1 |

Note: insulating terminal covers must be considered as 2pcs each

#### Insulating plates

| Size | Type                  | 3 poles      | 4 poles      |
|------|-----------------------|--------------|--------------|
| XT5  | Back shield XT5 fixed | 1SDA112971R1 | 1SDA112972R1 |

#### Sealable screws for terminal covers

| Size      | Type                         | Code         |
|-----------|------------------------------|--------------|
| XT1...XT4 | Kit with two sealable screws | 1SDA066672R1 |



Sealable screw



#### Phase separators for circuit-breaker

| Size      | Type            | 4 pcs        | 6 pcs        |
|-----------|-----------------|--------------|--------------|
| XT1-XT3   | PB Height 25mm  | 1SDA066674R1 | 1SDA066679R1 |
| XT1-XT3   | PB Height 100mm | 1SDA066676R1 | 1SDA066681R1 |
| XT1-XT3   | PB Height 200mm | 1SDA066678R1 | 1SDA066683R1 |
| XT2-XT4   | PB Height 25mm  | 1SDA069062R1 | 1SDA069063R1 |
| XT2-XT4   | PB Height 100mm | 1SDA066675R1 | 1SDA066680R1 |
| XT2-XT4   | PB Height 200mm | 1SDA066677R1 | 1SDA066682R1 |
| XT5       | PB Height 25mm  | 1SDA105006R1 | 1SDA105007R1 |
| XT5       | PB Height 100mm | 1SDA105002R1 | 1SDA105003R1 |
| XT5       | PB Height 200mm | 1SDA105004R1 | 1SDA105005R1 |
| XT6       | PB Height 100mm | 1SDA105010R1 | 1SDA105011R1 |
| XT6       | PB Height 200mm | 1SDA105012R1 | 1SDA105013R1 |
| XT7-XT7 M | PB Height 100mm | 1SDA073877R1 | 1SDA073878R1 |
| XT7-XT7 M | PB Height 200mm | 1SDA073879R1 | 1SDA073880R1 |

#### Phase separators for fixed parts

| Size     | Type                              | 4 pcs        | 6 pcs        |
|----------|-----------------------------------|--------------|--------------|
| XT1      | PS - Rear phase separators for FP | 1SDA068953R1 | 1SDA068954R1 |
| XT2      | PS - Rear phase separators for FP | 1SDA068953R1 | 1SDA068954R1 |
| XT3      | PS - Rear phase separators for FP | 1SDA068953R1 | 1SDA068954R1 |
| XT4      | PS - Rear phase separators for FP | 1SDA068953R1 | 1SDA068954R1 |
| XT5      | PS - Rear phase separators for FP | 1SDA105008R1 | 1SDA105009R1 |
| Size     | Type                              | 2 pcs        | 3 pcs        |
| XT7-XT7M | PS - Phase separators for FP W    | 1SDA076164R1 | 1SDA076165R1 |

# Ordering codes for accessories

## Safety and protection

### IP Protection

#### IP Protection for rotary handles



IP54 protection for RHE

| Size      | Type                    | Code         |
|-----------|-------------------------|--------------|
| XT1...XT4 | IP54 protection for RHE | 1SDA066587R1 |
| XT5       | IP54 protection for RHD | 1SDA104876R1 |
| XT6       | IP54 protection for RHD | 1SDA104877R1 |
| XT7       | IP54 protection for RHD | 1SDA104878R1 |

#### IP Protection for motor operators



IP54 protection for XT7 M

| Size  | Type                                    | Code         |
|-------|---|--------------|
| XT5   | IP54 Flange with different keys for MOE | 1SDA105105R1 |
| XT5   | IP54 Flange with the same keys for MOE  | 1SDA105106R1 |
| XT6   | IP54 Flange with different keys for MOE | 1SDA105107R1 |
| XT6   | IP54 Flange with the same keys for MOE  | 1SDA105108R1 |
| XT7 M | IP54 Flange with different keys         | 1SDA073866R1 |
| XT7 M | IP54 Flange with the same keys          | 1SDA073868R1 |

### MOC

#### Mechanical operation counter - MOC



Mechanical operation counter - MOC

| Size  | Type                         | Code         |
|-------|------------------------------|--------------|
| XT7 M | Mechanical operation counter | 1SDA101969R1 |

## Keylocks and padlocks

### Keylock/padlock for fixed part of withdrawable

| Size      | Type   | Code         |
|-----------|--|--------------|
| XT2-XT4   | KL-D Keylock FP, Giussani different keys               | 1SDA066293R1 |
| XT2-XT4   | KL-S Keylock FP, Giussani same keys N.20005            | 1SDA066294R1 |
| XT2-XT4   | KL-D Keylock FP, Ronis 1228 different keys             | 1SDA066298R1 |
| XT2-XT4   | KL-S Keylock FP, Ronis 1228 same keys Type A keys      | 1SDA066300R1 |
| XT5-XT6   | KL-D Keylock FP, Giussani different keys               | 1SDA105112R1 |
| XT5-XT6   | KL-S Keylock FP, Giussani same keys N.20005            | 1SDA105113R1 |
| XT5-XT6   | KL-D Keylock FP, Ronis 1228 different keys             | 1SDA105109R1 |
| XT5-XT6   | KL-S Keylock FP, Ronis 1228 same keys Type A keys      | 1SDA105114R1 |
| XT5-XT6   | KL_A Ronis Arrangement 1104 FP                         | 1SDA105110R1 |
| XT5-XT6   | KL_A STI Arrangement FP                                | 1SDA105111R1 |
| XT7-XT7 M | KLP-A Bl. Racked in/out Castell XT7-XT7 M 1st key      | 1SDA073836R1 |
| XT7-XT7 M | KLP-A Bl. Racked in/out Castell XT7-XT7 M 2nd key      | 1SDA073837R1 |
| XT7-XT7 M | KLP-A Bl. Racked in/out RonProf Kirk XT7-XT7 M 1st key | 1SDA073834R1 |
| XT7-XT7 M | KLP-A Bl. Racked in/out RonProf Kirk XT7-XT7 M 2nd key | 1SDA073835R1 |
| XT7-XT7 M | KLP-A Pos.lock Ronis-STI 1key                          | 1SDA085737R1 |
| XT7-XT7 M | KLP-A Pos.lock Ronis-STI 2key                          | 1SDA085738R1 |
| XT7-XT7 M | KLP-D Bl. Racked in/out XT7-XT7 M 1st key              | 1SDA073822R1 |
| XT7-XT7 M | KLP-D Bl. Racked in/out XT7-XT7 M 2nd key              | 1SDA073828R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20005 XT7-XT7 M 1st key      | 1SDA073823R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20005 XT7-XT7 M 2nd key      | 1SDA073829R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20006 XT7-XT7 M 1st key      | 1SDA073824R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20006 XT7-XT7 M 2nd key      | 1SDA073830R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20007 XT7-XT7 M 1st key      | 1SDA073825R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20007 XT7-XT7 M 2nd key      | 1SDA073831R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20008 XT7-XT7 M 1st key      | 1SDA073826R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20008 XT7-XT7 M 2nd key      | 1SDA073832R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20009 XT7-XT7 M 1st key      | 1SDA073827R1 |
| XT7-XT7 M | KLP-S Bl. Racked in/out N.20009 XT7-XT7 M 2nd key      | 1SDA073833R1 |
| XT7-XT7 M | Suppl. locks in racked-out XT7-XT7 M                   | 1SDA073838R1 |
| XT7-XT7 M | PLP Bl. padlocks Racked in/out D=4/6/8mm               | 1SDA073840R1 |



—  
Keylock/padlock  
for fixed part



—  
Key lock in racked-in/  
test/racked-out  
position - KLP



—  
Padlock in racked-in/  
test/racked-out  
position - PLP

# Ordering codes for accessories

## Safety and protection



Fixed padlock in the open position - PLL



Padlock in the open position - PLC



Removable padlock in the open position

### Circuit-breaker padlock

| Size    | Type   | Code         |
|---------|--|--------------|
| XT1-XT3 | PLL Removable lock with padlocks in open position    | 1SDA066588R1 |
| XT1-XT3 | PLL Fixed lock with padlocks in open position        | 1SDA066589R1 |
| XT1-XT3 | PLL Fixed lock with padlocks in open/closed position | 1SDA066591R1 |
| XT2-XT4 | PLL Fixed lock with padlocks in open position        | 1SDA066590R1 |
| XT2-XT4 | PLL Fixed lock with padlocks in open/closed position | 1SDA066592R1 |
| XT5     | PLL Fixed lock with padlocks in open position        | 1SDA105099R1 |
| XT5     | PLL Fixed lock with padlocks in open/closed position | 1SDA105098R1 |
| XT6     | PLL Removable lock with padlocks in open position    | 1SDA105103R1 |
| XT6     | PLL Fixed lock with padlocks in open position        | 1SDA105102R1 |
| XT6     | PLL Fixed lock with padlocks in open/closed position | 1SDA105101R1 |
| XT7     | PLL Fixed lock with padlocks in open position        | 1SDA105104R1 |
| XT7 M   | PLC Padlocks in open position D=4mm                  | 1SDA073800R1 |
| XT7 M   | PLC Padlocks in open position D=7mm                  | 1SDA073801R1 |
| XT7 M   | PLC Padlocks in open position D=8mm                  | 1SDA073802R1 |



Key lock on the circuit-breaker

### Keylock for circuit-breaker - KLC

| Size | Type  | Code         |
|------|---|--------------|
| XT1  | KLC Ronis key lock open, different keys, removable in open position   | 1SDA066593R1 |
| XT1  | KLC Ronis key lock open, same Type A keys, removable in open position | 1SDA066594R1 |
| XT1  | KLC Ronis key lock open, same Type B keys, removable in open position | 1SDA066595R1 |
| XT1  | KLC Ronis key lock open, same Type C keys, removable in open position | 1SDA066596R1 |
| XT1  | KLC Ronis key lock open, same Type D keys, removable in open position | 1SDA066597R1 |
| XT1  | KLC Ronis key lock open, same keys, removable in both position        | 1SDA066598R1 |
| XT3  | KLC Ronis key lock open, different keys, removable in open position   | 1SDA066605R1 |
| XT3  | KLC Ronis key lock open, same Type A keys, removable in open position | 1SDA066606R1 |
| XT3  | KLC Ronis key lock open, same Type B keys, removable in open position | 1SDA066607R1 |
| XT3  | KLC Ronis key lock open, same Type C keys, removable in open position | 1SDA066608R1 |
| XT3  | KLC Ronis key lock open, same Type D keys, removable in open position | 1SDA066609R1 |
| XT3  | KLC Ronis key lock open, same keys, removable in both position        | 1SDA066610R1 |



—  
Keylock on the  
circuit-breaker

### Keylock for circuit-breaker - KLC

| Size    | Type  | Code         |
|---------|---|--------------|
| XT2-XT4 | KLC Ronis key lock open, different keys, removable in open position   | 1SDA066599R1 |
| XT2-XT4 | KLC Ronis key lock open, same Type A keys, removable in open position | 1SDA066600R1 |
| XT2-XT4 | KLC Ronis key lock open, same Type B keys, removable in open position | 1SDA066601R1 |
| XT2-XT4 | KLC Ronis key lock open, same Type C keys, removable in open position | 1SDA066602R1 |
| XT2-XT4 | KLC Ronis key lock open, same Type D keys, removable in open position | 1SDA066603R1 |
| XT2-XT4 | KLC Ronis key lock open, same keys, removable in both position        | 1SDA066604R1 |
| XT5-XT6 | KLC Ronis key lock open, different keys, removable in open position   | 1SDA105066R1 |
| XT5-XT6 | KLC Ronis key lock open, same Type A keys, removable in open position | 1SDA105062R1 |
| XT5-XT6 | KLC Ronis key lock open, same Type B keys, removable in open position | 1SDA105063R1 |
| XT5-XT6 | KLC Ronis key lock open, same Type C keys, removable in open position | 1SDA105064R1 |
| XT5-XT6 | KLC Ronis key lock open, same Type D keys, removable in open position | 1SDA105065R1 |
| XT5-XT6 | KLC Ronis key lock open, same keys, removable in both position        | 1SDA105061R1 |
| XT5-XT6 | KLC-A Kirk key lock   | 1SDA105067R1 |
| XT5-XT6 | KLC-A Ronis 1104 key lock   | 1SDA105068R1 |
| XT5-XT6 | KLC-A STI key lock  | 1SDA105069R1 |
| XT7     | KLC Ronis key lock open, different keys, removable in open position   | 1SDA105075R1 |
| XT7     | KLC Ronis key lock open, same Type A keys, removable in open position | 1SDA105071R1 |
| XT7     | KLC Ronis key lock open, same Type B keys, removable in open position | 1SDA105072R1 |
| XT7     | KLC Ronis key lock open, same Type C keys, removable in open position | 1SDA105073R1 |
| XT7     | KLC Ronis key lock open, same Type D keys, removable in open position | 1SDA105074R1 |
| XT7     | KLC Ronis key lock open, same keys, removable in both position        | 1SDA105070R1 |
| XT7     | KLC-A Kirk key lock   | 1SDA105076R1 |
| XT7     | KLC-A Ronis 1104 key lock   | 1SDA105077R1 |
| XT7     | KLC-A STI key lock  | 1SDA105078R1 |
| XT7     | KLC-A Castell key lock  | 1SDA105149R1 |
| XT7 M   | KLC-D Key lock open   | 1SDA107494R1 |
| XT7 M   | KLC-S Key lock open N.20005   | 1SDA107495R1 |
| XT7 M   | KLC-S Key lock open N.20006   | 1SDA107496R1 |
| XT7 M   | KLC-S Key lock open N.20007   | 1SDA107497R1 |
| XT7 M   | KLC-S Key lock open N.20008   | 1SDA107498R1 |
| XT7 M   | KLC-S Key lock open N.20009   | 1SDA107499R1 |
| XT7 M   | KLC-A Castell key lock open <sup>(1)</sup>                            | 1SDA107500R1 |
| XT7 M   | KLC-A Kirk key lock open  | 1SDA101967R1 |
| XT7 M   | KLC-A Ronis 1104 - STI key lock open                                  | 1SDA101968R1 |



—  
Key lock in open  
position - KLC

(1) Arrangement factory mounted only



# Ordering codes for accessories

## Safety and protection



Key lock on the handle

### Keylock for the RH / FLD

| Size      | Type   | Code         |
|-----------|--|--------------|
| XT1...XT4 | RHL Ronis key lock open, different keys – RHx/FLD        | 1SDA066617R1 |
| XT1...XT4 | RHL Ronis key lock open, same Type A keys – RHx/FLD      | 1SDA066618R1 |
| XT1...XT4 | RHL Ronis key lock open, same Type B keys – RHx/FLD      | 1SDA066619R1 |
| XT1...XT4 | RHL Ronis key lock open, same Type C keys – RHx/FLD      | 1SDA066620R1 |
| XT1...XT4 | RHL Ronis key lock open, same Type D keys – RHx/FLD      | 1SDA066621R1 |
| XT1...XT4 | RHL Ronis key lock open/closed, different keys – RHx     | 1SDA066622R1 |
| XT1...XT4 | RHL Ronis key lock open/closed, different keys – FLD     | 1SDA069182R1 |
| XT5       | RHL Ronis key lock open, different keys – RHx/FLD        | 1SDA105081R1 |
| XT5       | RHL Ronis key lock open, same Type A keys – RHx/FLD      | 1SDA105082R1 |
| XT5       | RHL Ronis key lock open, same Type B keys – RHx/FLD      | 1SDA105083R1 |
| XT5       | RHL Ronis key lock open, same Type C keys – RHx/FLD      | 1SDA105084R1 |
| XT5       | RHL Ronis key lock open, same Type D keys – RHx/FLD      | 1SDA105085R1 |
| XT5       | RHL Ronis key lock open/closed, different keys – RHx/FLD | 1SDA105080R1 |
| XT6       | RHL Ronis key lock open, different keys – FLD            | 1SDA105091R1 |
| XT6       | RHL Ronis key lock open, same Type A keys – FLD          | 1SDA105086R1 |
| XT6       | RHL Ronis key lock open, same Type B keys – FLD          | 1SDA105087R1 |
| XT6       | RHL Ronis key lock open, same Type C keys – FLD          | 1SDA105088R1 |
| XT6       | RHL Ronis key lock open, same Type D keys – FLD          | 1SDA105089R1 |
| XT6       | RHL Ronis key lock open/closed, different keys – FLD     | 1SDA105090R1 |
| XT6 - XT7 | RHL Ronis key lock open, different keys – RHx            | 1SDA105091R1 |
| XT6 - XT7 | RHL Ronis key lock open, same Type A keys – RHx          | 1SDA105086R1 |
| XT6 - XT7 | RHL Ronis key lock open, same Type B keys – RHx          | 1SDA105087R1 |
| XT6 - XT7 | RHL Ronis key lock open, same Type C keys – RHx          | 1SDA105088R1 |
| XT6 - XT7 | RHL Ronis key lock open, same Type D keys – RHx          | 1SDA105089R1 |
| XT6 - XT7 | RHL Ronis key lock open/closed, different keys – RHx     | 1SDA105090R1 |

### Keylock on the panel door with RHE

| Size      | Type  | Code         |
|-----------|---|--------------|
| XT4...XT7 | RHL Ronis key lock open, different keys on the panel door | 1SDA105079R1 |



Key lock on the motor

**Keylock on the motor**

| Size    | Type  | Code         |
|---------|---|--------------|
| XT1-XT3 | MOL-D Ronis key lock open, different keys   | 1SDA066623R1 |
| XT1-XT3 | MOL-S Ronis key lock open, same Type A keys | 1SDA066624R1 |
| XT1-XT3 | MOL-S Ronis key lock open, same Type B keys | 1SDA066625R1 |
| XT1-XT3 | MOL-S Ronis key lock open, same Type C keys | 1SDA066626R1 |
| XT1-XT3 | MOL-S Ronis key lock open, same Type D keys | 1SDA066627R1 |
| XT2-XT4 | MOL-D Ronis key lock open, different keys   | 1SDA066629R1 |
| XT2-XT4 | MOL-S Ronis key lock open, same Type A keys | 1SDA066630R1 |
| XT2-XT4 | MOL-S Ronis key lock open, same Type B keys | 1SDA066631R1 |
| XT2-XT4 | MOL-S Ronis key lock open, same Type C keys | 1SDA066632R1 |
| XT2-XT4 | MOL-S Ronis key lock open, same Type D keys | 1SDA066633R1 |
| XT2-XT4 | MOL-M Key lock against manual operation     | 1SDA066634R1 |
| XT5-XT6 | MOL-D KE.LO. RONIS SEV.1228xMOE             | 1SDA105092R1 |
| XT5-XT6 | MOL-M KEY LOCK RONIS SEV. x MOE             | 1SDA105093R1 |
| XT5-XT6 | MOL-S KE.LO. RONIS EQ.A 1228xMOE            | 1SDA105094R1 |
| XT5-XT6 | MOL-S KE.LO. RONIS EQ.B 1228xMOE            | 1SDA105095R1 |
| XT5-XT6 | MOL-S KE.LO. RONIS EQ.C 1228xMOE            | 1SDA105096R1 |
| XT5-XT6 | MOL-S KE.LO. RONIS EQ.D 1228xMOE            | 1SDA105097R1 |

**Sealable lock on thermal setting**

| Size    | Type                                      | Code         |
|---------|---|--------------|
| XT1-XT3 | Lock on thermal setting for TMD trip unit | 1SDA066651R1 |

**Protection device for opening and closing pushbuttons - PBC**

| Size  | Type                              | Code         |
|-------|-----------------------------------|--------------|
| XT7 M | PBC Prot. Pushbuttons AP/CH       | 1SDA073854R1 |
| XT7 M | PBC Prot. Pushbuttons AP/CH D=4mm | 1SDA073857R1 |
| XT7 M | PBC Prot. Pushbuttons AP/CH D=7mm | 1SDA073856R1 |
| XT7 M | PBC Prot. Pushbuttons AP/CH D=8mm | 1SDA073855R1 |



Protection device for opening and closing pushbuttons - PBC

**Lock to prevent door opening when the circuit-breaker is in the closed position - DLC**

| Size      | Type  | Code         |
|-----------|---|--------------|
| XT7-XT7 M | DLC interlock direct door for fixed to wall           | 1SDA079779R1 |
| XT7-XT7 M | DLC interlock direct door for fixed to floor          | 1SDA079780R1 |
| XT7-XT7 M | DLC interlock direct door for fixed part withdrawable | 1SDA079781R1 |
| XT7-XT7 M | DLC interlock cable door for fixed to wall            | 1SDA081032R1 |
| XT7-XT7 M | DLC interlock cable door for fixed to floor           | 1SDA081033R1 |
| XT7-XT7 M | DLC interlock cable door for fixed part withdrawable  | 1SDA081034R1 |



Lock to prevent door opening when the circuit-breaker is in the closed position - DLC

# Ordering codes for accessories

## Safety and protection

### Flanges

#### Flanges for circuit breakers and frontal accessories



— Flange for circuit-breaker



— Flange for circuit-breaker for the withdrawable version



— Flange for circuit-breaker

| Size      | Type                                       | 3 poles      | 4 poles      |
|-----------|--|--------------|--------------|
| XT1       | Small flange for circuit-breaker           | 1SDA068657R1 | 1SDA068657R1 |
| XT1       | Large flange for circuit-breaker           | 1SDA068639R1 | 1SDA068640R1 |
| XT1       | Flange MOD                                 | 1SDA068648R1 | 1SDA068648R1 |
| XT1       | Flange for direct handle RHD               | 1SDA068651R1 | 1SDA068651R1 |
| XT1       | Flange for residual current RC Sel / Inst  | 1SDA068653R1 | 1SDA068654R1 |
| XT2       | Small flange for circuit-breaker           | 1SDA068657R1 | 1SDA068657R1 |
| XT2       | Large flange for circuit-breaker           | 1SDA068641R1 | 1SDA068642R1 |
| XT2       | Flange for MOE/MOE-E/FLD                   | 1SDA068649R1 | 1SDA068649R1 |
| XT2       | Flange for MOE/MOE-E/FLD W                 | 1SDA068650R1 | 1SDA068650R1 |
| XT2       | Flange for direct handle RHD               | 1SDA068651R1 | 1SDA068651R1 |
| XT2       | Flange for direct handle RHD W             | 1SDA068652R1 | 1SDA068652R1 |
| XT2       | Flange for residual current RC Sel         |              | 1SDA066647R1 |
| XT2       | Flange for residual current RC Sel W       |              | 1SDA066648R1 |
| XT3       | Small flange for circuit-breaker           | 1SDA068657R1 | 1SDA068657R1 |
| XT3       | Large flange for circuit-breaker           | 1SDA068644R1 | 1SDA068645R1 |
| XT3       | Flange for MOD                             | 1SDA068648R1 | 1SDA068648R1 |
| XT3       | Flange for direct handle RHD               | 1SDA068651R1 | 1SDA068651R1 |
| XT3       | Flange for residual current RC Sel/RC Inst | 1SDA068655R1 | 1SDA068656R1 |
| XT4       | Small flange for circuit-breaker           | 1SDA068657R1 | 1SDA068657R1 |
| XT4       | Large flange for circuit-breaker           | 1SDA068646R1 | 1SDA068647R1 |
| XT4       | Flange for MOE/MOE-E/FLD                   | 1SDA068649R1 | 1SDA068649R1 |
| XT4       | Flange for MOE/MOE-E/FLD W                 | 1SDA068650R1 | 1SDA068650R1 |
| XT4       | Flange for direct handle RHD               | 1SDA068651R1 | 1SDA068651R1 |
| XT4       | Flange for direct handle RHD W             | 1SDA068652R1 | 1SDA068652R1 |
| XT4       | Flange for residual current RC Sel         |              | 1SDA066649R1 |
| XT4       | Flange for residual current RC Sel W       |              | 1SDA066650R1 |
| XT5       | Flange for circuit-breaker                 | 1SDA105139R1 | 1SDA105139R1 |
| XT5       | Flange for MOE/MOE-E/FLD/RHD               | 1SDA105137R1 | 1SDA105137R1 |
| XT5       | Flange for MOE/MOE-E/FLD/RHD W             | 1SDA105138R1 | 1SDA105138R1 |
| XT5       | Flange for residual current RC Sel         |              | 1SDA105135R1 |
| XT5       | Flange for residual current RC Sel W       |              | 1SDA105136R1 |
| XT6       | Flange for circuit-breaker                 | 1SDA105142R1 | 1SDA105142R1 |
| XT6       | Flange for MOE/FLD/RHD                     | 1SDA105140R1 | 1SDA105140R1 |
| XT6       | Flange for MOE/FLD/RHD W                   | 1SDA105141R1 | 1SDA105141R1 |
| XT7       | Flange for RHD                             | 1SDA105143R1 | 1SDA105143R1 |
| XT7-XT7 M | IP30 Flange XT7-XT7 M                      | 1SDA073862R1 | 1SDA073862R1 |
| XT7-XT7 M | IP30 Flange XT7-XT7 M W                    | 1SDA073863R1 | 1SDA073863R1 |

# Ordering codes for accessories

## Interlocks and switching devices

### Automatic transfer devices



Rear mechanical interlock - MIR-H



Plate for rear mechanical interlock

#### Rear mechanical interlock

| Size                           | Type                                | Code         |
|--------------------------------|-------------------------------------|--------------|
| <b>XT1-XT2-XT3-XT4 chassis</b> |                                     |              |
| XT1...XT4                      | MIR-H                               | 1SDA066637R1 |
| XT1...XT4                      | MIR-V                               | 1SDA066638R1 |
| XT1                            | Plate XT1 F                         | 1SDA066639R1 |
| XT1                            | Plate XT1 P                         | 1SDA066640R1 |
| XT2                            | Plate XT2 F                         | 1SDA066641R1 |
| XT2                            | Plate XT2 P/W                       | 1SDA066642R1 |
| XT3                            | Plate XT3 F                         | 1SDA066643R1 |
| XT3                            | Plate XT3 P                         | 1SDA066644R1 |
| XT4                            | Plate XT4 F                         | 1SDA066645R1 |
| XT4                            | Plate XT4 P/W                       | 1SDA066646R1 |
| <b>XT5 chassis</b>             |                                     |              |
| XT5                            | MIR-H                               | 1SDA105117R1 |
| XT5                            | MIR-V                               | 1SDA105119R1 |
| XT5                            | Plate XT5 F                         | 1SDA105122R1 |
| XT5                            | Plate XT5 P/W 400A                  | 1SDA105123R1 |
| XT5                            | Plate XT5 P/W 630A                  | 1SDA105124R1 |
| XT4                            | Plate for XT4 F with XT5 MIR        | 1SDA105121R1 |
| XT4                            | Plate for XT4 P/W with XT5 MIR      | 1SDA105125R1 |
| <b>XT6 chassis</b>             |                                     |              |
| XT6                            | MIR-H                               | 1SDA105118R1 |
| XT6                            | MIR-V                               | 1SDA105120R1 |
| XT6                            | Plate XT6 F                         | 1SDA105126R1 |
| XT6                            | Plate XT6 W                         | 1SDA105127R1 |
| XT5                            | Plate for XT5 F with XT6 MIR        | 1SDA101988R1 |
| XT5                            | Plate for XT5 P/W 400A with XT6 MIR | 1SDA101989R1 |
| XT5                            | late for XT5 P/W 630A with XT6 MIR  | 1SDA101990R1 |

Note: If the CB interlocked has a stored energy motor operator (MOE/MOE-E) a key lock between the MOL-D and MOL-S is mandatory

#### Cable interlock

| Size      | Type   | Code         |
|-----------|--|--------------|
| XT7-XT7 M | Type A horizontal  | 1SDA073881R1 |
| XT7-XT7 M | Type A vertical  | 1SDA073885R1 |
| XT7-XT7 M | Support for mechanical interlock FP Type A                             | 1SDA073896R1 |
| XT7-XT7 M | Support for mechanical interlock for fixed CB Type A - floor mounted   | 1SDA073893R1 |
| XT7-XT7 M | Support for mechanical interlock for fixed CB Type A - wall mounted    | 1SDA073894R1 |
| XT7-XT7 M | Type B, C, D horizontal  | 1SDA073882R1 |
| XT7-XT7 M | Type B, C, D vertical  | 1SDA073886R1 |
| XT7-XT7 M | Support for mechanical interlock FP Type C                             | 1SDA101985R1 |
| XT7-XT7 M | Support for mechanical interlock for fixed CB Type C - floor mounted   | 1SDA101986R1 |
| XT7-XT7 M | Support for mechanical interlock for fixed CB Type C - wall mounted    | 1SDA101987R1 |
| XT7-XT7 M | Support for mechanical interlock FP Type B-D                           | 1SDA105128R1 |
| XT7-XT7 M | Support for mechanical interlock for fixed CB Type B-D - floor mounted | 1SDA105129R1 |
| XT7-XT7 M | Support for mechanical interlock for fixed CB Type B-D - wall mounted  | 1SDA105130R1 |

#### ATS021 - ATS022 Automatic transfer devices

| Size        | Type  | Code         |
|-------------|---|--------------|
| XT1...XT7 M | ATS021 Automatic multi voltage transfer device    | 1SDA065523R1 |
| XT1...XT7 M | ATS022 Automatic advanced control transfer device | 1SDA065524R1 |



ATS021-ATS022 Automatic transfer devices

# Ordering codes for accessories

## Residual current devices

Residual current devices

Residual current devices



RC Inst / RC Sel



RC Sel

| Size | Type                      | 3 poles      | 4 poles      |
|------|---------------------------|--------------|--------------|
| XT1  | RC Sel Low 200mm          |              | 1SDA067121R1 |
| XT1  | XT1 RC Inst               | 1SDA067122R1 | 1SDA067124R1 |
| XT1  | XT1 RC Sel                | 1SDA067123R1 | 1SDA067125R1 |
| XT2  | XT2 RC Sel                |              | 1SDA067126R1 |
| XT3  | XT3 RC Inst               | 1SDA067127R1 | 1SDA067129R1 |
| XT3  | XT3 RC Sel                | 1SDA067128R1 | 1SDA067130R1 |
| XT3  | XT3 RC B-Type             |              | 1SDA067132R1 |
| XT4  | XT4 RC Sel                |              | 1SDA067131R1 |
| XT5  | XT5 RC Sel <sup>(1)</sup> |              | 1SDA105131R1 |

(1) This can also be mounted on a three-poles circuit-breaker

Panel type residual current delay



Panel type residual current delay - RCQ020/A

| Size        | Type                  | Code         |
|-------------|-----------------------|--------------|
| XT1...XT7 M | RCQ020/A 115-230V AC  | 1SDA065979R1 |
| XT1...XT7 M | RCQ020/A 415V AC      | 1SDA065980R1 |
| XT1...XT7 M | RCQ020/P 110-690 V AC | 1SDA069390R1 |
| XT1...XT7 M | Toroid closed Ø 60mm  | 1SDA037394R1 |
| XT1...XT7 M | Toroid closed Ø 110mm | 1SDA037395R1 |
| XT1...XT7 M | Toroid closed Ø 185mm | 1SDA050543R1 |

Note: Opening coil and undervoltage coil to be ordered separately



Toroid

## Ordering codes for accessories

Accessories for electronic Ekip LSI, Ekip LSI<sup>®</sup>G and Ekip M-LRIU trip units

Ekip LSI, Ekip LSI<sup>®</sup>G and Ekip M-LRIU trip units

### Accessories for electronic Ekip Dip trip units (Ekip LSI, Ekip LSI<sup>®</sup>G and Ekip M-LRIU)



Ekip Display

| Size    | Type                               | Fixed/Plug-in | Withdrawable |
|---------|------------------------------------|---------------|--------------|
| XT2-XT4 | Ekip Display                       | 1SDA068659R1  | 1SDA068659R1 |
| XT2-XT4 | Ekip LED Meter                     | 1SDA068660R1  | 1SDA068660R1 |
| XT2-XT4 | Ekip Com                           | 1SDA068661R1  | 1SDA068662R1 |
| XT2-XT4 | HMI030 interface on front of panel | 1SDA063143R1  | 1SDA063143R1 |

### Connection kits



Ekip LED Meter

| Size    | Type  | Fixed/Plug-in | Withdrawable |
|---------|---|---------------|--------------|
| XT2-XT4 | Kit of 24V DC auxiliary voltage for electronic trip units | 1SDA066980R1  | 1SDA066981R1 |
| XT2-XT4 | Kit for external neutral connection                       | 1SDA066984R1  | 1SDA066985R1 |
| XT4     | Kit for external neutral voltage connection               | 1SDA069651R1  | 1SDA069652R1 |

## Ordering codes for accessories

### Accessories for electronic Ekip Touch trip units



Ekip Cartridge

#### Ekip Cartridge

| Size        | Type                               | Code         |
|-------------|------------------------------------|--------------|
| XT2-XT4-XT5 | Ekip Cartridge 2 slots XT2-XT4-XT5 | 1SDA105203R1 |
| XT2-XT4-XT5 | Ekip Cartridge 4 slots XT2-XT4-XT5 | 1SDA105204R1 |



Ekip Supply

#### Power Supply modules

| Size                    | Type                       | Code         |
|-------------------------|----------------------------|--------------|
| XT2...XT5-<br>XT7-XT7 M | Ekip Supply 110-240V AC/DC | 1SDA074172R1 |
| XT2...XT5-<br>XT7-XT7 M | Ekip Supply 24-48V DC      | 1SDA074173R1 |

#### Connectivity Modules

##### Internal modules



Ekip COM

| Size    | Type                     | Fixed/Plug-in | Withdrawable |
|---------|--------------------------|---------------|--------------|
| XT2-XT4 | Ekip Com Ethernet        | 1SDA105173R1  | 1SDA105173R1 |
| XT2-XT4 | Ekip Com Hub             | 1SDA105160R1  | 1SDA105160R1 |
| XT2-XT4 | Ekip Com IEC61850        | 1SDA105174R1  | 1SDA105174R1 |
| XT2-XT4 | Ekip Com Modbus RTU      | 1SDA105175R1  | 1SDA105176R1 |
| XT2-XT4 | Ekip Com Modbus TCP      | 1SDA105177R1  | 1SDA105177R1 |
| XT2-XT4 | Ekip Com Profinet        | 1SDA105180R1  | 1SDA105180R1 |
| XT2-XT4 | Ekip Link                | 1SDA105197R1  | 1SDA105197R1 |
| XT2-XT4 | Ekip Com STA Modbus TCP* | 1SDA105183R1  | 1SDA105184R1 |
| XT2-XT4 | Ekip Com STA Modbus RTU* | 1SDA105181R1  | 1SDA105182R1 |
| XT5     | Ekip Com Ethernet        | 1SDA105185R1  | 1SDA105185R1 |
| XT5     | Ekip Com Hub             | 1SDA105161R1  | 1SDA105161R1 |
| XT5     | Ekip Com IEC61850        | 1SDA105186R1  | 1SDA105186R1 |
| XT5     | Ekip Com Modbus RTU      | 1SDA105187R1  | 1SDA105188R1 |
| XT5     | Ekip Com Modbus TCP      | 1SDA105189R1  | 1SDA105189R1 |
| XT5     | Ekip Com Profinet        | 1SDA105192R1  | 1SDA105192R1 |
| XT5     | Ekip Link                | 1SDA105198R1  | 1SDA105198R1 |
| XT5     | Ekip Com STA Modbus TCP* | 1SDA105195R1  | 1SDA105196R1 |
| XT5     | Ekip Com STA Modbus RTU* | 1SDA105193R1  | 1SDA105194R1 |

\*Ekip Com STA internal modules are also available for other trip units. For more information see chapter 4 "Communication and Connectivity", section "Internal modules"



Ekip Link

**Cartridge and XT7 modules**

| Size                  | Type                         | Code         |
|-----------------------|------------------------------|--------------|
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com Modbus RTU Tmax XT  | 1SDA105166R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com Modbus TCP Tmax XT  | 1SDA105167R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com Profibus Tmax XT    | 1SDA105170R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com Profinet Tmax XT    | 1SDA105171R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com Devicenet Tmax XT   | 1SDA105162R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com Ethernet/IP Tmax XT | 1SDA105163R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com IEC61850 Tmax XT    | 1SDA105165R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Link Tmax XT            | 1SDA105172R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com Hub Tmax XT         | 1SDA105164R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com R Modbus RTU        | 1SDA074157R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com R Modbus TCP        | 1SDA107402R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com R Profibus          | 1SDA074159R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com R Profinet          | 1SDA107403R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com R DeviceNet™        | 1SDA074161R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com R EtherNet/IP™      | 1SDA107404R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Com R IEC61850          | 1SDA107405R1 |
| XT7 M                 | Ekip Com Actuator            | 1SDA074166R1 |



# Ordering codes for accessories

## Accessories for electronic Ekip Touch trip units

### Signaling Modules



Ekip 2K Signalling

#### Internal modules

| Size | Type                         | Fixed/Plug-in | Withdrawable |
|------|------------------------------|---------------|--------------|
| XT5  | EKIP Signalling 1K-1 XT5 INT | 1SDA105201R1  | 1SDA105202R1 |



Ekip 10K Signalling

#### Cartridge and XT7 modules

| Size                  | Type                                  | Code         |
|-----------------------|---------------------------------------|--------------|
| XT2-XT4-XT5-XT7-XT7 M | Ekip Signalling 2K-1                  | 1SDA074167R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Signalling 2K-2                  | 1SDA074168R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Signalling 2K-3                  | 1SDA074169R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Signalling 3T-1 AI - Temp PT1000 | 1SDA085693R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Signalling 3T-2 AI - Temp PT1000 | 1SDA085694R1 |
| XT2-XT4-XT5-XT7-XT7 M | Ekip Signalling 10K*                  | 1SDA074171R1 |

\*External device

### Other modules

#### Measuring modules

| Size      | Type  | Code         |
|-----------|---|--------------|
| XT7-XT7 M | Ekip Measuring module                               | 1SDA105210R1 |
| XT7-XT7 M | Voltage socket for neutral on right side L1 L2 L3 N | 1SDA076244R1 |



Ekip Measuring

#### Internal maintenance module

| Size | Type                            | Fixed/Plug-in | Withdrawable |
|------|---------------------------------|---------------|--------------|
| XT5  | EKIP Maintenance module XT5 INT | 1SDA105199R1  | 1SDA105200R1 |

#### Synchrocheck module

| Size                  | Type              | Code         |
|-----------------------|-------------------|--------------|
| XT2-XT4-XT5-XT7-XT7 M | Ekip Synchrocheck | 1SDA074183R1 |

**Contactor interface module**

| Size                  | Type    | Code         |
|-----------------------|---------|--------------|
| XT2-XT4-XT5-XT7-XT7 M | Ekip CI | 1SDA105205R1 |

**External 3T signaling probe module**

| Size                  | Type                      | Code         |
|-----------------------|---------------------------|--------------|
| XT2-XT4-XT5-XT7-XT7 M | External probe PT1000 3mt | 1SDA085695R1 |

**Options for Ekip electrical trip units**

| Size      | Type   | Code         |
|-----------|--|--------------|
| XT7-XT7 M | Upper internal installed voltage outlets                   | 1SDA074216R1 |
| XT7-XT7 M | External installed voltage outlets                         | 1SDA074217R1 |
| XT7-XT7 M | Arrangement for cables with lower internal voltage outlets | 1SDA074213R1 |
| XT7-XT7 M | Arrangement for cables with upper internal voltage outlets | 1SDA074214R1 |
| XT7-XT7 M | Arrangement for cables with external voltage outlets       | 1SDA074215R1 |
| XT7-XT7 M | RTC Ekip 24V   | 1SDA073772R1 |
| XT7-XT7 M | AUP Ekip auxiliary position contact                        | 1SDA073768R1 |



Ekip RTC contacts

**Connection kits**

| Size        | Type   | Fixed        | Plug-in      | Withdrawable |
|-------------|--|--------------|--------------|--------------|
| XT2-XT4     | Kit side connector with 24V DC & internal bus cable  | 1SDA101979R1 | 1SDA101979R1 |              |
| XT2-XT4     | Kit side connector with 24V DC & internal bus cable, selectivity cable, external neutral cable |              |              | 1SDA105206R1 |
| XT2-XT4     | Kit Ext NE V sensor for Ekip Touch: external neutral voltage only connection <sup>(1)</sup>    | 1SDA101978R1 | 1SDA101978R1 |              |
| XT2-XT4     | Kit zone selectivity for Ekip Touch <sup>(1)</sup>   | 1SDA113126R1 | 1SDA113126R1 |              |
| XT5         | Connection kit 24Vdc and Internal Bus  |              |              | 1SDA105207R1 |
| XT5         | Kit Ext NE V sensor for Ekip Touch: external neutral voltage only connection                   | 1SDA107391R1 | 1SDA107395R1 | 1SDA107395R1 |
| XT5         | Kit Ext NE C sensor for Ekip Touch: external neutral current only connection                   |              | 1SDA107394R1 | 1SDA107394R1 |
| XT5         | Kit Ext NE C+V sensor for Ekip Touch: external neutral current and voltage connection          |              | 1SDA107393R1 | 1SDA107393R1 |
| XT5         | Kit Ext NE C sensor for Ekip Dip: external neutral current only connection                     |              | 1SDA107396R1 | 1SDA107396R1 |
| XT5         | Kit zone selectivity for Ekip Touch  | 1SDA113125R1 | 1SDA107397R1 | 1SDA107397R1 |
| XT2-XT4-XT5 | Terminal block din rails with 5 positions  | 1SDA101976R1 | 1SDA101976R1 | 1SDA101976R1 |
| XT2-XT4-XT5 | Terminal block din rails with 10 positions   | 1SDA101977R1 | 1SDA101977R1 | 1SDA101977R1 |

(1) If the withdrawable version is needed it is enough to order just the code 1SDA105206R1

## Ordering codes for accessories

### Accessories for electronic Ekip Touch trip units

#### Advanced functionality

##### Packages

| Size          | Type                                     | Code         |
|---------------|--|--------------|
| XT2-XT4       | Measuring package for XT2-XT4            | 1SDA105208R1 |
| XT2-XT4       | Adaptive protection for XT2-XT4          | 1SDA105221R1 |
| XT2-XT4       | Frequency protection for XT2-XT4         | 1SDA105215R1 |
| XT2-XT4       | Power protection for XT2-XT4             | 1SDA105217R1 |
| XT2-XT4       | ROCOF protection for XT2-XT4             | 1SDA105219R1 |
| XT2-XT4       | Advanced voltages protection for XT2-XT4 | 1SDA105213R1 |
| XT2-XT4       | Voltages protection for XT2-XT4          | 1SDA105211R1 |
| XT5-XT7-XT7 M | Datalogger for XT5-XT7                   | 1SDA105224R1 |
| XT5-XT7-XT7 M | Network analyzer for XT5-XT7             | 1SDA105226R1 |
| XT5-XT7-XT7 M | Measuring package for XT5-XT7            | 1SDA105209R1 |
| XT5-XT7-XT7 M | Adaptive protection for XT5-XT7          | 1SDA105222R1 |
| XT5-XT7-XT7 M | Frequency protection for XT5-XT7         | 1SDA105216R1 |
| XT5-XT7-XT7 M | Power protection for XT5-XT7             | 1SDA105218R1 |
| XT5-XT7-XT7 M | ROCOF protection for XT5-XT7             | 1SDA105220R1 |
| XT5-XT7-XT7 M | Advanced voltages protection for XT5-XT7 | 1SDA105214R1 |
| XT5-XT7-XT7 M | Voltages protection for XT5-XT7          | 1SDA105212R1 |

##### Metering functionality

| Size    | Type   | Code         |
|---------|--|--------------|
| XT2-XT4 | Class 1 Power & Energy Metering <sup>(1)</sup> | 1SDA107492R1 |
| XT5-XT7 | Class 1 Power & Energy Metering <sup>(1)</sup> | 1SDA107493R1 |

(1) Factory mounted only

Display and supervision systems



Ekip Multimeter Display

| Display and supervision systems |   |              |
|---------------------------------|---|--------------|
| Size                            | Type  | Code         |
| XT2-XT4-XT5-XT7-XT7 M           | Ekip Programming                                  | 1SDA076154R1 |
| XT2-XT4-XT5-XT7-XT7 M           | Ekip Multimeter display on front of switchboard   | 1SDA074192R1 |
| XT2-XT4-XT5-XT7-XT7 M           | Ekip View software for 30 circuit-breakers        | 1SDA074298R1 |
| XT2-XT4-XT5-XT7-XT7 M           | Ekip View software for 60 circuit-breakers        | 1SDA074299R1 |
| XT2-XT4-XT5-XT7-XT7 M           | Ekip View software for unlimited circuit-breakers | 1SDA074300R1 |

# Ordering codes for accessories

## Other accessories for trip units

### Test and configuration

#### Test and configuration

| Size                      | Type                                 | Code         |
|---------------------------|--------------------------------------|--------------|
| XT2-XT4-XT5-XT6-XT7-XT7 M | Ekip TT - Trip test unit             | 1SDA066988R1 |
| XT2-XT4-XT5-XT6-XT7-XT7 M | Ekip T&P - Programming and test unit | 1SDA066989R1 |

### Current sensor

#### Current sensor for neutral conductor outside the circuit-breaker

| Size      | Type  | Code         |
|-----------|---|--------------|
| XT2       | CT External neutral 10A Ekip Dip                  | 1SDA067211R1 |
| XT2       | CT External neutral 25A Ekip Dip                  | 1SDA067212R1 |
| XT2       | CT External neutral 63A Ekip Dip                  | 1SDA069142R1 |
| XT2       | CT External neutral 100A Ekip Dip                 | 1SDA069143R1 |
| XT2       | CT External neutral 160A Ekip Dip                 | 1SDA069144R1 |
| XT2       | CS External neutral ≤ 63A Ekip Touch              | 1SDA101970R1 |
| XT2       | CS External neutral ≥ 100A Ekip Touch             | 1SDA105150R1 |
| XT2       | CS External neutral ≤63A Ekip Touch with voltage  | 1SDA107398R1 |
| XT2       | CS External neutral ≥100A Ekip Touch with voltage | 1SDA107399R1 |
| XT4       | CT External neutral 40A Ekip Dip                  | 1SDA066975R1 |
| XT4       | CT External neutral 63A Ekip Dip                  | 1SDA066976R1 |
| XT4       | CT External neutral 100A Ekip Dip                 | 1SDA066977R1 |
| XT4       | CT External neutral 160A Ekip Dip                 | 1SDA066978R1 |
| XT4       | CT External neutral 250A Ekip Dip                 | 1SDA066979R1 |
| XT4       | CS External neutral IEC Ekip Touch                | 1SDA105151R1 |
| XT4       | CS External neutral Ekip Touch with voltage       | 1SDA107400R1 |
| XT5       | CT External neutral 250A Ekip Dip                 | 1SDA101966R1 |
| XT5       | CT External neutral 320A Ekip Dip                 | 1SDA105153R1 |
| XT5       | CT External neutral 400A Ekip Dip                 | 1SDA105154R1 |
| XT5       | CT External neutral 630A Ekip Dip                 | 1SDA105156R1 |
| XT5       | CS External neutral Ekip Touch                    | 1SDA105157R1 |
| XT5       | CS External neutral Ekip Touch with voltage       | 1SDA107401R1 |
| XT6       | CT External neutral 630A Ekip Dip                 | 1SDA107672R1 |
| XT6       | CT External neutral 800A Ekip Dip                 | 1SDA105158R1 |
| XT6       | CT External neutral 1000A Ekip Dip                | 1SDA105159R1 |
| XT7-XT7 M | CS External neutral up to 2000A                   | 1SDA073736R1 |

#### Homopolar toroid for the earthing conductor of the main power supply

| Size      | Type                  | Code         |
|-----------|-----------------------|--------------|
| XT7-XT7 M | Homopolar toroid 100A | 1SDA073743R1 |
| XT7-XT7 M | Homopolar toroid 250A | 1SDA076248R1 |
| XT7-XT7 M | Homopolar toroid 400A | 1SDA076249R1 |
| XT7-XT7 M | Homopolar toroid 800A | 1SDA076250R1 |
| XT7-XT7 M | Toroid RC 3p          | 1SDA073741R1 |



Current sensor



Homopolar sensor



Toroid RC



Rating plug

## Rating plug for Ekip trip units

## Rating plug

| Size   | Type                              | Loose supply | Installed    |
|--|-----------------------------------|--------------|--------------|
| XT5  | Rating plug In=250A               | 1SDA101991R1 |              |
| XT5  | Rating plug In=320A               | 1SDA101994R1 |              |
| XT5  | Rating plug In=400A               | 1SDA101995R1 |              |
| XT5  | Rating plug In=500A               | 1SDA101997R1 |              |
| XT5  | Rating plug In=630A               | 1SDA102000R1 |              |
| <b>Ekip Dip LS/I, Ekip Dip LIG, Ekip M-I, Ekip Dip G-LS/I - BASIC Trip Units</b> |                                   |              |              |
| XT7-XT7 M  | Rating plug In=630 A XT7-XT7 M    | 1SDA107617R1 | 1SDA107623R1 |
| XT7-XT7 M  | Rating plug In=800 A XT7-XT7 M    | 1SDA102011R1 | 1SDA102013R1 |
| XT7-XT7 M  | Rating plug In=1000 A XT7-XT7 M   | 1SDA102014R1 | 1SDA102016R1 |
| XT7-XT7 M  | Rating plug In=1250 A XT7-XT7 M   | 1SDA102018R1 | 1SDA102019R1 |
| XT7-XT7 M  | Rating plug In=1600 A XT7-XT7 M   | 1SDA102020R1 |              |
| <b>Ekip Dip LSI, Ekip Dip LSIG, Ekip Touch all</b>                               |                                   |              |              |
| XT7-XT7 M  | Rating plug In=630 A XT7-XT7 M    | 1SDA107619R1 | 1SDA107621R1 |
| XT7-XT7 M  | Rating plug In=800 A XT7-XT7 M    | 1SDA102001R1 | 1SDA102003R1 |
| XT7-XT7 M  | Rating plug In=1000 A XT7-XT7 M   | 1SDA102004R1 | 1SDA102006R1 |
| XT7-XT7 M  | Rating plug In=1250 A XT7-XT7 M   | 1SDA102008R1 | 1SDA102009R1 |
| XT7-XT7 M  | Rating plug In=1600 A XT7-XT7 M   | 1SDA102010R1 |              |
| XT7-XT7 M  | Rating plug RC In=800A XT7-XT7 M  | 1SDA102021R1 | 1SDA102022R1 |
| XT7-XT7 M  | Rating plug RC In=1250A XT7-XT7 M | 1SDA102023R1 | 1SDA102024R1 |

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