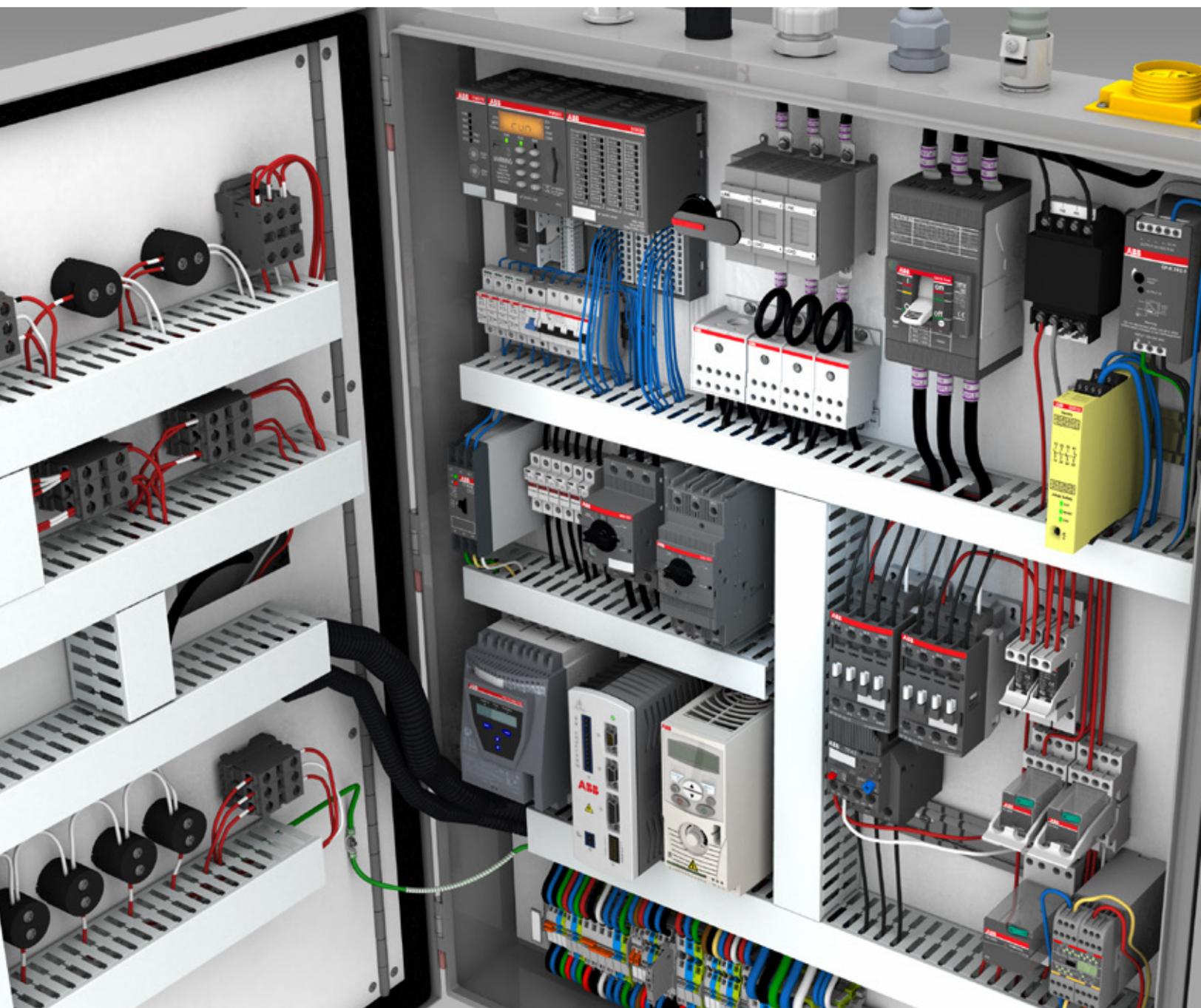


PANORAMA

# ABB solutions for control panels

## Capabilities guide



# Top reasons to choose ABB as your preferred supplier of low voltage control products

## 1. The most extensive product range, enabling you to source your critical components from one supplier

- Air circuit breakers
- Arc Guard System™
- Circuit monitoring system (CMS)
- Contactors and overloads
- DIN rail components
- Disconnects
- Drives
- Interface relays
- Limit switches
- Manual motor starters
- Miniature circuit breakers
- Molded case circuit breakers
- Pilot devices
- PLCs
- Power distribution bus systems
- Power supplies
- ProLine panelboards
- Residual current devices
- Safety locks
- Safety relays and PLCs
- Safety switches
- Sensors
- Softstarters
- Starters
- Surge protective devices
- Timers and monitors
- Transformers
- Universal motor controllers

## 2. Ease of product selection and installation

- Comprehensive selection tools and extensive technical documentation for easy specification and use
- Wide variety of product options — from standard to highly sophisticated — offering maximum value
- Products designed for safety and easy installation, set-up, commissioning and maintenance
- Common style across product line helps you create a cleaner panel design

## 3. Global support

- ABB products are available in more than 100 countries, giving you the confidence of worldwide sourcing and support — no matter where you build and operate your equipment
- Global certifications to support your business worldwide
- One single partner to handle your support requirements

## 4. Ease of doing business

- Source for widest range of best-in-class products
- Pricing available 24x7x365 for qualified control panel partners
- Product selection tools, including configurators, cross references, product training and a dedicated web portal ([www.electricalengineeringresource.com](http://www.electricalengineeringresource.com))

## 5. Business efficiency resources

- Regulatory compliance assistance
- Priority support



## Products

### SMISSLINE TP flexible power distribution bus system

Modular assembly allows for simple reconfiguration and maintenance and reduces space and installation time. Design changes and future expansion are easily accomplished.



- Certified for UL 508 and UL 489 applications
- 125 and 250 A busbar version
- MCBs up to 35 A (direct plug-in) and 100 A (with adapter)
- Combination motor starters
- Finger-safe IP20 design

### ABB Ability™ electrical distribution control system (EDCS)

ABB Ability™ EDCS gives you the ability to monitor energy usage, capture power quality analytics, and perform predictive maintenance easily, at anytime and from anywhere.



- Generate a new revenue stream by helping customers track panel performance
- Deliver ongoing differentiated solutions by helping your customers increase panel reliability
- Easy-to-install architecture reduces wiring and connection time
- Unmatched scalability and flexibility enable easy integration with supervision and management systems in single- and multiple-site applications

### TruONE® ATS

The TruONE ATS is the world's first true all-in-one automatic transfer switch, engineered to incorporate switch and controller in one seamless unit. TruONE stands ready to help ensure the steady delivery of critical power at all times.



- Rated voltage 200–480 V
- Available in 3- and 4-pole
- Both in open and delayed transition
- Up to 1200 A with 2000 A coming soon
- Three levels of controller:
  - Standard for basic DIP switch control
  - Advanced with LCD display, programmable I/O, flexible time delays and comm modules
  - Pro version includes power measurement and predictive maintenance

### Circuit monitoring system (CMS)

The CMS is a compact and scalable system to measure AC and DC loads in branch circuits. It is easy to use and has intuitive installation and configuration via integrated touch screen (CMS-600) or web client (CMS-700) in original installations or field retrofits.



- Open and closed core sensors up to 160 A true RMS with up to 0.5% accuracy
- Up to 96 sensors can be monitored by one control unit
- Measured data can be accessed via Ethernet or polled via Ethernet or Modbus RTU protocol interface

### Emax 2 air circuit breakers (ACBs)

Emax 2 ACBs provide the latest protection technology with ease of installation and use. They function as circuit breakers for general protection of plants, end-user complexes and electric lines and as protection circuit breakers for generators, motors, transformers and capacitors, making them the ideal solution for designers, installers, OEMs and end users.



- For applications in accordance to UL 1066 standards 600 V AC
- Available in fixed and drawout styles
- Up to 6000 A
- Up to 100 kA of short circuit protection
- Accessories include: motor operators, auxiliary and signal contacts, shunt trip, under-voltage release, bell alarms and more

### Featuring all-in-one innovation

Emax 2 all-in-one innovation embeds into an Emax 2 air circuit breaker to provide full power control. The embedded features of all-in-one innovation extraordinarily simplify the installation, programming and testing of these functions:

- Embedded ATS
- Load shedding
- Synchronized reclosing
- Integrated IPS
- Predictive maintenance

Ready-to-go programming and simplified connections all in a compact, reliable system.

### Ekip UP

Ekip UP provides the ability to upgrade any switching device with measuring and monitoring, protection and control capabilities.



Update your equipment with advanced features such as communications, measuring and advanced protections without replacing your existing circuit breaker, contactor or disconnect switch.

- Upgrade and optimize your panel with embedded energy management features
- Operating voltages: 220 V to 690 V
- Operating currents: 100 A to 4000 A
- Operating temperature: min. -25 °C, max. 85 °C
- Measurement accuracy: current, class 1; voltage, class 0.5; power, class 2; harmonics up to 50th

### 1 Contactors and overloads

ABB's AF contactors signify a major advancement in motor control and power switching. They come standard with electronic coils and built-in surge suppression. The AF contactors, along with ABB's short circuit and overload protective devices, provide the user with fully tested, UL-listed short circuit current rating (SCCR) motor combinations.



- UL general use and motor switching
- 9 to 2650 A
- 5 to 900 HP
- Up to 1500 V
- 3- and 4-pole versions
- Accessories include: connection sets, auxiliary contact blocks, interlocking units, timers, electronic and thermal overload relays
- Available with push-in spring termination for faster, easier assembly

### 2 Disconnect switches

ABB has a wide portfolio of low voltage switches that includes fusible, non-fusible, change-over and enclosed switches with ratings between 16 and 2000 amps for both AC and DC applications. These disconnects are suitable for machinery, power distribution, switchboards, motor control centers and photovoltaic applications.



- UL 508 and UL 98 Listed
- Compact size
- High performance
- Robust safety features and easy installation
- The most complete offering of disconnects on the market

### 3 SACE® Tmax® XT molded case circuit breakers (MCCBs)

Tmax XT MCCBs provide an extremely high level of performance with limited overall dimensions and installation simplicity. The Tmax XT line is available in 8 sizes, a complete range of trip unit options and with a wide variety of electrical and mechanical accessories.



- Thermal magnetic and electronic versions
- Up to 3000 A with up to 200 kA of short circuit protection
- 240, 480 and 600 V optimized solutions
- Fixed, plug-in or drawout
- Accessories include: motor operators, auxiliary and signal contacts, shunt trip, under-voltage release and bell alarms

### 4 Starters

ABB's starters can be used in most motor control applications using mechanical starting means as well as solid state.

- IEC and NEMA rated
- Combination tested to 200 kA
- Enclosed and open styles



### 5 Manual motor starters

Manual motor starters can reduce panel space, installation time and cost. Applications include manual motor control, local motor disconnect, group installation and self-protected combination motor controllers.



- Up to 100 A, 100 HP and 65 kA short circuit protection
- Self-protected UL 508 type E and F (up to 100 kA)
- Accessories include: connection sets, auxiliary contact blocks and shunt trips, power-feed blocks, under-voltage release and short circuit signaling contacts
- Available with push-in spring termination for faster, easier assembly

### 6 Control power and machine tool transformers

Machine tool transformers are used to provide voltage to control devices in applications where voltage regulation and minimum space are critical. Welded cores provide the highest quality electrical performance and quiet operation. Control power transformers are an economical alternative to high inrush/machine tool transformers.



- Finger-safe terminals offer added protection and safety
- Pressure-plate terminals ensure secure connections
- Wide variety of fusing options
- Type IP transformers are seismically qualified

### 7 Power supplies

ABB's CP range of innovative primary switch mode power supplies provides compact construction, easy DIN rail mounting, high efficiency, reliability and safety features. Accessories include buffer units, redundancy modules and more.



- 5, 12, 24 or 48 V DC output voltage with wide range of AC or DC supply voltages
- High efficiency, up to 94%
- Open-circuit, overload and short-circuit proof input fuse
- Coated (PCBA) and ATEX certification available for hazardous locations

## 8 Surge protective devices (SPDs)

SPDs are designed for long service life, helping protect sensitive electronic equipment against the damaging effects of surges caused by lightning, utility load switching, internal load switching and more. They are suitable for use in hospitals, data centers, renewable energy, water/wastewater treatment and other critical power applications.

- A full range of SPDs that comply with UL 1449, UL 96A or UL 497B
- OVR DIN rail SPDs provide equipment protection; 15 and 40 kA
- ABB OVR Q and OVR SL series of DIN rail SPDs deliver compact and reliable surge protection for data and signal applications
- Replaceable MOV cartridges and modules allow easier maintenance
- ABB OVRH series SPDs offer over-current and over-voltage protection to help mitigate damage to assets, reduce downtime and lower maintenance costs



## 9 Miniature circuit breakers (MCBs)

ABB, the inventor of miniature circuit breaker technology, offers the largest selection of current-limiting, compact, DIN-rail mounted MCBs for AC and DC applications. Thermal and magnetic trips are provided to cover both over-current and short-circuit faults.

- UL 489, UL 1077 and IEC
- 0.2 to 100 A, up to 600 V AC/DC and 50 kA short circuit protection
- Accessories: bus bars, auxiliary and signal contacts, shunt trip and lock out/tag out



## 10 Fuse holders

ABB offers a wide range of DIN-rail mountable, UL approved IP20 fuse holders. They offer venting grooves and cooling chambers to improve heat dissipation, increasing durability and reliability. Ergonomic flip hinge makes fuse replacement easier in small spaces even while wearing gloves. All models offer blown fuse indication.

- Class J — up to 60 A at 600 V AC/DC
- Class CC — up to 30 A at 600 V AC/DC
- Midget 10 x 38 mm — up to 30 A at 600 V AC/DC
- Photovoltaic PV — up to 30 A at 1500 V DC



## 11 Residual circuit devices (RCDs)

ABB offers residual current devices that are UL 1053 and IEC certified. RCDs are sensitive devices that switches off an electrical circuit in the event of a fault. If either a fault occurs or the voltage goes above zero, a leakage current flows to the ground, creating an unevenness that causes the toroidal transformer inside the RCD to trip the mechanism.

- Available in 2-poles and 4-poles
- Rated from 16 A up to 125 A
- Rated sensitivity from 10 mA up to 1000 mA



## 12 Ice cube and solid-state relays

ABB's solid-state and electromechanical relays help ensure reliable voltage conversion between process peripherals and higher-level control systems. Suitable for use in extreme environments, our relays help ensure reliable signal switching and electrical isolation for sensitive electronics such as PLCs. A wide variety of pluggable interface relays with standard or logic sockets can be used for switching AC or DC loads.

- Coil voltages from 5 V DC to 230 V AC
- Up to 16 A contact ratings and up to four output contacts
- Optional plug-in modules available; timer, LED and more
- Integrated test button for manual operation
- Gold-plated contacts available for lowest contact resistance
- Super slim (CR-S), less than ¼" wide

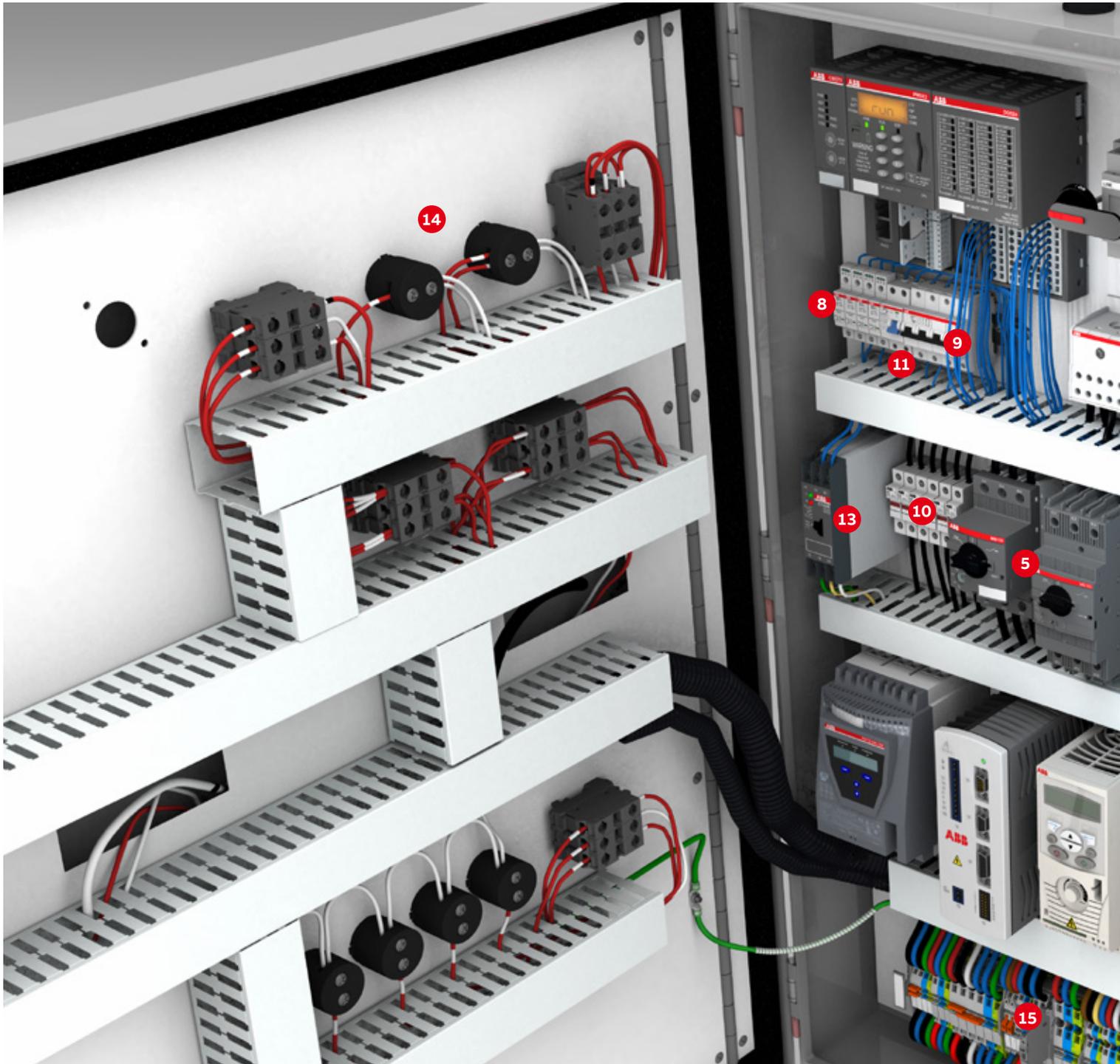


## 13 Electronic relays and controls

ABB's assortment includes a wide range of products for switchgear and control gear for electrical equipment and automation of machinery and plants. These versatile products offer maximum security, economic efficiency and capacity. Ongoing development of the product range makes new applications possible.

- Timers
- Measuring and monitoring relays
- Grid-feeding monitors
- Sensor interface relays
- Universal motor control





#### 14 Pilot devices

ABB offers three ranges of pilot devices for 22 mm and 30 mm diameter holes. The modular range is offered in metal or plastic bodies and includes operators, holders and contact, and LED blocks that can be combined. The compact range offers all functions built into a single unit. Adapter rings enable use of 22 mm pilot devices in 30 mm diameter holes.

- IP66, IP67, IP69K and NEMA 1, 3R, 4, 4X, 12, 13
- Wiping contacts and integrated LEDs
- Standard and custom legend plate shrouds
- A full line of emergency stops

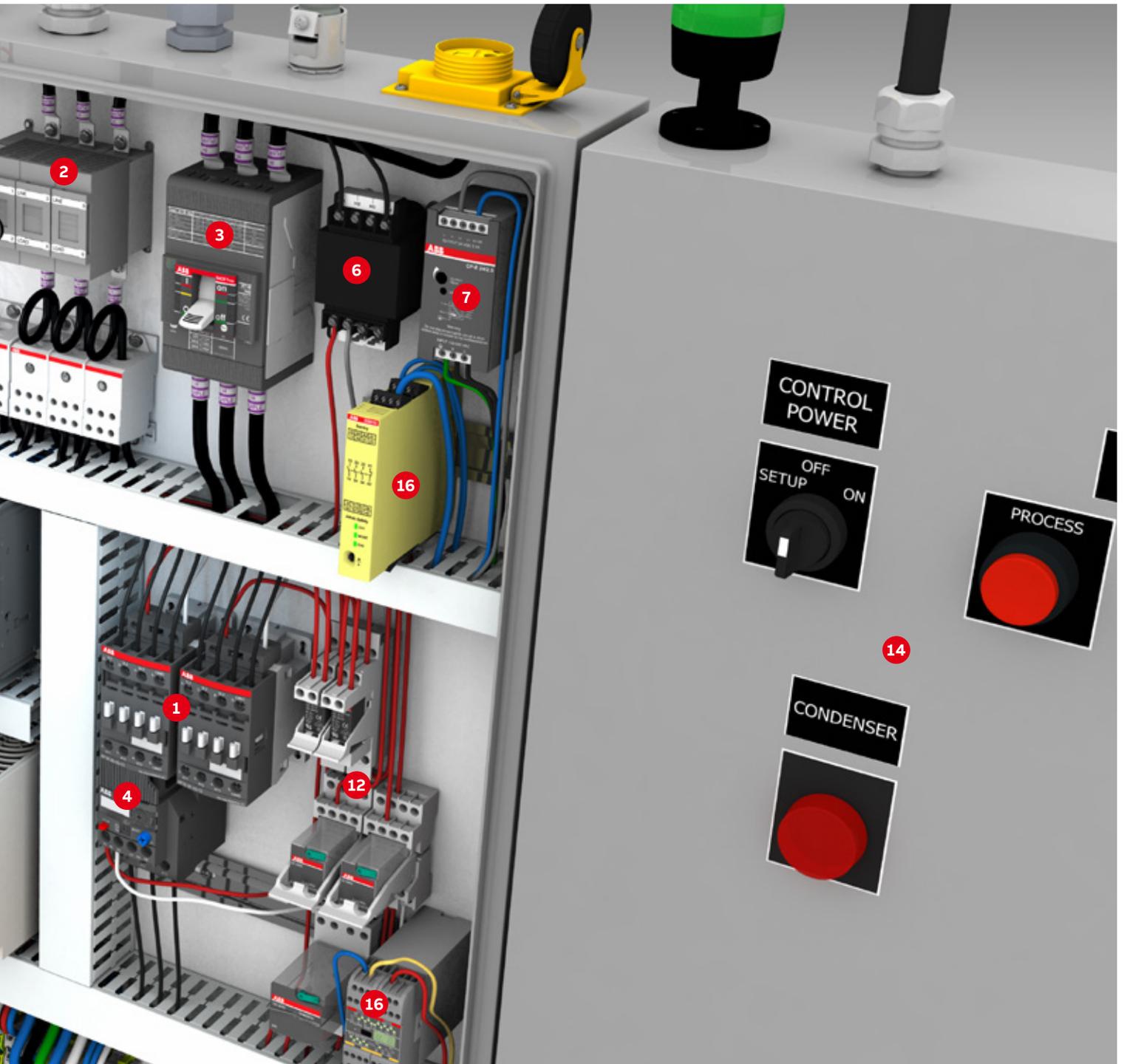


#### 15 ProLine panelboards

ProLine is the first UL 67 panelboard on the market offering touch-safe capabilities and total breaker coordination. It provides valuable features to those who demand the best possible protection against arc flash and electrical shock during installation or maintenance.

- Current-limiting branch breakers reduce potential for arc flash in a short circuit event
- Pluggable branch breakers with non-energized bolt-on screw further reduce potential for contact
- Contains a fault to the branch level, leaving the main and other branch circuits up and running





## 16 Safety products

ABB delivers machine safety solutions for single machines or entire production lines. Machine safety is used to help protect both man and machine from harm by using safety devices and controls. ABB's Jokab Safety offers an extensive range of innovative products and solutions for machine safety systems:



- Safety relay, safety controllers and programmable safety controllers
- Light curtains, safety sensors and locks, control devices
- Emergency stops and pilot devices
- Safety mats, edges and bumpers

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