PRODUCT OVERVIEW

Power Distribution Solutions

Commercial Buildings

Our power distribution solutions upgrade power in buildings to create safer, more energy efficient and more productive environments, enabling our customers and their customers to do more with less.

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About ABB
Company overview

ABB is a technology leader in electrification and automation, enabling a more sustainable and resource-efficient future.

The company's solutions connect engineering know-how and software to optimize how things are manufactured, moved, powered and operated. Building on more than 130 years of excellence, ABB's 105,000 employees are committed to driving innovations that accelerate industrial transformation.

Electrification
Writing the future of safe, smart and sustainable electrification

ABB's Electrification business offers a wide-ranging portfolio of products, digital solutions and services, from substation to socket, enabling safe, smart and sustainable electrification. Offerings encompass digital and connected innovations for low- and medium-voltage, including EV infrastructure, solar inverters, modular substations, distribution automation, power protection, wiring accessories, switchgear, enclosures, cabling, sensing and control.

Designed to perform
ABB understands the challenges faced in commercial and institutional projects and is committed to providing innovative electrical solutions that not only reduce overall project costs, but also increase safety, promote sustainability and even improve cash flow.

Whether it's labour-saving components, custom-designed electrical prefabrication systems, online cloud-based design tools or even our world-class logistics, ABB can help bring commercial and institutional projects in on time, within budget and profitably.

Protecta Power
Completing the smart building portfolio from grid to switch

Protecta Power is the latest generation of panel board supporting the transformation of smart electrical distribution within commercial, institutional, infrastructure and industrial buildings.

Protecta Power ensures stable and reliable power distribution
Integrating the latest digital monitoring and control while enhancing safety, Protecta Power ensures stable and reliable power distribution for larger facilities and completes the ABB portfolio of products to provide everything for smart buildings from the grid to the switch.

Value Propositions

Smarter buildings for a brighter future

—
01 ABB Smart Touch panel that combines smart home automation and door communication in one device
—
02 CBX Series
—
03 Energy Simulator is the SaaS hard-ware-free online tool to support the efficient and cost-effective microgrid design for single or multiple sites. Available as an Add-on of the ABB Ability™ Energy Manager platform

Control

The well-established **ABB i-bus®** system is available today for the demands of tomorrow. ABB i-bus® system is the synonym for smart home and intelligent building control. In this innovative system, all devices communicate with one another via a single bus cable which is installed alongside the normal power lines. This means that all electrical functions are connected with one another via the bus system, both in residential and commercial buildings. With the ABB i-bus® system, the buildings we occupy are easier to manage and control, resulting in increased flexibility, security, economic efficiency and convenience. The operational flexibility of an ABB i-bus® electrical installation allows the everyday working or living environment to be easily adapted to the individual's needs - now and in the future.

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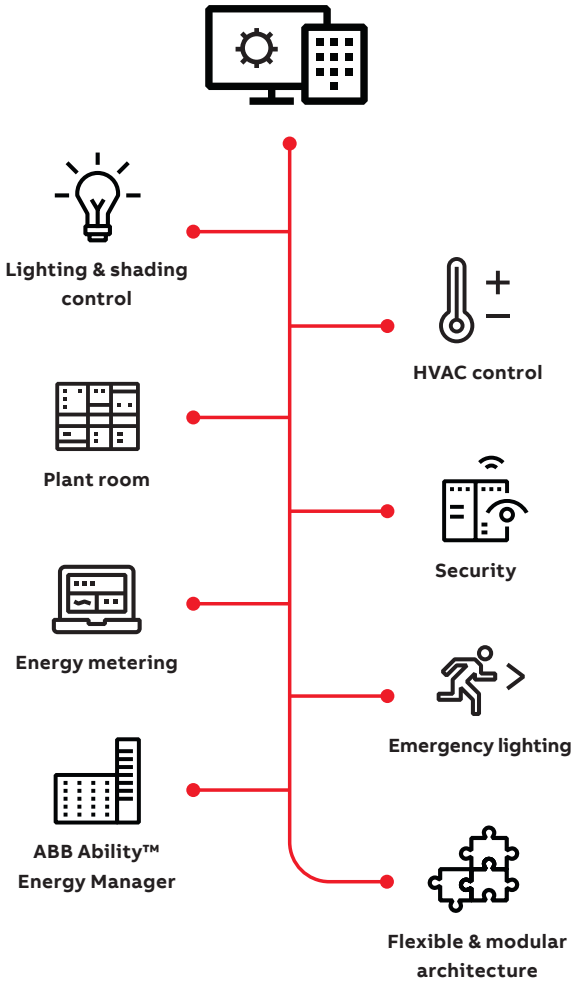
ABB Cylon® Building Automation and Controls is a powerful and flexible system that provides comprehensive and efficient energy management solutions for commercial and industrial buildings. The system offers a range of features and benefits for System Integrators, Facility Managers, and building owners. ABB Cylon Building Automation and Controls solutions provide an optimized environment that is safe, smart, and sustainable.

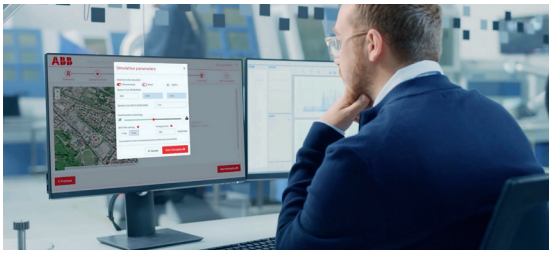
ABB Ability™ Building Ecosystem

The simplest way to a smart building.



Analyse

ABB Ability Energy Management portfolio, which includes metering and monitoring systems helps to analyse and obtain insights into where energy is being wasted and quantify it in terms of energy, carbon, and costs.
It maximises the return on existing investment in BMS and reduces consumption and emissions by up to 20% once improvement opportunities are implemented.



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Optimise

ABB Ability™ Efficiency AI uses Artificial Intelligence (AI) to proactively optimize the HVAC system in buildings to achieve remarkable cost savings and emission reductions, while improving occupant comfort. An SaaS business model with rapid implementation of the complete solution, it generates high energy cost savings in a fast amount of time.

Efficiency AI is an easy retrofit solution that works on top of any BACnet HVAC system with minimal investment needed.

- 20 –40% decrease in CO2 emissions
- Up to 25% in energy cost reduction
- 60% increase in occupant comfort
- Help meet CIBSE/ASHRAE guidelines for ventilation to meet the CDC and Airborne Virus Mitigation Program

Protecta Plus
General features of the series

With the Protecta Plus system, ABB has developed a new and versatile series of MCB distribution boards which can be expanded over time. The wide internal accessibility ensures a quick and easy approach to the electrical components assembly. The neutral and earth bars positioned on the inner sides of the distribution board are completely isolated to ensure better safety for users.

Main construction features
- Structure in epoxy coated metal sheets, 1 mm, textured finish
- Wall installation for indoor environments
- Degree of protection - IP43 with door, IP30 without door
- Mechanical resistance: IK07
- Busbar rating: 250A
- Number of ways: 4, 8, 12, 16, 20, 24
- Maximum ambient temperature +35 °C
- Compliance with IEC BS EN 61439 1-2
- Simple wiring of all cabinets, both horizontally and vertically
- Easy internal accessibility that facilitates all the wiring operations and maintenance
- Prepackaged standardized kits for specific applications (e.g. surge protection, metering)

A comprehensive range
The range consists of distribution boards for wall mounting in six heights from 590 mm to 1360 mm, 450 mm width and depth starting from 125 mm, ensuring the development of multiple solutions. Protecta Plus system is easy to design, quick to assemble and reliable to apply.

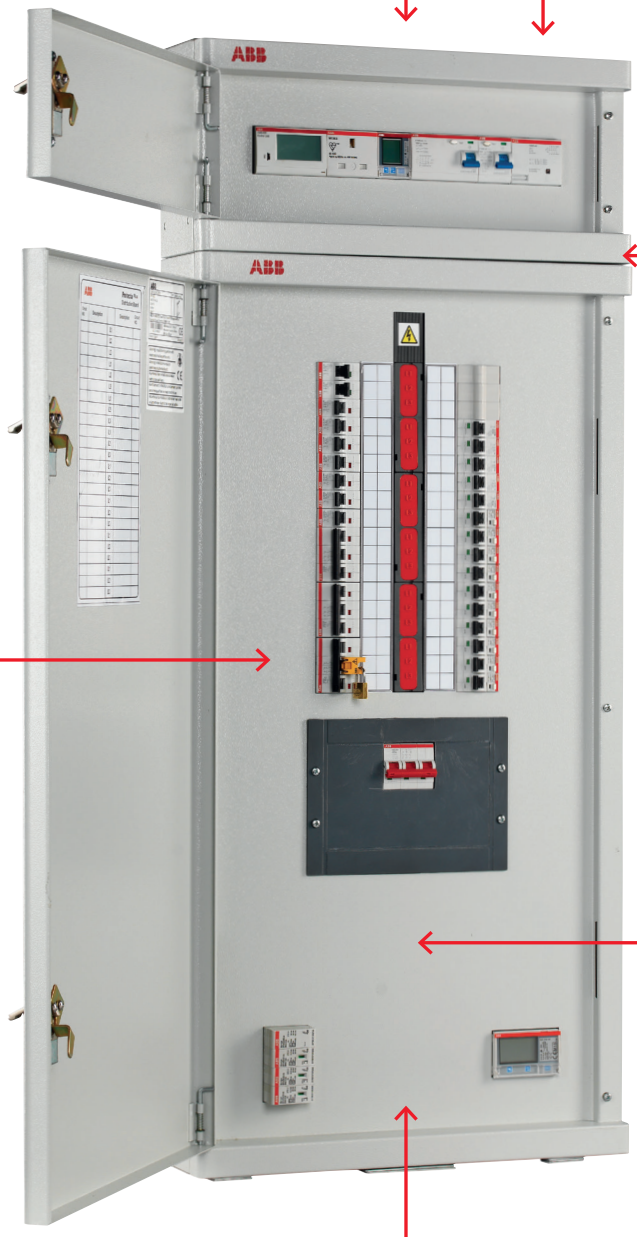
Ease of wiring
With the new mounting concept, Protecta Plus offers great levels of flexibility and accessibility for installation and wiring. The internal module can be easily removed allowing the wiring of different equipment outside the distribution board. This solution allows for an easier installation with more rapid production times.

Maximum accessibility
Thanks to the particularly large opening angle of the door, Protecta Plus offers the possibility to have optimal access to the distribution board, especially in case of maintenance. The reversible doors can be installed with right or left opening.

A series of rational solutions developed to achieve a complete range of capabilities and functions with a single type of distribution board to meet different installation requirements, whilst simplifying the work of the installer.

Simplified series connection
The distribution boards can be combined side-by-side through pre-cut cable conduit holes large enough for the passage of wiring harnesses.

Range
depth: 125 mm;
width: 450 mm;
6 heights: 590, 730, 870, 1050, 1220, 1360 mm.



Ergonomics and design
The design of this series is characterized by special features, such as rounded edges for a more efficient ergonomic look.

High output capacity
Primary branch capacity up to 100A.

Flexible mounting
The PAN assembly system can easily be removed from the bottom distribution board.

Complete protection
Designed to ensure maximum protection and efficiency, through the prevision for the installation of surge protection devices.

Protecta Power
General features of the series

Protecta Power is a versatile solution that can be seamlessly installed in a wide range of applications. With its reliable and safe power distribution, it provides exceptional performance and a peace of mind in any environment.

Applications
- Commercial Buildings
- Mixed Residential/Multi-Dwelling
- Industrial / Transportation
- Institutional Buildings

Main construction features
- Structure in epoxy coated metal sheets, 1.5 mm, textured finish
- Busbar rating: 800A
- •Short Circuit Withstand 50kA for 1s
- RAL 7035
- Form 3b type 2 as standard
- Form 4 type 2 & 6 Group mounted with 4 pole incoming breaker and individual dis-connectable neutral links adjacent to 3P outgoing breakers or utilisation of 4 pole breakers. Outgoing terminals shrouds should be used.
- Wall / Free standing installation for indoor environments
- Degree of protection - IP43 with door, IP30 without door
- Mechanical resistance: IK07
- Busbar rating: 800A
- Number of ways: 8, 12, 18
- Maximum ambient temperature +35 °C
- Compliance with IEC BS EN 61439 1-2
- Simple wiring of all cabinets, both horizontally and vertically
- Easy internal accessibility that facilitates all the wiring operations and maintenance
- Prepackaged standardized kits for specific applications (e.g. surge protection, metering)

Flexible Outgoing
allows to mix various Tmax XT breakers up to 630A providing a customizable and adaptable solution for power distribution, allowing installer to easily adjust and modify the system as their needs change.

Pluggable Breaker
convenient and efficient solution enabling quick and easy installation and replacement of breakers without the need for special tools or equipment leading to time saving and costs reduction

Generous Wiring Space
allows for easy installation and maintenance, providing ample room for cables and wiring which results in reduced installation time and costs, as well as improved system reliability and uptime.

Various Incoming Options
Compatible with a variety of breakers 3 & 4 poles up to 800A, allowing businesses to select the most suitable option for their specific needs

Range
depth: 300 mm;
width: 1000 mm;
3 heights: 1400, 1700, 2000 mm.

Ergonomics and design
removable doors and side gland plates for ease of access

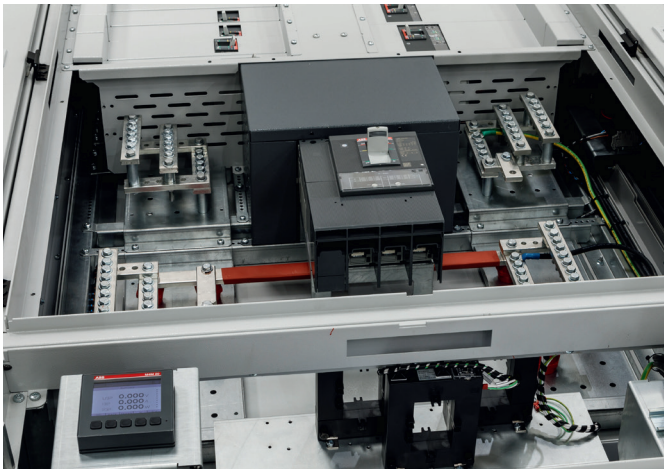
Integration
of ABB's latest Metering and surge solutions

Protecta Power
The details make the difference

Flexibility of MCCBs
Full compliment of Thermal Magnetic and Electronic Trip MCCBs. SP, TP+N and 4P arrangements

Reliable Connectivity
No more bolted joints that can become loose or require torque checks. Uses magnetic force to make the connection even tighter and more reliable

Metering
Incorporation of ABB's latest M4M meters allows for Pulse, Modbus and MID communication.



Segregation
Segregation of incoming and outgoing sections

Install components in seconds
Instill confidence for a lifetime

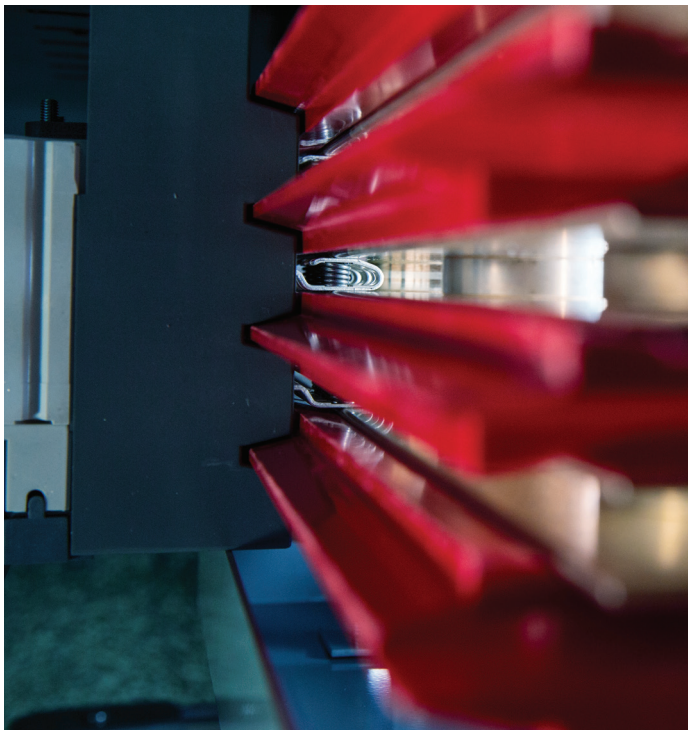
—
01 Improved finger-safe bus stack that meets IP20 standards in select models
—
02 Spring-loaded circuit breaker plug-in connectors

EASY TO INSTALL
Modular, flexible, fast.
Protecta Power features plug-in, single-tool simplicity enable easy, fast component installation or replacement in the field. For even greater flexibility, circuit breakers can be installed anywhere on the bus stack.

OUTSTANDING RELIABILITY
Dependable connections.
Spring-loaded circuit breaker plug-in connectors with increased plating thickness for durability to withstand repeated insertion and removal. This plug-in connector design uses the magnetic forces generated by a short circuit to help make the connection even tighter and more reliable. There are fewer bolted joints that can become loose or require torque checks.

ENHANCED SAFETY FEATURES
The next level of protection.
ABB is passionate about safety. From the largest piece of arc-resistant switchgear down to the smallest arc fault and ground fault sensing circuit breaker, ABB is always designing ways to help keep personnel out of harm's way. Protecta Power panelboard designs come with an improved finger-safe bus stack that meets IP20 standards. Thanks to the breaker integrated Bluetooth® technology, it is also possible to set parameters and check measurements directly from your smartphone from an arc-free zone.

01



02

Even more advantages

REDUCED COSTS

Speed up your project.

Reducing labor and saving time is crucial for electrical contractors. In fact, an 8% savings in labor costs for a typical large project can mean 133% more profit for the contractor.* Protecta Power intuitive single-person installation enables components to be installed in as few as 20 seconds, dramatically saving skilled-labor costs, reducing downtime and lowering the risk of mistakes.

*From “How to Make a Good Estimate Even Better” by Don Kiper, EC&M, 2017.

ADVANCED CONNECTIVITY

Link to data analysis in real time.

With ABB Ability® cloud connectivity, multiple communication options and built-in metering, the Tmax XT circuit breakers of Protecta Power put facility managers in control.

The extreme precision of the data measured means users have access to accurate information anywhere, anytime, making it easier to monitor resources and identify savings opportunities.

Tmax® XT plug-in circuit breakers feature spring-loaded primary disconnects, enabling fast installation, easy replacement and reliable connection to maximize your uptime.

System Pro E Power
Introduction

Thanks to the new switchboard, ABB can provide complete solutions for main electric power distribution in commercial and institutional buildings, in accordance with the regulatory framework.

Typical fields of application are airports, subways, hospitals, industrial and residential estates, ports, tunnels, railways, theatres, etc. In addition, System pro E power guarantees full synergy with all the other ABB apparatus (i.e.modular circuit-breakers, Tmax T and XT moulded-case circuit-breakers, Emax 2 air circuit-breakers) while being extremely simple to assemble and ensuring ease of wiring.

Great attention has been made to the wiring requirements, with adequately sized structures and pre-engineered sites for mounting the horizontal and vertical plastic ducts.

The switchboards comprise the following components:
- Structure: simple and quick to assemble. Stability is ensured thanks to the new double-surface profile of the upright and the new
- Internal kits: designed to integrate ABB's low voltage products. Save time during the assembly work thanks to the patented new
- Main distribution systems: available in the linear and scaled versions. Allow the busbars to be installed in any position, horizontally or vertically

The range of System pro E power structures can be used to create lots of switchboard configurations while guaranteeing flexibility and a certified product. Up to 120 different configurations can be assembled with a just a few part numbers. This new series features a structure in hot-dip galvanized sheet steel that guarantees equipotential bonding of the switchboard.

IP protection degrees for all types of applications, i.e. up to IP65, can be obtained. It's the only switchboard to reach such a high value. Certification was achieved after stringent tests involving the entire configuration (structure, circuit- breakers and busbar system), thus systems conforming to the new international standard IEC 61439-1-2 can be created by following ABB's instructions. ABB apparatus can be installed inside the switchboards with high-level integration and optimized use of the available space thanks to the new modules, i.e. 150mm in height, as well as the usual 200mm modules.

Main characteristics of the series

Compliance with Standard		IEC 61439-1-2
Vibration test		In accordance with Standard IEC 60068-2-57
Seismic withstand capability test		In accordance with Standard IEE Std 693
Rated service voltage Ue		415 V
Rated insulation voltage Ui		up to 1000V AC - 1500V DC
Rated frequency		50-60Hz
Rated impulse withstand voltage Uimp		12kV
Rated current In		up to 6300A
Rated short-time withstand current Icw		up to 120kA
Rated peak short-circuit current Ipk		up to 264kA
IP protection class		IP30, IP31, IP40, IP41, IP65
Functional dimensions	**Height (mm)**	1800, 2000mm
	Width (mm)	300, 400, 600, 800, 1000, 1250mm
	Depth (mm)	200, 300, 500, 700, 900mm

Reliable in extreme conditions
Thanks to the tests performed on the product, the enclosures can stand a rated short-time withstand current (Icw) up to 120 kA and a maximum rated current up to 6300A. The solution is also provided of an ant seismic certification, thanks to a shock level test up to 1 g performed with the installation of specific accessories. The safety is also guaranteed by the complete range of segregation forms up to 4b and by the blind tops arc fault resistant (composed by two flaps that, in case of internal arc fault, allow its out-burst upward, protecting an operator that could be present in front of the switchboard).

Speed up your projects
It is possible to save valuable time (up to 5% of the total time) by choosing the incoming column with DOC software, where a list of preconfigured incomer columns is already uploaded.

Additional time can be saved thanks to the breaker kit package that with one single code provides all the components for a breaker kit installation (panel, plate, supports and screws); the pre-assembled DIN rail kit allows to save up to 70% on the time in case of System pro M components installation.

Space saving
A wide variety of dimensions are available to meet all customer requests: 2 heights, 5 depths and 6 widths. Furthermore, amperage from 2500A to 6300A can be reached in the minimum widths listed below:
Up to 2500A (3P) installable in W=400mm
Up to 4000A (3P) installable in W=600mm
Up to 4000A (4P) installable in W=800mm
Up to 6300A (4P) installable in W=1000/1250mm
For example, further space (up to 38%) can be saved by mounting two air circuit breakers in one column In 2500A, width 400mm (E2.2 F/W 3P), thanks to the dedicated components.

Introducing TruONE® enclosed ATS from ABB

A critical breakthrough for critical power

Enclosed automatic transfer switches with current ratings 40A ... 800A. The enclosure complies with IP65 EN 60529 and finished in a RAL 7035 colour. The ATS enclosures are designed to allow adequate cabling space to allow installers to terminate oversized cables.

Automatic transfer switches
Automatic transfer switches comply with the standards listed below.

- IEC 60947-1: Low voltage switchgear and control gear Part 1: General rules
- IEC 60947-3: Low voltage switchgear and control gear Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination
- IEC 60947-6-1-PC: Low voltage switchgear and control gear Part 6: Multiple function equipment – Transfer switching equipment

Application
The automatic transfer switch is managing different power supplies to one or more load circuits and guarantees the continuity of performance. The automatic transfer switch ensures the switching and isolation between the primary network supply and the alternate network supply or a standby generator. Type of operation is open delayed transition, i.e. break-before-make. The automatic transfer switches can be operated in three ways, local manual operation with handle, local manual operation with the automatic control unit or fully automatic operation done by the automatic control unit. Manual operation, using a handle is the simplest type of operation. Local manual operation with the control unit enables to operate the switch electrically. Full automatic operation ensures that loads are transferred automatically to the secondary source in case of mains failure. Both local operation with the control unit and fully automatic operation enables a short switch-off time between the normal and the alternative supply.

Automatic transfer switches shall be used for switching I, 0 and II positions following types of loads:

- Resistive loads
- Mixed resistive and inductive loads (AC32-B)
- Motor loads (AC 33B)

Design & safety
Automatic transfer switches are available as 2, 3 or 4 pole versions. All three positions I-O-II and I-II shall be stable and keep its positions in case of supply failure or mechanical shocks. The switch mechanism is located on the left hand side to the switch's power poles. The operating mechanism is of "quick make / quick break" construction. The position indication markings on the mechanism shall always show reliably the true position of the main contacts. Automatic transfer switches can be operated by direct mounted handle. The transfer switch can be padlocked in the off position. The 40A to 125A motor is protected by a resettable overload button. The accessories, i.e. terminal shrouds and auxiliary contacts shall be mountable without any special tools (i.e. snap on mounting). The terminals of the 40A to 800A automatic transfer switch with single or dual bypass) will allow connection of two parallel cables for easier installation and space saving. All the terminals are finger protected withshrouding.
All the metal parts shall be protected against corrosion. The contact surfaces shall be silver-plated to minimise contact resistance. The automatic transfer switches meet the ROHS requirements and only recyclable material is used. The current carrying plastic parts shall have high thermal, mechanical and electrical properties and have V0 classification.

Enclosed automatic transfer switches
General specification

For ATS versions up to 125A the handle is a direct mounted type, and it can be padlocked in the “0” position with three padlocks with a 5 ... 6 mm hasp. It is possible to operate the switch with the manual handle in case of emergency, regardless of the position of switch and without any supply power.

Technical specifications according to IEC 60947-3 and IEC 60947-6-1

- Type of equipment ATSE
- Class of equipment PC
- Rated operational voltage, U_e Max. 415 V
- Rated impulse withstand voltage, U_{imp} 6 - 12 kV
- Rated frequency 50 - 60 Hz

Bypass Requirement
In order to comply with BS8519 which states “Where the availability of the life safety and fire-fighting equipment is conditional to the occupation of the building, a bypass arrangement should be incorporated to enable the changeover device to be maintained without loss of service from the critical plant”.

The bypass switches consist of the following;

Single or mains bypass
Operate isolators to give a seamless transfer to the primary supply bypassing the ATS. The front of the panel should indicate that the ATS has been bypassed and is safe to carry out maintenance.

Dual Bypass
Operate isolators and change over switches to give a seamless transfer to bypass the ATS and to select either the primary supply or secondary supply

PROTECTA PLUS

Protecta Plus gives UK installers and designers the flexibility to cover all applications through standard and customised kit packages.

Protecta Plus
Order process

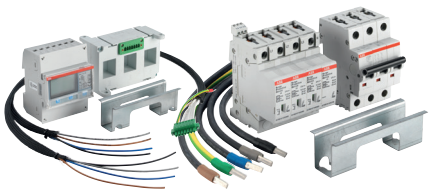
Protecta Plus DB

Vertical split-load board

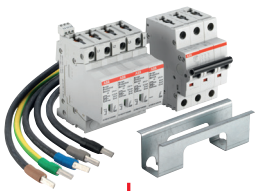
Horizontal split-load board

Incoming kit

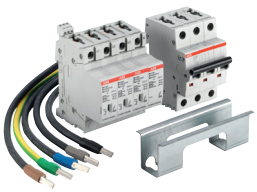
2 x Distribution boards



Meter/surge kits (optional)

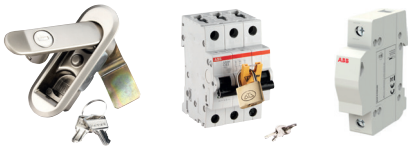


Surge kits (optional)



Surge kits (optional)

MCB/RCBO/Blanks



Accessories

Protecta Plus
Order codes

Pack contents: Type A Distribution board
- Distribution board
- Factory fitted 100A switch disconnector
- RAL7035 textured finish

MCB Distribution board - Type A

Description	Dimensions (mm) H x W x D	Order code
Protecta Plus DB 2way SP, inc 100A isolator	250 x 190 x 125	EPP-W102
Protecta Plus DB 4way SP, inc 100A isolator	250 x 190 x 125	EPP-W104
Protecta Plus DB 8way SP, inc 100A isolator	250 x 260 x 125	EPP-W108
Protecta Plus DB 12way SP, inc 100A isolator	250 x 330 x 125	EPP-W112
Protecta Plus DB 16way SP, inc 100A isolator	250 x 400 x 125	EPP-W116
Protecta Plus DB 20way SP, inc 100A isolator	250 x 470 x 125	EPP-W120

Pack contents
- • Enclosure
- * Factory fitted 100A switch disconnector
- • 2x MID, Modbus (RS485) & pulse meters

MCB Distribution board - Type A Split Metered

Description	No. of outgoing ways	Dimensions (mm) H x W x D	Order code
Single Phase Power & Lighting 14+12	14+12 SP	590 x 450 x 125	EPP-SSL1412-1002P
Single Phase Power & Lighting 6+6	6+6 SP	250 x 470 x 125	EPP-SSL66-1002P

* M-Bus available on request

Protecta Plus
Order codes

Pack contents: Type B Distribution board
- 250A Busbar
- RAL7035 textured finish
- Door Closing Latch

MCB distribution board - Type B

Description	Dimensions (mm) H x W x D	Order code
Protecta Plus DB 4 Way 250A - TPN	590 x 450 x 125	EPP-W304
Protecta Plus DB 8 Way 250A - TPN	730 x 450 x 125	EPP-W308
Protecta Plus DB 12 Way 250A - TPN	870 x 450 x 125	EPP-W312
Protecta Plus DB 16 Way 250A - TPN	1050 x 450 x 125	EPP-W316
Protecta Plus DB 20 Way 250A - TPN	1220 x 450 x125	EPP-W320
Protecta Plus DB 24 Way 250A - TPN	1360 x 450 x 125	EPP-W324

Pack contents: Horizontal split load kit
- 2 x MID, Modbus (RS485) & Pulse Meters
- Associated CTs
- Incoming isolators
- Internal cables
- **Requires 2 x MCB distribution board - Type B**

Please note as these kits allow for 4 to 24way boards cutting and crimping of cables is required.

Horizontal split load kit

Description	Dimensions (mm) H x W x D	Order code
125A 3P Horizontal split load kit - 2 x Meters	400 x 900 x 125	EPP-HSL-1253P
125A 4P Horizontal split load kit - 2 x Meters	400 x 900 x 125	EPP-HSL-1254P
160A 3P Horizontal split load kit - 2 x Meters	400 x 900 x 125	EPP-HSL-1603P
160A 4P Horizontal split load kit - 2 x Meters	400 x 900 x 125	EPP-HSL-1604P
250A 3P Horizontal split load kit - 2 x Meters	600 x 900 x125	EPP-HSL-2503P
250A 4P Horizontal split load kit - 2 x Meters	600 x 900 x 125	EPP-HSL-2504P

Protecta Plus
Order codes

Pack contents: Incoming kit
- Copper connection kit and fittings
- Incoming device
- Cover plate
- Instruction leaflet

Standard Cable Capacity:

125A Isolator	50mm²
160A Isolator	70mm²
250A Isolator	95mm²

See MCCB Accessories for extended terminals for larger cable requirements

Incoming connection kit

Description	Rating (A)	No. of Poles	Order code
125A 3P Switch Incoming Kit	125	TP	EPP-1253P
125A 4P Switch Incoming Kit	125	TPSN	EPP-1254P
160A 3P Switch Incoming Kit XT1	160	TP	EPP-1603P
160A 4P Switch Incoming Kit XT1	160	TPSN	EPP-1604P
250A 3P Switch Incoming Kit XT3	250	TP	EPP-2503P
250A 4P Switch Incoming Kit XT3	250	TPSN	EPP-2504P
125A 3P MCCB 36kA Th/Mag Inc Kit XT1	125	TP	EPP-1253PMCCB
125A 4P MCCB 36kA Th/Mag Inc Kit XT1	125	TPSN	EPP-1254PMCCB
160A 3P MCCB 36kA Th/Mag Inc Kit XT1	160	TP	EPP-1603PMCCB
160A 4P MCCB 36kA Th/Mag Inc Kit XT1	160	TPSN	EPP-1604PMCCB
250A 3P MCCB 36kA Th/Mag Inc Kit XT3	250	TP	EPP-2503PMCCB
250A 4P MCCB 36kA Th/Mag Inc Kit XT3	250	TPSN	EPP-2504PMCCB
100A 4P RCD Incoming Kit (to be ordered with RCCB Rating below)	100	TPSN	EPP-KIT-RCD
F200 A type RCCB - 30mA	100	TPSN	F204A-100/0.03
F200 A type RCCB - 100mA	100	TPSN	F204A-100/0.1
F200 A type RCCB - 300mA	100	TPSN	F204A-100/0.3
F200 A type RCCB - 300mA (time delay)	100	TPSN	F204AS-100/0.3
125A Single Phase Kit (to be used with EPP-1254P)	125	SPSN	EPP-KIT-1251P
250A Single Phase Kit (to be used with EPP-2504P)	250	SPSN	EPP-KIT-2501P
250A Direct Connection Kit	250	TP	EPP-KIT-DIRECT
EPP-ATS125 125A OTM-C21D (Std. 50mm2)	125	TP	EPP-ATS125
MCCB Accessories			
160A XT1 3P Front Extended Terminals (EF) - Set of 3			1SDA066865R1
160A XT1 4P Front Extended Terminals (EF) - Set of 4			1SDA066866R1
250A XT3 3P Front Extended Terminals (EF) - Set of 3			1SDA066873R1
250A XT3 4P Front Extended Terminals (EF) - Set of 4			1SDA066874R1

Protecta Plus
Order codes

Pack contents: Vertical split load boards
- 1x Isolator
- Meters are MID, Modbus (RS485) & pulse output
- Associated CTs
- Incoming terminals
- Internal cables
- **Units supplied with Main Isolator & meters pre-configured to internal C.T sizing**
- Outgoing devices to be ordered seperatley

Standard Cable Capacity:

125A Isolator	50mm²
160A Isolator	70mm²
250A Isolator	95mm²

See MCCB Accessories for extended terminals for larger cable requirements

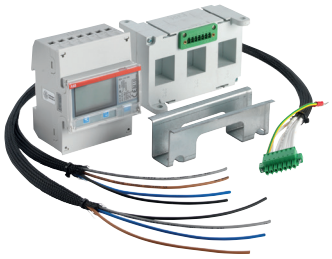
Vertical Split Load Distribution Boards

Rating of Main Isolator	No. of outgoing ways (TPN) Split variants	No. of meters	Dimensions mm (H x W x D)	Order code
125A TPN	8 + 4	2	1090 x 450 x125	EPP-VSL84-1253P
125A TPN	8 + 8	2	1270 x 450 x 125	EPP- VSL88-1253P
125A TPN	12 + 8	2	1440 x 450 x 125	EPP- VSL128-1253P
125A TPN	12 + 12	2	1580 x 450 x 125	EPP- VSL1212-1253P
125A TPN	16 + 8	2	1580 x 450 x 125	EPP- VSL168-1253P
125A TPN	8 + 4 + 4	3	1380 x 450 x 125	EPP- VSL844-1253P
125A TPN	12 + 8 + 4	3	1690 x 450 x 125	EPP- VSL1284-1253P
160A TPN	8 + 4	2	1090 x 450 x125	EPP-VSL84-1603P
160A TPN	8 + 8	2	1270 x 450 x 125	EPP-VSL88-1603P
160A TPN	12 + 8	2	1440 x 450 x 125	EPP-VSL128-1603P
160A TPN	12 + 12	2	1580 x 450 x 125	EPP-VSL1212-1603P
160A TPN	16 + 8	2	1580 x 450 x 125	EPP-VSL168-1603P
160A TPN	8 + 4 + 4	3	1380 x 450 x 125	EPP-VSL844-1603P
160A TPN	12 + 8 + 4	3	1690 x 450 x 125	EPP-VSL1284-1603P
250A TPN	8 + 4	2	1090 x 450 x125	EPP-VSL84-2503P
250A TPN	8 + 8	2	1270 x 450 x 125	EPP-VSL88-2503P
250A TPN	12 + 8	2	1440 x 450 x 125	EPP-VSL128-2503P
250A TPN	12 + 12	2	1580 x 450 x 125	EPP-VSL1212-2503P
250A TPN	16 + 8	2	1580 x 450 x 125	EPP-VSL168-2503P
250A TPN	8 + 4 + 4	3	1380 x 450 x 125	EPP-VSL844-2503P
250A TPN	12 + 8 + 4	3	1690 x 450 x 125	EPP-VSL1284-2503P

*4pole variants available - change end part code to 4P

* Please ensure RCBO lead lengths are considered for top section of DBs (12+12, 16+8, 8+4+4 & 12+8+4)

Protecta Plus
Order codes

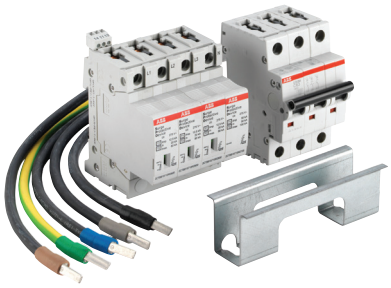


Pack contents: Incoming metering
- 1 x Meter
- 1 x C.T Block
- 1 x Wiring Loom & DIN support
- Instruction leaflet

Please note as these kits allow for 4 to 24way boards cutting and crimping of cables is required.

Incoming metering

Description	Order code
100A MID Incoming Meter c/w Pulse & RS485 to be used with Type A DBs only - Direct Connection	EPP-METMOD100SPN
125A MID Approved c/w pulse output	EPP-METMOD125A
125A MID Approved c/w pulse output & Modbus (RS485)	EPP-METMOD125B
125A MID Approved c/w pulse output, Modbus (RS485) Imp / Exp	EPP-METMOD125C
160A MID Approved c/w pulse output	EPP-METMOD160A
160A MID Approved c/w pulse output & Modbus (RS485)	EPP-METMOD160B
160A MID Approved c/w pulse output, Modbus (RS485) Imp / Exp	EPP-METMOD160C
250A MID Approved c/w pulse output	EPP-METMOD250A
250A MID Approved c/w pulse output & Modbus (RS485)	EPP-METMOD250B
250A MID Approved c/w pulse output, Modbus (RS485) Imp / Exp	EPP-METMOD250C



Pack contents: Surge protection
- 1 x Surge unit
- 1 x MCB
- 1 x Wiring Loom & DIN support
- Instruction leaflet

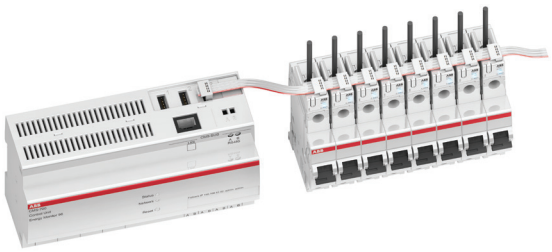
Please note as these kits allow for 4 to 24way boards cutting and crimping of cables is required.

Surge protection

Description	No. of Poles	Order code
Type 2 Surge Protection - including 63A 1P MCB	SPN	EPP-FURSE-SPN
Type 1+2 surge protection - including 63A 3P MCB	TPN	EPP-SOULET1-2
Type 2+3 surge protection - including 63A 3P MCB	TPN	EPP-SOULE

Protecta Plus

Circuit Monitoring System - CMS Order codes



Pack contents: Top / Bottom Extension - Control Unit

- 1x Control unit
- 1x Incoming CTs & fuses
- 1 x 5m Ribbon Cable
- 1x pack of (35pcs) sensor connectors
- RJ45 connection

- The CMS consists of a control unit and sensors, allowing easy monitoring of the individual circuits.
- Control unit which manages up to 96 sensors
- Support of several communication protocols: Modbus RTU, Modbus TCP/IP, SNMP v1/v2 and v3 encrypted
- Easy access for data collection (online and historical values) and quick data export provided by the integrated web server
- Notification of alarms via e-mail and FTP server

Top / Bottom Extension - Control Unit

Description	Dimensions (mm) H x W x D	Order code
CMS Distribution Board Incomer / Outgoing Control Unit (125A)	200 x 450 x 125	EPP-CMS125
CMS Distribution Board Incomer / Outgoing Control Unit (160A)	200 x 450 x 125	EPP-CMS160
CMS Distribution Board Incomer / Outgoing Control Unit (250A)	200 x 450 x 125	EPP-CMS250

Open core sensors Open-core sensors 18 mm

Description	Order code
80 A (MCBs)	CMS-120PS
40 A (MCBs)	CMS-121PS
20 A (MCBs)	CMS-122PS

Open core sensors Open-core sensors 18 mm for DIN rail mounting (universally usable)

Description	Order code
80 A (RCBOs)	CMS-120DR
40 A (RCBOs)	CMS-121DR
20 A (RCBOs)	CMS-122DR

Accessories

Description	Order code
Cable 5m	CMS-802
Sensor connectors (35pcs)	CMS-820

Protecta Plus
Order codes

Pack contents: Contactor control
- 3P contactor
- Control circuit & fuse protection
- Instruction leaflet

Contactor Control

Description	Dimensions (mm) H x W x D	Order code
125A AC1 rated 3P Contactor	400 x 450 x 250	EPP-CON125
160A AC1 rated 3P Contactor	400 x 450 x 250	EPP-CON160
250A AC1 rated 3P Contactor	400 x 450 x 250	EPP-CON250

Pack contents: Top extension boxes
- Fixings
- DIN rail / mounting plate
- RAL7035 textured finish

Extension boxes

Type	No. of modules	Dimensions (mm) H x W x D	Order code
Hinged door with 1 DIN rail	16	200 x 450 x 130	EPP-R1016
Hinged door with 2 DIN rail	32	400 x 450 x 130	EPP-R2032
Plain extension box 200mm		200 x 450 x 130	EPP-EB20
Plain extension box 400mm		400 x 450 x 130	EPP-EB40

Protecta Plus
Order codes

Pack contents: Row type boards
- Fixings
- DIN rail / mounting plate
- RAL7035 textured finish

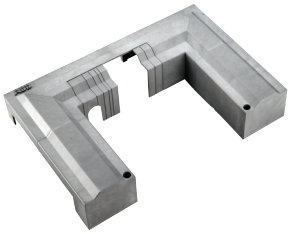
Row type extension boxes

No. of modules	No. of rows	Sided width	Dimensions (mm) H x W x D	Order code
36	2	4way DB	590 x 450 x 125	EPP-R2036
54	3	8way DB	730 x 450 x 125	EPP-R3054
72	4	12way DB	870 x 450 x 125	EPP-R4072
90	5	16way DB	1050 x 450 x 125	EPP-R5090
108	6	20way DB	1220 x 450 x 125	EPP-R6108
126	7	24way DB	1360 x 450 x 125	EPP-R7126

Additional N/PE for side extension boxes

Description	Order code
Protecta Plus - Row Type N-Bar 9	EPP-N-09
Protecta Plus - Row Type N-Bar 13	EPP-N-13
Protecta Plus - Row Type N-Bar 17	EPP-N-17
Protecta Plus - Row Type N-Bar 21	EPP-N-21
Protecta Plus - Row Type E-Bar 9	EPP-PE-09
Protecta Plus - Row Type E-Bar 13	EPP-PE-13
Protecta Plus - Row Type E-Bar 17	EPP-PE-17
Protecta Plus - Row Type E-Bar 21	EPP-PE-21

Terminal cover



Description	Order code
Protecta Plus - Top Shroud	EPP-TC
Protecta Plus Mains TS - 4 Way	EPP-MTCO4
Protecta Plus Mains TS - 8 Way	EPP-MTCO8
Protecta Plus Mains TS - 12 Way	EPP-MTC12
Protecta Plus Mains TS - 16 Way	EPP-MTC16
Protecta Plus Mains TS - 20 Way	EPP-MTC20
Protecta Plus Mains TS - 24 Way	EPP-MTC24

Protecta Plus
Order codes

Labels for outgoing circuits

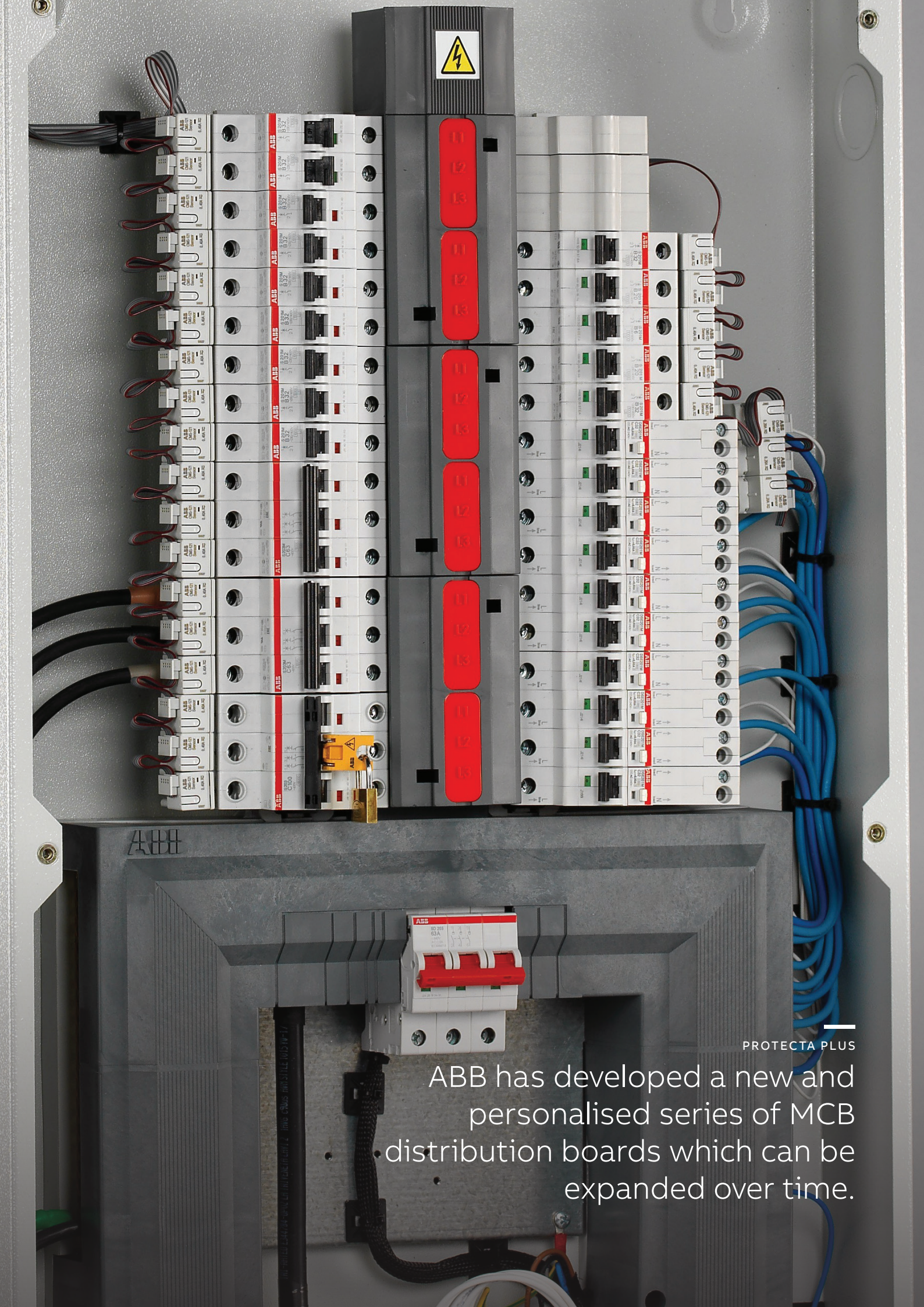
No. of ways	Order code
4	EPP-LKIT-04
8	EPP-LKIT-08
12	EPP-LKIT-12
16	EPP-LKIT-16
24	EPP-LKIT-24

Replacement doors

Description	Order code
Protecta Plus Solid Door - 4 ways / 2 rows	EPP-ST-04
Protecta Plus Solid Door - 8 ways / 3 rows	EPP-ST-08
Protecta Plus Solid Door - 12 ways / 4 rows	EPP-ST-12
Protecta Plus Solid Door - 16 ways / 4 rows	EPP-ST-16
Protecta Plus Solid Door - 20 ways / 5 rows	EPP-ST-20
Protecta Plus Solid Door - 24 ways / 6 rows	EPP-ST-24

Accessories

Description	Order code
MCB Blank	EPP-E91
Blanking Strip 12 Mods	SZ-BP1
Inner Isolator Terminal Shroud	EPP-ITS
Top Mount TPN DB Earth Bar	EPP-DME
Lock and Key	EPP-LK KEY
Side by Side Connection Kit	EPP-KIT JOIN
MCB Padlock Adaptor	SA 1
MCB Padlock C/W 2 X Keys	SA 2
DB / Trunking adaptor	EPP-TRADT
Protecta Plus - Glandplate Plain	EPP-GP-B



PROTECTA PLUS

ABB has developed a new and personalised series of MCB distribution boards which can be expanded over time.

MCB - S 200 M series
Order codes

S 200 series M B

Rated current in A	Rated current in kA IEC/EN 60898-1 IEC/EN 60947-2	Order code 1 Pole	3 Pole
6	10kA/15kA	S201M-B6	S203M-B6
10	10kA/15kA	S201M-B10	S203M-B10
13	10kA/15kA	S201M-B13	S203M-B13
16	10kA/15kA	S201M-B16	S203M-B16
20	10kA/15kA	S201M-B20	S203M-B20
25	10kA/15kA	S201M-B25	S203M-B25
32	10kA/15kA	S201M-B32	S203M-B32
40	10kA/15kA	S201M-B40	S203M-B40
50	10kA/15kA	S201M-B50	S203M-B50
63	10kA/15kA	S201M-B63	S203M-B63
80A	6kA	S201-B80	S203-B80
100A	6kA	S201-B100	S203-B100

S 200 series M C

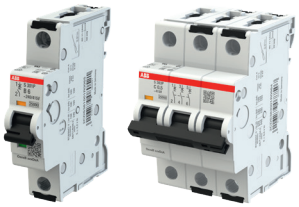
Rated current in A	Rated current in kA IEC/EN 60898-1 IEC/EN 60947-2	Order code 1 Pole	3 Pole
6	10kA/15kA	S201M-C6	S203M-C6
10	10kA/15kA	S201M-C10	S203M-C10
13	10kA/15kA	S201M-C13	S203M-C13
16	10kA/15kA	S201M-C16	S203M-C16
20	10kA/15kA	S201M-C20	S203M-C20
25	10kA/15kA	S201M-C25	S203M-C25
32	10kA/15kA	S201M-C32	S203M-C32
40	10kA/15kA	S201M-C40	S203M-C40
50	10kA/15kA	S201M-C50	S203M-C50
63	10kA/15kA	S201M-C63	S203M-C63
80A	6kA	S201-C80	S203-C80
100A	6kA	S201-C100	S203-C100

S 200 series M D

Rated current in A	Rated current in kA IEC/EN 60898-1 IEC/EN 60947-2	Order code 1 Pole	3 Pole
6	10kA/15kA	S201M-D6	S203M-D6
10	10kA/15kA	S201M-D10	S203M-D10
13	10kA/15kA	S201M-D13	S203M-D13
16	10kA/15kA	S201M-D16	S203M-D16
20	10kA/15kA	S201M-D20	S203M-D20
25	10kA/15kA	S201M-D25	S203M-D25
32	10kA/15kA	S201M-D32	S203M-D32
40	10kA/15kA	S201M-D40	S203M-D40
50	10kA/15kA	S201M-D50	S203M-D50
63	10kA/15kA	S201M-D63	S203M-D63

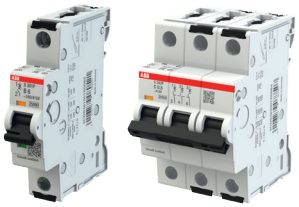
MCB - S 300 P series
Order codes

S 300 series P B



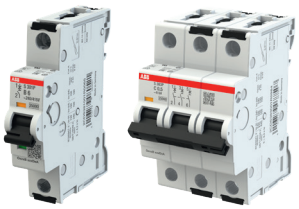
Rated current in A	Rated current in kA IEC/EN 60898-1	Order code 1 Pole	Order code 3 Pole
6	25kA	S301P-B6	S303P-B6
10	25kA	S301P-B10	S303P-B10
13	25kA	S301P-B13	S303P-B13
16	25kA	S301P-B16	S303P-B16
20	25kA	S301P-B20	S303P-B20
25	25kA	S301P-B25	S303P-B25
32	25kA	S301P-B32	S303P-B32
40	25kA	S301P-B40	S303P-B40
50	25kA	S301P-B50	S303P-B50
63	25kA	S301P-B63	S303P-B63

S 300 series P C



Rated current in A	Rated current in kA IEC/EN 60898-1	Order code 1 Pole	Order code 3 Pole
6	25kA	S301P-C6	S303P-C6
10	25kA	S301P-C10	S303P-C10
13	25kA	S301P-C13	S303P-C13
16	25kA	S301P-C16	S303P-C16
20	25kA	S301P-C20	S303P-C20
25	25kA	S301P-C25	S303P-C25
32	25kA	S301P-C32	S303P-C32
40	25kA	S301P-C40	S303P-C40
50	25kA	S301P-C50	S303P-C50
63	25kA	S301P-C63	S303P-C63

S 300 series P D



Rated current in A	Rated current in kA IEC/EN 60898-1	Order code 1 Pole	Order code 3 Pole
6	25kA	S301P-D6	S303P-D6
10	25kA	S301P-D10	S303P-D10
13	25kA	S301P-D13	S303P-D13
16	25kA	S301P-D16	S303P-D16
20	25kA	S301P-D20	S303P-D20
25	25kA	S301P-D25	S303P-D25
32	25kA	S301P-D32	S303P-D32
40	25kA	S301P-D40	S303P-D40
50	25kA	S301P-D50	S303P-D50
63	25kA	S301P-D63	S303P-D63

RCBO DSE201 M - Type A

Order codes

DSE201 M - Type A

Rated residual current IΔn [mA]	Rated current in A	Rated current in kA	Order code	
			B Characteristic	C Characteristic
10	6	10kA/15kA	DSE201 M B6 A10	DSE201 M C6 A10
	10	10kA/15kA	DSE201 M B10 A10	DSE201 M C10 A10
	16	10kA/15kA	DSE201 M B16 A10	DSE201 M C16 A10
	20	10kA/15kA	DSE201 M B20 A10	DSE201 M C20 A10
	25	10kA/15kA	DSE201 M B25 A10	DSE201 M C25 A10
	32	10kA/15kA	DSE201 M B32 A10	DSE201 M C32 A10
	40	10kA/15kA	DSE201 M B40 A10	DSE201 M C40 A10
	50	10kA	DSE201 M B50 A10	DSE201 M C50 A10
30	6	10kA/15kA	DSE201 M B6 A30	DSE201 M C6 A30
	10	10kA/15kA	DSE201 M B10 A30	DSE201 M C10 A30
	16	10kA/15kA	DSE201 M B16 A30	DSE201 M C16 A30
	20	10kA/15kA	DSE201 M B20 A30	DSE201 M C20 A30
	25	10kA/15kA	DSE201 M B25 A30	DSE201 M C25 A30
	32	10kA/15kA	DSE201 M B32 A30	DSE201 M C32 A30
	40	10kA/15kA	DSE201 M B40 A30	DSE201 M C40 A30
	50	10kA	DSE201 M B50 A30	DSE201 M C50 A30
100	6	10kA/15kA		DSE201 M C6 A100
	10	10kA/15kA		DSE201 M C10 A100
	16	10kA/15kA		DSE201 M C16 A100
	20	10kA/15kA		DSE201 M C20 A100
	25	10kA/15kA		DSE201 M C25 A100
	32	10kA/15kA		DSE201 M C32 A100
	40	10kA/15kA		DSE201 M C40 A100
	50	10kA		DSE201 M C50 A100
300	6	10kA/15kA		DSE201 M C6 A300
	10	10kA/15kA		DSE201 M C10 A300
	16	10kA/15kA		DSE201 M C16 A300
	20	10kA/15kA		DSE201 M C20 A300
	25	10kA/15kA		DSE201 M C25 A300
	32	10kA/15kA		DSE201 M C32 A300
	40	10kA/15kA		DSE201 M C40 A300
	50	10kA		DSE201 M C50 A300

RCBO DSE203N M
Order codes

DSE203N M: 3P+N eRCBO
Function: protection and control of the circuits against overloads and short-circuits; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contact and additional protection against direct contact ($I_{\Delta n}$ = 30 mA). The neutral is unswitched. Voltage dependent RCBO.

Applications: residential, commercial, industrial
Standard: IEC 61009-1; IEC 61009-2-2; AS/NZS 61009.1
Alternative Sensitivity of 10mA,100mA and 300mA are available on request

DSE203N M: 3P+N eRCBO

N. Poles	Breaking capacity	Type	Sensitivity $I_{\Delta n}$ mA	Tripping Char.	Rated Current I_n A	Order code
3+N	10 kA	A	30	B	6	DSE203N M B6 A30
					10	DSE203N M B10 A30
					13	DSE203N M B13 A30
					16	DSE203N M B16 A30
					20	DSE203N M B20 A30
					25	DSE203N M B25 A30
					32	DSE203N M B32 A30
					40	DSE203N M B40 A30
					50	DSE203N M B50 A30
					63	DSE203N M B63 A30
				C	6	DSE203N M C6 A30
					10	DSE203N M C10 A30
					13	DSE203N M C13 A30
					16	DSE203N M C16 A30
					20	DSE203N M C20 A30
					25	DSE203N M C25 A30
					32	DSE203N M C32 A30
					40	DSE203N M C40 A30
					50	DSE203N M C50 A30
					63	DSE203N M C63 A30

Maximum safety in buildings
Extended fire protection in the electrical installation with AFDDs

Comprehensively protect people, irreplaceable goods and buildings – easier, better, safer. Extended fire protection in the electrical installation with ABB's arc fault detection devices (AFDD) S-ARC1 and DS-ARC1

—
01 The S-ARC1 and DS-ARC1 reliably protect against arc faults.

Each year over two million fires erupt all over Europe. More than one third of these due to faults in the electrical installation which prevailingly occur as a result of dangerous arc faults.

The best comprehensive protection
According to the product standard "IEC 62606 – General requirements for Arc Fault Detection Devices" an AFDD is a device intended to mitigate the effects of arcing faults by disconnecting the circuit when an arc fault is detected. This product standard is partially derived from the UL 1699 standard.

ABB's arc fault detection devices provide maximum safety in all buildings, thus protecting people and valuable assets. By early detecting arc faults and disconnecting the affected circuit they offer reliable and complete protection in any type of building.

ABB offers two different versions:
- AFDD with integrated MCB: S-ARC1
- AFDD with integrated RCBO: DS-ARC1

Both versions are integrated into ABB's proven System Pro M compact® range of modular DIN rail devices.

S-ARC1 M, 10 kA & DS-ARC1 M
Order codes

S-ARC1 M, 10 kA - MCB + AFDD (2module)

Number of poles	Rated residual currrent IΔm mA	Charac-teristics	Rated current I_n A	Order code
1P+N	30	B	6	S-ARC1 M B6
			10	S-ARC1 M B10
			13	S-ARC1 M B13
			16	S-ARC1 M B16
			20	S-ARC1 M B20
			25	S-ARC1 M B25
			32	S-ARC1 M B32
			40	S-ARC1 M B40
1P+N	30	C	6	S-ARC1 M C6
			10	S-ARC1 M C10
			13	S-ARC1 M C13
			16	S-ARC1 M C16
			20	S-ARC1 M C20
			25	S-ARC1 M C25
			32	S-ARC1 M C32
			40	S-ARC1 M C40

DS-ARC1 M, 10 kA - RCBO + AFDD (3module)

Number of poles	Rated residual currrent IΔm mA	Charac-teristics	Rated current I_n A	Order code
1P+N	30	B	6	DS-ARC1 M B6 A30
			10	DS-ARC1 M B10 A30
			13	DS-ARC1 M B13 A30
			16	DS-ARC1 M B16 A30
			20	DS-ARC1 M B20 A30
1P+N	30	C	6	DS-ARC1 M C6 A30
			10	DS-ARC1 M C10 A30
			13	DS-ARC1 M C13 A30
			16	DS-ARC1 M C16 A30
			20	DS-ARC1 M C20 A30

RCCB F 200 series A type
Order codes

F 200 A type - F202

Number of poles	Rated residual current IΔn [mA]	Rated current in A	Order code
2	10	16	F202A-16/0.01
		25	F202A-25/0.01
	30	25	F202A-25/0.03
		40	F202A-40/0.03
		63	F202A-63/0.03
		80	F202A-80/0.03
		100	F202A-100/0.03
	100	25	F202A-25/0.1
		40	F202A-40/0.1
		63	F202A-63/0.1
		80	F202A-80/0.1
		100	F202A-100/0.1
	300	25	F202A-25/0.3
		40	F202A-40/0.3
		63	F202A-63/0.3
		80	F202A-80/0.3
		100	F202A-100/0.3
	500	25	F202A-25/0.5
		40	F202A-40/0.5
		63	F202A-63/0.5
		80	F202A-80/0.5
		100	F202A-100/0.5

F 200 A type - F204

Number of poles	Rated residual current IΔn [mA]	Rated current in A	Order code
4	30	25	F204A-25/0.03
		40	F204A-40/0.03
		63	F204A-63/0.03
		80	F204A-80/0.03
		100	F204A-100/0.03
	100	25	F204A-25/0.1
		40	F204A-40/0.1
		63	F204A-63/0.1
		80	F204A-80/0.1
		100	F204A-100/0.1
	300	25	F204A-25/0.3
		40	F204A-40/0.3
		63	F204A-63/0.3
		80	F204A-80/0.3
		100	F204A-100/0.3
	500	25	F204A-25/0.5
		40	F204A-40/0.5
		63	F204A-63/0.5
		80	F204A-80/0.5
		100	F204A-100/0.5

Metering EQ series - direct connection

Order codes

A series - A41

80A SPN 4mod	Description	Order code
	Pulse output	A41 111 - 100
	Pulse output, RS-485	A41 112 - 100
	Pulse output, M-Bus	A41 113 - 100
	2 output, 2 input, RS-485	A41 312 - 100
	2 output, 2 input. M-Bus	A41 313 - 100

A series - A43

80A TPN 7mod	Description	Order code
	Pulse output	A43 111 - 100
	Pulse output, RS-485	A43 112 - 100
	Pulse output, M-Bus	A43 113 - 100
	2 output, 2 input, RS-485	A43 312 - 100
	2 output, 2 input, M-Bus	A43 313 - 100

B series - B21

65A SPN 2mod	Description	Order code
	Pulse output	B21 111 - 100
	Pulse output, RS-485	B21 112 - 100
	Pulse output, M-Bus	B21 113 - 100
	2 output, 2 input, RS-485	B21 312 - 100
	2 output, 2 input, M-Bus	B21 313 - 100

B series - B23

65A TPN 4mod	Description	Order code
	Pulse output	B23 111 - 100
	Pulse output, RS-485	B23 112 - 100
	Pulse output, M-Bus	B23 113 - 100
	2 output, 2 input, RS-485	B23 312 - 100
	2 output, 2 input, M-Bus	B23 313 - 100

ESB installation contactors

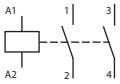
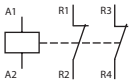
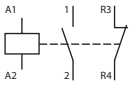
Order codes

ESB20..N

The ESB20..N installation contactors are used to control single-phase loads up to 20 A and can be operated by AC or DC voltages. These contactors are made for use in household applications as well as in industrial environment.
ESB20..N series is providing the following benefits:

- Hum-free operation, low power consumption and integrated overvoltage protection.
- Various contact combinations and accessories are available.

ESB20..N installation contactors - 20 A, AC-1 /AC-7a, AC/DC operated

Main contacts	Width in number of modular spacings	Rated control circuit voltage[1] VAC/DC	Order code
Single packaging			
	1	24	ESB20-20N-01
		230	ESB20-20N-06
	1	24	ESB20-02N-01
		230	ESB20-02N-06
	1	24	ESB20-11N-01
		230	ESB20-11N-06

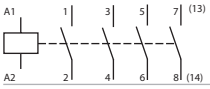
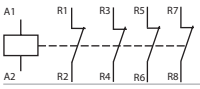
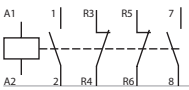
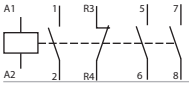
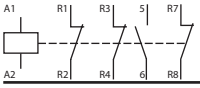
ESB installation contactors
Order codes

ESB25..N

The ESB25..N installation contactors are used to control single and three-phases loads up to 25 A and can be operated by AC or DC voltages.
These contactors are made for use in household applications as well as in industrial environment.
ESB25..N series is providing the following benefits:

- Hum-free operation, low power consumption and integrated overvoltage protection.
- Various contact combinations and accessories are available.

ESB25..N installation contactors - 25 A, AC-1/AC-7a, AC/DC operated

Main contacts	Width in number of modular spacings	Rated control circuit voltage[1] VAC/DC	Order code
Single packaging			
	2	24	ESB25-40N-01
		230 ... 240	ESB25-40N-06
	2	24	ESB25-04N-01
		230 ... 240	ESB25-04N-06
	2	24	ESB25-22N-01
		230 ... 240	ESB25-22N-06
	2	24	ESB25-31N-01
		230 ... 240	ESB25-31N-06
	2	24	ESB25-13N-01
		230 ... 240	ESB25-13N-06

ESB installation contactors

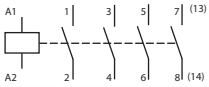
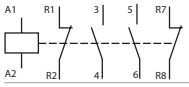
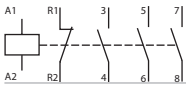
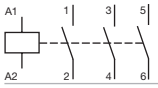
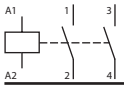
Order codes

ESB40..N

The ESB40..N installation contactors are used to control single and three-phases loads up to 40 A and can be operated by AC or DC voltages.
These contactors are made for use in household applications as well as in industrial environment.
ESB40..N series is providing the following benefits:

- Hum-free operation, low power consumption and integrated overvoltage protection.
- Various contact combinations and accessories are available.

ESB40..N installation contactors - 40 A, AC-1/AC-7a, AC/DC operated

Main contacts	Width in number of modular spacings	Rated control circuit voltage[1] VAC/DC	Order code
Single packaging			
	3	24	ESB40-40N-01
		230	ESB40-40N-06
	3	24	ESB40-22N-01
		230	ESB40-22N-06
	3	24	ESB40-31N-01
		230	ESB40-31N-06
	3	24	ESB40-30N-01
		230	ESB40-30N-06
	3	24	ESB40-20N-01
		230	ESB40-20N-06

ESB installation contactors

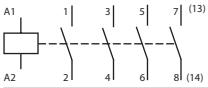
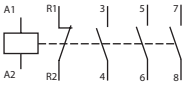
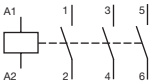
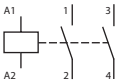
Order codes

ESB63..N

The ESB63..N installation contactors are used to control single and three-phases loads up to 63 A and can be operated by AC or DC voltages.
These contactors are made for use in household applications as well as in industrial environment.
ESB63..N series is providing the following benefits:

- Hum-free operation, low power consumption and integrated overvoltage protection.
- Various contact combinations and accessories are available.

ESB63..N installation contactors - 63 A, AC-1/AC-7a, AC/DC operated

Main contacts	Width in number of modular spacings	Rated control circuit voltage[1] VAC/DC	Order code
Single packaging			
	3	24	ESB63-40N-01
		230	ESB63-40N-06
	3	230	ESB63-31N-06
	3	230	ESB63-30N-06
	3	24	ESB63-20N-01
		230	ESB63-20N-06

ESB installation contactors

Order codes

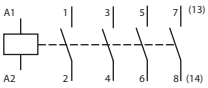
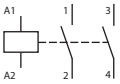
ESB100-20N

ESB100-40N

The ESB100..N installation contactors are used to control single and three-phases loads up to 100 A and can be operated by AC or DC voltages.
These contactors are made for use in household applications as well as in industrial environment.
ESB100..N series is providing the following benefits:

- Hum-free operation, low power consumption and integrated overvoltage protection.
- Various contact combinations and accessories are available.

ESB100..N installation contactors - 100 A, AC-1/AC-7a, AC/DC operated

Main contacts	Width in number of modular spacings	Rated control circuit voltage[(1)] VAC/DC	Order code
Single packaging			
	6	24	ESB100-40N-01
		230	ESB100-40N-06
	3	24	ESB100-20N-01
		230	ESB100-20N-06

D Line digital time switches
Order codes

D Line weekly digital time switches
The unique design, with white backlit LCD display, and extreme ease of use with two lines of text menu and only four buttons, make D Line ideal to automate the installation functions.

Thanks to the innovative management of time vacation, the D Line digital time switches allow the exclusion of the normal weekly program in one or more periods of several years or between two different years.

The range includes 1 and 2 channel versions, equipped with large capacity internal battery to maintain operation without power supply and permanent memory EEPROM, to avoid the risk of program loss and to maintain the date and time settings in the event of power failure, irrespective of its duration.

The “Plus” version can transfer different types of program by using a D KEY to be quickly copied in using no digital time switches, avoiding the errors due to future modification. The “SYNCHRO” version can be coupled to the D DCF77 antenna, that allows an automatic synchronization of the digital time switch with the Frankfurt DCF77 time signal, or can be coupled to the D GPS antenna to allows synchronization received from the Global Positioning System.

The D Line is particularly useful in environments and situations where user management is required with a time schedule flexible enough to predict or exclude activities according to time and day of week or month.

D Line switches

D1 D1 Plus

Channels no.	Type	Order code
1	D1	2CSM258763R0621
1	D1 PLUS	2CSM257583R0621
1	D1 SYNCHRO	2CSM257493R0621
2	D2	2CSM256313R0621
2	D2 PLUS	2CSM277583R0621
2	D2 SYNCHRO	2CSM277363R0621

Accessories

Versions	Type	Order code
Programming key	D KEY	2CSM277143R0621
Programming software	D SW	2CSM299973R0621
DCF77 antenna	D DCF77	2CSM299983R0621
GPS antenna	D GPS	2CSM299993R0621

T Line modular twilight switches
Order codes

— 01 T1

— 02 T1 PLUS

— 03 LS-D

T Line modular twilight switches
These twilight switches allow to switch ON and switch OFF lighting devices according to a scheduled level of the ambient light. They are used in combination with an external sensor to detect if the ambient light is higher or lower than the set level.

A switching delay prevents them from operating unnecessarily when the light intensity suddenly changes (e.g. lightning, moving vehicles, etc.). The T1 twilight switch in 1 channel is preset at 10 lux.

from factory and is equipped with 2 signalling LEDs that indicate the setpoint value and display the status of the contact . The operating instructions are printed on the side of the product. T1 PLUS switches feature a setpoint that can be adjusted for 4 different scale values (2:40, 20:200, 200:2000, 2000:15000).This makes them ideal for daytime applications where the lux values are very high. With a 10 lux preset factory setting, they are equipped with 2 signalling LEDs that indicate the setpoint value and display the status of the contact.

— **T Line modular twilight switches**

Brightness range lux	Type	Order code
2:200	T1	2CSM295563R1341
2:15000	T1 PLUS	2CSM295793R1341

Accessories for T Line modular twilight switches
The external sensor is supplied in the same package of the switch, but it's also available separately as spare part. The upper part of the external case (with screw locking), is made up of thermoplastic materials and bears up against ultraviolet rays to guarantee a homogeneous diffusion of the daylight internally. LS-D is also equipped with a cable gland.

— **Accessories**

Brightness range lux	Type	Order code
External sensor	LS-D	2CSM295723R1341

— 01

— 02

— 03

Modular sockets
Order codes

British standard modular sockets

	Colour	Modules	Order code
M1363	Grey	3	M1363
	Grey with light	3	M1363-L

E 90 fuse switch disconnectors
Order Codes

E 90 series fuse switch disconnectors are designed for switching circuits under load, providing protection against short circuits and overloads. The case is made of self-extinguishing thermoplastic material resistant to high temperatures (all materials are UL listed) while the contact clips are in silver plated copper.
E 90 fuse switch disconnectors can be sealed or padlocked to ensure operator safety during maintenance. Versions with blown fuse indicator(s) allow to check whether the fuse is still working correctly or not. For easy and quick installation E 90 range is totally compatible with connecting bars, terminals and caps of S 200 MCBs. Thanks to cURus approval, they can be installed in UL certified machines.

E 90 fuse switch disconnectors for 10.3 x 38 mm fuses (AC-22B)

	Number of poles	Rated current In	Modules	Order code
E91	1	32	1	E 91/32
	1	32	1	E 91/32s
	3	32	3	E 93/32
	3	32	3	E 93/32s
E93				
				

Fuses not included

PROTECTA POWER

Protecta Power gives flexibility with digital communication, protection and control

Protecta Power
Order process

Panelboard enclosure

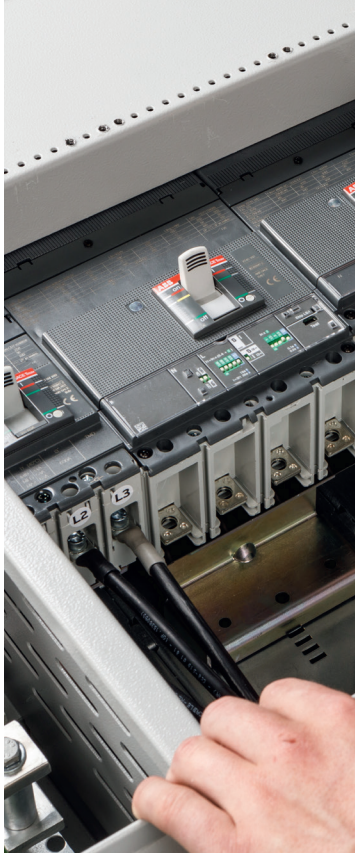
Incoming kit

MCCBs

Accessories

Protecta Power
Enhanced mechanical segregation

With enhanced mechanical segregation between busbars, functional units and terminals Protecta Power promotes ease of use while meeting the requirements of Form 4, types 2 and 6 under the BS EN 61439 standard.

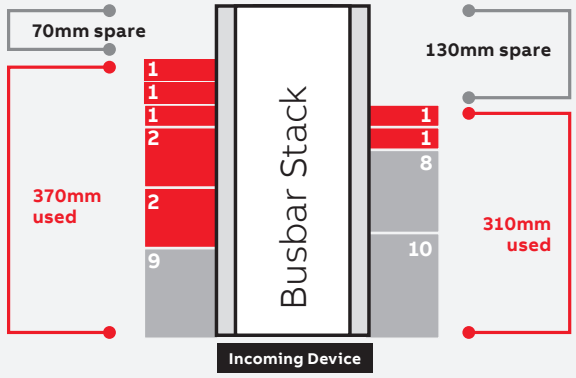


Outgoing Device Selection

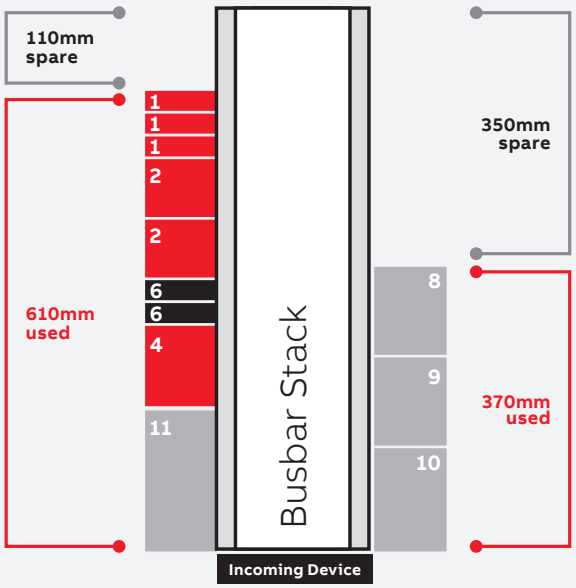
Key

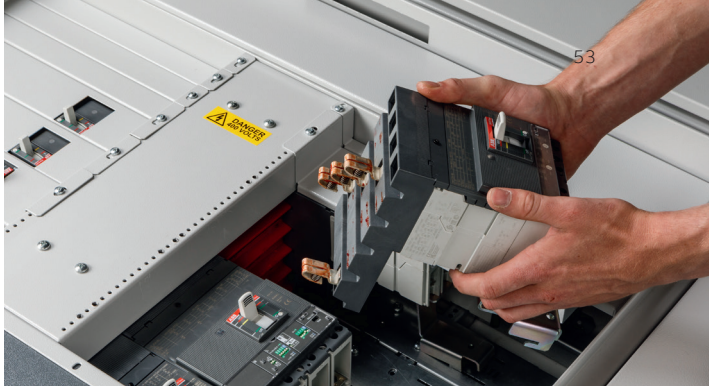
1. A1 - 1P, 30mm (w)
2. XT1 - 3P, 80mm (w)
3. XT2 - 3P, 90mm (w)
4. XT4 - 3P, 110mm (w)
5. XT5 - 3P, 140mm (w)
6. Neutral Link A1, XT1, XT2 & XT4, 30 mm (w)
7. Neutral Link - XT5, 50 mm (w)
8. XT1 - 4P, 110 mm (w)
9. XT2 - 4P or 3P + Neutral Link, 120 mm (w)
10. XT4 - 4P or 3P + Neutral Link, 140 mm (w)
11. XT5 - 4P or 3P + Neutral Link, 190 mm (w)

8 way - Panelboard
440mm Left & Right



12 way - Panelboard
720mm Left & Right





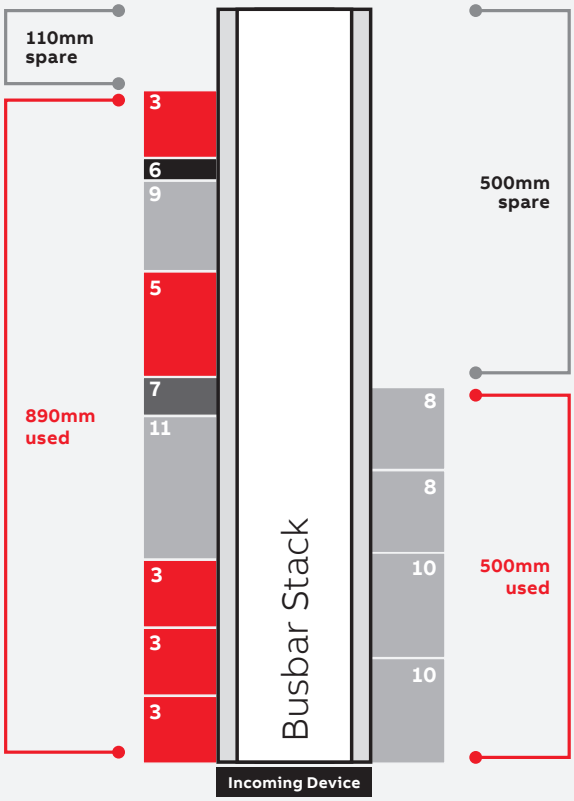
Custom options

You can choose and customise the layout of your outgoing devices - utilising the busbar stack lengths available 440mm, 720mm and 1000mm and populating it with the MCCB frame size to suit the application.

MCCB Devices available:

A1 - upto 125A Thermal Magnetic
XT1 - upto 160A Thermal Magnetic
XT2 - upto 160A Thermal Magnetic / Electronic Trip
XT4 - upto 250A Thermal Magnetic / Electronic Trip
XT5 - upto 630A Thermal Magnetic / Electronic Trip

18 way - Panelboard
1000mm Left & Right



Protecta Power
Order codes

Main Enclosure 400A Panelboard

Description	No. Of Ways	Busbar Rating	Dimensions (mm) H x W x D	Order code
400A Busbar Panelboard	8	400	1400 x 1000 x 300	EPX-PB408
400A Busbar Panelboard	12	400	1700 x 1000 x 300	EPX-PB412
400A Busbar Panelboard	18	400	2000 x 1000 x 300	EPX-PB418

Pack contents:
- Incoming device
- XT4 Max cable capacity = 150mm^2
- XT5 Max cable capacity = 185mm^2

Front extended terminals available for lug connectivity, see page 65

400A Panelboard - Incoming Devices - Non Auto Switch Disconnector

Description	Device Rating	No. of Poles	Order code
Switch Disconnector - XT4	250A	3P	EPX-2503SD
Switch Disconnector - XT4	250A	4P	EPX-2504SD
Switch Disconnector - XT5	400A	3P	EPX-4003SD
Switch Disconnector - XT5	400A	4P	EPX-4004SD

Protecta Power
Order codes

Pack contents:
Incoming device
- XT4 Max cable capacity = 150mm²
  XT5 Max cable capacity = 185mm²
  Front extended terminals available for lug connectivity, see page 65

MCCB Incoming Devices

Description	Device Rating	No. of Poles	Order code
TMA MCCB - XT4	250A	3P	EPX-2503MCCB
TMA MCCB - XT4	250A	4P	EPX-2504MCCB
TMA MCCB - XT5	400A	3P	EPX-4003MCCB
TMA MCCB - XT5	400A	4P	EPX-4004MCCB
Electronic MCCB - XT4	250A	3P	EPX-2503-E1-MCCB
Electronic MCCB - XT4	250A	4P	EPX-2504-E1-MCCB
Electronic MCCB - XT5	400A	3P	EPX-4003-E1-MCCB
Electronic MCCB - XT5	400A	4P	EPX-4004-E1-MCCB

* EKIP LS/I Electronic Trip MCCBs as standard

Pack contents:
- Incomer support bracket
- Shrouding
- Busbar connectivity

Incoming Connection Kits

Description	Current Rating	No. of Poles	Order code
XT4 Connection Kit	250	3P	EPX-2503CK
XT4 Connection Kit	250	4P	EPX-2504CK
XT5 Connection Kit	400	3P	EPX-4003CK
XT5 Connection Kit	400	4P	EPX-4004CK
Direct Connection Kit	400	4P	EPX-400DC

Protecta Power
Order codes

Main Enclosure 800A Panelboard

Description	No. Of Ways	Busbar Rating	Dimensions (mm) H x W x D	Order code
800A Busbar Panelboard	8	800	1400 x 1000 x 300	EPX-PB808
800A Busbar Panelboard	12	800	1700 x 1000 x 300	EPX-PB812
800A Busbar Panelboard	18	800	2000 x 1000 x 300	EPX-PB818

Pack contents:
- Incoming device
- XT5 Max cable capacity = 185mm^2
- XT6 Max cable capacity = 2x120mm^2

Front extended terminals available for lug connectivity, see page 65

800A Panelboard - Incoming Devices - Non Auto Switch Disconnector

Description	Device Rating	No. of Poles	Order code
Switch Disconnector - XT5	630A	3P	EPX-6303SD
Switch Disconnector - XT5	630A	4P	EPX-6304SD
Switch Disconnector - XT6	800A	3P	EPX-8003SD
Switch Disconnector - XT6	800A	4P	EPX-8004SD

Protecta Power
Order codes

Pack contents:
Incoming device
- XT5 Max cable capacity = 185mm^2
- XT6 Max cable capacity = 2x120mm^2

Front extended terminals available for lug connectivity, see page 65

MCCB Incoming Devices

Description	Device Rating	No. of Poles	Order code
TMA MCCB - XT5	630A	3P	EPX-6303MCCB
TMA MCCB - XT5	630A	4P	EPX-6304MCCB
TMA MCCB - XT6	800A	3P	EPX-8003MCCB
TMA MCCB - XT6	800A	4P	EPX-8004MCCB
Electronic MCCB - XT5	630A	3P	EPX-6303-E1-MCCB
Electronic MCCB - XT5	630A	4P	EPX-6304-E1-MCCB
Electronic MCCB - XT6	800A	3P	EPX-8003-E1-MCCB
Electronic MCCB - XT6	800A	4P	EPX-8004-E1-MCCB

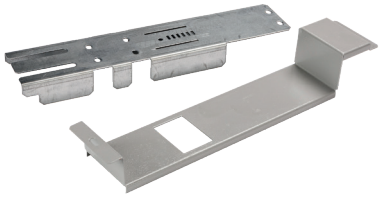
* EKIP LS/I Electronic Trip MCCBs as standard

Pack contents:
- Incomer support bracket
- Shrouding
- Busbar connectivity

Incoming Connection Kits

Description	Current Rating	No. of Poles	Order code
XT5 Connection Kit	630A	3P	EPX-6303CK
XT5 Connection Kit	630A	4P	EPX-6304CK
XT6 Connection Kit	800A	3P	EPX-8003CK
XT6 Connection Kit	800A	4P	EPX-8004CK
Direct Connection Kit	800A	4P	EPX-800DC

Protecta Power
Order codes



Pack contents:
- MCCB Base Plate and Cover required with each outgoing device - to be ordered seperatly

Outgoing MCCB Base Plate and Cover

Description	Order code
Outgoing MCCB Base Plate and Cover A1 1P	EPX-BPCA1-1P
Outgoing MCCB Base Plate and Cover A1 (1P+N)	EPX-BPCA1 -1P+N
Outgoing MCCB Base Plate and Cover XT1 3P	EPX-BPCXT1 -3P
Outgoing MCCB Base Plate and Cover XT2 3P	EPX-BPCXT2 -3P
Outgoing MCCB Base Plate and Cover XT4 3P	EPX-BPCXT4 -3P
Outgoing MCCB Base Plate and Cover XT5 3P	EPX-BPCXT5 -3P
Outgoing MCCB Base Plate and Cover XT1 4P	EPX-BPCXT1 -4P
Outgoing MCCB Base Plate and Cover XT2 4P	EPX-BPCXT2 -4P
Outgoing MCCB Base Plate and Cover XT4 4P	EPX-BPCXT4 -4P
Outgoing MCCB Base Plate and Cover XT5 4P	EPX-BPCXT5 -4P

* MCCB Base Plate and Cover required with each outgoing device

Max Cable capacity
- A1 SP = 50mm2
- XT1 = 70mm2
- XT2 = 95mm2
- XT4 = 150mm2
- XT5 = 185mm2

Front extended terminals available for lug connectivity, see page 65

TMA
- Thermal Trip adjustment 0.7 to 1 x In
- Magnetic Trip Adjustment 5 to 10 x In

Electronic Trip Unit
- Adjustable trip overloads 0.4 to 1 x In
- Delayed short circuit 1 to 10 x In

1-Pole Devices - A1 25kA - Thermal-magnetic

Rated current in A	Order code		
	A1 - 1P - L1	A1 - 1P - L2	A1 - 1P - L3
16A 1P 18kA MCCB	EPX-A1B-016L1	EPX-A1B-016L2	EPX-A1B-016L3
20A 1P 25kA MCCB	EPX-A1C-020L1	EPX-A1C-020L2	EPX-A1C-020L3
25A 1P 25kA MCCB	EPX-A1C-025L1	EPX-A1C-025L2	EPX-A1C-025L3
32A 1P 25kA MCCB	EPX-A1C-032L1	EPX-A1C-032L2	EPX-A1C-032L3
40A 1P 25kA MCCB	EPX-A1C-040L1	EPX-A1C-040L2	EPX-A1C-040L3
50A 1P 25kA MCCB	EPX-A1C-050L1	EPX-A1C-050L2	EPX-A1C-050L3
63A 1P 25kA MCCB	EPX-A1C-063L1	EPX-A1C-063L2	EPX-A1C-063L3
80A 1P 25kA MCCB	EPX-A1C-080L1	EPX-A1C-080L2	EPX-A1C-080L3
100A 1P 25kA MCCB	EPX-A1C-100L1	EPX-A1C-100L2	EPX-A1C-100L3
125A 1P 25kA MCCB	EPX-A1C-125L1	EPX-A1C-125L2	EPX-A1C-125L3

Protecta Power
Order codes

3-Pole Devices - 36kA - Thermal-magnetic

Rated current in A	Order code			
	XT1 - 3-Pole (80mm)	XT2 - 3-Pole (90mm)	XT4 - 3-Pole (110mm)	XT5 - 3-Pole (140mm)
16A 3P 36kA MCCB	EPX-XT1N-TM0163	EPX-XT2N-TM0163	EPX-XT4N-TM0163	-
20A 3P 36kA MCCB	EPX-XT1N-TM0203	EPX-XT2N-TM0203	EPX-XT4N-TM0203	-
25A 3P 36kA MCCB	EPX-XT1N-TM0253	EPX-XT2N-TM0253	EPX-XT4N-TM0253	-
32A 3P 36kA MCCB	EPX-XT1N-TM0323	EPX-XT2N-TM0323	EPX-XT4N-TM0323	-
40A 3P 36kA MCCB	EPX-XT1N-TM0403	EPX-XT2N-TM0403	EPX-XT4N-TM0403	-
50A 3P 36kA MCCB	EPX-XT1N-TM0503	EPX-XT2N-TM0503	EPX-XT4N-TM0503	-
63A 3P 36kA MCCB	EPX-XT1N-TM0633	EPX-XT2N-TM0633	EPX-XT4N-TM0633	-
80A 3P 36kA MCCB	EPX-XT1N-TM0803	EPX-XT2N-TM0803	EPX-XT4N-TM0803	-
100A 3P 36kA MCCB	EPX-XT1N-TM1003	EPX-XT2N-TM1003	EPX-XT4N-TM1003	-
125A 3P 36kA MCCB	EPX-XT1N-TM1253	EPX-XT2N-TM1253	EPX-XT4N-TM1253	-
160A 3P 36kA MCCB	EPX-XT1N-TM1603	EPX-XT2N-TM1603	EPX-XT4N-TM1603	-
200A 3P 36kA MCCB	-	-	EPX-XT4N-TM2003	-
250A 3P 36kA MCCB	-	-	EPX-XT4N-TM2503	-
320A 3P 36kA MCCB	-	-	-	EPX-XT5N-TM3203
400A 3P 36kA MCCB	-	-	-	EPX-XT5N-TM4003
630A 3P 36kA MCCB	-	-	-	EPX-XT5N-TM6303

For XT5 outgoing devices, consider a side cableway extension box for larger cables

4-Pole Devices - 36kA - Thermal-magnetic

Rated current in A	Order code			
	XT1 - 4-Pole (90mm)	XT2 - 4-Pole (110mm))	XT4 - 4-Pole (140mm)	XT5 - 4-Pole (190mm)
16A 4P 36kA MCCB	EPX-XT1N-TM0164	EPX-XT2N-TM0164	EPX-XT4N-TM0164	-
20A 4P 36kA MCCB	EPX-XT1N-TM0204	EPX-XT2N-TM0204	EPX-XT4N-TM0204	-
25A 4P 36kA MCCB	EPX-XT1N-TM0254	EPX-XT2N-TM0254	EPX-XT4N-TM0254	-
32A 4P 36kA MCCB	EPX-XT1N-TM0324	EPX-XT2N-TM0324	EPX-XT4N-TM0324	-
40A 4P 36kA MCCB	EPX-XT1N-TM0404	EPX-XT2N-TM0404	EPX-XT4N-TM0404	-
50A 4P 36kA MCCB	EPX-XT1N-TM0504	EPX-XT2N-TM0504	EPX-XT4N-TM0504	-
63A 4P 36kA MCCB	EPX-XT1N-TM0634	EPX-XT2N-TM0634	EPX-XT4N-TM0634	-
80A 4P 36kA MCCB	EPX-XT1N-TM0804	EPX-XT2N-TM0804	EPX-XT4N-TM0804	-
100A 4P 36kA MCCB	EPX-XT1N-TM1004	EPX-XT2N-TM1004	EPX-XT4N-TM1004	-
125A 4P 36kA MCCB	EPX-XT1N-TM1254	EPX-XT2N-TM1254	EPX-XT4N-TM1254	-
160A 4P 36kA MCCB	EPX-XT1N-TM1604	EPX-XT2N-TM1604	EPX-XT4N-TM1604	-
200A 4P 36kA MCCB	-	-	EPX-XT4N-TM2004	-
250A 4P 36kA MCCB	-	-	EPX-XT4N-TM2504	-
320A 4P 36kA MCCB	-	-	-	EPX-XT5N-TM3204
400A 4P 36kA MCCB	-	-	-	EPX-XT5N-TM4004
630A 4P 36kA MCCB	-	-	-	EPX-XT5N-TM6304

For XT5 outgoing devices, consider a side cableway extension box for larger cables

Protecta Power
Order codes

Features
- Electronic Trip MCCBs
- Overload Protection (L)
- Short Circuit Protection with Delayed Trip (S)
- Instantaneous Short Circuit Protection (I)
- EKIP LS/I = L Protection then you choose between S or I protection
- EKIP LSI = All three LS and I characteristics included for adjustability
- EKIP Touch / Hi Touch available on request

3-Pole Devices - 36kA - Electronic Trip - LS/I

Rated current in A	Order code		
	XT2 - 3-Pole (90mm)	XT4 - 3-Pole (110mm))	XT5 - 3-Pole (140mm)
25A 3P 36kA MCCB - (Ekip) - LS/I	EPX-XT2N-E1-0253	-	-
40A 3P 36kA MCCB - (Ekip) - LS/I	-	EPX-XT4N-E1-0403	-
63A 3P 36kA MCCB - (Ekip) - LS/I	EPX-XT2N-E1-0633	EPX-XT4N-E1-0633	-
100A 3P 36kA MCCB - (Ekip) - LS/I	EPX-XT2N-E1-1003	EPX-XT4N-E1-1003	-
160A 3P 36kA MCCB - (Ekip) - LS/I	EPX-XT2N-E1-1603	EPX-XT4N-E1-1603	-
250A 3P 36kA MCCB - (Ekip) - LS/I	-	EPX-XT4N-E1-2503	EPX-XT5N-E1-2503
320A 3P 36kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5N-E1-3203
400A 3P 36kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5N-E1-4003
630A 3P 36kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5N-E1-6303

For XT5 outgoing devices, consider a side cableway extension box for larger cables

4-Pole Devices - 36kA- Electronic Trip - LS/I

Rated current in A	Order code		
	XT2 - 4-Pole (120mm)	XT4 - 4-Pole (140mm)	XT5 - 4-Pole (190mm)
25A 4P 36kA MCCB - (Ekip) - LS/I	EPX-XT2N-E1-0254	-	-
40A 4P 36kA MCCB - (Ekip) - LS/I	-	EPX-XT4N-E1-0404	-
63A 4P 36kA MCCB - (Ekip) - LS/I	EPX-XT2N-E1-0634	EPX-XT4N-E1-0634	-
100A 4P 36kA MCCB - (Ekip) - LS/I	EPX-XT2N-E1-1004	EPX-XT4N-E1-1004	-
160A 4P 36kA MCCB - (Ekip) - LS/I	EPX-XT2N-E1-1604	EPX-XT4N-E1-1604	-
250A 4P 36kA MCCB - (Ekip) - LS/I	-	EPX-XT4N-E1-2504	EPX-XT5N-E1-2504
320A 4P 36kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5N-E1-3204
400A 4P 36kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5N-E1-4004
630A 4P 36kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5N-E1-6304

For XT5 outgoing devices, consider a side cableway extension box for larger cables

Protecta Power
Order codes

Features
- Electronic Trip MCCBs
- Overload Protection (L)
- Short Circuit Protection with Delayed Trip (S)
- Instantaneous Short Circuit Protection (I)
- EKIP LS/I = L Protection then you choose between S or I protection
- EKIP LSI = All three LS and I characteristics included for adjustability
- EKIP Touch / Hi Touch available on request

3-Pole Devices - 36kA- Electronic Trip - LSI

Rated current in A	Order code		
	XT2 - 3-Pole (90mm)	XT4 - 3-Pole (110mm)	XT5 - 3-Pole (140mm)
25A 3P 36kA MCCB - (Ekip) - LSI	EPX-XT2N-E2-0253	-	-
40A 3P 36kA MCCB - (Ekip) - LSI	-	EPX-XT4N-E2-0403	-
63A 3P 36kA MCCB - (Ekip) - LSI	EPX-XT2N-E2-0633	EPX-XT4N-E2-0633	-
100A 3P 36kA MCCB - (Ekip) - LSI	EPX-XT2N-E2-1003	EPX-XT4N-E2-1003	-
160A 3P 36kA MCCB - (Ekip) - LSI	EPX-XT2N-E2-1603	EPX-XT4N-E2-1603	-
250A 3P 36kA MCCB - (Ekip) - LSI	-	EPX-XT4N-E2-2503	EPX-XT5N-E2-2503
320A 3P 36kA MCCB - (Ekip) - LSI	-	-	EPX-XT5N-E2-3203
400A 3P 36kA MCCB - (Ekip) - LSI	-	-	EPX-XT5N-E2-4003
630A 3P 36kA MCCB - (Ekip) - LSI	-	-	EPX-XT5N-E2-6303

For XT5 outgoing devices, consider a side cableway extension box for larger cables

4-Pole Devices - 36kA- Electronic Trip - LSI

Rated current in A	Order code		
	XT2 - 4-Pole (120mm)	XT4 - 4-Pole (140mm)	XT5 - 4-Pole (190mm)
25A 4P 36kA MCCB - (Ekip) - LSI	EPX-XT2N-E2-0254	-	-
40A 4P 36kA MCCB - (Ekip) - LSI	-	EPX-XT4N-E2-0404	-
63A 4P 36kA MCCB - (Ekip) - LSI	EPX-XT2N-E2-0634	EPX-XT4N-E2-0634	-
100A 4P 36kA MCCB - (Ekip) - LSI	EPX-XT2N-E2-1004	EPX-XT4N-E2-1004	-
160A 4P 36kA MCCB - (Ekip) - LSI	EPX-XT2N-E2-1604	EPX-XT4N-E2-1604	-
250A 4P 36kA MCCB - (Ekip) - LSI	-	EPX-XT4N-E2-2504	EPX-XT5N-E2-2504
320A 4P 36kA MCCB - (Ekip) - LSI	-	-	EPX-XT5N-E2-3204
400A 4P 36kA MCCB - (Ekip) - LSI	-	-	EPX-XT5N-E2-4004
630A 4P 36kA MCCB - (Ekip) - LSI	-	-	EPX-XT5N-E2-6304

For XT5 outgoing devices, consider a side cableway extension box for larger cables

Protecta Power
Order codes

3-Pole Devices - 50kA - Thermal-magnetic

	Rated current in A	Order code			
		XT1S - 3-Pole (80mm)	XT2S -3 -Pole (90mm)	XT4S -3 -Pole (110mm)	XT5S - 3 -Pole (140mm)
	16A 3P 50kA MCCB	EPX-XT1S-TM0163	EPX-XT2S-TM0163	EPX-XT4S-TM0163	-
	20A 3P 50kA MCCB	EPX-XT1S-TM0203	EPX-XT2S-TM0203	EPX-XT4S-TM0203	-
	25A 3P 50kA MCCB	EPX-XT1S-TM0253	EPX-XT2S-TM0253	EPX-XT4S-TM0253	-
	32A 3P 50kA MCCB	EPX-XT1S-TM0323	EPX-XT2S-TM0323	EPX-XT4S-TM0323	-
	40A 3P 50kA MCCB	EPX-XT1S-TM0403	EPX-XT2S-TM0403	EPX-XT4S-TM0403	-
	50A 3P 50kA MCCB	EPX-XT1S-TM0503	EPX-XT2S-TM0503	EPX-XT4S-TM0503	-
	63A 3P 50kA MCCB	EPX-XT1S-TM0633	EPX-XT2S-TM0633	EPX-XT4S-TM0633	-
	80A 3P 50kA MCCB	EPX-XT1S-TM0803	EPX-XT2S-TM0803	EPX-XT4S-TM0803	-
	100A 3P 50kA MCCB	EPX-XT1S-TM1003	EPX-XT2S-TM1003	EPX-XT4S-TM1003	-
	125A 3P 50kA MCCB	EPX-XT1S-TM1253	EPX-XT2S-TM1253	EPX-XT4S-TM1253	-
	160A 3P 50kA MCCB	EPX-XT1S-TM1603	EPX-XT2S-TM1603	EPX-XT4S-TM1603	-
	200A 3P 50kA MCCB	-	-	EPX-XT4S-TM2003	-
	250A 3P 50kA MCCB	-	-	EPX-XT4S-TM2503	-
	320A 3P 50kA MCCB	-	-	-	EPX-XT5S-TM3203
	400A 3P 50kA MCCB	-	-	-	EPX-XT5S-TM4003
	630A 3P 50kA MCCB	-	-	-	EPX-XT5S-TM6303

For XT5 outgoing devices, consider a side cableway extension box for larger cables

4-Pole Devices - 50kA- Thermal-magnetic

	Rated current in A	Order code			
		XT1S - 4-Pole (110mm)	XT2S - 4-Pole (120mm)	XT4S - 4-Pole (140mm)	XT5S - 4-Pole (190mm)
	16A 4P 50kA MCCB	EPX-XT1S-TM0164	EPX-XT2S-TM0164	EPX-XT4S-TM0164	-
	20A 4P 50kA MCCB	EPX-XT1S-TM0204	EPX-XT2S-TM0204	EPX-XT4S-TM0204	-
	25A 4P 50kA MCCB	EPX-XT1S-TM0254	EPX-XT2S-TM0254	EPX-XT4S-TM0254	-
	32A 4P 50kA MCCB	EPX-XT1S-TM0324	EPX-XT2S-TM0324	EPX-XT4S-TM0324	-
	40A 4P 50kA MCCB	EPX-XT1S-TM0404	EPX-XT2S-TM0404	EPX-XT4S-TM0404	-
	50A 4P 50kA MCCB	EPX-XT1S-TM0504	EPX-XT2S-TM0504	EPX-XT4S-TM0504	-
	63A 4P 50kA MCCB	EPX-XT1S-TM0634	EPX-XT2S-TM0634	EPX-XT4S-TM0634	-
	80A 4P 50kA MCCB	EPX-XT1S-TM0804	EPX-XT2S-TM0804	EPX-XT4S-TM0804	-
	100A 4P 50kA MCCB	EPX-XT1S-TM1004	EPX-XT2S-TM1004	EPX-XT4S-TM1004	-
	125A 4P 50kA MCCB	EPX-XT1S-TM1254	EPX-XT2S-TM1254	EPX-XT4S-TM1254	-
	160A 4P 50kA MCCB	EPX-XT1S-TM1604	EPX-XT2S-TM1604	EPX-XT4S-TM1604	-
	200A 4P 50kA MCCB	-	-	EPX-XT4S-TM2004	-
	250A 4P 50kA MCCB	-	-	EPX-XT4S-TM2504	-
	320A 4P 50kA MCCB	-	-	-	EPX-XT5S-TM3204
	400A 4P 50kA MCCB	-	-	-	EPX-XT5S-TM4004
	630A 4P 50kA MCCB	-	-	-	EPX-XT5S-TM6304

For XT5 outgoing devices, consider a side cableway extension box for larger cables

Protecta Power
Order codes

Features
- Electronic Trip MCCBs
- Overload Protection (L)
- Short Circuit Protection with Delayed Trip (S)
- Instantaneous Short Circuit Protection (I)
- EKIP LS/I = L Protection then you choose between S or I protection
- EKIP LSI = All three LS and I characteristics included for adjustability
- EKIP Touch / Hi Touch available on request

3-Pole Devices - 50kA - Electronic Trip - LS/I

	Rated current in A	Order code		
		XT2S - 3-Pole (90mm)	XT4S - 3-Pole (110mm)	XT5S - 3-Pole (140mm)
	25A 3P 50kA MCCB - (Ekip) - LS/I	EPX-XT2S-E1-0253	-	-
	40A 3P 50kA MCCB - (Ekip) - LS/I	-	EPX-XT4S-E1-0403	-
	63A 3P 50kA MCCB - (Ekip) - LS/I	EPX-XT2S-E1-0633	EPX-XT4S-E1-0633	-
	100A 3P 50kA MCCB - (Ekip) - LS/I	EPX-XT2S-E1-1003	EPX-XT4S-E1-1003	-
	160A 3P 50kA MCCB - (Ekip) - LS/I	EPX-XT2S-E1-1603	EPX-XT4S-E1-1603	-
	250A 3P 50kA MCCB - (Ekip) - LS/I	-	EPX-XT4S-E1-2503	EPX-XT5S-E1-2503
	320A 3P 50kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5S-E1-3203
	400A 3P 50kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5S-E1-4003
	630A 3P 50kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5S-E1-6303

For XT5 outgoing devices, consider a side cableway extension box for larger cables

4-Pole Devices - 50kA - Electronic Trip - LS/I

	Rated current in A	Order code		
		XT2S - 4-Pole (120mm)	XT4S - 4-Pole (140mm)	XT5S - 4-Pole (190mm)
	25A 4P 50kA MCCB - (Ekip) - LS/I	EPX-XT2S-E1-0254	-	-
	40A 4P 50kA MCCB - (Ekip) - LS/I	-	EPX-XT4S-E1-0404	-
	63A 4P 50kA MCCB - (Ekip) - LS/I	EPX-XT2S-E1-0634	EPX-XT4S-E1-0634	-
	100A 4P 50kA MCCB - (Ekip) - LS/I	EPX-XT2S-E1-1004	EPX-XT4S-E1-1004	-
	160A 4P 50kA MCCB - (Ekip) - LS/I	EPX-XT2S-E1-1604	EPX-XT4S-E1-1604	-
	250A 4P 50kA MCCB - (Ekip) - LS/I	-	EPX-XT4S-E1-2504	EPX-XT5S-E1-2504
	320A 4P 50kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5S-E1-3204
	400A 4P 50kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5S-E1-4004
	630A 4P 50kA MCCB - (Ekip) - LS/I	-	-	EPX-XT5S-E1-6304

For XT5 outgoing devices, consider a side cableway extension box for larger cables

Protecta Power
Order codes

Features
- Electronic Trip MCCBs
- Overload Protection (L)
- Short Circuit Protection with Delayed Trip (S)
- Instantaneous Short Circuit Protection (I)
- EKIP LS/I = L Protection then you choose between S or I protection
- EKIP LSI = All three LS and I characteristics included for adjustability
- EKIP Touch / Hi Touch available on request

3-Pole Devices - 50kA - Electronic Trip - LSI

Rated current in A	Order code		
	XT2S - 3-Pole (90mm)	XT4S - 3-Pole (110mm)	XT5S - 3-Pole (140mm)
25A 3P 50kA MCCB - (Ekip) - LSI	EPX-XT2S-E2-0253	-	-
40A 3P 50kA MCCB - (Ekip) - LSI	-	EPX-XT4S-E2-0403	-
63A 3P 50kA MCCB - (Ekip) - LSI	EPX-XT2S-E2-0633	EPX-XT4S-E2-0633	-
100A 3P 50kA MCCB - (Ekip) - LSI	EPX-XT2S-E2-1003	EPX-XT4S-E2-1003	-
160A 3P 50kA MCCB - (Ekip) - LSI	EPX-XT2S-E2-1603	EPX-XT4S-E2-1603	-
250A 3P 50kA MCCB - (Ekip) - LSI	-	EPX-XT4S-E2-2503	EPX-XT5S-E2-2503
320A 3P 50kA MCCB - (Ekip) - LSI	-	-	EPX-XT5S-E2-3203
400A 3P 50kA MCCB - (Ekip) - LSI	-	-	EPX-XT5S-E2-4003
630A 3P 50kA MCCB - (Ekip) - LSI	-	-	EPX-XT5S-E2-6303

For XT5 outgoing devices, consider a side cableway extension box for larger cables

4-Pole Devices - 50kA - Electronic Trip - LSI

Rated current in A	Order code		
	XT2S - 4-Pole (120mm)	XT4S - 4-Pole (140mm)	XT5S - 4-Pole (190mm)
25A 4P 50kA MCCB - (Ekip) - LSI	EPX-XT2S-E2-0254	-	-
40A 4P 50kA MCCB - (Ekip) - LSI	-	EPX-XT4S-E2-0404	-
63A 4P 50kA MCCB - (Ekip) - LSI	EPX-XT2S-E2-0634	EPX-XT4S-E2-0634	-
100A 4P 50kA MCCB - (Ekip) - LSI	EPX-XT2S-E2-1004	EPX-XT4S-E2-1004	-
160A 4P 50kA MCCB - (Ekip) - LSI	EPX-XT2S-E2-1604	EPX-XT4S-E2-1604	-
250A 4P 50kA MCCB - (Ekip) - LSI	-	EPX-XT4S-E2-2504	EPX-XT5S-E2-2504
320A 4P 50kA MCCB - (Ekip) - LSI	-	-	EPX-XT5S-E2-3204
400A 4P 50kA MCCB - (Ekip) - LSI	-	-	EPX-XT5S-E2-4004
630A 4P 50kA MCCB - (Ekip) - LSI	-	-	EPX-XT5S-E2-6304

For XT5 outgoing devices, consider a side cableway extension box for larger cables

Protecta Power
Order codes

Terminals for circuit-breaker

Front extended terminal - EF

Front extended spread terminal - ES

FCCuAl internal terminal

		Order code	
Size	Type	pcs (1/2 kit for 3p)	pcs (1/2 kit for 4p)
XT1	F Front terminals	1SDA066849R1	1SDA066850R1
XT1	EF Extended front terminals	1SDA066865R1	1SDA066866R1
XT1	FC CuAl terminals for CuAl cables 1x1.5...70mm²	1SDA067151R1	1SDA067152R1
XT2	F Front terminals	1SDA066853R1	1SDA066854R1
XT2	EF Extended front terminals	1SDA066869R1	1SDA066870R1
XT2	FC CuAl terminals for CuAl cables 1x1...95mm²	1SDA067163R1	1SDA067164R1
XT4	F Front terminals	1SDA066861R1	1SDA066862R1
XT4	EF Extended front terminals	1SDA066877R1	1SDA066878R1
XT4	FC CuAl terminals for CuAl cables 1x1...150mm²	1SDA067191R1	1SDA067192R1
XT4	ES Extended spread front terminals	1SDA066901R1	1SDA066902R1
XT5	F Front terminals	1SDA104730R1	1SDA104731R1
XT5	EF Extended front terminals	1SDA104734R1	1SDA104735R1
XT5	XT5 FC CuAl 1x35...185mm²	1SDA104746R1	1SDA104747R1
XT5	ES Extended spread front terminals	1SDA104738R1	1SDA104739R1
XT6	F Front terminals	1SDA104732R1	1SDA104733R1
XT6	EF Extended front terminals 800A	1SDA104736R1	1SDA104737R1
XT6	XT6 ES Extended spread front terminals Upper	1SDA104740R1	1SDA104741R1
XT6	XT6 ES Extended spread front terminals Lower	1SDA113127R1	1SDA104741R1

Insulating terminal covers

		Order code	
Size	Type	3 poles	4 poles
XT1	HTC High terminal covers	1SDA066664R1	1SDA066665R1
XT2	HTC High terminal covers	1SDA066666R1	1SDA066667R1
XT3	HTC High terminal covers	1SDA066668R1	1SDA066669R1
XT4	HTC High terminal covers	1SDA066670R1	1SDA066671R1
XT5	HTC High terminal covers	1SDA105025R1	1SDA105026R1
XT6	HTC High terminal covers	1SDA105027R1	1SDA105028R1

Protecta Power
Order codes

Outgoing Neutral Links

Description	Order code
A1 / XT1 Neutral Link, to be used with 1P MCCB - Outgoing Device	EPX-NLA1XT1
XT2 Neutral Link, to be used with 3P MCCB - Outgoing Device	EPX-NLXT2
XT4 Neutral Link, to be used with 3P MCCB - Outgoing Device	EPX-NLXT4
XT5 Neutral Link, to be used with 3P MCCB - Outgoing Device	EPX-NLXT5

Group mounted Form 4 Type 2/6, Neutral link for outgoing section to be used with 1Pole and 3Pole MCCBs

Blanking plates for unused ways

Description	Order code
Cover blank Size 10	EPX-CB010
Cover blank Size 20	EPX-CB020
Cover blank Size 30	EPX-CB030
Cover blank Size 40	EPX-CB040
Cover blank Size 50	EPX-CB050
Cover blank Size 100	EPX-CB100
Cover blank Size 150	EPX-CB150
Cover blank Size 200	EPX-CB200

Blanking plates to be used for filling un-used ways / space in outgoing section

Cableway Extension Boxes

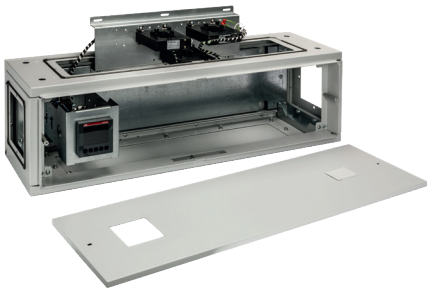
Description	Dimension (mm) H x W	No. of Meter Knock-outs	Order code
Side extension box to fit 8 way	1400 x 300	N/A	EPX-SIDECABLE-08
Side extension box to fit 12 way	1700 x 300	N/A	EPX-SIDECABLE-12
Side extension box to fit 18 way	2000 x 300	N/A	EPX-SIDECABLE-18
Side extension box with Metering provision to fit 8 way	1400 x 300	4	EPX-SIDECABLE-08M
Side extension box with Metering provision to fit 12 way	1700 x 300	7	EPX-SIDECABLE-12M
Side extension box with Metering provision to fit 18 way	2000 x 300	10	EPX-SIDECABLE-18M
Top / Bottom Extension box	300 x 1000	N/A	EPX-EXT1000
Corner Box	300 x 300	N/A	EPX-EXT300

Protecta Power
Order codes

Pack contents:
- Meter, Fixing brackets,
- CT and terminals.
- Requires a Side extension box
- with Metering provision - to be ordered separately

Outgoing Meter Kits

Description	Meter Type	Order code
125A Outgoing Metering Kits - Single Phase	M4M Pulse / Modbus	EPX-METER125-SP
125A Outgoing Metering Kits - Single Phase	M4M Pulse / Modbus & MID	EPX-METER125MID-SP
125A Outgoing Metering Kits - 3 Phase	M4M Pulse / Modbus	EPX-METER125-TP
160-250A Outgoing Metering Kits - 3phase	M4M Pulse / Modbus	EPX-METER250-TP
400A Outgoing Metering Kits - 3 Phase	M4M Pulse / Modbus	EPX-METER400-TP
630A Outgoing Metering Kits - 3 Phase	M4M Pulse / Modbus	EPX-METER630-TP
125A Outgoing Metering Kits	M4M Pulse / Modbus & MID	EPX-METER125MID-TP
160-250A Outgoing Metering Kits	M4M Pulse / Modbus & MID	EPX-METER250MID-TP
400A Outgoing Metering Kits	M4M Pulse / Modbus & MID	EPX-METER400MID-TP
630A Outgoing Metering Kits - 3 Phase	M4M Pulse / Modbus & MID	EPX-METER630MID-TP
Unused meter - blanks		EV1136

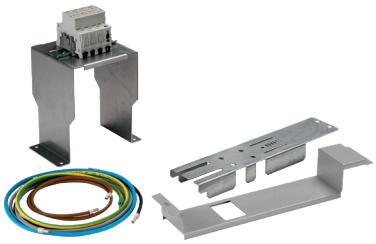


Pack contents:
- Top / Bottom extension box,
- Meter, Fixing brackets,
- CT and terminals

Incoming Meter Kits

Description	Dimension (mm) H x W	Order code
250A Incomer Meter Kit - M4M Pulse / Modbus	300 x 1000	EPX-ICMETER250
400A Incomer Meter Kit - M4M Pulse / Modbus	300 x 1000	EPX-ICMETER400
630A Incomer Meter Kit - M4M Pulse / Modbus	300 x 1000	EPX-ICMETER630
800A Incomer Meter Kit - M4M Pulse / Modbus	300 x 1000	EPX-ICMETER800
250A Incomer Meter Kit - M4M Pulse / Modbus & MID	300 x 1000	EPX-ICMETER250MID
400A Incomer Meter Kit - M4M Pulse / Modbus & MID	300 x 1000	EPX-ICMETER400MID
630A Incomer Meter Kit - M4M Pulse / Modbus & MID	300 x 1000	EPX-ICMETER630MID
800A Incomer Meter Kit - M4M Pulse / Modbus & MID	300 x 1000	EPX-ICMETER800MID

Protecta Power
Order codes



Pack contents:
- Surge unit
- Connection cables
- Din rail
- Protective "MCCB" and "Outgoing MCCB Base Plate and Cover" must be ordered separately. To be fitted into board taking an outgoing way to feed SPD.

Surge Protection Kits

Description	Dimension (mm) H x W	Order code
Surge Protection Kits type 1-2	300 x 1000	EPX-SURGE-T12
Surge Protection Kits type 1,2 & 3	300 x 1000	EPX-SURGE-T123

Residual current devices - 4 poles

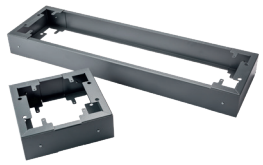
	Size	Type	Order code
	XT2	XT2 RC Sel	1SDA067126R1
	XT4	XT4 RC Sel	1SDA067131R1
	XT5	XT5 RC Sel (1)	1SDA105131R1

(1) This can also be mounted on a three-poles circuit-breaker

For XT5 outgoing devices, consider a side cableway extension box for larger cables

Protecta Power
Accessories

Accessories



Description	Order code
Plain Door H1400 x W1000 (8way PB)	EPX-PD08
Plain Door H1700 x W1000 (12way PB)	EPX-PD12
Plain Door H2000 x W1000 (18way PB)	EPX-PD18
Side Extension Plain Door H1400 x W300 (8way PB)	EPX-SED08
Side Extension Plain Door H1700 x W300 (12way PB)	EPX-SED12
Side Extension Plain Door H2000 x W300 (18way PB)	EPX-SED18
Side Extension Metered Door H1400 x W300 (8way PB)	EPX-SED08M
Side Extension Metered Door H1700 x W300 (12way PB)	EPX-SED12M
Side Extension Metered Door H2000 x W300 (18way PB)	EPX-SED18M
Enclosure Top/ Bottom gland	EPX-TG1000
Corner gland	EPX-CG300
Plain Side gland H1400 x D300 (8way PB)	EPX-SG08
Plain Side gland H1700 x D300 (12way PB)	EPX-SG12
Plain Side gland H2000 x D300 (18way PB)	EPX-SG18
Vented Side gland H1400 x D300 (8way PB)	EPX-VSG08
Vented Side gland H1700 x D300 (12way PB)	EPX-VSG12
Vented Side gland H2000 x D300 (18way PB)	EPX-VSG18
Plinth - RAL 7012	EPX-PL1000
Side Extension box Plinth - RAL 7012	EPX-PL300
Wall mounting kit	EPX-WM-KIT
Lifting bolt with accessories	EPX-LIFT
Double Lifting bolt with accessories	EPX-LIFT2
Standard lock solution	EPX-PBLOCK
Lock L handle	EPX-PBLOCK-L
Lock T handle	EPX-PBLOCK-T
Door Hinge	EPX-DH001
Extension/Neutral Kit 2x08W	EPX-EX-N08
Extension/Neutral Kit 2x12W	EPX-EX-N12
Extension/Neutral Kit 2x18W	EPX-EX-N18
Extension Earth Kit 2x08W	EPX-EX-E08

Introducing TruONE® ATS from ABB

A critical breakthrough for critical power

The all-new TruONE® is the world's first true purpose-built automatic transfer switch, engineered to incorporate switch and controller in one seamless unit.

Performance tested beyond standard requirements, TruONE® stands ready to ensure the steady delivery of critical power at all times. Its self-contained design reduces the number of wires and connections, which speeds installation and minimizes the potential for connection failures to ensure best-in-class reliability. Its predictive maintenance and modular components reduce downtime and service costs. And its advanced connectivity is ready for the future. In addition, unlike typical ATS solutions, TruONE® allows emergency manual operation under load for immediate power restoration in the event of an equipment malfunction.

TruONE® represents a major shift in engineering and a critical breakthrough for critical power.


ABB
S1
S2
LOAD
AUTO
59 s
11:06
System overview
S1
OK
OK
S2
S1 connected to load
Load current
393.0 A
Generator stop delay
TruONE
I
ON
II
ON
AUTO
LOAD
A
L1
SOURCE
S1
S2
LOAD
B
L2
SOURCE
S1
S2

The one ATS with all these advantages

—
01 Detachable HMI. Three levels of control to meet different customer requirements.
—
02 All-in-one concept that brings easy and fast installation.

Easy to Install
Reduces installation time by up to 80%.

Why waste time piecing together an ATS from multiple components and as many as 20 connection wires, not to mention the time spent testing? TruONE® is the first automatic transfer switch to put it all together, including the controller with detachable HMI. It can be installed with a single wire using standard enclosures.

Safety and Protection
Reduces risk of operator injury.

TruONE® enables emergency manual operation — even under load — without opening the panel door when the HMI is mounted to the ATS frame. The HMI can be detached from the frame for door mounting, offering more flexibility for the panel designer. Best of all, regardless of the HMI installation method, there's no need for connecting dangerous line voltages to the door, so the risk of operator injury due to equipment malfunction is reduced.

Optimum Interface
Simplifies connectivity.

TruONE® features cloud-based connectivity through the ABB Ability™ Electrical Distribution Control System (EDCS). ABB Ability simplifies implementation and use of TruONE® in coordination with other ABB devices, ensuring one common user interface and one common software environment. Market-leading modular connectivity with seven communication protocols ensures easy installation and connectivity now and far into the future.

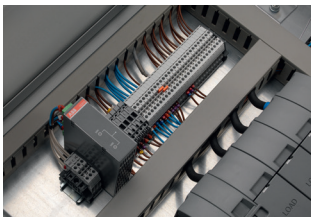
— 01

— 02

Ordering Information

Enclosed ATS

Mimic panel on front door for easy identification.



Features and benefits:

- I-O-II –operation with stable OFF position between positions I and II

I-O-II Delayed transition - Open style operation

Description	Enclosure Size (mm)	Order code
40A 4 pole ATS with adjustable time and voltage settings	600 x 400 x 200	OTCOM40F4D21-SR
63A 4 pole ATS with adjustable time and voltage settings	600 x 400 x 200	OTCOM63F4D21-SR
125A 4 pole ATS with adjustable time and voltage settings	600 x 400 x 200	OTCOM125F4D21-SR

Delayed transition – Open style, Level 2 DIP controls

"Bottom entry - Source 1 and Source 2 connections on bottom, load connections on top Modbus available on request

Description	Enclosure Size (mm)	Order code
160A 4 pole ATS with level 2 controller	600 x 600 x 250	OTOne160E4L2SR
250A 4 pole ATS with level 2 controller	600 x 600 x 250	OTOne250E4L2SR
400A 4 pole ATS with level 2 controller	800 x 600 x 300	OTOne400E4L2SR
630A 4 pole ATS with level 2 controller	1000 x 800 x 400	OTOne630E4L2SR
800A 4 pole ATS with level 2 controller	1000 x 800 x 400	OTOne800E4L2SR
1000A 4 pole ATS with level 2 controller	1400 x 800 x 500	OTOne1000E4L2SR
1250A 4 pole ATS with level 2 controller	1400 x 800 x 500	OTOne1250E4L2SR
1600A 4 pole ATS with level 2 controller	1400 x 800 x 500	OTOne1600E4L2SR

Delayed transition – Open style, Level 3 LCD controls

Bottom entry - Source 1 and Source 2 connections on bottom, load connections on top

Communication modules to be ordered separately.

Description	Enclosure Size (mm)	Order code
160A 4 pole ATS with level 3 controller	600 x 600 x 250	OTOne160E4L3SR
250A 4 pole ATS with level 3 controller	600 x 600 x 250	OTOne250E4L3SR
400A 4 pole ATS with level 3 controller	800 x 600 x 300	OTOne400E4L3AM
630A 4 pole ATS with level 3 controller	1000 x 800 x 400	OTOne630E4L3AM
800A 4 pole ATS with level 3 controller	1000 x 800 x 400	OTOne800E4L3AM
1000A 4 pole ATS with level 3 controller	1400 x 800 x 500	OTOne1000E4L3AM
1250A 4 pole ATS with level 3 controller	1400 x 800 x 500	OTOne1250E4L3AM
1600A 4 pole ATS with level 3 controller	1400 x 800 x 500	OTOne1600E4L3SAM

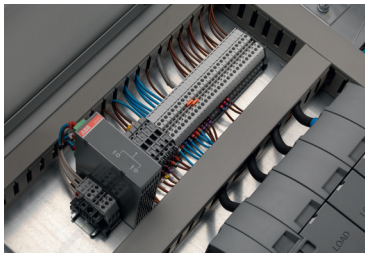
Ordering Information

Enclosed ATS single and dual bypass

Mimic panel on front door for easy identification.

Features and benefits:

- I-O-II –operation with stable OFF position between positions I and II



Delayed transition – I-O-II Level 3 LCD controller

Description	Enclosure Size (mm)	Order code
40A 4 pole level 3 controller ATS, single bypass	1000 x 800 x 300	OTOne40E4L3SBSR
63A 4 pole level 3 controller ATS, single bypass	1000 x 800 x 300	OTOne63E4L3SBSR
100A 4 pole level 3 controller ATS, single bypass	1000 x 800 x 300	OTOne100E4L3SBSR
160A 4 pole level 3 controller ATS, single bypass	1200 x 1000 x 400	OTOne160E4L3SBSR
250A 4 pole level 3 controller ATS, single bypass	1200 x 1000 x 400	OTOne250E4L3SBSR
400A 4 pole level 3 controller ATS, single bypass	1200 x 1000 x 400	OTOne400E4L3SBAM
630A 4 pole level 3 controller ATS, single bypass	1600 x 1200 x 600	OTOne630E4L3SBAM
800A 4 pole level 3 controller ATS, single bypass	1600 x 1200 x 600	OTOne800E4L3DBAM

Description	Enclosure Size (mm)	Order code
40A 4 pole level 3 controller ATS, dual bypass	1000 x 800 x 300	OTOne40E4L3DBSR
63A 4 pole level 3 controller ATS, dual bypass	1000 x 800 x 300	OTOne63E4L3DBSR
100A 4 pole level 3 controller ATS, dual bypass	1000 x 800 x 300	OTOne100E4L3DBSR
160A 4 pole level 3 controller ATS, dual bypass	1200 x 1000 x 400	OTOne160E4L3DBSR
250A 4 pole level 3 controller ATS, dual bypass	1200 x 1000 x 400	OTOne250E4L3SBSR
400A 4 pole level 3 controller ATS, dual bypass	1200 x 1000 x 400	OTOne400E4L3DBAM
630A 4 pole level 3 controller ATS, dual bypass	1600 x 1200 x 600	OTOne630E4L3DBAM
800A 4 pole level 3 controller ATS, dual bypass	1600 x 1200 x 600	OTOne800E4L3DBAM

Ordering Information

Enclosed ATS with overlapping neutral with no bypass, single bypass and dual bypass

Features and benefits:

- I-II operation without stable OFF position
- Delivery includes handle for manual operation

Open transition – Open style, Level 3 LCD controller with overlapping neutral. I-II Operation
Bottom entry - Source 1 and Source 2 connections on bottom, load connections on top

Description	Enclosure Size (mm)	Order code
60A 4 pole with TruOne level 3 controller & overlapping neutral	600 x 600 x 250	OTOne60E4L3OLNSR
100A 4 pole with TruOne level 3 controller & overlapping neutral	600 x 600 x 250	OTOne100E4L3OLNSR
160A 4 pole with TruOne level 3 controller & overlapping neutral	600 x 600 x 250	OTOne160E4L3OLNSR
200A 4 pole with TruOne level 3 controller & overlapping neutral	600 x 600 x 250	OTOne200E4L3OLNSR
250A 4 pole with TruOne level 3 controller & overlapping neutral	600 x 600 x 250	OTOne250E4L3OLNSR
400A 4 pole with TruOne level 3 controller & overlapping neutral	800 x 600 x 300	OTOne400E4L3OLNSR
630A 4 pole with TruOne level 3 controller & overlapping neutral	1000 x 800 x 400	OTOne630E4L3OLNSR
800A 4 pole with TruOne level 3 controller & overlapping neutral	1000 x 800 x 400	OTOne800E4L3OLNSR

Description	Enclosure Size (mm)	Order code
60A 4 pole with TruOne level 3 controller & overlapping neutral	1000 x 800 x 300	OTOne60E4L3OLNSBSR
100A 4 pole with TruOne level 3 controller & overlapping neutral	1000 x 800 x 300	OTOne100E4L3OLNSBSR
160A 4 pole with TruOne level 3 controller & overlapping neutral	1000 x 800 x 300	OTOne160E4L3OLNSBSR
200A 4 pole with TruOne level 3 controller & overlapping neutral	1200 x 1000 x 400	OTOne200E4L3OLNSBSR
250A 4 pole with TruOne level 3 controller & overlapping neutral	1200 x 1000 x 400	OTOne250E4L3OLNSBSR
400A 4 pole with TruOne level 3 controller & overlapping neutral	1200 x 1000 x 400	OTOne400E4L3OLNSBAM
630A 4 pole with TruOne level 3 controller & overlapping neutral	1600 x 1200 x 600	OTOne630E4L3OLNSBAM
800A 4 pole with TruOne level 3 controller & overlapping neutral	1600 x 1200 x 600	OTOne800E4L3OLNSBAM

Description	Enclosure Size (mm)	Order code
60A 4 pole with TruOne level 3 controller & overlapping neutral	1000 x 800 x 300	OTOne60E4L3OLNDBSR
100A 4 pole with TruOne level 3 controller & overlapping neutral	1000 x 800 x 300	OTOne100E4L3OLNDBSR
160A 4 pole with TruOne level 3 controller & overlapping neutral	1000 x 800 x 300	OTOne160E4L3OLNDBSR
200A 4 pole with TruOne level 3 controller & overlapping neutral	1200 x 1000 x 400	OTOne200E4L3OLNDBSR
250A 4 pole with TruOne level 3 controller & overlapping neutral	1200 x 1000 x 400	OTOne250E4L3OLNDBSR
400A 4 pole with TruOne level 3 controller & overlapping neutral	1200 x 1000 x 400	OTOne400E4L3OLNDBAM
630A 4 pole with TruOne level 3 controller & overlapping neutral	1600 x 1200 x 600	OTOne630E4L3OLNDBAM
800A 4 pole with TruOne level 3 controller & overlapping neutral	1600 x 1200 x 600	OTOne800E4L3OLNDBAM

Accessories

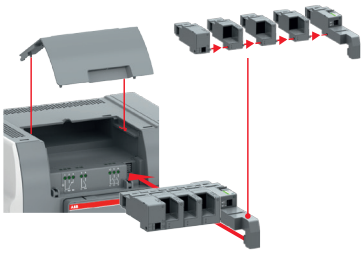
Automatic transfer switches

OXEA1

Auxiliary power supply module

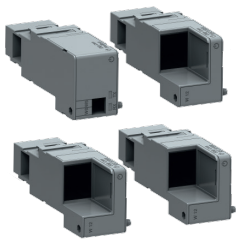
The OXEA1 auxiliary power supply module is used for: a) connecting connectivity modules (signalling and communication) to the switch b) powering the ATS controller and connectivity modules from auxiliary 12-24 Vdc power supply, to keep them operational during power failures. A 12-24 Vdc power supply is not required when line power is available but it is necessary to keep the modules operational during power failures.

Suitable for switches	Aux voltage	Type	Weight/unit kg	Order code
OX30...1600	12-24Vdc	OXEA1	0.04	1SCA148926R1001



Connectivity modules

The connectivity modules are used in combination with OXEA1 auxiliary power supply module to enable communication capabilities (Ekip Com modules) and increase the number of digital inputs and outputs (Ekip Signalling modules). The maximum number of additional modules depends on the TruONE switch size: IEC 200-400 Amps and UL 30-260 Amps can fit three additional modules and IEC 500-1600 Amps and UL 400-1200 Amps can fit four additional modules. These modules are available with TruONE Level 3 and Level 4 controllers.



EKIP COM

Communication modules for Level 3 and Level 4 controllers

The Ekip Com modules enable TruONE to be integrated in an industrial communication network for remote supervision and control of the switch. Several Ekip Com modules can be installed at the same time, thereby enabling connection to communication systems that use different protocols. The Ekip Com modules for Modbus RTU, Profibus-DP and DeviceNet contain a terminating resistor and DIP switch for optional activation to terminate the serial network or bus. The Profibus-DP module also contains a polarisation resistor and DIP switch for its activation.

Suitable for switches	Protocol	Type	Weight/unit kg	Order code
OX30...1600	Modbus RTU	Ekip Com Modbus RTU-OX	0.2	1SDA104051R1
OX30...1600	Modbus TCP	Ekip Com Modbus TCP-OX	0.2	1SDA104052R1
OX30...1600	Profibus DP	Ekip Com Profibus	0.2	1SDA074152R1
OX30...1600	Profinet	Ekip Com Profinet	0.2	1SDA074153R1
OX30...1600	EtherNet/IP	Ekip Com EtherNet / IP	0.2	1SDA074155R1
OX30...1600	DeviceNet	Ekip Com DeviceNet	0.2	1SDA074154R1

Accessories

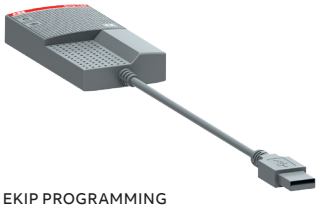
Automatic transfer switches

EKIP 2K SIGNALLING

The Ekip 2K Signalling modules add two input and two output contacts for controlling and remote signalling. They can be programmed with the HMI unit's display or with the Ekip Connect software. Three versions of the Ekip 2K Signalling modules are available: Ekip 2K-1, Ekip 2K-2, Ekip 2K-3. Simultaneous usage of same types is not possible.

Signalling modules for Level 3 and Level 4 controllers

Suitable for switches	No. of DI/DO	DI/DO numbering	Type	Weight/unit kg	Order code
OX30...1600	2/2	11,12/11,12	Ekip Signalling 2K-1-OX	0.2	1SDA104053R1
OX30...1600	2/2	21,22/21,22	Ekip Signalling 2K-2-OX	0.2	1SDA104054R1
OX30...1600	2/2	31,32/31,32	Ekip Signalling 2K-3-OX	0.2	1SDA104055R1



EKIP PROGRAMMING

The Ekip Programming module is used for programming TruONE via USB to a PC using the Ekip Connect software that can be downloaded online. It enables both online (line power available) and offline (no line power available) programming. Available for TruONE Level 3 and Level 4 controllers.

Ekip programming module

Suitable for switches	Type	Weight/unit kg	Order code
OX30...1600	Ekip Programming	0.2	1SDA076154R1

EKIP COM HUB

Ekip Com Hub is a communication module for cloud-based connectivity through the ABB Ability™ Electrical Distribution Control System (EDCS). TruONE equipped with Ekip Com Hub can establish the connection to ABB Ability for the whole low-voltage power distribution panel. This dedicated cartridge-type communication module just needs to be inserted into the TruONE and connected to the internet. For further information related to ABB Ability and Electrical Distribution Control System, please visit the dedicated website https://new.abb.com/low-voltage/launches/abb-ability-edcs. Available for TruONE Level 3 and Level 4 controllers.

Ekip com hub

Suitable for switches	Type	Weight/unit kg	Order code
OX30...1600	Ekip Programming	0.2	1SDA076154R1

Accessories

Automatic transfer switches

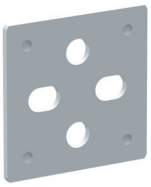
OXEB_

Phase barriers

Grey plastic barriers for maintaining 1" clearance between the phases without terminal shrouds. Snap-on mounting. Included as standard for the LOAD side terminals with IEC 500-1600 Amps and UL 400-1200 Amps.

Suitable for switches	No. of poles	Units/type [pcs]	Type	Weight/unit kg	Order code
OX30...1600	3	4	OXEB1600/4	0.5	1SCA150201R1001
OX30...1600	4	6	OXEB1600/6	0.7	1SCA150202R1001

Note: Phase barriers cannot be used together with terminal shrouds.



OXEW1600_

Wide blade kit

This is required for IEC 1000-1600 A and UL 800-1200 A switches on the LOAD side terminals, when wiring is done with four cables and using mechanical compression lugs.

Suitable for switches	No. of poles	Units/type [pcs]	Type	Weight/unit kg	Order code
IEC 1000-1600 Amps UL 800-1200 Amps	3	6	OXEW1600/3	1.38	1SCA150204R1001
	4	8	OXEW1600/4	1.83	1SCA150205R1001

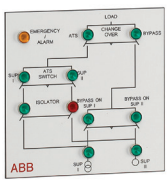
Note: These codes are only for spare part purposes as the items are already included in the standard delivery.

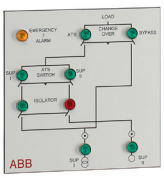
OXEC21

Wide blade kit

IP54 padlockable transparent cover, providing protection against accidental contact.

Suitable for switches	Type	Weight/unit kg	Order code
OX30...1600	OXEC21	0.18	1SCA147308R1001





Mimic panels (Single/Dual Bypass)

Description	Dimensions (mm)	Order code
Mimic Panel for Dual ByPass ATS	200 x 200 x 80	01MimicDB
Mimic Panel for Single ByPass ATS	200 x 200 x 80	01MimicSB

Note: Other options available upon request.

Accessories

Automatic transfer switches

OA1G01AU

Mounting on the right side of the switch: Max. 4 auxiliary contact blocks / Source 1 and Source 2 position indication (totally 8 blocks). Types _AU have gold plated contacts for harsh environments and low operating voltages. Simultaneous action with the main contacts, IP20.

Auxiliary contacts

Suitable for switches	Contact functions	Installation side	Delivery batch [pcs]	Type	Weight/unit kg	Order code
OX30...1600	1NO	Right	10	OA1G10	0.03	1SCA022353R4970
OX30...1600	1NC	Right	10	OA3G01	0.03	1SCA022456R7410
OX30...1600	1NO	Right	10	OA1G10AU	0.03	1SCA022436R7910
OX30...1600	1NC	Right	10	OA3G01AU	0.03	1SCA022819R5260

OA1G10

Auxiliary contacts - Technical data for auxiliary contacts according to IEC 60947-5-1, for OA1G_, OA3G_

AC15		DC12			DC13	
Ue/[V]	Ie/[A]	Ue/[V]	Ie/[A]	P/[W]	Ie/[A]	P/[W]
230	6	24	10	240	2	50
400	4	72	4	290	0.8	60
415	4	125	2	250	0.55	70
690	2	250	0.55	140	0.27	70
		440	0.1	44		

OA3G01

Auxiliary contacts - Function table for auxiliary contacts / Source 1 position (max. 2+2)

Switch position	Main contacts	OA1G10 NO	OA3G01 NC
I	closed	closed	open
0	open	open	closed
II	closed	open	closed

OA3G01AU

Auxiliary contacts - Function table for auxiliary contacts / Source 2 position (max. 2+2)

Switch position	Main contacts	OA1G10 NO	OA3G01 NC
I	closed	open	closed
0	open	open	closed
II	closed	closed	open

Enclosed switches
Switch solutions - Functionality and features

Enclosed switches are designed and used as main switches for applications, which need to be isolated from the network. The range includes front operated and side operated switch disconnectors, switch fuses and changeover switches enclosed in plastic, steel sheet or stainless steel sheet and aluminium enclosures. They are rated for utilization categories including disconnecting as well as making and breaking the load. In addition the switch fuses equipped with fuse links protects the application and the cables from overload currents and short circuits.

Plastic enclosures
The plastic enclosures are most suitable for locations with high chemical and moisture requirements. In addition they are light and easy to install and handle.

Steel sheet enclosures
The steel sheet enclosures are hot dip galvanized and the surface is polyester powder painted. The enclosures are durable and robust for various environments.

Stainless steel sheet enclosures
The stainless steel sheet enclosures are made of AISI 304 stainless steel. They are used particularly in the food and beverage industry and in locations where high hygiene is required. The smooth surface does not require any painting and is easy to clean.

Aluminium alloy enclosures
Aluminium enclosures have very good impact strength and protection against UV light. They are suitable both for indoor and outdoor use in medium to heavy-duty applications.

Safety for personnel – reliable position indication
- Padlocking in the OFF-position with one, three or six (with the shackle L6) padlocks against unintentional start-up.
- The handle cannot be padlocked in the OFF-position if one of the contacts is not in the OFF-position.
- The cover cannot be removed if the handle is padlocked.
- Door interlock in the ON-position.
- Arc proof, short circuit durability function: Expander washers in aluminium enclosures with I_e > 160 A and door locking release in large metal sheet enclosures type MSC.
- Door interlock defeatable with rectangular and pistol type handles.

Switchgear - Loadbreak and safety switches

IP65 Double insulated enclosure

Load Break Switches 3 - 4 pole 9...37kW

- IP65 three and four-pole switch disconnectors suitable for load break switching or isolation.
- Polycarbonate enclosure. IEC 60947-3

Polycarbonate enclosure 9kW ... 11kW 3 pole

Rating@415v			Dimensions (mm)			
1th A	AC22	kW	H	W	D	Order code
32	25	9	125	100	107	S37K5N-A
40	40	11				S315KN-A
Polycarbonate enclosure 9kW ... 37kW 4 pole						
32	25	9	125	100	107	S47K5N-A
40	40	11				S415KN-A
63	63	22	170	140	108	S418KN-A
80	80	37				S426KN-A

- IP65 rated
- Grey plastic enclosure
- Standard handle - Red/Yellow (padlockable in the off position)
- Cable entries top and bottom
- All OTP16 (excluding 3p) /25/32 all have 25/20mm reducers

Polycarbonate enclosure 9kW ... 37kW 4 pole

Rating@415v					Dimensions (mm)			
1th A	AC22	AC23	kW	No. Poles	H	W	D	Order code
25	16	16	7.5	3 + solid neutral	150	130	60	OTP16BA3M
				4				OTP16BA4MS
				6				OTP16BA6M
32	25	20	9	3 + solid neutral	150	130	60	OTP25BA3M
				4				OTP25BA4M
				6				OTP25BA6M
40	40	23	11	3 + neutral	150	130	60	OTP32BA3M
				4				OTP32BA4M
				6				OTP32BA6M
63	63	45	22	3 + solid neutral	200	145	90	OTP45BA3M
				4				OTP45BA4M
				6				OTP45BA6M
80	80	75	37	3 + solid neutral	200	145	90	OTP63BA3M
				4				OTP63BA4M
				6				OTP63BA6M
125	125	90	45	3 + solid neutral	400	200	140	OTP125BA3U
				4				OTP125BA4U
				6				OTP125BA6U
Safety switches 3 pole 16...40 amps								
25	16	16	7.5	3	150	130	60	OTP16B3M
32	25	20	9	3	150	130	60	OTP16B3M
40	40	23	11	3	150	130	60	OTP32B3U

Switchgear - Loadbreak switches

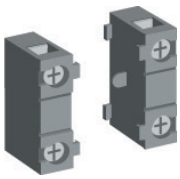
IP65 Steel enclosure

- IP65 rated **(not suitable for external installation)**
- Powder coated textured finish (RAL 7035)
- All 3 pole switches include detachable neutral link (OT160 solid link)
- Hinged lid complete with lock
- Padlockable pistol grip handle as standard
- Removable gland plates fitted top and bottom
- Spreader boxes available see below

Load break switches 3 - 4 pole 9...37kW

Rating@415v			Dimensions (mm)				
1th A	AC22	AC23	H	W	D	No. Poles	Order code
32	25	20	300	200	150	3 + solid neutral	OT20TPN-A
						4	OT20FP-A
40	40	23	300	200	150	3 + solid neutral	OT32TPN-A
						4	OT32FP-A
80	80	75	300	300	150	3 + solid neutral	OT63TPN-A
						4	OT63FP-A
115	100	80	400	300	150	3 + solid neutral	OT100TPN-A
						4	OT100FP-A
125	125	90	400	300	150	3 + solid neutral	OT125TPN-A
						4	OT125FP-A
160	160	135	500	400	200	3 + solid neutral	OT160TPN-A
						4	OT160FP-A
200	200	200	500	400	200	3 + solid neutral	OT200TPN-A
						4	OT200FP-A
315	315	315	500	400	200	3 + solid neutral	OT315TPN-A
						4	OT400FP-A
500	500	500	500	400	200	3 + solid neutral	OT400TPN-A
						4	OT400TPN-A
630	630	630	600	400	250	3 + solid neutral	OT630TPN-A
						4	OT630FP-A
800	800	800	600	400	250	3 + solid neutral	OT800TPN-A
						4	OT800TPN-A

Spreader boxes



	Suitable for Loadbreak Switches	Spreader Box Order code	Spreader Box Gasket Order code
	OT20, OT32, OT63, OT100, OT125	Not Required	Not Required
	OT160, OT200, OT315, OT400	SRN5420K	GZ4020
	OT630, OT800	SRN6425K	GZ4025
	Wall Mounting Brackets (Pack of 4)		AA1206
	Auxiliary Contacts		
	1 N/O	OA1G10	OA1G10
	1 N/C - only for OT20-125_	OA1G01	OA1G01
	1 N/C - only for OT200 and above	OA3G01	OA3G01
	1 N/O - 1 N/C - OT20-125 and OT160 only	OA2G11	OA2G11
	Mounting module for OA2G11 - for OT160 only	OAZX1	OAZX1

Switchgear - Switch fuses

IP65 Steel enclosure

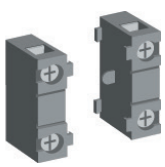
- IP65 rated **(not suitable for external installation)**
- Powder coated textured finish (RAL 7035)
- All switches are supplied with fuses and removable gland plates
- All 3 pole switches include detachable neutral link (OT160 solid link)
- Switch Fuses are internally rated IP20 on incoming terminals up to 63A
- Hinged lid complete with lock
- Padlockable pistol grip handle as standard
- Switch Fuses 100A are supplied with incoming terminal shrouds (NOT FITTED) to allow customer connections
- Spreader boxes available see below

3 - 4 pole 20 ... 800A

	AC23 [kW]			Dimensions (mm)					
1th A	400V	500V	690V	H	W	D	No. Poles	Fuse Type	Order code
20	7.5	11	15	300	300	150	3+detach neutral	A1	OS20TPN-A
							4		OS20FP-A
32	15	18	25	300	300	150	3+detach neutral	A2	OS32TPN-A
							4		OS32FP-A
63	30	37	55	400	300	150	3+detach neutral	A2/A3	OS63TPN-A
							4		OS63FP-A
100	55	55	90	400	300	150	3+detach neutral	A2/A3	OS100TPN-A
							4		OS100FP-A
125	55	75	110	400	300	150	3+detach neutral	A2/A3	OS125TPN-A
							4		OS125FP-A
160	75	90	132	500	400	200	3 + solid neutral	A3/A4	OS160TPN-A
							4		OS160FP-A
200	110	132	200	600	400	250	3+detach neutral	B1/B2	OS200TPN-A
							4		OS200FP-A
315	160	220	220	600	400	250	3+detach neutral	B1/B4	OS315TPN-A
							4		OS315FP-A
400	220	280	400	600	400	250	3+detach neutral	B1/B4	OS400TPN-A
							4		OS400FP-A
630	355	450	560	600	600	300	3+detach neutral	C1/C2	OS630TPN-A
							4		OS630FP-A
800	450	560	710	600	800	300	3+detach neutral	C1/C2	OS800TPN-A
							4		OS800FP-A

Note: OT630 & OT800 TPN/FP products are made to order and are non-stock items

Spreader boxes



Suitable for Loadbreak Switches	Order code	Spreader Box Order code	Order code	Spreader Box Gasket Order code
OS20 - OS125	Not Required	–	Not Required	Not Required
OS160	SRN5420K	SRN5420K	GZ4020	GZ4020
OS200 - OS400	SRN6425K	SRN6425K	GZ4025	GZ4025
OS630 - OS800	SRN8530K	SRN8530K	GZ6030	GZ6030
Wall Mounting Brackets (Pack of 4)			AA1206	AA1206

Auxiliary Contacts		
1 N/O	OA1G10	OA1G10
1 N/C	OA1G01	OA1G01
1 N/O - 1 N/C	OA3G01	OA3G01
1 x CO contact - only for products OS20_/OS32_	OA2G11	OA2G11
Mounting frame to fit OA1/OA3 aux on left side of OS20/0S32 switch fuse (only for OS20_/OS32_	OAZX1	OAZX1

The CMS system allows users to measure AC and DC currents for up to 64 individual lines. Data can be remotely monitored via desktop or mobile device app.

Technical details

086-090 **Protecta Plus Enclosures**

091-092 **Protecta Power Enclosures**

093-098 **MCBs**

099-103 **RCBOs / RCDs**

104-109 **Din Rail Meters & Panel Meters**

110 **CMS**

111 **Contactors**

112-115 **Time switches/Twilight switches**

116-129 **Tmax XT MCCBs**

130-131 **MCCB Max Zs**

132-137 **Protecta Power MCCBs**

Protecta Plus

Technical specification and dimensions

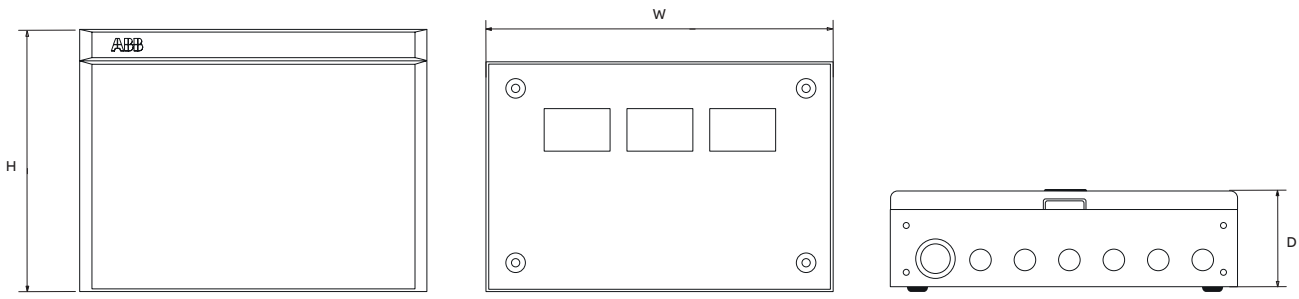
Technical features - Type A

Description	
Standards/requirements	IEC BS EN 61439 1-3
Rated current	
Maximum load	100A
Rated operational voltage (Ue)	230v AC
Rated frequency	50 Hz
Rated conditional short circuit current	17kA
Rated insulation voltage	280v AC
Incoming disconnector rating	100A 2P
Mechanical	
Degree of protection (with door)	IP41
Mechanical strength	IK07
Material	Cold rolled steel 1mm
Colour	RAL 7035
Coating type	Electrostatic powder coating, textured finish
Door opening angle	120°
Position of knockouts	Top, Bottom & Rear
Door closure	Padlock
Incoming cable size	50mm / 16mm - LN/E

01Type A Distribution boards

Type A Distribution boards

	Height mm	Width mm	Depth mm
EPP-W102 - 2 outgoing ways	250	190	130
EPP-W104 - 4 outgoing ways	250	190	130
EPP-W108 - 8 outgoing ways	250	260	130
EPP-W112 - 12 outgoing ways	250	330	130
EPP-W116 - 16 outgoing ways	250	400	130
EPP-W120 - 20 outgoing ways	250	470	130



01

Protecta Plus

Technical specification and dimensions

Technical features - Type B

Description		
Standards/requirements		IEC BS EN 61439-1&2
Rated current		
Maximum load		250A at ambient temperature +35°
Rated operational voltage (Ue)		415 V AC
Rated frequency		50/60 Hz
Rated insulation voltage (Ui)		690 V
Rated conditional short circuit current (Icc)		35 kA
Neutral size		2 Brass bar each size (7*10) mm
Earth size		2 Brass bars each size (7*10) mm
Degree of protection	With Door	IP 43
	Pan Assembly	IP 20
Mechanical impact strength	Cabinet enclosures	IK 07
Housing and door material		
Material Type		Cold rolled sheet steel 1 mm
Color		RAL 7035
Coating Type (Powder or)		Electrostatic powder coating, textured finish
Door opening angle		180°
Position of knockouts		Top and bottom
Type of Door Closure		Latch (Optional Lock)
Incoming cable connections*		125A >50 mm
		160A >70 mm
		250A >95 mm

Protecta Plus
Dimensions

01 Type B Distribution boards

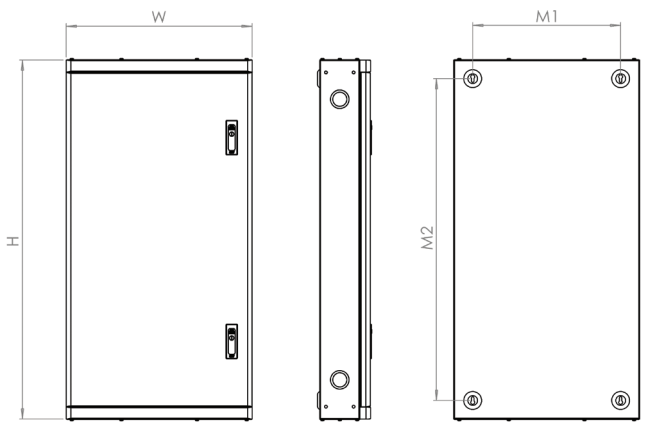
02 Extension boxes

Type B Distribution boards

	Height mm	Width mm	Depth mm	M1 mm	M2 mm
EPP-W304	590	450	125	358	500
EPP-R2036	590	450	125	358	500
EPP-W308	730	450	125	358	640
EPP-R3054	730	450	125	358	640
EPP-W312	870	450	125	358	780
EPP-R4072	870	450	125	358	780
EPP-W316	1,050	450	125	358	960
EPP-R5090	1,050	450	125	358	960
EPP-W320	1,220	450	125	358	1,130
EPP-R6108	1,220	450	125	358	1,130
EPP-W324	1,360	450	125	358	1,270
EPP-R7126	1,360	450	125	358	1,270

Extension boxes

	Height mm	Width mm	Depth mm	M1 mm	M2 mm
EPP-EB20	200	450	125	358	110
EPP-EB40	400	450	125	358	310
EPP-R1016	200	450	125	358	110
EPP-R2032	400	450	125	358	310
EPP-CON	500	450	125	358	410



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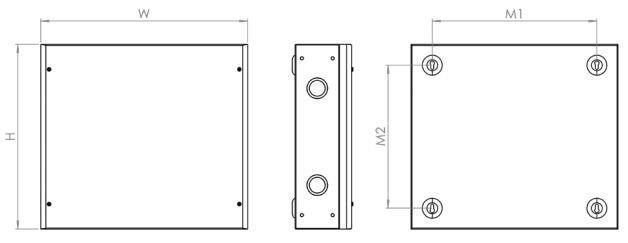


02

Protecta Plus
Dimensions

01 Horizontal split-load boards

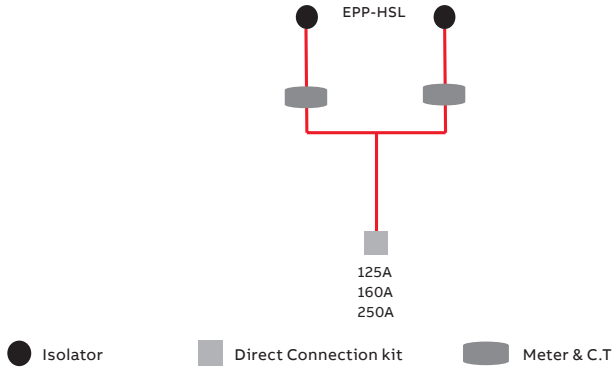
02 Connection philosophy

01 / 02 Horizontal split-load boards

	Height mm 125/160A	Height mm 250A	Width mm	Depth mm
EPP-HSL 2x4way	990	1,190	900	125
EPP-HSL 2x8way	1,130	1,330	900	125
EPP-HSL 2x12way	1,270	1,470	900	125
EPP-HSL 2x16way	1,450	1,650	900	125
EPP-HSL 2x20way	1,620	1,820	900	125
EPP-HSL 2x24way	1,760	1,960	900	125

EPP-HSL kits are aligned from the base of the DB.

01



02

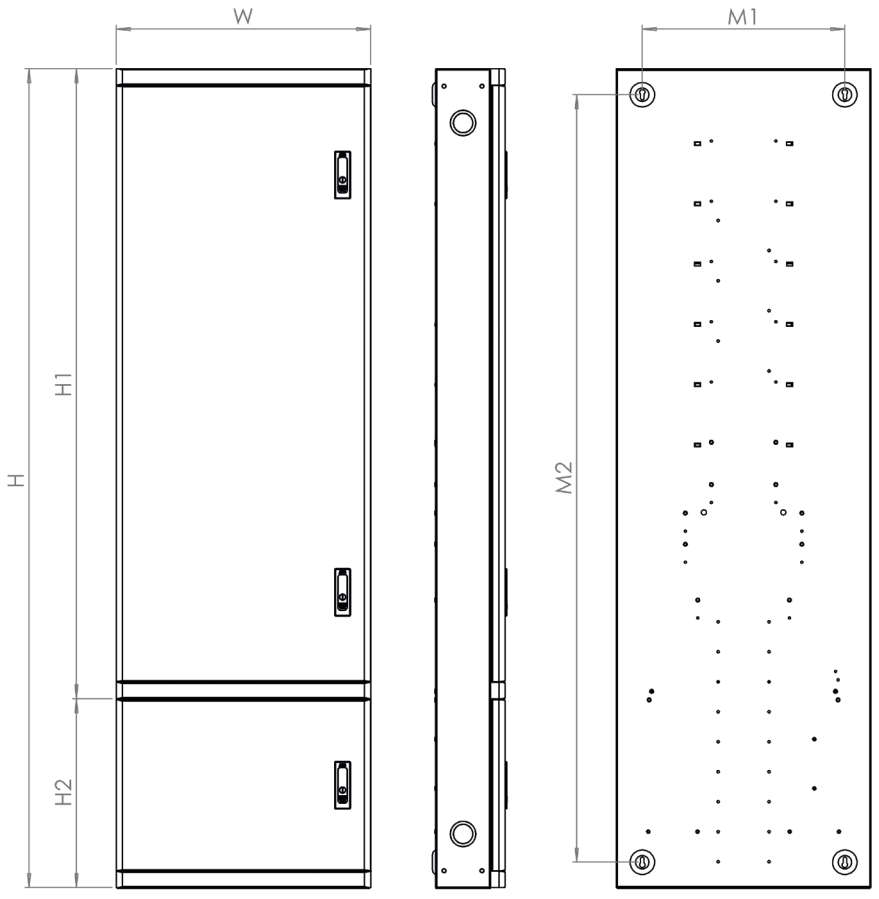
Protecta Plus
Dimensions

— 01 Vertical split-load board

— 02 Metering layout

125/160/250A	Height mm	Width mm	Depth mm	M1 mm	M2 mm
EPP-VSL 8+4	1,090	450	125	358	1,000
EPP-VSL 8+8	1,270	450	125	358	1,180
EPP-VSL 12+8	1,440	450	125	358	1,350
EPP-VSL 12+12*	1,580	450	125	358	1,490
EPP-VSL 16+8*	1,580	450	125	358	1,490
EPP-VSL 8+4+4*	1,380	450	125	358	1,290
EPP-VSL 12+4+4*	1,690	450	125	358	1,600

* Please ensure RCBO lead lengths are considered.



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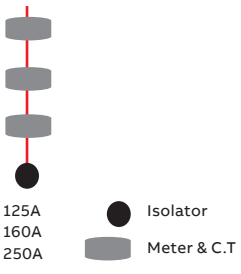


— 02

Protecta Power

Technical specification and dimensions

Technical features

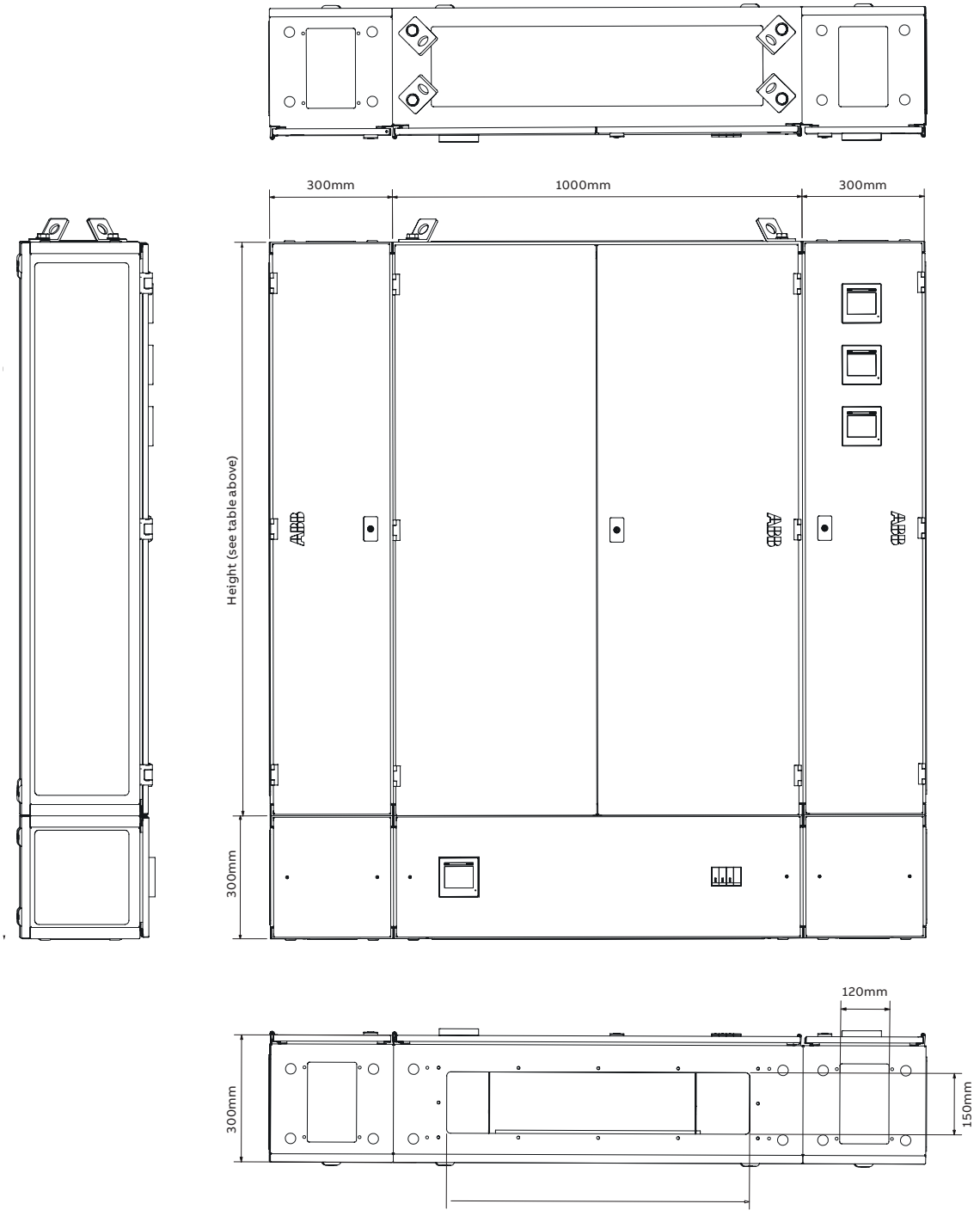
Description		
Standards/requirements		IEC BS 61439-1&2 / IEC EN 61439-1&2
Electrical Characteristics		
Maximum load		800A at ambient temperature 35°
Rated operational voltage (Ue)		415 V AC
Rated frequency		50 Hz
Rated insulation voltage (Ui)		1000 V
Rated Impulse Withstand Voltage		8KV
Rated Short circuit withstand (Icw)		50 kA @ 1s
Neutral size		1 Copper bar at each side (30*10) mm
Earth size		1 Copper bar at each side (30*10) mm
Segregation Form		Form 3b type 2 (3P solution)
		Form 4b type 6 (4P solution)
Mechanical Characteristics		
Degree of protection		IP 43 (With Door)
		Busbar system IPxxB (finger safe)
Mechanical impact strength		IK 07
Housing and door material		
Material Type		Cold rolled sheet steel 1.5 mm
Color		RAL 7035
Coating Type		Powder coating, textured finish
Door opening angle		180°
Type of Door Closure		3 Point Lock
Gland Plate		Removable Top, bottom & Sides

Protecta Power
Dimensions

01
Protecta Power
Panelboard

Protecta Power Panelboard

	Height mm
EPX-PB408	1400
EPX-PB808	1400
EPX-PB412	1700
EPX-PB812	1700
EPX-PB418	2000
EPX-PB818	2000



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MCBs technical details
Definitions according to standards for miniature circuit breakers

Rated insulation voltage (U_i) according IEC/EN 60664-1:
Root mean square (R.M.S.) withstand voltage value assigned by the manufacturer to the equipment or to a part of it, characterizing the specified (long-term) withstand capability of its insulation.

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The rated insulation voltage is not necessarily equal to the rated voltage of the equipment which is primarily related to functional performance.

IEC/EN 60898-1
Miniature Circuit Breakers according IEC/EN 60898-1 are intended for the protection against over-currents of wiring installations in buildings and similar applications; they are designed for use by uninstructed people and for not being maintained.

This part of IEC/EN 60898 applies for a.c. air-break circuit-breakers for operation at 50 Hz or 60 Hz, having a rated voltage not exceeding 440 V (between phases), a rated current not exceeding 125 A and a rated short-circuit capacity not exceeding 25,000 A. As far as possible, it is in line with the requirements contained in IEC/EN 60947-2.

Rated short-circuit capacity (Icn)
The rated short-circuit capacity of a circuit-breaker is the value of the ultimate short-circuit breaking capacity assigned to that circuit-breaker by the manufacturer.
The sequence of operations shall be: O – t – CO

Service short-circuit capacity (Ics)
A circuit-breaker having a given rated short-circuit capacity has a corresponding fixed service short-circuit capacity (Ics).
This is therefore generally not indicated.

Rated operational voltage (U_n)
The rated voltage of a circuit-breaker is the value of voltage, assigned by the manufacturer, to which its performance (particularly the short-circuit performance) is referred.
The same circuit-breaker may be assigned a number of rated voltages and associated rated short-circuit capacities.

The voltage which appears across the terminals of a pole of a circuit-breaker after the breaking of the current.

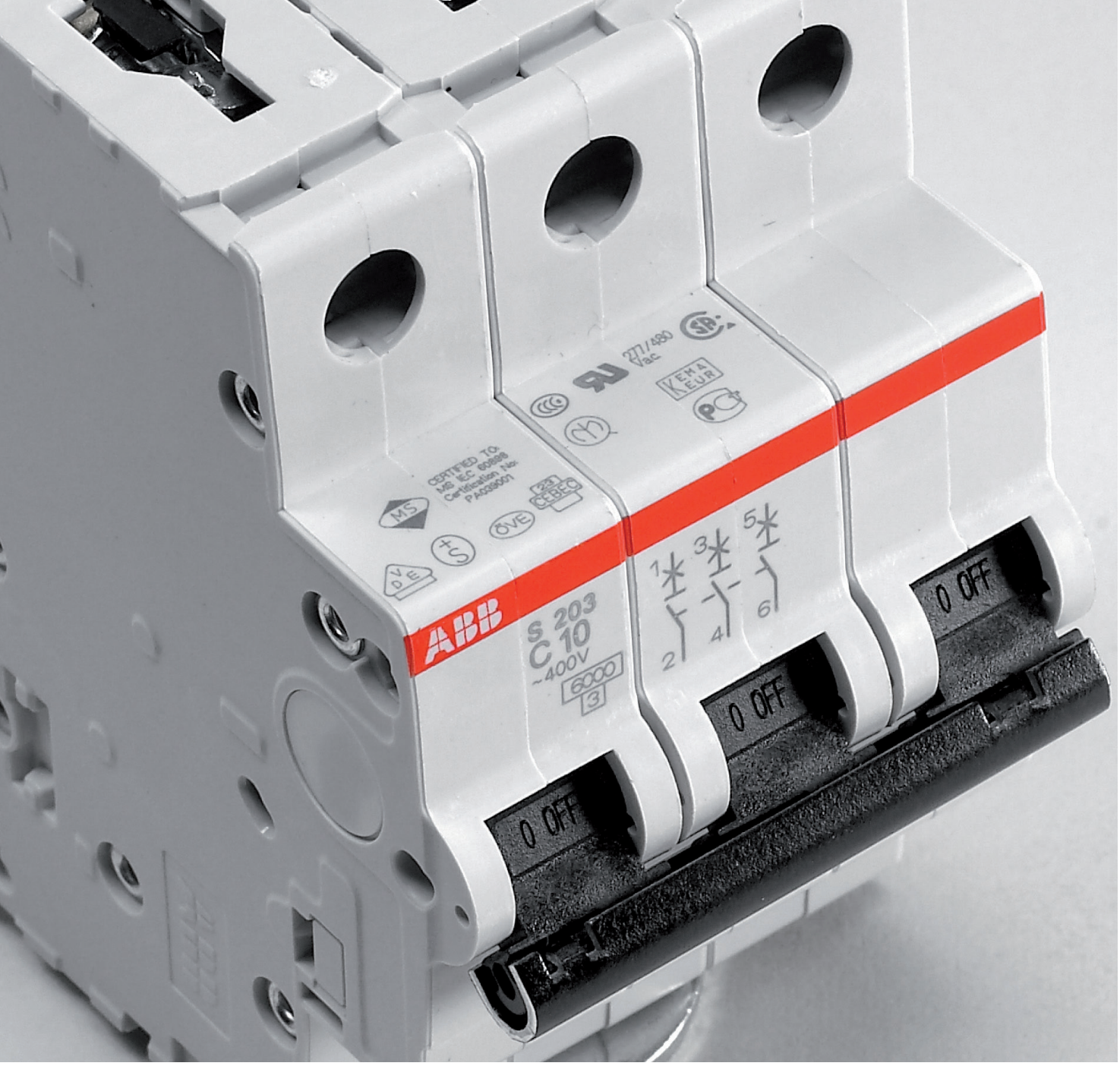
The value of the power frequency recovery voltage shall be equal to 110% of the rated voltage of the circuit-breaker under test.

IEC/EN 60947-2
This part of the IEC/EN 60947 applies to circuit-breakers, the main contacts of which are intended to be connected to circuits, the rated voltage of which does not exceed 1,000 V AC or 1,500 V DC
It applies whatever the rated currents, the method of construction or the proposed applications of the circuit-breakers may be.
The circuit-breakers are designed for use by instructed people.

Rated ultimate short-circuit breaking capacity Icu
The rated ultimate short-circuit breaking capacity of a circuit-breaker is the value of ultimate short-circuit breaking capacity assigned to that circuit-breaker by the manufacturer for the corresponding rated operational voltage.
It is expressed as the value of the prospective breaking current, in kA (r.m.s. value of the AC component in the case of AC).

The sequence of operations shall be: O – t – CO

Rated service short-circuit breaking capacity Ics
The rated service short-circuit breaking capacity of a circuit breaker is the value of service short-circuit breaking capacity assigned to that circuit-breaker by the manufacturer for the corresponding rated operational voltage. It is expressed as a value of prospective breaking current, in kA, corresponding to one of the specified percentages of the rated ultimate short



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01 The rated insulation voltage is not necessarily equal to the rated voltage of the equipment which is primarily related to functional performance

circuit breaking capacity and rounded up to the nearest whole number. It may be expressed as a percentage of Icu (for example Ics = 25% Icu).

The sequence of operations shall be:
O – t – CO – t – CO

The following symbols are used for defining the sequence of operations:

O	represents an opening operation.
CO	represents a closing operation followed by an automatic opening.
t	represents the time interval between two short-circuit operations.

Rated operational voltage (U_e)
The rated operational voltage of an equipment is a value of voltage which, combined with a rated operational current, determines the application of the equipment and to which the relevant tests and the utilization categories are referred.

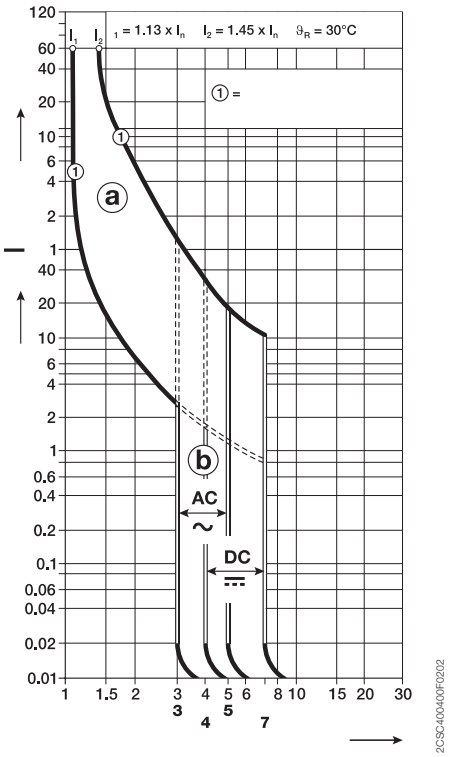
For single-pole equipment it is generally stated as the voltage across the pole. For multi pole equipment it is generally stated as the voltage between phases.

Equipment may be assigned a number of combinations of rated operational voltage and associated making and breaking capacities for different duties and utilization categories.

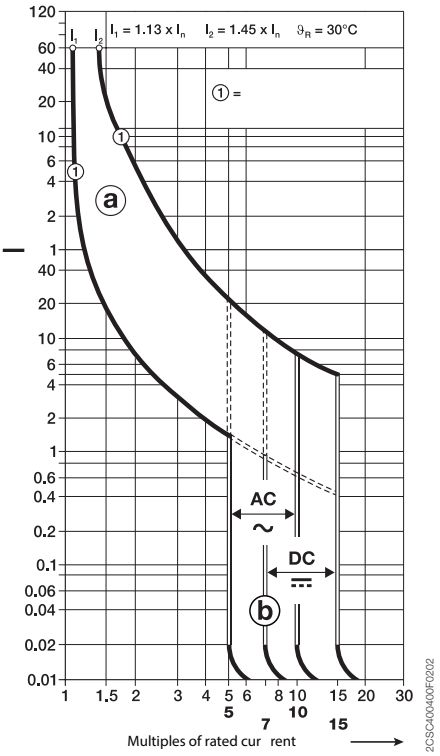
MCBs technical details

Definitions according to standards for miniature circuit breakers

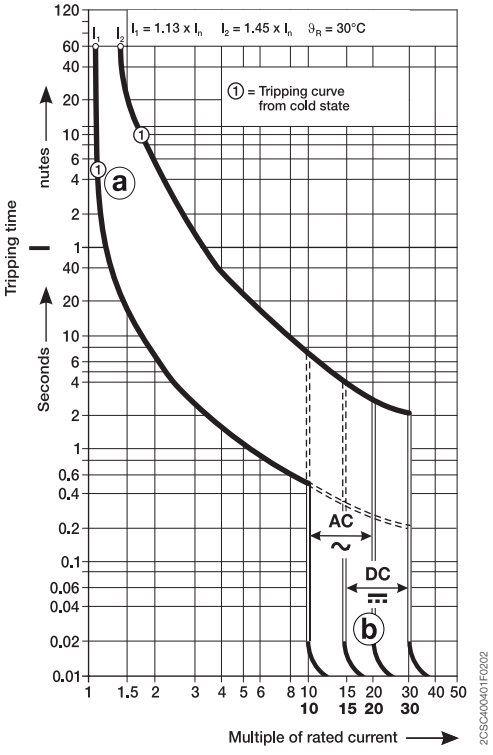
Characteristic B IEC-EN60898



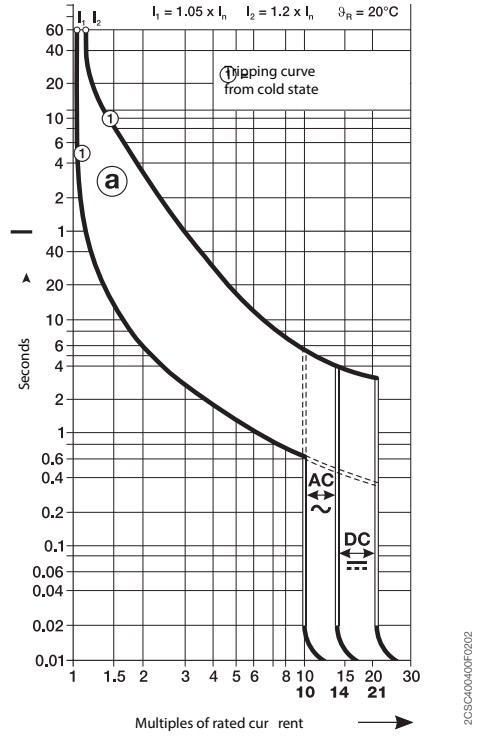
Characteristic C IEC-EN60898



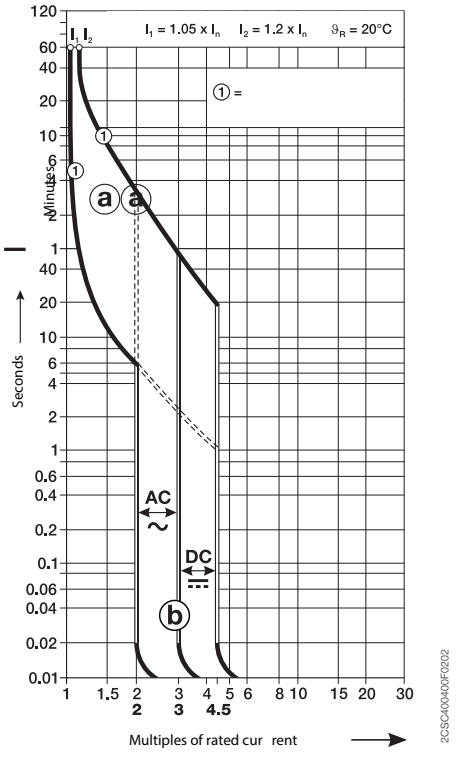
Characteristic D IEC-EN60898



Characteristic K IEC-EN60947-2



Characteristic Z IEC-EN60947-2



MCB

S200M / S300P Series technical features

Technical features

General data	Specifications		S200 M	S 300P
	Standards		IEC/EN 60898-1, IEC/EN 60947-2	IEC/EN 60898-1, IEC/EN 60947-2
			UL 1077, CSA 22.2 No. 235	UL 1077, CSA 22.2 No. 235
	Poles	–		1P, 2P, 3P, 4P, 1P+N, 3P+N
	Tripping characteristics	–	B, C, D, K, Z	B, C, D, K, Z
	Rated current I_n	A	0.5...63A	–
	Rated current f	Hz	50/60Hz	50/60Hz
	Rated insulation voltage U^i acc. to IEC/EN 60664-1	–	440V AC (phase to phase)	250 V AC (phase to ground), 500 V AC (phase to phase)
	Overvoltage category	–	III	–
	Pollution degree	–	3	2
Data acc. to IEC/EN 60898-1 (except S200M UC data acc. to IEC/EN60898-2)	Rated operational voltage U_n	V	1P: 230/400V AC; 1P+N: 230V AC ; 2... 4P: 400V AC; 3P+N: 400V AC	1P: 230V AC, 220V DC 2P: 400V AC, 440V DC 3...4P: 400V AC*
	Max. power frequency recovery voltage (U_{max})	V	1P: 253V AC; 1P+N: 253V AC; 2P: 440V AC; 3...4P: 440V AC; 3P+N: 440V AC	1P: 230V AC, 220V DC 2P: 400V AC, 440V DC 3...4P: 400V AC*
	Min. operating voltage	V	12V AC - 12V DC	–
	Rated short-circuit capacity I_{cn}	kA	10kA	≤ 25A: 25kA
	Energy limiting class (B, C up to 40 A)	–	3	3
	Rated impulse withstand voltage Uimp. (1.2/50µs)	kV	–	–
	Dielectric test voltage	kV	2kV (50/60Hz, 1 min.)	2kV (50/60Hz, 1 min.)
	Reference temperature for tripping characteristics	°C	B, C, D: 30°C	30°C
	Electrical endurance	ops.	In < 32A: 20,000 ops (AC), In ≥ 32A: 10,000 ops. (AC); 1,000 ops. (DC);	–
Data acc. to IEC/EN 60947-2	Rated operational voltage U_e	V		1P: 230V AC; 1P+N: 230V AC; 2...4P: 400V AC; 3P+N: 400V AC
	Max. power frequency recovery voltage (U_{max})	V		1P: 253V AC; 1P+N: 253V AC; 2P...4P: 440V AC; 3P+N: 440V AC; 1P: 72V DC; 2P: 125V DC
	Min. operating voltage	V	12V AC - 12V DC	12 V AC - 12V DC
	Rated ultimate short-circuit breaking capacity I_{cu}	kA	15kA	≤ 25A: 25kA ≥ 32A: 15kA
	Rated service short-circuit breaking capacity I_{cs}	kA	≤ 40A: 11.2kA 50, 63A: 7.5kA	≤ 25A: 12.5kA ≤ 32...40A: 11.2kA 50, 63A: 7.5kA
	Rated impulse withstand voltage U^{imp}. (1.2/50µs)	kV	4kV (test voltage 6.2kV at sea level, 5kV at 2,000m)	–
	Dielectric test voltage	kV	2kV (50/60Hz, 1 min.)	–
	Reference temperature for tripping characteristics	°C	B, C, D: 55°C; K, Z: 20°C	B, C: 55°C; K, Z: 20°C
	Electrical endurance	ops.	In < 32A: 20,000 ops (AC), In ≥ 32A: 10,000 ops. (AC); 1,000 ops. (DC); (1 cycle 2s - ON, 13s - OFF, In ≤ 32A), (1 cyle 2s - ON, 28s - OFF, In > 32A)	In < 32A: 20,000 ops (AC), In ≥ 32A: 10,000 ops. (AC); 1,000 ops. (DC); (1 cycle 2s - ON, 13s - OFF, In ≤ 32A), (1 cyle 2s - ON, 28s - OFF, In ≥ 32A)

Note: * Only acc. to IEC/EN 60898-1 r switching

MCB

S 200 80A-100A Series technical features

Technical features

General Data	S 200 80A-100A
Standards	IEC/EN 60898-1, IEC/EN 60947-2
Poles	1P, 2P, 3P, 4P, 1P+N, 3P+N
Tripping characteristics	B, C
Rated current I_n	80 A, 100 A
Rated frequency f	50/60 Hz
Rated insulation voltage Ui acc. to IEC/EN 60664-1 (VDE 0110-1)	440 V AC
Overvoltage category	III
Pollution degree	2
IEC/EN 60898-1 (VDE 0641-11)	
Rated operational voltage U_n	1P: 230/400 V AC; 1P+N: 230 V AC; 2P, 3P, 4P, 3P+N: 400 V AC
Max. power frequency recovery voltage U_{max}	1P: 253/440 V AC; 1P+N: 253 V AC; 2P, 3P, 4P, 3P+N: 440 V AC
Min. operating voltage	12 V AC
Rated short-circuit capacity I_{cn}	6 kA
Rated impulse withstand voltage U_{imp} (1.2/50µs)	4 kV (test voltage 6.2 kV at sea level, 5 kV at 2,000 m)
Dielectrical test voltage	2 kV (50/60 Hz, 1 min.)
Reference temperature for tripping characteristics	B, C: 30 °C
Electrical endurance	10,000 ops. (AC); one cycle 2 s - ON, 28 s - OFF
IEC/EN 60947-2 (VDE 0660-101)	
Rated operational voltage U_e	1P, 1P+N: 230 V AC; 2P, 3P, 4P, 3P+N: 400 V AC
Max. power frequency recovery voltage U_{max}	1P, 1P+N: 253 V AC; 2P, 3P, 4P, 3P+N: 440 V AC
Min. operating voltage	12 V AC
Rated ultimate short-circuit breaking capacity I_{cu}	6 kA
Rated service short-circuit breaking capacity I_{cs}	6 kA
Rated impulse withstand voltage U_{imp} (1.2/50 µs)	4 kV (test voltage 6.2 kV at sea level, 5 kV at 2,000 m)
Dielectrical test voltage	2 kV (50/60 Hz, 1 min.)
Reference temperature for tripping characteristics	B, C: 55 °C
Electrical endurance	10,000 ops. (AC); one cycle 2 s - ON, 28 s - OFF
Mechanical data	
Housing	Insulation group I, RAL 7035
Toggle	Insulation group II, black, sealable
Contact position indication	Real CPI (red ON/green OFF)
Protection degree acc. to DIN EN 60529	IP20[(1)], IP40 in enclosure with cover
Mechanical endurance	20,000 ops.
Shock resistance acc. to DIN EN 60068-2-27	25 g, 2 shocks, 13 ms
Vibration resistance acc. to DIN EN 60068-2-6	5 g, 20 cycles at 5…150…5 Hz at 0.8 I_n
Environmental conditions (Damp heat cyclic) acc. to DIN EN 60068-2-30	28 cycles with 55 °C/90-96 % and 25 °C/95-100 %
Ambient temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C

MCB

S200 80A-100A series technical features and tripping characteristics

Installation features

Installation	S200 80A-100A
Terminal	Failsafe bi-directional cache clamp
Cross-section of conductors (top/bottom)	solid, stranded: 50 mm^2 / 50 mm^2 flexible: 50 mm^2 / 50 mm^2
Cross-section of busbars (top/bottom)	16 mm^2 / 16 mm^2
Torque	3.0 Nm
Screwdriver	Nr. 2 Pozidriv
Mounting	On DIN rail 35 mm acc. to EN 60715 by fast clip
Mounting position	any
Supply	any
Dimensions and weight	
Mounting dimensions acc. to DIN 43880	Mounting dimension 1
Pole dimensions (H x T x B) mm	88.8 x 69 x 17.5
Pole weight	approx. 126 g
Combination with auxiliary elements	
Auxiliary contact	Yes
Signal/auxiliary contact	Yes
Shunt trip	Yes
Unervoltage release	Yes
Motor Operating Device	Yes

Tripping characteristics

					Thermal release [1]	**Electromagnetic release** [2]		
Data acc. to	**Tripping characteristics**	**Rated current I_n**	**Currents: conventional non-tripping current I_1**	**Conventional tripping current I_2**	**Tripping time**	**Range of instantaneous tripping**		**Tripping time**
DIN EN 60898-1	B	**80 up to 100 A**	$1.13 \cdot I_n$	$1.45 \cdot I_n$	> 2 h < 2 h	$3 \cdot I_n$	$5 \cdot I_n$	0.1 ... 90 s < 0.1 s
(VDE 0641-11)	C	**80 up to 100 A**	$1.13 \cdot I_n$	$1.45 \cdot I_n$	> 2 h < 2 h	$5 \cdot I_n$	$10 \cdot I_n$	0.1 ... 30 s < 0.1 s

[1] The thermal releases are calibrated to a nominal reference ambient temperature; for B and C the reference value is 30 °C.
In the case of higher ambient temperatures, the current values fall by approx. 6 % for each 10 K temperature rise.
[2] The indicated tripping values of electromagnetic tripping devices apply to a frequency of 50/60 Hz. The thermal release operates independent of frequency.

RCBO DSE201 M
Technical features

Technical features

Electrical features			
Standards			IEC 61009-1; IEC 61009-2-2; AS/NZS 61009
Type (wave form of the earth leakage sensed)			A
Number of poles			1P+N
Rated current I_n		A	6≤ In ≤ 50
Rated sensitivity $I_{\Delta n}$		mA	10, 30, 100, 300
Rated voltage U_e		V	230-240
Insulation voltage U_i		V	500 V AC
Overvoltage category			III
Pollution degree			2
Max. operating voltage		V	264
Min. operating voltage for protection against IΔn residual sinusoidal alternating currents		V	85
Min. operating voltage of circuit test		V	195
Rated frequency		Hz	50/60
Rated breaking capacity acc. to IEC 61009	ultimate I_{cn}	A	10000
		kA	15 (for 6A≤ In ≤ 40A)
	ultimate I_{cn}	kA	10 (for In = 50A)
Rated breaking capacity acc. to IEC 60947-2	service I_{cs}	kA	7.5
Rated residual breaking capacity $I_{\Delta m}$		kA	10
Rated impulse withstand voltage (1.2/50) U_{imp}		kV	4 kV (test voltage 6.2kV at sea level, 5kV at 2000m)
Dielectric test voltage at ind. freq. for 1 min.		kV	2.5 kV (50 / 60Hz, 1 min.)
Thermomagnetic release - characteristic	B: $3\ I_n \le I_m \le 5\ I_n$		■
	C: $5\ I_n \le I_m \le 10\ I_n$		■
Surge current resistance (wave 8/20)		A	250
Mechanical data			
Housing			insulation group II, RAL 7035
Toggle			insulation group IIIA, black, sealable in ON-OFF positions
Contact position indication			CPI on toggle (I ON / 0 OFF)
Electrical life		operations	10000
Mechanical life		operations	20000
Protection degree	housing		IP4X
	terminals		IP2X
Shock resistance acc. to IEC/EN 60068-2-27			30g - 2 shocks - 13ms
Vibration resistance acc. to IEC/EN 60068-2-6			0.35mm or 5g - 20 cycles at 5...150...5 Hz without load
Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30		°C/RH	28 cycles with 55°C/90-96% and 25°C/95-100%
Reference temperature for setting of thermal element		°C	30
Ambient temperature (with daily average ≤ +35 °C)		°C	-25...+55
Storage temperature		°C	-40...+70

RCBO DSE203N M

Technical features and dimensions

Installation features

			DSE203N M
Standards			IEC 61009-1; IEC 61009-2-2; AS/NZS 61009.1
Electrical features			
Type (wave form of the earth leakage sensed)			A
Number of poles			3P+N
Number od modules			3M
Rated sensitivity $I_{\Delta n}$		mA	10, 30, 100, 300
Tripping Characteristic			B, C, D
Rated current I_n		A	$6 \le I_n \le 63$
Rated voltage U_e		V AC	400/415
Insulation voltage U_i		V	500
Overvoltage category			III
Pollution degree			2
Rated frequency		Hz	50/60
Min. operating voltage for protection against $I_{\Delta n}$ residual sinusoidal alternating currents		V AC	150
Max operating voltage		V AC	457
Operating voltage of circuit test		V AC	204 - 457
Rated breaking capacity acc. to IEC 61009-1	I_{cn}	A	10000
Rated residual breaking capacity $I_{\Delta m}$ to IEC 61009-1	$I_{\Delta m}$	A	6000
Rated impulse withstand voltage (1.2/50) U_{imp}		kV	4 kV (test voltage 6.2 kV at sea level, 5 kV at 2,000 m)
Dielectric test voltage at ind. freq. for 1 min.		kV	2 kV (50 / 60 Hz, 1 min.)
Mechanical features			
Housing			Insulation group I, RAL 7035
Toggle			Insulation group II, black: Pantone black c
Contact position indicator			Green/Red window
Electrical life		operations	10000
Mechanical life		operations	20000
Protection degree acc. to EN 60529	housing		IP40
	terminals		IP20
Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30		°C/RH	28 cycles with 55°C/90-96% and 25°C/95-100%
Reference temperature for setting of thermal element		°C	30
Ambient temperature (with daily average ≤ +35 °C)		°C	-5...+40
Storage temperature		°C	-25...+70
Installation			
Terminal type	top / bottom		pillar terminals
Terminal size for cables	top / bottom	mm^2	16/16 flexible; 25/25 rigid
Tightening torque	top / bottom	Nm	2.5
Stripping length of the cable	top / bottom	mm	11.5/15
Mounting			on DIN rail EN 60715 (35 mm) by means of mounting clip
Neutral Cable	Lenght	mm	1000
	Section	mm^2	6...25 A: 2.5 mm; 32, 40 A: 4 mm^2; 50, 63 A: 6 mm^2
	Color		Blue: pantone 293 c
Mounting position			Vertical & Horizontal
Supply from			Bottom terminals
Dimensions and weight			
Dimensions (H x D x W)		mm	117.5 x 71.6 x 53.4
Weight		g	549

63 50A version is 115 mm height

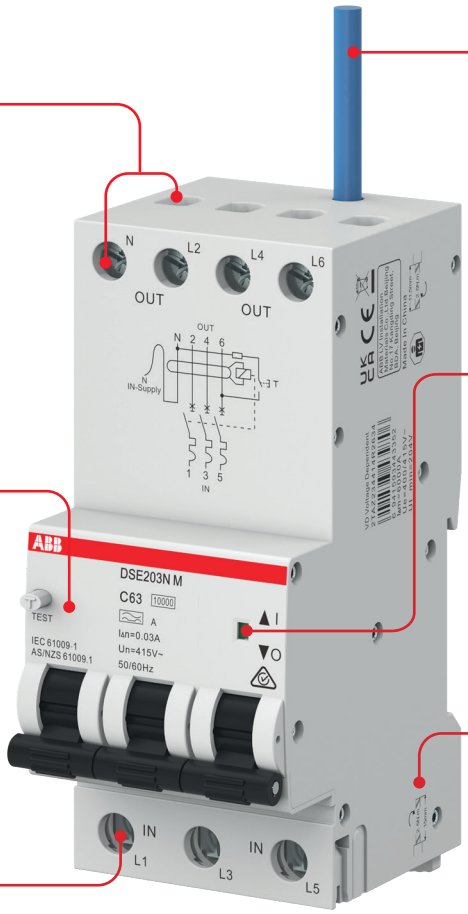
DSE203N M eRCBO 3P+N 3M
Product at a glance

Load connection
Load from the top. Neutral is Unswitched and on the left.

All screws are on the same level for a fast and easy installation.

Printed information
Main technical information are printed on the front side, visible also when the device is installed.

Easy to install
Supply from the bottom, for a quick installation in chassis distribution board and DIN-Rail.



Neutral Flying lead
The neutral is supplied from the top via solid cable. Black or blue color depending by the different country installation habits.

Guaranteed security
Contact position indicator (CPI) to show the contact status independently from the toggle position. Green: open / Red: closed.

Stable fixing
Two clips on bottom side ensure a good stability on chassis and DIN-Rail.

DSE203N M Datasheet

Technical features

Installation			
Terminal type	top (load side)		failsafe cage (shock protected)
	bottom (line side)		failsafe bi-directional cylinder-lift terminal (shock protected)
Terminal size for cables	load side (top)	mm^2	16
	line side (bottom)	mm^2	25
Terminal size for busbars	load side (top)		only for wire connection
	line side (bottom)	mm^2	10 (Standard ABB busbar / distribution board system)
Tightening torque	top (load side)	Nm	1.2
	bottom (line side)	Nm	2.8
Neutral load cable	Type		low smoke halogen free
	Lenght	mm	750
	Section	mm^2	2.5 mm^2 up to 20 A; 4 mm^2 up to 50 A
	Color		blue
Functional earth cable	Type		low smoke halogen free
	Lenght	mm	750
	Section	mm^2	0.75
	Color		white
Mounting			on DIN rail EN 60715 (35 mm) by means of fast clip device in consumer unit Type A according to IEC 61439-1&3, BS EN 61439-1&3, in distribution board Type B according to IEC 61439-1&3, BS EN 61439-1&3.
Supply from			bottom terminal
Dimensions and weight			
Dimensions (H x D x W)		mm	100 x 68.9 x 17.6
Weight		g	180
Combination with auxiliary elements			
Auxiliary contact	yes		
Signal contact / auxiliary switch yes			
Shunt trip yes			
Undervoltage release yes			
Overvoltage release yes			
Auxiliary contact for MCBs bottom fitting yes			
Signal contact / auxiliary switch	yes		
Shunt trip	yes		
Undervoltage release	yes		
Overvoltage release	yes		
Auxiliary contact for MCBs bottom fitting	yes		

RCCB F 200 series
Technical features

Technical features

Features	Specifications				F 200A
Electrical features	Standards				IEC/EN 61008-1; IEC/EN 61008-2-1, UL 1053 (1)
	Type (wave form of the earth leakage sensed)			–	A
	Poles			–	2P, 4P (for 125 A only 4P)
	Rated current I_n			A	16, 25, 40, 63, 80, 100, 125
	Rated sensitivity $I\Delta_n$			A	0.01-0.03-0.1-0.3-0.5 50/60Hz
	Rated voltage U_e			V	230/400 - 240/415
				V	480Y/277 (up to 100 A
	Insulation voltage U_i		–	V	500
	Max. operating voltage of circuit test			V	110 (185 for 125 A); 195 for F 200 left neutral 170 (150 for 125 A); 300 for F 200 left neutral for IDn = 30 mA (5)
				V	277 (up to 100 A); 480 for F 200 left neutral (4)
	Min. operating voltage of circuit test			V	110 (185 for 125 A); 195 for F 200 left neutral 170 (150 for 125 A); 300 for F 200 left neutral for IDn = 30 mA (5)
	Rated frequency			Hz	50…60
	Rated conditional short-circuit current Inc=IΔ (3)			kA	277 (up to 100 A); 480 for F 200 left neutral (4
	Rated residual breaking capacity IΔm=Im			kA	1 (1.25 for 125 A)
	Rated impulse withstand voltage (1.2/50) U_{imp}			kV	4
	Dielectric test voltage at ind. freq. for 1 min.			kV	2.5
	Overvoltage category			–	III, disconnector abilities
	Surge current resistance (wave 8/20)			A	250
Mechanical features	Toggle			–	Blue sealable in ON-OFF position
	Contact position indicator (CPI)			–	Yes
	Electrical life		–	–	10000 (2000 for 125 A)
	Mechanical life		–	–	20000 (5000 for 125 A)
	Protection degree	Housing			IP4X
		Terminals			IP2X
	Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30			°C/RH	28 cycles with 55°C/90-96% and 25°C/95
	Ambient temperature (with daily average ≤ +35 °C)			°C	-25…+55 (-25…+40 for 125A)
	Storage temperature		–	°C	-40…+70
Installation	Terminal type				Failsafe bi-directional cylinder-lift terminal at top and bottom (shock protected) (cage for In > 63A) (2)
	Terminal size top/bottom for cable			mm²	25/25 (35/35 single slot terminal for In > 63A)
		UL/CSA		AWG	18-4 (up to 63A)
	Terminal size top/bottom for busbar	IEC		mm²	10/10 (not for In = 80-100A)
		UL/CSA		AWG	18-8 (up to 63A)
	Tightening torque			Nm	2.8 (3 for In = 125A)
		UL/CSA		in-lbs.	25 (up to 63A)
	Tool			–	Nr. 2 Pozidriv
	Mounting			–	On DIN rail EN 60715 (35mm) by means of fast clip device
	Connection			–	From top and bottom
	Withdrawal from busbar			–	It is possible without using any tools only from the bottom (not for 125A)
Dimensions and weight	Dimensions (H x D x W)			mm	85 x 69 x 35
	Weight			g	200
Combination with auxiliary elements	Combinable with:	Auxiliary contact			Yes (no for 125A)
		Signal contact/auxiliary switch			Yes
		Shunt trip			Yes (no for 125A)
		undervoltage release			Yes (no for 125A)

(1) Ground-fault sensing and relaying equipment-component (up to 63 A).
(2) Prior to connection of aluminium conductors (≥ 4 mm²) ensure that their contact points are cleaned, brushed and coated with grease.
(3) For S700-E/K 100A, S750-E 63A, S750DR-E/K 63A and other SCPD coordination values see Chapter 3 of Solutions for electrical distribution in buildings – technical details.
(4) F200 left neutral has not the UL certification and the UL mark.
(5) Only for versions with marking according to EN 61008-1; EN 61008-2-1.

EQ Meter - A series

Technical features

Technical features

	A41	A43
Voltage/current inputs		
Nominal voltage	230 V AC	3x230/400 V AC
Voltage range	57.7 - 288 V AC (-20% - +15%)	3x57.7/100 ... 288/500 V AC (-20% - +15%)
Power dissipation voltage circuits	0.8 VA (0.8 W) total	
Power dissipation current circuits	0.007 VA (0.007 W) at 230 V AC and I_b	0.007 VA (0.007 W) per phase at 230 V AC and I_b
Base current I_b	5 A	5 A
Rated current I_n	-	-
Reference current I_{ref}	5 A	5 A
Transitional current I_{tr}	0.5 A	0.5 A
Maximum current I_{max}	80 A	80 A
Minimum current I_{min}	0.25 A	0.25 A
Starting current I_{st}	< 20 mA	< 20 mA
Terminal wire area	1 - 25 mm^2	1 - 25 mm^2
Recommended tightening torque	3 Nm	3 Nm
Communication		
Terminal wire area	0.5 - 1 mm^2	0.5 - 1 mm^2
Recommended tightening torque	0.25 Nm	
Transformer ratios		
Configurable voltage ratio (VT)	-	-
Configurable current ratio (CT)	-	-
Pulse indicator (LED)		
Pulse frequency	1000 imp/kWh	1000 imp/kWh
Pulse length	40 ms	40 ms
General data		
Frequency	50 or 60 Hz ± 5%	
Accuracy Class	B (Cl.1) or Reactive Cl. 2	A (Cl.2), B (Cl.1) or Reactive Cl. 2
Active energy	1%	1%, 2%
Display of energy	Pixel oriented	
Environmental		
Operating temperature	-40°C - +70°C	
Storage temperature	-40°C - +85°C	
Humidity	75% yearly average, 95% on 30 days/year	
Resistance to fire and heat	Terminal 960°C, cover 650°C (IEC 60695-2-1)	
Resistance to water and dust	IP20 on terminal block without protective enclosure and IP51 in protective enclosure, according to IEC 60529.	
Mechanical environment	Class M2 in accordance with the Measuring Instrument Directive (MID). (2004/22/EC).	
Electromagnetic environment	Class E2 in accordance with the Measuring Instrument Directive (MID), (2004/22/EC).	
Outputs		
Current	2 - 100 mA	
Voltage	5 - 240 V AC/DC. For meters with only 1 output, 5 - 40 V DC.	
Pulse output frequency	Programmable: 1 - 999999 imp/kWh	
Pulse length	Programmable: 10 - 990 ms	
Terminal wire area	0.5 - 1 mm^2	
Recommended tightening torque	0.25 Nm	
Inputs		
Voltage	0 - 240 V AC/DC	
OFF	0 - 12 V AC/DC	
ON	57-240 V AC/24 - 240 V DC	
Min. pulse length	30 ms	
Terminal wire area	0.5 - 1 mm^2	
Recommended tightening torque	0.25 Nm	
EMC compatibility		
Impulse voltage test	6 kV 1.2/50 µs (IEC 60060-1)	
Surge voltage test	4 kV 1.2/50 µs (IEC 61000-4-5)	
Fast transient burst test	4 kV (IEC 61000-4-4)	
Immunity to electromagnetic HF-fields	80 MHz - 2 GHz at 10 V/m (IEC 61000-4-3)	
Immunity to conducted disturbance	150 kHz - 80 MHz, (IEC 61000-4-6)	
Immunity to disturbance with harmonics	2kHz - 150kHz	
Radio frequency emission	EN 55022, class B (CISPR22)	
Electrostatic discharge	15 kV (IEC 61000-4-2)	
Standards	IEC 62052-11, IEC 62053-21 class 1 & 2, IEC 62053-22 class 0,5 S, IEC 62053-23 class 2, IEC 62054-21, GB/T 17215.211-2006, GB/T 17215.321-2008 class 1 & 2, GB/T 17215.322-2008 class 0,5 S, GB 4208-2008, EN 50470-1, EN 50470-3 category A, B & C	
Mechanical		
Material	Polycarbonate in transparent front glass, bottom case, upper case and terminal cover, Glass reinforced polycarbonate in terminal block.	
Dimensions		
Width	70 mm	123 mm
Height	97 mm	97 mm
Depth	65 mm	65 mm
DIN modules	4	7

*) Only A44 552 - 110 and A44 553 - 110

EQ Meter - B series

Technical features

Technical features

	B21	B23	B24
Voltage/current inputs			
Nominal voltage	230 V AC	3 x 230/400 V AC	
Voltage range	220-240 V AC (-20% - +15%)	3 x 220-240 V AC (-20% - +15%)	
Power dissipation voltage circuits	0.9 VA (0,4 W) total	1.6 VA (0.7 W) total	
Power dissipation current circuits	0.014 VA (0.014 W) at 230 V AC and I_b	0.007 VA (0.007 W) per phase at 230 V AC and I_b	
Base current I_b	5 A		-
Rated current I_n	-		1 A
Reference current I_{ref}	5 A		-
Transitional current I_{tr}	0.5 A		0.05 A
Maximum current I_{max}	65 A		6 A
Minimum current I_{min}	0.25 A		0.02 A
Starting current I_{st}	< 20 mA		< 1 mA
Terminal wire area	1 - 25 mm^2		0.5 - 10 mm^2
Recommended tightening torque	3 Nm		1.5 Nm
Communication			
Terminal wire area	0.5 - 1 mm^2		
Recommended tightening torque	0.25 Nm		
Transformer ratios			
Configurable current ratio (CT)	-		1/9 - 9999/1
Pulse indicator (LED)			
Pulse frequency	**1000 imp/kWh**	**1000 imp/kWh**	**5000 imp/kWh**
Pulse length	40 ms	40 ms	40 ms
General data			
Frequency	50 or 60 Hz ± 5%		
Accuracy Class	B (Cl. 1) and Reactive Cl. 2	B (Cl. 1) and Reactive Cl. 2	B (Cl. 1) or C (Cl. 0,5 S) and Reactive Cl. 2
Active energy	1%	1%	0.5%, 1%
Display of energy	6 digit LCD	7 digit LCD	
Environmental			
Operating temperature	-40°C - +70°C		
Storage temperature	-40°C - +85°C		
Humidity	75% yearly average, 95% on 30 days/year		
Resistance to fire and heat	Terminal 960 °C, cover 650°C (IEC 60695-2-1)		
Resistance to water and dust	IP20 on terminal block without protective enclosure and IP51 in protective enclosure, according to IEC 60529.		
Mechanical environment	Class M2 in accordance with the Measuring Instrument Directive (MID), (2004/22/EC).		
Electromagnetic environment	Class E2 in accordance with the Measuring Instrument Directive (MID), (2004/22/EC).		
Outputs			
Current	2 - 100 mA		
Voltage	5 - 240 V AC/DC. For meters with only 1 output 5 - 40 V DC.		
Pulse output frequency	Programmable: 1 - 999999 imp/kWh		
Pulse length	Programmable: 10 - 990 ms		
Terminal wire area	0.5 - 1 mm^2		
Recommended tightening torque	0.25 Nm		
Inputs			
Voltage	0 - 240 V AC/DC		
OFF	0 - 12 V AC/DC		
ON	57 - 240 V AC/24 - 240 V DC		
Min. pulse length	30 ms		
Terminal wire area	0.5 - 1 mm^2		
Recommended tightening torque	0.25 Nm		
EMC compatibility			
Impulse voltage test	6 kV 1.2/50µs (IEC 60060-1)		
Surge voltage test	4 kV 1.2/50µs (IEC 61000-4-5)		
Fast transient burst test	4kV (IEC 61000-4-4)		
Immunity to electromagnetic HF-fields	80 MHz - 2 GHz (IEC 61000-4-6)		
Immunity to conducted disturbance	150kHz - 80MHz (IEC 61000-4-6)		
Immunity to disturbance with harmonics	2kHz - 150kHz		
Radio frequency emission	EN 55022, class B (CISPR22)		
Electrostatic discharge	15 kV (IEC 61000-4-2)		
Standards	IEC 62052-11, IEC 62053-21 class 1 & 2, IEC 62053-22 class 0,5 S, IEC 62053-23 class 2, IEC 62054-21, GB/T 17215.211-2006, GB/T 17215.312-2008 class 1 & 2, GB/T 17215.322-2008 class 0,5 S, GB 4208-2008, EN 50470-1, EN 50470-3 category A, B & C		
Mechanical			
Material	Polycarbonate in transparent front glass. Glass reinforced polycarbonate in bottom case and upper case. Polycarbonate in terminal cover.		
Dimensions			
Width	35 mm	70 mm	
Height	97 mm	97 mm	
Depth	65 mm	65 mm	
DIN modules	2	4	

EQ Meter - A series

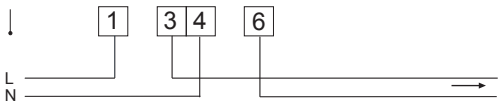
Wiring diagram

01 Terminal block A41

02 Terminal block A43

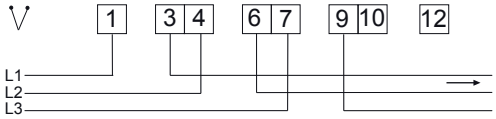
03 Terminal block A44

Terminal block A41 (A)

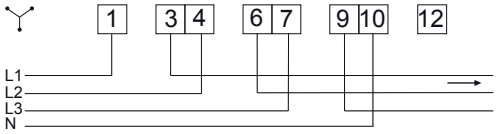


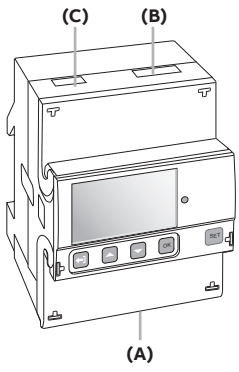
Terminal block A43 (A)

3 wire connection, 2 elements

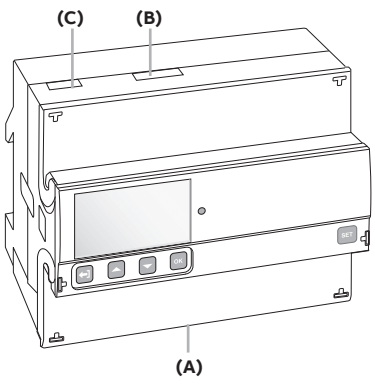


4 wire connection, 3 elements

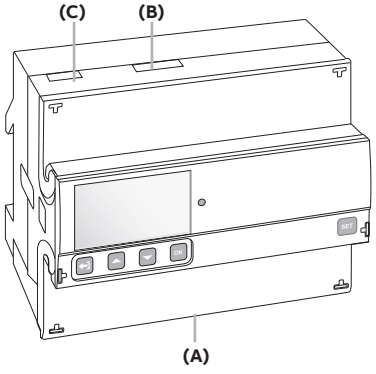




01



02



03

EQ Meter - B series

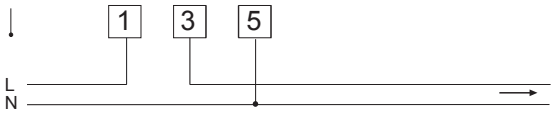
Wiring diagram

01 Terminal block B21

02 Terminal block B23

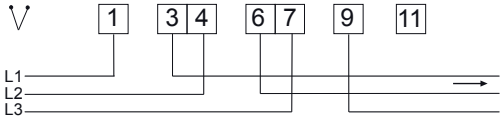
03 Terminal block B24

Terminal block B21

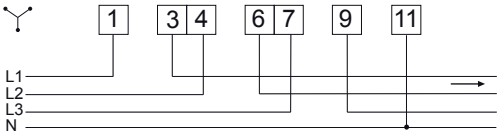


Terminal block B23

3 wire connection, 2 elements

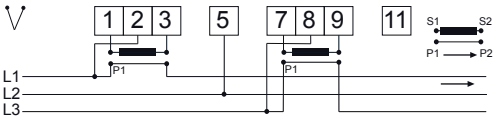


4 wire connection, 3 elements

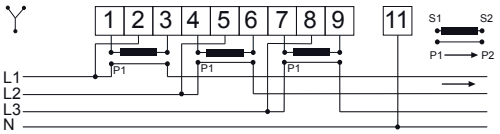


Terminal block B24

3 wire connection, 2 elements



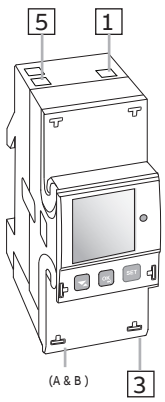
4 wire connection, 3 elements



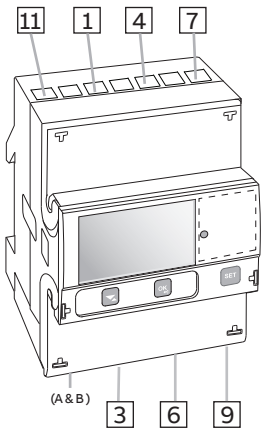
1	Phase in
3	Phase out
5	Neutral

1 4 7	Phase in
3 6 9	Phase out
11	Neutral

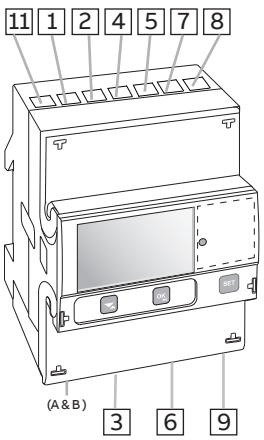
1 4 7	Current in
2 5 8	Voltage
3 6 9	Current out
11	Neutral



01



02



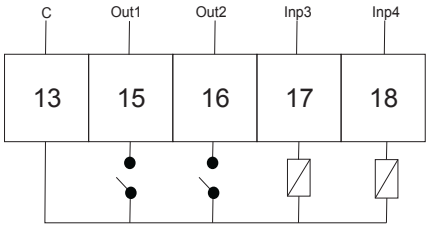
03

EQ Meter - A/B series

Inputs/ouputs and communication

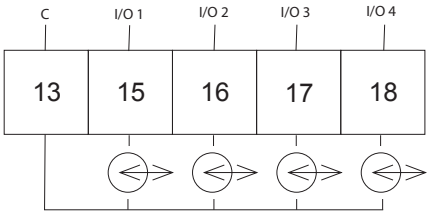
Inputs / outputs (B)

2 outputs, 2 inputs

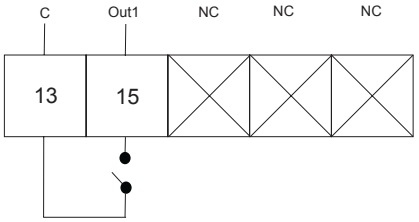


External power supply needed 5-240 VAC/VDC...

4 Configurable inputs/outputs



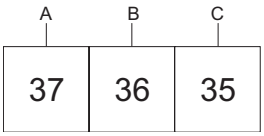
1 output



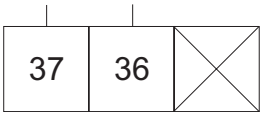
External power supply needed 5-40VDC...

Communication (C)

RS-485



M-Bus



Compare the M4M versions

M4M 20 and M4M 30

Accuracy	**M4M 20** - Class 0,5S	**M4M 30** - Class 0,5S not included in standard offer
MID certification	Option	Option
Real-time		
TRMS current	●	●
TRMS voltage	●	●
Frequency	●	●
Active, Reactive and Apparent power	●	●
Power factor	●	●
Operating timer, countdown timer	●	●
Energy		
Active, Reactive and Apparent energy	●	●
4 quadrants Energy (Import/Export)	●	●
Tariffs	/	●
Power Quality		
THD (I, VLN, VLL)	●	●
Individual Harmonics	/	40th
Unbalances (I, VLN, VLL)	/	●
Neutral current	Calculated	Measured
Phasors (I, VLN)	/	●
Waveforms (I, VLN, VLL)	/	●
Data recording and logs		
Single alarms	25	25
Warnings, alarms and errors logs	●	●
Complex alarms with logics	/	4
Demand values (average)	Basic	Advanced
Min/Max Demand values	Basic	Advanced
Energy Trending logs	/	●
RTC	/	●
HMI	**Graphic color**	**Graphic color touchscreen**
Graphs visualization	Basic	Advanced
Notifications	●	●
Homepage and favourite page	●	●
Password protection	●	●
Connectivity		
Automatic integration in ABB Ability™ Energy and Asset Manager	●	●
Automatic integration in System pro M compact® InSite	●	●
Bluetooth Low Energy	●	●
Communication Protocols	Modbus RTU, Modbus TCP/IP, Profibus DP-V0, BACnet/IP	Modbus RTU, Modbus TCP/IP, Profibus DP-V0, BACnet/IP
RJ45 Daisy Chain (Ethernet version)	/	●*

* daisy-chain not available on M4M 30-M

Circuit Monitoring System - CMS

Technical features

Control unit CMS 700

Control Unit CMS-700		
Supply voltage	[V AC]	80 – 277 (L1-N, +5%)
Frequency	[Hz]	50 / 60
Power input (L1-N)	[W]	5 ... 40 (dep. on number of sensors)
Power input, current transformer, secondary side	[VA]	Current circuit <2 (per phase)
Voltage measurement range	[V AC]	80 – 277 (L1, L2, L3-N)
Measurement range, current transformer, secondary side	[A]	nominal: 5, max.: 6
Harmonic component	[Hz]	up to 2000
Data rate of Modbus RTU	[Baud]	RS485 2-wire, 2400 ... 115200
Refresh time		≤1 sec with max. 96 sensors
LAN	[Mbit/s]	100
Conductor cross-section	[mm²]	0.5 ... 2.5
Mounting method		35 mm DIN rail (DIN 50022)
Degree of protection		IP20
Dimensions	[mm]	160.0 x 87.0 x 64.9 (9 WM)
Operating temperature	[°C]	-25 ... +60
Bearing temperature	[°C]	-40 ... +85
Standards		IEC61010-1 UL 508/ CSA C22.2 No. 14
Main circuit accuracy		
Voltage		±1%
Current		±1%
Harmonic component		1%
Active power		±2%
Apparent power		±2%
Reactive power		±2%
Power factor		±0.2%

Open-core sensors 18mm

	Sensor type			CMS-120xx	CMS-121xx	CMS-122xx
CMS 120PS	Measurement range		[A]	80	40	20
	Measuring method					TRMS, AC 50 / 60 Hz, DC
	Peak factor, distorted waveform			≤ 1.5	≤ 3	≤ 6
	AC accuracy (TA = +25 °C)*					≤ ±1%
	AC temperature coefficient*					≤ ±0.04%
CMS 120DR	DC accuracy (TA = +25 °C)*			≤ ±1.2%	≤ ±1.4%	≤ ±1.8%
	DC temperature coefficient*			≤ ±0.14%	≤ ±0.24%	≤ ±0.44%
	Resolution		[A]			0.01
	Sampling rate, internal		[Hz]			5000
	Response time (±1%)		[sec]			typ. 0.34
	Conductor penetration		[mm]			9,6
	Insulation strength					690 AC / 1500 DC
CMS 120DR	Operating/storage temperature		[°C]			-25 ... +70 / -40 ... +85
	Dimensions	CMS-120PS Serie	**[mm]**			17.4 x 41.0 x 26.5
		CMS-120CA Serie	**[mm]**			17.4 x 41.0 x 29.0
		CMS-120DR Serie	**[mm]**			17.4 x 51.5 x 43.2
	Standards					IEC 61010-1 | UL508 / CSA C22.2 No 14

*All accuracy specifications refer to the relevant full scale value and apply to 25 °C. In the case of open-core sensors, the position of the cable influences the precision.

ESB installation contactors
Technical features

ESB installation contactors technical features

Main circuit – Utilization characteristics according to IEC/EN

Contactor type		ESB16..N	ESB20..N/ EN20..N	ESB25..N/ EN25..N	ESB40..N/ EN40..N	ESB63..N	ESB100..N
Standards		IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 61095					
Rated operational voltage U_e		220 V DC 250 V AC	220 V DC 250 V AC	220 V DC 400 V AC	220 V DC 400 V AC	220 V DC 400 V AC	220 V DC 400 V AC
Rated frequency		DC, 50/60 Hz	DC, 50/60 Hz	DC, 50/60 Hz	DC, 50/60 Hz	DC, 50/60 Hz	DC, 50/60 Hz
AC-1/AC-7a utilization category for air temperature near the contactor ≤ 55 °C							
Rated operational current I_e AC-1/AC-7a	NO	16 A	20 A	25 A	40 A	63 A	100 A
	NC	16 A	20 A	25 A	30 A	30 A	-
Rated operational power AC-1	230 V 1 phase	3.7 kW	4.6 kW	5.8 kW	9.2 kW	14.5 kW	23 kW
	400 V 3 phases	–	–	17.3 kW	27.7 kW	43.6 kW	69.3 kW
AC-3/AC-3e/AC-7b utilization category for air temperature close to contactor ≤ 55 °C							
Rated operational current I_e AC-3/AC-3e/AC-7b	230 V 1 phase	6 A	9 A	9 A	22 A	30 A	–
	400 V 3 phases	–	–	9 A	22 A	30 A	–
Rated operational power AC-3/AC-3e	230 V 1 phase	0.9 kW	1.3 kW	1.3 kW	3.7 kW	5 kW	–
	400 V 3 phases	–	–	4 kW	11 kW	15 kW	–
Rated making capacity acc. to IEC 60947-4-1		10 x I_e/AC-3 13 x I_e/AC-3e	10 x I_e/AC-3 13 x I_e/AC-3e	10 x I_e/AC-3 13 x I_e/AC-3e	10 x I_e/AC-3 13 x I_e/AC-3e	10 x I_e/AC-3 13 x I_e/AC-3e	–
Rated breaking capacity acc. to IEC 60947-4-1		8 x I_e/AC-3 8.5 x I_e/AC-3e	8 x I_e/AC-3 8.5 x I_e/AC-3e	8 x I_e/AC-3 8.5 x I_e/AC-3e	8 x I_e/AC-3 8.5 x I_e/AC-3e	8 x I_e/AC-3 8.5 x I_e/AC-3e	–
Rated short-time withstand current I_{cw} at 40 °C ambient temp. in free air, from a cold state	10 s	48 A	72 A	72 A	176 A	240 A	–
Power loss per pole		0.9 W	1.4 W	2 W	3 W	4.5 W	6 W
Maximum electrical switching frequency	AC-1/AC-7a	300 cycles/h	300 cycles/h	300 cycles/h	300 cycles/h	300 cycles/h	150 cycles/h
	AC-3/AC-7b	600 cycles/h	600 cycles/h	600 cycles/h	600 cycles/h	600 cycles/h	–
Electrical durability	AC-1/AC-7a	150,000 cycles	150,000 cycles	130,000 cycles	150,000 cycles	100,000 cycles	70,000 cycles
	AC-3/AC-7b	150,000 cycles	150,000 cycles	500,000 cycles	150,000 cycles	240,000 cycles	–
Mechanical durability							1,000,000 cycles

D Line digital time switches
Technical features

D Line technical features

		General data					
		D1	**D1 PLUS**	**D1 SYNCHRO**	**D2**	**D2 PLUS**	**D2 SYNCHRO**
Rated voltage	[V]						230 AC ± 10%
Rated pulsating voltage	[kV]						4
Contact type							Contact relay in free exchange from potential
Programming key		-	■	■	-	■	■
External input		■	■	-	■	■	-
DCF77 antenna		-	-	■	-	-	■
GPS antenna		-	-	■	-	-	■
Programming software		-	■	■	-	■	■
250 V contact capacity							
Ohm loads	[A]						16 16
Inductive loads	[A]						10 2
Rated frequency	[Hz]						50-60
Time base							quartz
Minimum switching	[sec.]						1
Max programs per cycle	[n°]						64 (can be coupled in day blocks)
Running reserve	[year]						6 from the first start-up (lithium battery)
External input	[n°]		1	-		2	-
Activity suspension							From 1 day to 12 months
Operating precision	[sec./ day]						± 0.5
Max. dissipated power	[VA]			6.5			7.8
Max. switch power	[VA]						3500
Incandescent lamps	[W]						3000
Non-rephased fluorescent lamps	[W]						1100
Fluorescent tube lamps rephased in parallel	[W]						900
Fluorescent tube lamps with electronic reactor	[W]						7 ÷ 23 (max. 23 lamp.)
Fluorescent tube lamps rephased in series	[W]						1100
Protection degree	[IP]						20
Max. terminal cross-section	[mm²]						6
Terminals							In positive safety with captive screw
Tightening torque	[Nm]						0.5
Installation type							DIN rail
Operating temperature	[°C]						-5 ... +55
Storage temperature	[°C]						-10 ... +65
Modules	[n°]						2
Reference standards							EN 60730-1; EN 60730-2-7

T Line twilight switches
Technical features

T1 technical features

General data				
			T1	**T1 PLUS**
Rated supply voltage		[V]		110 ÷ 230 AC
Contact type				1NO
Switching capacity				
resistive load cosj 1		[A]		16
inductive load cosj 0.6		[A]		3
incandescent lamps		cosj 1		max 3600 W
fluorescent lamps		cosj0.8		max 3600 W
fluorescent - duo./electronic lamps		cosj0.9		max 300 W
Rated frequency		[Hz]		50-60
Switching delay				
ON		[s]	30 ±10%	15...120 ±10%
OFF		[s]	40 ±10%	15...120 ±10%
Brightness range		[lx]	2:200	2:40 20:200 200:2000 2000:15000
Protection degree				
twilight switch			IP20	IP20
sensor			IP65	IP65
Operating temperature				
twilight switch		[°C]		-25...+55
sensor		[°C]		-40...+70
Storage temperature				
twilight switch		[°C]		-40...+70
sensor		[°C]		-50...+80
Power consumption		[VA]		4.5
Max. commutable power		[W]		3500
Max. terminal cross-section		[mm²]		2.5
Terminals				loss-proof screw
Tightening torque	terminals	[Nm]		0.5
	sensor screw	[Nm]		0.4
	Mounting			on DIN rail
	Switching status indication/ brightness range			red Led / green Led
	Max wiring length	[m]		100
	Modules			1
	Reference standards			EN 60669-1; EN 60669-2-1; EN 60730-1

T1 & T1 PLUS twilight switch
Control and automation technical features

01 Daytime

02 Evening operation

03 Late evening mode

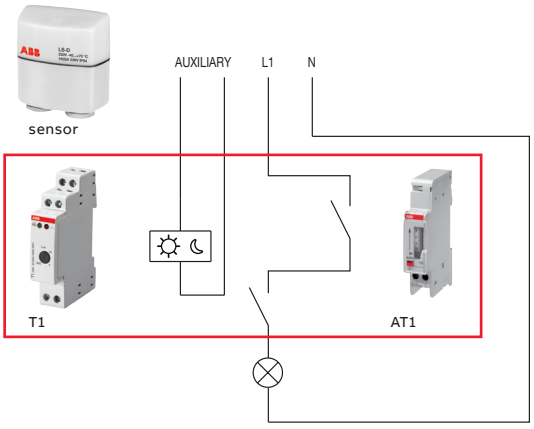
T1 twilight switch

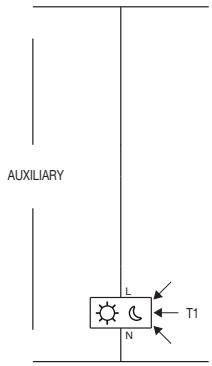
Operating principle
The diagram shows an example of the installation of the T1 twilight switch in the lighting system of a commercial establishment. When the external light falls below a certain level (e.g. during the evening when the shop is closed), the device switches on the window lights and the shop sign. The lights can be switched off late evening to reduce power consumption thanks to the AT1 switch timer.

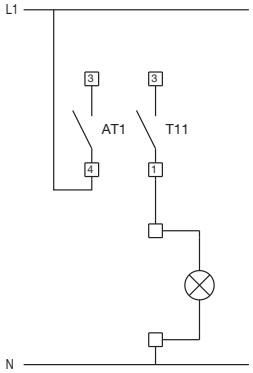
Application environments
The installation of the T1 twilight switch with an AT electromechanical timer is particularly useful in settings and situations where energy saving is a prime concern (shops, office corridors and public passageways, car parks,
parks, etc.).

Example of installation
As shown in the diagrams, one of the possible applications is the installation of a T1 twilight switch in the lighting system of a commercial establishment.

When the external light falls below a certain level (e.g. when the shop is closed), the twilight switch switches on the window lights and the sign. The lights can be switched off late evening to reduce power consumption thanks to the AT1 switch timer which keeps the circuit open until the next morning. When the external light returns to above the threshold value, the twilight switch relay returns to the open position.







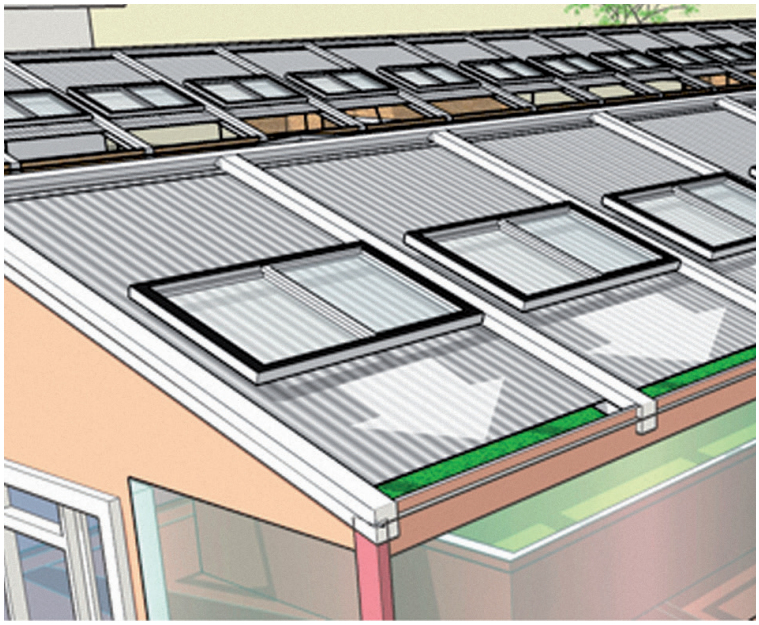
LIGHTING

01

02

03

04



05

04 Required light levels

05 Excessive light levels

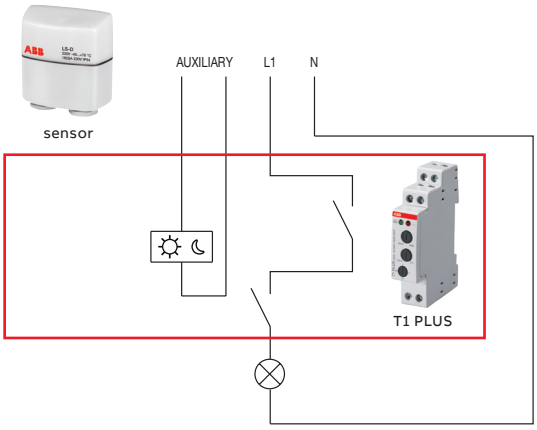
T1 PLUS twilight switch

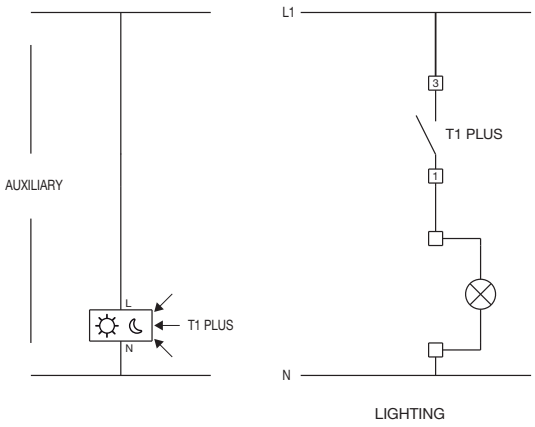
Operating principle
The diagram shows an example of the installation of the T1 PLUS twilight switch in the lighting system of a greenhouse. When the external light exceeds a certain level (e.g. during the warmest hours of the day, i.e. early afternoon), the device activates the shading system, e.g. roller blinds. Thanks to the option to advance or delay the activation-deactivation time, the T1 PLUS can also maintain the roller blinds closed in the case of passing clouds.

Application environments
The installation of the T1 PLUS twilight switch is particularly useful in settings and situations where lighting control is required for locations where there are consistently high brightness values, thus guaranteeing substantial savings in energy consumption (greenhouses, arcades, photovoltaic plants, etc.).

Example of installation
As shown in the diagrams, one of the possible options is to install a T1 PLUS twilight switch in the lighting system of a greenhouse.
When the external light exceeds a certain level (for example during peak hours in the early afternoon) the twilight switch activates the roller blinds, protecting the plants in the greenhouse against burning by the strong sunlight.

When the external light returns to below the threshold value, the twilight switch relay opens the blinds to allow the sunlight to pass through.





SACE Tmax XT

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**

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.

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.

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 (Electrificatio 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.

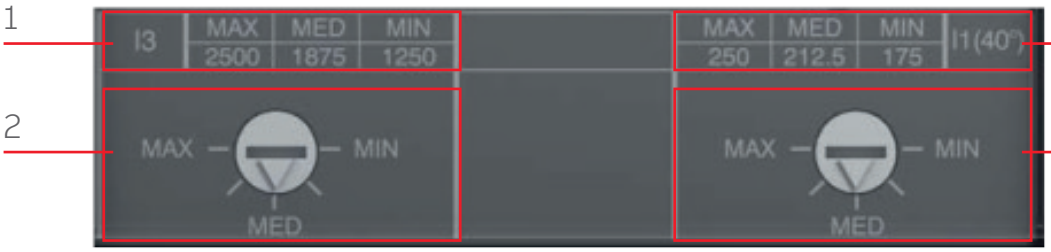
Thermal-magnetic trip unit
Overview

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.

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
XT3	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	625...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

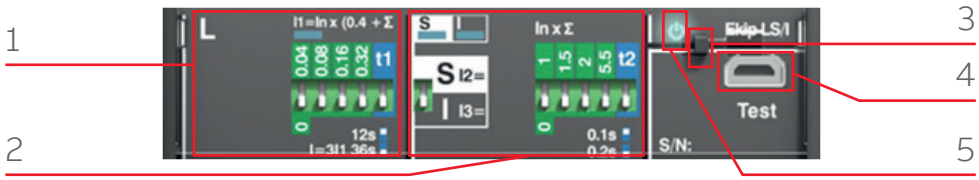
Ekip Dip
Overview

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 LSI
- Ekip Dip LSIG

Motor Protection
- Ekip M Dip I

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).

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

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.

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
L	Overload	I1 = 0.4...1 x In with steps of 0.04	t1 at 3 x I1 = 12 - 36s 12 - 48s for XT7	$t=k/I^2$
S	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 at 10 x In when $t = k/I^2$	t=k t = k or $t = k/I^2$ for XT7
I	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 t3 ≤ 30ms for XT7	t=k
G	Earth fault	I4 = Off - 0.20 - 0 .25 - 0.45 - 0.55 - 0.75 - 0.80 – 1 x In 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 at 3 x In when $t = k/I^2$	t=k t = k or $t = k/I^2$ for XT7

Ekip DIP LSI & Ekip DIP LSIG

ABB code	Protection Function	Threshold	Trip Time	Trip Curve
L	Overload	I1 = 0.4...1 x In with steps of 0.02 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 = 3 - 12 - 36 - 60s at 3xI1 for XT2-XT4 3 - 12 - 36 - 48s for XT5 3 - 12 - 36 - MAX for XT6 3 - 12 - 24 - 36 - 48 - 72 - 108 - 144s for XT7	$t=k/I^2$
S	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 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 t2 = 0.1 - 0.2 - 0.3 – 0.4 – 0.5 – 0.6 – 0.7 – 0.8 for XT7 at 10xIn when $t = k/I^2$	t = k or $t = k/I^2$
I	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 I3 = Off – 1 .5 – 2 – 3 – 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 -13 - 14 - 15 for XT7	t3 ≤ 20ms t3 ≤ 30ms for XT7	t=k
G	Earth fault	I4 = Off - 0.20 - 0 .25 - 0.45 - 0.55 - 0.75 - 0.80 – 1 x In 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 at 3 x In when $t = k/I^2$	t=k t = k or $t = k/I^2$ for XT7

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

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, through the Ekip Link switchgear supervision system and the Ekip Control Panel. 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.

Protecta Power

Power Connection & Torque Settings

Front terminals - F

			Busbars dimensions [mm]						Cable terminals [mm]		Tightening	
CB	Vers.	Wmin	Wmax	H	Ø	Dmin	Dmax	W	Ø	Cable or busbar/ terminal	
XT1	F	13	16	7.5	6.5	3.5	5	16	6.5	M6	6Nm
XT2	F	13	20	7.5	6.5	2.5	5	20	6.5	M6	6Nm
XT4	F	17	25	10	8.5	5	8	25	8.5	M8	8Nm
XT5	F	25	35	12	10.5	5	10	35	10.5	M10	28Nm
XT6 (1)	F	40	50	12	2x7	5	5	50	2x7	M6	9Nm

Front terminal - F

F terminal with cable lug

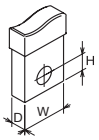
(1) Not available for the XT6 1000A
(2) Phase barriers 25 mm are mandatory according indications on instructions sheet

Extended front terminals - EF

		Busbars dimensions MAX [mm]			Cable terminals [mm]				Tightening	
CB	Vers.	W	D	Ø	W	Ø	Terminal/CB		Cable or busbar/ terminal	
XT1	F	20	4	8.5	20	8.5	M6	6Nm	M8	9Nm
XT2	F	20	4	8.5	20	8.5	M6	6Nm	M8	9Nm
XT4	F	20	10	10	20	10	M8	8Nm	M10	18Nm
XT5	F	32.5	10	11	32.5	11	M10	28Nm	M10	18Nm
XT6 800	F	50	5	14	50	14	M6	9Nm	M12	30Nm

Front extended terminal - F

EF terminal with cable lug



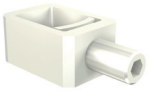
W Width
H Hole height
D Depth
F Fixed

P Plug-in
W Withdrawable
Ø Diameter
R On Request

S_{CB} Supplied as standard with circuit-breaker, not available in the loose terminals kit
S_T Supplied as standard with the terminals kit

Terminals for copper/aluminium cables - FC CuAl

	Cable terminals [mm]			Tightening Torque
CB	Rigid	Terminal	Cable or busbar/ terminal	Max. Cable Dia.
XT1	1x1.5...70	M5	Ø 9.5mm	≤10mm² - 2,5 Nm >10mm² - 5 Nm
XT2	1x1...95	-	Ø 14mm	≤ 25mm² - 4 Nm >25mm² - 6 Nm
XT4	1x1...150	-	Ø 17mm	10Nm
XT5	1x35...185	M10	Ø 17mm	23Nm
XT6	2x120...240	M6	Ø 21.5mm	31Nm



Internal FCCuAl terminal for copper/aluminum cables

FCCuAl internal terminal with cable

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, Ue	(AC) 50-60Hz	[V]			690		
Rated insulation voltage, Ui		[V]			800		
Rated impulse withstand voltage, Uimp		[kV]			8		
Versions					Fixed, Plug-in(1)		
Breaking capacities according to IEC 60947-2			**B**	**C**	**N**	**S**	**H**
Rated ultimate short-circuit breaking capacity, Icu							
Icu @ 220-230-240V 50-60Hz (AC)		[kA]	25	40	65	85	100
Icu @ 380V 50-60Hz (AC)		[kA]	18	25	36	50	70
Icu @ 415V 50-60Hz (AC)		[kA]	18	25	36	50	70
Icu @ 440V 50-60Hz (AC)		[kA]	15	25	36	50	65
Icu @ 500V 50-60Hz (AC)		[kA]	8	18	30	36	50
Icu @ 525V 50-60Hz (AC)		[kA]	6	8	22	35	35
Icu @ 690V 50-60Hz (AC)		[kA]	3	4	6	8	10
Rated service short-circuit breaking capacity, Ics							
Ics @ 220-230-240V 50-60Hz (AC)		[kA]	100%	100%	75% (50)	75%	75%
Ics @ 380V 50-60Hz (AC)		[kA]	100%	100%	100%	100%	75%
Ics @ 415V 50-60Hz (AC)		[kA]	100%	100%	100%	75%	50% (37.5)
Ics @ 440V 50-60Hz (AC)		[kA]	75%	50%	50%	50%	50%
Ics @ 500V 50-60Hz (AC)		[kA]	100%	50%	50%	50%	50%
Ics @ 525V 50-60Hz (AC)		[kA]	100%	100%	50%	50%	50%
Ics @ 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		
Icw		[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) Ics=100% Icu up to 250 A with EF, ES and Rear terminal. When any other terminals are used and I1 >200A Icu=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%(2)
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, **Ue**	(AC) 50-60Hz	[V]			690			
Rated insulation voltage, **Ui**		[V]			1000			
Rated impulse withstand voltage, **Uimp**		[kV]			8			
Versions					Fixed, Withdrawable, Plug-in (5)			
Breaking capacities according to IEC 60947-2			**N**	**S**	**H**	**L**	**V**	**X**
Rated ultimate short-circuit breaking capacity, Icu								
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, Ics								
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% (2)	100% (3)	100% (3)	100% (3)
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) (4)			
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]			240			
Electrical life @ 415 V (AC)		[No. operations]			7.000 (400A) - 5.000 (630A)			
		[No. hourly operations]			120			
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

			Not applicable in Protecta Power panelboards			Not applicable in Protecta Power panelboards		
								
XT6[1]			**XT7**			**XT7 M**		
800 / 1000 (only F)			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%
100%	100%	100%	100%	100%	100%	100%	100%	100%
A (up to 1000A) - B (800A) [4]			B			B		
10			20			20		
IEC 60947-2			IEC 60947-2			IEC 60947-2		
✓			✓			✓		
-			-			-		
20,000			10,000			20,000		
240			240			240		
5,000			3,000			3,000		
120			120			120		
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

SACE Tmax XT switch-disconnectors

Switch-disconnectors are devices created from the corresponding circuit-breakers and feature the same overall dimensions, versions, and can be fitted with the same accessories.

Applications

These devices are mainly used as:

- general disconnection devices in sub-switchboards;
- switching and insulation devices for lines, bus bars or groups of apparatus;
- bus ties.

In the open position, the disconnector guarantees a sufficient insulation distance (between the contacts) to ensure safety and to prevent an electrical arc from striking.

Utilization category

Tmax XT disconnectors comply with utilization categories defined by IEC 60947-3 Standard.

Characteristics

Size			**XT1D**	**XT3D**	**XT4D**
Conventional free air thermal current, Ith		[A]	160	250	250
Poles		[No.]	3, 4	3, 4	3, 4
Versions			Fixed, Plug-in	Fixed, Plug-in	Fixed, Plug-in, Withdrawable
Rated service voltage, Ue	(AC) 50-60Hz	[V]	690	690	690
	(DC)	[V]	500	500	500
Rated insulation voltage, Ui		[V]	800	800	800
Rated impulse withstand voltage, Uimp		[kV]	8	8	8
Rated making capacity in shortcircuit, Icm	(Min) Disconnector only	[kA]	2.8	5.3	5.3
	(Max) With automatic circuit-breaker on supply side	[kA]	154	105	330
Rated short-time withstand current for 1s, Icw		[kA]	2	3	3.6
Rated operating current, Ie	**(AC) 50-60Hz**				
AC-22A	415-440Vac		160	250	250
AC-23A			125	200	200
AC-22A	690V AC		160	250	250
AC-23A			125	200	200
Rated operating current, Ie	**DC**				
DC-22A	250V DC		160 - 2p in series	250 - 2p in series	250 - 2p in series
DC-23A			125 - 2p in series	200 - 2p in series	200 - 2p in series
DC-22A	500V DC		160 - 4P in series	250 - 3p in series	250 - 2p in series
DC-23A			125 - 4P in series	200 - 3p in series	200 - 2p in series
DC-22A	750V DC		-	-	-
DC-23A			-	-	-
Electrical life AC22 / AC23 (AC) 440 V In					
Mechanical life					

(1) XT6 1000 A is available exclusively in fixed version

Coordination

Supply side			**XT1 160**							**XT2**			**XT3**			**XT4**				**XT5 400**				
	Icu @ 415V AC		**B**	**C**	**N**	**S**	**H**	**N**	**S**	**H**	**L**	**V**	**B**	**S**	**N**	**S**	**H**	**L**	**V**	**N**	**S**	**H**	**L**	**V**
			18	**25**	**36**	**50**	**70**	**36**	**50**	**70**	**120**	**150**	**36**	**50**	**36**	**50**	**70**	**120**	**150**	**36**	**50**	**70**	**120**	**200**
Load side	**XT1D**	160	18	25	36	50	70	36	50	70	70	70	-	-	-	-	-	-	-	-	-	-	-	-
	XT3D	250	-	-	-	-	-	-	-	-	-	-	36	50	36	50	50	50	50	-	-	-	-	-
	XT4D	250	-	-	-	-	-	-	-	-	-	-	36	50	36	50	70	120	150	-	-	-	-	-
	XT5D	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	50	70	120	200
	XT5D	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	XT6D	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	XT6D	800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	XT6D	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	XT7D	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	XT7D	1250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	XT7D	1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 Icm 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.

				Not applicable in Protecta Power panelboards
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 [1]	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	[2]	[2]
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	20,000	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**
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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36	50	70	120	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	50	70	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-		-	-	-	-	-	-
-	-	-	-	-	36	50	70	-	-	-	-	-		-	-	-	-	-	-	-	-		-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	70	120	-	-	-	-	-	-	50	70	120

MCCBs

Z values

Circuit Breaker	Trip Unit	Rating	Thermal adjustments (Min / Max)	Magnetic releases Operating current Settings	A	Max loop (disconnection 0.4s) Impedance Zs (ohms)	Max loop (disconnection 5s) Impedance Zs (ohms)
ABB Formula Single Pole A1	**TMF**	16	-	Fixed	400	0.48	0.48
	TMF	20	-	Fixed	400	0.48	0.48
	TMF	25	-	Fixed	400	0.48	0.48
	TMF	32	-	Fixed	400	0.48	0.48
	TMF	40	-	Fixed	400	0.48	0.48
	TMF	50	-	Fixed	500	0.383	0.383
	TMF	63	-	Fixed	630	0.304	0.304
	TMF	80	-	Fixed	800	0.24	0.24
	TMF	100	-	Fixed	1000	0.19	0.19
	TMF	125	-	Fixed	1250	0.15	0.15
XT1	**TMF**	16A	16A	fixed	450A	0.430	1.14
	TMF	20A	20A	fixed	450A	0.430	0.91
	TMD	25A	18 - 25A	fixed	450A	0.430	0.73
	TMD	32A	22 - 32A	fixed	450A	0.430	0.57
	TMD	40A	28 - 40A	fixed	450A	0.430	0.46
	TMD	50A	35 - 50A	fixed	500A	0.380	0.38
	TMD	63A	44 - 63A	fixed	630A	0.300	0.3
	TMD	80A	56 - 80A	fixed	800A	0.240	0.24
	TMD	100A	70 - 100A	fixed	1000A	0.190	0.19
	TMD	125A	88 - 125A	fixed	1250A	0.150	0.15
	TMD	160A	112 - 160A	fixed	1600A	0.120	0.12
XT2	**TMD**	16A	11 - 16A	fixed	300	0.640	0.640
	TMD	20A	14 - 20A	fixed	300	0.640	0.640
	TMD	25A	18 - 25A	fixed	300	0.600	0.600
	TMD	32A	22 - 32A	fixed	320	0.430	0.430
	TMA	40A	28 - 40A	Adjustable (Min / Max)	300	0.640	0.640
					400	0.480	0.480
	TMA	50A	35 - 50A	Adjustable (Min / Max)	300	0.640	0.640
					500	0.380	0.380
	TMA	63A	44 - 63A	Adjustable (Min / Max)	300	0.640	0.640
					630	0.300	0.300
	TMA	80A	56 - 80A	Adjustable (Min / Max)	400	0.480	0.480
					800	0.240	0.240
	TMA	100A	70 - 100A	Adjustable (Min / Max)	500	0.380	0.380
					1000	0.190	0.190
	TMA	125A	88 - 125A	Adjustable (Min / Max)	625	0.310	0.310
					1250	0.150	0.150
	TMA	160A	112 - 160A	Adjustable (Min / Max)	800	0.240	0.240
					1600	0.120	0.120
XT3	**TMD**	63A	44 - 63A	fixed	630A	0.300	0.300
	TMD	80A	56 - 80A	fixed	800A	0.240	0.240
	TMD	100A	70 - 100A	fixed	1000A	0.190	0.190
	TMD	125A	88 - 125A	fixed	1250A	0.150	0.150
	TMD	160A	112 - 160A	fixed	1600A	0.120	0.120
	TMD	200A	140 - 200A	fixed	2000A	0.100	0.100
	TMD	250A	175 - 250A	fixed	2500A	0.080	0.080
XT4	**TMD**	16A	11 - 16A	fixed	300	0.640	0.640
	TMD	20A	14 - 20A	fixed	300	0.640	0.640
	TMD	25A	18 - 25A	fixed	300	0.600	0.600
	TMD	32A	22 - 32A	fixed	320	0.430	0.430
	TMA	40A	28 - 40A	Adjustable (Min / Max)	300	0.640	0.640
					400	0.480	0.480
	TMA	50A	35 - 50A	Adjustable (Min / Max)	300	0.640	0.640
					500	0.380	0.380
	TMA	63A	44 - 63A	Adjustable (Min / Max)	315	0.610	0.610
					630	0.300	0.300
	TMA	80A	56 - 80A	Adjustable (Min / Max)	400	0.480	0.480
					800	0.240	0.240

Circuit Breaker	Trip Unit	Rating	Thermal adjustments (Min / Max)	Magnetic releases Operating current Settings	A	Max loop (disconnection 0.4s) Impedance Zs (ohms)	Max loop (disconnection 5s) Impedance Zs (ohms)
	TMA	100A	70 - 100A	Adjustable (Min / Max)	500	0.380	0.380
					1000	0.190	0.190
	TMA	125A	88 - 125A	Adjustable (Min / Max)	625	0.310	0.310
					1250	0.150	0.150
	TMA	160A	112 - 160A	Adjustable (Min / Max)	800	0.240	0.240
					1600	0.120	0.120
	TMA	200A	140 - 200A	Adjustable (Min / Max)	1000	0.190	0.190
					2000	0.100	0.100
	TMA	225A	158 - 225A	Adjustable (Min / Max)	1125	0.170	0.170
					2250	0.090	0.090
	TMA	250A	175 - 250A	Adjustable (Min / Max)	1250	0.150	0.150
					2500	0.080	0.080
XT5	**TMA**	320A	224 - 320A	Adjustable (Min / Max)	1600	0.120	0.120
					3200	0.060	0.060
	TMA	400A	280 - 400A	Adjustable (Min / Max)	2000	0.096	0.096
					4000	0.048	0.048
	TMA	630A	441 - 630A	Adjustable (Min / Max)	3150	0.061	0.061
					6300	0.030	0.030
XT6	**TMA**	630A	441 - 630A	Adjustable (Min / Max)	3150	0.061	0.061
					6300	0.030	0.030
	TMA	800A	560 - 800A	Adjustable (Min / Max)	4000	0.048	0.048
					8000	0.024	0.024

*For Electronic breakers use the formula below

Zs values for MCCBs and ACBs should be calculated from the trip curve including tolerance band, using the curve to establish the minimum current required to guarantee a 5s disconnection time. But it is possible to offer a general rule of thumb by calculating as follows:-

- Zs = Vph /(Im * 1.2).
- Where Vph is the phase/neutral voltage.
- Im is the magnetic or instantaneous trip setting.
- Using this method gives a guaranteed disconnection time by the use of the instantaneous trip value but can result in lower Zs values than can really be achieved in practice.
- Thermo magnetic MCCBs with fixed magnetic trip rated at thermal ratings below 50A, Im is fixed at 500A.
- Generally, for all other thermo magnetic MCCBs, Im is fixed at 10x the thermal rating eg 63A MCCB, Im = 630A.

Outgoing MCCB

ABB Protective Devices Cross reference

Description	ABB Protective Device	Order code
16A 1P 18kA MCCB - A1C125 (Th/Mag)	1SDA068745R1	EPX-A1B-016L1 EPX-A1B-016L2 EPX-A1B-016L3
20A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA066686R1	EPX-A1C-020L1 EPX-A1C-020L2 EPX-A1C-020L3
25A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA066687R1	EPX-A1C-025L1 EPX-A1C-025L2 EPX-A1C-025L3
32A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA066688R1	EPX-A1C-032L1 EPX-A1C-032L2 EPX-A1C-032L3
40A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA066689R1	EPX-A1C-040L1 EPX-A1C-040L2 EPX-A1C-040L3
50A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA066690R1	EPX-A1C-050L1 EPX-A1C-050L2 EPX-A1C-050L3
63A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA068766R1	EPX-A1C-063L1 EPX-A1C-063L2 EPX-A1C-063L3
80A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA066693R1	EPX-A1C-080L1 EPX-A1C-080L2 EPX-A1C-080L3
100A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA066695R1	EPX-A1C-100L1 EPX-A1C-100L2 EPX-A1C-100L3
125A 1P 25kA MCCB - A1N125 (Th/Mag)	1SDA066696R1	EPX-A1C-125L1 EPX-A1C-125L2 EPX-A1C-125L3
16A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA080827R1	EPX-XT1N-TM0163
20A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA080828R1	EPX-XT1N-TM0203
25A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA080829R1	EPX-XT1N-TM0253
32A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067411R1	EPX-XT1N-TM0323
40A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067412R1	EPX-XT1N-TM0403
50A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067413R1	EPX-XT1N-TM0503
63A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067414R1	EPX-XT1N-TM0633
80A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067415R1	EPX-XT1N-TM0803
100A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067416R1	EPX-XT1N-TM1003
125A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067417R1	EPX-XT1N-TM1253
160A 3P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067418R1	EPX-XT1N-TM1603
16A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMD	1SDA067010R1	EPX-XT2N-TM0163
20A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMD	1SDA067011R1	EPX-XT2N-TM0203
25A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMD	1SDA067012R1	EPX-XT2N-TM0253
32A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMD	1SDA067013R1	EPX-XT2N-TM0323
40A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067014R1	EPX-XT2N-TM0403
50A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067015R1	EPX-XT2N-TM0503
63A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067016R1	EPX-XT2N-TM0633
80A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067017R1	EPX-XT2N-TM0803
100A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067018R1	EPX-XT2N-TM1003
125A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067019R1	EPX-XT2N-TM1253
160A 3P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067020R1	EPX-XT2N-TM1603
16A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMD	1SDA068076R1	EPX-XT4N-TM0163
20A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMD	1SDA068080R1	EPX-XT4N-TM0203
25A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMD	1SDA068081R1	EPX-XT4N-TM0253
32A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMD	1SDA068082R1	EPX-XT4N-TM0323

Description	ABB Protective Device	Order code
40A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068083R1	EPX-XT4N-TM0403
50A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068084R1	EPX-XT4N-TM0503
63A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068085R1	EPX-XT4N-TM0633
80A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068086R1	EPX-XT4N-TM0803
100A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068087R1	EPX-XT4N-TM1003
125A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068088R1	EPX-XT4N-TM1253
160A 3P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068089R1	EPX-XT4N-TM1603
200A 3P 36kA MCCB - XT4N250 (Th/Mag) - TMA	1SDA068090R1	EPX-XT4N-TM2003
250A 3P 36kA MCCB - XT4N250 (Th/Mag) - TMA	1SDA068092R1	EPX-XT4N-TM2503
320A 3P 36kA MCCB - XT5N400 (Th/Mag) - TMA	1SDA100344R1	EPX-XT5N-TM3203
400A 3P 36kA MCCB - XT5N400 (Th/Mag) - TMA	1SDA100345R1	EPX-XT5N-TM4003
630A 3P 36kA MCCB - XT5N630 (Th/Mag) - TMA	1SDA100347R1	EPX-XT5N-TM6303
16A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA080842R1	EPX-XT1N-TM0164
20A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA080843R1	EPX-XT1N-TM0204
25A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA080844R1	EPX-XT1N-TM0254
32A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067419R1	EPX-XT1N-TM0324
40A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067420R1	EPX-XT1N-TM0404
50A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067421R1	EPX-XT1N-TM0504
63A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067422R1	EPX-XT1N-TM0634
80A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067423R1	EPX-XT1N-TM0804
100A 4P 36kA MCCB - XT1N160 (Th/Mag)	1SDA067424R1	EPX-XT1N-TM1004
125A 4P 36kA MCCB - XT1N160 (Th/Mag) (N=100%)	1SDA067427R1	EPX-XT1N-TM1254
160A 4P 36kA MCCB - XT1N160 (Th/Mag) (N=100%)	1SDA067428R1	EPX-XT1N-TM1604
16A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMD	1SDA067031R1	EPX-XT2N-TM0164
20A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMD	1SDA067032R1	EPX-XT2N-TM0204
25A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMD	1SDA067033R1	EPX-XT2N-TM0254
32A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMD	1SDA067034R1	EPX-XT2N-TM0324
40A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067035R1	EPX-XT2N-TM0404
50A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067036R1	EPX-XT2N-TM0504
63A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067037R1	EPX-XT2N-TM0634
80A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067038R1	EPX-XT2N-TM0804
100A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMA	1SDA067039R1	EPX-XT2N-TM1004
125A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMA (N=100%)	1SDA067042R1	EPX-XT2N-TM1254
160A 4P 36kA MCCB - XT2N160 (Th/Mag) - TMA (N=100%)	1SDA067043R1	EPX-XT2N-TM1604
16A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMD	1SDA068093R1	EPX-XT4N-TM0164
20A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMD	1SDA068094R1	EPX-XT4N-TM0204
25A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMD	1SDA068095R1	EPX-XT4N-TM0254
32A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMD	1SDA068096R1	EPX-XT4N-TM0324
40A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068097R1	EPX-XT4N-TM0404
50A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068098R1	EPX-XT4N-TM0504
63A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068099R1	EPX-XT4N-TM0634
80A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068100R1	EPX-XT4N-TM0804
100A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMA	1SDA068101R1	EPX-XT4N-TM1004
125A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMA - (N=100%)	1SDA068107R1	EPX-XT4N-TM1254
160A 4P 36kA MCCB - XT4N160 (Th/Mag) - TMA - (N=100%)	1SDA068108R1	EPX-XT4N-TM1604
200A 4P 36kA MCCB - XT4N250 (Th/Mag) - TMA - (N=100%)	1SDA068109R1	EPX-XT4N-TM2004
250A 4P 36kA MCCB - XT4N250 (Th/Mag) - TMA - (N=100%)	1SDA068111R1	EPX-XT4N-TM2504
320A 4P 36kA MCCB - XT5N400 (Th/Mag) - TMA - (N=100%)	1SDA100383R1	EPX-XT5N-TM3204
400A 4P 36kA MCCB - XT5N400 (Th/Mag) - TMA - (N=100%)	1SDA100385R1	EPX-XT5N-TM4004
630A 4P 36kA MCCB - XT5N630 (Th/Mag) - TMA - (N=100%)	1SDA100389R1	EPX-XT5N-TM6304

Outgoing MCCB

ABB Protective Devices Cross reference

Description	ABB Protective Device	Order code
25A 3P 36kA MCCB - XT2N160 (Ekip) - LS/I	1SDA067055R1	EPX-XT2N-E1-0253
63A 3P 36kA MCCB - XT2N160 (Ekip) - LS/I	1SDA067056R1	EPX-XT2N-E1-0633
100A 3P 36kA MCCB - XT2N160 (Ekip) - LS/I	1SDA067057R1	EPX-XT2N-E1-1003
160A 3P 36kA MCCB - XT2N160 (Ekip) - LS/I	1SDA067058R1	EPX-XT2N-E1-1603
40A 3P 36kA MCCB - XT4N160 (Ekip) - LS/I	1SDA068122R1	EPX-XT4N-E1-0403
63A 3P 36kA MCCB - XT4N160 (Ekip) - LS/I	1SDA068123R1	EPX-XT4N-E1-0633
100A 3P 36kA MCCB - XT4N160 (Ekip) - LS/I	1SDA068124R1	EPX-XT4N-E1-1003
160A 3P 36kA MCCB - XT4N160 (Ekip) - LS/I	1SDA068125R1	EPX-XT4N-E1-1603
250A 3P 36kA MCCB - XT4N250 (Ekip) - LS/I	1SDA068126R1	EPX-XT4N-E1-2503
250A 3P 36kA MCCB - XT5N400 Ekip Dip - LS/I	1SDA100352R1	EPX-XT5N-E1-2503
320A 3P 36kA MCCB - XT5N400 Ekip Dip - LS/I	1SDA100353R1	EPX-XT5N-E1-3203
400A 3P 36kA MCCB - XT5N400 Ekip Dip - LS/I	1SDA100354R1	EPX-XT5N-E1-4003
630A 3P 36kA MCCB - XT5N630 Ekip Dip - LS/I	1SDA100355R1	EPX-XT5N-E1-6303
25A 4P 36kA MCCB - XT2N160 (Ekip) - LS/I	1SDA067091R1	EPX-XT2N-E1-0254
63A 4P 36kA MCCB - XT2N160 (Ekip) - LS/I	1SDA067092R1	EPX-XT2N-E1-0634
100A 4P 36kA MCCB - XT2N160 (Ekip) - LS/I	1SDA067093R1	EPX-XT2N-E1-1004
160A 4P 36kA MCCB - XT2N160 (Ekip) - LS/I	1SDA067095R1	EPX-XT2N-E1-1604
40A 4P 36kA MCCB - XT4N160 (Ekip) - LS/I	1SDA068142R1	EPX-XT4N-E1-0404
63A 4P 36kA MCCB - XT4N160 (Ekip) - LS/I	1SDA068144R1	EPX-XT4N-E1-0634
100A 4P 36kA MCCB - XT4N160 (Ekip) - LS/I	1SDA068145R1	EPX-XT4N-E1-1004
160A 4P 36kA MCCB - XT4N160 (Ekip) - LS/I	1SDA068146R1	EPX-XT4N-E1-1604
250A 4P 36kA MCCB - XT4N250 (Ekip) - LS/I	1SDA068147R1	EPX-XT4N-E1-2504
250A 4P 36kA MCCB - XT5N400 Ekip Dip - LS/I	1SDA100394R1	EPX-XT5N-E1-2504
320A 4P 36kA MCCB - XT5N400 Ekip Dip - LS/I	1SDA100395R1	EPX-XT5N-E1-3204
400A 4P 36kA MCCB - XT5N400 Ekip Dip - LS/I	1SDA100396R1	EPX-XT5N-E1-4004
630A 4P 36kA MCCB - XT5N630 Ekip Dip - LS/I	1SDA100397R1	EPX-XT5N-E1-6304
25A 3P 36kA MCCB - XT2N160 (Ekip) - LSI	1SDA067068R1	EPX-XT2N-E2-0253
63A 3P 36kA MCCB - XT2N160 (Ekip) - LSI	1SDA067069R1	EPX-XT2N-E2-0633
100A 3P 36kA MCCB - XT2N160 (Ekip) - LSI	1SDA067070R1	EPX-XT2N-E2-1003
160A 3P 36kA MCCB - XT2N160 (Ekip) - LSI	1SDA067071R1	EPX-XT2N-E2-1603
40A 3P 36kA MCCB - XT4N160 (Ekip) - LSI	1SDA068132R1	EPX-XT4N-E2-0403
63A 3P 36kA MCCB - XT4N160 (Ekip) - LSI	1SDA068133R1	EPX-XT4N-E2-0633
100A 3P 36kA MCCB - XT4N160 (Ekip) - LSI	1SDA068134R1	EPX-XT4N-E2-1003
160A 3P 36kA MCCB - XT4N160 (Ekip) - LSI	1SDA068135R1	EPX-XT4N-E2-1603
250A 3P 36kA MCCB - XT4N250 (Ekip) - LSI	1SDA068136R1	EPX-XT4N-E2-2503
250A 3P 36kA MCCB - XT5N400 Ekip Dip - LSI	1SDA100356R1	EPX-XT5N-E2-2503
320A 3P 36kA MCCB - XT5N400 Ekip Dip - LSI	1SDA100357R1	EPX-XT5N-E2-3203
400A 3P 36kA MCCB - XT5N400 Ekip Dip - LSI	1SDA100358R1	EPX-XT5N-E2-4003
630A 3P 36kA MCCB - XT5N630 Ekip Dip - LSI	1SDA100359R1	EPX-XT5N-E2-6303
25A 4P 36kA MCCB - XT2N160 (Ekip) - LSI	1SDA067103R1	EPX-XT2N-E2-0254
63A 4P 36kA MCCB - XT2N160 (Ekip) - LSI	1SDA067104R1	EPX-XT2N-E2-0634
100A 4P 36kA MCCB - XT2N160 (Ekip) - LSI	1SDA067105R1	EPX-XT2N-E2-1004
160A 4P 36kA MCCB - XT2N160 (Ekip) - LSI	1SDA067107R1	EPX-XT2N-E2-1604
40A 4P 36kA MCCB - XT4N160 (Ekip) - LSI	1SDA068153R1	EPX-XT4N-E2-0404
63A 4P 36kA MCCB - XT4N160 (Ekip) - LSI	1SDA068154R1	EPX-XT4N-E2-0634
100A 4P 36kA MCCB - XT4N160 (Ekip) - LSI	1SDA068155R1	EPX-XT4N-E2-1004
160A 4P 36kA MCCB - XT4N160 (Ekip) - LSI	1SDA068156R1	EPX-XT4N-E2-1604
250A 4P 36kA MCCB - XT4N250 (Ekip) - LSI	1SDA068157R1	EPX-XT4N-E2-2504
250A 4P 36kA MCCB - XT5N400 Ekip Dip - LSI	1SDA100398R1	EPX-XT5N-E2-2504
320A 4P 36kA MCCB - XT5N400 Ekip Dip - LSI	1SDA100399R1	EPX-XT5N-E2-3204

Description	ABB Protective Device	Order code
400A 4P 36kA MCCB - XT5N400 Ekip Dip - LSI	1SDA100400R1	EPX-XT5N-E2-4004
630A 4P 36kA MCCB - XT5N630 Ekip Dip - LSI	1SDA100401R1	EPX-XT5N-E2-6304
16A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080830R1	EPX-XT1S-TM0163
20A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080831R1	EPX-XT1S-TM0203
25A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080832R1	EPX-XT1S-TM0253
32A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080833R1	EPX-XT1S-TM0323
40A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080834R1	EPX-XT1S-TM0403
50A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067431R1	EPX-XT1S-TM0503
63A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067432R1	EPX-XT1S-TM0633
80A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067433R1	EPX-XT1S-TM0803
100A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067434R1	EPX-XT1S-TM1003
125A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067435R1	EPX-XT1S-TM1253
160A 3P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067436R1	EPX-XT1S-TM1603
16A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMD	1SDA067550R1	EPX-XT2S-TM0163
20A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMD	1SDA067551R1	EPX-XT2S-TM0203
25A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMD	1SDA067552R1	EPX-XT2S-TM0253
32A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMD	1SDA067553R1	EPX-XT2S-TM0323
40A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067554R1	EPX-XT2S-TM0403
50A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067555R1	EPX-XT2S-TM0503
63A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067556R1	EPX-XT2S-TM0633
80A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067557R1	EPX-XT2S-TM0803
100A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067558R1	EPX-XT2S-TM1003
125A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067559R1	EPX-XT2S-TM1253
160A 3P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067560R1	EPX-XT2S-TM1603
16A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMD	1SDA068299R1	EPX-XT4S-TM0163
20A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMD	1SDA068300R1	EPX-XT4S-TM0203
25A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMD	1SDA068301R1	EPX-XT4S-TM0253
32A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMD	1SDA068302R1	EPX-XT4S-TM0323
40A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068303R1	EPX-XT4S-TM0403
50A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068304R1	EPX-XT4S-TM0503
63A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068305R1	EPX-XT4S-TM0633
80A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068306R1	EPX-XT4S-TM0803
100A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068307R1	EPX-XT4S-TM1003
125A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068308R1	EPX-XT4S-TM1253
160A 3P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068309R1	EPX-XT4S-TM1603
200A 3P 50kA MCCB - XT4S250 (Th/Mag) - TMA	1SDA068310R1	EPX-XT4S-TM2003
250A 3P 50kA MCCB - XT4S250 (Th/Mag) - TMA	1SDA068312R1	EPX-XT4S-TM2503
320A 3P 50kA MCCB - XT5S400 (Th/Mag) - TMA	1SDA100414R1	EPX-XT5S-TM3203
400A 3P 50kA MCCB - XT5S400 (Th/Mag) - TMA	1SDA100415R1	EPX-XT5S-TM4003
630A 3P 50kA MCCB - XT5S630 (Th/Mag) - TMA	1SDA100417R1	EPX-XT5S-TM6303
16A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080845R1	EPX-XT1S-TM0164
20A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080846R1	EPX-XT1S-TM0204
25A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080847R1	EPX-XT1S-TM0254
32A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080848R1	EPX-XT1S-TM0324
40A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA080849R1	EPX-XT1S-TM0404
50A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067439R1	EPX-XT1S-TM0504
63A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067440R1	EPX-XT1S-TM0634
80A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067441R1	EPX-XT1S-TM0804
100A 4P 50kA MCCB - XT1S160 (Th/Mag)	1SDA067442R1	EPX-XT1S-TM1004
125A 4P 50kA MCCB - XT1S160 (Th/Mag) (N=100%)	1SDA067445R1	EPX-XT1S-TM1254

Outgoing MCCB

ABB Protective Devices Cross reference

Description	ABB Protective Device	Order code
160A 4P 50kA MCCB - XT1S160 (Th/Mag) (N=100%)	1SDA067446R1	EPX-XT1S-TM1604
16A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMD	1SDA067571R1	EPX-XT2S-TM0164
20A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMD	1SDA067572R1	EPX-XT2S-TM0204
25A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMD	1SDA067573R1	EPX-XT2S-TM0254
32A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMD	1SDA067574R1	EPX-XT2S-TM0324
40A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067575R1	EPX-XT2S-TM0404
50A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067576R1	EPX-XT2S-TM0504
63A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067577R1	EPX-XT2S-TM0634
80A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067578R1	EPX-XT2S-TM0804
100A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMA	1SDA067579R1	EPX-XT2S-TM1004
125A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMA (N=100%)	1SDA067582R1	EPX-XT2S-TM1254
160A 4P 50kA MCCB - XT2S160 (Th/Mag) - TMA (N=100%)	1SDA067583R1	EPX-XT2S-TM1604
16A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMD	1SDA068313R1	EPX-XT4S-TM0164
20A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMD	1SDA068314R1	EPX-XT4S-TM0204
25A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMD	1SDA068315R1	EPX-XT4S-TM0254
32A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMD	1SDA068316R1	EPX-XT4S-TM0324
40A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068317R1	EPX-XT4S-TM0404
50A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068318R1	EPX-XT4S-TM0504
63A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068319R1	EPX-XT4S-TM0634
80A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068320R1	EPX-XT4S-TM0804
100A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMA	1SDA068321R1	EPX-XT4S-TM1004
125A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMA - (N=100%)	1SDA068327R1	EPX-XT4S-TM1254
160A 4P 50kA MCCB - XT4S160 (Th/Mag) - TMA - (N=100%)	1SDA068328R1	EPX-XT4S-TM1604
200A 4P 50kA MCCB - XT4S250 (Th/Mag) - TMA - (N=100%)	1SDA068329R1	EPX-XT4S-TM2004
250A 4P 50kA MCCB - XT4S250 (Th/Mag) - TMA - (N=100%)	1SDA068331R1	EPX-XT4S-TM2504
320A 4P 50kA MCCB - XT5S400 (Th/Mag) - TMA - (N=100%)	1SDA100453R1	EPX-XT5S-TM3204
400A 4P 50kA MCCB - XT5S400 (Th/Mag) - TMA - (N=100%)	1SDA100455R1	EPX-XT5S-TM4004
630A 4P 50kA MCCB - XT5S630 (Th/Mag) - TMA - (N=100%)	1SDA100459R1	EPX-XT5S-TM6304
25A 3P 50kA MCCB - XT2S160 (Ekip) - LS/I	1SDA067801R1	EPX-XT2S-E1-0253
63A 3P 50kA MCCB - XT2S160 (Ekip) - LS/I	1SDA067802R1	EPX-XT2S-E1-0633
100A 3P 50kA MCCB - XT2S160 (Ekip) - LS/I	1SDA067803R1	EPX-XT2S-E1-1003
160A 3P 50kA MCCB - XT2S160 (Ekip) - LS/I	1SDA067804R1	EPX-XT2S-E1-1603
40A 3P 50kA MCCB - XT4S160 (Ekip) - LS/I	1SDA068471R1	EPX-XT4S-E1-0403
63A 3P 50kA MCCB - XT4S160 (Ekip) - LS/I	1SDA068472R1	EPX-XT4S-E1-0633
100A 3P 50kA MCCB - XT4S160 (Ekip) - LS/I	1SDA068473R1	EPX-XT4S-E1-1003
160A 3P 50kA MCCB - XT4S160 (Ekip) - LS/I	1SDA068474R1	EPX-XT4S-E1-1603
250A 3P 50kA MCCB - XT4S250 (Ekip) - LS/I	1SDA068475R1	EPX-XT4S-E1-2503
250A 3P 50kA MCCB - XT5S400 Ekip Dip - LS/I	1SDA100422R1	EPX-XT5S-E1-2503
320A 3P 50kA MCCB - XT5S400 Ekip Dip - LS/I	1SDA100423R1	EPX-XT5S-E1-3203
400A 3P 50kA MCCB - XT5S400 Ekip Dip - LS/I	1SDA100424R1	EPX-XT5S-E1-4003
630A 3P 50kA MCCB - XT5S630 Ekip Dip - LS/I	1SDA100425R1	EPX-XT5S-E1-6303
25A 4P 50kA MCCB - XT2S160 (Ekip) - LS/I	1SDA067834R1	EPX-XT2S-E1-0254
63A 4P 50kA MCCB - XT2S160 (Ekip) - LS/I	1SDA067835R1	EPX-XT2S-E1-0634
100A 4P 50kA MCCB - XT2S160 (Ekip) - LS/I	1SDA067836R1	EPX-XT2S-E1-1004
160A 4P 50kA MCCB - XT2S160 (Ekip) - LS/I	1SDA067838R1	EPX-XT2S-E1-1604
40A 4P 50kA MCCB - XT4S160 (Ekip) - LS/I	1SDA068491R1	EPX-XT4S-E1-0404
63A 4P 50kA MCCB - XT4S160 (Ekip) - LS/I	1SDA068492R1	EPX-XT4S-E1-0634
100A 4P 50kA MCCB - XT4S160 (Ekip) - LS/I	1SDA068493R1	EPX-XT4S-E1-1004
160A 4P 50kA MCCB - XT4S160 (Ekip) - LS/I	1SDA068494R1	EPX-XT4S-E1-1604
250A 4P 50kA MCCB - XT4S250 (Ekip) - LS/I	1SDA068495R1	EPX-XT4S-E1-2504

Description	ABB Protective Device	Order code
250A 4P 50kA MCCB - XT5S400 Ekip Dip - LS/I	1SDA100464R1	EPX-XT5S-E1-2504
320A 4P 50kA MCCB - XT5S400 Ekip Dip - LS/I	1SDA100465R1	EPX-XT5S-E1-3204
400A 4P 50kA MCCB - XT5S400 Ekip Dip - LS/I	1SDA100466R1	EPX-XT5S-E1-4004
630A 4P 50kA MCCB - XT5S630 Ekip Dip - LS/I	1SDA100467R1	EPX-XT5S-E1-6304
25A 3P 50kA MCCB - XT2S160 (Ekip) - LSI	1SDA067811R1	EPX-XT2S-E2-0253
63A 3P 50kA MCCB - XT2S160 (Ekip) - LSI	1SDA067812R1	EPX-XT2S-E2-0633
100A 3P 50kA MCCB - XT2S160 (Ekip) - LSI	1SDA067813R1	EPX-XT2S-E2-1003
160A 3P 50kA MCCB - XT2S160 (Ekip) - LSI	1SDA067814R1	EPX-XT2S-E2-1603
40A 3P 50kA MCCB - XT4S160 (Ekip) - LSI	1SDA068481R1	EPX-XT4S-E2-0403
63A 3P 50kA MCCB - XT4S160 (Ekip) - LSI	1SDA068482R1	EPX-XT4S-E2-0633
100A 3P 50kA MCCB - XT4S160 (Ekip) - LSI	1SDA068483R1	EPX-XT4S-E2-1003
160A 3P 50kA MCCB - XT4S160 (Ekip) - LSI	1SDA068484R1	EPX-XT4S-E2-1603
250A 3P 50kA MCCB - XT4S250 (Ekip) - LSI	1SDA068485R1	EPX-XT4S-E2-2503
250A 3P 50kA MCCB - XT5S400 Ekip Dip - LSI	1SDA100426R1	EPX-XT5S-E2-2503
320A 3P 50kA MCCB - XT5S400 Ekip Dip - LSI	1SDA100427R1	EPX-XT5S-E2-3203
400A 3P 50kA MCCB - XT5S400 Ekip Dip - LSI	1SDA100428R1	EPX-XT5S-E2-4003
630A 3P 50kA MCCB - XT5S630 Ekip Dip - LSI	1SDA100429R1	EPX-XT5S-E2-6303
25A 4P 50kA MCCB - XT2S160 (Ekip) - LSI	1SDA067846R1	EPX-XT2S-E2-0254
63A 4P 50kA MCCB - XT2S160 (Ekip) - LSI	1SDA067847R1	EPX-XT2S-E2-0634
100A 4P 50kA MCCB - XT2S160 (Ekip) - LSI	1SDA067848R1	EPX-XT2S-E2-1004
160A 4P 50kA MCCB - XT2S160 (Ekip) - LSI	1SDA067850R1	EPX-XT2S-E2-1604
40A 4P 50kA MCCB - XT4S160 (Ekip) - LSI	1SDA068501R1	EPX-XT4S-E2-0404
63A 4P 50kA MCCB - XT4S160 (Ekip) - LSI	1SDA068502R1	EPX-XT4S-E2-0634
100A 4P 50kA MCCB - XT4S160 (Ekip) - LSI	1SDA068503R1	EPX-XT4S-E2-1004
160A 4P 50kA MCCB - XT4S160 (Ekip) - LSI	1SDA068504R1	EPX-XT4S-E2-1604
250A 4P 50kA MCCB - XT4S250 (Ekip) - LSI	1SDA068505R1	EPX-XT4S-E2-2504
250A 4P 50kA MCCB - XT5S400 Ekip Dip - LSI	1SDA100468R1	EPX-XT5S-E2-2504
320A 4P 50kA MCCB - XT5S400 Ekip Dip - LSI	1SDA100469R1	EPX-XT5S-E2-3204
400A 4P 50kA MCCB - XT5S400 Ekip Dip - LSI	1SDA100470R1	EPX-XT5S-E2-4004
630A 4P 50kA MCCB - XT5S630 Ekip Dip - LSI	1SDA100471R1	EPX-XT5S-E2-6304

Additional information
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