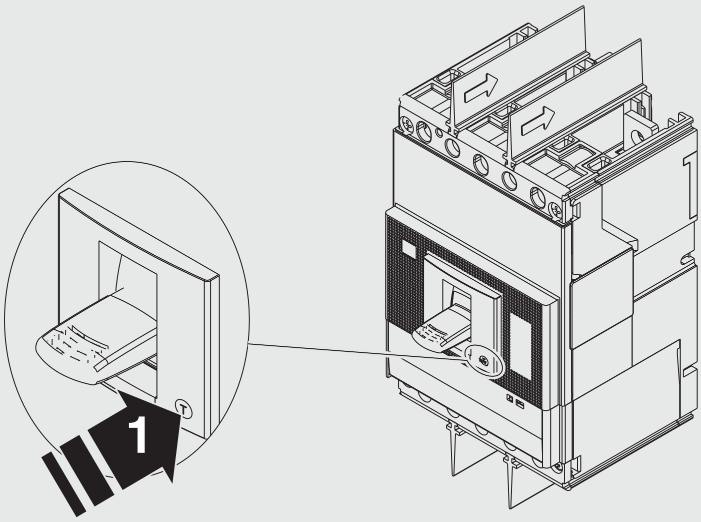
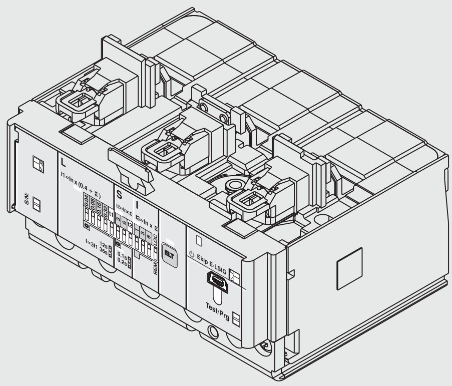
Doc. N.° 1SDH000722R0501 - ECN000212989 - Rev. C

# SACE Tmax XT

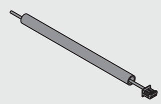
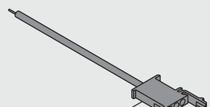
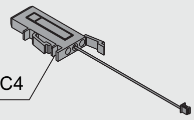
Ekip E-LSIG e connettore per  conduttore neutro esterno, XT4.
Ekip E-LSIG  and connector for external neutral conductor, XT4.
Ekip E-LSIG  und Anschluss für außenliegenden neutralleiter, XT4.
Ekip E-LSIG  et connecteur pour conducteur neutre extérieur, XT4.
Ekip E-LSIG  y conectores para conductor neutro externo, XT4.
Ekip E-LSIG和连接器用于外部中性导体，XT4.

XT4

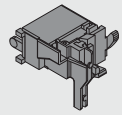


Ekip E - LSIG

| | F - P | W |
|---|---|---|
|  | 1 | - |
|  JC4 | - | 1 |
|  JC4 | - | 1 |

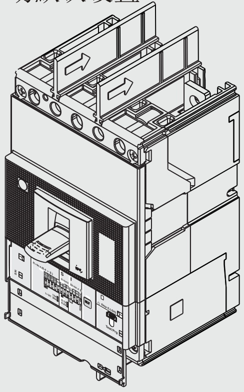
Optional for V Ne Ext

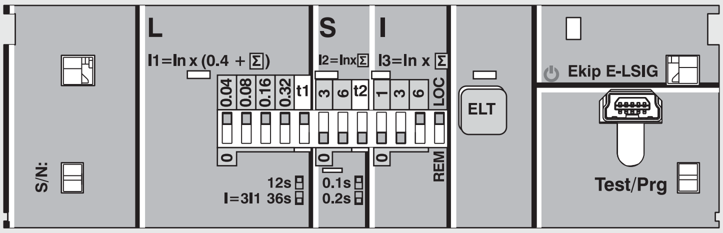
| | F - P | W |
|---|---|---|
|  | 1 | 1 |

## 1



Settaggio di default manuale
Manual default setting
Manuelle Default-Einstellung
Configuration par défaut manuelle
Ajuste de default manual
手动默认设置





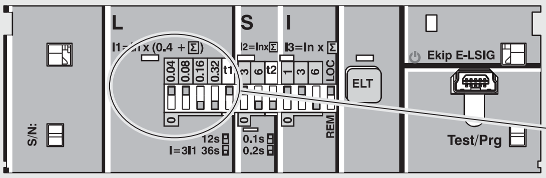

(Neutral setting = OFF)

| LED | Color | CONDITION Run time | |
|---|---|---|---|
| ⏻ | Green | LED Fixed = Device active | |
| L | Red | LED Fixed = L pre alarm (0.9 * I1 < I < 1.2 * I1) | LED Blinking = L alarm (I > 1.2 * I1) |
| S | Red | LED Blinking = S alarm (I > I2) | |
| ELT | Green | LED Fixed = Electronic settings - OFF = Manual settings | |
| L \| S \| I | Red | LED Blinking = Parameters inconsistency - L=I or S >= I.<br>LED Blinking without Parameters inconsistency = generic fault (please contact ABB) | |

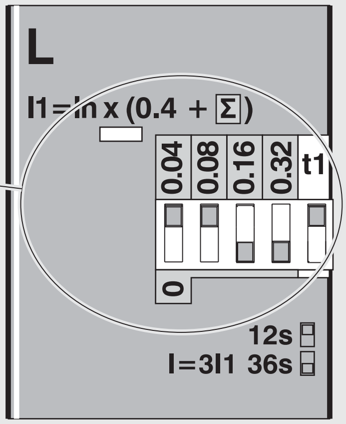
## 2



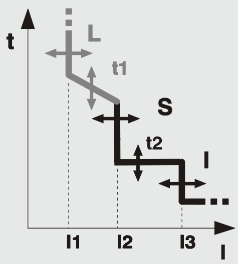
Esempio - Example - Beispiel - Exemple - Ejemplo - 示例



In = 100A
I1 = 100x(0.4+0.04+0.08)=52A
t1 = 12s @156A (3I1)



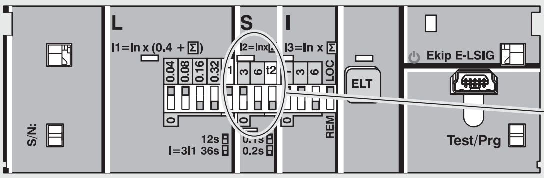

| | | I1 (In) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | In (A) | 0.4 | 0.44 | 0.48 | … | 0.92 | 0.96 | 1 |
| XT4 | IEC - UL | 40 | 16 | 17.6 | | | 36.8 | 38.4 | 40 |
| | UL | 60 | 24 | 26.4 | | | 55.2 | 57.6 | 60 |
| | IEC | 63 | 25.2 | 27.72 | | | 57.96 | 60.48 | 63 |
| | IEC - UL | 100 | 40 | 44 | | | 92 | 96 | 100 |
| | UL | 150 | 60 | 66 | | | 138 | 144 | 150 |
| | IEC | 160 | 64 | 70.4 | | | 147.2 | 153.6 | 160 |
| | UL | 225 | 90 | 99 | | | 207 | 216 | 225 |
| | IEC - UL | 250 | 100 | 110 | | | 230 | 240 | 250 |



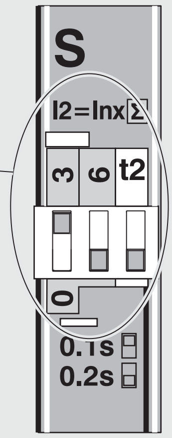

## 3



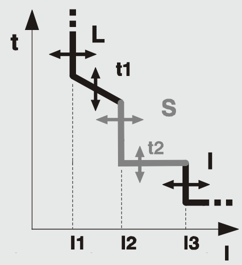
Esempio - Example - Beispiel - Exemple - Ejemplo - 示例

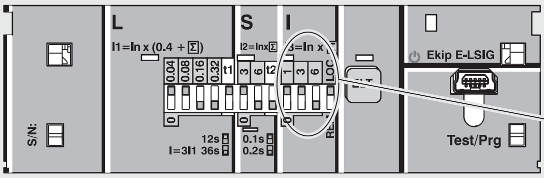


In = 100A
I2 = 100x(3)=300A
t2 = 0.2s




| | | I2 (In) | | | |
|---|---|---|---|---|---|
| | | In (A) | 3 | 6 | 9 |
| XT4 | IEC - UL | 40 | 120 | 240 | 360 |
| | UL | 60 | 180 | 360 | 540 |
| | IEC | 63 | 189 | 378 | 567 |
| | IEC - UL | 100 | 300 | 600 | 900 |
| | UL | 150 | 450 | 900 | 1350 |
| | IEC | 160 | 480 | 960 | 1440 |
| | UL | 225 | 675 | 1350 | 2025 |
| | IEC - UL | 250 | 750 | 1500 | 2250 |

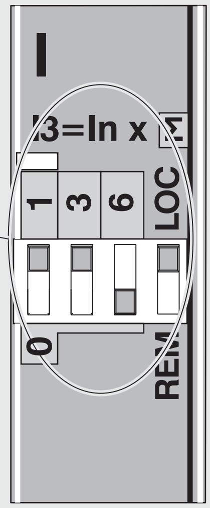




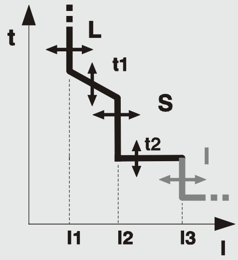

Esempio - Example - Beispiel - Exemple - Ejemplo - 示例

In = 100A

I3 = 100x(1+3)=400A




| | | I3 (In) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | In (A) | 1 | 3 | 4 | 6 | 7 | 9 | 10 |
| XT4 | IEC - UL | 40 | 40 | 120 | 160 | 240 | 280 | 360 | 400 |
| | UL | 60 | 60 | 180 | 240 | 360 | 420 | 540 | 600 |
| | IEC | 63 | 63 | 189 | 252 | 378 | 441 | 567 | 630 |
| | IEC - UL | 100 | 100 | 300 | 400 | 600 | 700 | 900 | 1000 |
| | UL | 150 | 150 | 450 | 600 | 900 | 1050 | 1350 | 1500 |
| | IEC | 160 | 160 | 480 | 640 | 960 | 1120 | 1440 | 1600 |
| | UL | 225 | 225 | 675 | 900 | 1350 | 1575 | 2025 | 2250 |
| | IEC - UL | 250 | 250 | 750 | 1000 | 1500 | 1750 | 2250 | 2500 |




## 5 Trip Test with Ekip TT

1

PROCEDURA DI CONTROLLO
- CONTROLLO LED: tutti i led del relè si devono accendere
- ULTIMA INDICAZIONE DI TRIP: se presente nella memoria del relè
- LED:⏻ resta acceso finchè l'unità TT e' connessa al relè
- PRONTO PER TRIP

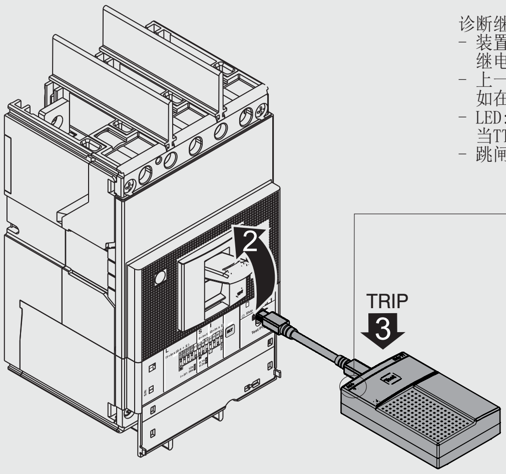
DIAGNOSTIC PROCEED
- UNIT CHECK LED: all the leds in the relay must come on
- LAST TRIP INDICATION: if present in the relay's data store
- LED:⏻ remains on for as long as the TT is connected to the relay
- READY TO TRIP

DIAGISTIKABLAUF
- EINEITHSPRUF-LED: Alle LEDs des Relais müssen aufleuchten
- ANGABE DER LETZTEN AUSLOSUNG: Wenn im Speicher des Relais vorhanden.
- LED:⏻ Bleibt angeschaltet, bis die Einheit TT an die Relais angeschlossen ist.
- AUSLOSEBEREIT

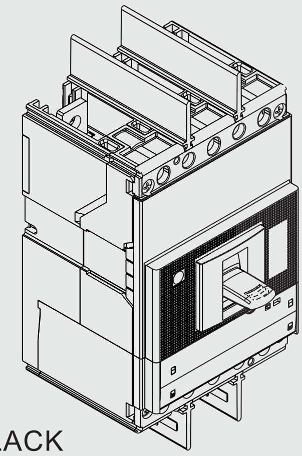
PROCÉDURE DE DIAGNOSTIC
- UNIT CHECK LED : toutes les diodes du relais doivent s'allumer
- LAST TRIP INDICATION : si présente dans la mémoire du relais
- LED:⏻ la DIODE reste allumée tant que l'unité TT est connectée au relais
- READY TO TRIP

PROCEDIMIENTO DIAGNOSTICO
- LED CONTROL UNIDAD: todos los led del relé se deben encender
- INDICACION ULTIMA ACTUACION: si está presente en la memoria del relé
- LED:⏻ queda encendido mientras la unidad TT permanezca conectada con el relé
- LISTO PARA LA ACTUACION

诊断继续
- 装置检查LED:
  继电器中的所有LED必须亮起
- 上一次跳闸显示:
  如在继电器数据store中存在
- LED:⏻
  当TT 连接到继电器的情况下，将保持亮起
- 跳闸就绪



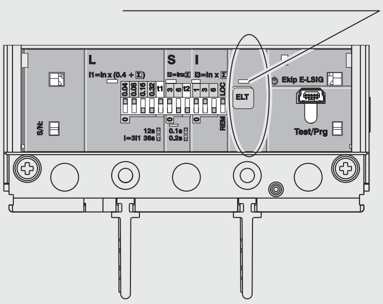

| LED Ekip TT | |
|---|---|
| Verde<br>Green<br>Grün<br>Vert<br>Verde<br>绿色 | Rosso<br>Red<br>Rot<br>Rouge<br>Rojo<br>红色 |
| Dispositivo acceso<br>Device ON<br>Einrichtung eingeschaltet<br>Dispositif allumé<br>Dispositivo encendido<br>设备已开机 | Sostituire batterie<br>Change battery<br>Batterie ersetzen<br>Remplacer batteries<br>Sustituir baterías<br>更换电池 |



4 CLACK

## 6 ELT by default setting

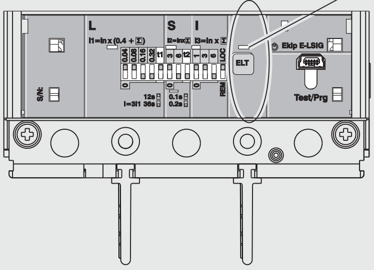
LED ON = ELT



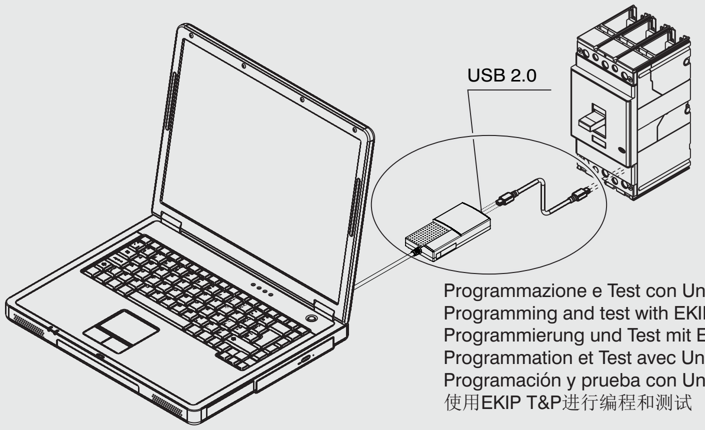

| EKIP E-LSIG | | DEFAULT |
|---|---|---|
| L | I1 | 1 In |
| | t1 | 12s |
| S | Curve type | t=k |
| | I2 | OFF |
| | t2 | 0.2s |
| I | I3 | ON |
| G | I4 | OFF |
| | t4 | 0.8s |
| UV | U10 | OFF |
| | t10 | 5 s |
| OV | U11 | OFF |
| | t11 | 5s |
| Trip unit configuration | Neutral configuration | 100% |
| | External neutral sensor | OFF |
| | Nominal Voltage (Un) | 415V |
| | Electronic/Manual parameters | MANUAL |
| | Led Mode | POWER MODE |

Settaggio di default elettronico
Electronic default setting
Elektronische Standardeinstellung
Réglage par défaut électronique
Configuración electrónica predeterminada
电动默认设置

LED ON = ELT




Esempio - Example - Beispiel - Exemple - Ejemplo - 示例




Programmazione e Test con Unità EKIP T&P
Programming and test with EKIP T&P
Programmierung und Test mit Einheit EKIP T&P
Programmation et Test avec Unité EKIP T&P
Programación y prueba con Unidad EKIP T&P
使用EKIP T&P进行编程和测试

Settaggio tramite sist. di comunicazione
Setting by communication system
Einstellung über Kommunikationssystem
Réglage par syst. de communication
Configuración mediante sist. de comunicación
通过通讯系统进行的设置

| EKIP E-LSIG | | RANGE | DEFAULT |
|---|---|---|---|
| L | I1 | 0.4…1 In step 0.01 In | 1 In |
| | t1 | 3…60s step 0.5s | 12s |
| S | Curve type | t=k/I2; t=k | t=k |
| | I2 | 1…10 In step 0.1 In | OFF - 3 In |
| | t2 | 0.05…0.4s step 0.01 | 0.2s |
| I | I3 | 1…10 In step 0.1 In | ON - 6 In |
| G | I4 | 0.2…1 In step 0.02 | OFF - 1 In |
| | t4 | 0.1…0.8s step 0.05s | 0.8s |
| Trip unit configuration | Neutral configuration | OFF/50%/100% | 100% |
| | Electronic/Manual parameters | MANUAL/ELECTRONIC | MANUAL |
| | Led Mode | POWER MODE (fixed) | POWER MODE |
| | | ALIVE MODE (flash) | |

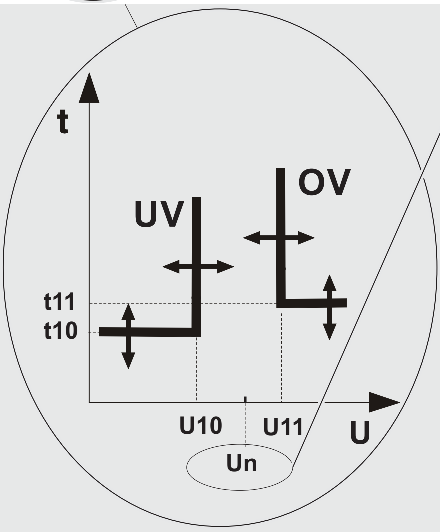
| EKIP E-LSIG | | RANGE | DEFAULT |
|---|---|---|---|
| UV | Trip Status | ON/OFF | ON |
| | U10 | 0.5…0.95 Un step 0.01 Un | OFF - 0.5 Un |
| | t10 | 0.1…5s step 0.1s | 5 s |
| OV | Trip Status | ON/OFF | ON |
| | U11 | 1.05…1.2 un step 0.01 Un | OFF - 1.2 Un |
| | t11 | 0.1…5s step 0.1s | 5s |
| Trip unit configuration | External neutral sensor | OFF/ON | OFF |
| | Nominal Voltage (Un) | 100…690V step 1V | 415V |

**Default setting OV-UV on Ekip E-LSIG by communication system**

Un = 415 V

U10 = 0.5 * Un = 415*0.5 = 207.5 V
t10 = 5 s

U11 = 1.2 * Un = 415*1.2 = 498 V
t11= 5 s




**Example setting OV-UV on Ekip E-LSIG by communication system**

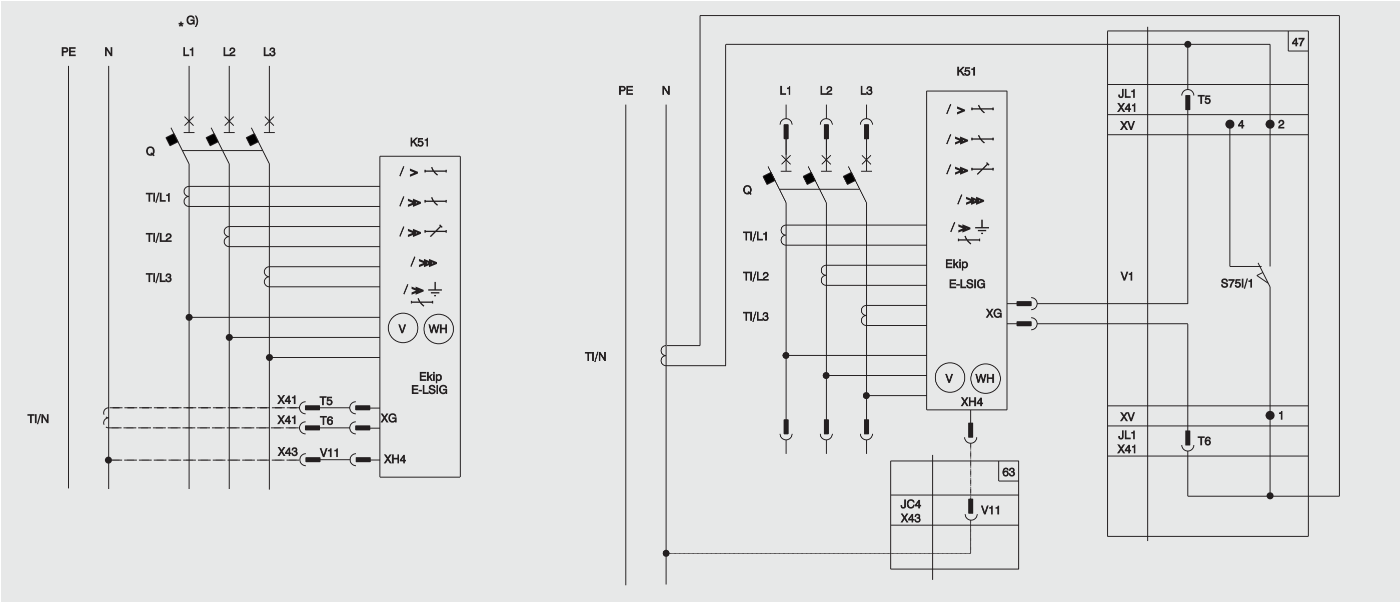
Un = 600 V

U10 = 0.75 * Un = 600*0.75 = 450 V
t10 = 3 s

U11 = 1.1 * Un = 600*1.1 = 660 V
t11= 1 s

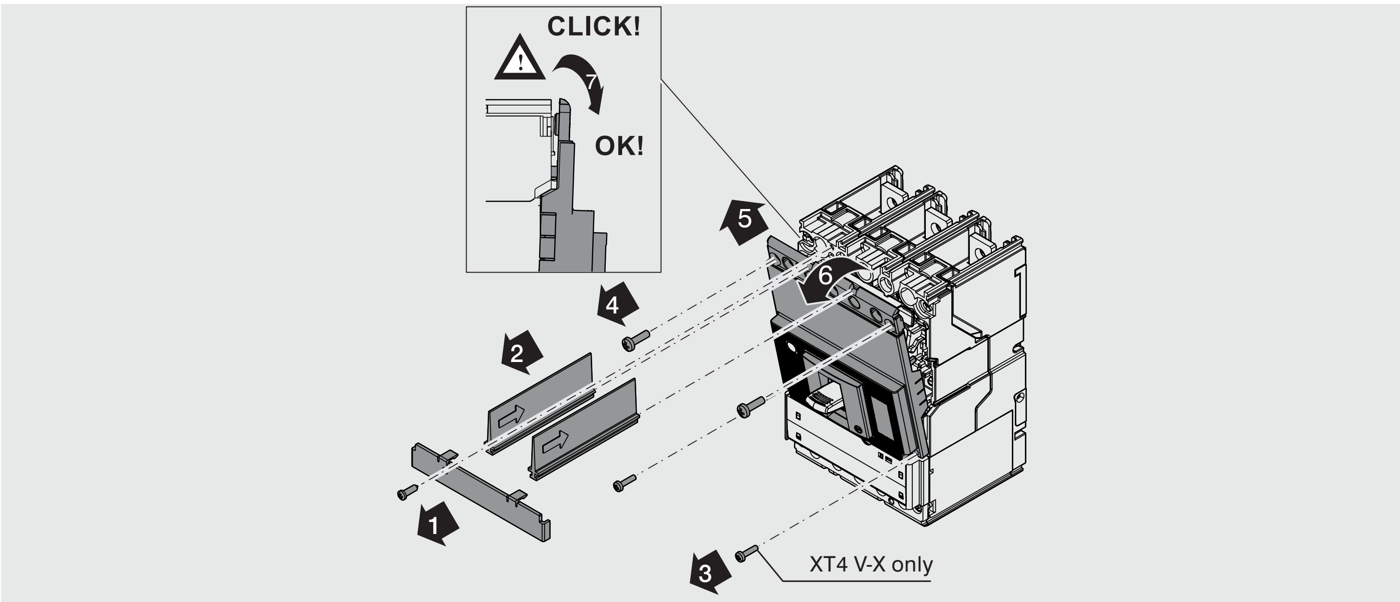
## 8

XT4



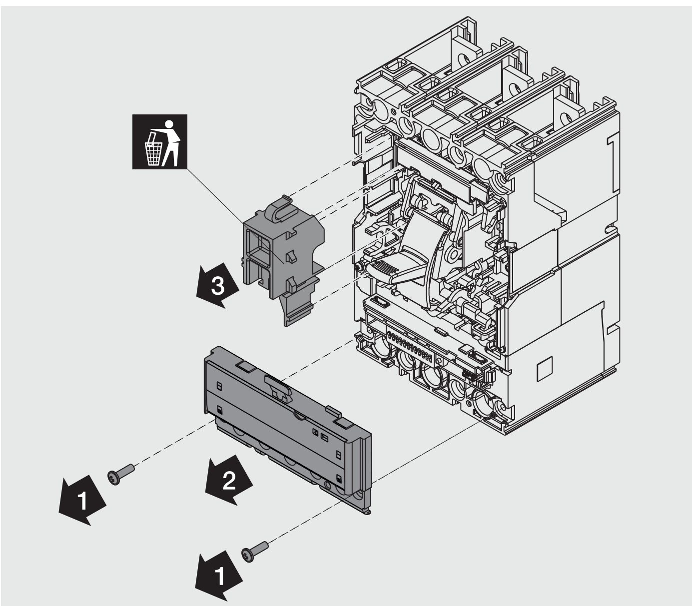

## 9

XT4 F - P V Ne Ext only



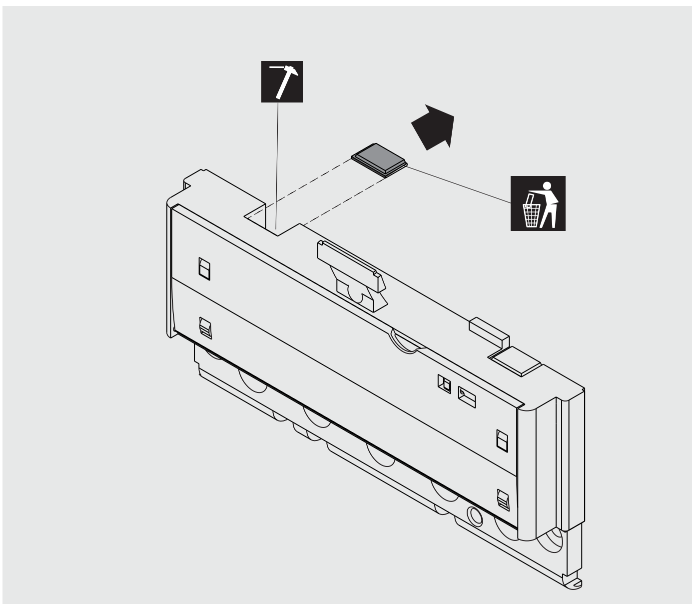

## 10

XT4 F - P V Ne Ext only

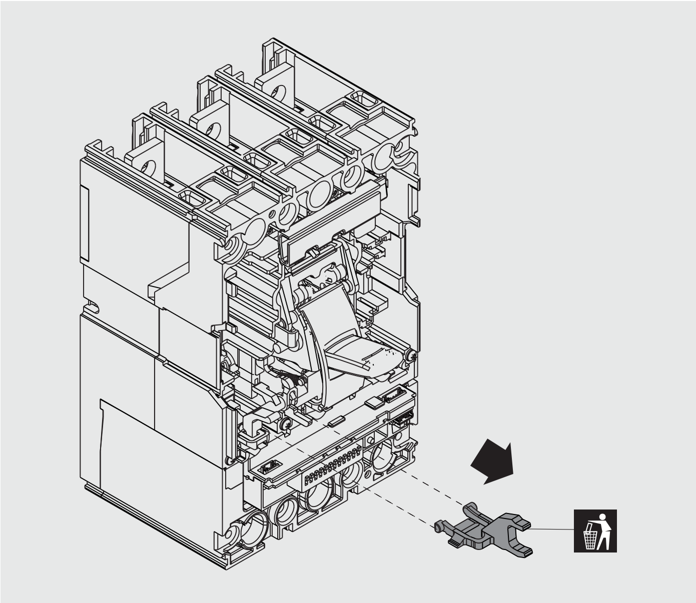



## 11

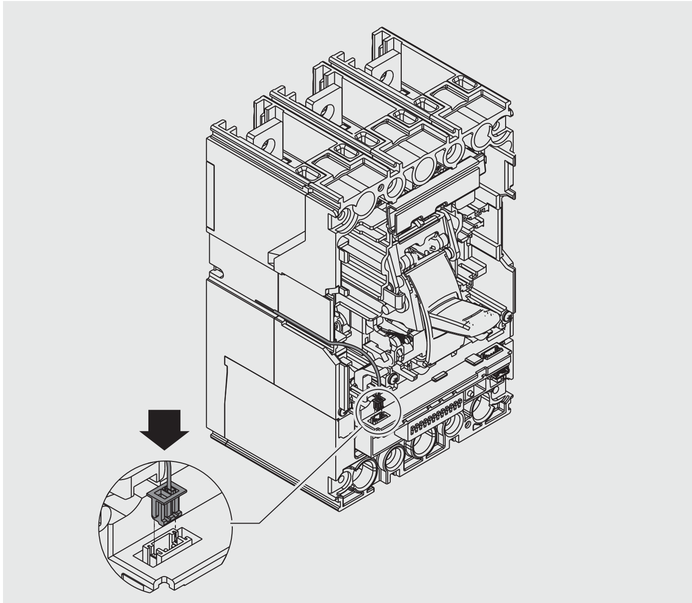
XT4 F - P V Ne Ext only



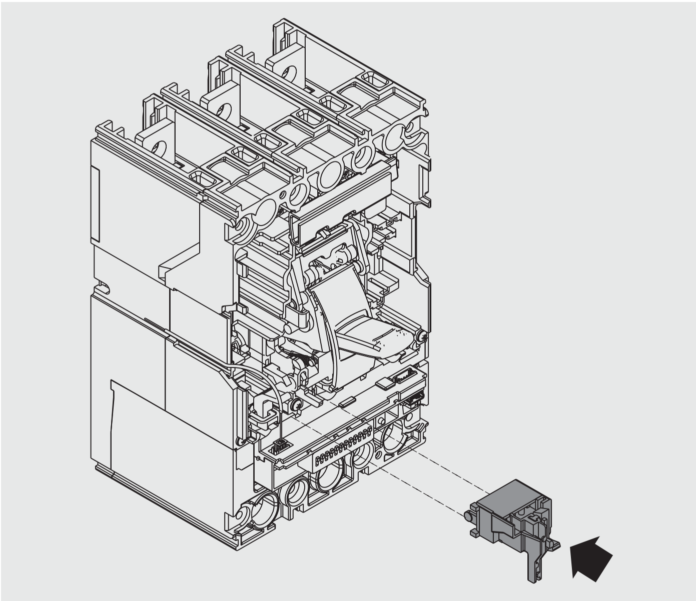
12 XT4 F - P V Ne Ext only



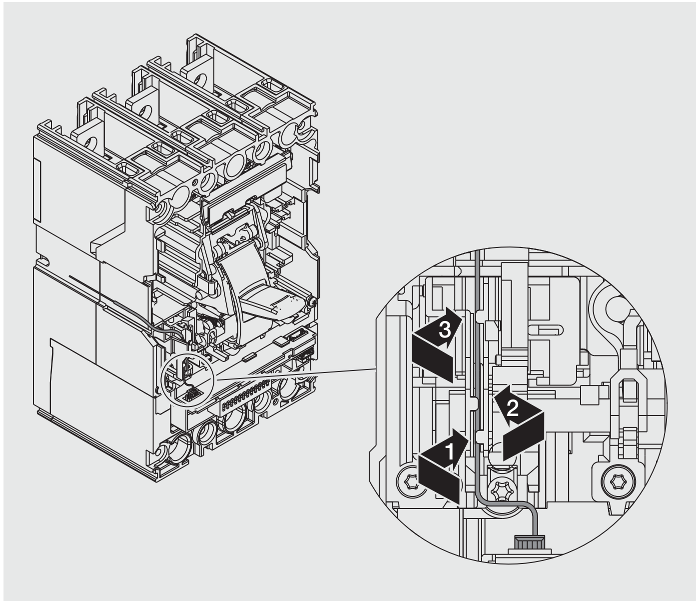
13 XT4 F - P V Ne Ext only



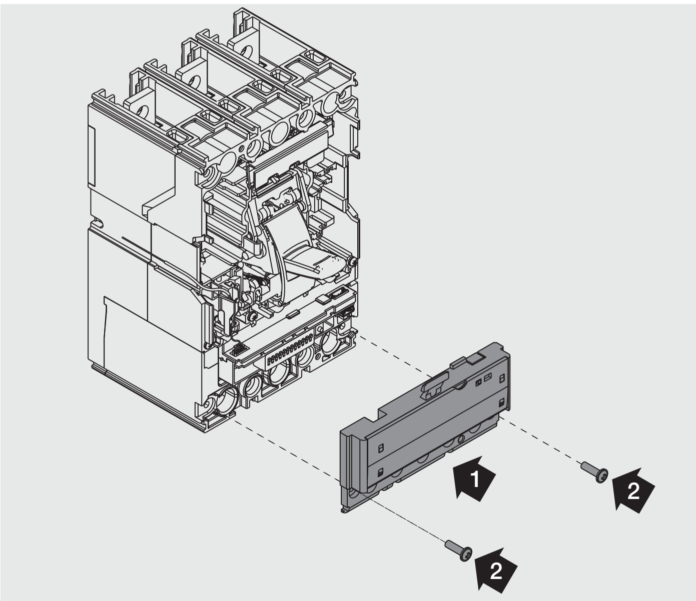
14 XT4 F - P V Ne Ext only



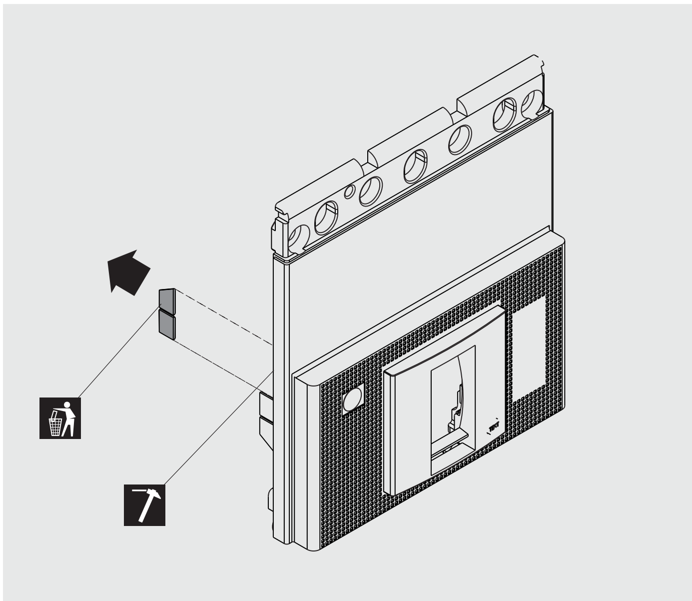
15 XT4 F - P V Ne Ext only



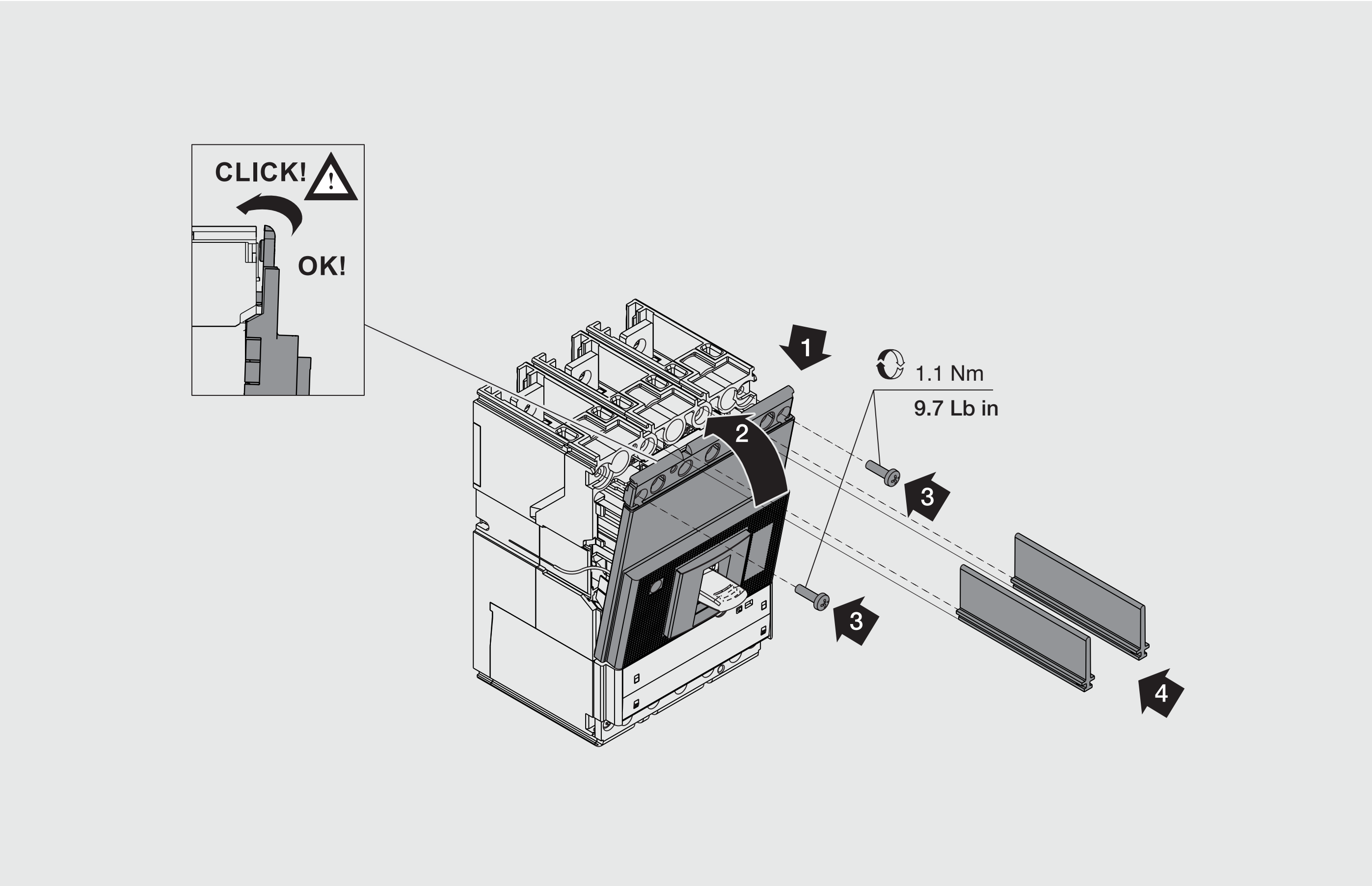

16 XT4 F - P V Ne Ext only



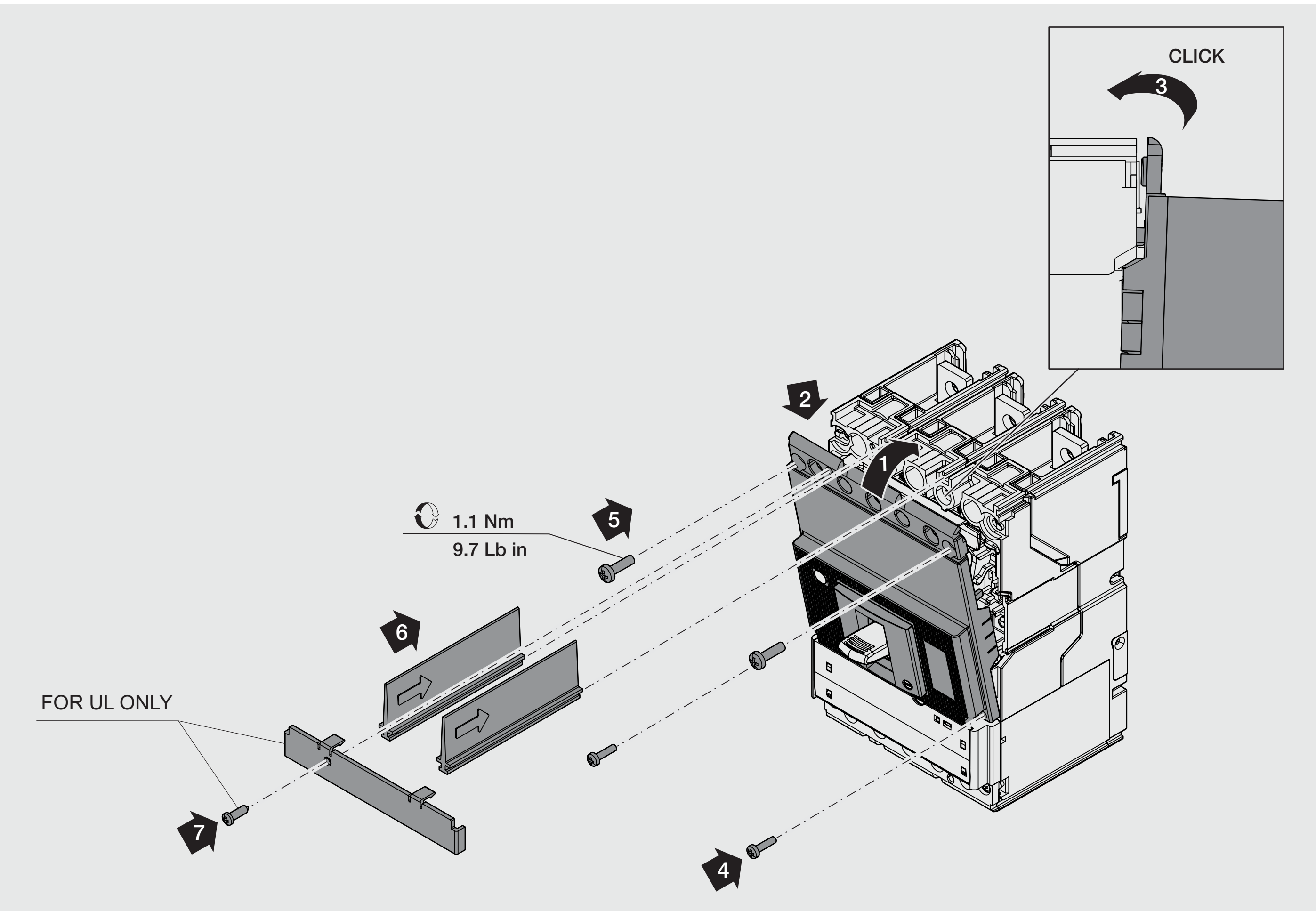

17 XT4 F - P V Ne Ext only



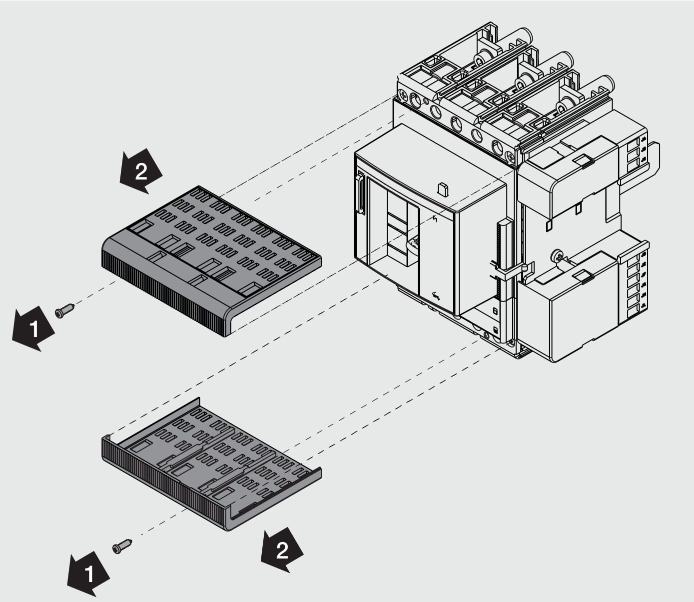
18 XT4 F - P V Ne Ext only



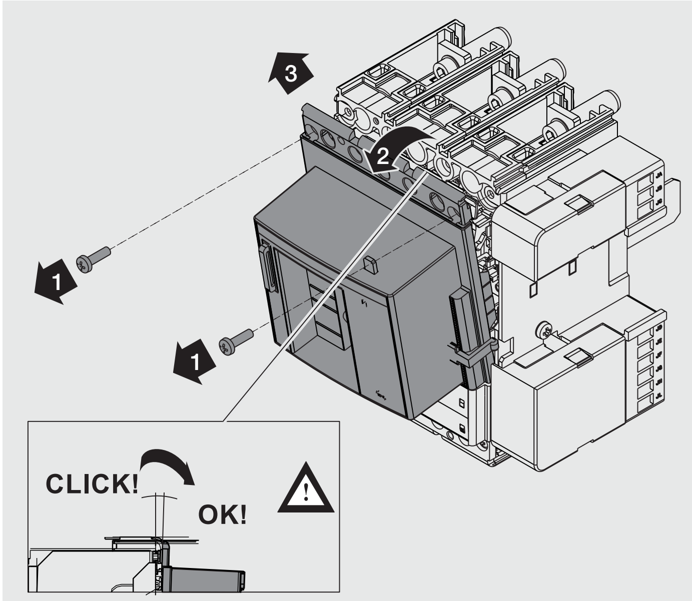

19 XT4 F - P V - X only



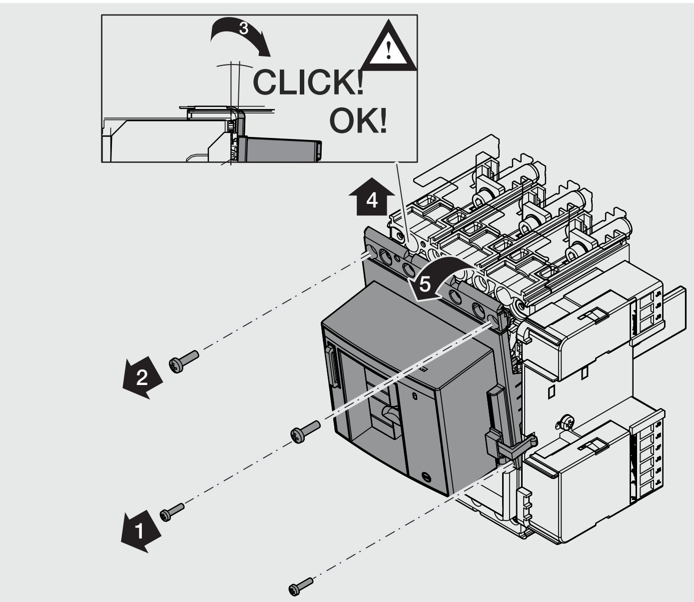
20 XT4 W V Ne Ext only



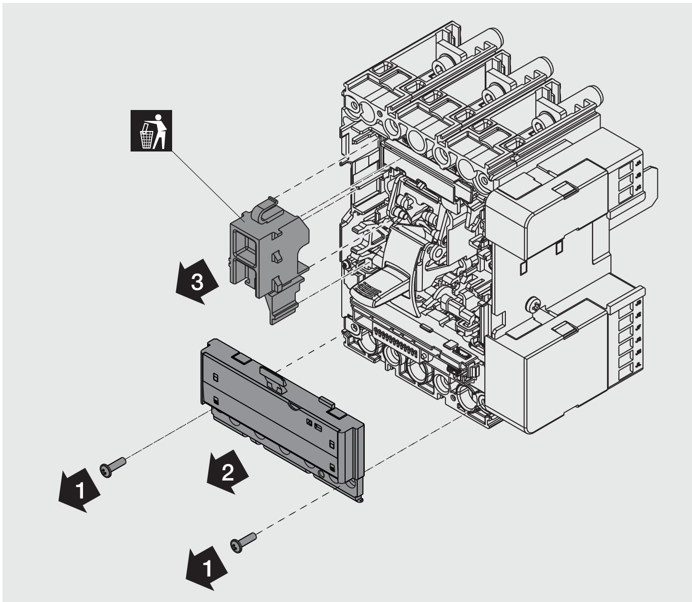

21 XT4 W V Ne Ext only



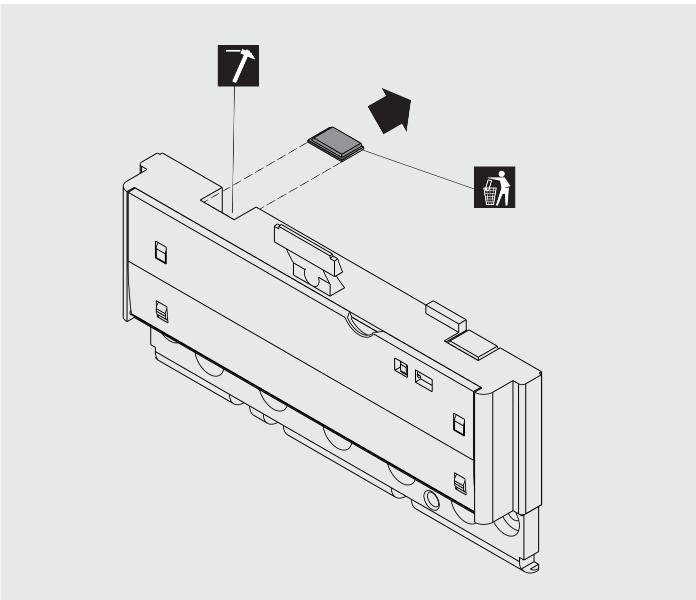

22 XT4 W V - X only



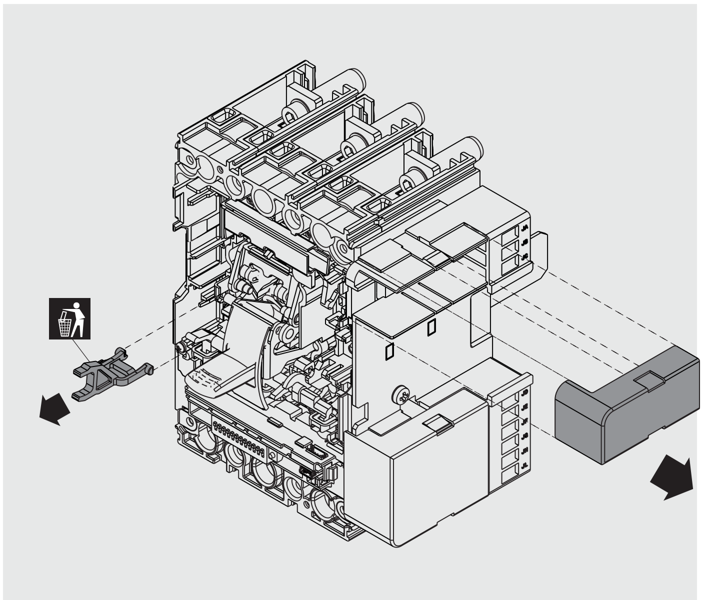

23 XT4 W V Ne Ext only




24 XT4 W V Ne Ext only

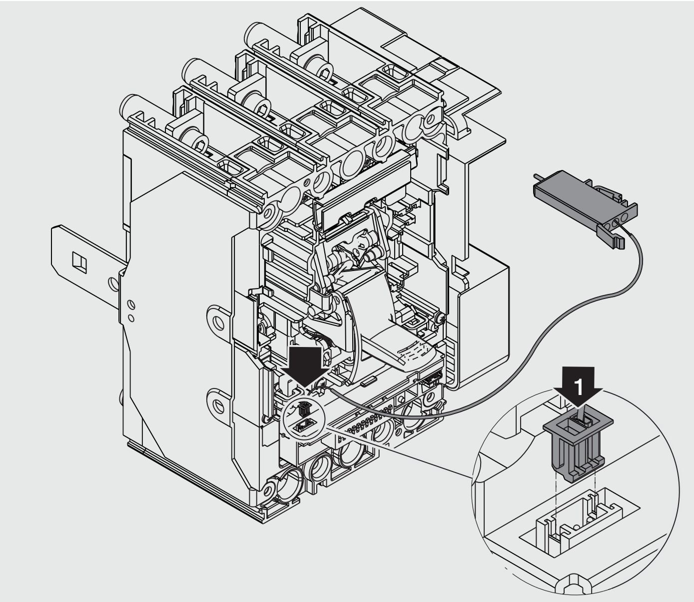


25 XT4 W V Ne Ext only



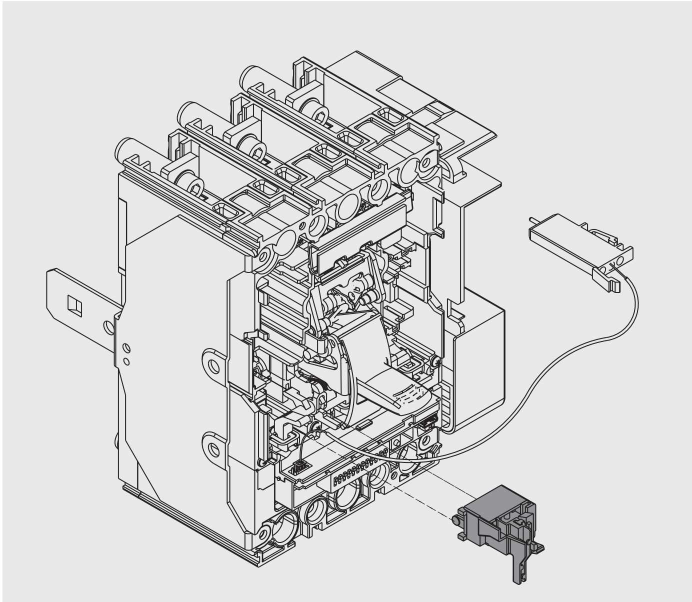
## 26

XT4 W V Ne Ext only



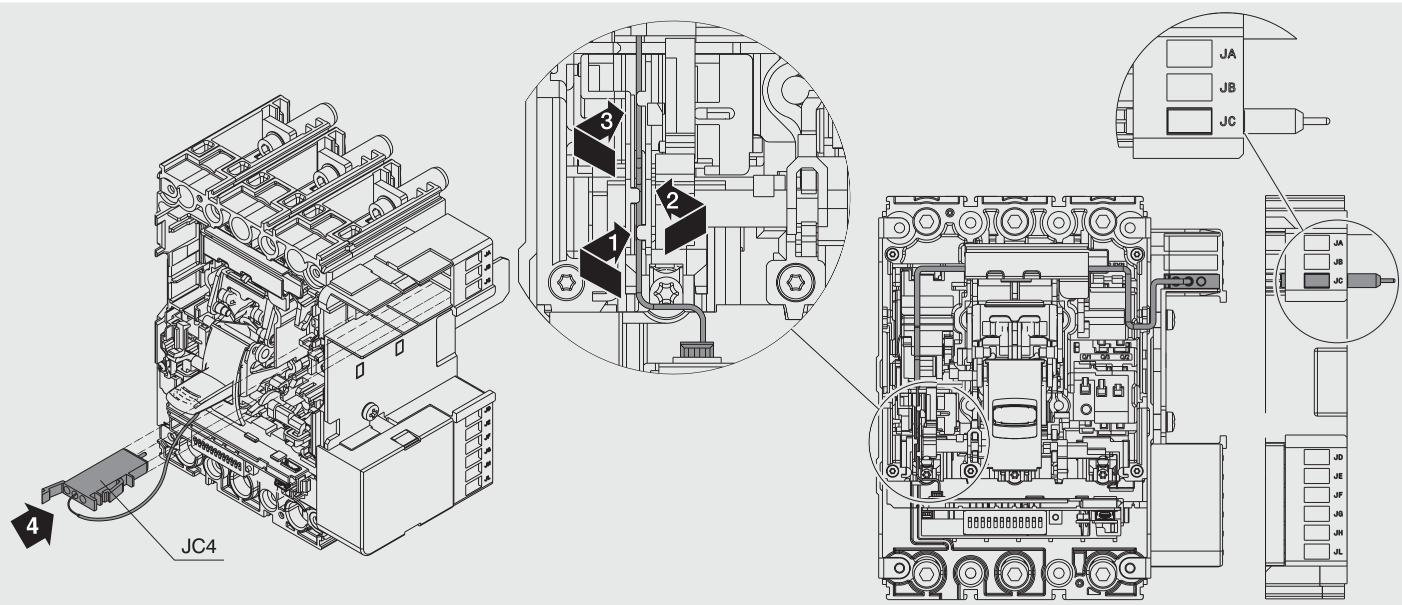

## 27

XT4 W V Ne Ext only



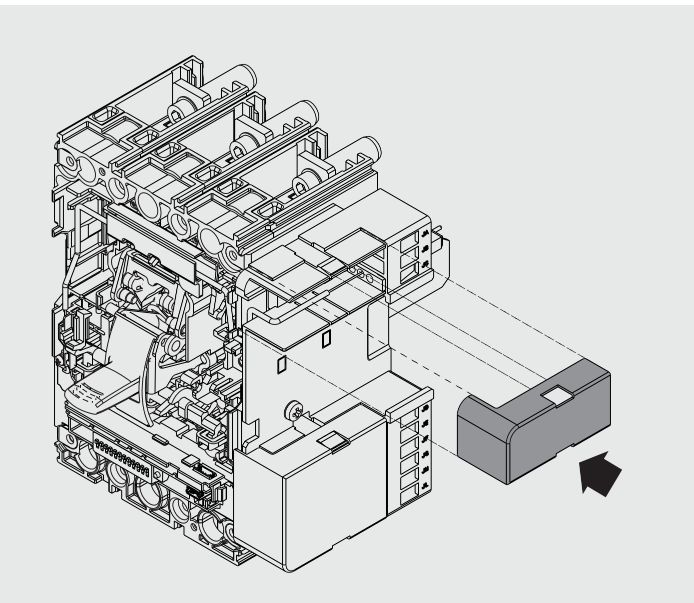
## 28

XT4 W V Ne Ext only



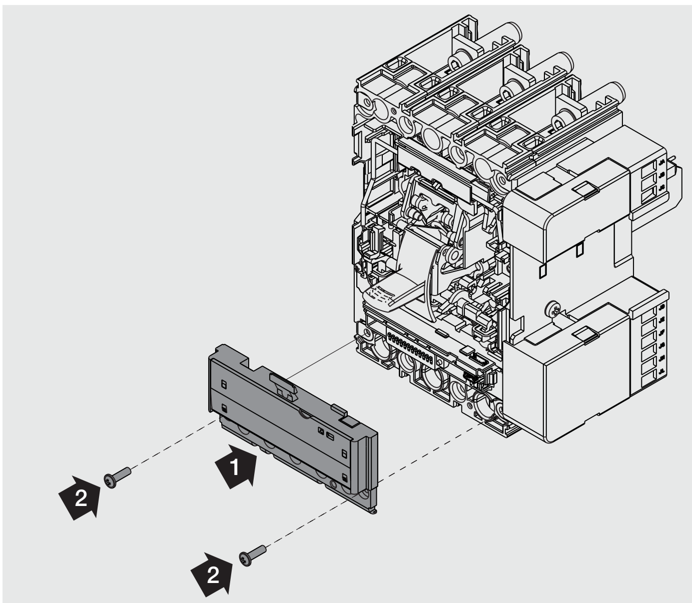

## 29

XT4 W V Ne Ext only

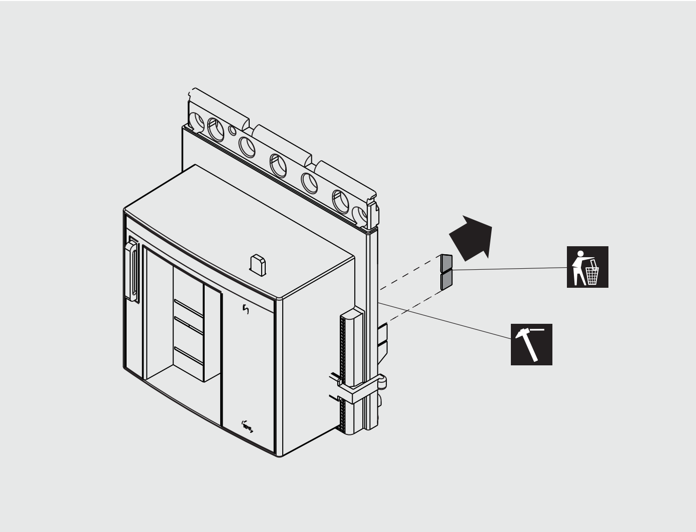


## 30

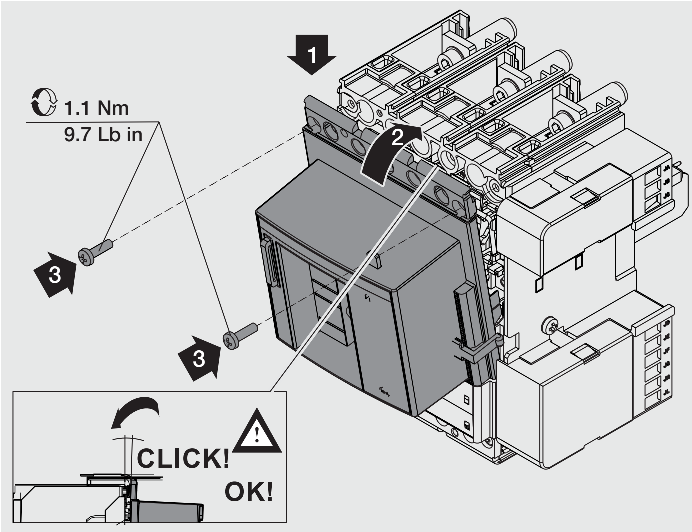
XT4 W V Ne Ext only



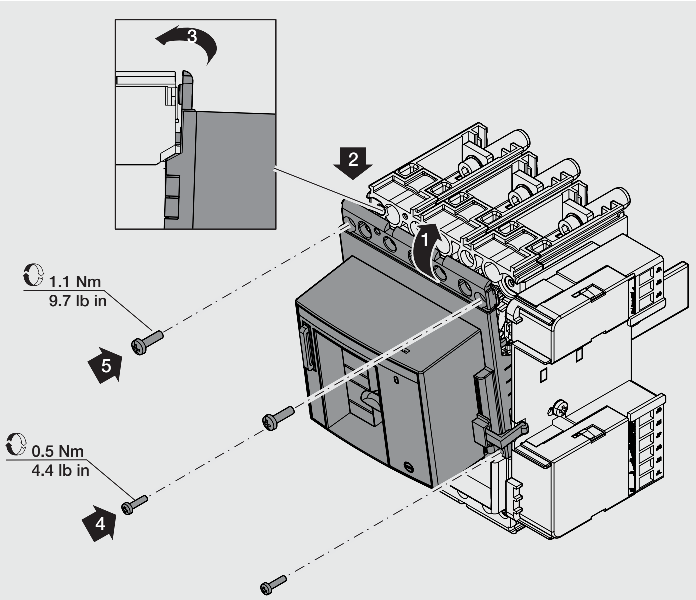
31 XT4 W V Ne Ext only



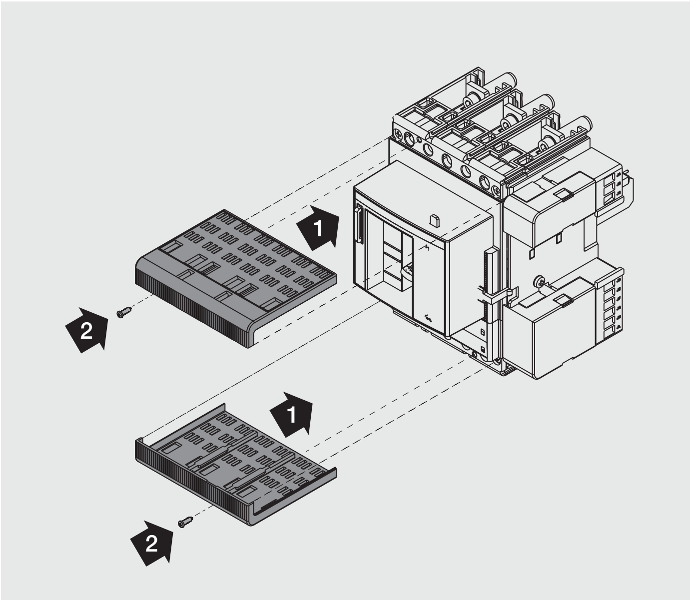
32 XT4 W V Ne Ext only



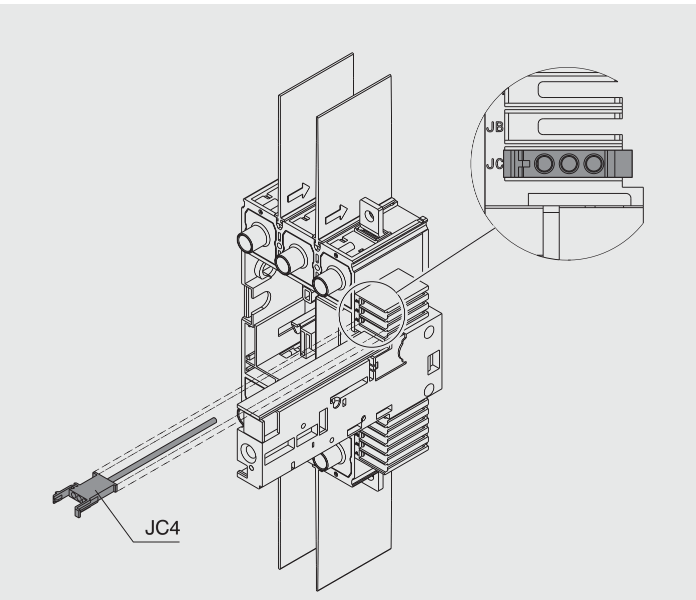

33 XT4 W V - X only



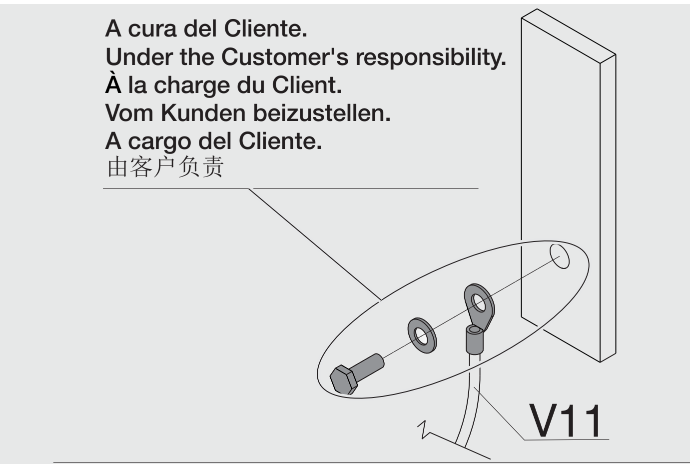

34 XT4 W V Ne Ext only



35 XT4 W V Ne Ext only




36 XT4 F - P - W V Ne Ext: fixing CABLE on ext. neutral conductor, and setting




| EKIP E-LSIG | | RANGE | DEFAULT |
|---|---|---|---|
| Trip unit configuration | External neutral sensor | OFF/ON | OFF |

XT4 F - P - W V Ne Ext setting

Set ON