PRODUCT SELECTION GUIDE

Electrification products

UK Contractor handbook

ABB offers a comprehensive and professional tool box where you can find solutions for all kinds of residential, commercial and industrial applications. Our products are not only fast to mount, durable and easy to implement, but also a benchmark in efficiency and protection.

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Pioneering technology leader

ABB is at the heart of the connected world

But what does the Internet of Things, Services and People (IoTSP) mean for distributors.

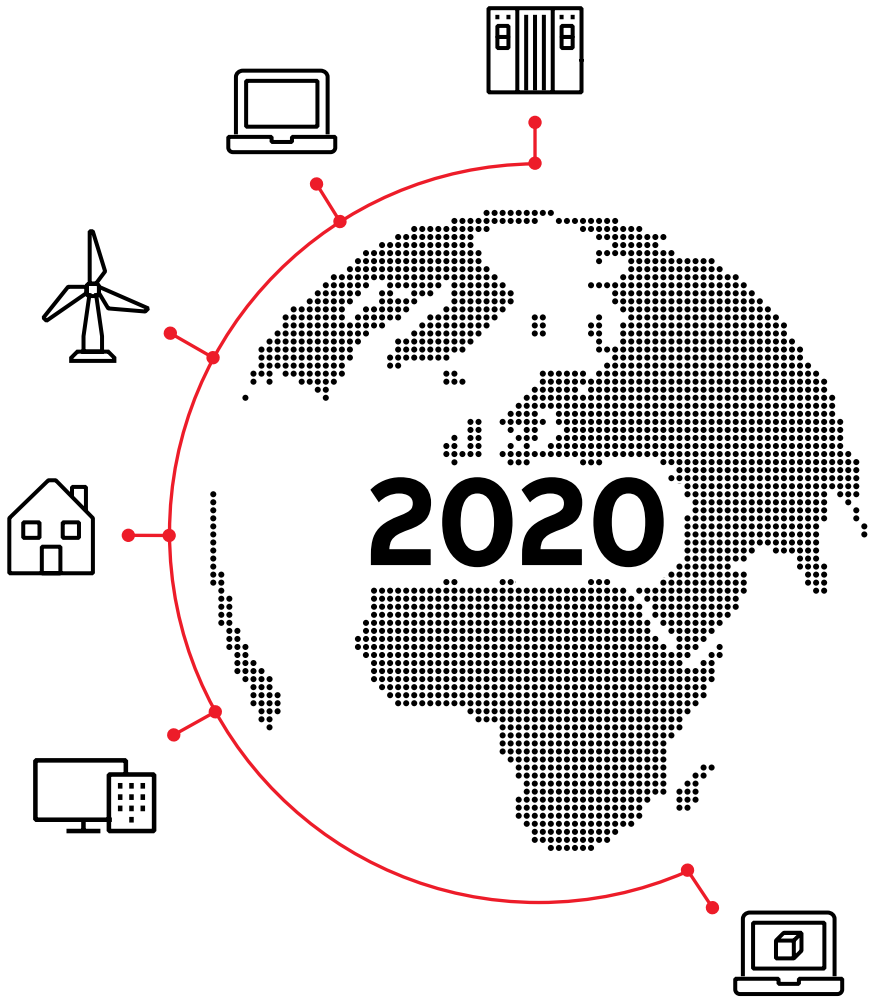
ABB is advancing technology and extending the capabilities of the IoT (Internet of Things) to include Services and People in the IoTSP. These elements are important for ABB because services make use of actionable information derived from data gathered from the IoT and enable people, through the analysis of that data, to be more productive and make better decisions. ABB's continuous focus on research and development enables our distributors to have access to the latest technological developments and be at the forefront of industry advancements. In today's rapidly evolving world, nearly all aspects of daily life are touched by smart products or devices to monitor, control, optimize and operate systems we rely upon from week to week, some of which adapt autonomously to a changing environment.

BY 2020 AN ESTIMATED

33

Billion

Internet-connected things or devices will be used worldwide

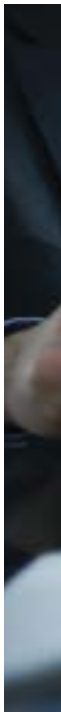


THAT IS ON AVERAGE

4.3

Connected devices for every person on the planet

Each connected device is equipped with sensors, computing power and software



Digital solutions

cBOL (Business Online) Business
Online is a Web-based front-end application linking many ABB businesses together on one platform to streamline their information, quotation and ordering processes online to make it easier for both our internal and external customers. Internet accessibility and easy-to-navigate tools provide 24-hour access to order entry and tracking capability though a standard Web browser and secure login.

ABB Connect
ABB Connect is a digital application tool that details the broad range of low-voltage connection, protection and control products and solutions that ABB offers. It connects customers to the full library of documentation, multimedia tools and materials.

Training programs

ABB is committed to training and education for the power-products industry. We offer a range of training opportunities designed to benefit engineers, researchers and customers – and of course our distributors. One example of this commitment is our Smart Lab medium-voltage facility at Dalmine in Italy, where the demands of large-scale networks can be simulated under controlled conditions. Another is the Busch-Jaeger Living Space® Experience in Nieuwegein, Netherlands. Here a real-life environment allows training and research in intelligent building control, including lighting, heating, energy consumption and security systems.

http://new.abb.com/service/abb-university

01 Digital solutions including e-Configure, cBOL (Business Online) Business and ABB Connect

02 Training programs

03 Logistics and services

01

02

03

My world of installation

Medium- and low-voltage products and support

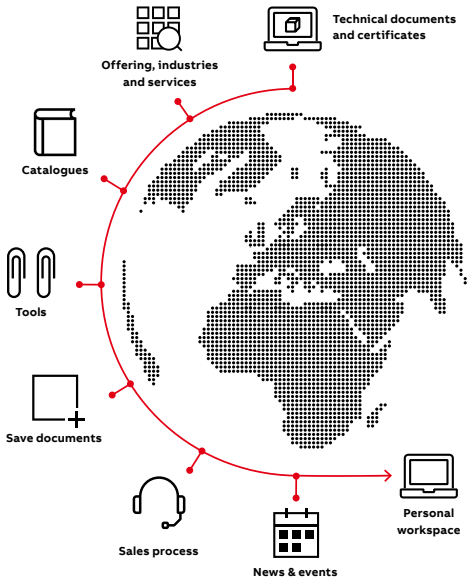
With our world of installation we offer a complete range of products, solutions and services for all electrical distribution requirements. With this comprehensive package we can meet your safety and reliability needs in residential, commercial and industrial environments in a professional and simple way! Leading technology, quality, unlimited compatibility, as well as information, documentation and support, all tailored specially to your wishes, this is what makes ABB so unique. So why not use ABB's full range of expertise and experience for your projects and make your very own "world of installation"

new.abb.com/low-voltage/my-world-of-installation

ABB Connect

The digital assistant for all your electrification needs

ABB Connect helps you to find product information and stay connected to the latest news and tools. It's a digital assistant that enables customers to connect to the broadest range of electrification solutions in one place.



You can use ABB Connect to create your own digital workspace on your phone or tablet, including scanning and saving documents to be viewed offline. Scan product QR codes for more information and access the world of ABB electrification information all in one place.

Simply tap to connect to the latest ABB stories in our News section.

Compatible on any iOS, Android or Windows 10 device.

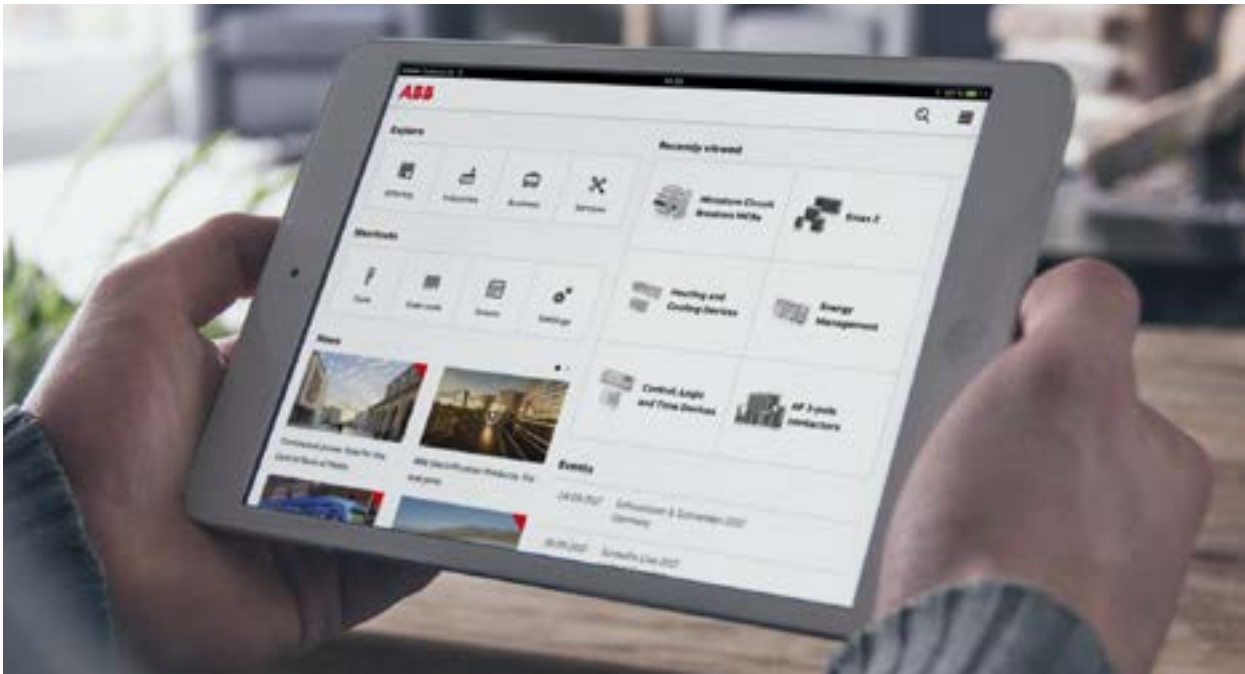
Log on to the Google Play Store, Apple App Store or Microsoft Store to download ABB Connect for free.

Download ABB Connect:

iTunes (iOS)

Google Play (Android)

Microsoft Store (Windows 10)



How to use this book

Quick guide to ordering products

Section header
This is the product group title

Product image
Helping you to find the correct product at a glance

Description
Item specific product description

Order code
When placing an order this is the number to quote

MCBs - S200 series

Order codes

Key features

- Clear contact position indication in red/green Unique, patented twin terminal with captive screws and an increased opening for cables up to max. 35 mm2, finger-proof (IP20)
- High performance at an increased rated voltage for marine and industrial applications: 10 kA/15 kA at Ue = 440 V AC acc. to IEC/EN 60947-2
- Individual product identification code
- Approved acc. to IEC/EN 60898-1, IEC/EN 60947-2 and UL 1077/CSA 22.2 No. 235 for global use

S200 series MB

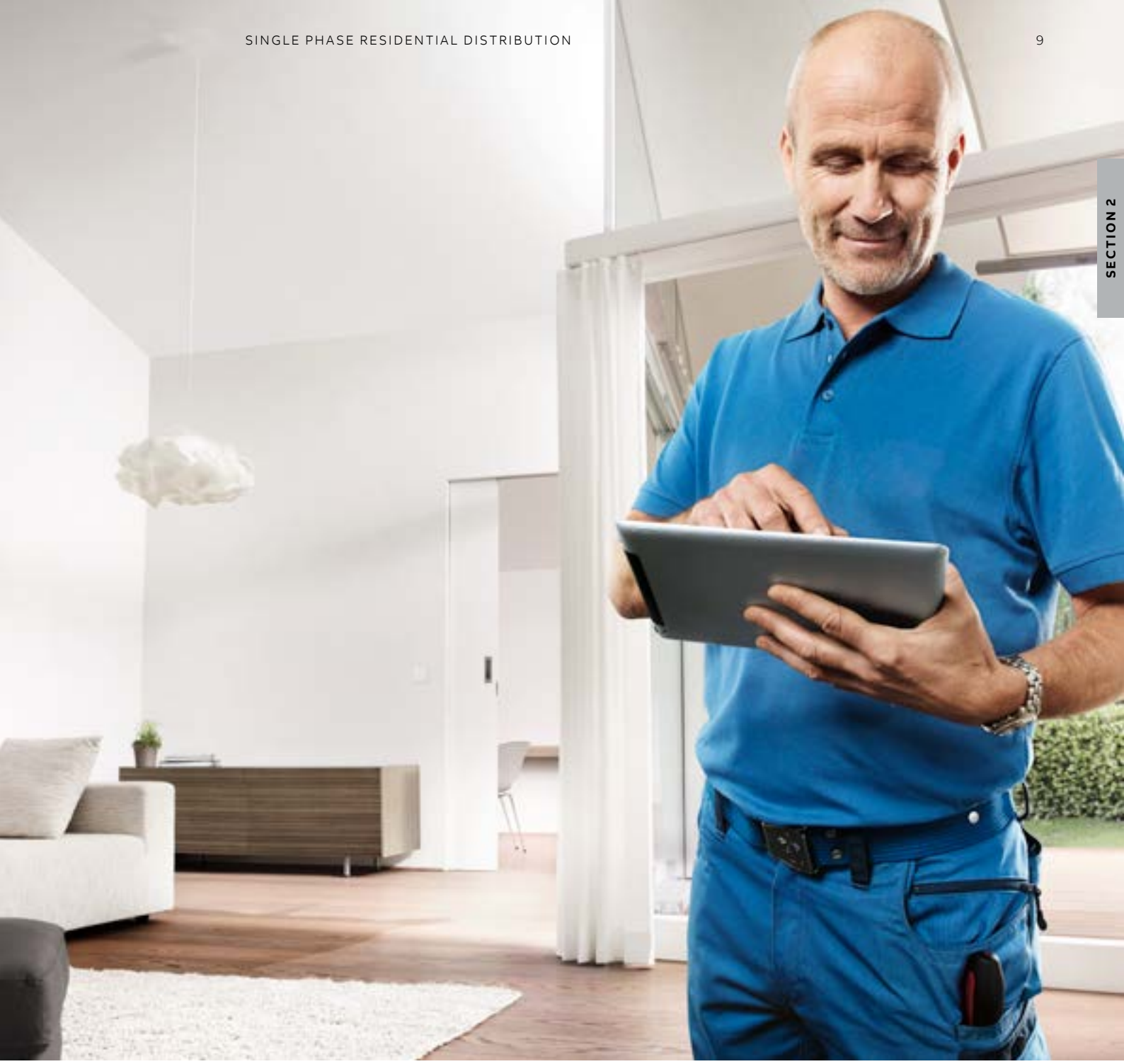
Rated current In A	Order Code 1 Pole	Order Code 3 Pole	Rated current in kA IEC/EN 60898-1 IEC/EN 60694-2
6	201M-B6	203M-B6	10kA/15kA
10	201M-B10	203M-B10	10kA/15kA
13	201M-B13	203M-B13	10kA/15kA
16	201M-B16	203M-B16	10kA/15kA
20*	201M-B20	203M-B20	10kA/15kA
25	201M-B25	203M-B25	10kA/15kA
32*	201M-B32	203M-B32	10kA/15kA
40*	201M-B40	203M-B40	10kA/15kA
50	201M-B50	203M-B50	10kA/15kA
63	201M-B63	202M-B63	10kA/15kA
80A	201M-B80	203M-B80	6kA
100A	201M-B100	203M-B100	6kA

S200 series MC

Rated current In A	Order Code 1 Pole	Order Code 3 Pole	Rated current in kA IEC/EN 60898-1 IEC/EN 60694-2
6	201M-C6	203M-C6	10kA/15kA
10	201M-C10	203M-C10	10kA/15kA
13	201M-C13	203M-C13	10kA/15kA
16	201M-C16	203M-C16	10kA/15kA
20*	201M-C20	203M-C20	10kA/15kA
25	201M-C25	203M-C25	10kA/15kA
32*	201M-C32	203M-C32	10kA/15kA
40*	201M-C40	203M-C40	10kA/15kA
50	201M-C50	203M-C50	10kA/15kA
63	201M-C63	202M-C63	10kA/15kA
80A	201M-C80	203M-C80	6kA
100A	201M-C100	203M-C100	6kA

Contact us - UK

cBOL Online	www.online.abb.com	24/7
Phone	0333 999 9900	Monday - Friday: (GMT) 9am - 5pm
Email	LV.Enquiries@gb.abb.com	
Web	new.abb.com/low-voltage	24/7



Single phase residential distribution
The complete solution

ABB offer a first-class quality assortment of enclosures and accessories, which provide more space and flexibility to ensure a fast and easy installation of almost any type of electrical distribution system in industrial, commercial and residential environments. **new.abb.com/world-of-installation**

Housemaster - Consumer units

Steel enclosures

Steel Enclosure to BS EN 61439-3

- Supplied factory fitted with switch disconnector and/or RCD, specification as table. Unit comes complete with shrouded busbar, earth and neutral bars and installation instructions
- Colour RAL7035 Steel
- Adaptable split load versions.

Steel enclosure to BS EN 61439-3

	Incomer		Split load		
Way combinations	**Isolator**	**RCD**	**Isolator**	**RCD**	**Order code**
4	–	100A	–	–	–	HSMS4C
7	–	100A	–	–	–	HSMS7C
11	–	100A	–	–	–	HSMS11C
16	–	100A	–	–	–	HSMS16C
20	–	100A	–	–	–	HSMS20C
4	–	–	80A/30mA	–	–	HSRC4C
7	–	–	100A/30mA	–	–	HSRC7C
11	–	–	100A/30mA	–	–	HSRC11C
16	–	–	100A/30mA	–	–	HSRC16C
20	–	–	100A/30mA	–	–	HSRC20C
4+4	3+5, 2+6	–	–	100A	80A/30mA	HSSL4+4C
6+6	4+8, 5+7	–	–	100A	80A/30mA	HSSL6+6C
8+8	7+9, 9+7	–	–	100A	80A/30mA	HSSL8+8C
4+4	–	100A	80A/30mA	–	63A/30mA	HSSE4186C
6+6	–	100A	80A/30mA	–	63A/30mA	HSSE6186C
8+8	–	100A	80A/30mA	–	63A/30mA	HSSE8186C

DImensions

Order code	**Height**	**Width**	**Depth**
HSMS4C - HSRC4C	256 mm	155 mm	110 mm
HSMS7C - HSRC7C	256 mm	210 mm	110 mm
HSMS11C - HSRC11C - HSSL4+4C - HSSE4186C	256 mm	282 mm	110 mm
HSMS16C - HSRC16C - HSSL6+6C - HSSE6186C	256 mm	368 mm	110 mm
HSMS20C - HSRC20C - HSSL8+8C - HSSE8186C	256 mm	440 mm	110 mm

Housemaster - Consumer units

Outgoing MCBs & RCBOs

SH200 MCBs

Breaking capacity kA	Rating Amps	Type B Order code	Type C Order code
6kA	6	SH201B6	SH201C6
6kA	10	SH201B10	SH201C10
6kA	16	SH201B16	SH201C16
6kA	20	SH201B20	SH201C20
6kA	25	SH201B25	SH201C25
6kA	32	SH201B32	SH201C32
6kA	40	SH201B40	SH201C40
6kA	50	SH201B50	SH201C50
6kA	63	SH201B63	SH201C63

Type B - Suitable for small inrush or switching surges, heating loads and tungsten lighting.
Type C - Suitable for moderate switching surges for sort duration, e.g. discharge lamps.

DSE201 - Type AC RCBO

Breaking capacity kA	Rating Amps	Sensitivity	Type B Order code	Type C Order code
6kA	6	30mA	DSE201-B6 AC30	DSE201-C6 AC30
6kA	10	30mA	DSE201-B10 AC30	DSE201-C10 AC30
6kA	16	30mA	DSE201-B16 AC300	DSE201-C16 AC30
6kA	20	30mA	DSE201-B20 AC30	DSE201-C20 AC30
6kA	25	30mA	DSE201-B25 AC300	DSE201-C25 AC30
6kA	32	30mA	DSE201-B32 AC30	DSE201-C32 AC30
6kA	40	30mA	DSE201 B40 AC30	DSE201 C40 AC30
6kA	50	30mA	DSE201 B50 AC30	DSE201 C50 AC30

Type B - Suitable for small inrush or switching surges, heating loads and tungsten lighting.
Type C - Suitable for moderate switching surges for sort duration, e.g. discharge lamps.
Supplied with 800mm flying neutral and functional earth leads.

Accessories

Accessories

Description	Order code
MCB padlock adaptor 3mm hasp	SA1
Padlock with 2 keys	SA2
Spare 19 Module Busbar	PS 1/19/30
MCB Blank module RAL7035	EPP-BP1

Protecta Plus
General features of the series

With the new Protecta Plus system, ABB has developed a new and personalised 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 perfectly 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.

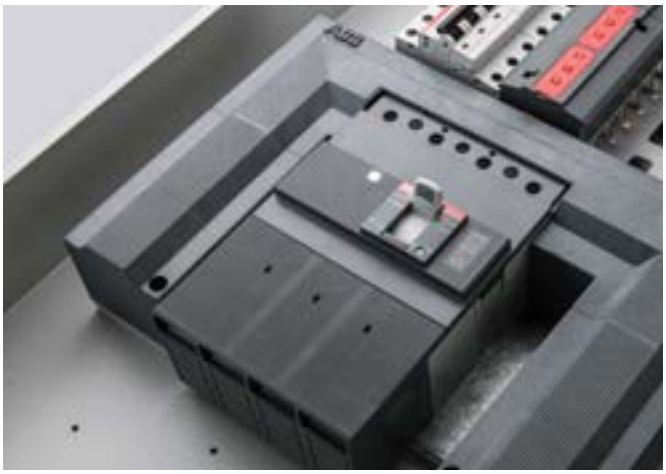
High output capacity
Primary branch capacity up to 100A.

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

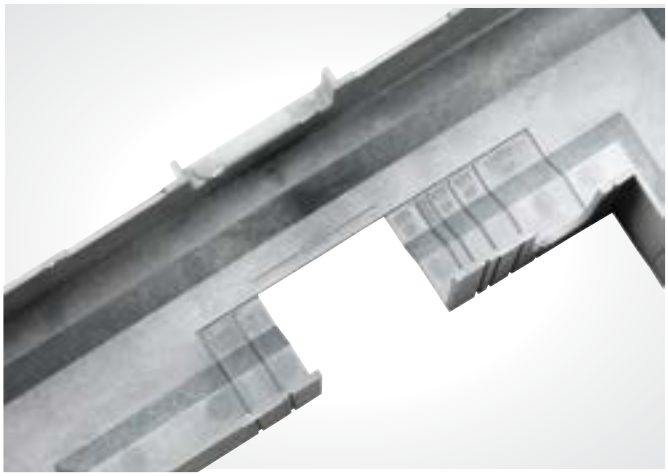
Flexible mounting
The PAN assembly system can easily be removed from the bottom distribution board of the framework, ensuring quick and simple installation.

Protecta Plus
The details make the difference

Board width
Protecta Plus has been designed with a width of 450 mm, this combined with the reduced RCBO height of 115 mm gives the installer ample cable room either side of the board.



One Solution
All Protecta Plus boards come as standard with 250A main bars. This gives the user a full range from 125A 3P through to 250A 4P incoming options.



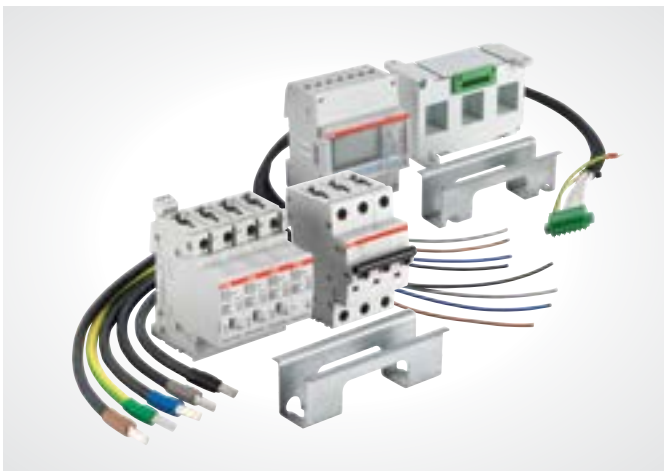
Incoming shroud
The shroud comes ready to accept a 125A 3P incoming devices. The easy break technology and clear indication on the rear allows the user to modify the shroud dependant upon requirements up to 250A 4P.

100A Outgoing ways
The first two 3P outgoing ways are fitted with 3 mm branch copper to allow for 100A MCBs to be fitted. This allows for a maximum of **2 x 100A 3P or 6 x 100A 1P** MCBs per board removing the need to move up to high performance boards or panel boards.

Full MCB blank
To aid installation and safety a custom MCB blank has been developed specifically for Protecta Plus.

Clean earth
Earth bars are fitted with removable links allowing the boards to be configured for 50/100% clean earth.

Padlocking facilities
All outgoing devices on Protecta Plus can be padlocked in on/off position for increased safety.



Metering and surge protection
Available in kit form to fit all Protecta Plus TPN boards. The boards have been designed to house these integrally.

Protecta Plus
Order process

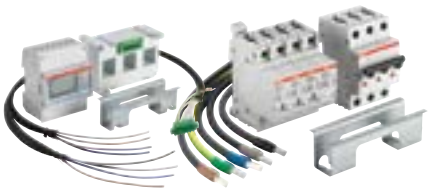
Protecta Plus DB

Vertical split-load board

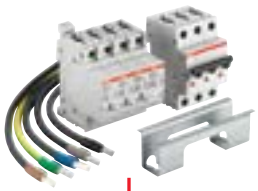
Horizintal split-load board

Incoming kit

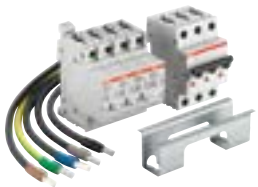
2 x Distribution boards



Meter/surge kits (optional)



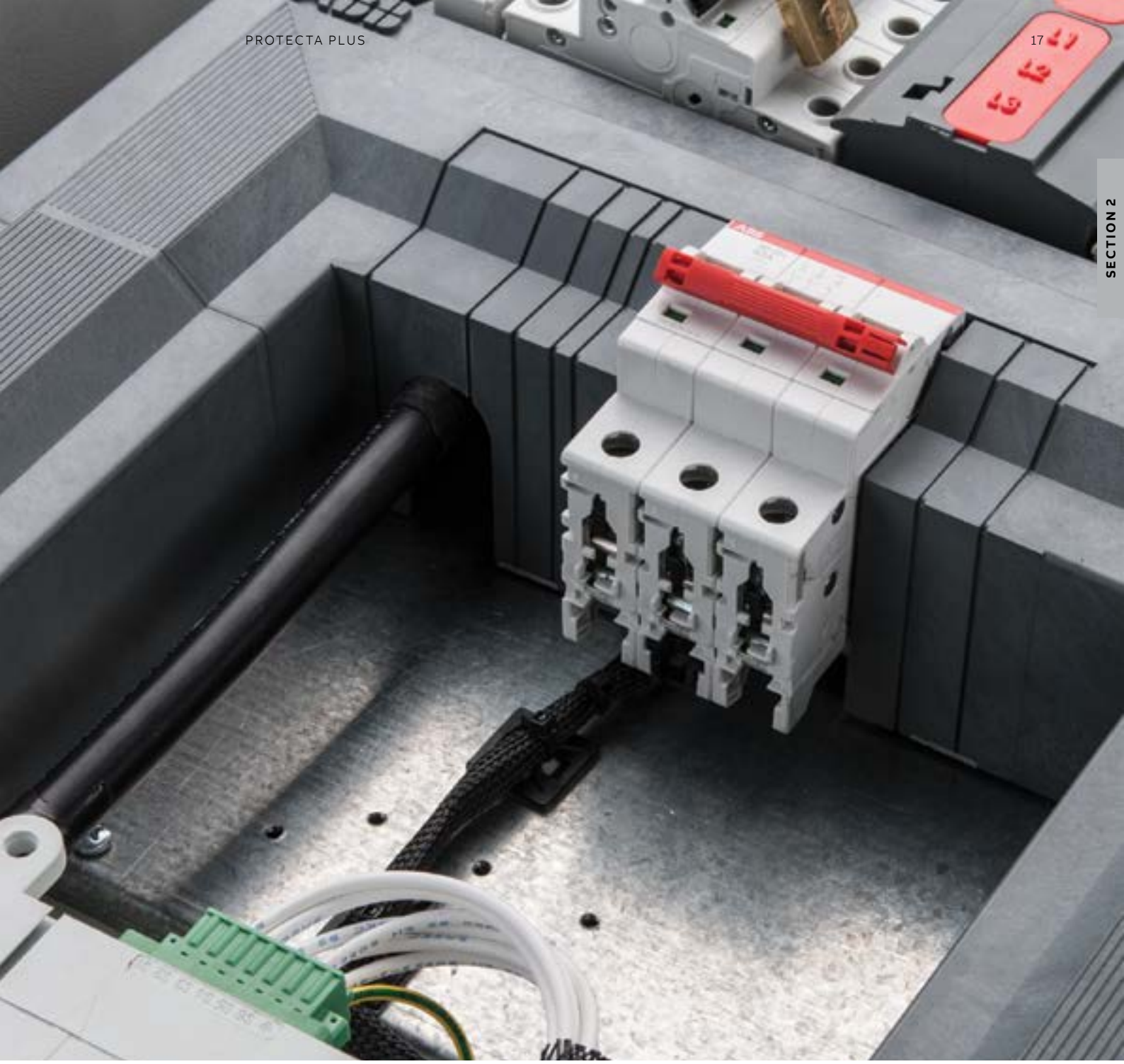
Surge kits (optional)



Surge kits (optional)

MCB/RCBO/Blanks

Accessories



Protecta Plus
The details make the difference

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.
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Protecta Plus

Order codes

Pack contents: Standard distribution board
- 250A distribution bar
- RAL7035 textured finish
- Door closing latch

MCB distribution board - Type B

Description	Order Code
Protecta Plus DB 4 Way 250A	EPP-W304
Protecta Plus DB 8 Way 250A	EPP-W308
Protecta Plus DB 12 Way 250A	EPP-W312
Protecta Plus DB 16 Way 250A	EPP-W316
Protecta Plus DB 20 Way 250A	EPP-W320
Protecta Plus DB 24 Way 250A	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	Order Code
125A 3P Horizontal split load kit - 2 x Meters	EPP-HSL-1253P
125A 4P Horizontal split load kit - 2 x Meters	EPP-HSL-1254P
160A 3P Horizontal split load kit - 2 x Meters	EPP-HSL-1603P
160A 4P Horizontal split load kit - 2 x Meters	EPP-HSL-1604P
250A 3P Horizontal split load kit - 2 x Meters	EPP-HSL-2503P
250A 4P Horizontal split load kit - 2 x Meters	EPP-HSL-2504P

Protecta Plus
Order codes

Pack contents: Vertical split load boards
- 2/3 MID, Modbus (RS485) & Pulse Meters
- Associated CTs
- Incoming terminals
- Internal cables

Please note, no additional assembly is required. Units will be delivered with meters pre-configured to internal C.T sizing.

Vertical Split Load Boards - 42 variations are available

Order Code	No. of outgoing	Incomer rating (A)	No. of poles
EPP-VSL84	8+4 TPN	-125	3 P
EPP-VSL88	8+8 TPN	-160	4 P
EPP-VSL128	12+8 TPN	-250	
EPP-VSL1212	12+12 TPN		
EPP-VSL168	16+8 TPN		
EPP-VSL844	8+4+4 TPN		
EPP-VSL1284	12+8+4 TPN		

Example order codes
EPP-VSL1212-1253P 12+12 Way 125A 3P
EPP-VSL168-2503P 16+8 Way 250A 3P

Vertical DB CT ratios
Dual 125 125+100
Dual 160 160+125
Dual 250 250+160
Tri 125 125+100+100
Tri 160 160+125+100
Tri 250 250+160+125

Boards are supplied fully assembled and metering devices configured to C.T. ratio's

Protecta Plus

Order codes

Pack contents: Incoming kit

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

Incoming connection kit

Description	Order Code
125A 3P Switch incoming connection kit	EPP-1253P
125A 4P Switch incoming connection kit	EPP-1254P
100A 4P RCD incoming connection kit 30mA Type AC - Left side neutral	EPP-1004R
160A 3P Switch incoming connection kit	EPP-1603P
160A 4P Switch incoming connection kit	EPP-1604P
250A 3P Switch incoming connection kit	EPP-2503P
250A 4P Switch incoming connection kit	EPP-2504P

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
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

Protecta Plus
Order codes

Pack contents: Surge protection
- 1 x Surge unit
- 1 x MCB 3P
- 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	Order Code
Type 2 surge protection - including 63A 3P MCB	EPP-SOULE
Type 2/3 surge protection - including 63A 3P MCB	EPP-FURSE

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

Contactor Control

Description	Order Code
125A AC1 rated 3P Contactor	EPP-CON125
160A AC1 rated 3P Contactor	EPP-CON160
250A AC1 rated 3P Contactor	EPP-CON250

Protecta Plus
Order codes

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

Extension boxes

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

Pack contents: Type A distribution
- Supplied factory fitted with 100A switch disconnector
- RAL7035 textured finish

MCB Distribution board - Type A

Description	Order Code
Protecta Plus DB 4way 100A	HSMS4C
Protecta Plus DB 7way 100A	HSMS7C
Protecta Plus DB 11way 100A	HSMS11C
Protecta Plus DB 16way 100A	HSMS16C
Protecta Plus DB 20way 100A	HSMS20C

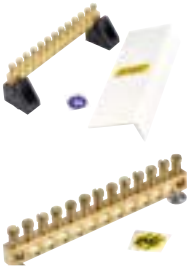
Protecta Plus
Order codes

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) Height	Order Code
36	2	4way DB	590	EPP-R2036
54	3	8way DB	730	EPP-R3054
72	4	12way DB	870	EPP-R4072
90	5	16way DB	1050	EPP-R5090
108	6	20way DB	1220	EPP-R6108
126	7	24way DB	1360	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 KIT-LAB04W
8	EPP KIT-LAB08W
12	EPP KIT-LAB12W
16	EPP KIT-LAB16W
20	EPP KIT-LAB20W
24	EPP KIT-LAB24W

Replacement doors

Description	Order Code
Protecta Plus Trans Door - 4 ways / 2 rows	EPP-TD-04
Protecta Plus Trans Door - 8 ways / 3 rows	EPP-TD-08
Protecta Plus Trans Door - 12 ways / 4 rows	EPP-TD-12
Protecta Plus Trans Door - 16 ways / 4 rows	EPP-TD-16
Protecta Plus Trans Door - 20 ways / 5 rows	EPP-TD-20
Protecta Plus Trans Door - 24 ways / 6 rows	EPP-TD-24
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 RAL7035 Grey	EPP-BP1
MCB Blank RAL9004 Black	EPP-BP1B
Lock and Key	EPP-LK KEY
Side by Side Connection Kit	EPP-KIT JOIN
Padlock Adaptor	SA 1
Padlock C/W 2 X Keys	SA 2
125A Single Phase Kit	EPP-KIT-1251P*
250A Single Phase Kit	EPP-KIT-2501P**
Trunking adaptor plate	EPP-TRADT
Protecta Plus - Glandplate Plain	EPP-GP-B
Protecta Plus - Glandplate K Os	EPP-GP KO
19 Modules 30 mm Busbar	PS1/19/30

*** Requires kit EPP-1254P** **** Required kit EPP-2504P**

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	Order Code 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	S202M-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	Order Code 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	S202M-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	Order Code 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	S202M-D63

RCBO DSE201 M - Type AC

Order codes

DSE201 M - Type AC

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 AC10	DSE201 M C6 AC10
	10	10kA/15kA	DSE201 M B10 AC10	DSE201 M C10 AC10
	16	10kA/15kA	DSE201 M B16 AC10	DSE201 M C16 AC10
	20	10kA/15kA	DSE201 M B20 AC10	DSE201 M C20 AC10
	25	10kA/15kA	DSE201 M B25 AC10	DSE201 M C25 AC10
	32	10kA/15kA	DSE201 M B32 AC10	DSE201 M C32 AC10
	40	10kA/15kA	DSE201 M B40 AC10	DSE201 M C40 AC10
	50	10kA	DSE201 M B50 AC10	DSE201 M C50 AC10
30	6	10kA/15kA	DSE201 M B6 AC30	DSE201 M C6 AC30
	10	10kA/15kA	DSE201 M B10 AC30	DSE201 M C10 AC30
	16	10kA/15kA	DSE201 M B16 AC30	DSE201 M C16 AC30
	20	10kA/15kA	DSE201 M B20 AC30	DSE201 M C20 AC30
	25	10kA/15kA	DSE201 M B25 AC30	DSE201 M C25 AC30
	32	10kA/15kA	DSE201 M B32 AC30	DSE201 M C32 AC30
	40	10kA/15kA	DSE201 M B40 AC30	DSE201 M C40 AC30
	50	10kA	DSE201 M B50 AC30	DSE201 M C50 AC30
100	6	10kA/15kA		DSE201 M C6 AC100
	10	10kA/15kA		DSE201 M C10 AC100
	16	10kA/15kA		DSE201 M C16 AC100
	20	10kA/15kA		DSE201 M C20 AC100
	25	10kA/15kA		DSE201 M C25 AC100
	32	10kA/15kA		DSE201 M C32 AC100
	40	10kA/15kA		DSE201 M C40 AC100
	50	10kA		DSE201 M C50 AC100
300	6	10kA/15kA		DSE201 M C6 AC300
	10	10kA/15kA		DSE201 M C10 AC300
	16	10kA/15kA		DSE201 M C16 AC300
	20	10kA/15kA		DSE201 M C20 AC300
	25	10kA/15kA		DSE201 M C25 AC300
	32	10kA/15kA		DSE201 M C32 AC300
	40	10kA/15kA		DSE201 M C40 AC300
	50	10kA		DSE201 M C50 AC300

RCCB F 200 series AC type

Order codes

F 200 AC type - F202

Number of poles	Rated residual current IΔn [mA]	Rated current in A	Order Code
2	10	16	F202 AC-16/0.01
		25	F202 AC-25/0.01
	30	25	F202 AC-25/0.03
		40	F202 AC-40/0.03
		63	F202 AC-63/0.03
		80	F202 AC-80/0.03
		100	F202 AC-100/0.03
	100	25	F202 AC-25/0.1
		40	F202 AC-40/0.1
		63	F202 AC-63/0.1
		80	F202 AC-80/0.1
		100	F202 AC-100/0.1
	300	25	F202 AC-25/0.3
		40	F202 AC-40/0.3
		63	F202 AC-63/0.3
		80	F202 AC-80/0.3
		100	F202 AC-100/0.3
	500	25	F202 AC-25/0.5
		40	F202 AC-40/0.5
		63	F202 AC-63/0.5
		80	F202 AC-80/0.5
		100	F202 AC-100/0.5

F 200 AC type - F204

Number of poles	Rated residual current IΔn [mA]	Rated current in A	Order Code
4	30	25	F204 AC-25/0.03
		40	F204 AC-40/0.03
		63	F204 AC-63/0.03
		80	F204 AC-80/0.03
		100	F204 AC-100/0.03
	100	25	F204 AC-25/0.1
		40	F204 AC-40/0.1
		63	F204 AC-63/0.1
		80	F204 AC-80/0.1
		100	F204 AC-100/0.1
	300	25	F204 AC-25/0.3
		40	F204 AC-40/0.3
		63	F204 AC-63/0.3
		80	F204 AC-80/0.3
		100	F204 AC-100/0.3
	500	25	F204 AC-25/0.5
		40	F204 AC-40/0.5
		63	F204 AC-63/0.5
		80	F204 AC-80/0.5
		100	F204 AC-100/0.5

Metering A & B series

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

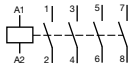
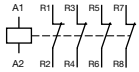
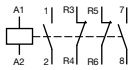
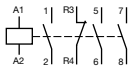
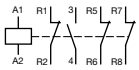
65A TPN 4mod	Description	Order Code
	Pulse output	B23 111 - 100
	Pulse output, RS-485	B23 112 - 100
	Pulse output, M-Bus	B23 113 - 100
	2 output, 2 input, RS-485	B23 312 - 100
	2 output, 2 input, M-Bus	B23 313 - 100

ESB installation contactors

Order codes

These devices are specifically made for commanding loads and signalling electrical conditions in any low-voltage distribution board. The functions of these devices are particularly switching, pushing and signalling electrical conditions in any installations (low-voltage area)

ESB 24

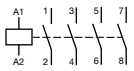
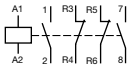
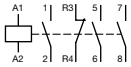
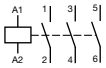
Main poles	Number of modules	Control coil voltage 40-50 Hz	Control coil voltage DC	Order Code
2 N.O.	2	24 V	24 V	ESB 24-20*
		230...240 V	230...240 V	ESB 24-20*
4 N.O. 	2	12 V	12 V	ESB 24-40*
		24 V	24 V	ESB 24-40*
		110...120 V	110...120 V	ESB 24-40*
		230...240 V	230...240 V	ESB 24-40*
4 N.C. 	2	12 V	12 V	ESB 24-04*
		24 V	24 V	ESB 24-04*
		110...120 V	110...120 V	ESB 24-04*
		230...240 V	230...240 V	ESB 24-04*
2 N.O. 2 N.C. 	2	12 V	12 V	ESB 24-22*
		24 V	24 V	ESB 24-22*
		110...120 V	110...120 V	ESB 24-22*
		230...240 V	230...240 V	ESB 24-22*
3 N.O. 1 N.C. 	2	12 V	12 V	ESB 24-31*
		24 V	24 V	ESB 24-31*
		110...120 V	110...120 V	ESB 24-31*
		230...240 V	230...240 V	ESB 24-31*
4 N.O. 3 N.C. 	2	12 V	12 V	ESB 24-13*
		24 V	24 V	ESB 24-13*
		110...120 V	110...120 V	ESB 24-13*
		230...240 V	230...240 V	ESB 24-13*

*** Ensure voltage is selected**

ESB installation contactors

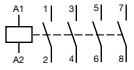
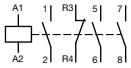
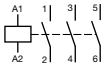
Order codes

ESB 40

Main poles	Number of modules	Control coil voltage 40-50 Hz	Control coil voltage DC	Order Code
4 N.O. 	3	12 V	12 V	ESB 40-40*
		24 V	24 V	ESB 40-40*
		110...120 V	110...120 V	ESB 40-40*
		230...240 V	230...240 V	ESB 40-40*
2 N.C. 	3	24 V	24 V	ESB 40-22*
		230 V	230 V	ESB 40-22*
1 N.C. 	3	24 V	24 V	ESB 40-31*
		230 V	230 V	ESB 40-31*
3 N.O. 	3	24 V	24 V	ESB 40-30*
		230 V	230 V	ESB 40-30*
2 N.O.	3	24 V	24 V	ESB 40-20*
		230 V	230 V	ESB 40-20*

*** Ensure voltage is selected**

ESB 63

Main poles	Number of modules	Control coil voltage 40-50 Hz	Control coil voltage DC	Order Code
4 N.O. 	3	12 V	12 V	ESB 63-40*
		24 V	24 V	ESB 63-40*
		110...120 V	110...120 V	ESB 63-40*
		230...240 V	230...240 V	ESB 63-40*
1 N.C. 	3	110 V	110 V	ESB 63-31*
		230 V	230 V	ESB 63-31*
3 N.O. 	3	230 V	230 V	ESB 63-30*
		400 V	400 V	ESB 63-30*
2 N.O.	3	24 V	24 V	ESB 63-20*
		230 V	230 V	ESB 63-20*
1 N.O. 1 N.C.	3	230 V	230 V	ESB 63-11*

* Ensure voltage is selected

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 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
E92	1	32	1	E 91/32
	1	32	1	E 91/32s
	3	32	3	E 93/32
	3	32	3	E 93/32s
E94				

Fuses not included

ArTu PB panelboard

MCCB Panelboards (up to 1250A)

Available wall mounted as standard, and in three configurations of 6/8, 12/16 and 18/24 outgoing ways, giving you the ability to build your own custom panelboard.
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ArTu PB panelboard
Overview

The ArTu PB panelboard is available wall mounted as standard, and in three configurations of 6/8, 12/16 and 18/24 outgoing ways, giving you the ability to build your own custom panelboard.

The new system allows you to fit F1 single pole, together with XT1 and XT3 three pole MCCBs to the same busbar system using the new plug in bases designed by ABB. Side cable chambers are available which can be fitted on either side of the main structure. There is also an option of adding top, bottom and metering extension boxes. As standard the panelboard is fitted with a plain door but, an optional glazed version is available.

Key features
- Robust metalwork system
- Incoming options up to 1250A
- Outgoing ways up to 400A
- Shrouding for spare ways and busbar covers for unused ways are both available for additional safety
- Comprehensive range of surge protection and metering solutions available

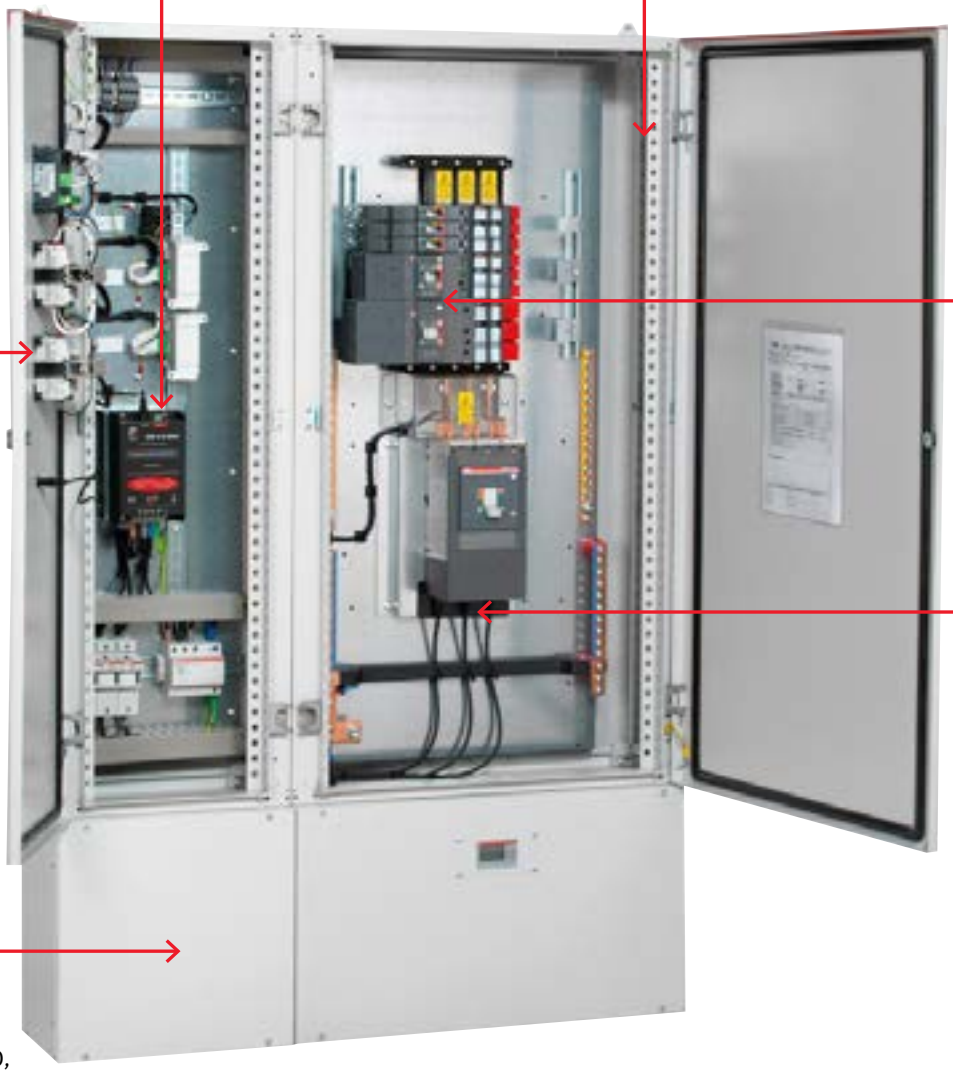
General characteristics
- Compliance with IEC 61439-1 & 2
- ASTA Certified busbars
- Rated at 415V, 50-60Hz
- Rated current/Icw
- Up to 400A/35kA flat busbar
- Up to 800A/50kA profiled busbar
- Up to 1250A/65 kA profiled busbar
- Rated impulse withstand voltage Uimp 8Kv
- Rated short-circuit short-time withstand current Icw up to 65kA
- Rated short-circuit peak current Icw up to 143kA
- IP43 ingress protection with door
- Colour light grey RAL 7035
- Supplied with plain door as standard
- Supplied without incomer, wide variety of options available
- Earth and neutral terminals are included
- 4 pole versions are available upon request

ArTu PB panelboard

General characteristics

Surge Protection options
Complete portfolio of surge protection options available for Type 1-3 protection using either the Furse or Quicksafe ranges.

Easy to access or expand
Removable side covers allow side access, future expansion of panelboard layout or additional accessory fitment.



Adaptibility
Layout and design can be altered using ABB's plug in bases to fit outgoing breakers to suit.

Wide range of metering options
Metering chambers available with cutouts to house 96 x 96 meters. Blank cutout covers are also available for future addition.

Flexibility
Incoming options from 250 - 1250A, 3 and 4 pole, which include shrouding for extra safety.

Modular range of metalwork depth: 240mm; width: 690, 890mm; height: 1250, 1650, 2050mm

ArTu PB panelboard
The details which make the difference

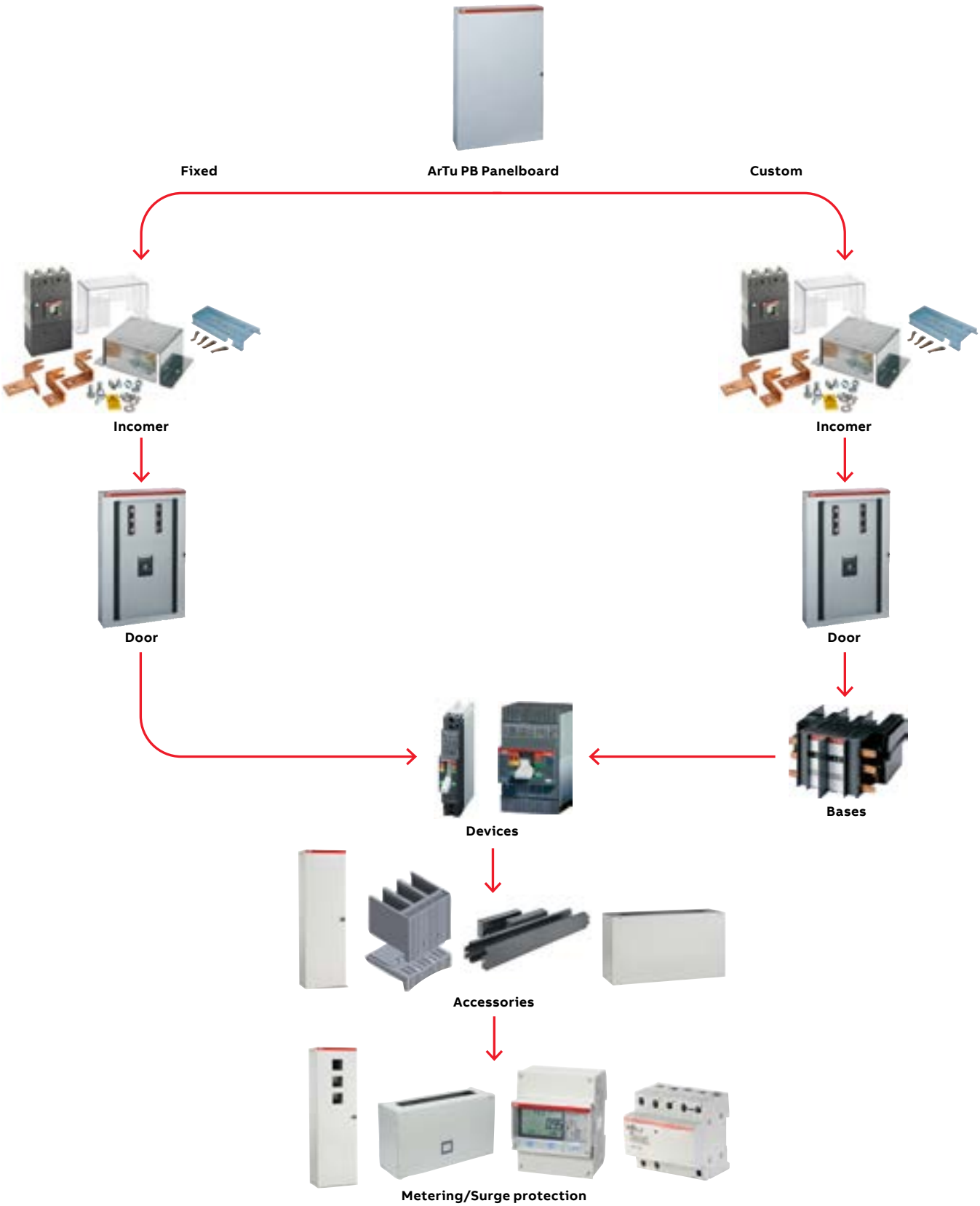
Flexibility
Flexible incoming options from 250A-1250A including shrouding for additional safety.

Plug in technology
A spring loaded contact achieve s a high contact force, again leading to a greater effective contact area.

Easy Access
Removable side covers in addition to top and bottom gland plates ensure there are a variety of access points for efficient assembly, installation and maintenance.

Modular design
Top / bottom extension boxes and side cable/ metering chambers of one depth (240mm) allow for additional accessories or cabling to be added.

ArTu PB Panelboard
Order process



ArTu PB Panelboard

Order codes

Fixed boards

Ways	Outgoing MCCB Type	Copper Rating (A)	Dimensions (mm) Height	Width	Depth	Order Code
6	XT1 160A	400A	1250	690	240	640T1PB3MD
	XT3 250A	400A	1250	690	240	640T3PB3MD
	XT3 250A	800A	1250	690	240	680T3PB3MD
12	XT1 160A	400A	1650	690	240	124T1PB3MD
	XT3 250A	400A	1650	690	240	124T3PB3MD
	XT1 160A	800A	1650	690	240	128T1PB3MD
	XT3 250A	800A	1650	690	240	128T3PB3MD
18	XT1 160A	400A	2050	690	240	184T1PB3MD
	XT1 160A	800A	2050	690	240	188T1PB3MD
	XT3 250A	800A	2050	690	240	188T3PB3MD

Note:
Fixed boards are pre populated with plug in bases of set frame size.

Custom boards

Ways	Outgoing MCCB Type	Copper Rating (A)	Dimensions (mm) Height	Width	Depth	Order Code
6/8	F1 (SP) / XT1 / XT3	400A	1250	690	240	CU640PB3MD
	F1 (SP) / XT1 / XT3	800A	1250	690	240	CU680PB3MD
12/16	F1 (SP) / XT1 / XT3	400A	1650	690	240	CU124PB3MD
	F1 (SP) / XT1 / XT3	800A	1650	690	240	CU128PB3MD
18/24	F1 (SP) / XT1 / XT3	400A	2050	690	240	CU184PB3MD
	F1 (SP) / XT1 / XT3	800A	2050	690	240	CU188PB3MD
12/16	F1 (SP) XT1/ XT3	1250A	2050	690	240	CU12504T5PB3MD

Note:
F1(SP) ratings: Up to 125A
XT1 ratings: Up to 160A
XT3 ratings: Up to 250A
T5 ratings: Up to 400A

Selection and ordering guide

Incomer and inner cover options

Incomer options

Incomers below include the connection kit and terminal shrouds. Order inner cover to suit. Incoming devices are provided with front terminals as standard. If larger/different orientation of cables are required select alternative terminals accordingly.

400/800A rated panelboards

Description	Inner Cover Type	Order Code
250A 3P Switch disconnector	2	PB-2503SD
250A 4P Switch disconnector	2	PB-2504SD
250A 3P 36kA Thermomagnetic (TMD) MCCB	2	PB-2503MCCB
250A 4P 36kA Thermomagnetic (TMD) MCCB	2	PB-2504MCCB
400A 3P Direct connection kit	1	400DC3/4P
400A 3P Switch disconnector	3	PB-4003SD
400A 4P Switch disconnector	3	PB-4004SD
400A 3P 36kA Electronic (LS/I) MCCB -LS/I	3	PB-4003MCCB
400A 4P 36kA Electronic (LS/I) MCCB-LS/I	3	PB-4004MCCB
630A 3P Switch disconnector	3	PB-6303SD
630A 4P Switch disconnector	3	PB-6304SD
630A 3P 50kA Electronic (LS/I) MCCB - PR221DS-LS/I	3	PB-6303MCCB
630A 4P 50kA Electronic (LS/I) MCCB - PR221DS-LS/I	3	PB-6304MCCB
800A 3P Direct connection kit	1	800DC3P
800A 3P Switch disconnector – T6D800	4	PB-8003SD
800A 4P Switch disconnector – T6D800	4	PB-8004SD
800A 3P 50kA Electronic (LS/I) MCCB - PR221DS-LS/I	4	PB-8003MCCB
800A 4P 50kA Electronic (LS/I) MCCB - PR221DS-LS/I	4	PB-8004MCCB

For 1250A rated panelboards

Description	Inner Cover Type	Order Code
1250A 3P Direct connection kit	5	1250DC3P
1000A 3P Switch disconnector – T7D1000	6	PB-10003SD
1000A 3P 50kA Electronic (LS/I) MCCB – T7S1000-PR231/P LS/I	6	PB-10003MCCB
1250A 3P Switch disconnector – T7D1250	6	PB-12503SD
1250A 3P 50kA Electronic (LS/I) MCCB – T7S1000-PR231/P LS/I	6	PB-12503MCCB

Selection and ordering guide

Incomer and inner cover options

For 400/800A rated panelboards

Description	Inner Cover Type	Order Code
Direct connection inner cover kit for 400/800A rated panelboard	**1**	P6X6DC
250A TP XT3/T3 Inner cover kit	**2**	P6X6T3
400/630A TP T5 Inner cover kit	**3**	P6X6T5
800A TP T6 Inner cover kit	**4**	P6X6T6

For 1250A rated panelboards

Description	Inner Cover Type	Order Code
Direct connection inner cover kit for 1250A rated panelboard	**5**	P8XDC
800-1250A TP T7 inner cover kit	**6**	P8XT7

Selection and ordering guide

Plug in bases and outgoing MCCBs

Plug in bases - for custom panel boards only

Description	Order Code
F1 SP L1/L3	PLF11L1/L3P
F1 SP L2	PLF11L2P
XT1	PLT13P
XT3	PLT33P
T5 TP (Only available for fitment into 1250A)	PLT53PT

Note:
Both L1/L3 and L2 need to be ordered for SP device

Outgoing devices - A1C125 and A1N125 (Thermal Magnetic) MCCB - Single phase

Description	Order Code
16A SP 18kA	1SDA068745R1
20A SP 25kA	1SDA066686R1
25A SP 25kA	1SDA066687R1
32A SP 25kA	1SDA068755R1
40A SP 25kA	1SDA066689R1
50A SP 25kA	1SDA066690R1
63A SP 25kA	1SDA068766R1
80A SP 25kA	1SDA066693R1
100A SP 25kA	1SDA066695R1
125A SP 25kA	1SDA066696R1

*Requires terminals for connecting to the base. See page 47.

Outgoing devices - XT1B 3 pole (Thermal Magnetic) MCCB - Three phase

Description	Order Code
16A 3P 18kA	1SDX014883R1
20A 3P 18kA	1SDX014885R1
25A 3P 18kA	1SDX014886R1
32A 3P 18kA	1SDX014887R1
40A 3P 18kA	1SDX014888R1
50A 3P 18kA	1SDX014889R1
63A 3P 18kA	1SDX014891R1
80A 3P 18kA	1SDX002813R1
100A 3P 18kA	1SDX014310R1
125A 3P 18kA	1SDX014892R1
160A 3P 18kA	1SDX014894R1

Selection and ordering guide

Plug in bases and outgoing MCCBs

Outgoing devices - XT1C 3 pole (Thermal Magnetic) MCCB

Description	Order Code
16A 3P 25kA	1SDX014895R1
20A 3P 25kA	1SDX018174R1
25A 3P 25kA	1SDX014896R1
32A 3P 25kA	1SDX014897R1
40A 3P 25kA	1SDX014898R1
50A 3P 25kA	1SDX014899R1
63A 3P 25kA	1SDX014900R1
80A 3P 25kA	1SDX014901R1
100A 3P 25kA	1SDX014902R1
125A 3P 25kA	1SDX014903R1
160A 3P 25kA	1SDX014904R1

Outgoing devices - XT1N 3 pole (Thermal Magnetic) MCCB

Description	Order Code
16A 3P 36kA	1SDX018803R1
20A 3P 36kA	1SDX018804R1
25A 3P 36kA	1SDX018805R1
32A 3P 36kA	1SDX014905R1
40A 3P 36kA	1SDX014906R1
50A 3P 36kA	1SDX014907R1
63A 3P 36kA	1SDX014908R1
80A 3P 36kA	1SDX014909R1
100A 3P 36kA	1SDX014910R1
125A 3P 36kA	1SDX014911R1
160A 3P 36kA	1SDX014912R1

Outgoing devices - XT1S 3 pole (Thermal Magnetic) MCCB

Description	Order Code
16A TP 50kA	1SDA080830R1
20A TP 50kA	1SDA080831R1
25A TP 50kA	1SDA080832R1
32A TP 50kA	1SDA080833R1
40A TP 50kA	1SDA080834R1
50A TP 50kA	1SDA067431R1
63A TP 50kA	1SDA067432R1
80A TP 50kA	1SDA067433R1
100A TP 50kA	1SDA067434R1
125A TP 50kA	1SDA067435R1
160A TP 50kA	1SDA067436R1

Selection and ordering guide

Plug in bases and outgoing MCCBs

Outgoing devices - XT3N 3 pole (Thermal Magnetic) MCCB

Description	Order Code
63A TP 36kA MCCB - XT3N250 (Th /Mag) - TMD	1SDA068053R1
80A TP 36kA MCCB - XT3N250 (Th /Mag) - TMD	1SDA068054R1
100A TP 36kA MCCB - XT3N250 (Th /Mag) - TMD	1SDA068055R1
125A TP 36kA MCCB - XT3N250 (Th /Mag) - TMD	1SDA068056R1
160A TP 36kA MCCB - XT3N250 (Th /Mag) - TMD	1SDA068057R1
200A TP 36kA MCCB - XT3N250 (Th /Mag) - TMD	1SDA068058R1
250A TP 36kA MCCB - XT3N250 (Th /Mag) - TMD	1SDA068059R1

Outgoing devices - XT3S 3 pole (Thermal Magnetic) MCCB

Description	Order Code
63A 3P 50kA	1SDA068215R1
80A 3P 50kA	1SDA068216R1
100A 3P 50kA	1SDA068217R1
125A 3P 50kA	1SDA068218R1
160A 3P 50kA	1SDA068219R1
200A 3P 50kA	1SDA068220R1
250A 3P 50kA	1SDA068221R1

Outgoing devices - T5N 3 pole (Electronic) MCCB

Description	Order Code
320A 3P 36kA (Electronic PR221DS-LS/I)	1SDA054316R1
400A 3P 36kA (Electronic PR221DS-LS/I)	1SDA054317R1
320A 3P 36kA (Electronic PR222DS/P-LSI)	1SDA054320R1
400A 3P 36kA (Electronic PR222DS/P-LSI)	1SDA054321R1

Outgoing devices - T5S 3 pole (Electronic) MCCB

Description	Order Code
320A 3P 50kA (Electronic PR221DS-LS/I)	1SDA054332R1
400A 3P 50kA (Electronic PR221DS-LS/I)	1SDA054333R1
320A 3P 50kA (Electronic PR222DS/P-LSI)	1SDA054336R1
400A 3P 50kA (Electronic PR222DS/P-LSI)	1SDA054337R1

Selection and ordering guide

Accessories

Top/bottom extension modules

Description	Dimensions (mm)	Order Code
For 250 - 800A panelboard	365H x 690W x 240D	RC1000
For side cable way	365H x 390W x 240D	RC2000
For 1250A panelboard only	385H x 890W x 240D	RC0000

Note:
When fitting side extension/side metering modules together with a top or bottom extension box please order the required number of RC2000 extension modules to suit.

Side extension modules - 390mm width

Height (mm)	Description	Order Code
1250	Uprights	MI1200
	Cable container	VC1201
	Front door	PC1202
1650	Uprights	MI1600
	Cable container	VC1600
	Front door	PC1602
2050	Uprights	MI2000
	Cable container	VC2000
	Front door	PC2002

Plinths

Description	Order Code
Four corner feet 100mm high for main structure of 250 - 1250A	ZL1000
Finishing profile plinth for 250 - 800A panelboard	ZL1001
Finishing profile plinth for 1250A panelboard	ZL1101
Two feet 100mm high for side extension or side metering module	ZL3000
Finishing profile for side extension or side metering module	ZL2001

Note:
Plinths cannot be used when bottom extension boxes are fitted. This applies to the main panelboard structure as well as side extension and metering modules.

Selection and ordering guide
Accessories

Single pole breakers – front terminals for copper aluminium cables FC CuAl (single piece)
3 pole breakers - front connection terminals for copper cables FC Cu (set of 3pcs)

	Description	Order Code
	F1 (Single pole) 2.5 - 25mm²	1SDA066234R1
	F1 (Single pole) 25 - 50mm²	1SDA066240R1
	XT1	1SDA066905R1
	XT3	1SDA066913R1

Terminal shroud for MCCB

	Description	Order Code
	F1 Single pole terminal covers (Each)	ED0001
	XT1 TP High terminal covers (Pair)	1SDA066664R1
	XT3 TP High terminal covers (Pair)	1SDA066668R1
	T5 TP High terminal covers (Pair)	1SDA054960R1

General accessories

	Description	Order Code
	Busbar shroud 630mm long (3 pcs)	SH630
	MCCB blanking module for inner door (210mm)	SZ-BP1
	F1/ XT1 Busbar shroud 10pcs	MODT1
	XT3 Busbar shroud 10pcs	MODT3
	T5 Busbar shroud 10pcs	MODT5
	Wall fixing brackets (Pack of 2)	AL2000
	Side by side kit to join side extension box to panelboard (1 pack)	AA1000
	Neutral/ earth bar additional kit	AK1NEMD
	Neutral/ earth bar extension kit for panelboards up to 800A	EX1NEMD
	Neutral shroud 250 - 800A – pair	AD1082
	Aluminium gland plate for 250 - 800A panelboards	ALF0600

Selection and ordering guide

Incoming metering kits and metering side chambers

Includes RC2000 enclosure, meter, fixing brackets, CT, terminals, wiring looms for breaker – terminals, terminals to CT & CT to meter.

Incoming metering modules using B24-112-100 MID approved class 1 meter with active energy, pulse output and RS-485 communication

Description	Order Code
250A Incoming metering module	PB-METMOD250-B
400A Incoming metering module	PB-METMOD400-B
630A Incoming metering module	PB-METMOD630-B
800A Incoming metering module	PB-METMOD800-B
1000A Incoming metering module	PB-METMOD1000-B
1250A Incoming metering module	PB-METMOD1250-B

Incoming metering modules using M2M MODBUS network analyser with active energy, pulse/alarm output and RS-485 communication

Description	Order Code
250A Incoming metering module	PB-METMOD250-M2M
400A Incoming metering module	PB-METMOD400-M2M
630A Incoming metering module	PB-METMOD630-M2M
800A Incoming metering module	PB-METMOD800-M2M
1000A Incoming metering module	PB-METMOD1000-M2M
1250A Incoming metering module	PB-METMOD1250-M2M

Metering Cable chamber for outgoing metering

Suitable size PB	Description	Order Code
6 W	PB Side metering chamber 1250 x 390 x 240mm (with 3 x 92 x 92 cutouts)	PB-SIDEMET-12
12W	PB Side metering chamber 1650 x 390 x 240mm (with 6 x 92 x 92 cutouts)	PB-SIDEMET-16
18W	PB Side metering chamber 2050 x 390 x 240mm (with 9 x 92 x 92 cutouts)	PB-SIDEMET-20
	92 x 92 Blank covers (un-used way)	EV1136

Note:
Includes cable connection loom to power meters

Selection and ordering guide

Outgoing meter kits, surge protection kits and other accessories

Includes meter, CT, terminals, wiring looms for breaker – terminals, terminals to CT & CT to meter.

Outgoing metering modules for 3 pole breakers using M2M MODBUS network analyser with active energy, pulse/alarm output and RS-485 communication

Description	Order Code
0 - 63A Outgoing metering kit	PBMET63-M2M
80 - 125A Outgoing metering kit	PBMET125-M2M
160 - 250A Outgoing metering kit	PBMET250-M2M
400A Outgoing metering kit	PBMET400-M2M

Outgoing metering modules using B24-112-100 MID approved class 1 meter with active energy, pulse output and RS-485 communication

Description	Order Code
For 3 pole breakers	
0 - 63A Outgoing metering kit	PBMET63-B
80 - 125A Outgoing metering kit	PBMET125-B
160 - 250A Outgoing metering kit	PBMET250-B
400A Outgoing metering kit	PBMET400-B
For single pole breakers	
0 - 63A Outgoing v with single core CT inc B24 - 112 - 100 meter	PBMET63-S-B
80 - 125A Outgoing metering kit with single core CT inc B24 - 112 - 100	PBMET125-S-B

Surge protection kits

Description	Order Code
Surge Protection kit Type 1 & 2. Includes 63A breaker protection	PB-SOULE
Surge Protection kit Furse Type 1, 2 & 3. Includes 63A breaker protection and remote display	PB-FURSE

Note:
A side extension box with hinged door must be used to house the surge protection kit. In addition the MCCB protection device for the surge protection device requires the use of a one three phase outgoing way. Fuse protection options may be available upon request. Please ask for details if required.

Other accessories

Description	Order Code
Neutral shroud 250 - 800A – pair	AD1082
Neutral shroud 1250A – pair	AD1084
Aluminium gland plate for 250 - 800A panelboards	ALF0600
Aluminium gland plate for 1250A panelboards	ALF0800

Automatic Transfer Switches (ATSs)

Reliable & secure transfer of critical loads

Critical applications require constant and reliable power supply, which is why ABB developed its range of Automatic Transfer Switches (ATSs) to ensure the safe transfer of loads from the primary network to a standby generator or other power supply. **new.abb.com/world-of-installation**

Enclosed automatic transfer switches
Switch solutions - Functionality and features

As industrial processes and IT applications diversify, a secure power supply is becoming an increasingly important asset in the drive to cut production and maintenance costs. In emergency situations, the system logic of power distribution can become complex with mechanical devices looking after the making, breaking, conducting and isolating of power. Loads may sometimes need to be transferred from one supply to another – this will be the case when energy use is restricted or when the supply source is overloaded.

—
01 ATS automatic transfer switch with dual supply bypass

High performance level
In change-over applications where the loaded switch may need to be operated remotely, adequate durability has been ensured by testing against the IEC 60947-6-1 standard in the specification of endurance requirements.

Utilisation categories
- AC-31 for non-inductive or slightly inductive load
- AC-33 for motor loads or mixed loads including motors ABB change-over switches are rated according to IEC 60947-6-1 standard.

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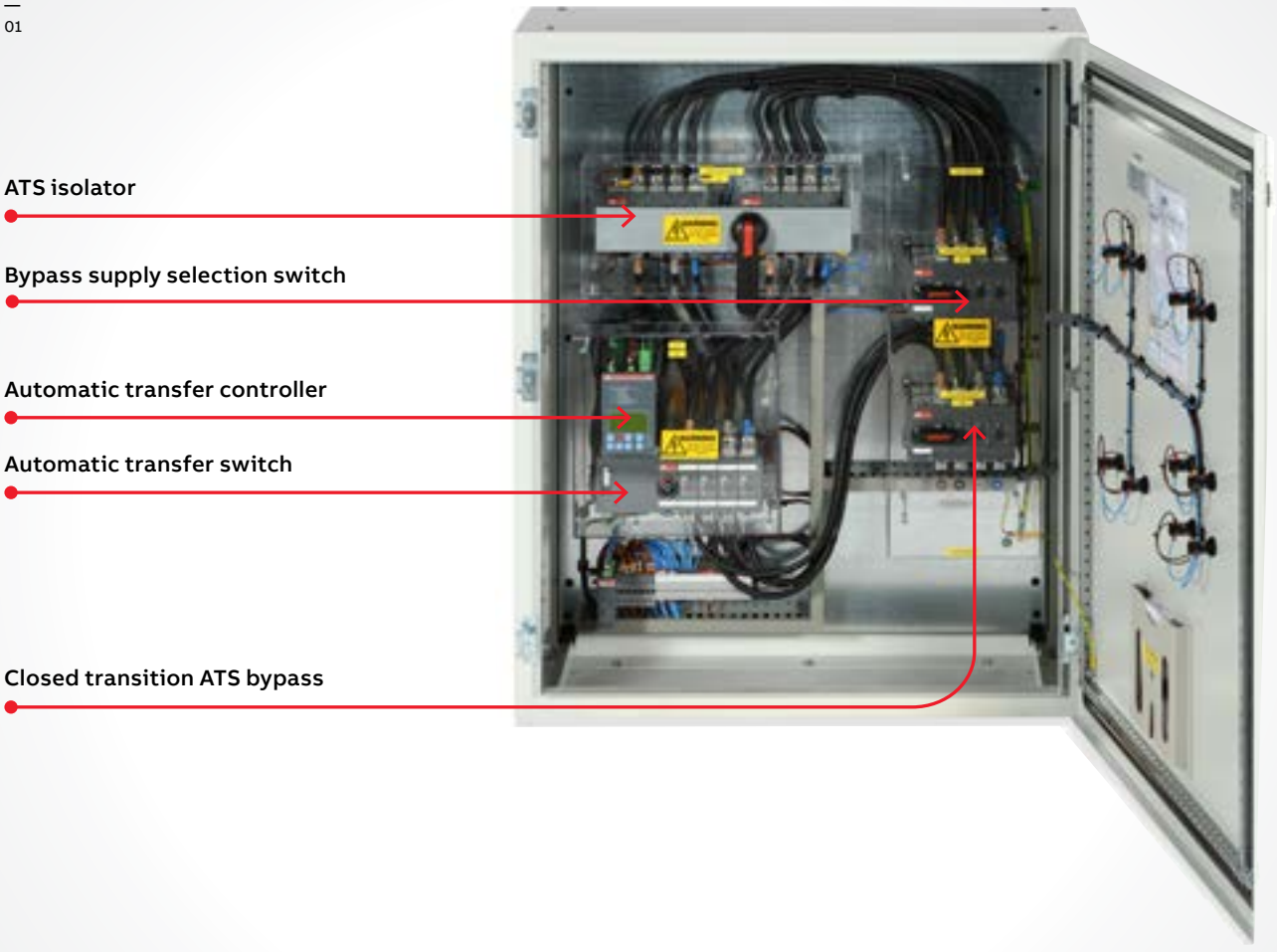
01



Enclosed manual & automatic transfer switches - Switch solutions

Selection and ordering guide

Enclosed manual transfer switches, I-O-II operation, open transition

- MTS 4 pole 40 to 800A with blank door, wall mountable

Description	Rated Current (A)	Enclosure Size (mm) H	W	D	Order Code
MTS 40A	40	400	300	150	OT40FPC-B
MTS 63A	63	400	300	150	OT63FPC-B
MTS 80A	80	400	300	150	OT80FPC-B
MTS 100A	100	500	400	250	OT100FPC-B
MTS 125A	125	500	400	250	OT125FPC-B
MTS 160A	160	600	400	250	OT160FPC-B
MTS 200A	200	600	400	250	OT200FPC-B
MTS 250A	250	600	400	250	OT250FPC-B
MTS 315A	315	800	600	300	OT315FPC-B
MTS 400A	400	800	600	300	OT400FPC-B
MTS 630A	630	1000	600	400	OT630FPC-B
MTS 800A	800	1000	600	400	OT800FPC-B

Enclosed automatic transfer switches, I-O-II operation, open transition

ATS 4 pole 40 to 1600A with OMD300 & OMD800 controller , blank door, wall mountable

Description	Rated Current (A)	Enclosure Size (mm) H	W	D	Controller OMD300 Order Code	Controller OMD800 Order Code
ATS 40A	40	600	600	250	OTA40E4C3SR	OTA40E4C8SR
ATS 63A	63	600	600	250	OTA63E4C3SR	OTA63E4C8SR
ATS 125A	125	600	600	250	OTA125E4C3SR	OTA125E4C8SR
ATS 160A	160	600	600	250	OTA160E4C3SR	OTA160E4C8SR
ATS 250A	250	600	600	250	OTA250E4C3SR	OTA250E4C8SR
ATS 400A	400	800	600	300	OTA400E4C3SR	OTA400E4C8SR
ATS 630A*	630	1000	800	400	OTA630E4C3AM	OTA630E4C8AM
ATS 800A*	800	1000	800	400	OTA800E4C3AM	OTA800E4C8AM
ATS 1000A*	1000	1400	800	500	OTA1000E4C3AM	OTA1000E4C8AM
ATS 1250A*	1250	1400	800	500	OTA1250E4C3AM	OTA1250E4C8AM
ATS 1600A*	1600	1400	800	500	OTA1600E4C3AM	OTA1600E4C8AM

* Floor standing - plinths from accessories below.
Bypass options are available on request.
Other wall mounting and floor standing versions available on request.

Enclosed switches - Switch solutions

Selection and ordering guide

Enclosed bypass switches, I-O-II operation, open transition

BPS 4 pole 40 to 630A with OMD800 controller, blank door, wall mountable

Description	Rated Current (A)	Enclosure Size (mm) H	W	D	Single Bypass Controller OMD800	Dual Bypass Controller OMD800
BPS 40A	40	1000	800	300	OTA40E4C8DBSR	OTA40E4C8DBSR
BPS 63A	63	1000	800	300	OTA63E4C8SBSR	OTA63E4C8DBSR
BPS 100A	100	1000	800	300	OTA100E4C8SBSR	OTA100E4C8DBSR
BPS 100A	125	1000	800	300	OTA125E4C8SBSR	OTA125E4C8DBSR
BPS 160A	160	1200	1000	400	OTA160E4C8SBSR	OTA160E4C8DBSR
BPS 250A	250	1200	1000	400	OTA250E4C8SBSR	OTA250E4C8DBSR
BPS 400A	400	1200	1000	400	OTA400E4C8SBSR	OTA400E4C8DBSR
BPS 630A	630	1600	1200	600	OTA630E4C8DBAM	OTA630E4C8DBAM

Enclosed automatic transfer switches with contactor set solution, single phase mains, open transition

ATS 4 pole 30 to 800A with phase monitoring and timer functions, pilot lights on door, wall mountable

Description	Rated Current (A)	Enclosure Size (mm) H	W	D	Mains - Mains Single Phase Supply Order Code	Mains - Generator Single Phase Supply Order Code
ATS 30A	30	500	300	200	AFA30E2MMSR	AFA30E2MGSR
ATS 45A	45	500	300	200	AFA45E2MMSR	AFA45E2MGSR
ATS 70A	70	600	400	200	AFA70E2MMSR	AFA70E2MGSR
ATS 100A	100	600	400	200	AFA100E2MMSR	AFA100E2MGSR
ATS 125A	125	600	400	200	AFA125E2MMSR	AFA125E2MGSR
ATS 160A	160	800	600	300	AFA160E2MMSR	AFA160E2MGSR
ATS 200A*	200	800	600	300	AFA200E2MMSR	AFA200E2MGSR
ATS 275A*	275	800	600	300	AFA275E2MMSR	AFA275E2MGSR
ATS 350A*	350	800	600	300	AFA350E2MMSR	AFA350E2MGSR
ATS 400A*	400	800	600	300	AFA400E2MMSR	AFA400E2MGSR
ATS 500A*	500	800	600	300	AFA500E2MMSR	AFA500E2MGSR
ATS 800A*	800	1000	800	300	AFA800E2MMSR	AFA800E2MGSR

Enclosed manual & automatic transfer switches - Contactor solutions

Selection and ordering guide

Enclosed bypass switches, I-O-II operation, open transition

- BPS 4 pole 40 to 630A with OMD800 controller, blank door, wall mountable

Enclosed automatic transfer switches with contactor set solution, 3 phase mains, open transition

ATS 4 pole 30 to 800A with phase monitoring and timer functions, pilot lights on door, wall mountable

Description	Rated Current (A)	Enclosure Size (mm) H	W	D	Mains - Mains Single Phase Supply Order Code	Mains - Generator Single Phase Supply Order Code
ATS 30A	30	500	300	200	AFA30E4MMSR	AFA30E4MGSR
ATS 45A	45	500	300	200	AFA45E4MMSR	AFA45E4MGSR
ATS 70A	70	600	400	200	AFA70E4MMSR	AFA70E4MGSR
ATS 100A	100	600	400	200	AFA100E4MMSR	AFA100E4MGSR
ATS 125A	125	600	400	200	AFA125E4MMSR	AFA125E4MGSR
ATS 160A	160	800	600	300	AFA160E4MMSR	AFA160E4MGSR
ATS 200A*	200	800	600	300	AFA200E4MMSR	AFA200E4MGSR
ATS 275A*	275	800	600	300	AFA275E4MMSR	AFA275E4MGSR
ATS 350A*	350	800	600	300	AFA350E4MMSR	AFA350E4MGSR
ATS 400A*	400	800	600	300	AFA400E4MMSR	AFA400E4MGSR
ATS 500A*	500	800	600	300	AFA500E4MMSR	AFA500E4MGSR
ATS 800A*	800	1000	800	300	AFA800E4MMSR	AFA800E4MGSR

Enclosed bypass ATS using contactor sets and switches, I-O-II operation, 3 phase mains, open transition, single bypass

ATS 4 pole 30 to 275A with phase monitoring and timer functions, pilot lights on door, wall mountable

Description	Rated Current (A)	Enclosure Size (mm) H	W	D	Single Bypass Mains - Mains Order Code	Single Bypass Mains - Generator Order Code
SBPS 30A	30	1000	800	300	AFA30E4MMSBSR	AFA30E4MGSBSR
SBPS 45A	45	1000	800	300	AFA45E4MMSBSR	AFA45E4MGSBSR
SBPS 100A	100	1000	800	300	AFA100E4MMSBSR	AFA100E4MGSBSR
SBPS 125A	125	1000	800	300	AFA125E4MMSBSR	AFA125E4MGSBSR
SBPS 160A	160	1000	800	300	AFA160E4MMSBSR	AFA160E4MGSBSR
SBPS 275A	275	1000	800	300	AFA275E4MMSBSR	AFA275E4MGSBSR

Enclosed manual & automatic transfer switches - Switch solutions

Selection and ordering guide

Enclosed bypass ATS using contactor sets and switches, I-O-II operation, 3 phase mains, open transition

Dual bypass ATS 4 pole 30 to 275A with phase monitoring and timer functions, pilot lights on door, wall mountable

Description	Rated Current (A)	Enclosure Size (mm) H	W	D	Dual Bypass Mains - Mains Order Code	Dual Bypass Mains - Generator Order Code
DBPS 30A	30	1000	800	300	AFA30E4MMDBSR	AFA30E4MGDBSR
DBPS 45A	45	1000	800	300	AFA45E4MMDBSR	AFA45E4MGDBSR
DBPS 100A	100	1000	800	300	AFA100E4MMDBSR	AFA100E4MGDBSR
DBPS 125A	125	1000	800	300	AFA125E4MMDBSR	AFA125E4MGDBSR
DBPS 160A	160	1000	800	300	AFA160E4MMDBSR	AFA160E4MGDBSR
DBPS 275A	275	1000	800	300	AFA275E4MMDBSR	AFA275E4MGDBSR

Optional extras & accessories

Enclosed Automatic Transfer Switch with ATS2PL & ATSDMC optional extras

Description	Suitable switch	Order Code
2 pilot lights		ATS2PL
Door mounted controller complete with IP54 cover plate		ATSDMC
Energy meter		ATSEM
Aniti-condensation heater with thermostat		ATSHT
Description	**Suitable switch**	**Order Code**
N/O auxiliary for on right hand side of switch	OTA40-1600	OA1G10
N/O auxiliary for on left hand side of switch	OTA40-125	OA7G10
N/C auxiliary for on right hand side of switch		OA8G01
N/C auxiliary for on left hand side of switch		OA1G01
N/C auxiliary for on right hand side of switch	OTA160-1600	OA3G01
Direct mounting handle, padlockable with 3 padlocks in '0'position. Includes shaft and mech cover	OTA40-125	OHB65D6CM
	OTA160-250	OTV250ECMK
	OTA400	OTV400ECMK
	OTA630-800	OTV800ECMK
	OTA1000-1600	OTV1000ECMK
Handle and spare fuse storage clip	OTA40-125	OTVS0
	OTA160-250	OTVS1
	OTA400-1600	OTVS2
IP54 cover plate for door mounting ATS controller	All	OMZC2
Yale type key, 19mm dia box with security insert	OTA40-400	AA8002
Unique coded Yale insert lock	OTA630-1600	EV1036
A4 Document pocket	All	EV1075K
Blind plinth flanges (pair) H100 x W800mm	OTA630-1600	ZN8000
Blind plinth flanges (pair) H100 x D400mm	OTA630-800	ZN4011
Blind plinth flanges (pair) H100 x D500mm	OTA1000-1600	ZN5011
Wall mounting brackets (4 off)	OTA40-400	AA1206
Anti tilting brackets (pair)	OTA630-1600	TA1207

TruONE™ part number key

Example key and product description:
OXB1000E3S4Q54B
ABB TruONE™ automatic transfer switch, delayed transition, 1000 amperes, IEC, 3 phase + Neutral (3ph, 4 wire), Level 4 controls, 200–480 VAC voltage area, enclosed style IP54 – bottom in/bottom out.

ABB TruONE™ ATS
OX
ATS type
A Open transition I - II (without stable OFF position for load disconnection)
B Delayed transition I - O - II (with stable OFF position for load disconnection)
ATS size
30, 60, 100, 125, 160, 200, 250, 260, 315, 400, 500, 600, 630, 800, 1000, 1200, 1250, 1600
Standard
E IEC
U UL
Phase poles
1 1-pole
2 2-pole
3 3-pole
Neutral
S Switched Neutral
O Overlapping Neutral
X None
Controller
2 Level 2 controls (DIP)
3 Level 3 controls (LCD)
4 Level 4 controls (Touch)
Voltage code
Q 200–480 VAC
Enclosure rating
54 IP54 (IEC)
_(blank) Open style, no enclosure
Cabling direction
Open style, no enclosure
B Bottom entry (sources on bottom, load on top)
T Top entry (sources on the top, load on the bottom)
Enclosed style
B Bottom in / Bottom out
D Bottom in / Top out
Note: Contact ABB for more details on the available versions.

—
01 Open style ATS
UL 30-200 A
IEC 200-250 A
—
02 Open style ATS
UL 260 A
IEC 315-400 A
—
03 Open style ATS
UL 400-600 A
IEC 500-800 A
—
04 Open style ATS
UL 800-1200 A
IEC 1000-1600 A
—
05 Enclosed style ATS
IEC 200-1600 A

—
01

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02

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03

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04

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05

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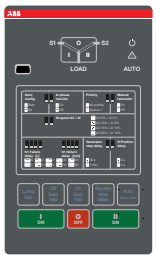
Targeted product performance

ATS Frame Size		**30-400 A**	**260-800 A**	**800-1600 A**
Rated operational current	IEC 60947-6-1, GB 14048-11: AC-33B	200-400 A	630-800 A	1000-1600 A
	GB 14048-11: AC-33iA	30-200 A	260-600 A	800-1200 A
	UL1008: Emergency systems–total system load	30-200 A	260-600 A	800-1200 A
Short-circuit characteristics	Icc (rated conditional short-circuit current)	100 kA	100 kA	100 kA
	Icw (rated short-time withstand current)/Short-time current ratings, 100ms	18-30 kA	42 kA	50 kA
	Icw (rated short-time withstand current)/Short-time current ratings, 500ms		30 kA	50 kA
	Withstand and Close-on ratings (any breaker) 480V	42 kA	50 kA	85 kA
	Withstand and Close-on ratings, with current limiting fuses	200 kA	200 kA	200 kA

TruONE™ feature comparison

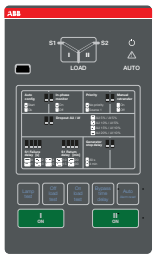
Main features in the table below. Consult ABB for more information.



Feature comparison

	Level 2 controls	Level 3 controls	Level 4 controls
Ampere sizes available	IEC: 200-1600 A	IEC: 200-1600 A	IEC: 200-1600 A
	UL: 30-1200 A	UL: 30-1200 A	UL: 30-1200 A
Rated voltage	200-480Vac	200-480Vac	200-480Vac
Rated frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Phase system	Single and Three	Single and Three	Single and Three
Number of poles	2, 3 and 4	2, 3 and 4	3 and 4
Neutral configuration			
Switched	Yes	Yes	Yes
Overlapping	No	Yes	Yes
Product type			
Open transition (I-II)	Yes	Yes	Yes
Delayed transition (I-O-II)	Yes	Yes	Yes
Voltage and frequency settings			
Pick up Voltage Source 1	Fixed 2% above drop out	81…99%, 101…119%	81…99%, 101…119%
Drop out Voltage Source 1	+/-5, 10, 15, 20%	80…98%, 102…120%	80…98%, 102…120%
Pick up Voltage Source 2	Fixed 2% above drop out	81…99%, 101…119%	81…99%, 101…119%
Drop out Voltage Source 2	+/-5, 10, 15, 20%	80…98%, 102…120%	80…98%, 102…120%
Pick up Frequency Source 1	Fixed 1% above drop out	80,5…99,5%, 100,5…119,5%	80,5…99,5%, 100,5…119,5%
Drop out Frequency Source 1	+/-5, 10 %	80…99%, 101…120%	80…99%, 101…120%
Pick up Frequency Source 2	Fixed 1% above drop out	80,5…99,5%, 100,5…119,5%	80,5…99,5%, 100,5…119,5%
Drop out Frequency Source 2	+/-5, 10 %	80…99%, 101…120%	80…99%, 101…120%
Time delay settings			
Override momentary Source 1 Outage, sec	0, 1, 2, 3, 4, 5, 10, 15, 20, 25, 30	0…60	0…60
Transfer from Source 1 to Source 2, sec	Fixed 2 seconds	0…3600	0…3600
Override momentary Source 2 Outage, sec	Fixed 1,5 seconds	0…60	0…60
Transfer from Source 2 to Source 1, min	0, 1, 2, 3, 4, 5, 10, 15, 20, 25, 30	0…120	0…120
Generator stop delay, min	30 secs or 4 mins	0…60	0…60
Center-OFF delay, sec	0 or 4	0…300	0…300
Pre-transfer delay S1 to S2, sec	No	0…60	0…60
Post-transfer delay S1 to S2 , sec	No	0…60	0…60
Pre-transfer delay S2 to S1, sec	No	0…60	0…60
Post-transfer delay S2 to S1, sec	No	0…60	0…60
Load shed delay, sec	No	0…60	0…60
Source failure detections			
No voltage	Yes	Yes	Yes
Undervoltage	Yes	Yes	Yes
Overvoltage	Yes	Yes	Yes
Phase missing	Yes	Yes	Yes
Voltage unbalance	Yes	Yes	Yes
Invalid frequency	Yes	Yes	Yes
Incorrect phase sequence	Yes	Yes	Yes

TruONE™ feature comparison



Feature comparison

	Level 2 controls	Level 3 controls	Level 4 controls
Features			
Controls	DIP + keys	LCD + keys	Touch + keys
LED indications for ATS, S1 and S2 status	Yes	Yes	Yes
Open transition - Standard digital inputs/outputs	0 / 1	1 / 1	2 / 1
Delayed transition - Standard digital inputs/	1 / 1	2 / 1	3 / 1
Programmable digital inputs/outputs	No	Yes	Yes
Auto config (voltage, frequency, phase system)	Yes	Yes	Yes
Source priority	Source 1, No priority	Source 1/2, No priority	Source 1/2, No priority
Manual re-transfer	Yes	Yes	Yes
In-phase monitor	Yes	Yes	Yes
Genset exercising: on-load, off-load	Yes	Yes	Yes
In-built power meter module	No	No	Yes
Load shedding	No	Yes	Yes
Real time clock	No	Yes	Yes
Event log	No	Yes	Yes
Predictive maintenance	No	No	Yes
Field-mount accessories			
Auxiliary contacts for position indication	Yes	Yes	Yes
Digital input/output modules	No	Yes	Yes
12-24 Vdc aux supply module for controller	No	Yes	Yes
Communication modules	No	Yes	Yes
Connectivity			
Modbus RS485	No	Yes	Yes
Modbus/TCP	No	Yes	Yes
Profibus DP	No	Yes	Yes
ProfiNet	No	Yes	Yes
DeviceNet	No	Yes	Yes
Ethernet IP	No	Yes	Yes
IEC 61850	No	Yes	Yes
Monitoring via ABB Ability™: EDCS	No	Yes	Yes
Enclosures			
Open style	Yes	Yes	Yes
IP54	No	Yes	Yes
For applications			
Mains - Mains	Yes	Yes	Yes
Mains - Generator	Yes	Yes	Yes

Technical data

OTM_C_D products overview

OTM_C20D
For Network/Network application

Fixed version with pre-defined delay times and voltage thresholds

Fixed version

Number of poles	Rated current (A)	Rated voltage (V)	Voltage sensing	Type	Ordering code	Weight (kg)
2	63	230:220-240	Top in	OTM63F2C20D230C	1SCA151421R1001	1.75
2	125	230:220-240	Top in	OTM125F2C20D230C	1SCA151417R1001	1.75
3	63	400:380-415	Top in	OTM63F3C20D400C	1SCA151423R1001	1.75
3	125	400:380-415	Top in	OTM125F3C20D400C	1SCA151419R1001	1.75
4	40	400:380-415	Top in	OTM40F4C20D400C	1SCA151252R1001	2.00
4	63	400:380-415	Top in	OTM63F4C20D400C	1SCA151254R1001	2.00
4	125	400:380-415	Top in	OTM125F4C20D400C	1SCA151250R1001	2.00

OTM_C21D
For Network/Network and Network/Genset applications

Adjustable version with configurable transfer and back-switching delays
Adjustable over and under-voltage thresholds

Adjustable version

Number of poles	Rated current (A)	Rated voltage (V)	Voltage sensing	Type	Ordering code	Weight (kg)
2	63	230:220-240	Top in	OTM63F2C21D230C	1SCA151422R1001	1.75
2	125	230:220-240	Top in	OTM125F2C21D230C	1SCA151418R1001	1.75
3	63	400:380-415	Top in	OTM63F3C21D400C	1SCA151424R1001	1.75
3	125	400:380-415	Top in	OTM125F3C21D400C	1SCA151420R1001	1.75
4	40	400:380-415	Top in	OTM40F4C21D400C	1SCA151253R1001	2.00
4	63	400:380-415	Top in	OTM63F4C21D400C	1SCA151255R1001	2.00
4	125	400:380-415	Top in	OTM125F4C21D400C	1SCA151251R1001	2.00
4	40	400:380-415	Bottom in	OTM40F4CB21D400C	1SCA150580R1001	2.00
4	63	400:380-415	Bottom in	OTM63F4CB21D400C	1SCA150586R1001	2.00
4	125	400:380-415	Bottom in	OTM125F4CB21D400C	1SCA150574R1001	2.00

Technical data
Compact automatic transfer switches

Automatic transfer switches functionality

OTM_C_D products overview	OTM_C20D_	OTM_C21D_
Features	x	x
Rated operational voltage Ue		154 V AC - 480 V AC +/- 20% + N
Rated frequency		50 / 60 Hz +/- 10%
Voltage sensing precision		5%
Frequency sensing precision		1%
Rated impulse withstand voltage, Uimp		6 kV
Overvoltage category		III
Pollution degree		2
Protection rating for the front panel		IP20
Operating temperature		– 20...+ 60 °C
Transportation and storage temperature		– 25...+ 80 °C
Altitude		Max. 2000m
Humidity With condensation		5 %...98 %
Humidity Without condensation		5 %...90 %
Operation Types		
Manual operation with handle	x	x
Local operation with front panel keypad		x
Automatic transfer switching equipment (ATSE)	x	x
Applications		
Transfer between two Transformers	x	x
Transfer between a Transformers and a generator		x
Operation modes		
Automatic transfer and back-switching operation	x	x
Automatic transfer and manual back-switching operation	x	x
Source failure detections		
No voltage	x	x
Undervoltage	Fixed 0.7Ue	0.7-0.95 Ue
Overvoltage	Fixed 1.3Ue	1.05-1.3 Ue
Phase missing	x	x
Voltage unbalance		x
Invalid frequency		x
Configuration		
By DIP switches	x	x
By rotary switches		x
Two power status display	x	x
Two switches status display	x	x
Auto status display	x	x
Alarm display	x	x

Technical data

Compact automatic transfer switches

Automatic transfer switches functionality

OTM_C_D products overview	OTM_C20D_	OTM_C21D_
Time delays		
Delay on transfer[3)]		0-30s
Back-switching delay		0-900s
Generator stop delay		30s,400s
Signals input and output		
Emergency Off with 24VDC signal input	x	x
Test signal input		x
Switch position signal	With Auxiliary contacts	Without Auxiliary contact
Alarm output signal		x

[3)] Overvoltage and undervoltage conditions

Compact ATS

Easy use and installation

01 Easy manual operation with the handle in case of emergency

02 DIN- rail mounting

03 Base mounting with screws

01

02

03

Technical data

Compact automatic transfer switches OTM40...125_

Compact automatic transfer switches

				Switch size		
Data according to IEC 60947-3				**OTM40_**	**OTM63_**	**OTM125_**
Rated insulation voltage and rated operational voltage AC20/DC20		Pollution degree 3	V	800	800	800
Dielectric strength		50 Hz 1min.	kV	6	6	6
Rated impulse withstand voltage			kV	8	8	8
Rated thermal current and rated operational current AC20/DC20	/ ambient 40°C	In open air	A	40	63	125
	/ ambient 40°C	In enclosure	A	40	63	125
	/ ambient 60°C	In enclosure	A	32	50	100
..with minimum conductor cross section		Cu	mm^2	10	16	50
Rated operational current, AC-21A		up to 500 V	A	40	63	125
		690 V	A	40	63	125
Rated operational current, AC-22A		up to 500 V	A	40	63	125
		690 V	A	40	63	125
Rated operational current, AC-23A		up to 415 V	A	40	63	90
		500 V	A	40	60	70
		690 V	A	40	40	50
Rated operational current / poles in series, DC-21A		up to 48 V	A	40/1	63/1	125/1
		110 V	A	40/2	63/2	125/2
		220 V	A	40/4	63/4	100/4
Rated operational current / poles in series, DC-22A		up to 48 V	A	40/1	63/1	125/1
		110 V	A	40/2	63/2	125/2
		220 V	A	40/4	63/4	80/4
Rated operational current / poles in series, DC-23A		up to 48 V	A	40/1	63/1	125/1
		110 V	A	40/2	63/2	125/2
		220 V	A	40/4	63/4	63/4
Rated operational power, AC-23A[1]		230 V	kW	7.5	15	22
The kW-ratings are accurate for 3-phase 1500 R.P.M. standard asychronous motors		400 V	kW	18.5	30	45
		415 V	kW	18.5	30	45
		500 V	kW	22	37	45
		690 V	kW	37	37	45
Rated breaking capacity in category AC-23		up to 415 V	A	320	504	720
		500 V	A	320	480	560
		690 V	A	320	320	400
Rated conditional short-circuit current Ip (r.m.s.) and corresponding max. allowed cut-off current îc (peak) value.	Ip (r.m.s.) 50 kA, 415 V	îc (peak)	kA	16.5	16.5	16.5
	Max. OFA_ fuse size	gG/aM	A/A	125/125	125/125	125/125
	Ip (r.m.s.) 18 kA, 690 V	îc (peak)	kA	11	11	11
The cut-off current îc refers to values listed by fuse manufacturers (single phase test acc. to IEC60269).	Max. OFA_ fuse size	gG	A	125	125	125
	Ip (r.m.s.) 50 kA, 690 V	îc (peak)	kA	10	10	10
	Max. OFA_ fuse size	gG/aM	A/A	63/63	63/63	63/63
Rated short-time withstand current	Icw (r.m.s.)	690 V 1s	kA	2.5	2.5	2.5
Rated short-time making capacity[2]	Icm (peak)	690 V	kA	3.6	3.6	3.6
Power loss / pole	With rated current		W	1.6	2.8	6.3
Mechanical endurance	Number of oper. cycles[3]		Cycles	10 000	10 000	10 000
Cable size	Cu-wire size suitable for terminal clamps		mm^2	2.5-25/2x2.5-16	10-70	10-70
			AWG	14-4/2x14-6	8-00	8-00
Terminal tightening torque	Counter torque required		Nm	6	6	6
Operating torque	Typical for 3-pole switches		Nm	5	5	5
Weight without accessories	3-pole switch		kg	1.75	1.75	1.75

Technical data

Compact automatic transfer switches OTM40...125_

Compact automatic transfer switches

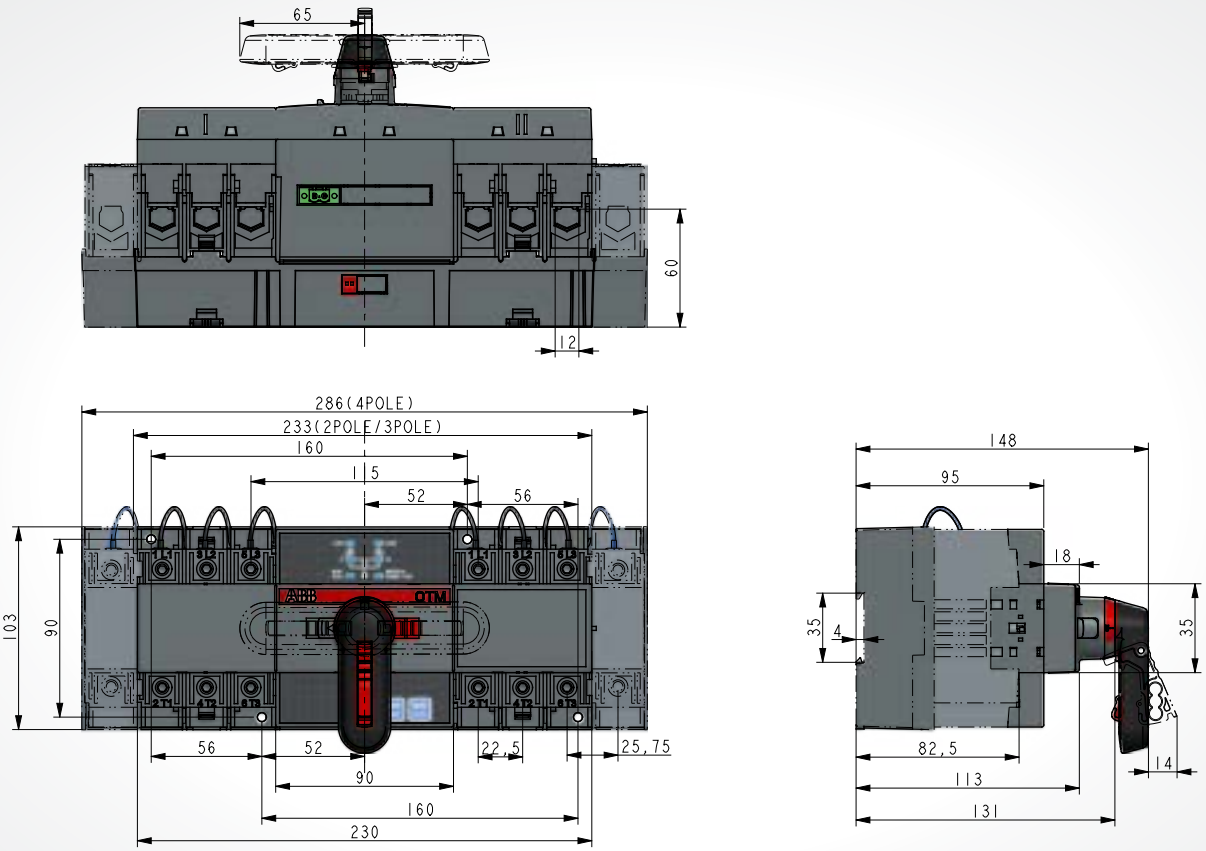
				Switch size		
Data according to IEC 60947-6-1				**OTM40_**	**OTM63_**	**OTM125_**
Class of equipment				PC	PC	PC
Rated short-time withstand current	Icw (r.m.s.)	690 V 0.1s	kA	5	5	5
Conditional short-circuit current	Icc (r.m.s.)	415 V	kA	50	50	50
Corresponding fuse rating	gG/aM fuse	415 V	A	125	125	125
Rated operational current, AC-31B		up to 415 V	A	40	63	125
Rated operational current, AC-32B		up to 415 V	A	40	63	125

[1] These values are given for guidance and may vary according to the motor manufacturer
[2] Short circuit duration > 50ms, without fuse protection
[3] Operating cycle: O - I - O - II - O

SECTION 4

Compact ATS

Dimensional drawings



Ordering information
Accessories

Handles, direct mounting
Plastic I - O - II handle.

Suitable for switches	Colour	Installation side	Type	Order number	Units/type (pcs)	Weight/ unit (kg)
OTM40…125F_CM	Black	Shaft incl.	OHB65D6CM	1SCA022807R9430	1	0.12

Handle storage clip
The handle can be stored in the handle storage clip OTVS0. The handle storage clip can be fixed to a panel frame using the included adhesive tape.

Suitable for switches	Type	Order number	Units/type (pcs)	Weight/ unit (kg)
OTM40…125F_CM	OTVS0	1SCA117524R1001	1	0.02

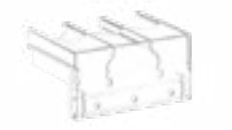
OA1G01
OA7G10

OA1G10
OA8G01

Auxiliary contacts
Snap-on mounting to the switch, IP 20, max. 2 blocks/ side. I_{th} = 16 A, suitable for cable cross sections max. 2 x 2.5 mm^2. Simultaneous action with the main contacts. The type and ordering number is for one piece.

Suitable for switches	Contact function	Installation side	Type	Order number	Units/type (pcs)	Weight/ unit (kg)
OTM40...125F_CM	1NO	Right	OA1G10	1SCA022353R4970	1	0.03
OTM40...125F_CM	1NC	Right	OA8G01	1SCA022744R2240	1	0.03
OTM40...125F_CM	1NO	Left	OA7G10	1SCA022673R1140	1	0.03
OTM40...125F_CM	1NC	Left	OA1G01	1SCA022353R4890	1	0.03

Ordering information
Accessories



OTS_T3

OTS_T1

Terminal shrouds
Transparent plastic, snap-on mounting to the switches, IP20. The full shrouding of a 3-pole change-over switch is achieved with four 3-pole shrouds.*

Suitable for switches	Type	Order number	Units/type (pcs)	Weight/ unit (kg)
For three pole switches				
OTM40...125F_CM	OTS125T3	1SCA022379R9680	1	0.03
For fourth pole				
OTPS60FP, OTPS125FP	OTS125T1	1SCA022379R9760	1	0.03

OZXT1

OZXT2...3

OZXT6

Terminal clamp sets

Suitable for switches	Contact function	Type	Order number	Units/type (pcs)	Weight/ unit (kg)
Terminal clamp sets for Al- and Cu-cables insulated versions					
OTM40...125F_CM	16...50 Al / 2.5...50 Cu	OZXT1	1SCA022469R6310	3	0.06
OTM63...125F_CM	16...120 Al/Cu	OZXT2	1SCA022620R7200	3	0.21
OTM63...125F_CM	2x(16...50) Al/Cu	OZXT3	1SCA022639R0720	3	0.21
Including 0.75...2.5 mm2 voltage sensing connection. Voltage sensing wires are not included in the delivery					
OTM40...125F_CM	16...50 Al/2.5...50 Cu	OZXT6	1SCA122537R1001	3	0.06
Terminal clamp sets for Al- and Cu-cables					
OTM40...125F_CM	10...70 Al/Cu	OZXL1	1SCA022439R6770	3	0.14

OMZC_

Parallel connection kits
Finger protected connection bars for parallel connection of the upper or lower terminals. The bars accept additional cables, the maximum size is stated below.

Suitable for switches	Cable crosssection (mm^2)	Type	Order number	Units/type (pcs)	Weight/ unit (kg)
OTM40F3CM_	2.5...25/2x2.5...16	OMZC003	1SCA121324R1001	1	0.5
OTM40F4CM_	2.5...25/2x2.5...16	OMZC004	1SCA121325R1001	1	0.65
OTM40...125F3CM_	10...70	OMZC03	1SCA117037R1001	1	0.5
OTM40...125F4CM_	10...70	OMZC04	1SCA117038R1001	1	0.65

* Terminal shrouds can also be mounted on parallel connection kits.

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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.
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ABB

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 aluminum 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 & 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 (see below for knockout configurations)
- 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

	Spreader Box		Spreader Box Gasket	
Suitable for Loadbreak Switches	Order Code	Order Code	Order Code	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

Enclosed starters
Get the perfect match

Motor starting is the most common application in the world's industry. When it comes to open starter, you can easily select your direct-on-line, reversing and star delta starter, in kit form, through our selection tables.
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Direct-on-line starters

IP66 plastic - IP55 metal enclosure

Direct on line IP66 plastic enclosure 400v up to 7.5kW (supplied without overload)

DL23055P99

Three Phase 400V [AC3]		Single Phase 230V [AC3]		Dimensions (mm)			
KW	hp	KW	hp	H	W	D	Order code
100-250v coil							
5.5	7.5	1.5	2.0	230	106	127	DL205P
7.5	10.0	2.2	3.0				DL207P
250-500v coil							
5.5	7.5			230	106	127	DL405P
7.5	10.0						DL407P

Direct on line IP55 metal enclosure 400v up to 7.5kW (supplied without overload)

DL205S

Three Phase 400V [AC3]		Single Phase 230V [AC3]		Dimensions (mm)			
KW	hp	KW	hp	H	W	D	Order code
100-250v coil							
5.5	7.5	1.5	2.0	184	184	165	DL205S
7.5	10.0	2.2	3.0				DL207S
250-500v coil							
5.5	7.5			184	184	165	DL405S
7.5	10.0						DL407S

Direct on line with Isolator IP55 metal enclosure 400v up to 7.5kW (supplied without overload)

DI205S

Three Phase 400V [AC3]		Single Phase 230V [AC3]		Dimensions (mm)			
KW	hp	KW	hp	H	W	D	Order code
100-250v coil							
5.5	7.5	1.5	2.0	184	184	180	DI205S
7.5	10.0	2.2	3.0				DI207S
250-500v coil							
5.5	7.5			184	184	180	DI405S
7.5	10.0						DI407S

Direct on line Reversing IP55 metal enclosure 400v up to 7.5kW (supplied without overload)

DR207S

Three Phase 400V [AC3]		Single Phase 230V [AC3]		Dimensions (mm)			
KW	hp	KW	hp	H	W	D	Order code
100-250v coil							
7.5	10.0	2.2	3.0	184	184	165	DI207S
250-500v coil							
7.5	10.0			184	184	165	DI407S

Note: Overload supplied separately (See page 65)

Star delta starters

IP55 metal enclosure

SD215S

Star-Delta IP65 metal Enclosure 400V up to 22kW

- Star-Delta starters in metal enclosure IEC 947-4-1.
- All three phase star delta starters, are complete with pushbuttons, and 100-250v or 250-500v coils.
- Overload for standard motor duty must be purchased separately, see page 65.

Star-Delta IP55 metal enclosure 400V up to 22kW (supplied without overload)

	Three Phase 400V [AC3]		Dimensions (mm)			
	KW	hp	H	W	D	Order code
	100-250v coil					
	15	20.0	184	284	165	SD215S
	22.0	30.0	305	284	175	SD222S
	250-500v coil					
	15	20.0	184	284	165	SD415S
SD215S	22.0	30.0	305	284	175	SD422S

Star-Delta with Isolator IP55 metal enclosure 400V up to 22kW (supplied without overload)

	Three Phase 400V [AC3]		Dimensions (mm)			
	KW	hp	H	W	D	Order code
	100-250v coil					
	15	20.0	184	284	180	SI215S
	22.0	30.0	305	284	190	SI222S
	250-500v coil					
	15	20.0	184	284	180	SI415S
SI215S	22.0	30.0	305	284	190	SI422S

Overload protection
Selection

TF42

TF42

The TF42 thermal overload relays are economic electromechanical protection devices for the main circuit. They offer reliable protection for motors in the event of overload or phase failure. The devices have trip class 10.

The thermal overload relays are three pole relays with bimetal tripping elements. The motor current flows through the bimetal tripping elements and heats them directly and indirectly. In case of an overload (over current), the bimetal elements bent as a result of the heating. This leads to a release of the relay and a change of the contacts switching position (95-96 / 97-98).

- Manual or automatic reset selectable
- Phase loss sensitive acc. to IEC/EN 60947-4-1
- TEST and STOP function – Trip indication on the front
- Temperature compensation
- Suitable for three- and single-phase applications

TF42 0.10 to 38.0A

Setting range A	Short-circuit protective device	Trip class	Part No
0.10 ... 0.13	0.5 A, fuse type T7.5	10	TF42-0.13
0.13 ... 0.17	1.0 A, fuse type T	10	TF42-0.17
0.17 ... 0.23	1.0 A, fuse type T	10	TF42-0.23
0.23 ... 0.31	1.0 A, fuse type T	10	TF42-0.31
0.31 ... 0.41	2.0 A, fuse type gG	10	TF42-0.41
0.41 ... 0.55	2.0 A, fuse type gG	10	TF42-0.55
0.55 ... 0.74	4.0 A, fuse type gG	10	TF42-0.74
0.74 ... 1.00	6.0 A, fuse type gG	10	TF42-1.0
1.00 ... 1.30	6.0 A, fuse type gG	10	TF42-1.3
1.30 ... 1.70	10.0 A, fuse type gG	10	TF42-1.7
1.70 ... 2.30	10.0 A, fuse type gG	10	TF42-2.3
2.30 ... 3.10	10.0 A, fuse type gG	10	TF42-3.1
3.10 ... 4.20	20.0 A, fuse type gG	10	TF42-4.2
4.20 ... 5.70	20.0 A, fuse type gG	10	TF42-5.7
5.70 ... 7.60	35.0 A, fuse type gG	10	TF42-7.6
7.60 ... 10.0	35.0 A, fuse type gG	10	TF42-10
10.0 ... 13.0	40.0 A, fuse type gG	10	TF42-13
13.0 ... 16.0	40.0 A, fuse type gG	10	TF42-16
16.0 ... 20.0	63.0 A, fuse type gG	10	TF42-20
20.0 ... 24.0	63.0 A, fuse type gG	10	TF42-24
24.0 ... 29.0	63.0 A, fuse type gG	10	TF42-29
29.0 ... 35.0	80.0 A, fuse type gG	10	TF42-35
35.0 ... 38.0/40.0	80.0 A, fuse type gG	10	TF42-38

Note: The overload in star delta starters should be fitted in the Delta loop, therefore overload rating equal to FLC x by 0.58*

Overload calculation for Star Delta starters

Motor FLC	Delta Loop Setting
5	2.9
6	3.5
7	4.0
8	4.6
9	5.2
10	5.8
12	7.0
14	8.1
16	9.3
18	10.4
20	11.6
25	14.5
30	17.4
35	20.3
40	23.2
45	26.1
50	29.0
55	32.0

Pushbutton stations

Plastic IP65 enclosures

- IP65 thermoplastic control station complete with actuator, contact blocks and legend plate. Supplied fully assembled. Other variations are available on request.

One gang pushbuttons

Description	Dimensions (mm) H	W	D	Part No	Order code
1 Way Start/Green	75	101	74	1GO	1TVC110000P3101
1 Way Stop/Red				1RC	1TVC101000P3102

Emergency stops

Description	Dimensions (mm) H	W	D	Part No	Order code
Mushroom Head 30mm (twist release) - to IEC60947-5-5	75	101	92	1RSC	1TVC101000P3203
Emergency Stop 40mm (twist release) - to IEC60947-5	75	101	107	1RSC-EN	1TVC101000P3204
Mushroom Head 60mm (twist release) - to IEC60947-5-5	75	101	107	1RMSC50	1TVC101000P3205
Emergency Stop 40mm (with key release) - to IEC60947-5-5	75	101	122	1RMSKC	1TVC101000P3206

Selector switches

Description	Dimensions (mm) H	W	D	Part No	Order code
Two-position switch	75	101	74	1H2O-I	1TVC110000P3107
Two-position key switch (key removable both positions)				1K2O-I	1TVC110000P3108
Three position switch				1H3I-O-II	1TVC110100P3109
Three position key switch (key removable in all positions)				1K3I-O-II	1TVC110100P3110

Two gang pushbuttons

Description	Dimensions (mm) H	W	D	Part No	Order code
Start/Green and Stop/Red	75	141	79	2GORC	1TVC211000P3111
Start/Green and Red/Emergency Stop 40mm (twist release) to IEC60947-5-5	75	141	107	2GORSC-EN	1TVC211000P3112

IP55 stainless steel enclosures

Stainless enclosures

Description	Dimensions (mm) H	W	D	Part No	Order code
Emergency Stop 40mm (stay-put) - to EN418	100	140	100	1RSC-ENSS	1TVC100000P5015
1 Gang Empty Enclosure	–	–	55	01.001001.SS1	01.001001.SS1
2 Gang Empty Enclosure	–	–	55	01.001002.SS2	01.001002.SS2
3 Gang Empty Enclosure	–	–	55	01.001003.SS3	01.001003.SS3

Terminal boxes

Plastic IP65 enclosures

Terminals in enclosures

Description	No of Terms	[A] 1th	Dimensions (mm) H	W	D	Part No	Order code
Terminal Box 2.5mm IP55 plastic enclosure	5	24	118	163	72	5TERM2.5	1TVC151800S2349
	10	24				10TERM2.5	1TVC151800S2347
Terminal Box 4mm IP55 plastic enclosure	5	32				5TERM4	1TVC151800S2350
	10	32				10TERM4	1TVC151800S2348

Heating & lighting

IP65 plastic - IP55 metal enclosure

Three & four pole heating & lighting contactors IP65 plastic enclosure

HL025P

100-250v coil (Including neutral terminal strip)				
Heating AC1 Amps	**Amps per pole Fluorescent Mercury**	**Amps per Pole Tungsten**	**Main Poles**	**Order code**
25	16	16	4	HL025P
45	30	32	4	HL045P

Three & four pole heating & lighting contactors IP55 metal enclosure

HL025S

100-250v coil (Including neutral terminal strip)				
Heating AC1 Amps	**Amps per pole Fluorescent Mercury**	**Amps per Pole Tungsten**	**Main Poles**	**Order code**
25	16	16	4	HL025S
45	30	32	4	HL045S
70	40	16	3	HL063S
100	70	32	3	HL100S

Dimensions

Enclosure	**Height (mm)**	**Width (mm)**	**Depth (mm)**	**Order code**
Plastic	230	106	127	HL•••25P4 - HL•••45P4
Metal	180	185	145	HL•••25S4 - HL•••45S4
				HL•••63S3 - HL•••100S3

Industrial plugs & sockets

Reliable, durable & safe

Used for connection of equipment in all kinds of applications where it needs to be possible to connect and disconnect. ABB's industrial sockets are widely chosen when safety, reliability and durability are essential.

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Plugs

IP44

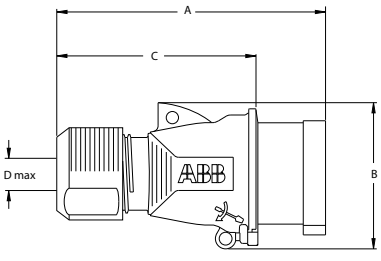
16 A. Splashproof
Housing in plastic (PA). Cable entry with compression gland. Cable area 1...2.5 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage	Frequency	Type	Order Code	Pkg qty	Weight pkg (1pce)
		V	Hz				kg
2P+E							
3	Grey		AC	216EP1	2CMA101943R1000	10	0.11
	Green	>50	>300...500	216EP2	2CMA101944R1000		
	Yellow	100...130	50 and 60	216EP4	2CMA101946R1000		
	Blue	200...250		216EP6	2CMA101947R1000		
	Red	380...415		216EP9	2CMA101948R1000		
	Grey	transf		216EP12	2CMA101950R1000		
3P+E							
4	Grey		AC	316EP1	2CMA101951R1000	10	0.16
	Green	>50	>300...500	316EP2	2CMA101952R1000		
	Red	380/440	50/60	316EP3	2CMA101953R1000		
	Yellow	100...130	50 and 60	316EP4	2CMA101954R1000		
	Black	600...690		316EP5	2CMA101955R1000		
	Red	380...415		316EP6	2CMA101956R1000		
	Black	480...500		316EP7	2CMA101957R1000		
	Blue	200...250		316EP9	2CMA101958R1000		
	Green	>50	100...300	316EP10	2CMA101959R1000		
	Red	440...460	60	316EP11	2CMA101960R1000		
	Grey	transf	50 and 60	316EP12	2CMA101961R1000		
3P+N+E							
5	Grey		AC	416EP1	2CMA101962R1000	10	0.18
	Green	>50	>300...500	416EP2	2CMA101963R1000		
	Red	380...440	50/60	416EP3	2CMA101964R1000		
	Yellow	100...130	50 and 60	416EP4	2CMA101965R1000		
	Black	600...690		416EP5	2CMA101966R1000		
	Red	346...415		416EP6	2CMA101967R1000		
	Black	480...500		416EP7	2CMA101968R1000		
	Blue	208...250		416EP9	2CMA101969R1000		
	Red	440...460	60	416EP11	2CMA101970R1000		

Dimensions (mm)

Type	A	B	C	Dmax
216EP...	127	62.5	88.5	14
316EP...	144	74.5	106	17
416EP...	144	78	106	17



Plugs

IP44

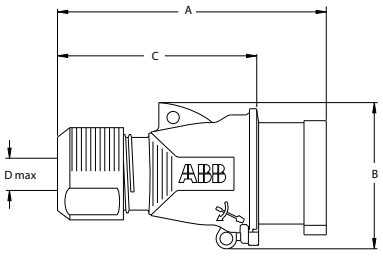
32 A. Splashproof
Housing in plastic (PA). Cable entry with compression gland. Cable area 2.5...6 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	232EP1	2CMA101971R1000	10	0.21
	Green	>50	>300...500	232EP2	2CMA101972R1000		
	Yellow	100...130	50 and 60	232EP4	2CMA101974R1000		
	Blue	200...250		232EP6	2CMA101975R1000		
	Red	380...415		232EP9	2CMA101976R1000		
	Grey	transf		232EP12	2CMA101978R1000		
3P+E							
4	Grey		AC	332EP1	2CMA101979R1000	10	0.23
	Green	>50	>300...500	332EP2	2CMA101980R1000		
	Red	380/440	50/60	332EP3	2CMA101981R1000		
	Yellow	100...130	50 and 60	332EP4	2CMA101982R1000		
	Black	600...690		332EP5	2CMA101983R1000		
	Red	380...415		332EP6	2CMA101984R1000		
	Black	480...500		332EP7	2CMA101985R1000		
	Blue	200...250		332EP9	2CMA101986R1000		
	Green	>50	100...300	332EP10	2CMA101987R1000		
	Red	440...460	60	332EP11	2CMA101988R1000		
	Grey	transf	50 and 60	332EP12	2CMA101989R1000		
3P+N+E							
5	Grey		AC	432EP1	2CMA101990R1000	10	0.24
	Green	>50	>300...500	432EP2	2CMA101991R1000		
	Red	380...440	50/60	432EP3	2CMA101992R1000		
	Yellow	100...130	50 and 60	432EP4	2CMA101993R1000		
	Black	600...690		432EP5	2CMA101994R1000		
	Red	346...415		432EP6	2CMA101995R1000		
	Black	480...500		432EP7	2CMA101996R1000		
	Blue	208...250		432EP9	2CMA101997R1000		
	Red	440...460	60	432EP11	2CMA101998R1000		

Dimensions (mm)

Type	A	B	C	Dmax
232EP...	167	82.5	121	22
332EP...	167	82.5	121	22
432EP...	167	87.5	121	22



Connectors

IP44

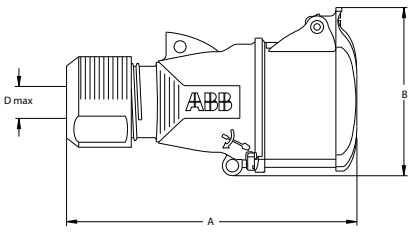
16 A. Splashproof
Housing in plastic (PA). Cable entry with compression gland. Cable area 1...2.5 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	216EC1	2CMA101999R1000	10	0.16
	Green	>50	>300...500	216EC2	2CMA102000R1000		
	Yellow	100...130	50 and 60	216EC4	2CMA102002R1000		
	Blue	200...250		216EC6	2CMA102003R1000		
	Red	380...415		216EC9	2CMA102004R1000		
	Grey	transf		216EC12	2CMA102006R1000		
3P+E							
4	Grey		AC	316EC1	2CMA102007R1000	10	0.21
	Green	>50	>300...500	316EC2	2CMA102008R1000		
	Red	380/440	50/60	316EC3	2CMA102009R1000		
	Yellow	100...130	50 and 60	316EC4	2CMA102010R1000		
	Black	600...690		316EC5	2CMA102011R1000		
	Red	380...415		316EC6	2CMA102012R1000		
	Black	480...500		316EC7	2CMA102013R1000		
	Blue	200...250		316EC9	2CMA102014R1000		
	Green	>50	100...300	316EC10	2CMA102015R1000		
	Red	440...460	60	316EC11	2CMA102016R1000		
	Grey	transf	50 and 60	316EC12	2CMA102017R1000		
3P+N+E							
5	Grey		AC	416EC1	2CMA102018R1000	10	0.23
	Green	>50	>300...500	416EC2	2CMA102019R1000		
	Red	380...440	50/60	416EC3	2CMA102020R1000		
	Yellow	100...130	50 and 60	416EC4	2CMA102021R1000		
	Black	600...690		416EC5	2CMA102022R1000		
	Red	346...415		416EC6	2CMA102023R1000		
	Black	480...500		416EC7	2CMA102024R1000		
	Blue	208...250		416EC9	2CMA102025R1000		
	Red	440...460	60	416EC11	2CMA102026R1000		

Dimensions (mm)

Type	A	B	Dmax
216EC...	135.5	74.5	14
316EC...	155	87	17
416EC...	156	90.5	17



Connectors

IP44

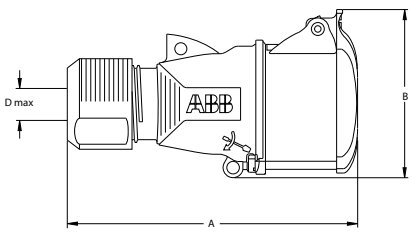
32 A. Splashproof
Housing in plastic (PA). Cable entry with compression gland. Cable area 2.5...6 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	232EC1	2CMA102027R1000	10	0.26
	Green	>50	>300...500	232EC2	2CMA102028R1000		
	Yellow	100...130	50 and 60	232EC4	2CMA102030R1000		
	Blue	200...250		232EC6	2CMA102031R1000		
	Red	380...415		232EC9	2CMA102032R1000		
	Grey	transf		232EC12	2CMA102034R1000		
3P+E							
4	Grey		AC	332EC1	2CMA102035R1000	10	0.28
	Green	>50	>300...500	332EC2	2CMA102036R1000		
	Red	380/440	50/60	332EC3	2CMA102037R1000		
	Yellow	100...130	50 and 60	332EC4	2CMA102038R1000		
	Black	600...690		332EC5	2CMA102039R1000		
	Red	380...415		332EC6	2CMA102040R1000		
	Black	480...500		332EC7	2CMA102041R1000		
	Blue	200...250		332EC9	2CMA102042R1000		
	Green	>50	100...300	332EC10	2CMA102043R1000		
	Red	440...460	60	332EC11	2CMA102044R1000		
	Grey	transf	50 and 60	332EC12	2CMA102045R1000		
3P+N+E							
5	Grey		AC	432EC1	2CMA102046R1000	10	0.30
	Green	>50	>300...500	432EC2	2CMA102047R1000		
	Red	380...440	50/60	432EC3	2CMA102048R1000		
	Yellow	100...130	50 and 60	432EC4	2CMA102049R1000		
	Black	600...690		432EC5	2CMA102050R1000		
	Red	346...415		432EC6	2CMA102051R1000		
	Black	480...500		432EC7	2CMA102052R1000		
	Blue	208...250		432EC9	2CMA102053R1000		
	Red	440...460	60	432EC11	2CMA102054R1000		

Dimensions (mm)

Type	A	B	Dmax
232EC...	182	93.5	22
332EC...	182	93.5	22
432EC...	182.5	99	22



Inlets

for wall mounting, IP44

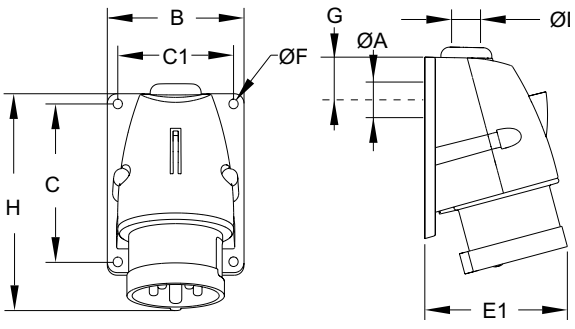
16 A. Splashproof
Housing in plastic (PA). Flexible membrane and metric threaded M20 insert for cop cable entry.
Rear knock-out cable entry. Cable area 1...2.5 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	216BS1	2CMA193293R1000	10	0.15
	Yellow	100...130	50 and 60	216BS4	2CMA193289R1000		
	Blue	200...250		216BS6	2CMA193290R1000		
	Red	380...415		216BS9	2CMA193291R1000		
	Grey	transf.		216BS12	2CMA193292R1000		
3P+E							
4	Grey		AC	316BS1	2CMA193303R1000	10	0.19
	Yellow	100...130	50 and 60	316BS4	2CMA193296R1000		
	Black	600...690		316BS5	2CMA193297R1000		
	Red	380...415		316BS6	2CMA193298R1000		
	Black	480...500		316BS7	2CMA193299R1000		
	Blue	200...250		316BS9	2CMA193300R1000		
	Green	>50	100...300	316BS10	2CMA193301R1000		
	Red	440...460	60	316BS11	2CMA193302R1000		
3P+N+E							
5	Grey		AC	416BS1	2CMA193311R1000	10	0.20
	Green	>50	>300...500	416BS2	2CMA193304R1000		
	Black	600...690	50 and 60	416BS5	2CMA126699R1000		
	Red	346...415		416BS6	2CMA193307R1000		
	Blue	208...250		416BS9	2CMA193309R1000		
	Red	440...460	60	416BS11	2CMA193310R1000		

Dimensions (mm)

Type	A	B	C	C1	Dmax	E1	F	G	H
216BS..	23	66	75	54	18/M20	72	5.5	27	110
316BS..	23	79	91	67	18/M20	78	5.5	30	124
416BS..	23	79	91	67	18/M20	81	5.5	30	125



Inlets

for panel mounting with minimized or unified straight flange, IP44

216B6

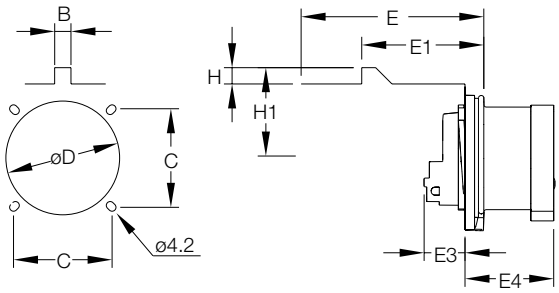
16 A. Splashproof
Housing in plastic (PA). Minimized flange, Cable area 1...2.5 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	216B1	2CMA193341R1000	10	0.10
	Blue	200...250	50 and 60	216B6	2CMA193338R1000		
3P+E							
4	Yellow	100...130	50 and 60	316B4	2CMA100187R1000	10	0.13
	Black	600...690		316B5	2CMA193345R1000		
	Red	380...415		316B6	2CMA193346R1000		
	Blue	200...250		316B9	2CMA193348R1000		
3P+N+E							
5	Grey		AC	416B1	2CMA193359R1000	10	0.14
	Red	346...415	50 and 60	416B6	2CMA193355R1000		
	Blue	208...250		416B9	2CMA193357R1000		

Dimensions (mm)

Type	B	C	D	E	E1	E3	E4	H	H1
216B...	9	44-47	49	75	40.5	21.5	46.5	4	30.0
316B...	9	50-52	59	80	46.8	21.0	47.0	5	34.0
416B...	9	50-52	59	90	52.5	21.0	46.5	7	38.0



Inlets

for panel mounting with minimized or unified straight flange, IP44

432BU6

16 A. IP44. Splashproof
Housing in plastic (PA). Unified flange, Cable area 1...2.5 mm²

EASY & SAFE

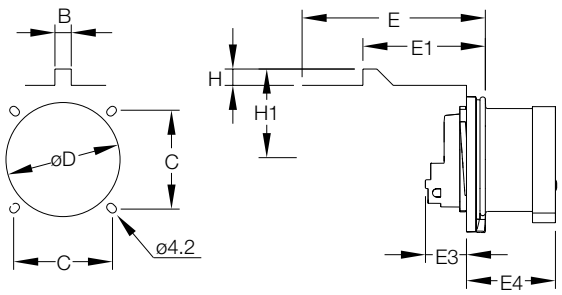
Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
3P+E							
4	Blue	200...250	50 and 60	316BU9	2CMA163824R1000	10	0.13
3P+N+E							
5	Black	600...690	50 and 60	416BU5	2CMA100235R1000	10	0.14
	Red	346...415		416BU6	2CMA193468R1000		

32 A. IP44. Splashproof
Housing in plastic (PA). Unified flange, Cable area 2.5...6 mm²

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	232BU1	2CMA193437R1000	10	0.15
	Blue	200...250	50 and 60	232BU6	2CMA193434R1000		
3P+E							
4	Grey		AC	332BU1	2CMA193447R1000	10	0.17
	Black	600...690	50 and 60	332BU5	2CMA193441R1000		
	Red	380...415		332BU6	2CMA193442R1000		
	Blue	200...250		332BU9	2CMA193444R1000		
3P+N+E							
5	Grey		AC	432BU1	2CMA193455R1000	10	0.19
	Red	346...415	50 and 60	432BU6	2CMA193451R1000		

Dimensions (mm)

Type	B	C	D	E	E1	E3	E4	H	H1
416BU...	9	60-61	59	90	52.5	21.0	46.5	7	38.0
232BU...	9	60-61	66	90	53.5	24.5	55.5	7	40.0
332BU...	9	60-61	66	90	53.5	24.5	55.5	7	40.0
432BU...	9	60-61	66	105	59.5	25.0	55.5	8	45.0



Socket outlet

for wall mounting, IP44

216RS6

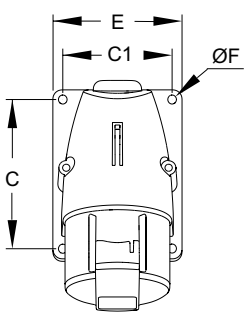
16 A. Splashproof
Housing in plastic (PA). Flexible membrane and metric threaded M20 insert for cop cable entry.
Rear knock-out cable entry. Cable area 1.5...4 mm²

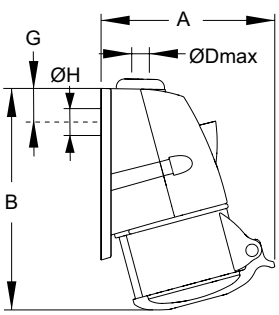
EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
	Grey		AC	216RS1	2CMA193101R1000	10	0.22
	Yellow	100...130	50 and 60	216RS4	2CMA193097R1000		
	Blue	200...250		216RS6	2CMA193098R1000		
	Red	380...415		216RS9	2CMA193099R1000		
3	Grey	transf.		216RS12	2CMA193100R1000		
3P+E							
4	Grey		AC	316RS1	2CMA193111R1000	10	0.24
	Yellow	100...130	50 and 60	316RS4	2CMA193104R1000		
	Black	600...690		316RS5	2CMA193105R1000		
	Red	380...415		316RS6	2CMA193106R1000		
	Black	480...500		316RS7	2CMA193107R1000		
	Blue	200...250		316RS9	2CMA193108R1000		
	Green	**>50**	100...300	316RS10	2CMA193109R1000		
	Red	440...460	60	316RS11	2CMA193110R1000		
3P+N+E							
5	Grey		AC	416RS1	2CMA193119R1000	10	0.26
	Green	>50	>300...500	416RS2	2CMA193112R1000		
	Black	600..690	50 and 60	416RS5	2CMA126666R1000		
	Red	346...415		416RS6	2CMA193115R1000		
	Blue	208...250		416RS9	2CMA193117R1000		
	Red	440...460	60	416RS11	2CMA193118R1000		

Dimensions (mm)

Type	A	B	C	C1	Dmax	E	F	G	H
216RS..	91	117	75	54	18/M20	66	5.5	27	23
316RS..	100	132	91	67	18/M20	79	5.5	30	23
416RS..	104	134	91	67	18/M20	79	5.5	30	23





Socket outlet

for panel mounting with unified angled flange, IP44

216RAU6

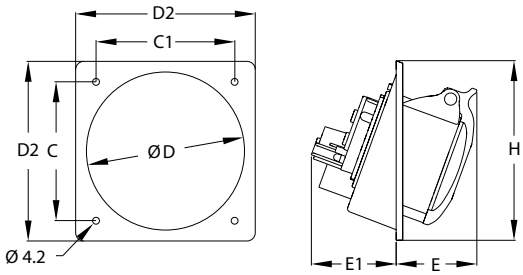
16 A. Splashproof
Housing in plastic (PA). Cable area 1.5...4 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	216RAU1	2CMA193221R1000	10	0.19
	Green	>50	300...500	216RAU2	2CMA101342R1000		
	Yellow	100...130	50 and 60	216RAU4	2CMA193217R1000		
	Blue	200...250		216RAU6	2CMA193218R1000		
	Red	380...415		216RAU9	2CMA193219R1000		
	Grey	transf.		216RAU12	2CMA193220R1000		
3P+E							
4	Grey		AC	316RAU1	2CMA193231R1000	10	0.22
	Yellow	100...130	50 and 60	316RAU4	2CMA193224R1000		
	Black	600...690		316RAU5	2CMA193225R1000		
	Red	380...415		316RAU6	2CMA193226R1000		
	Black	480...500		316RAU7	2CMA193227R1000		
	Blue	200...250		316RAU9	2CMA193228R1000		
	Green	>50	>300...500	316RAU10	2CMA193229R1000		
	Red	440...460	60	316RAU11	2CMA193230R1000		
3P+N+E							
5	Grey		AC	416RAU1	2CMA193239R1000	10	0.24
	Green	>50	300...500	416RAU2	2CMA193232R1000		
	Yellow	100...130	50 and 60	416RAU4	2CMA101343R1000		
	Black	600...690		416RAU5	2CMA126678R1000		
	Red	346...415		416RAU6	2CMA193235R1000		
	Blue	208...250		416RAU9	2CMA193237R1000		

Dimensions (mm)

Type	C	C1	D	D2	E	E1	H
216RAU..	85	85	98	110	48	48	110
316RAU..	85	85	98	110	50	48	110
416RAU..	85	85	98	110	51	50	110



SECTION 7

Socket outlet

for panel mounting with unified angled flange, IP44

432RAU6

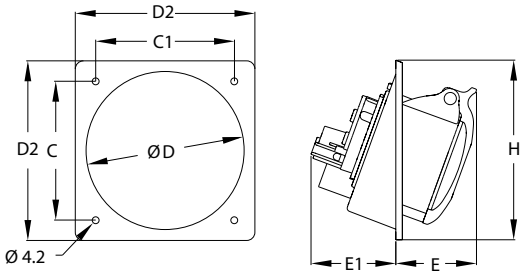
32 A. Splashproof
Housing in plastic (PA). Cable area 2.5...10 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
	Grey		AC	232RAU1	2CMA193269R1000		
3	Yellow	100...130	50 and 60	232RAU4	2CMA193265R1000	10	0.25
	Blue	200...250		232RAU6	2CMA193266R1000		
3P+E							
4	Grey		AC	332RAU1	2CMA193279R1000	10	0.26
	Black	600...690	50 and 60	332RAU5	2CMA193273R1000		
	Red	380...415		332RAU6	2CMA193274R1000		
	Black	480...500		332RAU7	2CMA193275R1000		
	Blue	200...250		332RAU9	2CMA193276R1000		
3P+N+E							
5	Grey		AC	432RAU1	2CMA193287R1000	10	0.28
	Black	600...690	50 and 60	432RAU5	2CMA126679R1000		
	Red	346...415		432RAU6	2CMA193283R1000		

Dimensions (mm)

Type	C	C1	D	D2	E	E1	H
232RAU...	85	85	98	110	61	53	110
332RAU...	85	85	98	110	61	53	110
432RAU...	85	85	98	110	63	54	110



Socket outlet

for panel mounting with minimized straight flange, IP44

216R6

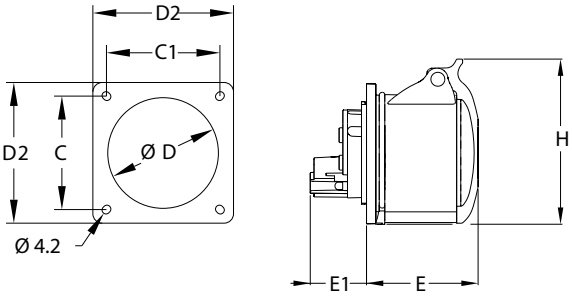
16 A. Splashproof
Housing in plastic (PA). Cable area 1.5...4 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Yellow	100...130	50 and 60	216R4	2CMA193145R1000	10	0.14
	Blue	200...250		216R6	2CMA193146R1000		
	Red	380...415		216R9	2CMA193147R1000		
	Grey	transf.		216R12	2CMA193148R1000		
3P+E							
4	Grey		AC	316R1	2CMA193159R1000	10	0.17
	Yellow	100...130	50 and 60	316R4	2CMA193152R1000		
	Black	600...690		316R5	2CMA193153R1000		
	Red	380...415		316R6	2CMA193154R1000		
	Black	480...500		316R7	2CMA193155R1000		
	Blue	200...250		316R9	2CMA193156R1000		
	Green	>50	100...300	316R10	2CMA193157R1000		
	Red	440...460	60	316R11	2CMA193158R1000		
3P+N+E							
5	Grey		AC	416R1	2CMA193167R1000	10	0.19
	Green	>50	>300...500	416R2	2CMA193160R1000		
	Red	346...415		416R6	2CMA193163R1000		
	Blue	208...250	50 and 60	416R9	2CMA193165R1000		

Dimensions (mm)

Type	C	C1	D	D2	E	E1	H
216R..	44-47	44-47	49	56	56	29	73
316R..	50-52	50-52	59	66	58	30	87
416R..	50-52	50-52	59	66	60	31	89



Socket outlet

for panel mounting with minimized angled flange, IP44

216RAM6

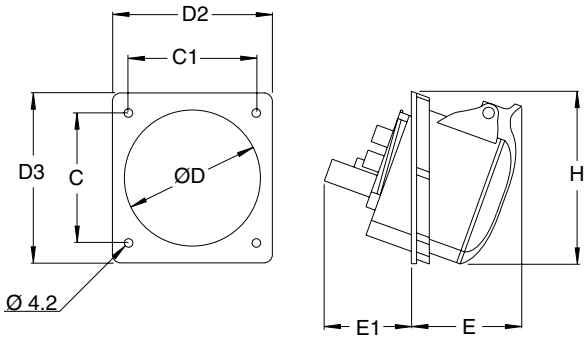
16 A. Splashproof
Housing in plastic (PA). Cable area 1.5...4 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	216RAM1	2CMA170007R1000	10	0.21
	Yellow	100...130	50 and 60	216RAM4	2CMA170003R1000		
	Blue	200...250		216RAM6	2CMA170004R1000		
	Red	380...415		216RAM9	2CMA170005R1000		
	Grey	transf.		216RAM12	2CMA170006R1000		
3P+E							
4	Grey		AC	316RAM1	2CMA170017R1000	10	0.22
	Yellow	100...130	50 and 60	316RAM4	2CMA170010R1000		
	Black	600...690		316RAM5	2CMA170011R1000		
	Red	380...415		316RAM6	2CMA170012R1000		
	Black	480...500		316RAM7	2CMA170013R1000		
	Blue	200...250		316RAM9	2CMA170014R1000		
	Green	> 50	100...300	316RAM10	2CMA170015R1000		
	Red	440...460	60	316RAM11	2CMA170016R1000		
3P+N+E							
5	Grey		AC	416RAM1	2CMA170025R1000	10	0.24
	Green	> 50	>300...500	416RAM2	2CMA170018R1000		
	Red	346...415	50 and 60	416RAM6	2CMA170021R1000		
	Blue	208...250		416RAM9	2CMA170023R1000		

Dimensions (mm)

Type	C	C1	D	D2	D3	E	E1	H
216RAM..	55	55	63	70	78	53	42	76
316RAM..	66	66	78	83	89	53	46	85
416RAM..	66	66	78	83	89	55	48	89



Socket outlet

for panel mounting with minimized angled flange, IP44

332RAM6

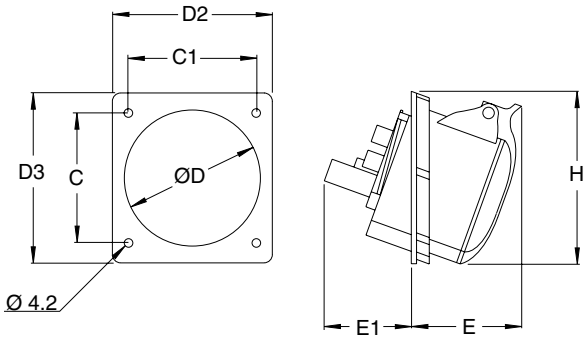
32 A. Splashproof
Housing in plastic (PA). Cable area 2.5...10 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	232RAM1	2CMA170030R1000	10	0.21
	Grey	> 50...250	DC	232RAM3	2CMA100856R1000		
	Yellow	100...130	50 and 60	232RAM4	2CMA170026R1000		
	Blue	200...250		232RAM6	2CMA170027R1000		
3P+E							
4	Grey		AC	332RAM1	2CMA170040R1000	10	0.22
	Black	600...690	50 and 60	332RAM5	2CMA170034R1000		
	Red	380...415		332RAM6	2CMA170035R1000		
	Black	480...500		332RAM7	2CMA170036R1000		
	Blue	200...250		332RAM9	2CMA170037R1000		
3P+N+E							
5	Grey		AC	432RAM1	2CMA170048R1000	10	0.24
	Red	346...415	50 and 60	432RAM6	2CMA170044R1000		

Dimensions (mm)

Type	C	C1	D	D2	D3	E	E1	H
232RAM...	75	75	87	93	99	61	52	98
332RAM...	75	75	87	93	99	61	52	98
432RAM...	75	75	87	93	99	64	52	101



Watertight industrial plugs & sockets

Our new IP67 Easy & Safe is a perfect choice in most applications where water and dirt can occur. They combine easy access to contact parts during installation with high protection degree while the products are in use. Electrical contacts protected against liquids and dirt retains its performance over time. High contact performance means reliability, reducing downtime and lowers maintenance costs.

Watertight industrial plugs & sockets

IP67

216EC6W

16 A. Watertight

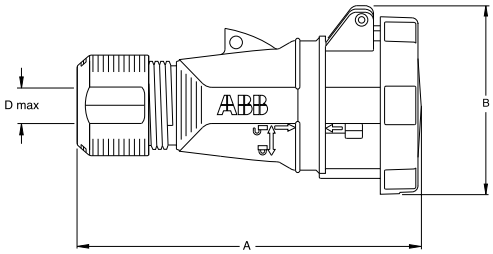
Housing in plastic (PA). Cable entry with compression gland. Cable area 1...2.5 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	216EC1W	2CMA101116R1000	10	0.17
	Yellow	100...130	50 and 60	216EC4W	2CMA101118R1000		
	Blue	200...250		216EC6W	2CMA101119R1000		
	Red	380...415		216EC9W	2CMA101120R1000		
	Grey	transf		216EC12W	2CMA101121R1000		
3P+E							
4	Grey		AC	316EC1W	2CMA101122R1000	10	0.23
	Green	>50	>300...500	316EC2W	2CMA101123R1000		
	Red	380/440	50/60	316EC3W	2CMA101124R1000		
	Yellow	100...130	50 and 60	316EC4W	2CMA101125R1000		
	Black	600...690		316EC5W	2CMA101126R1000		
	Red	380...415		316EC6W	2CMA101127R1000		
	Black	480...500		316EC7W	2CMA101128R1000		
	Blue	200...250		316EC9W	2CMA101129R1000		
	Green	>50	100...300	316EC10W	2CMA101130R1000		
	Red	440...460	60	316EC11W	2CMA101131R1000		
3P+N+E							
5	Grey		AC	416EC1W	2CMA101132R1000	10	0.26
	Green	>50	>300...500	416EC2W	2CMA101133R1000		
	Red	380...440	50/60	416EC3W	2CMA101134R1000		
	Yellow	100...130	50 and 60	416EC4W	2CMA101135R1000		
	Red	346...415		416EC6W	2CMA101136R1000		
	Black	480...500		416EC7W	2CMA101137R1000		
	Blue	208...250		416EC9W	2CMA101138R1000		
	Red	440...460	60	416EC11W	2CMA101139R1000		

Dimensions (mm)

Type	A	B	Dmax
216EC...W	146	81	14
316EC...W	169	88	17
416EC...W	169	92	17



SECTION 7

Watertight industrial plugs & sockets

IP67

432EC6W

32 A. Watertight

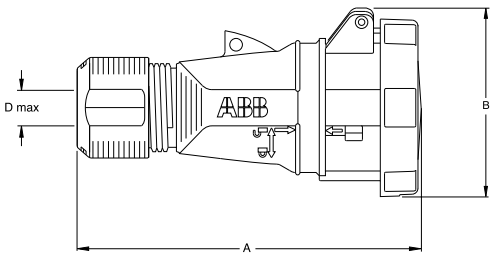
Housing in plastic (PA). Cable entry with compression gland. Cable area 2.5...6 mm²

EASY & SAFE

Terminals/ Poles	Color code	Voltage V	Frequency Hz	Type	Order Code	Pkg qty	Weight pkg (1pce) kg
2P+E							
3	Grey		AC	232EC1W	2CMA101140R1000	10	0.28
	Yellow	100...130	50 and 60	232EC4W	2CMA101141R1000		
	Blue	200...250		232EC6W	2CMA101142R1000		
	Red	380...415		232EC9W	2CMA101143R1000		
	Grey	transf		232EC12W	2CMA101144R1000		
3P+E							
4	Grey		AC	332EC1W	2CMA101145R1000	10	0.30
	Green	>50	>300...500	332EC2W	2CMA101146R1000		
	Red	380/440	50/60	332EC3W	2CMA101147R1000		
	Yellow	100...130	50 and 60	332EC4W	2CMA101148R1000		
	Black	600...690		332EC5W	2CMA101149R1000		
	Red	380...415		332EC6W	2CMA101150R1000		
	Black	480...500		332EC7W	2CMA101151R1000		
	Blue	200...250		332EC9W	2CMA101152R1000		
	Green	>50	100...300	332EC10W	2CMA101153R1000		
	Red	440...460	60	332EC11W	2CMA101154R1000		
3P+N+E							
5	Grey		AC	432EC1W	2CMA101155R1000	10	0.30
	Green	>50	>300...500	432EC2W	2CMA101156R1000		
	Red	380...440	50/60	432EC3W	2CMA101157R1000		
	Yellow	100...130	50 and 60	432EC4W	2CMA101158R1000		
	Red	346...415		432EC6W	2CMA101159R1000		
	Black	480...500		432EC7W	2CMA101160R1000		
	Blue	208...250		432EC9W	2CMA101161R1000		
	Red	440...460	60	432EC11W	2CMA101162R1000		

Dimensions (mm)

Type	A	B	Dmax
232EC...W	195	98	22
332EC...W	195	98	22
432EC...W	195	104	22



SECTION 8

Enclosures

The complete solution for professionals

Professional users of enclosures for low voltage devices search for simple, fast and flexible solutions. With System Pro they will find a first-class quality assortment enclosures and accessories, from the smallest consumer unit to industrial sized automation and main distribution boards.
new.abb.com/world-of-installation

Enclosures
IP65 SR2 Sheet steel enclosures

The range of SR2 enclosures is a complete offer of monobloc enclosures for constructing small and medium sized electric automation, switching and control switchboards.

Ideal enclosures, special apparatus

The SR2 enclosures come from years in building the experience P65 metal structures (in accordance with the IEC 60529 Standard), together with the innovative new production process used for construction patented by ABB.

SR2 enclosures are particular suited for panel builders for the manufacture of switchgear and controlgear switchboards for a very wide variety of industrial applications - from large machinery with automated production lines.

Conforming to EN 62208 standard for low voltage switchgear and controlgear assemblies and allow realisation of electrical equipment conforming to IEC 60204-1 standard “Safety of machinery", electrical equipment of machines and of the EN 60439- 1

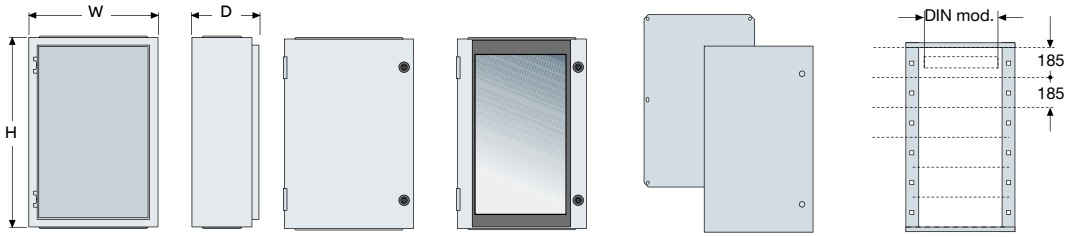
Standard and the new EN 61439-1-2 standard “Low voltage protection switchgear and controlgear for assemblies”. The degree of protection, in accordance with the IEC 60529 standard “Degrees of protection of enclosures (IP Code)”, is IP65.

The SR2 enclosures conform to UL (Underwriters Laboratories) and CSA (Canadian Standards Association) Type 12 marks. SR2 enclosures allow secondary distribution switchboards to be made due to there modular widths 400, 600 and 800 mm of installing the whole range of apparatus and modular circuit-breakers on DIN rails combined with special pre-drilled and hinged modular front panels, allowing construction of AS/ANS type electrical switchgear conforming to the IEC 60439-1 and the new EN 61439-1-2 standards.

A single line of metalwork structures therefore allows construction of automation and secondary and end distribution electrical switchboards thanks to the availability of a series of accessories (modular panels, DIN rails) and to the possibility of stacking the enclosures.

Enclosures

IP65 SR2 Sheet steel enclosures



Rapid selection table

Overall dimensions			Enclosures with blind door + back plate		Kit for automation		Kit for distribution Supports for mounting modular panels			
Height mm	Width mm	Depth mm	Enclosures with blind door + back plate	with glazed door*	Blind counter door	Back plate	No. vertical mod. H=185mm	No. DIN mod. per row	Total modules	DIN Supports
	200		SRN3215K							
300	300	150	SRN3315K							
	400		SRN3415K							
	300	150	SRN4315K							
	300		SRN4320K							
400	400	200	SRN4420K							
	600		SRN4620K							
	300		SRN5320K							
500	300	200	SRN5420K	SRN5420VK*	KC5040K	PF5040	2	14	28	KD5040K
	500		SRN5520K							
	400	250	SRN5425K	SRN5425VK*	KC5040K	PF5040	2	14	28	KD5040K
	400		SRN6420K	SRN6420VK*	KC6040K	PF6040	3	14	42	KD6040K
	500	200	SRN6520K							
	600		SRN6620K							
600	400		SRN6425K	SRN6425VK*	KC6040K	PF6040	3	14	42	KD6040K
	500	250	SRN6520K							
	600		SRN6625K							
	600	300	SRN6630K							
700	500	200	SRN7520K	SRN7520VK*	KC7050K	PF7050				
	500	250	SRN7525K	SRN7525VK*	KC7050K	PF7050				
	600	250	SRN8625K	SRN8625VK*	KC8060K	PF8060	4	25	100	KD8060K
800	600	300	SRN8630K	SRN8630VK*	KC8060K	PF8060	4	25	100	KD8060K
	800		SRN8830K							
	600	250	SRN10625K	SRN10625VK*	KC1060K	PF1060	5	25	125	KD1060K
1000	600	300	SRN10630K	SRN10630VK*	KC1060K	PF1060	5	25	125	KD1060K
	800		SRN10830K	SRN10830VK*	KC1080K	PF1080	5	36	180	KD1080K
	600	300	SRN12630K	SRN12630VK*	KC1260K	PF1260	6	25	150	KD1260K
1200	800		SRN12830K	SRN12830VK*	KC1280K	PF1280	6	36	216	KD1280K
	800	400	SRN12840K							

* No mounting plate included.

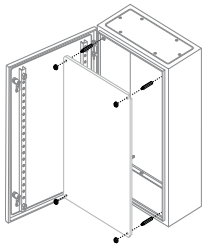
Technical characteristics

Conformity with Standard		IEC 62208, IEC 61439-1-2
Degree of protection		IP65 (IEC 60529) TYPE 12 (Normativa UL)
Degree of mechanical strength		IK10 blind door
		IK09 glazed door
		(IEC 62262)
Certifications		
Type of material		Metallic
Installation site		Indoors
Fixing method		floor/wall
Normal service conditions - ambient temperature		–5 a +40°C
Operating climate (t°/Ur%)	constant	23°C/83% - 40°C/93%
	variable	23°C/98% - 40°C/98%

SR2 Enclosures

IP65 Sheet steel enclosures

Mounting plates

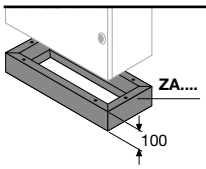


For enclosure	H (mm) x W (mm)	Order Code
SRN5420K & SRN5425K	500 x 400	PF5040
SRN6420K & SRN6425K	600 x 400	PF6040
SRN7520K & SRN7525K	700 x 500	PF7050
SRN8625K & SRN8630K	800 x 600	PF8060
SRN10625K & SRN10630K	1000 x 600	PF1060
SRN10830K	1000 x 800	PF1080
SRN12630K	1200 x 600	PF1260
SRN12830K	1200 x 800	PF1280

Rainhoods

W (mm) x D (mm)	Order Code
200 x 150	TT2015K
300 x 150	TT3015K
400 x 150	TT4015K
300 x 200	TT3020K
400 x 200	TT4020K
500 x 200	TT5020K
600 x 200	TT6020K
400 x 250	TT4025K
500 x 250	TT5025K
600 x 250	TT6025K
600 x 300	TT6030K
800 x 300	TT8030K

Plinths



W (mm) x D (mm)	Order Code
400 x 200	ZA4020
400 x 250	ZA4025
600 x 250	ZA6025
600 x 300	ZA6030
800 x 300	ZA8030

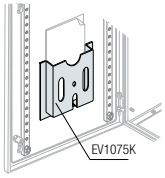
SR2 Enclosures

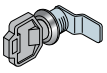
IP65 Sheet steel enclosures

IP65 Combining gasket

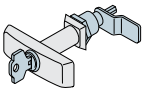
H (mm) x D (mm)	Order Code
400 x 200	GZ4020
400 x 250	GZ4025
600 x 250	GZ6025
600 x 300	GZ6030
800 x 300	GZ8030

Accessories




AA8001

AA8002


AA8003

Description	Order Code
Document pocket	EV1075K
N.4 wall mounting brackets	AA1206
Double tongue 7mm lock with DIN 5mm plastic key	AA8001
Lock with Yale insert & key	AA8002
T handle with Yale insert and key	AA8003
Replacement hinge kit	AA1204

Enclosures
IP66 SR2X Sheet steel enclosures

Stainless steel enclosures for automation. Functionality and hygiene in the new range of ABB cabinets.

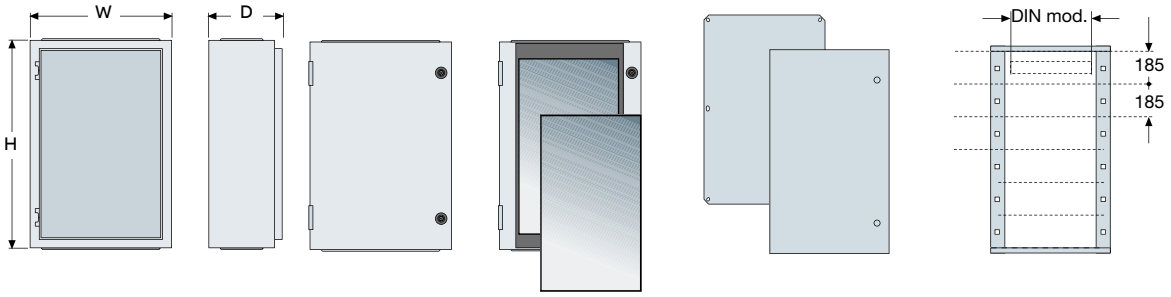
SRX enclosures conform to IEC EN 62208 and IEC 61439-1-2, ingress protection IP66 (IEC EN 60529) and NEMA4X (UL standard). Mechanical protection IK10 against external impacts and IK09 with blind door and glass door (IEC 62262). The AISI 304 stainless steel is suitable for both indoors and outdoors applications.

Distribution systems can made by using distribution kits consisting of a pair of functional uprights for assembly of the AISI 304 stainless steel modular panels (to be ordered separately) and any blanking panels. The modular panels can also be installed on the enclosures with blind door using the same KD kit, are all hinged and have vertical modularity of 185mm.

Accessories for SRX enclosures, AMX monobloc cabinets, ISX modular cabinets include standard mounting plate, kit for recessing mounting plate, partial height mounting plate, side cross pieces H=100/48 mm, opposite mounting plate, DIN rail kits, blind apparatus holder back plates, door anti-closure device, lifting eyebolts, horizontal partition panels, position switch, lamps, voltage detector devices, door reinforcement profiles, shaped sections for accessories, cable anchoring brackets and sliding rails.

Enclosures

IP66 SR2X Sheet steel enclosures



Rapid selection table

Overall dimensions			Enclosures		Kit for automation	Kit for distribution Supports for mounting modular panels				
Height mm	Width mm	Depth mm	Enclosures with blind door + back plate	with glazed door*	Blind counter door	Back plate	No. vertical mod. H=185mm	No. DIN mod. per row	Total modules	DIN Supports
300	200	150	SRN3215X			PF3020				
	400	150	SRN3415X			PF3040				
400	300	150	SRN4315X		KC4030X	PF4030				
		200	SRN4320X							
	400	200	SRN4420X			PF4040				
	600	200	SRN4620X			PF4060				
500	400	200	SRN5420X	SRN5420VX*	KC5040X	PF5040	2	14	28	KD5040X
	500	250	SRN5520X			PF5050				
600	400	200	SRN6420X	SRN6420VX*	KC6040X	PF6040	3	14	42	KD6040X
	600	200	SRN6620X			PF6060				
		300	SRN6630X							
700	500	250	SRN7525X	SRN7525VX*	KC7050X	PF7050				
800	600	200	SRN8620X		KC8060X	PF8060	4	25	100	KD8060X
		250		SRN8625VX*				25	100	
		300	SRN8630X					25	100	
	800	300	SRN8830X			PF8080				
1000	800	300	SRN10830X	SRN10830VX*	KC1080X	PF1080	5	36	180	KD1080X
1200	600	300	SRN12630X			PF1260				
	800	300	SRN12830X			PF1280				

* No mounting plate included.

Technical characteristics

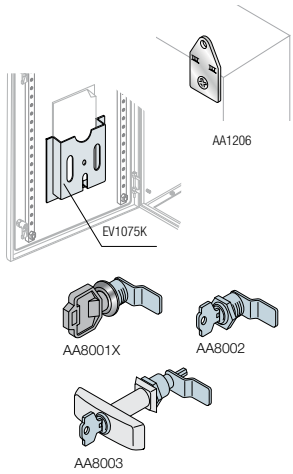
Conforms to	CEI EN 62208, IEC 61439-1-2
Degree of protection	IP66 (CEI EN 60529)*
	NEMA 4X (UL standard)*
Degree of mechanical protection	IK10 blind door
	IK09 glazed door
	(IEC 62262)
Certifications	UL LISTED Ex II 3 G D
Type of material	AISI 304
Installation site	Indoors/outdoors
Fixing method	floor/wall
Normal service conditions	
- ambient temperature	from –25 to +55°C

* Under certification.

SR2 Enclosures

IP66 SR2X Stainless steel enclosures

Accessories

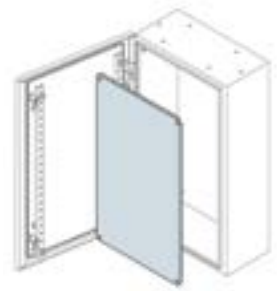


Description	Order Code
Document pocket	EV1075K
Wall mounting brackets (4 off)	AA1206
Double tongue 7mm lock with DIN 55mm plastic key	AA8001
Lock with Yale insert & key	AA8002
T handle with Yale insert and key	AA8003

Opaque internal mounting plate

- 20/10 thick galvanised sheet metal internal plate, complete with fixing with small parts supplied
- Depth-adjustable using a special spacer kit (to be ordered separately)

Opaque internal mounting plate



Dimensions (mm)		
H	W	Order Code
500	400	PF5040
600	400	PF6040
700	500	PF7050
800	600	PF8060
1000	800	PF1080

Enclosures
IP66 Gemini weather proof range

The Gemini series ensures maximum protection in the toughest environments.

The Gemini range is revolutionising the market of low voltage electric insulating switchboards as it is the first switchboard made of thermoplastic material, to which the co-injection moulding technique gives the same mechanical characteristics as polyester.

Extremely sturdy, with its rigid covering and expanded internal core Gemini switchboards are IP66, IP30 with the door open afford a very high resistance to chemical and atmospheric agents and guarantees excellent performances even in severe operating conditions.

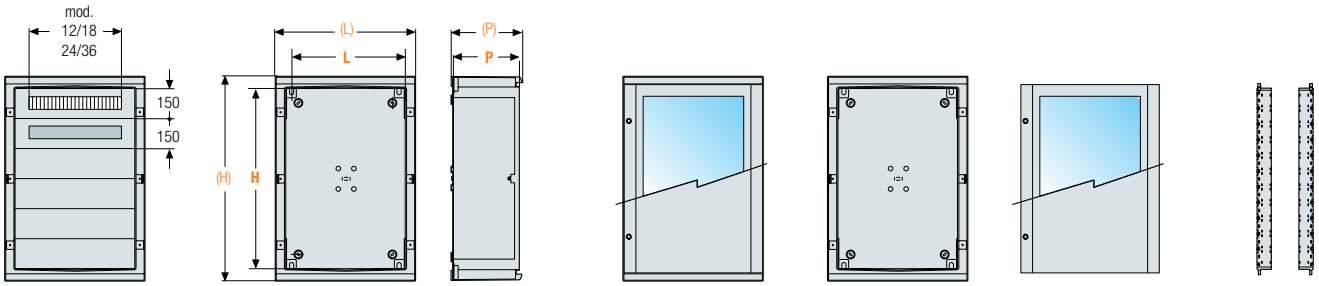
In distribution and mixed applications, the Gemini switchboard is designed to be fitted with System pro M modular devices and Tmax moulded-case circuit breakers. Gemini switchboards are designed to be compatible with ABB components for low voltage control, protection, monitoring and switching.

Technical characteristics

Rated service voltage	CEI EN 50298, CEI 23-48, CEI23-49, IEC 60670, CEI EN 60439-1, CEI EN 62208, IEC 61439-1-2
Compliance with standards	Ue 1000 V AC - 1500V DC
Operating temperature °C	-25°C +100°C
Resistance to abnormal heat and fire	up to 750°C
Degree of resistance to impacts	IK10 (IEC 62262)
Degree protection (CEI EN 60529)	IP30 open door
	IP66 closed door
Recyclable	100%

Enclosures

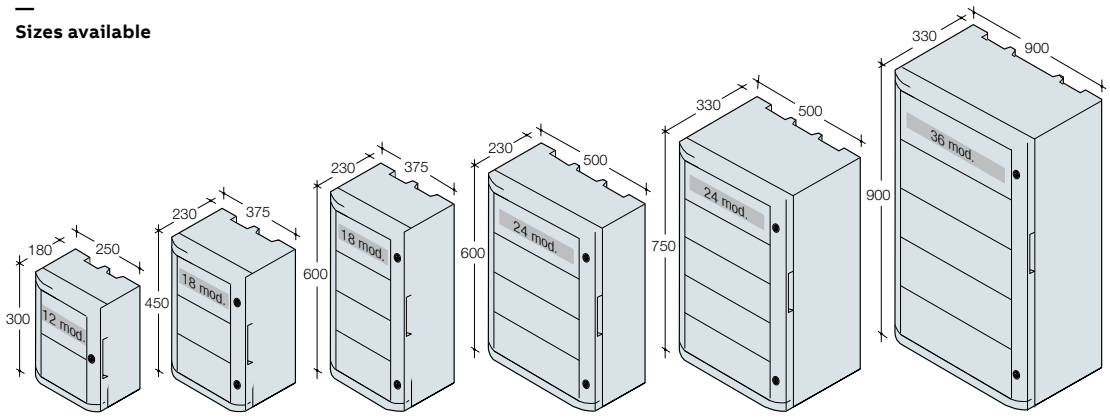
Gemini



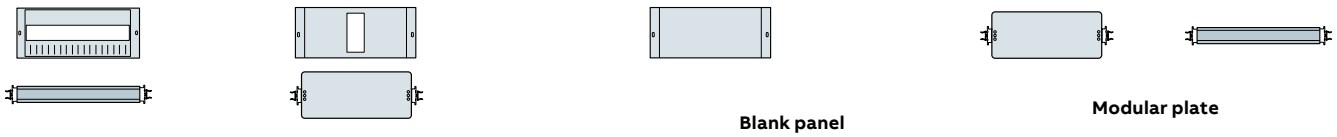
Rapid selection table

Size	No. of vertical mod. H= 150mm	No. of DIN modules installable	External dimensions (H) mm	(W) mm	(D) mm	Internal dimensions (H) mm	(W) mm	(D) mm	Complete switchboard door Transparent	Opaque	Box	Door Transparent	Opaque	Uprights
1	2	24 (12x2)	400	335	210	300	250	180	1SL0211A00	1SL0201A00	1SL0221A00	1SL0241A00	1SL0231A00	1SL0283A00
2	3	54 (18x3)	550	460	260	450	375	230	1SL0212A00	1SL0202A00	1SL0222A00	1SL0242A00	1SL0232A00	1SL0284A00
3	4	72 (18x4)	700	460	260	600	375	230	1SL0213A00	1SL0203A00	1SL0223A00	1SL0243A00	1SL0233A00	1SL0285A00
4	4	96 (24x4)	700	580	260	600	500	230	1SL0214A00	1SL0204A00	1SL0224A00	1SL0244A00	1SL0234A00	1SL0285A00
5	5	120 (24x5)	855	585	360	750	500	330	1SL0215A00	1SL0205A00	1SL0225A00	1SL0245A00	1SL0235A00	1SL0286A00
6	6	216 (36x6)	1005	840	360	900	750	330	1SL0216A00	1SL0206A00	1SL0226A00	1SL0246A00	1SL0236A00	1SL0287A00

Sizes available



Size 1 Size 2 Size 3 Size 4 Size 5 Size 6



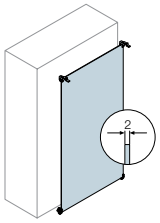
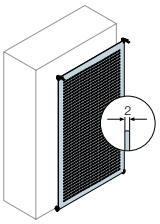
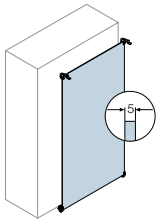
Blank panel

Modular plate

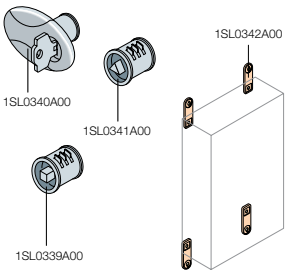
Size	DIN rail kit DIN rail+drilled panel 1 mod. H=150mm	1+1/2 mod. H=225mm	Kit for Tmax plate+drilled 1 mod. H=150mm	2 mod. H=300mm	Blank panel 1/2 mod. H=75mm	1 mod. H=150mm	2 mod. H=300mm	Blank panel 1 mod. H=150mm	2 mod. H=300mm	DIN rail
1	1SL0307A00	–	–	–	1SL0318A00	1SL0324A00	1SL0330A00	1SL0296A00	–	1SL0290A00
2	1SL0308A00	1SL0313A00	1SL0336A00	1SL0370A00	1SL0319A00	1SL0325A00	1SL0331A00	1SL0297A00	1SL0302A00	1SL0291A00
3	1SL0308A00	1SL0313A00	1SL0336A00	1SL0370A00	1SL0319A00	1SL0325A00	1SL0331A00	1SL0297A00	1SL0302A00	1SL0291A00
4	1SL0309A00	1SL0314A00	1SL0337A00	1SL0371A00	1SL0320A00	1SL0326A00	1SL0332A00	1SL0298A00	1SL0303A00	1SL0292A00
5	1SL0309A00	1SL0314A00	1SL0337A00	1SL0371A00	1SL0320A00	1SL0326A00	1SL0332A00	1SL0298A00	1SL0303A00	1SL0292A00
6	1SL0310A00	1SL0315A00	1SL0338A00	1SL0372A00	1SL0321A00	1SL0327A00	1SL0333A00	1SL0299A00	1SL0304A00	1SL0293A00

Gemini switchboards
Assembly kits

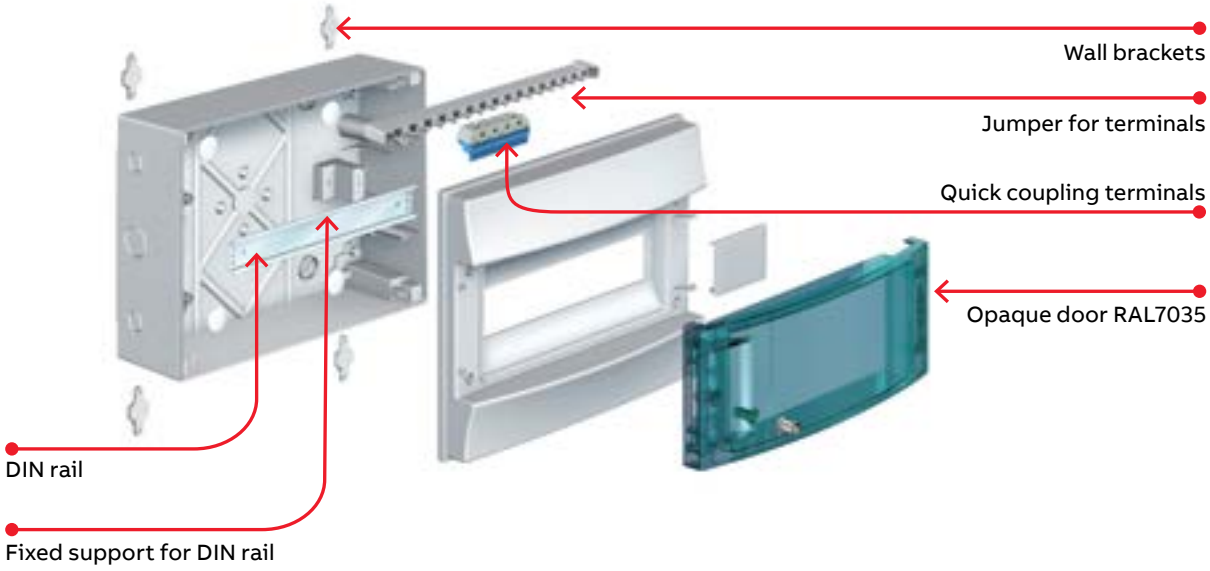
Base plates

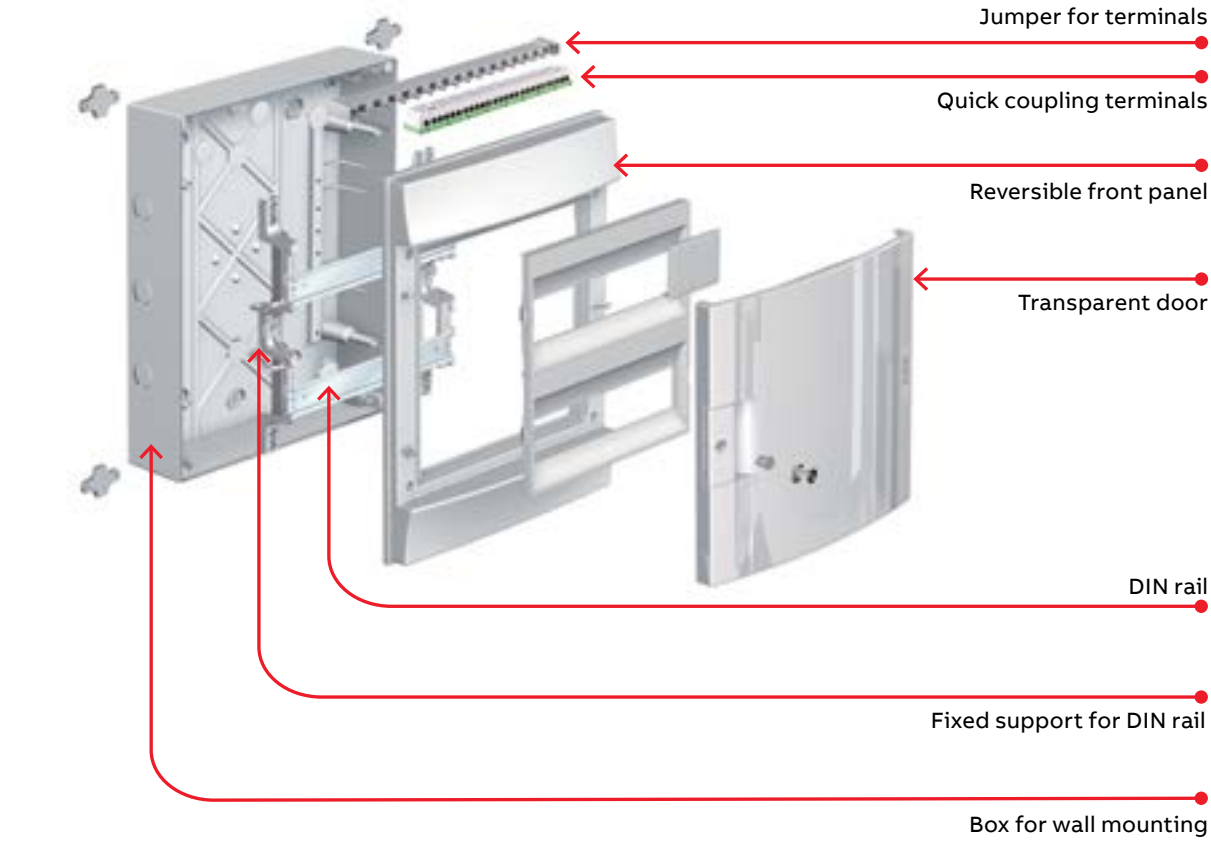
	Size	Box dimensions WxHxD (mm)	Order Code
	**Blank metal**		
	1		1SL0259A00
	2		1SL0260A00
	3		1SL0261A00
	4		1SL0262A00
	5		1SL0263A00
	6		1SL0264A00
	**Drilled metal**		
	1		1SL0275A00
	2		1SL0276A00
	3		1SL0277A00
	4		1SL0278A00
	5		1SL0279A00
	6		1SL0280A00
	**Insulating material**		
	1		1SL0267A00
	2		1SL0268A00
	3		1SL0269A00
	4		1SL0270A00
	5		1SL0271A00
	6		1SL0272A00

Locks

	Description	Order Code
	Lock with Yale type coded key	1SL0340A00
	Lock with triangular impression	1SL0341A00
	Lock with square impression	1SL0339A00
	Wall mounting brackets	1SL0342A00

Mistral 65
Double insulated enclosures





Mistral 65

Double insulated enclosures

Enclosure with opaque door

		Dimensions (mm)			
	Rows	Width	Height	Depth	Order Code
650 Opaque door 4M	1	152	202	117	1SL1200A00
650 Opaque door 8M	1	232	250	154	1SL1201A00
650 Opaque door 12M	1	320	250	155	1SL1202A00
650 Opaque door 18M	1	430	250	155	1SL1203A00
650 Opaque door 24M	2	320	435	155	1SL1204A00
650 Opaque door 36M 2F	2	430	435	155	1SL1205A00
650 Opaque door 36M 3F	3	320	435	155	1SL1206A00
650 Opaque door 48M	4	320	735	155	1SL1207A00
650 Opaque door 54M	5	430	600	155	1SL1208A00
650 Opaque door 72M	6	430	735	155	1SL1209A00

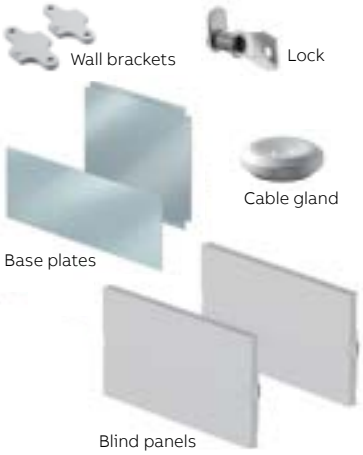
Enclosure with transparent door

		Dimensions (mm)			
	Rows	Width	Height	Depth	Order Code
650 Transparent door 4M	1	152	202	117	1SL1200A00
650 Transparent door 8M	1	232	250	154	1SL1201A00
650 Transparent door 12M	1	320	250	155	1SL1202A00
650 Transparent door 18M	1	430	250	155	1SL1203A00
650 Transparent door 24M	2	320	435	155	1SL1204A00
650 Transparent door 36M 2F	2	430	435	155	1SL1205A00
650 Transparent door 36M 3F	3	320	435	155	1SL1206A00
650 Transparent door 48M	4	320	735	155	1SL1207A00
650 Transparent door 54M	5	430	600	155	1SL1208A00
650 Transparent door 72M	6	430	735	155	1SL1209A00

Mistral 65

Double insulated enclosures

Accessories

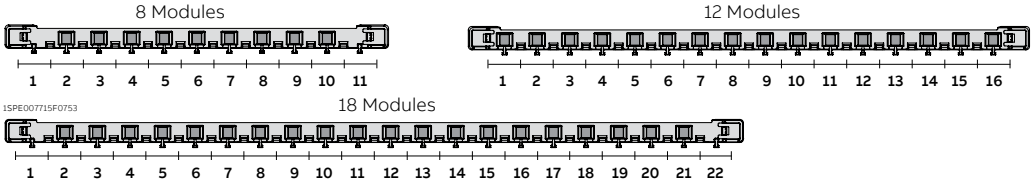


	Order Code
Wall fixing brackets (4 pcs) MISTRAL65	1SL1927A00
Lock with key MISTRAL65	1SL1931A00
Cable gland Ø 16	1SL1935A00
Cable gland Ø 20	1SL1936A00
Cable gland Ø 25	1SL1937A00
Cable gland Ø 32	1SL1938A00
Metal base plate 12M Mistral65	1SL1920A00
Metal base plate 2x12M Mistral65	1SL1921A00
Metal base plate 18M Mistral65	1SL1922A00
Metal base plate 2x18M Mistral65	1SL1923A00
Central blind panel 12M Mistral65	1SL1945A00
Blind panel 12M Mistral65	1SL1946A00
Central blind panel 18M Mistral65	1SL1947A00
Blind panel 18M Mistral65	1SL1948A00

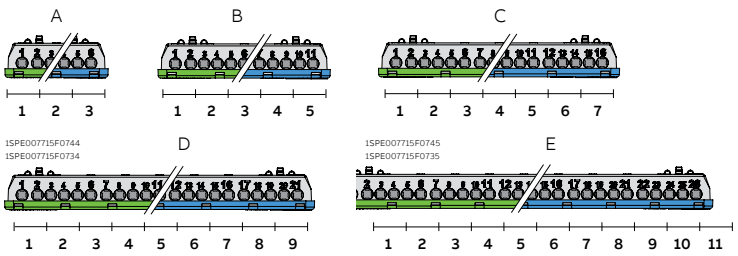
Terminal blocks

		Order Code
Terminal block N 3*16mm²+3*6mm²	A	1SPE007715F0731
Terminal block N 5*16mm²+6*6mm²	B	1SPE007715F0732
Terminal block N 7*16mm²+9*6mm²	C	1SPE007715F0733
Terminal block N 9*16mm²+12*6mm²	D	1SPE007715F0734
Terminal block N 11*16mm²+15*6mm²	E	1SPE007715F0735
Terminal block PE 3*16mm²+3*6mm²	**A**	1SPE007715F0741
Terminal block PE 5*16mm²+6*6mm²	**B**	1SPE007715F0742
Terminal block PE 7*16mm²+9*6mm²	**C**	1SPE007715F0743
Terminal block PE 9*16mm²+12*6mm²	**D**	1SPE007715F0744
Terminal block PE 11*16mm²+15*6mm²	**E**	1SPE007715F0745
Terminal carrier, 8 modules		1SPE007715F0751
Terminal carrier, 12 modules		1SPE007715F0752
Terminal carrier, 18 modules		1SPE007715F0753

Terminal Carrier



Terminal Blocks



SECTION 8

Europa series
Modular Units IP65

Technical characteristics
- Protection degree IP 65
- Insulation class II
- Available in the versions with opaque and transparent, smoky vertically hinged doors
- Available in RAL 7035 grey
- In polycarbonate material, self-extinguishing and resistant to abnormal heat and fire up to 960 °C (glow wire test) in compliance with IEC 60695-2-1 Standard
- Operating temperature from -25 °C to +115 °C
- Shock resistance 20 Joules (IK level 10)
- High resistance to UV rays
- Perfectly symmetrical switchboards with the possibility of attaching the door hinge onto the front (by means of the special articulated screws supplied) on the right or left with 140° opening
- Doors designed to take lock with coded key, code 12866
- Designed for the insertion of an extractable frame with pre-drilled panelling for mounting 100, 125 and 160 A circuit breakers
- All models (except for code 12764 and 12784) are fitted with one rigid and one bimaterial flange to facilitate insertion of conduits and cables
- Switchboards made and produced in compliance with CEI 23-48, CEI 23-49 and IEC 60 670 Standards
- Switchboards are supplied complete with:
  - 4 screw-cover caps to guarantee
  - accessories for hinging the front part
  - 1 certification plate
  - instruction sheet

Number of modules	Size (mm): W x H x D	Solid Door	Clear Door
IP65 Polycarbonate			
4	140 x 220 x 140	12764	12784
8	205 x 220 x 140	12768	12788
12	275 x 220 x 140	12772	12792
18	380 x 570 x 140	12778	12798
24	275 x 370 x 140	12774	12794
36	275 x 570 x 140	12776	12796

Europa series

Modular Units IP65

Accessories

Description	Number of modules	For switchboards	Order Code
Kit for modular for circuit breakers Circuit breakers 100, 125, 160A on DIN rail	12 modules for 1	12774 - 12794	12820
	24 modules for 2	12776 - 12796	12821
	36 modules for 3	12778 - 12798	12882
DIN section bars Complete with screws	–	12764 - 12784	12852
	–	12768 - 12788	12854
	–	12772 - 12792	12855
		12774 - 12794	
		12776 - 12796	
	–	12778 - 12798	12856
Base plates Aluminium plated metal	–	12764 - 12784	12842
	–	12768 - 12788	12844
	–	12772 - 12792	12845
	–	12774 - 12794	12846
	–	12776 - 12796	12847
	–	12778 - 12798	12848
Base plates Insulated material	–	12764 - 12784	12832
	–	12768 - 12788	12834
	–	12772 - 12792	12835
	–	12774 - 12794	12836
	–	12776 - 12796	12837
	–	12778 - 12798	12838
Inner doors	–	12774 - 12794	12825
	–	12776 - 12796	12826
	–	12778 - 12798	12826
Modular covers	1 module	–	12861
	4 modules	–	12863
Wall brackets	–	–	12858
Key lock	–	–	12866

Europa series

Junction boxes IP44, IP55 & IP65 in thermoplastic

Technical characteristics

- Protection degree:
  - IP 44 for press-on lid boxes
  - IP 55 for screw-on lid boxes
- Boxes with press-on lids in thermoplastic material, self extinguishing in compliance with UL 94 HB Standard and resistant to abnormal heat and fi re up to 650 °C (glow wire test) in compliance with IEC 60695-2-1
- Boxes with opaque screw-on lids in thermoplastic material, self-extinguishing in compliance with UL 94 V-O and resistant to abnormal heat and fi re up to 960 °C (glow wire test) in compliance with IEC 695-2-1
- Boxes with screw-on covers in transparent polycarbonate material, self-extinguishing in compliance with UL 94 V-2 and resistant to abnormal heat and fire up to 960 °C glow wire test) in compliance with IEC 60695-2-1
- Operating temperature -25 °C to +75 °C IP 44 and IP 55
- Shock resistance 6 Joules
- High resistance to heat, chemical and atmospheric agents
- Junction boxes made in compliance with CEI 23-48 and IEC60 670 Standards

IP44, IP55 & IP65 Thremoplastic boxes

	Description	Dimensions (mm)	Order Code 650° C	960° C
	IP 44 boxes	Ø60 - H35	00800	1SL0900A00
		Ø80 - H40	00802	1SL0901A00
		65 x 65 x 32	00808	1SL0902A00
		80 x 80 x 40	00810	1SL0903A00
	IP 55 waterproof boxes with plastic 1/4 turn screws	100x100x50	1SL0816A00	1SL0916A00
		105x70x50	1SL0820A00	1SL0920A00
		100x100x80	1SL0821A00	1SL0921A00
		153x110x66	1SL0822A00	1SL0922A00
		160x135x77	1SL0824A00	1SL0924A00
		220x170x80	1SL0826A00	1SL0926A00
		310x240x110	1SL0828A00	1SL0928A00
	IP 65 waterproof boxes with plastic 1/4 turn screws	100x100x50	1SL0846A00	1SL0946A00
		105x70x50	1SL0850A00	1SL0950A00
		100x100x80	1SL0851A00	1SL0951A00
		153x110x66	1SL0852A00	1SL0952A00
		160x137x77	1SL0854A00	1SL0954A00
		220x170x80	1SL0856A00	1SL0956A00
		310x240x110	1SL0858A00	1SL0958A00
	IP 65 waterproof boxes with plastic 1/4 turn screws c/w Transparent Lid	153x110x66	1SL0872A00	1SL0972A00
		160x135x77	1SL0874A00	1SL0974A00
		220x170x80	1SL0876A00	1SL0976A00
		310x240x110	1SL0878A00	1SL0978A00

Europa series

Junction boxes IP44, IP55 & IP65 in thermoplastic

IP44, IP55 & IP65 Thremoplastic boxes

	Description	Dimensions (mm)	Order Code 650° C	960° C
	IP 55 waterproof boxes with steel screws	100x100x50	00816	1SL0904A00
		105x70x50	00820	1SL0905A00
		100x100x80	00821	1SL0906A00
		153x110x66	00822	1SL0907A00
	IP 65 waterproof boxes with steel screws	100x100x50	00846	1SL0908A00
		105x70x50	00850	1SL0909A00
		100x100x80	00851	1SL0910A00
		153x110x66	00852	1SL0911A00
	IP 65 waterproof boxes with plastic 1/4 turn screws	151x110x66	00 872	1SL0912A00
	IP 55 waterproof boxes with plastic 1/4 turn screws	160x135x150	1SL0830A00	1SL0930A00
		220x170x150	1SL0832A00	1SL0932A00
		310x240x160	1SL0834A00	1SL0934A00
	IP 65 waterproof boxes with plastic 1/4 turn screws	160x135x150	1SL0860A00	1SL0960A00
		220x170x150	1SL0862A00	1SL0962A00
		310x240x160	1SL0864A00	1SL0964A00
	IP 65 waterproof boxes with plastic 1/4 turn screws	160x135x150	1SL0880A00	1SL0980A00
		220x170x150	1SL0882A00	1SL0982A00
		310x240x160	1SL0884A00	1SL0984A00
	Metal base plates	160 x 135 x 77	00900	
		220 x 170 x 80	00902	
		310 x 240 x 110	00904	

Europa series

Junction boxes IP65 in polycarbonate

Technical characteristics

- Protection degree IP 65
- Insulation class II
- Self-extinguishing and resistant to abnormal heat and fire up to 960 °C (glow wire test) in compliance with IEC 60695-2-1 Standard
- Operating temperature from -25 °C to +115 °C
- Shock resistance 20 Joules (IK 10)
- High resistance to UV rays
- Boxes code 12 808, 12 812, 12 814, 12 816 and 12 818 fitted with one rigid and one bi-material flange for facilitated input of conduits and cables
- Junction boxes produced in compliance with CEI 23-48 and IEC 60 670 Standards

IP65 Polycarbonate enclosure

Size (mm): H x W x D	Order Code
220 x 140 x 140	12804
220 x 205 x 140	12808
220 x 275 x 140	12812
768 x 275 x 140	12814
776 x 275 x 140	12816
776 x 380 x 140	12818

Mounting plates

Type	For Enclosure Type	Order Code
Aluminium plated metal	12804	12842
	12808	12844
	12812	12845
	12814	12846
	12816	12847
	12818	12848
Insulated	12804	12832
	12808	12834
	12812	12835
	12814	12836
	12816	12837
	12818	12838

Wall mounting brackets

For enclosure type	Order Code
Fits all	12858

DIN rails

For enclosure type	Order Code
12804	12852
12808	12854
12812 - 12814 - 12816	12855
12818	12856

EQmatic Energy Analyzer

Energy management is getting smarter

Identify energy guzzlers and sustainably reduce energy costs – ABB's EQmatic Energy Analyzer makes it possible. The intelligent energy meter from the EQmatic range uses M-Bus to read, save, and analyze energy consumption data from electric, gas, water, and heat meters. It accesses meters via an intuitive, web-based user interface, which can be flexibly configured to meet specific demands. Especially practical: the energy meters can be extended at any time when needed. **abb.com/buildings**

Timers

Ordering details

The CT-D range in MDRC design with a width of only 17.5 mm fits into all domestic installation and distribution panels. The CT-D range represents a link between industry and the installation types. For maximum flexibility in operation. The devices offer 4 or 7 time ranges from 0.05 seconds up to 100 hours. Their wide input range allows the use in applications worldwide.

Ordering details - CT-D range

Timing function	Rated control supply voltage	Time ranges	Control input	Output	Type	Order code	Weight (1 pce) kg (lb)
Multi [1]	24-240 V AC / 24-48 V DC	7 (0.05 s - 100 h)	■	1 c/o	CT-MFD.12	1SVR500020R0000	0.060 (0.132)
Multi [1]	12-240 V AC/DC	7 (0.05 s - 100 h)	■	2 c/o	CT-MFD.12	1SVR500020R1100	0.065 (0.143)
ON-delay	24-240 V AC / 24-48 V DC	7 (0.05 s - 100 h)		1 c/o	CT-ERD.12	1SVR500100R0000	0.060 (0.132)
OFF-delay	24-240 V AC / 24-48 V DC	7 (0.05 s - 100 h)	■	1 c/o	CT-AHD.12	1SVR500110R0000	0.060 (0.132)
Impulse--ON	24-240 V AC / 24-48 V DC	7 (0.05 s - 100 h)		1 c/o	CT-VWD.12	1SVR500130R0000	0.060 (0.132)
Flasher starting with ON	24-240 V AC / 24-48 V DC	7 (0.05 s - 100 h)		1 c/o	CT-EBD.12	1SVR500150R0000	0.060 (0.132)
Pulse generator	24-240 V AC / 24-48 V DC	2 x 7 (0.05 s - 100 h)	■	1 c/o	CT-TGD.12	1SVR500160R0000	0.060 (0.132)
Star Delta changeover	24-240 V AC / 24-48 V DC	4 (0.05 s - 10 min)		2 c/o	CT-SAD.22	1SVR500210R0100	0.065 (0.143)

[1] The external conductor voltage towards the neutral conductor is measured.

Ordering details - CP-E range < 100W

Input voltage range function	Rated output voltage / current	Type	Order code	Weight (1 pce) kg (lb)
90-264 V AC / 120-375 V DC	24 V DC / 0.75 A	CP-E.24 / 0.75 A	1SVR427030R0000	0.15 (0.33)
90-264 V AC / 90-375 V DC	24 V DC / 1.25 A	CP-E.24 / 1.25 A	1SVR427032R1000	0.29 (0.64)
90-264 V AC / 90-375 V DC	24 V DC / 2.5 A	CP-E.24 / 2.5 A	1SVR427032R0000	0.36 (0.79)

Ordering details - CP-E range < 120W

Input voltage range function	Rated output voltage / current	Type	Order code	Weight (1 pce) kg (lb)
90-132 V AC, 180-264 V AC / 210-375 V DC	24 V DC / 5 A	CP-E.24 / 5A	1SVR427034R0000	1.0 (2.20)
90-132 V AC, 180-264 V AC / 210-375 V DC	24 V DC / 10 A	CP-E.24 / 10 A	1SVR427035R0000	1.36 (3.01)
90-264 V AC / 120-375 V DC	24 V DC / 20 A	CP-E.24 / 20 A	1SVR427036R0000	1.90 (4.18)

Pluggable interface relays

Selection table - Ordering details - CR-P range

Ordering details - CP-P range

Rated control supply voltage	Outputs	Contact ratings	Type	Order code	Pkg qty	Weight (1 pce) kg (lb)
12 V DC	1 c/o (SPDT)	250 V, 16A	CR-P012DC1	1SVR405600R4000		
24 V DC			CR-P024DC1	1SVR405600R1000		
48 V DC			CR-P048DC1	1SVR405600R6000		
110 V DC			CR-P110DC1	1SVR405600R8000		
24 V DC			CR-P024AC1	1SVR405600R0000	10	0.14 (0.31)
48 V DC			CR-P048AC1	1SVR405600R5000		
110 V DC			CR-P110AC1	1SVR405600R7000		
120 V DC			CR-P120AC1	1SVR405600R2000		
230 V DC			CR-P230AC1	1SVR405600R3000		
12 V DC	2 c/o (SPDT)	250 V, 8A	CR-P012DC1	1SVR405601R4000		
24 V DC			CR-P024DC1	1SVR405601R1000		
48 V DC			CR-P048DC1	1SVR405601R6000		
110 V DC			CR-P110DC1	1SVR405601R8000		
24 V DC			CR-P024AC1	1SVR405601R0000	10	0.14 (0.31)
48 V DC			CR-P048AC1	1SVR405601R5000		
110 V DC			CR-P110AC1	1SVR405601R7000		
120 V DC			CR-P120AC1	1SVR405601R2000		
230 V DC			CR-P230AC1	1SVR4056001R3000		

Ordering details - CP-Accessories

Version	Connection terminal	Type	Order code	Pkg qty	Weight (1 pce) kg (lb)
Logical socket	screw	CR-PLS	1SVR405650R0000	10	0.045 (0.099)
Standard socket	screw	CR-PSS	1SVR405650R1000		0.038 (0.084)
Plastic holder for socket		CR-PH	1SVR405659R0000		0.002 (0.004)
Jumper bar for sockets with screw connection		CR-PJ	1SVR405658R5000	10	0.018 (0.040)
Marker		CR-PM	1SVR405658R0000	10	0.0002 (0.0004)

Pluggable interface relays

Ordering details - CR-P range

Ordering details - CR-M range without LED

Rated control supply voltage	Outputs	Contact ratings	Type	Order Code	Pkg qty	Weight (1 pce) kg (lb)
12 V DC	2 c/o (SPDT)	250 V, 12 A	CR-M012DC1	1SVR405611R4000		
24 V DC			CR-M024DC1	1SVR405611R1000		
48 V DC			CR-M048DC1	1SVR405611R6000		
110 V DC			CR-M110DC1	1SVR405611R8000		
220 V DC			CR-M220DC2	1SVR405611R9000	10	0.033 (0.073)
24 V AC			CR-M024AC2	1SVR405611R0000		
48 V AC			CR-M048AC2	1SVR405611R5000		
110 V AC			CR-M110AC2	1SVR405611R7000		
230 V AC			CR-M230AC2	1SVR405611R3000		
12 V DC	3 c/o (SPDT)	250 V, 10 A	CR-M012DC3	1SVR405601R4000		
24 V DC			CR-M024DC3	1SVR405601R1000		
48 V DC			CR-M048DC3	1SVR405601R6000		
110 V DC			CR-M110DC3	1SVR405601R8000		
220 V DC			CR-M220DC3	1SVR405601R8000	10	0.033 (0.073)
24 V AC			CR-M024AC3	1SVR405601R0000		
48 V AC			CR-M048AC3	1SVR405601R5000		
110 V AC			CR-M110AC3	1SVR405601R7000		
230 V AC			CR-M230AC3	1SVR4056001R3000		
12 V DC	4 c/o (SPDT)	250 V, 6 A	CR-M012DC4	1SVR405613R4000		
24 V DC			CR-M024DC4	1SVR405613R1000		
48 V DC			CR-M048DC4	1SVR405613R6000		
110 V DC			CR-M110DC4	1SVR405613R8000		
220 V DC			CR-M220DC4	1SVR405613R9000	10	0.033 (0.073)
24 V AC			CR-M024AC4	1SVR405613R0000		
48 V AC			CR-M048AC4	1SVR405613R5000		
110 V AC			CR-M110AC4	1SVR405613R7000		
230 V AC			CR-M230AC4	1SVR405613R3000		

Ordering details - CP-Accessories

Version	Connection terminal	Type	Order Code	Pkg qty	Weight (1 pce) kg (lb)
Logical socket for 2 c/o	screw	CR-M2LS	1SVR405651R1100		0.055 (0.121)
Logical socket for 3 c/o	screw	CR-M3LS	1SVR405651R2100	10	0.062 (0.137)
Logical socket for 2/4 c/o	screw	CR-M4LS	1SVR405651R3100		0.066 (0.146)
Standard socket for 2 c/o	screw	CR-M2SS	1SVR405651R1000		0.066 (0.146)
Standard socket for 3 c/o	screw	CR-M3SS	1SVR405651R2000	10	0.068 (0.150)
Standard socket for 2/4 c/o	screw	CR-M4SS	1SVR405651R1300		0.070 (0.154)
Plastic holder		CR-MH	1SVR405659R1000	10	0.003 (0.007)
Metal holder		CR-MH1	1SVR405659R1100	10	0.003 (0.007)
Jumper bar for sockets with screw connection		CR-MJ	1SVR405658R6000	10	0.029 (0.064)
Marker		CR-MM	1SVR405658R1000	10	0.0005 (0.001)

Three-phase monitoring relays

Selection table - Singlefunctional

Selection table

CM-PBE

CM-PSS.41P

CM-PAS.31P

	Order number																
	1SVR730885R1300	1SVR740885R1300	1SVR730885R3300	1SVR740885R3300	1SVR730884R1300	1SVR740884R1300	1SVR730884R3300	1SVR740884R3300	1SVR730885R4300	1SVR740885R4300	1SVR730884R4300	1SVR740884R4300	1SVR750487R8300	1SVR760487R8300	1SVR750488R8300	1SVR760488R8300	1SVR750489R8300	1SVR760489R8300
	Type																	
Rated control supply voltage U_s	CM-MPS.11S	CM-MPS.11P	CM-MPS.21S	CM-MPS.21P	CM-MPS.31S	CM-MPS.31P	CM-MPS.41S	CM-MPS.41P	CM-MPS.23S	CM-MPS.23P	CM-MPS.43S	CM-MPS.43P	CM-MPN.52S	CM-MPN.52P	CM-MPN.62S	CM-MPN.62P	CM-MPN.72S	CM-MPN.72S
Phase to Phase																		
160-300 V AC					■	■												
300-500 V AC							■	■			■	■						
350-580 V AC													■	■				
450-720 V AC															■	■		
530-820 V AC																	■	■
Phase to Neutral																		
90-170 V AC	■	■																
180-280 V AC			■	■					■	■								
Rated frequency																		
50/60 Hz	■	■	■	■	■	■	■	■					■	■	■	■	■	■
50/60/400 Hz									■	■	■	■						
Suitable for monitoring																		
Single-phase mains	■	■	■	■					■	■								
Three-phase mains	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitoring function																		
Phase failure	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Phase sequence	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel	sel
Automatic phase sequence correction																		
Overvoltage	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Undervoltage	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Unbalance	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Neutral	■[2)]	■[2)]	■[2)]	■[2)]					■[2)]	■[2)]								
Thresholds	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Timing functions for tripping																		
On and OFF delay	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Connection type																		
Push-in terminals		■		■		■		■		■		■		■		■		■
Double-chamber cage connection terminals	■		■		■		■		■		■		■		■		■	

[2)] Interrupted neutral monitoring
adj: adjustable
sel: selectable

Pilot devices
The complete offering

From the smallest inside component to the outer tough shell, ABB's pilot devices are pieces of engineering ingenuity. Reliable, flexible and available worldwide - just as ABB. A quality experience throughout.
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Pilot devices - compact 22mm

Pushbuttons

Order example:
Ex1: Type CP1-10 ■ -10, to order colour red replace ■ with R: CP1-10 R-10
EX2: Order code 1SFA619100R101 □
To order red replace □ with 1: 1SFA619100R1011

Colour Codes

	Red ●	Green ●	Yellow ●	Blue ●	White ○	Black ●	Grey ●	Clear ○
Type ■	R	G	Y	L	W	B	U	c
Order code	1	2	3	4	5	6	7	8

Pushbuttons black plastic bezel

Type	Contacts N/O	Contacts N/C	Part No	Order Code
Flush momentary	1	–	CP1-10 ■ -10	
	2	–	CP1-10 ■ -20	
	–	1	CP1-10 ■ -01	
	–	2	CP1-10 ■ -02	
	1	1	CP1-10 ■ -11	
Flush maintained	1	–	CP2-10 ■ -10	
	2	–	CP2-10 ■ -20	
	–	1	CP2-10 ■ -01	
	–	2	CP2-10 ■ -02	
	1	1	CP2-10 ■ -11	
Extended momentary	1	–	CP3-10 ■ -10	
	2	–	CP3-10 ■ -20	
	–	1	CP3-10 ■ -01	
	–	2	CP3-10 ■ -02	
	1	1	CP3-10 ■ -11	
Extended maintained	1	–	CP4-10 ■ -10	
	2	–	CP4-10 ■ -20	
	–	1	CP4-10 ■ -01	
	–	2	CP4-10 ■ -02	
	1	1	CP4-10 ■ -11	

Pushbuttons chrome metal bezel

Type	Contacts N/O	Contacts N/C	Part No	Order Code
Flush momentary	1	–	CP1-30 ■ -10	
	2	–	CP1-30 ■ -20	
	–	1	CP1-30 ■ -01	
	–	2	CP1-30 ■ -02	
	1	1	CP1-30 ■ -11	
Flush maintained	1	–	CP2-30 ■ -10	
	2	–	CP2-30 ■ -20	
	–	1	CP2-30 ■ -01	
	–	2	CP2-30 ■ -02	
	1	1	CP2-30 ■ -11	
Extended momentary	1	–	CP3-30 ■ -10	
	2	–	CP3-30 ■ -20	
	–	1	CP3-30 ■ -01	
	–	2	CP3-30 ■ -02	
	1	1	CP3-30 ■ -11	
Extended maintained	1	–	CP4-30 ■ -10	
	2	–	CP4-30 ■ -20	
	–	1	CP4-30 ■ -01	
	–	2	CP4-30 ■ -02	
	1	1	CP4-30 ■ -11	

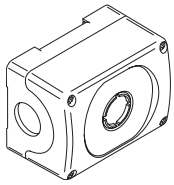
Pilot devices - compact 22mm

Emergency stops, enclosures heavy duty pushbuttons

Emergency stop buttons

Type	Contacts N/O	Contacts N/C	Part No	Order Code
30mm Twist Release Red	0	1	CE3T-10R-01	1SFA619500R1041
	0	2	CE3T-10R-02	1SFA619500R1051
	1	1	CE3T-10R-11	1SFA619500R1071
40mm Twist Release Red	0	1	CE4T-10R-01	1SFA619550R1041
	0	2	CE4T-10R-02	1SFA619550R1051
	1	1	CE4T-10R-11	1SFA619550R1071
40mm Key Release Red	0	2	CE4K-10R-02	1SFA619552R1051
	1	1	CE4K-10R-11	1SFA619552R1071

Enclosures



Type	Part No	Order Code
Enclosure 1 hole - yellow	CEPY1-0	1SFA619821R1000
Enclosed E-Stop (twist release 2NO + 2NC)	CEPY1-1001	1SFA619821R1001
Enclosed E-Stop with shroud (twist release)	CEPY1-2001	1SFA619821R2001
E-Stop shroud for compact enclosure	CA1-8053	1SFA619920R8053

Compact LED pilot lights

Colour	Part No	Order Code
Rated voltage 24 V AC/DC		
Red	CL2-502R	1SFA619403R5021
Green	CL2-502G	1SFA619403R5022
Yellow	CL2-502Y	1SFA619403R5022
Blue	CL2-502L	1SFA619403R5024
Clear	CL2-502C	1SFA619403R5028
Rated voltage 110-130 V AC		
Red	CL2-513R	1SFA619403R5131
Green	CL2-513G	1SFA619403R5132
Yellow	CL2-513Y	1SFA619403R5133
Rated voltage 110-130 V DC		
Red	CL2-515R	1SFA619403R5151
Green	CL2-515G	1SFA619403R5152
Yellow	CL2-515Y	1SFA619403R5153
Rated voltage 220 V DC		
Red	CL2-520R	1SFA619403R5201
Green	CL2-520G	1SFA619403R5202
Yellow	CL2-520Y	1SFA619403R5203
Rated voltage 230 V AC		
Red	CL2-523R	1SFA619403R5231
Green	CL2-523G	1SFA619403R5232
Yellow	CL2-523Y	1SFA619403R5233
Blue	CL2-523L	1SFA619403R5234
Clear	CL2-523C	1SFA619403R5238
Rated voltage 380-415 V AC		
Red	CL2-542R	1SFA619403R5421
Green	CL2-542G	1SFA619403R5422

Pilot devices - modular 22mm

Standard & double pushbuttons

Standard pushbuttons black plastic bezel

Type			Part No	Order Code
Flush	Momentary	Non illuminated	MP1-10 ■	
	Maintained		MP2-10 ■	
	Momentary	Illuminated	MP1-11 ■	
	Maintained		MP2-11 ■	
Extended	Momentary	Non illuminated	MP3-10 ■	
	Maintained		MP4-10 ■	
	Momentary	Illuminated	MP3-11 ■	
	Maintained		MP4-11 ■	

Standard pushbuttons chrome plastic bezel

Type			Part No	Order Code
Flush	Momentary	Non illuminated	MP1-20 ■	
	Maintained		MP2-20 ■	
	Momentary	Illuminated	MP1-21 ■	
	Maintained		MP2-21 ■	
Extended	Momentary	Non illuminated	MP3-20 ■	
	Maintained		MP4-20 ■	
	Momentary	Illuminated	MP3-21 ■	
	Maintained		MP4-21 ■	

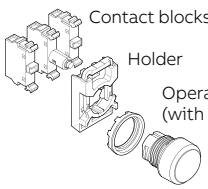
Standard pushbuttons metal bezel

Type			Part No	Order Code
Flush	Momentary	Non illuminated	MP1-30 ■	
	Maintained		MP2-30 ■	
	Momentary	Illuminated	MP1-31 ■	
	Maintained		MP2-31 ■	
Extended	Momentary	Non illuminated	MP3-30 ■	
	Maintained		MP4-30 ■	
	Momentary	Illuminated	MP3-31 ■	
	Maintained		MP4-31 ■	

Select your colour by replacing with a digit from the chart below

How to order standard operators:

- Non-illuminated operator
  + holder
  + contact block(s)
- Illuminated operator
  + holder
  + contact block(s)
  + lamp block



Ordering example:

Ex 1: Type CP1-10 ■-10, to order color red replace ■ with R: CP1-10 R-10

Ex 2: Order code 1SFA619100R101 □, to order color red replace □ with 1: 1SFA619100R1011

Color codes

Description	Type ■	Order Code □
Red	R	1
Green	G	2
Yellow	Y	3
Blue	L	4
White	W	5
Black	B	6
Grey	U	7
Clear	C	8

Contact blocks including holder with 3 blocks

Description	Type	Order Code
1 NO	MCBH-10	1SFA611605R1101
1 NC	MCBH-01	1SFA611605R1110
2 NC	MCBH-02	1SFA611605R1120
2 NO	MCBH-20	1SFA611605R1102
1 NO+1 NC	MCBH-11	1SFA611605R1111
1 NO+2 NC	MCBH-12	1SFA611605R1121
Contact blocks		
1 NO	MCB-10	1SFA611610R1001
1 NC	MCB-01	1SFA611610R1010
Separate holder for 3 blocks		
Holder	MCBH-00	1SFA611605R1100

Pilot devices - modular 22mm

Emergency, machine stops and mushroom pushbuttons

Emergency stops

Type		Part No	Order Code
30mm Red Non illuminated	Twist release	MPET3-10R	1SFA611520R1001
	Pull release	MPEP3-10R	1SFA611521R1001
	Key release	MPEK3-11R	1SFA611522R1101
40mm Red Non illuminated	Twist release	MPET4-10R	1SFA611523R1001
	Pull release	MPEP4-10R	1SFA611524R1001
	Key release	MPEK4-11R	1SFA611525R1101
40mm Red Illuminated	Twist release	MPMT3-11R	1SFA611510R1101
	Pull release	MPMP3-11R	1SFA611511R1101
60mm Red Illuminated	Twist release	MPMT4-11R	1SFA611513R1101
	Pull release	MPMP4-11R	1SFA611514R1101

Selector switches - black plastic bezel and chrome metal bezel

Selector switches black plastic bezel

Type			Part No	Order Code
Two position BC	Black	Short handle	M2SS1-10B	1SFA611200R1006
Two position AC	Black		M2SS2-10B	1SFA611201R1006
Two position spring return CB	Black		M2SS3-10B	1SFA611202R1006
Two position BC	Black	Long handle	M2SS4-10B	1SFA611203R1006
Two position AC	Black		M2SS5-10B	1SFA611204R1006
Two position spring return CB	Black		M2SS6-10B	1SFA611205R1006
Three position ABC	Black	Short handle	M3SS1-10B	1SFA611210R1006
Three position spring return A to B - C to B	Black		M3SS2-10B	1SFA611211R1006
Three position stay put A, spring return C to B	Black		M3SS3-10B	1SFA611212R1006
Three position stay put C, spring return A to B	Black		M3SS7-10B	1SFA611216R1006
Three position ABC	Black	Long handle	M3SS4-10B	1SFA611213R1006
Three position spring return A to B - C to B	Black		M3SS5-10B	1SFA611214R1006
Three position stay put A, spring return C to B	Black		M3SS6-10B	1SFA611215R1006
Three position stay put C, spring return A to B	Black		M3SS8-10B	1SFA611217R1006

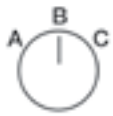
Selector switches chrome metal bezel

Type			Part No	Order Code
Two position BC	Black	Short handle	M2SS1-30B	1SFA611200R3006
Two position AC	Black		M2SS2-30B	1SFA611201R3006
Two position spring return CB	Black		M2SS3-30B	1SFA611202R3006
Two position BC	Black	Long handle	M2SS4-30B	1SFA611203R3006
Two position AC	Black		M2SS5-30B	1SFA611204R3006
Two position spring return CB	Black		M2SS6-30B	1SFA611205R3006
Three position ABC	Black	Short handle	M3SS1-30B	1SFA611210R3006
Three position spring return A to B - C to B	Black		M3SS2-30B	1SFA611211R3006
Three position stay put A, spring return C to B	Black		M3SS3-30B	1SFA611212R3006
Three position stay put C, spring return A to B	Black		M3SS7-30B	1SFA611216R3006
Three position ABC	Black	Long handle	M3SS4-30B	1SFA611213R3006
Three position spring return A to B - C to B	Black		M3SS5-30B	1SFA611214R3006
Three position stay put A, spring return C to B	Black		M3SS6-30B	1SFA611215R3006
Three position stay put C, spring return A to B	Black		M3SS8-30B	1SFA611217R3006

Pilot devices - modular 22mm

Key switches, pilot lights

Key switches black plastic bezel



Type			Part No	Order Code
Two position Key release in BC positions	71/Ronis 455	Maintained BC	M2SSK1-101	1SFA611280R1001
	72/Ronis 421		M2SSK1-102	1SFA611280R1002
	73/Ronis 3433-E		M2SSK1-103	1SFA611280R1003
Two position Key release in B positions	71/Ronis 455		M2SSK2-101	1SFA611281R1001
	72/Ronis 421		M2SSK2-102	1SFA611281R1002
	73/Ronis 3433-E		M2SSK2-103	1SFA611281R1003
Two position	71/Ronis 455	Momentary BC	M2SSK3-101	1SFA611282R1001
	72/Ronis 421		M2SSK3-102	1SFA611282R1002
	73/Ronis 3433-E		M2SSK3-103	1SFA611282R1003
Three position	71/Ronis 455	Maintained ABC	M3SSK1-101	1SFA611283R1001
	72/Ronis 421		M3SSK1-102	1SFA611283R1002
	73/Ronis 3433-E		M3SSK1-103	1SFA611283R1003

Key switches chrome metal bezel

Type			Part No	Order Code
Two position Key release in BC positions	71/Ronis 455	Maintained BC	M2SSK1-301	1SFA611280R3001
	72/Ronis 421		M2SSK1-302	1SFA611280R3002
	73/Ronis 3433-E		M2SSK1-303	1SFA611280R3003
Two position Key release in B positions	71/Ronis 455		M2SSK2-301	1SFA611281R3001
	72/Ronis 421		M2SSK2-302	1SFA611281R3002
	73/Ronis 3433-E		M2SSK2-303	1SFA611281R3003
Two position	71/Ronis 455	Momentary BC	M2SSK3-301	1SFA611282R3001
	72/Ronis 421		M2SSK3-302	1SFA611282R3002
	73/Ronis 3433-E		M2SSK3-303	1SFA611282R3003
Three position	71/Ronis 455	Maintained ABC	M3SSK1-301	1SFA611283R3001
	72/Ronis 421		M3SSK1-302	1SFA611283R3002
	73/Ronis 3433-E		M3SSK1-303	1SFA611283R3003

Pilot lights

	Part No	Order Code
Red	ML-100 R	1SFA611400R1001
Green	ML-100 G	1SFA611400R1002
Yellow	ML-100 Y	1SFA611400R1003
Blue	ML-100 B	1SFA611400R1004
White	ML-100 W	1SFA611400R1005
Clear	ML-100 C	1SFA611400R1008
Light diffusing lens	KA1-8005	1SFA616920R8005

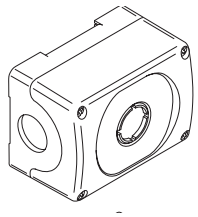
Pilot devices - modular 22mm

Contacts, lamp blocks and accessories

Contact block holders

Single contact blocks

Double contact blocks



	Part No	Order Code
Separate holder		
Holder for 3 blocks	MCBH-00	1SFA611605R1100
Holder for 5 blocks	MCBH-50	1SFA611601R1100
Contact blocks		
1 NO	MCB-10	1SFA611610R1001
1 NC	MCB-01	1SFA611610R1010
2 NC	MCB-20	1SFA611610R1020
2 NC	MCB-02	1SFA611610R1002
1 NO + 1 NC	MCB-11	1SFA611610R1011
Contact blocks with 3-holder		
1 NO	MCBH-10	1SFA611605R1101
1 NC	MCBH-01	1SFA611605R1110
2 NO	MCBH-20	1SFA611605R1102
2 NC	MCBH-02	1SFA611605R1120
1 NO + 1 NC double contacts	MCBH-11	1SFA611605R1111
2 NO + 1 NC double contacts	MCBH-21	1SFA611605R1112
Legend plate holders		
Holder black	KA1-8120	1SFA616920R8120
Inserts without text	KA1-8121	1SFA616920R8121
Legend plate holder for plastic enclosures	MA6-1060	1SFA611930R1060
Inserts without text for plastic enclosures	MA6-1061	1SFA611930R1061
General accessories		
Shroud	MA1-8053	1SFA611920R8053
Mounting tool	MA1-8015	1SFA611920R8015
Membrane of silicone flush button	KA1-8052	1SFA616920R8052
Blanking plug	MA1-8130	1SFA611920R8130
Spacer	–	SK615516-1
Spacer for emergency stop	KA1-8045	1SFA616920R8045
Empty enclosures		
Empty Grey Enclosure - 1 Seat		1SFA611811R1000
Empty Grey Enclosure - 2 Seat		1SFA611812R1000
Empty Grey Enclosure - 3 Seat		1SFA611813R1000
Empty Grey Enclosure - 4 Seat		1SFA611814R1000
Empty Yellow Enclosure - 1 Seat		1SFA611821R1000
Contact blocks for enclosures		
1 NO		1SFA611610R2001
1 NC		1SFA611610R2010
2 NO		1SFA611610R2002
2 NC		1SFA611610R2020
1 NO + 1 NC		1SFA611610R2011

Flexible conduit systems

Protecting critical power & data cables

Adaptaflex is one of the market leading flexible conduit system brands that can be found all over the world. Combining innovative design with dedicated manufacture it offers customers one of the world's broadest ranges of cable protection products and solutions. **new.abb.com/world-of-installation**

Adaptaflex

ABB

Non-metallic conduit systems

Type A - Adaptalok

- Straight fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Locknut supplied with metric thread only
- Materials: Polyamide (Nylon) 66
- Colours: Black (BL), Grey (GR)

Type A - Adaptalok

Order code	Nominal Conduit Size	Metric Thread
AL10/M12/A*	10mm	M16
AL13/M16/A*	13mm	M16
AL13/M20/A*	13mm	M20
AL16/M16/A	16mm	M16
AL16/M20/A	16mm	M20
AL21/M20/A	21mm	M20
AL21/M25/A	21mm	M25
AL28/M25/A	28mm	M25
AL28/M32/A	28mm	M32
AL34/M32/A	34mm	M32
AL34/M40/A	34mm	M40
AL42/M40/A	42mm	M40
AL42/M50/A	42mm	M50
AL54/M50/A	54mm	M50
AL54/M63/A	54mm	M63

*These parts are not covered by the RU certification

Type C90 - Adaptalok

- 90º elbow fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Locknut supplied with metric thread only
- Materials: Polyamide (Nylon) 66
- Colours: Black (BL), Grey (GR)

Type C90 - Adaptalok

Order code	Nominal Conduit Size	Metric Thread
AL10/M12/C90*	10mm	M12
AL13/M16/C90*	13mm	M16
AL16/M16/C90	16mm	M16
AL16/M20/C90	16mm	M20
AL21/M20/C90	21mm	M20
AL28/M25/C90	28mm	M25
AL34/M32/C90	34mm	M32
AL42/M40/C90	42mm	M40
AL54/M50/C90	54mm	M50
AL54/M63/C90	54mm	M63

*These parts are not covered by the RU certification

Approvals	IP Rating	Appropriate Conduit	Temperature Range	Fitting Characteristics
KM35161		**For use with: Type PA / PI / CP / PR / PF**	Static Applications: -50˚C to +120˚C	
	IP66	Yes	Moving Applications: -45˚C to +120˚C	
	IP67	Yes + ALS Seal		
	IP68	Yes + ALS Seal		
	IP69	Yes + ALS Seal		

Contractor packs

Professional installer conduit systems

LFH convenience pack

- Nylon conduit with Adaptalok one-piece, fast fit, push and twist fittings
- Materials: Polyamide (Nylon) 66
- Colour: Black

Order code	Type	Conduit / Fitting Diameter	One-Piece Conduit Fittings	Locknuts	IP Rating
CP-AF20A	10m Black Type PA LFH Nylon 6, 20mm diameter	20mm	10	10	IP66
CP-AF25A	10m Black Type PA LFH Nylon 6, 25mm diameter	25mm	10	10	IP66

Budget convenience pack

- Type PP Polypropylene conduit with Adaptalok one-piece, fast fit, push and twist fittings
- Materials: PP Polypropylene
- Colour: Grey

Order code	Type	Conduit / Fitting Diameter	One-Piece Conduit Fittings	Locknuts	IP Rating
CP-AF20BS-PP	10m Grey Type PP Polypropylene, 20mm diameter	20mm	10	10	IP54
CP-AF25BS-PP	10m Grey Type PP Polypropylene, 25mm diameter	25mm	10	10	IP54
CP-AF20A-APP	Pack of 10 Grey Fittings (Straight), 20mm diameter	20mm	10		IP54
CP-AF25A-APP	Pack of 10 Grey Fittings (Straight), 25mm diameter	25mm	10		IP54

Retail / office convenience pack

- Self-extinguishing PVC conduit & one-piece fittings and locknuts
- Materials: PVC pliable
- Colour: White, Grey

Order code	Type	Conduit / Fitting Diameter	One-Piece Conduit Fittings	Locknuts	IP Rating
CP-AF20BS	10m Grey Type KF PVCu, 20mm diameter	20mm	10	10	IP66
CP-AF25BS	10m Grey Type KF PVCu, 20mm diameter	25mm	10	10	IP66
CP-KF20BS	10m White Type KF PVCu, 25mm diameter	20mm	10	10	IP66
CP-KF25BS	10m White Type KF PVCu, 25mm diameter	25mm	10	10	IP66

Liquid resistant convenience pack

- Type SP Adaptasteel PVC covered steel conduit with fixed and swivel fittings
- PVC covered galvanised steel
- Colour: Black

Order code	Conduit Type	Conduit Diameter	Adaptasteel Fittings	Locknuts
CP-AF20SP-BS	10m Black Type SP PVC Covered Steel	20mm	N/A	10

			Fixed Male Fitting	Swivel Male Fitting	IP Rating
			5	5	IP54

Non-metallic conduit systems

Type KC/A & KC/C90 - Korifit

- Straight fitting - fixed external male thread
- For insertion into threaded entries & knockouts
- Locknut supplied
- Materials: Polyamide (Nylon) 66
- Colours: Black, Grey or White

Type KC/A - Korifit

Order code	Nominal Conduit Size	Metric Thread
KC16/M16/A	16mm	M16
KC16/M20/A	16mm	M20
KC20/M20/A	20mm	M20
KC25/M25/A	20mm	M25

To order quote order code & body colour, e.g. KC16/M16/A/BL

- 90° elbow fitting - fixed external male thread
- For insertion into knockouts
- Locknut supplied
- Materials: Polyamide (Nylon) 66
- Colour: Black only

Type KC/C90 - Korifit

Order code	Nominal Conduit Size	Metric Thread
KC16/M16/C90	16mm	M16
KC20/M20/C90	20mm	M20
KC25/M25/C90	25mm	M25

To order quote order code & body colour, e.g. KC16/M16/C90/BL

Approvals	IP Rating	Appropriate Conduit	Temperature Range	Fitting Characteristics
KM35161 CE LOW VOLTAGE DIRECTIVE		**For use with: Korifit Type KF**	Static Applications: -5˚C to +60˚C	
	IP40	Yes	Moving Applications: -5˚C to +60˚C	

Type T & AWB - Adaptaring

- Rotational inspection T-piece
- For connection to corrugated flexible conduit
- Materials: Polyamide (Nylon) 66 and Acetal (POM)
- Colour: Black only

Type T - Adaptaring T-piece

Order code	Nominal Conduit Size
AR13X3/T	13mm
AR16X3/T	16mm
AR21X3/T	21mm
AR28X3/T	28mm
AR34X3/T	34mm

Approvals	IP Rating	Appropriate Conduit
KM35161 CE LOW VOLTAGE DIRECTIVE		**For use with: Type PA / PI / CP / PR / PF**
	IP40	Yes

Temperature Range	Fitting Characteristics
Static Applications: -40ºC to +120ºC	
Moving Applications: -5˚C to +120˚C	

- Anti-vibration washer
- Prevents fitting loosening under vibration
- Materials: Acetal (POM)
- Colour: Black only

Type AWB - Adaptaring

Order code	Nominal Conduit Size
AWB13	13mm
AWB16	16mm
AWB21	21mm
AWB28	28mm
AWB34	34mm

Non-metallic conduit systems

Type PA

- Standard weight conduit
- Material: Polyamide (Nylon) 6
- Colour: Black, Grey

Type PA

Order code	Nominal Conduit Size	NW Conduit Size	Conduit Pitch	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length (BL)	(GR)
PAFS10	10mm	7.5	Fine	10.0mm	6.5mm	15mm	50m	50m
PAFS13	13mm	10	Fine	13.0mm	9.6mm	25mm	50m	50m
PAFS16	16mm	13	Fine	15.8mm	11.8mm	35mm	10/25/50m	50m
PAFS21	21mm	17	Fine	21.2mm	16.5mm	45mm	10/25/50m	50m
PAFS28	28mm	23	Fine	28.5mm	22.6mm	50mm	10/25/50m	50m
PACS28	28mm	23	Coarse	28.5mm	21.7mm	50mm	10/25/50m	50m
PAFS34	34mm	29	Fine	34.5mm	28.8mm	60mm	10/25/50m	50m
PACS34	34mm	29	Coarse	34.5mm	27.7mm	60mm	10/25/50m	50m
PACS42	42mm	36	Coarse	42.5mm	35.2mm	65mm	10/25m	25m
PACS54	54mm	48	Coarse	54.5mm	46.5mm	75mm	10/25m	25m
PACS80	80mm	70	Coarse	79.3mm	67.0mm	160mm	10m	10m
PACS106	106mm	95	Coarse	106.0mm	91.5mm	210mm	10m	10m

To order quote order code, colour & reel length, e.g. PAFS13/BL/50M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161		For use with: Type PA / PI / CP / PR / PF	Static Applications: -40˚C to +120˚C	Very High	High Flexibility - High Fatigue Life	Self Extinguishing
CE LOW VOLTAGE DIRECTIVE	IP40	Adaptaring & Jumbo	Moving Applications: -5˚C to +120˚C			Halogen Free
DIN	IP65	Jumbo + SK Seal				LFH LOW FIRE HAZARD
NF	IP66	Adaptalok, ATS or Adaptaseal				
	IP67	Adaptalok + ALS Seal or ATS, Adaptaseal				
	IP68	Adaptalok + ALS Seal or ATS, Adaptaseal				
	IP69	Adaptalok + ALS Seal or ATS				

- Heavyweight weight conduit
- Material: Polyamide (Nylon) 6
- Colour: Black, Grey

Type PA

Order code	Nominal Conduit Size	NW Conduit Size	Conduit Pitch	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
PAFH13	13mm	10	Fine	13.0mm	9.0mm	35mm	50m
PAFH16	16mm	13	Fine	15.8mm	11.3mm	45mm	50m
PACH21	21mm	17	Coarse	21.2mm	14.5mm	60mm	50m
PACH28	28mm	23	Coarse	28.5mm	21.3mm	70mm	50m
PACH34	34mm	29	Coarse	34.5mm	26.8mm	75mm	50m
PACH42	42mm	36	Coarse	42.5mm	34.6mm	90mm	25m
PACH54	54mm	48	Coarse	54.5mm	46.0mm	95mm	25m

To order quote order code, colour & reel length, e.g. PAFH13/BL/50M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161		For use with: Type PA / PI / CP / PR / PF	Static Applications: -40˚C to +120˚C	Very High	High Flexibility - High Fatigue Life	Self Extinguishing
CE LOW VOLTAGE DIRECTIVE	IP40	Adaptaring & Jumbo	Moving Applications: -5˚C to +120˚C			Halogen Free
DIN	IP65	Jumbo + SK Seal				LFH LOW FIRE HAZARD
NF	IP66	Adaptalok, ATS or Adaptaseal				
	IP67	Adaptalok + ALS Seal or ATS, Adaptaseal				
	IP68	Adaptalok + ALS Seal or ATS, Adaptaseal				
	IP69	Adaptalok + ALS Seal or ATS				

Metallic conduit systems

Type S & SS - Adaptasteel

- Inherent low fire hazard steel conduit
- Material: Galvanised steel - general purpose

Type S - Adaptasteel

Order code	Nominal Conduit Size	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
S10	10mm	9.1mm	7.0mm	25mm	25, 50m
S12	12mm	13.0mm	10.3mm	30mm	10, 25, 50m
S16	16mm	16.0mm	13.0mm	35mm	10, 25, 50m
S20	20mm	20.5mm	16.9mm	45mm	10, 25, 50m
S25	25mm	25.0mm	21.4mm	55mm	10, 25, 50m
S32	32mm	32.0mm	28.1mm	60mm	10, 25m
S40	40mm	42.5mm	37.7mm	80mm	10, 25m
S50	50mm	53.0mm	48.4mm	90mm	10, 25m
S63	63mm	62.5mm	57.5mm	115mm	10m
S75	75mm	77.0mm	70.0mm	150mm	10m

To order quote order code & reel length, e.g. S12/25M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161		For use with: Type S	Static Applications: -50˚C to +300˚C	Very High	High Flexibility - High Fatigue Life	LOW FIRE HAZARD LFH LOW FIRE HAZARD
CE LOW VOLTAGE DIRECTIVE	IP40	Type S - Type A, B, F & C	Moving Applications: -45˚C to +250˚C			

- Inherent low fire hazard steel conduit
- Material: Stainless steel 316 - corrosion resistant

Type SS - Adaptasteel

Order code	Nominal Conduit Size	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
SS10	10mm	9.0mm	6.8mm	25mm	25, 50m
SS12	12mm	13.0mm	10.3mm	30mm	10, 25, 50m
SS16	16mm	16.0mm	13.0mm	35mm	10, 25, 50m
SS20	20mm	20.5mm	16.9mm	45mm	10, 25, 50m
SS25	25mm	25.0mm	21.4mm	55mm	10, 25, 50m
SS32	32mm	32.0mm	28.1mm	60mm	10, 25m

To order quote order code & reel length, e.g. SS12/25M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161		For use with: Type S	Static Applications: -50˚C to +300˚C	Very High	High Flexibility - High Fatigue Life	LOW FIRE HAZARD LFH LOW FIRE HAZARD
CE LOW VOLTAGE DIRECTIVE	IP40	Type S - Type A, B, F & C	Moving Applications: -45ºC to +250ºC			

Metallic conduit systems

Type SP & SN - Adaptasteel

- Liquid resistant general purpose covered steel flexible conduit
- Material: PVC covered galvanised steel
- Colour: Black, Grey and Orange

Type SP - Adaptasteel

Order code	Nominal Conduit Size	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
SP10	10mm	10.0mm	6.8mm	25mm	25, 50m
SP12	12mm	14.0mm	10.3mm	30mm	25, 50m
SP16	16mm	17.0mm	13.0mm	35mm	10, 25, 50m
SP20	20mm	21.5mm	16.9mm	45mm	10, 25, 50m
SP25	25mm	26.0mm	21.4mm	55mm	10, 25, 50m
SP32	32mm	34.0mm	28.1mm	60mm	10, 25m
SP40	40mm	44.5mm	37.7mm	80mm	10, 25m
SP50	50mm	55.0mm	48.4mm	90mm	10, 25m
SP63	63mm	64.5mm	57.5mm	115mm	10m
SP75	75mm	79.0mm	70.0mm	150mm	10m

To order quote order code colour & reel length, e.g. SP12/BL/25M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161		For use with: Type S	Static Applications: -25˚C to +70˚C	Very High	High Flexibility - Medium Fatigue Life	Self Extinguishing
CE LOW VOLTAGE DIRECTIVE	IP54	Type SP - Type A, B, C, E & F	Moving Applications: -5˚C to +90˚C			
	IP65	Type SP - Type M & C90				

- Liquid resistant Abrasion and solvent resistant covered steel flexible conduit
- Material: PVC covered galvanised steel
- Colour: Black only

Type SN - Adaptasteel

Order code	Nominal Conduit Size	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
SN12	12mm	14.0mm	10.3mm	30mm	25, 50m
SN16	16mm	17.0mm	13.0mm	35mm	25, 50m
SN20	20mm	21.5mm	16.9mm	45mm	25, 50m
SN25	25mm	26.0mm	21.4mm	55mm	25, 50m
SN32	32mm	34.0mm	28.1mm	60mm	25m

To order quote order code & reel length, e.g. SN12/25M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161		For use with: Type S	Static Applications: -40˚C to +120˚C	High	Medium Flexibility - Medium Fatigue Life	Self Extinguishing
CE LOW VOLTAGE DIRECTIVE	IP40	Type SP - Type A, B, C, E & F	Moving Applications: -25˚C to +150˚C			Halogen Free
	IP65	Type SP - Type M & C90				

Non-metallic conduit systems

Type 45, SA, CS90 & S45 - Adaptalok

- 45˚ Elbow fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Locknut supplied with metric thread only
- Materials: Polyamide (Nylon) 66
- Colours: Black (BL), Grey (GR)

Type 45 - Adaptalok

Order code	Nominal Conduit Size	Metric Thread
AL13/M16/45*	13mm	M16
AL16/M16/45	16mm	M16
AL16/M20/45	16mm	M20
AL21/M20/45	21mm	M20
AL28/M25/45	28mm	M25
AL34/M32/45	34mm	M32
AL42/M50/45	42mm	M40
AL54/M50/45	54mm	M50
AL54/M63/45	54mm	M63

To order quote order code & body colour, e.g. AL21/M20/45/BL.
*These parts are not covered by the RU certification.

- 90˚elbow fitting - swivel external male thread
- For insertion into threaded entries & knockouts using a locknut. Order locknut separately
- Materials: Polyamide (Nylon) 66, nickel plated brass thread
- Colours: Black (BL), Grey (GR)

Type CS90 - Adaptalok

Order code	Nominal Conduit Size	Metric Thread
AL13/M16/CS90*	13mm	M16
AL16/M16/CS90	16mm	M16
AL21/M20/CS90	21mm	M20
AL28/M25/CS90	28mm	M25
AL34/M32/CS90	34mm	M32
AL42/M40/CS90	42mm	M40
AL54/M50/CS90	54mm	M50
AL54/M63/CS90	54mm	M63

To order quote order code & body colour, e.g. AL13/M16/CS90/BL. NPT also available.
*These parts are not covered by the RU certification

- Straight fitting - swivel external male thread
- For insertion into threaded entries & knockouts using a locknut. Order locknut separately
- Materials: Polyamide (Nylon) 66, nickel plated brass thread
- Colours: Black (BL), Grey (GR)

Type SA - Adaptalok

Order code	Nominal Conduit Size	Metric Thread
AL13/M16/SA*	13mm	M16
AL16/M16/SA	16mm	M16
AL21/M20/SA	16mm	M20
AL28/M25/SA	28mm	M25
AL34/M32/SA	34mm	M32
AL42/M40/SA	42mm	M40
AL54/M50/SA	54mm	M50
AL54/M63/SA	54mm	M63

To order quote order code & body colour, e.g. AL13/M16/SA/BL. NPT also available.
*These parts are not covered by the RU certification.

- 45˚elbow body - swivel external male thread
- For insertion into threaded entries & knockouts using a locknut. Order locknut separately
- Materials: Polyamide (Nylon) 66 , nickel plated brass thread
- Colours: Black (BL), Grey (GR)

Type S45 - Adaptalok

Order code	Nominal Conduit Size	Metric Thread
AL13/M16/S45*	13mm	M16
AL16/M16/S45	16mm	M16
AL21/M20/S45	21mm	M20
AL28/M25/S45	28mm	M25
AL34/M32/S45	34mm	M32
AL42/M40/S45	42mm	M40
AL54/M50/S45	54mm	M50
AL54/M63/S45	54mm	M63

To order quote order code & body colour, e.g. AL21/M20/45/BL
*These parts are not covered by the RU certification

Approvals	IP Rating	Appropriate Conduit	Temperature Range
		For use with: Type PA / PI / CP / PR / PF	Static Applications: -50˚C to +120˚C
	IP66	Yes	Moving Applications: -45˚C to +120˚C
	IP67	Yes + ALS Seal	
	IP68	Yes + ALS Seal	
	IP69	Yes + ALS Seal	

Non-metallic conduit systems

Type A, C90 & 45 - Adaptalok ATS™

- Straight fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Locknut supplied with metric thread
- Materials: Polyamide (Nylon) 66 / TPE
- Colours: Black (BL), Grey (GR))/Yellow (Y) Elastomer

Type A - Adaptalok ATS™

Order code	Nominal Conduit Size	Metric Thread
AT13/M16/A	13mm	M16
AT16/M16/A	16mm	M16
AT16/M20/A	16mm	M20
AT21/M20/A	21mm	M20
AT21/M25/A	21mm	M25
AT28/M25/A	28mm	M25
AT28/M32/A	28mm	M32
AT34/M32/A	34mm	M32
AT34/M40/A	34mm	M40
AT42/M40/A	42mm	M40
AT42/M50/A	42mm	M50
AT48/M50/A	48mm	M50
AT54/M50/A	54mm	M50
AT54/M63/A	54mm	M63

To order quote order code, body colour & Elastomer colour, e.g. AT21/M20/A/BLY

- 45˚elbow fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Locknut supplied with metric thread
- Materials: Polyamide (Nylon) 66 / TPE
- Colours: Black (BL), Grey (GR))/Yellow (Y) Elastomer

Type 45 - Adaptalok ATS™

Order code	Nominal Conduit Size	Metric Thread
AT13/M16/45	13mm	M16
AT16/M16/45	16mm	M16
AT16/M20/45	16mm	M20
AT21/M20/45	21mm	M20
AT28/M25/45	28mm	M25
AT34/M32/45	34mm	M32
AT42/M40/45	42mm	M40
AT48/M50/45	48mm	M50
AT54/M50/45	54mm	M50

To order quote order code, body colour & Elastomer colour, e.g. AT54/M50/45/BLY.

Approvals	IP Rating	Appropriate Conduit
		For use with: Type PA / PI / PR / PADL / PF
	IP40	Yes
	IP65	Yes
	IP68	Yes (4 bar 30mins)
	IP69	Yes

Temperature Range
Static Applications: -50˚C to +120˚C
Moving Applications: -45˚C to +120˚C

- 90˚elbow fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Locknut supplied with metric thread
- Materials: Polyamide (Nylon) 66 / TPE
- Colours: Black (BL), Grey (GR))/Yellow (Y) Elastomer

Type C90 - Adaptalok ATS™

Order code	Nominal Conduit Size	Metric Thread
AT13/M16/C90	13mm	M16
AT16/M16/C90	16mm	M16
AT16/M20/C90	16mm	M20
AT21/M20/C90	21mm	M20
AT28/M25/C90	28mm	M25
AT34/M32/C90	34mm	M32
AT42/M40/C90	42mm	M40
AT48/M50/C90	48mm	M50
AT54/M50/C90	54mm	M50
AT54/M63/C90	54mm	M63

To order quote order code, body colour & Elastomer colour, e.g. AT21/M20/C90/BLY.

Non-metallic conduit systems

Type SA, CS90 & S45 - Adaptalok ATS™

- Straight fitting - metal swivel external male thread
- For insertion into threaded entries & knockouts
- Order locknuts separately
- Materials: Polyamide (Nylon) 66, Nickel pated Brass thread/TPE
- Colours: Black (BL), Grey (GR) / Yellow (Y), Blue (B) Elastomer

Type SA - Adaptalok ATS™

Order code	Nominal Conduit Size	Metric Thread
AT13/M16/SA	13mm	M16
AT16/M16/SA	16mm	M16
AT21/M20/SA	21mm	M20
AT28/M25/SA	28mm	M25
AT34/M32/SA	34mm	M32
AT42/M40/SA	42mm	M40
AT48/M50/SA	48mm	M50
AT54/M50/SA	54mm	M50
AT54/M63/SA	54mm	M63

To order quote order code, body colour & Elastomer colour, e.g. AT16/M16/SA/BLB.

- 45˚elbow body - swivel external male thread
- For insertion into threaded entries & knockouts
- Order locknuts separately
- Materials: Polyamide (Nylon) 66, Nickel plated Brass thread/TPE
- Colours: Black (BL), Grey (GR) / Yellow (Y), Blue (B) Elastomer

Type S45 - Adaptalok ATS™

Order code	Nominal Conduit Size	Metric Thread
AT13/M16/S45	13mm	M16
AT16/M16/S45	16mm	M16
AT21/M20/S45	21mm	M20
AT28/M25/S45	28mm	M25
AT34/M32/S45	34mm	M32
AT42/M40/S45	42mm	M40
AT48/M50/S45	48mm	M50
AT54/M50/S45	54mm	M50
AT54/M63/S45	54mm	M63

To order quote order code, body colour & Elastomer colour, e.g. AT54/M63/S45/BLB.

- 90˚elbow fitting - swivel external male thread
- For insertion into threaded entries & knockouts
- Order locknuts separately
- Materials: Polyamide (Nylon) 66, Nickel Plated Brass Thread/TPE
- Colours: Black (BL), Grey (GR) / Yellow (Y), Blue (B) Elastomer

Type CS90 - Adaptalok ATS™

Order code	Nominal Conduit Size	Metric Thread
AT13/M16/CS90	13mm	M16
AT16/M16/CS90	16mm	M16
AT21/M20/CS90	21mm	M20
AT28/M25/CS90	28mm	M25
AT34/M32/CS90	34mm	M32
AT42/M40/CS90	42mm	M40
AT48/M50/CS90	48mm	M50
AT54/M50/CS90	54mm	M50
AT54/M63/CS90	54mm	M63

To order quote order code, body colour & Elastomer colour, e.g. AT16/M16/SA/BLB.

Approvals	Blue Elastomer version only
KM35161	Intertek

IP Rating	Appropriate Conduit
	For use with: Type PA / PI / PR / PADL / PF
IP40	Yes
IP65	Yes
IP68	Yes (4 bar 30mins)
IP69	Yes

Temperature Range	Fitting Characteristics
Static Applications:-50˚C to +120˚C	
Moving Applications: -45˚C to +120˚C	

Non-metallic conduit systems

Type KF - Korifit

- Lightweight conduit
- Material: PVCu
- Colour: Grey (GR) only

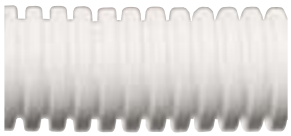
Type KF

Order code	Nominal Conduit Size	NW Conduit Size	Conduit Pitch	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
KFL16	16mm	13	Fine	15.8mm	12.1mm	25mm	50m
KFL20	20mm	17	Fine	19.8mm	14.5mm	30mm	50m
KFL25	25mm	22	Fine	24.8mm	19.9mm	40mm	50m

To order quote order code, colour & reel length, e.g. KFL16/GR/50M

- Standard weight conduit
- Material: PVCu
- Colour: Colour: White (W) only

Type KF



Order code	Nominal Conduit Size	NW Conduit Size	Conduit Pitch	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
KFS16	16mm	13	Fine	15.8mm	11.9mm	25mm	50m
KFS20	20mm	17	Fine	19.8mm	14.3mm	30mm	50m
KFS25	25mm	22	Fine	24.8mm	19.7mm	40mm	50m

To order quote order code, colour & reel length, e.g. KFS16/W/50M

- Medium weight conduit
- Material: PVCu
- Colour: Black (BL) only

Type KF

Order code	Nominal Conduit Size	NW Conduit Size	Conduit Pitch	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
KFM16	16mm	13	Fine	15.8mm	11.9mm	25mm	50m
KFM20	20mm	17	Fine	19.8mm	14.3mm	30mm	50m
KFM25	25mm	22	Fine	24.8mm	19.7mm	40mm	50m

To order quote order code & body colour, e.g. KFM16/BL/50M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161	**For use with: Korfit Type KC & KF**		Static Applications: -5˚C to +60˚C	High	Pliable - Low Fatigue Life	Self Extinguishing
	IP40	Yes	Moving Applications: -5˚C to +60˚C			
LOW VOLTAGE DIRECTIVE	IP65	N/A				

Non-metallic conduit systems

Type KFA & Coupler - Korifit

- Straight fitting - fixed external male thread
- For insertion into threaded entries & knockouts
- Locknut supplied
- Materials: Polyamide (Nylon) 66
- Colours: Black (BL), Grey (GR) or White (W)

- Straight one piece coupler
- For coupling two corrugated flexible conduits
- Materials: Polyamide (Nylon) 66
- Colour: White (W) only

Type KFA - Korifit

	Order code	Nominal Conduit Size	Metric Thread
	KF16/M16/A	16mm	M16
	KF16/M20/A	16mm	M20
	KF20/M20/A	20mm	M20
	KF25/M25/A	25mm	M25

To order quote order code & body colour, e.g. KF16/M16/A/BL

Coupler - Korifit

	Order code	Nominal Conduit Size	NW Conduit Size
	KF2020	20mm	17

To order quote order code & body colour, e.g. KF2020/W

Approvals	IP Rating	Appropriate Conduit	Temperature Range	Fitting Characteristics
		For use with: Korifit Type KF	Static Applications: -5˚C to +60˚C	
	IP40	Yes	Moving Applications: -5˚C to +60˚C	

Polypropylene Type PP - Adaptalok

- Medium weight conduit
- Materials: Polypropylene
- Colour: Black (BL) only

Type PP

	Order code	Nominal Conduit Size	NW Conduit Size	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
	PPFM13	13mm	10	13.0mm	9.8mm	5mm	50m
	PPFM16	16mm	13	15.8mm	12.1mm	35mm	50m
	PPFM21	21mm	17	21.2mm	16.8mm	40mm	50m
	PPFM28	28mm	23	28.5mm	23.1mm	60mm	50m
	PPFM34	34mm	29	34.5mm	29.1mm	50mm	50m

To order quote order code, colour & reel length, e.g. PPFM16/BL/50M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life
	For use with: Polypropylene Type PPA		Static Applications: -20˚C to +90˚C	Medium	High Flexibility - Medium Fatigue Life
	IP6	Polypropylene Type PPA	Moving Applications: -5˚C to +105˚C		

Non-metallic conduit systems

Accessories - Type LNP & AC

- Nylon locknuts
- Material: Polyamide (Nylon) 6
- Colour: Black (BL), Grey (GR)

Type LNP

Order code		
Black	Grey	Metric Thread
LNPB/M12	–	M12
LNPB/M16	LNPG/M16	M16
LNPB/M20	LNPG/M20	M20
LNPB/M25	LNPG/M25	M25
LNPB/M32	LNPG/M32	M32
LNPB/M40	LNPG/M40	M40
LNPB/M50	LNPG/M50	M50
LNPB/M63	LNPG/M63	M63

- Conduit clips
- With integral lid
- Material: Polyamide (Nylon) 66, impact modified Nylon - ST version only
- Colour: Black (BL), Grey (GR)

Type AC

Order code		Impact Modified	
Black	Grey	(Black only)	Nominal Conduit Size
ACB10	ACG10	–	10mm
ACB13	ACG13	ACB13/ST	13mm
ACB16	ACG16	ACB16/ST	16mm
ACB21	ACG21	ACB21/ST	21mm
ACB28	ACG28	ACB28/ST	28mm
ACB34	ACG34	ACB34/ST	34mm
ACB42	ACG42	ACB42/ST	42mm
ACB54	ACG54	ACB54/ST	54mm

Metallic conduit systems

Type LFH-SP & A - Adaptasteel

- Liquid resistant enhanced low fire hazard covered steel flexible conduit
- Material: Polyolefin covered galvanised steel
- Colour: Black (BL) only

Type LFH-SP - Adaptasteel

Order code	Nominal Conduit Size	Outside Diameter	Inside Diameter	Min. Bend Radius	Reel Length
LFH- SP12	12mm	14.0mm	10.3mm	30mm	25, 50m
LFH- SP16	16mm	17.0mm	13.0mm	35mm	10, 25, 50m
LFH- SP20	20mm	21.5mm	16.9mm	45mm	10, 25, 50m
LFH- SP25	25mm	26.0mm	21.4mm	55mm	10, 25, 50m
LFH- SP32	32mm	34.0mm	28.1mm	60mm	10, 25m
LFH- SP40	40mm	44.5mm	37.7mm	80mm	10, 25m

To order quote Order code, colour & reel length, e.g. LFH-SP16/BL/50M

Approvals	IP Rating	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161 CE LOW VOLTAGE DIRECTIVE		For use with: Type SP	Static Applications: -25˚C to +90˚C	High	Medium Flexibility - Medium Fatigue Life	Self Extinguishing
	IP54	Type SP - Type A, B, C, E & F	Moving Applications: -5˚C to +105˚C			Halogen Free
	IP65	Type SP - Type M & C90				

- Straight fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Order locknuts separately
- Materials: Nickel Plated Brass

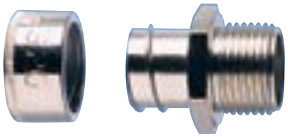
Type A - Adaptasteel

Order code	Nominal Conduit Size	Metric Thread
SP10/M12/A	10mm	M12
SP12/M16/A	12mm	M16
SP16/M16/A	16mm	M16
SP16/M20/A	16mm	M20
SP20/M20/A	20mm	M20
SP25/M25/A	25mm	M25
SP32/M32/A	32mm	M32
SP40/M40/A	40mm	M40
SP50/M50/A	50mm	M50
SP63/M63/A	63mm	M63
SP75/M75/A	75mm	M75

Approvals	IP Rating	Appropriate Conduit	Temperature Range
KM35161 CE LOW VOLTAGE DIRECTIVE		For use with: Type SP / SN / LFH-SP	Static Applications: -50˚C to +300˚C
	IP54	Yes	Moving Applications: -45˚C to +250˚C

- Straight fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Order locknuts separately
- Materials: Nickel Plated Brass

Type A - Adaptasteel



Order code	Nominal Conduit Size	Metric Thread
S10/M12/A	10mm	M12
S12/M16/A	12mm	M16
S16/M16/A	16mm	M16
S16/M20/A	16mm	M20
S20/M20/A	20mm	M20
S25/M25/A	25mm	M25
S32/M32/A	32mm	M32
S40/M40/A	40mm	M40
S50/M50/A	50mm	M50
S63/M63/A	63mm	M63
S75/M75/A	75mm	M75

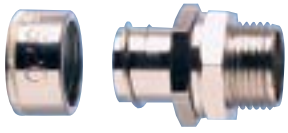
Approvals	IP Rating	Appropriate Conduit	Temperature Range	Fitting Characteristics
KM35161 CE LOW VOLTAGE DIRECTIVE		For use with: Type S / SS	Static Applications: -50˚C to +300˚C	
	IP40	Yes	Moving Applications: -45˚C to +250˚C	

Metallic conduit systems

Type A, B & C - Adaptasteel

- Straight fitting - swivel external male thread
- For insertion into threaded entries & knockouts using a locknut (order locknuts separately)
- Materials: Nickel Plated Brass

Type B - Adaptasteel



Order code	Nominal Conduit Size	Metric Thread
S10/M12/B	10mm	M12
S12/M16/B	12mm	M16
S16/M16/B	16mm	M16
S16/M20/B	16mm	M20
S20/M20/B	20mm	M20
S25/M25/B	25mm	M25
S32/M32/B	32mm	M32
S40/M40/B	40mm	M40
S50/M50/B	50mm	M50

Approvals	IP Rating	Appropriate Conduit
		For use with: Type S / SS
	IP40	Yes

Temperature Range	Fitting Characteristics
Static Applications: -50˚C to +300˚C	
Moving Applications: -45˚C to +250˚C	

- Straight fitting - swivel external male thread
- For insertion into threaded entries & knockouts using a locknut (order locknuts separately)
- Materials: Nickel Plated Brass

Type B - Adaptasteel

Order code	Nominal Conduit Size	US Conduit Size	Metric Thread
SPL16/M16/B	16mm	3/8”	M16
SPL16/M20/B	16mm	3/8”	M20
SPL20/M20/B	20mm	1/2”	M20
SPL25/M25/B	25mm	3/4”	M25
SPL32/M32/B	32mm	1”	M32

Approvals	IP Rating	Appropriate Conduit
		For use with: Type SPL / SPLHC / SPUL / SPL-EF / LFH-SPL
	IP67	Yes

Temperature Range	Fitting Characteristics
Static Applications: -65˚C to +150˚C	
Moving Applications: -45˚C to +150˚C	

- Straight fitting - fixed external male thread
- For insertion into threaded entries & knockouts using a locknut (order locknuts separately)
- Materials: Nickel Plated Brass

Type A - Adaptasteel

Order code	Nominal Conduit Size	US Conduit Size	Metric Thread
SPL16/M16/A	16mm	3/8”	M16
SPL16/M20/A	16mm	3/8”	M20
SPL20/M20/A	20mm	1/2”	M20
SPL25/M25/A	25mm	3/4”	M25
SPL32/M32/A	32mm	1”	M32

Approvals	IP Rating	Appropriate Conduit
		For use with: Type SPL / SPLHC / SPUL / SPL-EF / LFH-SPL

Temperature Range
Static Applications: -65˚C to +150˚C
Moving Applications: -45˚C to +150˚C

- Smooth entry bush
- For locking conduit into plain holes in enclosures
- Materials: Nickel Plated Brass

Type C - Adaptasteel

Order code	Nominal Conduit Size	Hole Size
S10/9/C	10mm	9mm
S12/12/C	12mm	12mm
S16/16/C	16mm	16mm
S20/20/C	20mm	20mm
S25/25/C	25mm	25mm
S32/32/C	32mm	32mm
S40/40/C	40mm	40mm
S50/51/C	50mm	50mm
S63/61/C	63mm	63mm
S75/75/C	75mm	75mm

Approvals	IP Rating	Appropriate Conduit
		For use with: Type S / SS
	IP40	Yes

Temperature Range	Fitting Characteristics
Static Applications: -50˚C to +300˚C	
Moving Applications: -45˚C to +250˚C	

Metallic conduit systems

Type F, B, C90 & M - Adaptasteel

- Straight fitting - fixed internal female thread
- For attaching to external threads & other fittings
- Materials: Nickel Plated Brass

Type F - Adaptasteel

Order code	Nominal Conduit Size	Metric Thread
S20/M20/F	20mm	M20
S25/M25/F	25mm	M25
S32/M32/F	32mm	M32

Approvals	IP Rating	Appropriate Conduit
		For use with: Type S / SS
	IP40	Yes

Temperature Range
Static Applications: -50˚C to +300˚C
Moving Applications: -45˚C to +250˚C

- Straight fitting - fixed external male thread
- For insertion into threaded entries & knockouts using a locknut (order locknuts separately)
- Materials: Nickel Plated Brass

Type B - Adaptasteel

Order code	Nominal Conduit Size	Metric Thread
SP10/M12/B	10mm	M12
SP12/M16/B	12mm	M16
SP16/M16/B	16mm	M16
SP16/M20/B	16mm	M20
SP20/M20/B	20mm	M20
SP25/M25/B	25mm	M25
SP32/M32/B	32mm	M32
SP40/M40/B	40mm	M40
SP50/M50/B	50mm	M50

Approvals	IP Rating	Appropriate Conduit
		For use with: Type / SN / LFH-SP
	IP54	Yes

Temperature Range
Static Applications: -50˚C to +300˚C
Moving Applications: -45˚C to +250˚C

- 90° Combined fitting & elbow
- For insertion into threaded entries & knockouts using a locknut (order locknuts separately)
- Materials: Nickel Plated Brass

Type C90 - Adaptasteel

Order code	Nominal Conduit Size	Metric Thread
SPL16/M16/C90	16mm	M16
SPL16/M20/C90	16mm	M20
SPL20/M20/C90	20mm	M20
SPL25/M25/C90	25mm	M25
SPL32/M32/C90	32mm	M32

Approvals	IP Rating	Appropriate Conduit
		For use with: Type SP / SN / LFH-SP
	IP65	Yes

Temperature Range	Fitting Characteristics
Static Applications: -50˚C to +300˚C	
Moving Applications: -45˚C to +250˚C	

- Coupler
- For coupling separate lengths of liquid tight conduit
- Materials: Nickel Plated Brass, Co-Polyester Seals

Type M - Adaptasteel

Order code	Nominal Conduit Size	US Conduit Size	Bore
SPL16/U/M	16mm	3/8”	M20
SPL20/U/M	20mm	1/2”	M25
SPL25/U/M	25mm	3/4”	M32
SPL32/U/M	32mm	1”	
SPL40/U/M	40mm	1 1/4”	
SPL50/U/M	50mm	1 1/2”	
SPL63/U/M	63mm	2”	

Approvals	IP Rating	Appropriate Conduit
		For use with: Type SPL / SPLHC / SPUL / SPL-EF / LFH-SPL
	IP66	Yes
	IP67	Yes
	IP68	Yes (10 bar 30mins)
	IP69	Yes

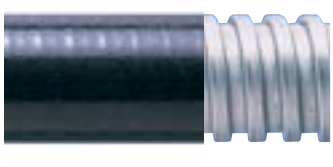
Temperature Range	Fitting Characteristics
Static Applications: -65˚C to +150˚C	
Moving Applications: -45˚C to +150˚C	

Metallic conduit systems

Type SPL & LFH-SPL - Adaptasteel

- Liquid Tight oil resistant covered steel flexible conduit
- Material: PVC covered galvanised steel
- Colour: Black (BL), Grey (GR), Orange (OR)

Type SPL - Adaptasteel



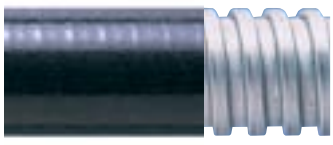
Order code	Nominal Conduit Size	Outside Diameter	US Conduit Size	Inside Diameter	Min. Bend Radius	Reel Length
SPL12	12mm	14.2mm	5/16”	10.0mm	45mm	10, 25, 50m
SPL16	16mm	17.8mm	3/8”	12.5mm	50mm	10, 25, 50m
SPL20	20mm	21.1mm	1/2”	15.9mm	80mm	10, 25, 50m
SPL25	25mm	26.4mm	3/4”	21.0mm	110mm	10, 25, 50m
SPL32	32mm	33.1mm	1”	26.7mm	145mm	10, 25m
SPL40	40mm	41.8mm	1 1/4”	35.4mm	180mm	10, 25m

To order quote order code, colour & reel length, e.g. SPL12/BL/50M

Approvals	IP	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161		For use with: Type SPL	Static Applications: -20˚C to +90˚C	Very High	Medium Flexibility - Medium Fatigue Life	Self Extinguishing
CE LOW VOLTAGE DIRECTIVE	IP66	Type SPL - Type M, C45 & C90	Moving Applications: -5˚C to +105˚C			
c UL us	IP67	Type SPL - Type A, B, M, C45 & C90				
	IP68	Type SPL - Type M, C45 & C90 (10 bar 30 mins)				
	IP69	Type SPL - Type M, C45 & C90				

- Low fire hazard performance covered steel flexible conduit
- Material: Low fire hazard jacket covered galvanised steel
- Colour: Black (BL) only

Type LFH-SPL - Adaptasteel



Order code	Nominal Conduit Size	Outside Diameter	US Conduit Size	Inside Diameter	Min. Bend Radius	Reel Length
LFH- SPL16	16mm	17.0mm	3/8”	13.0mm	50mm	10, 25m
LFH- SPL20	20mm	21.5mm	1/2”	16.9mm	80mm	10, 25m
LFH- SPL25	25mm	26.0mm	3/4”	21.4mm	110mm	10, 25m
LFH- SPL32	32mm	34.0mm	1”	28.1mm	145mm	10, 25m
LFH- SPL40	40mm	44.5mm	1 1/4”	37.7mm	180mm	10m

To order quote order code, colour & reel length, e.g. LFH-SPL16/BL/25M

Approvals	IP	Appropriate Fitting	Temperature Range	UV Resistance	Flexibility & Fatigue Life	Fire Performance & EMI Screen
KM35161 CE LOW VOLTAGE DIRECTIVE		For use with: Type SPL	Static Applications: -20˚C to +90˚C	High	Medium Flexibility - Medium Fatigue Life	Self Extinguishing
UNDERGROUND NF	IP66	Type SPL - Type M, C45 & C90	Moving Applications: -5˚C to +105˚C			Halogen Free
EN45545-2 HL3 - R22 & R23	IP67	Type SPL - Type A, B, M, C45 & C90				ENHANCED ELFH LOW FIRE HAZARD
	IP68	Type SPL - Type M, C45 & C90 (10 bar 30 mins)				
	IP69	Type SPL - Type M, C45 & C90				

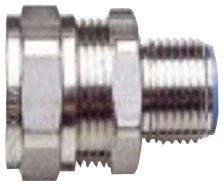
Non-metallic conduit systems

Type M, F - Adaptasteel

- Straight swivel fitting - fixed external male thread
- For insertion into threaded entries & knockouts
- Locknut supplied
- Materials: Nickel Plated Brass

- Straight fitting - fixed external female thread
- For external threads and other fittings
- Materials: Nickel Plated Brass

Type M - Adaptasteel

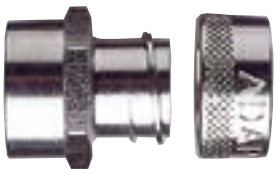


Order code	Nominal Conduit Size	Metric Thread
SP12/M16/M	12mm	M16
SP16/M16/M	16mm	M16
SP16/M20/M	16mm	M20
SP20/M20/M	20mm	M20
SP25/M25/M	25mm	M25
SP32/M32/M	32mm	M32
SP40/M40/M	40mm	M40
SP50/M50/M	50mm	M50

Approvals	IP Rating	Appropriate Conduit
		For use with: Type SP / SN / LFH-SP
	IP65	Yes

Temperature Range	Fitting Characteristics
Static Applications: -50˚C to +150˚C	
Moving Applications: -45˚C to +150˚C	

Type F - Adaptasteel



Order code	Nominal Conduit Size	Metric Thread
SP20/M20/F	20mm	M20
SP25/M25/F	25mm	M25
SP32/M32/F	32mm	M32

Approvals	IP Rating	Appropriate Conduit
		For use with: Type SP / SN / LFH-SP
	IP54	Yes

Temperature Range
Static Applications: -50˚C to +300˚C
Moving Applications: -45˚C to +250˚C

Accessories - Type LNB/LNS & P

- Metallic locknuts
- Materials: Nickel Plated Brass, galvanised steel

- P-clip conduit support
- Materials: Plated steel or stainless steel construction with PVC insert

Type LNB/LNS

Metric Thread	Order code: Nickel Plated Brass	Order code: Galvanised Steel
M12 x 1.0	LNB/M12X1	
M12 x 1.5	LNB/M12	
M16	LNB/M16	LNS/M16
M20	LNB/M20	LNS/M20
M25	LNB/M25	LNS/M25
M32	LNB/M32	LNS/M32
M40	LNB/M40	
M50	LNB/M50	
M63	LNB/M63	
M75	LNB/M75	

Type P

Plated Steel Order code	Stainless Steel Order code	Nominal Conduit Size
PCLIP/10		10
PCLIP/12		12
PCLIP/16	PCLIP/16SS	16
PCLIP/20	PCLIP/20SS	20
PCLIP/25	PCLIP/25SS	25
PCLIP/32	PCLIP/32SS	32
PCLIP/40		40
PCLIP/50		50
PCLIP/63		63
PCLIP/75		75

Ty-Rap® & Ty-Met™ cable ties

Easily bundle, secure & manage cables

ABB offers one of the industry's broadest range of innovative solutions for bundling, securing and routing wire and cable, including the trusted original Ty-Rap® brand, Ty-Met™ fastening products and tools. All designed to perform in the most demanding conditions and to make the task of fastening, bundling and managing wires easier. **new.abb.com/world-of-installation**

Ty-Rap® Ty-Met™

ABB

Ty-Rap® High Performance Cable Ties

Ty-Rap® Product code structure

Tie: **TY**

Dimension code: **XXXXM**

TY C 5 25M X R ☐

C — Material

- "blank" – Standard, Polyamide 6.6
- H – Heat stabilised Polyamide 6.6 (+105 °C)
- HT – High temperature resistant Polyamide 4.6 (+150 °C)
- C – Polyamide 12
- P – Polypropylene
- Z – ETFE Fluoropolymer
- V – ECTFE Fluoropolymer

5 — Packaging size

- "blank" – Standard, 1000/500 pieces
- B – Workbench box, 1000 pieces
- 5 – Small bags 100/50 pieces

X — Material

- X – UV-resistant black
- X-A – UV-resistant black and heat stabilised (+105°C)
- FR – Flame-retardant according to UL 94 V-0
- -NDT – Detectable Polyamide 6.6
- -PDT – Detectable Polypropylene

R — Rack Bag with Euroslot

☐ — Colour

- "blank" = natural
- 0 = black
- 1 = brown
- 2 = red
- 3 = orange
- 4 = yellow
- 5 = green
- 6 = blue
- 7 = purple
- 8 = grey
- 9 = white

Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Ty-Rap® cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

Polyamide 6.6 cable ties - UV-resistant black - Euroslot packaging

Ty-Rap® High Performance Cable Ties

01 Ty-Rap® High Performance Cable Ties

Characteristics

- UV-resistant version, especially recommended for outdoor applications
- Black version (2% carbon for military specifications)
- Packaging in small polythene bags with Euroslot, ideal for display and point-of-sales promotion (rack)
- Several lengths and 6 typical widths with a tensile strength up to 780N, to cover the most demanding applications
- Very convenient for small series production: 100 pieces (for cable ties from 2.4 mm to
- 4.8 mm width) or 50 pieces (for cable ties 6.9 mm width and above)

Technical Information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +105°C
- Colour: See colour chart below
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Order code	MIL Spec.	Length [mm]	Width [mm]	Thickness [mm]	Bundle ø from ... to [mm]	Min. tensile strength [N]	Quantity [pieces]	Tooling
TY5232MR	MS-3367-4	92	2.4	1.0	2 - 16	80	100	
TY5232MR	–	203	2.4	1.0	2 - 50	80	100	
TY5234M*	–	356	2.4	1.0	2 - 102	80	100	
TY524MR	MS-3367-5	140	3.6	1.1	2 - 29	180	100	ERG50 WT193A
TY5242MR	–	204	3.6	1.1	2 - 50	180	100	
TY526MR	–	284	3.6	1.1	2 - 76	130	100	
TY5244MR	–	368	3.6	1.1	2 - 103	130	100	
TY525MR	MS-3367-1	186	4.8	1.3	3.5 - 45	220	100	
TY5253MR	MS-3367-7	295	4.8	1.3	3.5 - 78	220	100	ERG50 ERG120
TY528MR	MS-3367-2	361	4.8	1.4	3.5 - 102	220	100	WT193A
TY5271MR	–	150	7.6	1.5	6 - 31	540	50	
TY5272MR	–	223	6.9	1.6	6 - 50	540	50	
TY527MR	MS-3367-3	340	6.9	1.6	6 - 90	540	50	
TY5275M*	–	457	6.9	1.6	6 - 127	540	50	ERG120 L-500-EU
TY5277M*	–	617	6.9	1.6	6 - 177	540	50	
TY529M*	MS-3367-6	771	6.9	1.6	6 - 229	540	50	

*Product References TY5234M, TY5275M, TY5277M and TY529M have no Euroslot

01

For cable ties in a specific colour, replace * in the Product Reference by the colour code:
0 = black, 1 = brown, 2 = red, 3 =orange, 4 = yellow, 5 = green, 6 = blue, 7 = purple, 8 = grey and 9 = white

For example: TY23M-1 defines a brown TY23M cable tie.
Contact your Sales Office for product availability.

** For smaller quantities, the figure “5” needs to be added to the order code immediately after “TY” - example: TY523M-2 is the same as TY23M-2 but in bags of 100

** Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations.

All plastic cable ties

Ty-Rap® Product code structure

Tie		Dimension code		
TY		**XXXX**		
TY	**100**	**18**	**X**	**100**
Tie Width Code	Tie Length Code	Tie Width/ Tensile Strength Code	Colour / Material	Packaging Code
Standard cable ties with a width up to 13.2 mm	for lengths from 112 mm up to 1214 mm	18 = 2.4 mm / (80N) 30 = 3.3 mm / (130N) 40 = 3.6 mm / (180N) 50 = 4.6 mm / (220N) 120 = 7.6 mm / (540N) 175 = 8.8 mm / (780N) 250 = 13.2 mm / (1120N)	All product references are made of halogen free Polyamide 6.6, UL 94 V-2, operating temperature -40°C to +85°C blank = natural X = black, UV-stabilised 1 = brown 2 = red 3 = orange 4 = yellow 5 = green 6 = blue 7 = purple 8 = grey 9 = white 39 = Heat stabilised, temperature range: -40°C to +105°C, natural	[Blank] = Bulk packaging (1000 / 500 / 50 ties according to the size of the tie) 50 = 50 ties in a bag with Euroslot (only for Prod. Ref. TY400-120) 100 = 100 ties in a bag with Euroslot (not available for Prod. Ref. TY400-120, TY450-120, TY600-120 & TY800-120)

Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Ty-Rap® cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

Standard cable ties

All-plastic cable ties

01 All-plastic cable ties

Characteristics

State-of-the-art robotic and raw material handling equipment assures product and material integrity throughout the manufacturing process.

- The integrally formed Polyamide pawl combines low insertion and high locking strength
- A rounded, low-profile head makes for less snags
- Tails have improved two-sided finger grip design that helps the operator grasp and pull ties snug
- Sure Grip tab keeps the tail from popping out while being threaded, then holds it securely for final tightening by hand or tool
- Quick and easy pull through increases productivity, reduces operator fatigue

Technical Information

- Material: Polyamide 6.6 (*)
- Temperature range: -40°C to +85°C
- Colour: Natural as standard colour (*)
- Approvals: MIL: MS 3367-x (see table)
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Order code	MIL Spec.	Length [mm]	Width [mm]	Bundle ø from ... to [mm]	Min. tensile strength [N]	Quantity [pieces]	Tooling
TY100-18	MS-3367-4	112	2.4	1.6 - 25	80	1000	
TY125-18	–	136	2.4	1.6 - 32	80	1000	
TY150-18	–	163	2.4	1.6 - 38	80	1000	
TY125-30	–	143	3.3	1.6 - 32	130	1000	ERG50
TY125-40	MS-3367-5	141	3.6	1.6 - 32	180	1000	WT193A
TY200-40	–	205	3.6	1.6 - 50	180	1000	
TY300-40	–	290	3.6	1.6 - 76	180	1000	
TY400-40	–	368	3.6	1.6 - 102	180	1000	
TY125-50	–	140	4.6	1.6 - 25	220	1000	
TY175-50	MS-3367-1	186	4.6	1.6 - 44	220	1000	ERG50
TY225-50	–	226	4.6	1.6 - 57	220	1000	ERG120
TY300-50	MS-3367-7	291	4.6	1.6 - 76	220	1000	WT193A
TY400-50	MS-3367-2	366	4.6	1.6 - 102	220	1000	
TY200-120	–	219	7.6	4.8 - 50	540	500	
TY300-120	–	289	7.6	4.8 - 76	540	100	ERG120
TY400-120	MS-3367-3	375	7.6	4.8 - 102	540	50 /100	L-500-EU
TY450-120	–	457	7.6	4.8 - 123	540	50	WT3D
TY600-120	–	610	7.6	4.8 - 177	540	50	
TY800-120	MS-3367-6	706	7.6	4.8 - 203	540	50	

01

** Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations.

Standard cable ties

Stainless steel cable ties

— 01 Stainless steel cable ties

Characteristics

The Ball-Lock Type stainless steel ties from ABB are self-locking, requiring no time consuming crimping or folding operations.

- Strong self-locking mechanism (stainless steel ball), with low insertion force
- Fast, easy and reliable installation
- Heavy-duty version (12 mm & 16 mm of width), for extreme applications, indoor and outdoor
- Uncoated version, suitable for high temperature environments
- Corrosion resistant 316 grade stainless steel (marine grade) for high mechanical and chemical durability
- Applications: installation of cables and pipes in extreme conditions and hazardous areas, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

Technical Information

- Material: 316 grade non-magnetic stainless steel
- Temperature range: -80°C to +300°C
- Colour: Metallic
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant

Order code	Length [mm]	Width [mm]	Material thickness [mm]	Bundle ø from ... to [mm]	Min. tensile strength [N]	Quantity [pieces]	Tooling
YLS-12-200B	200	12.0	0.32	25-50	2670	50	
YLS-12-300B	300	12.0	0.32	25-83	2670	50	
YLS-12-360B	360	12.0	0.32	25-100	2670	50	
YLS-12-440B	440	12.0	0.32	25-125	2670	50	
YLS-12-520B	520	12.0	0.32	25-150	2670	50	
YLS-12-600B	600	12.0	0.32	25-175	2670	50	CT3
YLS-12-680B	680	12.0	0.32	25-200	2670	50	CT7
YLS-12-760B	760	12.0	0.32	25-225	2670	50	
YLS-12-840B	840	12.0	0.32	25-250	2670	50	
YLS-12-1000B	1000	12.0	0.32	25-300	2670	25	
YLS-12-1200B	1200	12.0	0.32	25-365	2670	25	
YLS-12-1400B	1400	12.0	0.32	25-425	2670	25	
YLS-16-200B	200	16.0	0.32	40-50	3110	50	
YLS-16-300B	300	16.0	0.32	40-80	3110	50	
YLS-16-360B	360	16.0	0.32	40-100	3110	50	
YLS-16-440B	440	16.0	0.32	40-125	3110	50	
YLS-16-520B	520	16.0	0.32	40-150	3110	50	
YLS-16-600B	600	16.0	0.32	40-185	3110	50	CT7
LS-16-680B	680	16.0	0.32	40-200	3110	50	
YLS-16-760B	760	16.0	0.32	40-225	3110	50	
YLS-16-840B	840	16.0	0.32	40-250	3110	50	
YLS-16-1000B	1000	16.0	0.32	40-300	3110	25	
YLS-16-1200B	1200	16.0	0.32	40-365	3110	25	
YLS-16-1400B	1400	16.0	0.32	40-425	3110	25	

—
01

ABB Lighting solutions

Join us one step ahead in safety

Whether planning, installing, managing or renewing(emergency) lighting ABB always offer smart, state-of-the-art, highly user friendly solutions. Our range contains: lighting, emergency lighting, AC and DC central battery systems, explosion proof lighting, photo-electronics and advanced monitoring safety systems. **new.abb.com/world-of-installation**

Timers & switches
Introduction

The Timers & Switches range from ABB's Elkay range Electrical provides a simple and highly cost effective way of saving energy, which can be easily installed in existing buildings as it can be incorporated into new build schemes.

With a wide choice of timer controls for lighting and other types of electrical loads, products across the Energy Sense range provide a fast track route to substantial reduction both in energy bills and carbon emissions.

From the Columbus® pneumatic time delay switch to intelligent pushbutton, touch and PIR timers, the Elkay range offers extensive features, attractive styling and practical solutions.

Outdoor timers & switches
Energy saving can now be extended to suit your outdoor requirements. With the brand new range of Outdoor Timers & Switches, ambient and security lighting and power applications can be timer controlled in outdoor environments including parking areas and gardens.

Designed to give an IP rating of IP66, the easy to fit products are supplied complete with an enclosure, mounting screws, nylon washers and screw cover seals and are suitable for use with IP rated SWA, M20 cable glands or ATS Flexible conduit systems.

Offering a choice of push button, touch and PIR giving functionality, style and durability to outdoor energy saving.

Overview
Presence detectors

Presence detectors 230 V
Compact devices for almost every application.

Busch-Watchdog Presence tech
Versatile due to modular construction.

Busch-Watchdog Presence tech BasicLINE
For small offices, toilets, pass-through areas and dedicated applications.

Busch-Presence detectors KNX
Expertise always works. Almost unnoticed.

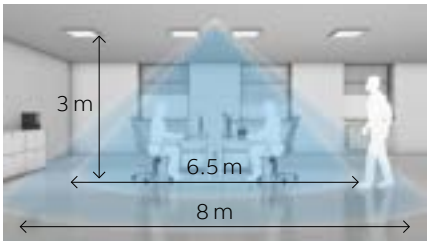
Technical data

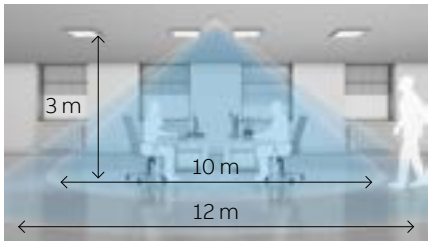
Presence detectors 230 V

NEW

NEW

Products	Busch-Presence detector Compact, relay	Busch-Presence detector Universal, relay
Article number	6819/60-24-500 6819/60-183-500	6819/30-24-500 6819/30-183-500
Devicetype	Master[1)]	Master[1)]
Half- / automatic / comfort automatic mode	yes / yes / -	yes / yes / -
Detection range:		
Mounting height	2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m
sitting	5 m / 6.5 m / -	8 m / 10 m / -
walking (lateral / diagonal)	6.5 m / 8 m / 10.5 m	10 m / 12 m / 16 m
walking (frontal)	4.5 m / 6 m / 7 m	7 m / 8 m / 10 m
Sensitivity adjustment	-	-
Number of channels	1	1
Load[2)]:		
LEDi	200 VA	200 VA
LEDs with converter	200 VA	200 VA
Incandescent lamps	2300 W	2300 W
HV halogen lamps	2300 W	2300 W
LV halogen lamps with electr. transformer	2300 VA	2300 VA
Flourescent lamps	2300 VA	2300 VA
Electr. fan engines	-	-
Inrush current max.:	165 A / 20 ms // 350 A / 200 µs	165 A / 20 ms // 350 A / 200 µs
2-stage power-off (EN15232)	-	-
PIR / individually activated	4 / -	4 / -
2 light bands / HVAC / backboard light	- / - / -	- / - / -
Intern brightness sensor	yes	yes
Remote controlable	yes, via IR service-remote control 6843	yes, via IR service-remote control 6843
False ceilings via spring brackets	yes	yes
Surface mounted	-	-
Flush-mounting	-	-
Mounting depth (fm box / ceiling mount):	- / 49 mm	- / 49 mm
Mounting dimensions:	Ø 68 mm	Ø 68 mm
Visible hight:	23 mm	23 mm
Protection class (sensor / actuator)	IP 40	IP 40



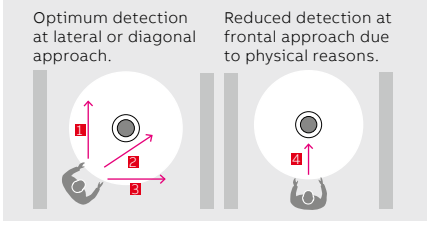


1 Lateral approach to the detector.

2 Diagonal approach to the detector.

3 Lateral approach to the detector.

4 Frontal approach to the detector.



Technical details

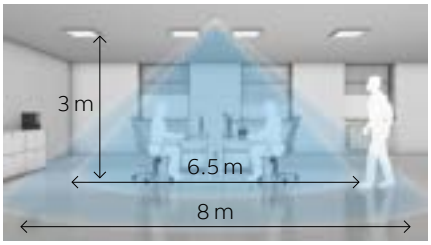
The Busch-Presence detectors consist of two parts lense and 4 PIR sensors. The maximum detection range depends on the mounting site and ambient conditions.

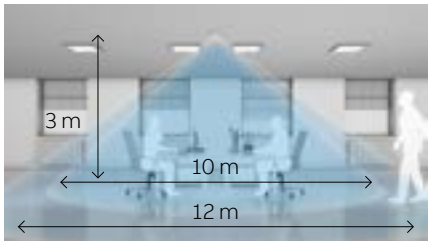
NEW

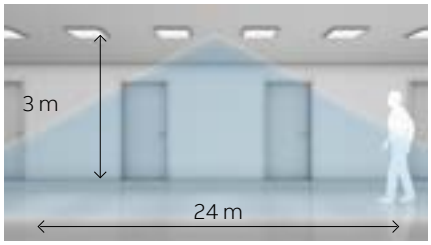
NEW

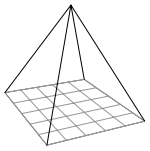
NEW

Busch-Presence detector Compact, e-contact	**Busch-Presence detector Universal, e-contact**	**Busch-Presence detector Corridor, relay**
6817/62-24-500 6817/62-183-500	6817/32-24-500 6817/32-183-500	6819/50-24-500 6819/50-183-500
Master[1)]	Master[1)]	Master[1)]
yes / yes / -	yes / yes / -	yes / yes / -
2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m
5 m / 6.5 m / -	8 m / 10 m / -	- / - / -
6.5 m / 8 m / 10.5 m	10 m / 12 m / 16 m	24 m x 2.5 m / 24 m x 3 m / 24 m x 3 m
4.5 m / 6 m / 7 m	7 m / 8 m / 10 m	14 m x 2.5 m / 14 m x 3 m / 14 m x 3 m
-	-	-
1	1	1
3 - 200 VA	3 - 200 VA	200 VA
3 - 200 VA	3 - 200 VA	200 VA
3 - 200 W	3 - 200 W	2300 W
3 - 200 W	3 - 200 W	2300 W
3 - 200 VA	3 - 200 VA	2300 VA
3 - 200 VA	3 - 200 VA	2300 VA
-	-	-
165 A / 20 ms // 350 A / 200 µs	165 A / 20 ms // 350 A / 200 µs	165 A / 20 ms // 350 A / 200 µs
-	-	-
4 / -	4 / -	4 / -
- / - / -	- / - / -	- / - / -
yes	yes	yes
yes, via IR service- remote control 6843	yes, via IR service- remote control 6843	yes, via IR service- remote control 6843
yes	yes	yes
-	-	-
-	-	-
- / 36 mm	- / 36 mm	- / 49 mm
Ø 68 mm	Ø 68 mm	Ø 68 mm
23 mm	23 mm	27 mm
IP 40	IP 40	IP 40

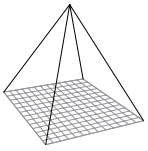








—
Detection system of conventional movement detectors



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Busch-Presence detection system

There is no better way.
The detection system consisting of four sensors and mirrors is far superior to conventional movement sensors. Even the smallest movement is reliably detected and triggers a response.

[1)] Slave version available
[2)] at 230 V~ main voltage

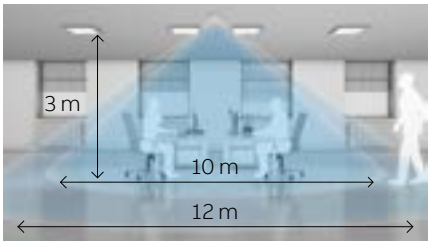
Technical data

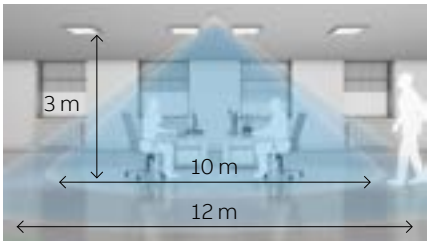
Presence detectors 230 V

NEW

NEW

Products	Busch-Presence detector Universal BT, relay	Busch-Presence detector Universal BT, e-contact
Article number	6819/31-24-500 6819/31-183-500	6819/33-24-500 6819/33-183-500
Devicetype	Master[1)]	Master[1)]
Half- / automatic / comfort automatic mode	yes / yes / yes	yes / yes / yes
Detection range:		
Mounting height	2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m
sitting	8 m / 10 m /-	8 m / 10 m / -
walking (lateral / diagonal)	10 m / 12 m / 16 m	10 m / 12 m / 16 m
walking (frontal)	7 m / 8 m / 10 m	7 m / 8 m / 10 m
Sensitivity adjustment	yes	yes
Number of channels	1	1
Load[2)]:		
LEDi	200 VA	3 - 200 VA
LEDs with converter	200 VA	3 - 200 VA
Incandescent lamps	2300 W	3 - 200 W
HV halogen lamps	2300 W	3 - 200 W
LV halogen lamps with electr. transformer	2300 VA	3 - 200 VA
Flourescent lamps	2300 VA	3 - 200 VA
Electr. fan engines	-	-
Inrush current max.:	165 A / 20 ms // 350 A / 200 µs	165 A / 20 ms // 350 A / 200 µs
2-stage power-off (EN15232)	-	-
PIR / individually activated	4 / 4	4 / 4
2 light bands / HVAC / backboard light	- / - / -	- / - / -
Intern brightness sensor	yes	yes
Remote controlable	yes, Smartphone APP via Bluetooth	yes, Smartphone APP via Bluetooth
False ceilings via spring brackets	yes	yes
Surface mounted	-	-
Flush-mounting	-	-
Mounting depth (fm box / ceiling mount):	- / 49 mm	- / 36 mm
Mounting dimensions:	Ø 68 mm	Ø 68 mm
Visible hight:	23 mm	23 mm
Protection class (sensor / actuator)	IP 40	IP 40



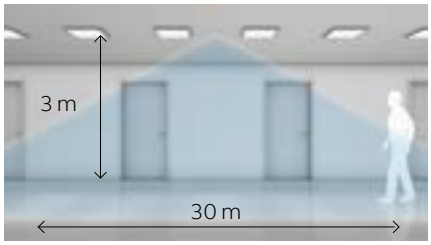


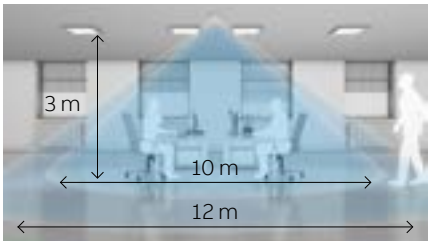
NEW

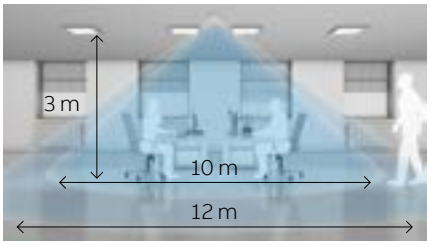
NEW

NEW

Busch-Presence detector Corridor BT, relay	Busch-Presence detector Universal BT, e-contact with sealing ring	Busch-Presence detector Universal BT, DALI
6819/51-24-500 6819/51-183-500	6817/93-24-500 6817/93-183-500	6819/35-24-500 6819/35-183-500
Master[1)]	Master[1)]	Master[1)]
yes / yes / yes	yes / yes / yes	yes / yes / yes
2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m
- / - / -	8 m / 10 m / -	8 m / 10 m / -
24 m x 2.5 m / 30 m x 3 m / 30 m x 3 m	10 m / 12 m / 16 m	10 m / 12 m / 16 m
18 m x 2.5 m / 20 m x 3 m / 20 m x 3 m	7 m / 8 m / 10 m	7 m / 8 m / 10 m
yes	yes	yes
1	1	2
200 VA	3 - 200 VA	200 VA
200 VA	3 - 200 VA	200 VA
2300 W	3 - 200 W	1380 W
2300 W	3 - 200 W	1380 W
2300 VA	3 - 200 VA	1380 VA
2300 VA	3 - 200 VA	1380 VA
-	-	1380 VA
165 A / 20 ms // 350 A / 200 µs	165 A / 20 ms // 350 A / 200 µs	165 A / 20 ms // 350 A / 200 µs
-	-	yes
4 / 4	4 / 4	4 / 4
- / - / -	- / - / -	- / yes / yes
yes	yes	yes
yes, Smartphone APP via Bluetooth	yes, Smartphone APP via Bluetooth	yes, Smartphone APP via Bluetooth
yes	yes	yes
-	-	-
-	-	-
- / 49 mm	- / 36 mm	- / 60 mm
Ø 68 mm	Ø 68 mm	Ø 68 mm
27 mm	23 mm	23 mm
IP 40	IP 41	IP 40







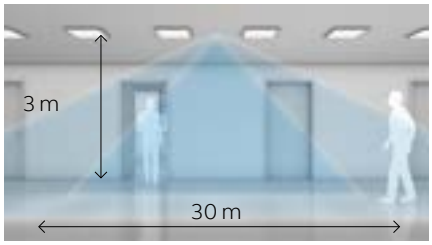
[1)] Slave version available
[2)] at 230 V~ main voltage

Technical data

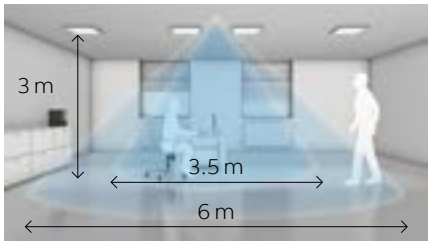
Presence detectors 230 V

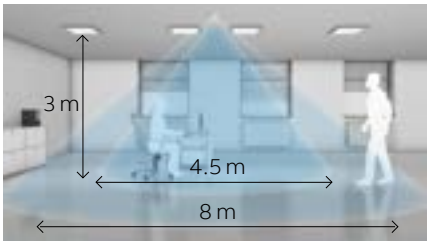
NEW

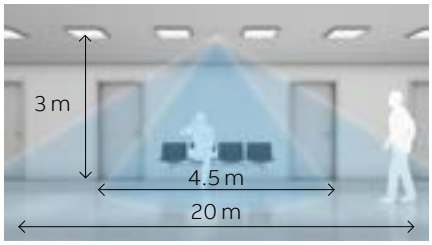
Products	**Busch-Presence detector Corridor BT, DALI**
Article number	6819/55-24-500 6819/55-183-500
Devicetype	Master[1)]
Half- / automatic / comfort automatic mode	yes / yes / yes
Detection range:	
Mounting height	2.5 m / 3 m / 4 m
sitting	- / - / -
walking (lateral / diagonal)	24 m x 2,5 m / 30 m x 3 m / 30 m x 3 m
walking (frontal)	18 m x 2,5 m / 20 m x 3 m / 20 m x 3 m
Sensitivity adjustment	yes
Number of channels	2
Load[2)]:	
LEDi	200 VA
LEDs with converter	200 VA
Incandescent lamps	1380 W
HV halogen lamps	1380 W
LV halogen lamps with electr. transformer	1380 VA
Flourescent lamps	1380 VA
Electr. engines	1380 VA
Inrush current max.:	165 A / 20 ms // 350 A / 200 µs
2-stage power-off (EN152321)	yes
PIR / individually activated	4 / 4
2 light bands / HVAC / backboard light	- / yes / yes
Intern brightness sensor	yes
Remote controlable	yes, Smartphone APP via Bluetooth
False ceilings via spring brackets	yes
Surface mounted	-
Flush-mounting	-
Mounting depth (fm box / ceiling mount):	- / 60 mm
Mounting dimensions:	Ø 68 mm
Visible hight:	27 mm
Protection class (sensor / actuator)	IP 40



Busch-Watchdog Presence tech BasicLINE mini	Busch-Watchdog Presence tech BasicLINE	Busch-Watchdog Presence tech BasicLINE Corridor
6811 EB-500	6814 U-500	6818 U-500
Single device	Single device	Single device
- / yes / -	yes / yes / -	- / yes / -
2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m
3 m / 3.5 m / -	4 m / 4.5 m / -	4 m / 4.5 m / -
5 m / 6 m / 8 m	7 m / 8 m / 10 m	24 m / 20 m / -
ns	4 m / 3 m / 2 m	ns
yes	-	-
1	1	1
200 VA	200 VA	200 VA
200 VA	200 VA	200 VA
2000 W	2000 W	2000 W
1000 W	1000 W	1000 W
2000 VA	2000 VA	2000 VA
1000 VA	1000 VA	1000 VA
-	-	-
80 A / 20 ms	80 A / 20 ms	80 A / 20 ms
-	-	-
1 / -	1 / -	4 / -
- / - / -	- / - / -	- / - / -
yes	yes	yes
-	-	yes, via IR service-remote control 6843
yes	yes	yes
-	-	yes
-	yes	yes
180 mm	28 mm / 41 mm	18 mm / 48 mm
32 mm	65 mm	64 mm
10 mm	31 mm	57 mm
IP 40 / IP 20	IP 40	IP 40 / IP 54[3]





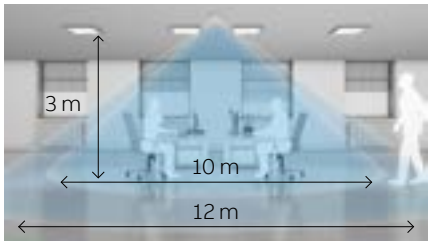


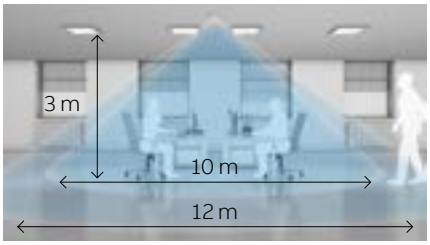
[1] Slave version available
[2] at 230 V~ main voltage
[3] only with surface mount box

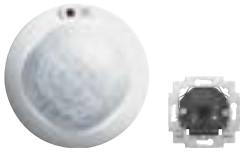
Technical data

Presence detectors 230 V

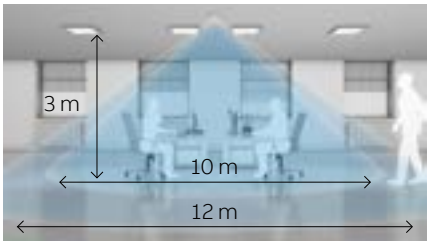
Products	Busch-Watchdog Presence tech	Busch-Watchdog Presence tech
Article number	6813-101-500 & 6401 U-102-500 6813-183-101-500 & 6401 U-102-500	6813-101-500 & 6402 U-500 6813-183-101-500 & 6402 U-500
Devicetype	Master[1)]	Master[1)]
Half- / automatic / comfort automatic mode	- / yes / -	- / yes / -
Detection range:		
Mounting height	2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m
sitting	8 m / 10 m / -	8 m / 10 m / -
walking (lateral / diagonal)	10 m / 12 m / 16 m	10 m / 12 m / 16 m
walking (frontal)	6 m / 7 m / 9 m	6 m / 7 m / 9 m
Sensitivity adjustment	-	-
Number of channels	1	2
Load[2)]:		
LEDi	200 VA	200 VA
LEDs with converter	200 VA	200 VA
Incandescent lamps	2300 W	2300 W
HV halogen lamps	2300 W	2300 W
LV halogen lamps with electr. transformer	2300 VA	2300 VA
Flourescent lamps	2300 VA	2300 VA
Electr. engines	-	-
Inrush current max.:	80 A / 20 ms	80 A / 20 ms
2-stage power-off (EN152321)	-	-
PIR / individually activated	4 / -	4 / -
2 light bands / HVAC / backboard light	- / - / -	- / yes / -
Intern brightness sensor	yes	yes
Remote controlable	yes, via IR remote control 6010-25	yes, via IR remote control 6010-25
False ceilings via spring brackets	-	-
Surface mounted	yes	yes
Flush-mounting	yes	yes
Mounting depth (fm box / ceiling mount):	32 mm / -	32 mm / -
Mounting dimensions:	-	-
Visible hight:	51 mm	51 mm
Protection class (sensor / actuator)	IP 20	IP 20

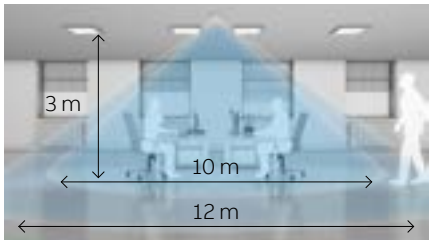






Busch-Watchdog Presence tech DualLINE	Busch-Watchdog Presence tech DualLINE
6813/11-24-500 & 6402 U-500 6813/11-183-500 & 6402 U-500	6813/11-24-500 & 6550 U-101-500 6813/11-183-500 & 6550 U-101-500
Master[1)]	Master[1)]
yes / yes / -	yes / yes / -
2.5 m / 3 m / 4 m	2.5 m / 3 m / 4 m
8 m / 10 m / -	8 m / 10 m / -
10 m / 12 m / 16 m	10 m / 12 m / 16 m
6 m / 7 m / 9 m	6 m / 7 m / 9 m
-	-
2	1
200 VA	-
200 VA	200 VA
2300 W	-
2300 W	-
2300 VA	-
2300 VA	700 VA
-	-
80 A / 20 ms	-
-	-
4 / -	4 / -
yes / - / -	- / - / -
yes	yes
yes, via IR remote control 6010-25	yes, via IR remote control 6010-25
-	-
yes	yes
yes	yes
32 mm / -	32 mm / -
-	-
51 mm	51 mm
IP 20	IP 20





[1)] Slave version available
[2)] at 230 V~ main voltage

Technical data

Elkay timers & switches

Products Reference	**Columbus® Timer** 400A	**Columbus® Timer** 400A-3	**Columbus® Electronic Timer** 400E
Configuration	Single contacts	Double contacts	–
Colour	White	White	White
Hidden screws	•	•	•
Fascia plate height	10 mm	10 mm	10 mm
Back box depth (not supplied)	10 mm	10 mm	10 mm
Max Load Rating @240V Resistive / Incandescent	6A	6A	2A
Max Load Rating @240V Fluorescent	3A (max 6 fittings)	3A (max 6 fittings)	2A (max 6 fittings)
Max Load Rating @240V Compact Fluorescent	3A (max 6 fittings)	3A (max 6 fittings)	2A (max 6 fittings)
Max Load Rating @240V LED	3A	3A	2A
Blue locator ring	–	–	–
Red signal LED	–	–	–
Neutral required	–	–	–
Timing range	5sec - 5min	5sec - 5min	20sec - 25min
LUX Level Adjustment	–	–	–
Timing cancellation	–	–	–
Illuminated switches	–	–	–
Intelligent power search facility	–	–	–
Use with contactor	•	•	-
GID code	7TCA299000R0001	7TCA299000R0002	7TCA299000R0008

Products Reference	**PIR Timer** 370A-1	**PIR Slave Electronic Timer** 376A-3	**Ceiling Mount PIR Timer** 374B-1
Configuration	3 Wire	3 Core connection	3 Wire
Colour	White	White	White
Hidden screws	•	•	–
Fascia plate height	8 mm	8 mm	4 mm
Back box depth (not supplied)	25 mm	25 mm	55 mm
Max Load Rating @240V Resistive / Incandescent	16A	16A	10A
Max Load Rating @240V Fluorescent	16A	16A	10A
Max Load Rating @240V Compact Fluorescent	16A	16A	10A
Max Load Rating @240V LED	16A	16A	10A
Blue locator ring	•	•	–
Red signal LED	•	•	•
Neutral required	•	–	•
Sensitivity Control	–	–	–
Timing range	2min - 1h	–	2min - 1h
LUX Level Adjustment	•	•	•
Timing cancellation	•	•	–
Illuminated switches	•	•	•
Timing Re-Trigger	–	–	–
Intelligent power search facility	N/A	N/A	•
Use with contactor	•	–	•
GID code	7TCA299010R0020	7TCA299010R0040	7TCA299030R0007

Touch Timer 360A-1	**Touch Timer** 2235A-1	**Touch Slave** 360A-3	**PIR Timer** 376A-1
2 Wire	3 Wire	3 Core connection	2 Wire
White	White	White	White
•	•	•	•
8 mm	8 mm	8 mm	8 mm
25 mm	25 mm	25 mm	25 mm
16A	16A	16A	16A
16A	16A	16A	16A
16A	16A	16A	16A
16A	16A	16A	16A
•	•	•	•
•	•	•	•
–	•	–	–
2min - 2h	2min - 2h	–	2min - 1h
–	–	–	•
•	•	•	•
•	•	•	•
•	N/A	N/A	•
-	•	–	–
7TCA299010R0016	7TCA299010R0003	7TCA299010R0018	7TCA299010R0037

Microwave Timer 380A-1	**Pushbutton Timer** 550A-1	**Pushbutton Slave** 550A-5
3 Wire	3 Wire	–
White	White	White
•	•	•
8 mm	8 mm	8 mm
35 mm	65 mm	65 mm
16A	16A	16A
16A	16A	16A
16A	16A	16A
16A	16A	16A
–	•	•
•	•	•
•	•	–
•	–	–
2min - 2h	2min - 2h	–
•	–	•
–	•	•
•	–	–
–	•	•
N/A	N/A	N/A
•	•	–
7TCA299010R0042	7TCA299010R0059	7TCA299010R0063

DALI
What is DALI?

DALI (Digital Addressable Lighting Interface) is a data protocol and transport mechanism that was jointly developed and specified by several manufacturers of lighting equipment.

It is essentially a network connected by a pair of cables and powered by a power supply. The common platform of DALI enables equipment from different manufacturers to be connected together.

Elkay's easyDALi is designed to work with all DALI compliant equipment displaying the DALI logo*

DALI ballasts have two addresses:
Short address - This is a 6 bit number, which allows a maximum of 64 devices on a DALI network. Each DALI device must have a unique address, which is frequently used for normal control of the DALI system.

Long Address - this is a 24 bit value that is primarily used for commissioning of the ballast.

Maximum number of devices	64
Number of Groups	16 (15 + 1)** 2
Data Cable	wires 1200bps
Data Rate (bps)	18V DC 250mA
Network Power Supply	

Put simply, DALI (digital addressable lighting interface) is a two-way communication system that brings digital technology to lighting.
An international standard for communication, DALI defines the commands that ballasts need to recognize in order to be considered DALI ballasts. The system allows individual ballasts to "talk" to the user and allows the user to "talk" back via DALI controllers.

Elkay
The easyDALi System

For controlling standard lighting or self-contained emergency lighting, Elkay's easyDALi solution has been designed to make the installation and set-up of an intelligent lighting control system simple, easy and accessible. Through its ease of installation and commissioning, the need for expensive commissioning tools is removed, reducing project costs and other potential overheads.

—
01 DALI
multi-Purpose Box
—
02 DALI
power Supply Unit
—
03 DALI
easyDALi PIR
—
04 DALI
remote Controller

Lighting controls, particularly in commercial buildings, can form a key aspect in the drive to reduce energy consumption and carbon emissions, while reducing energy spend. Elkay easyDALI system helps to reduce these lighting costs.

Elkay has achieved this by making the first range of sensors that can automatically configure DALI lighting ballasts, as well as the more commonly used broadcast mode.

In a brand new 'out of the box' installation of new DALI luminaires and with a new Elkay easyDALi PIR, you can simply wire the lighting, the power supply and the PIR together with the multi-purpose box and simply accept the default settings of...
- Broadcast mode
- Timing
- Daylight Harvesting

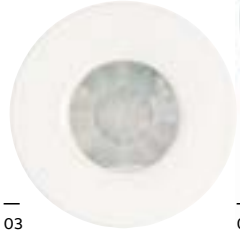
...and the PIR, with just a few pushes of the remotecontrol, will find and address all luminaire control gear on the network and the installation is complete.

For facility managers and commercial building owners, Elkay's easyDALi system now provides inexpensive control and flexible management of the lighting plan, without the expense of engineers, at the start and during the lifetime of the installation.

A DALI lighting control system can be used to cover a small area of luminaires or can be connected to other DALI devices to create a much larger system. Elkay's easyDALi system can be used to configure up to 64 ballasts or used as part of a much wider overall lighting strategy, connecting many hundreds of separate DALI networks on different floors of a building for example, forming them into a coherent building lighting control system.

—
01

—
02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03

—
04

Technical data

Elkay easyDALi range

Elkay easyDALi PIR	Elkay easyDALi Dual Purpose Remote Control	Elkay easyDALi Power Supply	Elkay easyDALi multi-purpose box
Part No. 374-CMPIRDALI	**Part No.** 374-DREM	**Part No.** 374-PSU	**Part No.** 374-DMBOX
Order Code: 7TCA299030R0032	**Order Code:** 7TCA299030R0034	**Order Code:** 7TCA299030R0035	**Order Code:** 7TCA299030R0033
Features: • Presence and absence • Detection • Automatic daylight • Harvesting • Settable time modes including 4 room options and 4 corridor options • Basic luminaire set up without commissioning tools • Broadcast and group functions • Manual lux level and sensitivity control • Walk test • 360˚ detection • 6-7m detection range • Coloured feedback LEDs • Can control LED and fluorescent DALI luminaires	**Features:** • Dual Purpose control options for end user and installers • Sets all non-default functions • Sets timing room modes and corridor modes • Sets min arc levels • 25%, 50% and 100% brightness pre sets • Override functions • Remote lux control • Remote feedback LEDs • 3 x AAA batteries supplied	**Features:** • For use with Elkay easyDALi system • Powers DALI network of PIRS and lighting ballasts • Thermal and overload protection • Connected to multipurpose connection box • 18V d.c. 250mA	**Features:** • Maximum 10A rating per box • 8 Multiple connections per box • Connects power supply for Elkay easyDALi network • Can control LED and fluorescent DALI luminaires

Lighting and emergency lighting

Join us one step ahead in safety

The Emergi-Lite concept is clear and simple. Providing you a reliable, total solution for safe evacuation. The way in which we do this is what makes the difference. We offer advantages to everybody involved throughout the life-cycle process. That way, you know that Emergi-Lite is always the right choice, for both you and your customers. **new.abb.com/world-of-installation**

EMERGI-LITE®

ABB

Indulux escape route signalisation

Industrial & design

Indulux escape route signalisation

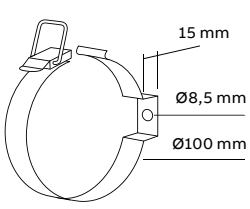
- **Easy to install**
  Mounting, wiring and expanded flexibility
- **Reliable in extreme conditions**
  Stainless steel solution resisting dust and water (IP68)
- **Speed up your projects**
  Rapid maintenance with sliding electronic base module

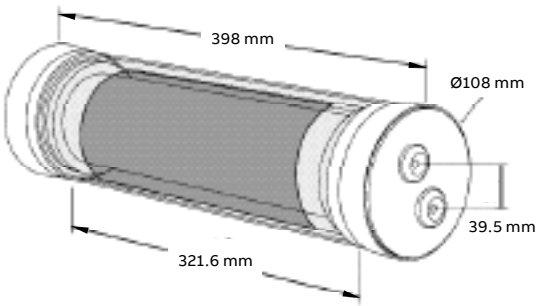
Luminaire

Order Code	Input voltage	Description	Lamp type	Power consumption** (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)
7TCA091720R0091	220 - 240 Vac, 50 Hz	RS100E	2 x 1.5W LED*	10/4.8	3	0 - +25	0.425
7TCA091720R0092	220 - 240 Vac, 50 Hz	SM100E	2 x 1.5W LED*	9/4.5	3	0 - +25	0.425

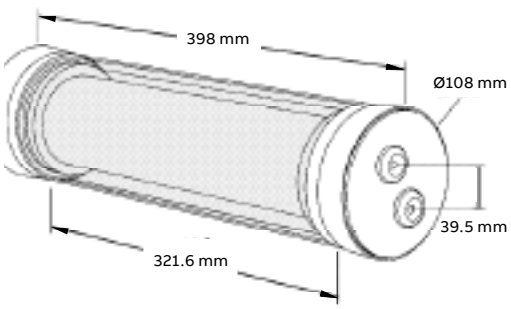
* = 3W LED
** maintained mode

Indulux escape route signalisation





Indulux escape route lighting



Indulux escape route lighting

Industrial & design

Indulux escape route lighting

- **Easy to install**
  Mounting, wiring and expanded flexibility
- **Reliable in extreme conditions**
  Stainless steel solution resisting dust and water (IP68)
- **Speed up your projects**
  Rapid maintenance with sliding electronic base module

Luminaire

Order Code	Input voltage	Description	Lamp type	Power consumption** (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)
7TCA091720R0091	220 - 240 Vac, 50 Hz	RS100E	2 x 1.5W LED*	10/4.8	3	0 - +25	0.425
7TCA091720R0092	220 - 240 Vac, 50 Hz	SM100E	2 x 1.5W LED*	9/4.5	3	0 - +25	0.425

* = 3W LED
** maintained mode

Self contained 1hr & slave version
MF 0.8 - 1.0 lx

h (m)	Ya	Yb	Xa	Xb
3.5	2.8	8.3	6.4	14.2
4.0	2.7	8.2	7.0	15.8
4.5	2.7	8.0	7.9	17.3
6.0	3.0	7.8	9.8	22.0
8.0	3.5	8.5	12.6	27.7
10.0	4.0	9.7	15.2	33.6
12.0	4.3	10.8	17.6	39.2
16.0	3.7	12.4	21.1	49.2

Self contained 1hr & slave version
MF 0.8 - 1.0 lx

h (m)	Ya	Yb	Xa	Xb
3.5	5.4	12.4	5.4	12.4
4.0	6.0	13.7	6.0	13.7
4.5	6.3	14.9	6.3	14.9
6.0	7.3	17.7	7.3	17.7
8.0	8.2	20.4	8.2	20.4
10.0	8.3	22.5	8.3	22.5
12.0	7.4	23.9	7.4	23.9
16.0	0.0	15.5	0.0	15.5

Self contained 1hr & slave version
MF 0.8 - 0.5 lx

h (m)	Ya	Yb	Xa	Xb
3.5	6.1	13.3	6.1	13.3
4.0	6.8	14.8	6.8	14.8
4.5	7.3	16.3	7.3	16.3
6.0	8.7	20.4	8.7	20.4
8.0	10.1	24.4	10.1	24.4
10.0	11.0	27.3	11.0	27.3
12.0	11.9	29.7	11.9	29.7
16.0	11.1	33.2	11.1	33.2

Self contained 3hr
MF 0.8 - 1.0 lx

h (m)	Ya	Yb	Xa	Xb
3.5	1.8	4.9	5.9	12.9
4.0	2.0	4.9	6.5	14.4
4.5	2.1	5.0	7.3	15.9
6.0	2.5	5.9	9.4	20.2
8.0	2.7	7.0	11.7	25.8
10.0	2.5	7.8	13.6	30.7
12.0	0.0	7.5	0.0	23.4
16.0	0.0	2.9	0.0	20.9

Self contained 3hr
MF 0.8 - 1.0 lx

h (m)	Ya	Yb	Xa	Xb
3.5	4.4	10.7	4.4	10.7
4.0	4.6	11.5	4.6	11.5
4.5	4.9	12.2	4.9	12.2
6.0	5.3	13.9	5.3	13.9
8.0	3.9	15.2	3.9	15.2
10.0	0.0	10.0	0.0	10.0
12.0	0.0	1.1	0.0	1.1
16.0	–	–	–	–

Self contained 3hr
MF 0.8 - 0.5 lx

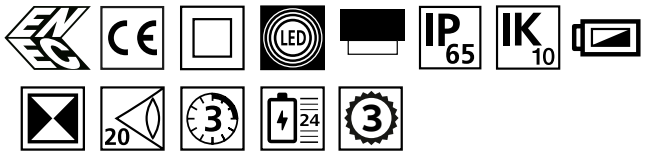
h (m)	Ya	Yb	Xa	Xb
3.5	5.2	12.0	5.2	12.0
4.0	5.6	13.3	5.6	13.3
4.5	6.1	14.3	6.1	14.3
6.0	6.8	16.8	6.8	16.8
8.0	7.4	19.2	7.4	19.2
10.0	7.2	20.9	7.2	20.9
12.0	0.0	21.8	0.0	21.8
16.0	0.0	10.3	0.0	10.3

PrimEvo XT100E

Productivity & reliability

PrimEvo XT100E

- **Global availability**
  Available at your local wholesaler
- **Easy to install**
  Plug and play, maintained and non-maintained in one
- **Unique 3 year warranty**
- **Affordable range**
  Full LED range with best price/performance ratio



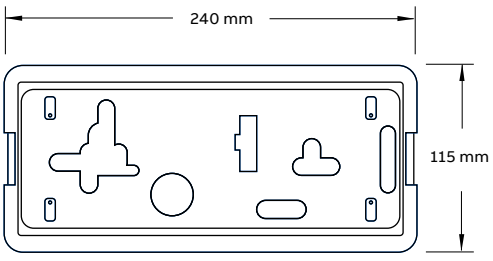
Luminaire

Order Code	Input voltage	Description	Lamp type	Power consumption (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)	Configurable pictograms included
7TCA091160R0499	220 - 240 Vac, 50 Hz	XT100E	2 x 0.5W LED*	5/2	3	0 - +40	0.6	

* = 1W LED

Spacing table

Mounting height (m)					
2.00	2.97	7.80	8.14	8.61	3.33
2.50	3.09	8.38	8.72	9.18	3.32
3.00	3.22	8.78	8.96	9.42	3.33
3.50	3.15	9.03	9.16	9.47	3.15
4.00	3.01	9.16	9.25	9.50	3.01



PrimEvo XT200E

Productivity & reliability

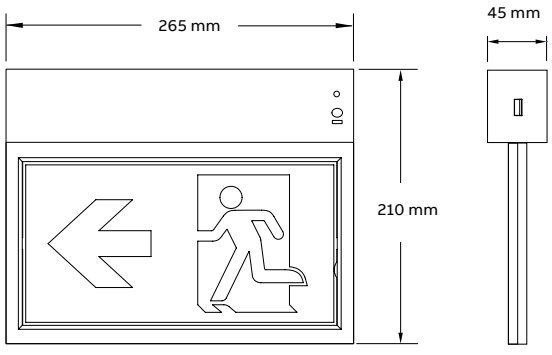
PrimEvo XT200E

- **Global availability**
  Available at your local wholesaler
- **Easy to install**
  Plug and play, maintained and non-maintained in one
- **Unique 3 year warranty**
- **Affordable range**
  Full LED range with best price/performance ratio

Luminaire

Order Code	Input voltage	Description	Lamp type	Power consumption (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)	Configurable pictograms included
7TCA091720R0090	220 - 240 Vac, 50	XT200E	14 x 0.125W LED	5.2/2.4	3	-5 - +45	0.95	

* = 1.75W LED



PrimEvo RS100E & SM100E

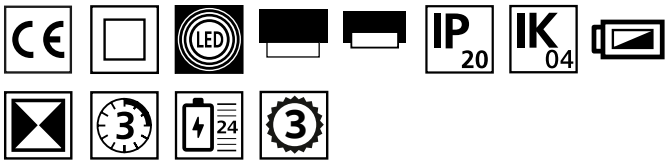
Productivity & reliability

RS100E

SM100E

PrimEvo RS100E & SM100E

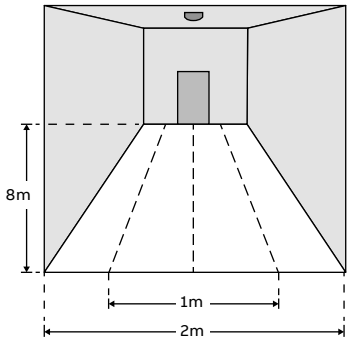
- **Global availability**
  Available at your local wholesaler
- **Easy to install**
  Plug and play, maintained and non-maintained in one
- **Unique 3 year warranty**
- **Affordable range**
  Full LED range with best price/performance ratio



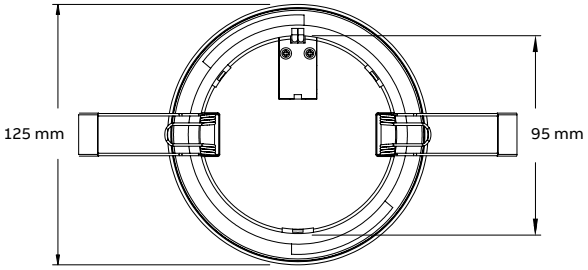
Luminaire

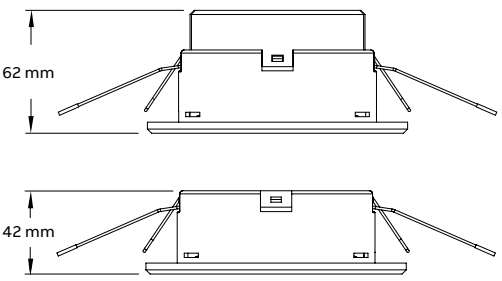
Order Code	Input voltage	Description	Lamp type	Power consumption** (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)
7TCA091720R0091	220 - 240 Vac, 50 Hz	RS100E	2 x 1.5W LED*	10/4.8	3	0 - +25	0.425
7TCA091720R0092	220 - 240 Vac, 50 Hz	SM100E	2 x 1.5W LED*	9/4.5	3	0 - +25	0.425

* = 3W LED

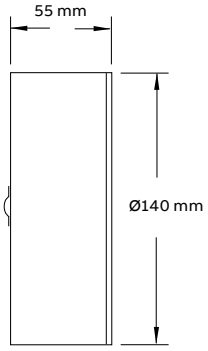


PrimEvo RS100E





PrimEvo SM100E



DALI emergency lighting
Why use DALI with emergency lighting?

Regular system checks must be carried out to guarantee that any emergency lighting system is fully operational. Emergency lighting with DALI constantly monitors the system, storing reports of any failures or issues and ensuring that the system is 100 percent healthy for the maximum time possible. The health of building occupants is assured, and automatic monitoring reduces maintenance costs.

—
01 Emergency lighting can be controlled and monitored via DALI for maximum safety in all types of property.

DALI emergency system key features:
- Central monitoring from touch screen panel
- Report logging software
- Functional and full duration tests
- Faults reported to central computer, reducing maintenance time and costs
- Fully addressable emergency system with central test to BS-EN and IEC standards
- Switching of maintained luminaires, individually or per group
- Scheduled tests can be programmed via the touch screen panel and automatic tests can be staggered minimising disruption to building users and still protecting every area in case of a real emergency
- Based on the international industry standard DALI protocol
- Utilises standard DALI bus wiring

—
Advantages of using DALI with emergency lighting

1. Proven DALI technology specific for emergency lighting

2. Our DALI solution is based on non-proprietary systems. As long as all components of a system are DALI compliant, they will be able to communicate with each other

3. Cost-effective solution with reduced maintenance costs after commissioning

4. With the addition of the ABB DALI gateway, we can connect our DALI luminaires with KNX systems and BMS

5. DALI (DiiA) Certified

DALI emergency lighting
Safety of emergency lighting

It has never been more important to ensure the safety of a building, because ensuring safety requires full knowledge that the emergency lighting is fully operational and healthy.

DALI emergency is an extension of the DALI protocol, allowing for monitoring of the status of emergency fittings from a touch screen. Proven DALI technology is specific for emergency lighting.

About DALI emergency

DALI - Digital Addressable Lighting Interface - is an open standard defined under EN62386. This standard ensures that all DALI-compatible emergency control systems work in synchronization and that the technology is available to multiple device manufacturers.

DALI emergency lighting is a cost effective monitored emergency system that often betters the traditional systems

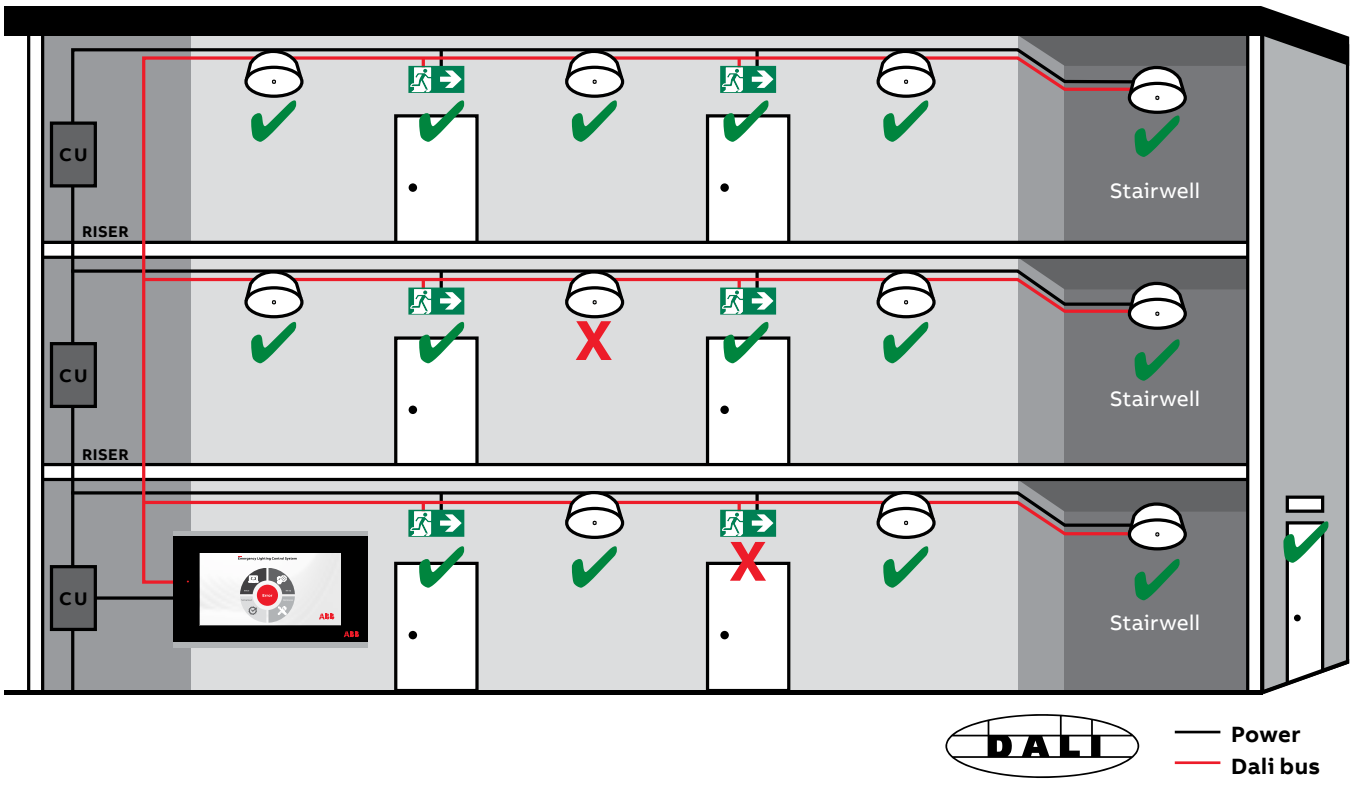
As a standalone monitored emergency system DALI emergency can monitor lamp and battery status and advise whether the luminaires are working, faulty, charge levels and hours of use in either normal or emergency operation.

As DALI is a two-way communication protocol, the central control can send commands to the luminaire and they will send back information to the control system.

Its a mandatory requirement that building owners are taking steps to ensure that their emergency lighting installations are routinely tested, with detailed records maintained. The associated labour costs have resulted in the owners of many larger buildings or building complexes investing in automated centralised test systems.

This type of system has also become increasingly popular since changes to the fire regulations now place the legal responsibility for recording these testing procedures solely with the building owners.

The benefits of using DALI central test systems for emergency lighting applications are wide-ranging:
- Increased safety
- Reduced maintenance labour time
- Ongoing monitoring savings



The emergency lighting package consists of:

- ABB luminaires: Exit signs and escape routes self-contained
- ABB control panel with emergency lighting function for test and monitoring solutions for up to 128 luminaires per panel.

DALI control unit (DCU)

Productivity & reliability

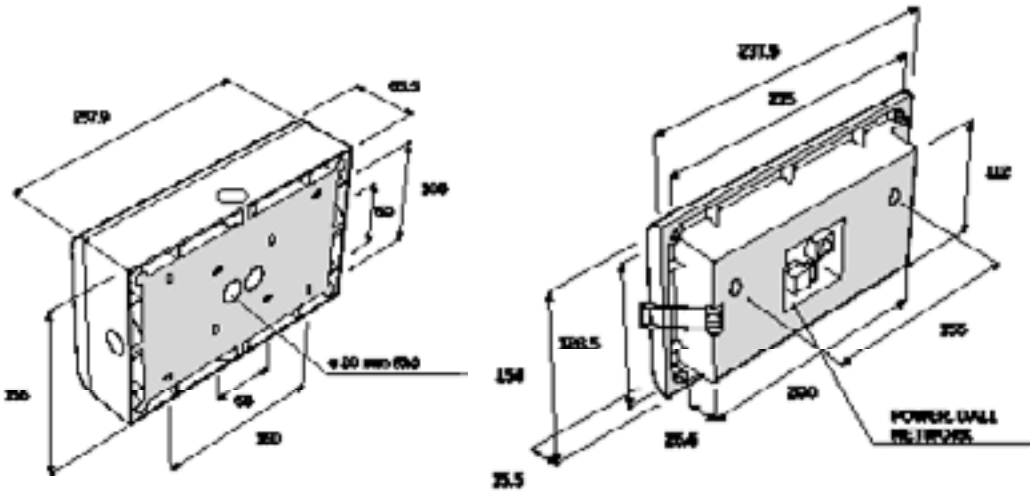
DALI emergency lighting control panel

- Ensuring building occupant safety
- Touch screen to control, test and monitor emergency lighting
- Simple to group and easy to install

Control unit

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
ELDCS1/DALI	DALI emergency control unit	220-240 Vac, 50 Hz	N/A	6	N/A	0 - 50	1.1

Note. The manual, pre-commissioning documents, device location record sheet, test record sheet and download software for spreadsheet are available on the ABB low voltage website
DALI bus power supply 12V DC included

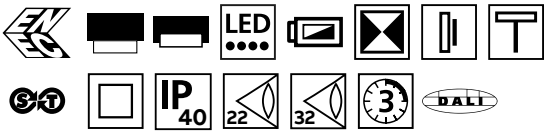


Guideway

Innovative & stylish

Escape route signalisation

- Compatible with DALI control unit to control, test & monitor emergency lighting
- Clearly visible in daylight - 500 cd/m2
- Uniform light distribution
- In harmony with interior spaces
- Frameless legend design



Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
DAEGR3LS1-S22	REC LED SIGN M3 22M DALI	220-240 Vac, 50 Hz	LED strip 1.8W	4.2 / 4.2	M3/NM3	5 - 35	0.93
DAEGR3LS1-S32	REC LED SIGN M3 32M DALI	220-240 Vac, 50 Hz	LED strip 3.6W	6.0 / 6.0	M3/NM3	5 - 35	1.11
DAEG3LS1-S22	LED SIGN M3 22M DALI	220-240 Vac, 50 Hz	LED strip 1.8W	4.2 / 4.2	M3/NM3	5 - 35	1.11
DAEG3LS1-S32	LED SIGN M3 32M DALI	220-240 Vac, 50 Hz	LED strip 3.6W	6.0 / 6.0	M3/NM3	5 - 35	1.58

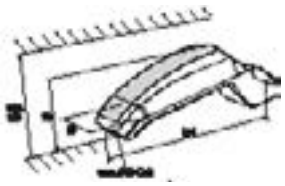
Includes back to wall mounting accessory as standard.
60 hrs charge at first commissioning, 24 hrs re-charge thereafter.
Maintained and non maintained

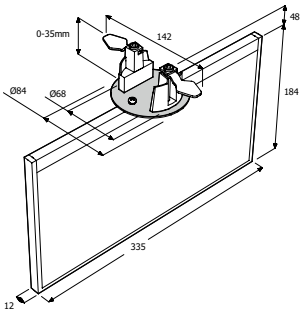
Single sided

Part No.	Legends
ISO 7010 legend format	
XEN2EG32	
XEN3EG32	
XEN6EG32	
XEN5EG32	

Flag mounted

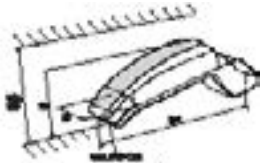
Part No.	Legends
ISO 7010 legend format	
XEN602EG32	
XEN603EG32	
XEN606EG32	
XEN605EG32	

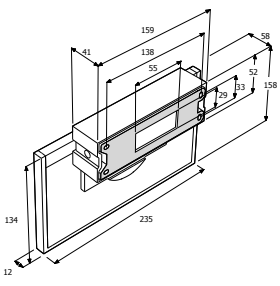




Accessories

Order code	Description	Colour
EG-T4SG	Cover discs, 2+2 self contained	
EG-T4EG	Cover discs, 2+2 slave	





Serenga 2

Project covering & stylish

Escape route lighting

- Compatible with DALI control unit to control, test & monitor emergency lighting
- Injection moulded - high grade polycarbonate body and geartray of aluminium die cast
- Specially designed lens for optimised light distribution
- Modular, First-Fix installation

Luminaire

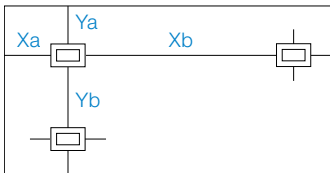
Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
DASR2-DEA-M3	REC M3 DALI ESC-4MH WH	220-240 Vac, 50 Hz	2x LED 0.85W = 1,9W	4.74 / 4.0	M3/NM3	5 - 40	0.6 kg
DASR2-DAD-M3	REC M3 DALI OA-L4M WH	220-240 Vac, 50 Hz	2x LED 0.85W = 1,9W	4.74 / 4.0	M3/NM3	5 - 40	0.6 kg
DASR2-SEM3-A1	SFC M3 DALI ESC-L4M WH	220-240 Vac, 50 Hz	2 x LED 0.85W = 1.9W	4.74 / 4.0	M3/NM3	5 - 40	1.0
DASR2-SAM3-D1	SFC M3 DALI OA-L4M WH	220-240 Vac, 50 Hz	2 x LED 0.85W = 1.9W	4.74 / 4.0	M3/NM3	5 - 40	1.0

Interchangeable lenses are available.
Maintained and non maintained

Accessories

Order code	Description
SR2-CCAW	WH circular adaptor

Picture table



Spacing table

DASR2-DEA-M3

h(m)				
2.0	1.8	4.9	6.4	18.8
2.5	1.3	5.3	6.4	19.4
3.0	1.0	5.0	3.9	18.3
3.5	0.9	3.9	3.6	16.6
4.0	0.9	3.1	2.5	15.6

DASR2-DAD-M3

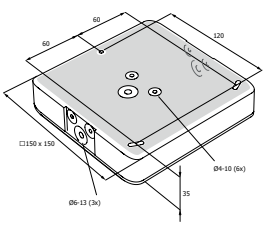
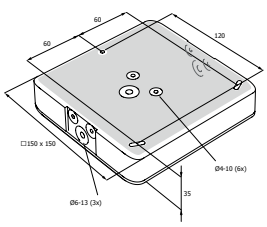
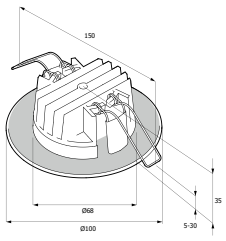
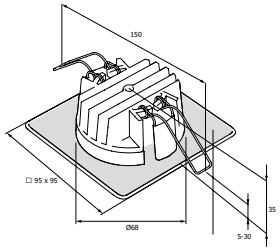
h(m)				
2.0	3.5	7.8	3.5	7.8
2.5	4.3	9.4	4.3	9.4
3.0	4.7	11.0	4.7	11.0
3.5	4.4	12.2	4.4	12.2
4.0	2.5	10.9	2.5	10.9

DASR2-SEM3-A1

h(m)				
2.0	1.8	4.9	6.4	18.8
2.5	1.3	5.3	6.4	19.4
3.0	1.0	5.0	3.9	18.3
3.5	0.9	3.9	3.6	16.6
4.0	0.9	3.1	2.5	15.6

DASR2-SAM3-D1

h(m)				
2.0	3.5	7.8	3.5	7.8
2.5	4.3	9.4	4.3	9.4
3.0	4.7	11.0	4.7	11.0
3.5	4.4	12.2	4.4	12.2
4.0	2.5	10.9	2.5	10.9

Aqualux

Durable & high performance

Escape route signalisation

- Compatible with DALI control unit to control, test & monitor emergency lighting
- Attractive aluminium modular enclosure
- Clear polycarbonate broad delivery diffuser

LED base unit

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
DLOW3LS60	AQUALUX 3W LED DALI M3	220-240 Vac, 50 Hz	3W LED	9.9 / 5.1	M3/NM3	0 - 25	**2.2**

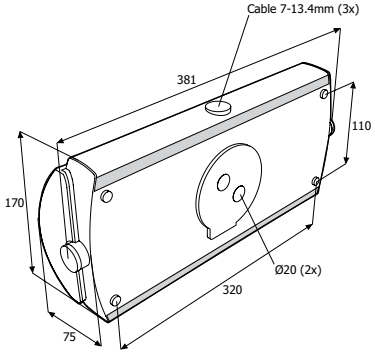
Maintained and non maintained

Legends

Part No.	Pictogram
XEN2W	
XEN3W	
XEN6W	
XEN5W	
XLF802W	
XLF803W	

Accessoires

Order code	Description
OW/BCM	Ceiling bracket, vertical mount
OW/BWA	Wall bracket, angled mount



Ovano

Productivity & reliability

Escape route signalisation

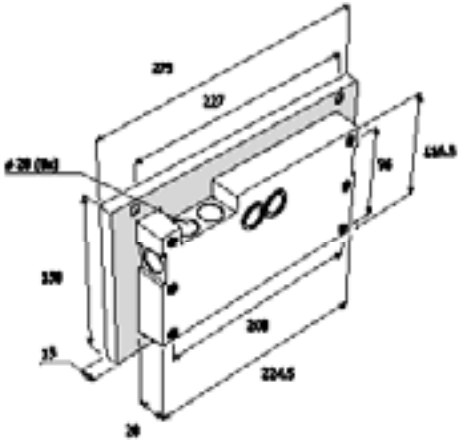
- Compatible with DALI control unit to control, test & monitor emergency lighting
- Plug and play, maintained and non-maintained in one
- Compact and decorative design

Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
XT224SM/DALI*	Ovano XT224SM	220-240 Vac, 50 Hz	0.2W=2.8W	3.5	M3/NM3	-5 - 45	**0.66**

* Configurable pictograms included
Maintained and non maintained

Ensure 3cm clearance above product when wall mounting



Ovano

Productivity & reliability

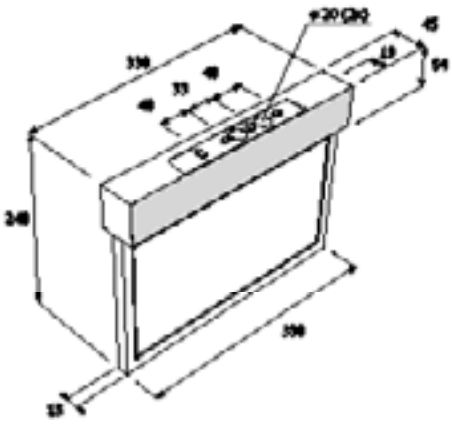
Escape route signalisation

- Compatible with DALI control unit to control, test & monitor emergency lighting
- Plug and play, maintained and non-maintained in one
- Compact and decorative design

Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
XT230RS/DALI*	Ovano XT230RS	220-240 Vac, 50 Hz	2x 1W LED	3.5	M3/NM3	-5 - 45	1.24

* Configurable pictograms included
Maintained and non maintained



Ovano

Productivity & reliability

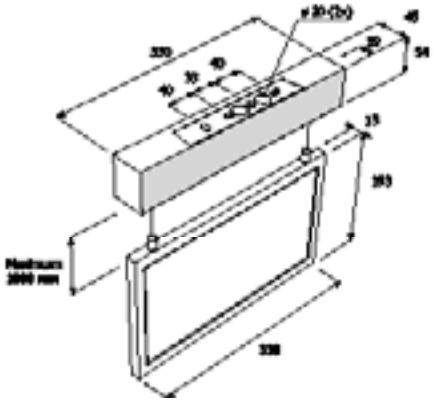
Escape route signalisation

- Compatible with DALI control unit to control, test & monitor emergency lighting
- Plug and play, maintained and non-maintained in one
- Compact and decorative design

Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
XT230H/DALI*	Ovano XT230H	220-240 Vac, 50 Hz	0.2W=2.8W	3.5	M3/NM3	-5 - 45	1.27

* Configurable pictograms included
Maintained and non maintained



Ovano

Productivity & reliability

XT200M3H

XT201M3H

Escape route lighting

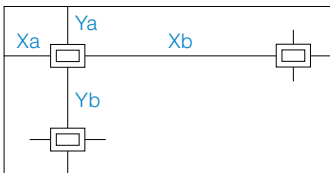
- Compatible with DALI control unit to control, test & monitor emergency lighting
- Plug and play, maintained and non-maintained in one
- Compact and decorative design

Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
XT200M3H/DALI	Ovano XT200M3H	220-240 Vac, 50 Hz		5	M3/NM3	0 - 40	0.35
XT201M3H/DALI	Ovano XT201M3H	220-240 Vac, 50 Hz		5	M3/NM3	0 - 25	0.35

Maintained and non maintained

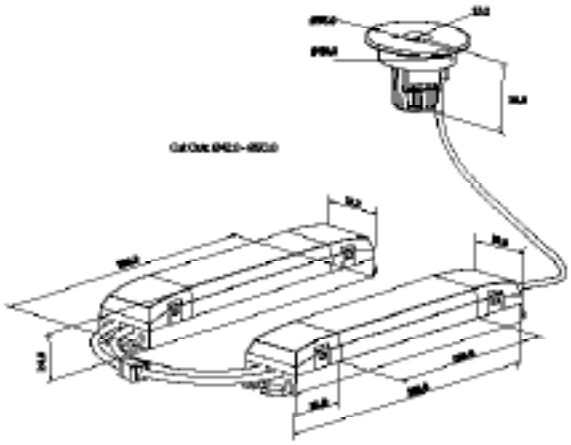
Picture table



Spacing table

XT200M3H				
h(m)		-□	□-□	□-□
2.0	3.11	7.53	7.50	3.29
2.5	3.35	8.34	8.37	3.49
3.0	3.48	8.98	8.93	3.62
3.5	3.51	9.47	9.37	3.68
4.0	3.47	9.79	9.70	3.65

XT201M3H				
h(m)		-□	□-□	□-□
2.0	3.24	7.98	5.04	2.05
2.5	3.56	8.71	5.38	2.34
3.0	3.77	9.35	5.87	2.60
3.5	3.90	9.98	6.48	2.80
4.0	3.99	10.43	7.02	2.94



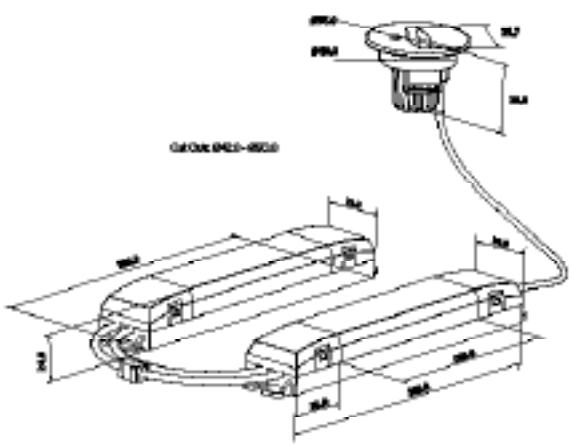


ABB-free@home

Making home automation easier than ever

Simply smart. ABB-free@home® transforms the house or apartment into an intelligent home. Whether blinds, lights, heating, air conditioning, door communication or scenes. ABB's solutions for future oriented lifestyle in residential living environments. Delivering more comfort, increased efficiency as well as safety and security. **new.abb.com/world-of-installation**

Wiring accessories

Millenium wiring accessories

01 ST - Stainless Steel
02 SB - Silk Black
03 MG - Matt Gold
04 AG - Antique Gold

Millenium offers high quality complete sets. Each unique reference contains mechanism, frame and mounting plate; making easier the ordering, handling and installation. A reliable and complete collection with all functionality at first sight.

Millenium offers a wide and elegant choice of finishes in stainless steel AISI 304 material: from the Brush Stainless Steel, to the soft new touch given by the Silk Black, and the luxury of the sophisticated gold finishes, Matt Gold and Antique Gold.

1 Gang switch rocker

AM10120-ST

AM10920-ST

AM11120-ST

AM43020-ST

Description	Technical data	Order code
1 gang 1 way switch	10 AX	AM10120-ST
1 gang 2 way switch	10 AX	AM10520-ST
Intermediate switch	10 AX	AM11920-ST
1 gang 1 way switch	20 AX	AM11020-ST
1 gang 2 way switch	20 AX	AM11520-ST
1 gang 1 way double pole switch, with status indicator led	346-415	2CMA193519R1000
1 gang 1 way double pole switch, with led for water heater	346-415	2CMA193519R1000
1 gang 1 way push button switch	346-415	2CMA193519R1000

Premium switch rocker

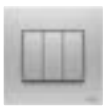
Description	Technical data	Order code
1 gang 1 way switch	10 AX	AM10144-ST
1 gang 2 way switch	10 AX	AM10544-ST
Intermediate switch	10 AX	AM11944-ST
1 gang 1 way switch	20 AX	AM11044-ST
1 gang 2 way switch	20 AX	AM11544-ST

Premium switch rocker

Description	Technical data	Order code
1 gang 1 way push button switch	10 A	AM43044-ST

2, 3 and 4 gang switches

2 Gang


3 Gang

4 Gang

Description	Technical data	Order code
2 gang 1 way switch	10 A	AM10244-ST
2 gang 2 way switch	10 AX	AM10644-ST
2 gang 1 way switch	10 AX	AM11444-ST
2 gang 2 way switch	20 AX	AM11644-ST
3 gang 2 way switch	20 AX	AM112153-ST
3 gang 2 way push button	346-415	AM43053-ST
4 gang 2 way switch	10 AX	AM119188-ST
4 gang 2 way switch	16 AX	M119588-ST

01

02

03

04

SECTION 15

Wiring accessories

Millenium wiring accessories

Gang switches premium rocker

	Description	Technical data	Order code
AM13444-ST AM17744-ST	Fan isolator	10A 3 pole	AM13444-ST
	1 gang double pole with status indicator LED. Flush 45mm wall box	45A	AM17744-ST
			AM17744-SB
			M17744-MG
			AM17744-AG

Socket outlets

	Description	Technical data	Order code
	BS single pole switched socket outlet	13A SP dual earth terminals with child safety shutter system.	AM23386-ST
			AM23386-SB
			AM23386-MG
			AM23386-AG
	BS double pole switched socket outlet	13A DP dual earth terminals with child safety shutter system.	AM23786-ST
			AM23786-SB
			AM23786-MG
			AM23786-AG
	BS double pole switched socket outlet	13A SP dual earth terminals and LED with child safety shutter system.	AM23486-ST
			AM23486-SB
			AM23486-MG
			AM23486-AG
	BS double pole switched socket outlet with led	13A DP dual earth terminals and LED with child safety shutter system.	AM23886-ST
			AM23886-SB
			AM23886-MG
			AM23886-AG
	2 Gang BS double pole switched socket outlet	13A DP dual earth terminals and LED with child safety shutter system.	AM239147-ST
			AM239147-SB
			AM239147-MG
			AM239147-AG
	2 Gang BS double pole switched socket outlet with led.	13A DP dual earth terminals and LED with child safety shutter system.	AM240147-ST
			AM240147-SB
			AM240147-MG
			AM240147-AG

Telecommunications & audio

	Description	Technical data	Order code
	1 Gang telephone outlet RJ11	4 pole UTP	AM32144-ST
			AM32144-SB
			AM32144-MG
			AM32144-AG
	1 Gang telephone outlet BT master, RJ11/RJ12	4 pole UTP	AM30544-ST
			AM30544-SB
			AM30544-MG
			AM30544-AG
	1 Gang telephone outlet BT secondar, outlet RJ11/RJ12	6 pole UTP	AM30644-ST
			AM30644-SB
			AM30644-MG
			AM30644-AG

SECTION 15

Wiring accessories

Millenium wiring accessories

Telecommunications & audio

	Description	Technical data	Order code
	1 Gang computer outlet RJ45 Cat 5e UTP	8 pole UTP	AM33144-ST
			AM33144-SB
			AM33144-MG
			AM33144-AG
	1 Gang computer outlet RJ45 Cat 6 UTP	8 pole UTP	AM33344-ST
			AM33344-SB
			AM33344-MG
			AM33344-AG
	RJ45 single adapter	For connectors type Keystone, AMP, Brand-Rex, Openet-ICS, THT Leviton, Krone	AM33544-ST
			AM33544-SB
			AM33544-MG
			AM33544-AG
	2 Gang computer outlet RJ45 Cat 5e UTP	8 pole UTP	AM33244-ST
			AM33244-SB
			AM33244-MG
			AM33244-AG
	RJ45 double adapter	For connectors type Keystone, AMP, Brand-Rex, Openet-ICS, THT Leviton, Krone	AM33444-ST
			AM33444-SB
			AM33444-MG
			AM33444-AG
	USB charger insert, 2 modules	44x44 for use in frames, 1.5mA	AMD85144-AN
	TV/Sat module	F-Type, 1 Module, 22x44 for use in frames	AMD30322-AN
		F-Type, 2 Modules, 44x44 for use in frames	AMD30344-AN
	RJ45 Data module	Cat6a, 1 Module, 22x44 for use in frames	AMD33422-AN

Wiring accessories

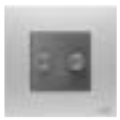
Millenium wiring accessories

Telecommunications & audio

	Description	Technical data	Order code
	1 Gang TV outlet	Dead-end-feeder isolated. For technical data see below	AM30144-ST
			AM30144-SB
			AM30144-MG
			AM30144-AG
	SAT outlet	F type isolated dead-end-feeder. For technical data see below	AM30344-ST
			AM30344-SB
			AM30344-MG
			AM30344-AG
	SAT Twin outlet	F type isolated dead-end-feeder. For technical data see below	AM32344-ST
			AM32344-SB
			AM32344-MG
			AM32344-AG

	TV & SAT outlet technical information	Frequency (Mhz)	Insertion loss (dB) Technical data	Output return loss (dB)	Voltage resistance
	TV	5~550	< 2.5	<16	2 KV
		550~750	< 2.5	<14	2 KV
		750~1000	< 2.5	<14	2 KV
	SAT	5~550	< 0.5	<18	2 KV
		550~750	< 0.8	<18	2 KV
		750~1000	< 0.8	<16	2 KV

Telecommunications & audio

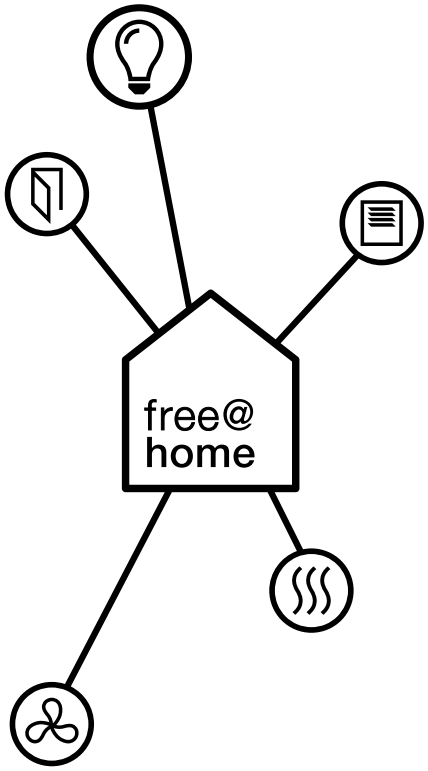
	Description	Technical data	Order code
	Audio outlet, 2 terminals L & R	2 terminals	AM34144-ST
			AM34144-SB
			AM34144-MG
			AM34144-AG
	Flex outlet	20A	AM55044-ST
			AM55044-SB
			AM55044-MG
			AM55044-AG

Dimmers

	Description	Technical data	Order code
	1 Gang double rotary dimmer	230 V~ ±10 % 50 Hz 40-250 W 40-150 VA	AM41244-ST
			AM41244-SB
			AM41244-MG
			AM41244-AG

Just as you like it.
The Smart Home.

The perfect daily routine. With ABB-free@home®, the entire home can be controlled not only with switches, but now even more practically: by smartphone or tablet and via touch or voice control. This allows home automation to be managed in a way that's mobile and smart, precise and flexible. For example, if the light atmosphere needs to be changed, tapping on the touchscreen or a simple voice command moves the blinds or changes the colours of the lights. Experience the future of smart living today.



Communicative and competent.
The ABB partner close to you.

Advice and assistance close to you. Your electrician will be happy to explain to you in detail the advantages of ABB-free@home® in a face-to-face discussion. This will allow home automation to be planned to suit your individual requirements.

free@home
for iOS

free@home
for Android

The ABB-free@home® app
The activation of the voice control in the ABB-free@home® app suffices to control the climate, lights and safety in the entire house via voice input: “Switch on the lamp in the living room”, “Move all the blinds up”, and whatever else you wish, without having to learn special commands, without laborious configuration. The previously defined names of rooms, floors and devices continue to be used without interruption. Everything remains in the one system for the future.

Home automation – ABB-free@home® range

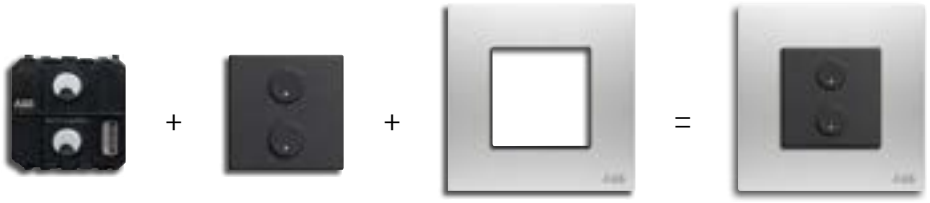
Modularity makes everything possible

	System Access Point	ABB-free@homeTouch 7"
Article no.	SAP-S-2	black: DP7-S-625 white: DP7-S-611
Description	For commissioning and remote control of the ABB-free@home® system. With integrated free@home wireless antenna. With integrated free@home bus connection. Allows the execution of astro and time programs. Commissioning and remote conatrol is executed via web interface or app. No additional commissioning software is required. Easy commissioning with WLAN ad-hoc mode. Connection to the home network via WLAN client mode or via CAT cable.	Indoor video station with 17.8 cm (7") touch display for ABB-free@home® and ABB-Welcome. For the central control of up to 16 configurable functions and display of the video image of an ABB-Welcome outdoor station. SD card slot for extension of the picture memory. Suitable as room temperature controller extension unit. For surface mounting.
Dimensions (H × W × D)	110 mm × 170 mm × 31 mm	155 mm × 218 mm × 29 mm
Technical data	Display elements: LED for status display Nominal voltage: 230 V~ Rated frequency: 50 Hz/60 Hz Protection type of device: IP 20	Display size: 17.8 cm (7") Display resolution: 800 × 480 Display elements: TFT touch display Protection type of device: IP 30

	ABB-free@homeTouch 4.3"	Installation box, FM	Temperature sensor
Article no.	black: DP4-1-625 white: DP4-1-611	DP4-F	DP4-T-1
Description	For the central control of up to 16 configurable ABB-free@home® functions. For the display of configurable system messages. A configurable primary function can be triggered with a multi-touch gesture. Capacitive touch screen with closed glass surface. With integrated room temperature controller and temperature sensor. In connection with temperature sensor DP4-T-1 the integrated room temperature controller can be fitted with a remote sensor. Suitable as room temperature controller extension unit (up to 8).	For flush-mounted und hollow-wall installation of the ABB-free@homeTouch 4.3" DP4-1-6XX. Windproof.	For use as remote sensor.
Dimensions (H × W × D)	104 mm x 143 mm x 53 mm	82 mm × 123 mm × 50 mm	Cable length: 4 m
Technical data	Display size: 10.9 cm (4.3") Display resolution: 480 x 854 Mounting height: 8 mm Display elements: 1 LCD display Bus voltage: 24 V~ Protection class (Device): IP 30	Mounting depth: 50 mm	Line type: H03 VV-F Type: NTC 10 kohm

Home automation – ABB-free@home® range

Modularity makes everything possible



— 01 — 02 — 04 — 04

— 01 Switch actuator
— 02 Rocker, 2 fold push buttons
— 03 Frame
— 04 ABB-free@home® Switch Sensor 1/2gang KNX

— 05 — 06 — 07 — 08

— 05 ABB-free@home® 1/2gang switches
— 06 ABB-free@home® Room temperature controller
— 07 ABB-free@home® Movement detector
— 08 ABB-free@home® 2/4gang switches

Color options for frames and cover plates

Color		Code (c)	Color		Code (c)
	anthracite	AN		matt gold	MG
	antique gold	AG		silk black	SB
	brushed stainless steel	ST			

Available symbols for push buttons

Symbol		Code (i)	Color		Code (i)
	No symbol			Scene	S
	Light	L		Dimmer	D
	Blind	B			

Home automation – ABB-free@home® range

Modularity makes everything possible

	Cover plate for 2 fold push buttons incl neutral symbols
Article no.	SR-2-AMAN
Description	As cover for ABB-free@home® 1/2gang switches of Millenium Range.
Dimensions (H × W)	44 mm x 44 mm

	Cover plate for 4 fold push buttons incl neutral symbols
Article no.	SR-4-AMAN
Description	As cover for ABB-free@home® 2/4gang switches of Millenium Range.
Dimensions (H × W)	44 mm x 44 mm

	Cover Plate for Movement Detector
Article no.	CP-MD-AMAN
Description	As cover for ABB-free@home® movement detector of Millenium Range.
Dimensions (H × W)	44 mm x 44 mm

	Cover Plate for Room Temperature Controller
Article no.	CP-RTC-AMAN
Description	As cover for ABB-free@home® room thermostat RTC-F-1.PB.
Dimensions (H × W)	44 mm x 44 mm

	Square Frame, Millenium
Article no.	AMD5144-**c**
Description	As frame for ABB-free@home® sensors and rockers of Millenium Range, includes mounting frame: AMD5053.
Dimensions (H × W)	86 mm x 86 mm
Colors (**c**)	AG, MG, SB, ST
Symbols (**i**)	

	Icon for Millenium Rockers
Article no.	SB**i**-AMAN
Description	Interchangeable icons for Millenium rockers, available with several icon design options (**i**) in color anthracite.
Colors (**c**)	AN
Symbols (**i**)	L, S, D

Home automation – ABB-free@home® range

Modularity makes everything possible

	Sensor/Switch actuator 1/1gang	Sensor/Switch actuator 2/1gang
Article no.	SSA-F-1.1.PB.1	SSA-F-2.1.PB.1
Description	For switching 230 V~ devices. With 1 integrated switch actuator. Switching function is available pre-configured. Use with ABB-free@home® 2 fold push buttons.	For switching 230 V~ devices. With 1 integrated switch actuator. Switching function is available pre-configured. Use with ABB-free@home® 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1x normally open contact, potential free Suitable for: resistive Rated current: 10 A Rated power: 2300 W Suitable for: capacitive Rated current: 10 AX Protection class of device: IP 20 Mounting depth: 31.5 mm	Outputs: 1x normally open contact, potential free Suitable for: resistive Rated current: 10 A Rated power: 2300 W Suitable for: capacitive Rated current: 10 AX Protection class of device: IP 20 Mounting depth: 31.5 mm

	Sensor/Switch actuator 2/2gang	Sensor/Dim actuator 1/1gang
Article no.	SSA-F-2.2.PB.1	SDA-F-1.1.PB.1
Description	For switching 230 V~ devices. With 1 integrated switch actuator. Switching function is available pre-configured. Use with ABB-free@home® 4 fold push buttons.	For dimming 230 V~ loads. With integrated universal dimming actuator for controlling different lamps. The dimming function is available pre-configured. Use with ABB-free@home® 2 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 2× normally open contact, potential free Suitable for: resistive Rated current: 10 A Rated power: 2 x 1200 W Suitable for: capacitive Rated current: 10 AX Protection class of device: IP 20 Mounting depth: 31.5 mm	Outputs: 1x dimming channel Suitable for: 230 V incandescent lamps and low-voltage halogen lamps with conventional transformers or electronic transformers Rated power: 10–180 W/VA Suitable for: LEDi and energy-saving bulbs Rated power: 2–80 W/VA Protection class of device: IP 20 Mounting depth: 31.5 mm

Home automation – ABB-free@home® range

Modularity makes everything possible

	Sensor/Dim actuator 2/1gang
Article no.	SDA-F-2.1.PB.1
Description	For dimming 230 V~ loads. With integrated universal dimming actuator for controlling different lamps. The dimming function is available pre-configured. Use with ABB-free@home® 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1x dimming channel Suitable for: 230 V incandescent lamps and low-voltage halogen lamps with conventional transformers or electronic transformers Rated power: 10–180 W/VA Suitable for: LEDi and energy-saving bulbs Rated power: 2–80 W/VA Protection class of device: IP 20 Mounting depth: 31.5 mm

	Sensor/Blind actuator 1/1gang
Article no.	SBA-F-1.1.PB.1
Description	For controlling blind and awning motors. With integrated blind actuator. Blind function is available pre-configured. To be used with ABB-free@home® 2 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1x Change-over contacts/normally open contact, potential-bound Rated power: 920 VA Rated current: 4 A Suitable for: Operating mode blind Protection class of device: IP 20 Mounting depth: 31.5 mm

	Sensor/Blind actuator 2/1gang
Article no.	SBA-F-2.1.PB.1
Description	For controlling blind and awning motors. With integrated blind actuator. Blind function is available pre-configured. To be used with ABB-free@home® 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1x Change-over contacts/normally open contact, potential-bound Rated power: 920 VA Rated current: 4 A Suitable for: Operating mode blind Protection class of device: IP 20 Mounting depth: 31.5 mm

	Room temperature controller
Article no.	RTC-F-1.PB
Description	Room temperature control function for controlling commercially available valve drives or analogue valve drives (continuous controllers). With display of set-value temperature. Only to be used with ABB-free@home® Zenit cover plates for room thermostat.
Dimensions (H × W × D)	44 mm x 44 mm x 29.4 mm
Technical data	Display elements: LCD Display showing operation modes Protection class of device: IP 20 Mounting depth: 17.9 mm

Home automation – ABB-free@home® range

Modularity makes everything possible

	Room temperature controller
Article no.	RTC-F-2.1-1.PB-WL
Description	Room temperature control function for controlling commercially available valve drives or analogue valve drives (continuous controllers). With display of set-value temperature. Only to be used with ABB-free@home® Zenit cover plates for room thermostat.
Dimensions (H × W × D)	44 mm x 44 mm x 29.4 mm
Technical data	Display elements: LCD Display showing operation modes Protection class of device: IP 20 Mounting depth: 17.9 mm

	Sensor unit 1gang
Article no.	SU-F-1.0.PB.1
Description	For sending switching, dimming and blind commands to an ABB-free@home® actuator. To be used with ABB-free@ home® 2 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 23.5 mm
Technical data	Control element: Switch contacts top/ bottom Display elements: LED as light for orientation or display of switching state Protection class of device: IP 20 Mounting depth: 14.1 mm

	Sensor unit 2gang
Article no.	SU-F-2.0.PB.1
Description	For sending switching, dimming and blind commands to an ABB-free@home® actuator. To be used with ABB-free@ home® 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 23.5 mm
Technical data	Control element: Switch contacts top/ bottom Display elements: LED as light for orientation or display of switching state Protection class of device: IP 20 Mounting depth: 14.1 mm

Home automation – ABB-free@home® range

Modularity makes everything possible

wireless

	Sensor/Switch actuator 1/1gang, wireless
Article no.	SSA-F-1.1.PB.1-WL
Description	For switching 230 V~ devices. With integrated actuator. Switching function is available pre-configured. To be used with ABB-free@home® Zenit cover plates for 2 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1× normally open contact, potential free Suitable for: resistive Rated current: 10 A Rated power: 2300 W Suitable for: capacitive Rated current: 10 AX Protection class of device: IP 20 Mounting depth: 31.5 mm

wireless

	Sensor/Switch actuator 2/1gang, wireless
Article no.	SSA-F-2.1.PB.1-WL
Description	For switching 230 V~ devices. With integrated actuator. Switching function is available pre-configured. To be used with ABB-free@home® Zenit cover plates for 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1× normally open contact, potential free Suitable for: resistive Rated current: 10 A Rated power: 2300 W Suitable for: capacitive Rated current: 10 AX Protection class of device: IP 20 Mounting depth: 31.5 mm

wireless

	Sensor/Switch actuator 2/2gang, wireless
Article no.	SSA-F-2.2.PB.1-WL
Description	For switching 230 V~ devices. With integrated actuator. Switching function is available pre-configured. To be used with ABB-free@home® Zenit cover plates for 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 2× normally open contact, potential free Suitable for: resistive Rated current: 10 A Rated power: 2 x 1200 W Suitable for: capacitive Rated current: 10 AX Protection class of device: IP 20 Mounting depth: 31.5 mm

wireless

	Sensor/Dim actuator 1/1gang, wireless
Article no.	SDA-F-1.1.PB.1-WL
Description	For dimming 230 V~ loads. With integrated universal dimming actuator for controlling different lamps. The dimming function is available pre-configured. To be used with ABB-free@home® Zenit cover plates for 2 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1× dimming channel Suitable for: 230 V incandescent lamps and low-voltage halogen lamps with conventional transformers or electronic transformers Rated power: 10–180 W/VA Suitable for: LEDi and energy-saving bulbs Rated power: 2–80 W/VA Protection class of device: IP 20 Mounting depth: 31.5 mm

Home automation – ABB-free@home® range

Modularity makes everything possible

wireless

	Sensor/Dim actuator 2/1gang, wireless
Article no.	SDA-F-2.1.PB.1-WL
Description	For dimming 230 V~ loads. With integrated universal dimming actuator for controlling different lamps. The dimming function is available pre-configured. To be used with ABB-free@home® Zenit cover plates for 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1× dimming channel Suitable for: 230 V incandescent lamps and low-voltage halogen lamps with conventional transformers or electronic transformers Rated power: 10–180 W/VA Suitable for: LEDi and energy-saving bulbs Rated power: 2–80 W/VA Protection class of device: IP 20 Mounting depth: 31.5 mm

wireless

	Sensor/Blind actuator 1/1gang, wireless
Article no.	SBA-F-1.1.PB.1-WL
Description	For controlling blind and awning motors. With integrated blind actuator. Blind function is available pre-configured. To be used in combination with ABB-free@home® Zenit cover plates for 2 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1× Change-over contacts/normally open contact, potential bound Rated power: 920 VA Rated current: 4 A Suitable for: Operating mode blind Protection class of device: IP 20 Mounting depth: 31.5 mm

wireless

	Sensor/Blind actuator 2/1gang, wireless
Article no.	SBA-F-2.1.PB.1-WL
Description	For controlling blind and awning motors. With integrated blind actuator. Blind function is available pre-configured. To be used with ABB-free@home® Zenit cover plates for 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 40.9 mm
Technical data	Outputs: 1× Change-over contacts/normally open contact, potential-bound Rated power: 920 VA Rated current: 4 A Suitable for: Operating mode blind Protection class of device: IP 20 Mounting depth: 31.5 mm

wireless

	Room Thermostat, wireless
Article no.	RTC-F-1.PB-WL
Description	Room temperature control function for controlling commercially available valve drives or analogue valve drives (continuous controllers) in connection with HA-M-0.6.1, HA-M-0.12.1, FCA-M-2.3.1. With display of set-value temperature. To be used with ABB-free@home® Zenit cover plates for room temperature controller.
Dimensions (H × W × D)	44 mm x 44 mm x 29.4 mm
Technical data	Display elements: LCD Display showing operation modes Protection class of device: IP 20 Mounting depth: 17.9 mm

Home automation – ABB-free@home® range

Modularity makes everything possible

wireless

	Room Thermostat, wireless
Article no.	RTC-F-2.1-1.PB-WL
Description	Room temperature control function for controlling commercially available valve drives or analogue valve drives (continuous controllers) in connection with HA-M-0.6.1, HA-M-0.12.1, FCA-M-2.3.1. With display of set-value temperature. To be used with ABB-free@home® Zenit cover plates for room temperature controller.
Dimensions (H × W × D)	44 mm x 44 mm x 29.4 mm
Technical data	Display elements: LCD Display showing operation modes Protection class of device: IP 20 Mounting depth: 17.9 mm

wireless

	Sensor unit 1gang, wireless
Article no.	SU-F-1.0.PB.1-WL
Description	For sending switching, dimming and blind command to an ABB-free@home® actuator. To be used with ABB-free@home® Zenit cover plates for 2 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 23.5 mm
Technical data	Control element: Switch contacts top/bottom Display elements: LED for orientation or switch state display Protection class of device: IP 20 Mounting depth: 14.1 mm

wireless

	Sensor unit 2gang, wireless
Article no.	SU-F-2.0.PB.1-WL
Description	For sending switching, dimming and blind command to an ABB-free@home® actuator. To be used with ABB-free@home® Zenit cover plates for 4 fold push buttons.
Dimensions (H × W × D)	44 mm x 44 mm x 23.5 mm
Technical data	Control element: Switch contacts top/bottom Display elements: LED for orientation or switch state display Protection class of device: IP 20 Mounting depth: 14.1 mm

Home automation – ABB-free@home® range

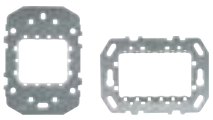
Modularity makes everything possible

	Sensor unit, 1gang	Sensor unit, 2gang
Article no.	SU-F-1.0.1	SU-F-2.0.1
Description	For sending switching, dimming and blind commands to an ABB-free@home® actuator. To be used with ABB-free@home® 1gang rockers.	For sending switching, dimming and blind commands to an ABB-free@home® actuator. To be used with ABB-free@home® 2gang rockers.
Dimensions (H × W × D)	71 mm x 71 mm x 23 mm	71 mm x 71 mm x 23 mm
Technical data	Control element: Switch contacts top/ bottom Display elements: LED as light for orientation or display of switching state Protection class of device: IP 20 Mounting depth: 9 mm	Control element: Switch contacts top/ bottom Display elements: LED as light for orientation or display of switching state Protection class of device: IP 20 Mounting depth: 9 mm

	Weather station	Room Thermostat
Article no.	WS-1	RTC-F-1
Description	For recording and transmitting of brightness, temperature, wind speed and rain. Weather data can be linked with actuators to automatically control functions. Weather data can be visualized in the free@home web interface and the free@home app. Wind speed measuring range 2 - 30 m/s. The bus can be connected via enclosed terminal block.	Control element with room temperature control function for controlling commercially available actuating drives or analogue actuating drives (continuous controllers). With display of set-value temperature. Only to be used with ABB-free@home® cover plates for room thermostat.
Dimensions (L × W × D)	108 mm x 121 mm x 227 mm	71 mm x 71 mm x 30 mm
Technical data	Rated voltage: 110 V~ - 230 V~ Rated frequency: 50 Hz - 60 Hz Bus voltage: 24 V- Inputs: 4 Protection class (Device): IP 44 Temperature range (Device): -20 °C to 55 °C Brightness limit value: 1 Lux - 100000 Lux	Display elements: LCD Display showing operation modes Protection class of device: IP 20 Mounting depth: 14 mm

Home automation – ABB-free@home® range

Modularity makes everything possible



	Metal Mounting Frame NEMA
Article no.	Vertical: N2371.9 V Horizontal: N2373.9
Description	Metal mounting frame for flush mounted units of Zenit NEMA range.
Dimensions (H × W × D)	102 mm x 74 mm, 74 mm x 102 mm

	Metal Mounting Frame VDE
Article no.	N2271.9
Description	Metal mounting frame for flush mounted units of Zenit VDE range.
Dimensions (H × W × D)	71 mm x 71 mm

	Metal Mounting Frame VDE
Article no.	N2271.9G
Description	Metal mounting frame with clamps for flush mounted units of Zenit VDE range.
Dimensions (H × W)	71 mm x 71 mm

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Protecting people, buildings & systems

With over 120 years of expertise and technical knowledge Furse provide world leading earthing, lightning and electronic systems protection solutions. From our own designed and manufactured products, through to risk assessment software and systems design advice, Furse offer a renowned Total Solution to all your earthing and lightning protection needs. **new.abb.com/world-of-installation**

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ABB

Air termination

Air rods

Air rod

	Part no.	Order Code	Rod length (mm)	Rod diameter (mm)	Thread size	Conductor material	Weight each (kg)
	RA215	7TCA083410R0063	500	Ø 15	M16	Copper	0.73
	RA225	7TCA083410R0067	1000	Ø 15	M16	Copper	1.51
	RA230	7TCA083410R0070	1500	Ø 15	M16	Copper	2.35
	RA240	7TCA083410R0071	2000	Ø 15	M16	Copper	3.00
	RA250-FU	7TCA083410R0072	3000	Ø 15	M16	Copper	4.70
	RA015	7TCA083420R0053	500	Ø 15	M16	Aluminium	0.29
	RA025	7TCA083420R0054	1000	Ø 15	M16	Aluminium	0.53
	RA030	7TCA083420R0056	1500	Ø 15	M16	Aluminium	0.80
	RA040	7TCA083420R0057	2000	Ø 15	M16	Aluminium	1.06
	RA050	7TCA083420R0058	3000	Ø 15	M16	Aluminium	1.60
	RA400-FU	7TCA083430R0001	500	Ø 10	M10	Copper	0.33
	RA402	7TCA083430R0002	1000	Ø 10	M10	Copper	0.65
	RA080	7TCA083440R0004	500	Ø 10	M10	Aluminium	0.11
	RA085	7TCA083440R0005	1000	Ø 10	M10	Aluminium	0.22

Air rod base and multiple point not included.

Manufactured from high conductivity hard drawn copper or aluminium, with rolled threads. Supplied complete with locknut
Note: during high winds and extreme weather conditions air rods over 1000 mm long can be subjected to fatigue mechanisms. It is therefore recommended that additional supports are considered before installation

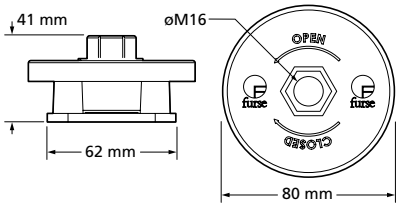
Air termination

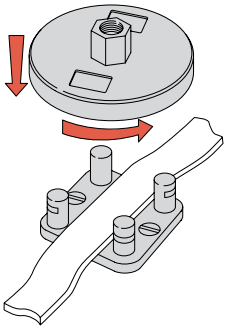
Air rod bases & saddles

Air rod base

Part no.	Order Code	Air rod diameter (mm)	Thread size	Maximum Conductor width (mm)	Conductor material	Weight each (kg)
SD105-H	7TCA083410R0077	Ø 15	M16	25	Copper	0.73
SD003-H	7TCA083420R0062	Ø 15	M16	25	Aluminium	0.14
SD120	7TCA083410R0080	Ø 15	M16	50	Copper	0.7

Manufactured from high quality alloys of either copper or aluminium
Simple to install, providing an effective connection between air rod and air termination tape
Fix using countersunk wood screws (Part no. SW005 or SW105) and wall plugs (Part no. PS305)
SD120 not as illustrated (drawing available on request)





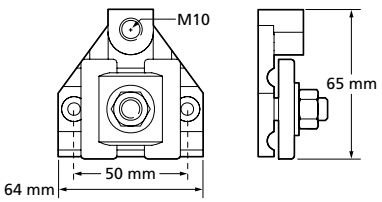
Horizontal or vertical air rod base

SD307

SD305

Part no.	Order Code	Air rod diameter (mm)	Thread size	Conductor size (mm)	Conductor material	Mounting plane	Weight each (kg)
SD305	7TCA083430R0003	Ø 10	M10	Ø 8	Copper	Horizontal	0.30
SD307	7TCA083430R0004	Ø 10	M10	Ø 8	Copper	Vertical	0.30
SD005	7TCA083440R0006	Ø 10	M10	Ø 8	Aluminium	Horizontal	0.11
SD007	7TCA083440R0007	Ø 10	M10	Ø 8	Aluminium	Vertical	0.11

Manufactured from high quality alloys of either copper or aluminium
Simple to install, providing an effective connection between air rod and solid circular air termination conductor, in either the horizontal or vertical plane
Fix using countersunk wood screws 11/2" No. 10 or M6 (Part no. SW005 or SW105) and wall plugs (Part no. PS305)
Tightening torque 15 Nm



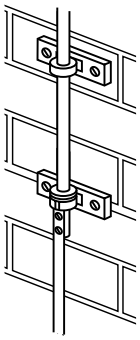
Air termination

Air rod brackets & rod to conductor coupling

Rod brackets

Part no.	Order Code	Air rod diameter (mm)	Air rod material	Weight each (kg)
BR105	7TCA083410R0000	Ø 15	Copper	0.90
BR005	7TCA083420R0034	Ø 15	Aluminium	0.28

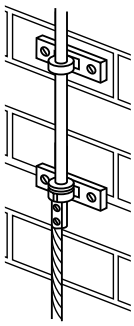
Manufactured from high quality alloys of either copper or aluminium
Simple to install, providing an effective means of mounting an air rod on to a vertical surface e.g. chimney stack
Use in conjunction with a rod to tape or rod to stranded conductor coupling
Fix using roundhead wood screws 11/2" x No. 12 or M8 and wall plugs



Rod to conductor coupling

Part no.	Order Code	Air rod diameter (mm)	Thread size	Conductor size (mm)	Air rod material	Weight each (kg)
For use with flat tape conductor						
CG600	7TCA083410R0001	Ø 15	M16	25 x 3	Copper	0.23
CG500	7TCA083420R0035	Ø 15	M16	25 x 3	Aluminium	0.08
For use with stranded conductor						
CG705	7TCA083450R0006	Ø 15	M16	50-70 mm²	Copper	0.25
CG710	7TCA083450R0007	Ø 15	M16	95 mm²	Copper	0.25

Manufactured from high quality alloys of either copper or aluminium
Provides an effective connection between air rod and air termination tape or stranded air termination conductor
Tightening torque 7 Nm (tape); 6 Nm (stranded)



Air termination

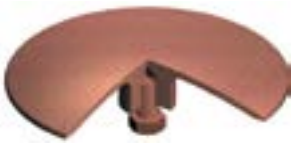
Multiple point & strike pad

Multiple point

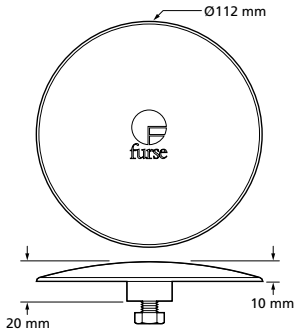
	Part no.	Order Code	Air rod diameter (mm)	Air rod material	Weight each (kg)
	RA600	7TCA083410R0001	Ø 15	Copper	0.27
	RA500	7TCA083420R0035	Ø 15	Aluminium	0.10

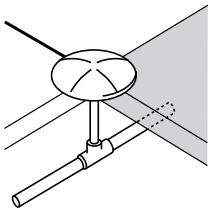
Manufactured from high conductivity hard drawn copper or aluminium
Suitable for use with 15 mm diameter air rods

Strike pad

	Part no.	Order Code	Conductor material	Weight each (kg)
	PL010	7TCA083030R0013	Copper	0.41
	PL005	7TCA083030R0012	Aluminium	0.13
	Accessories			
	SM005	-	Stainless steel stem for use with PL005	0.06
	SM010	7TCA083030R0014	Copper stem for use with PL010	0.07

Strike pads manufactured from high quality alloys of either copper or aluminium
Provides an exposed attractive point on conductor systems hidden/embedded in the building's fabric, e.g. below the tiles of a pitched roof
Supplied with setscrew for attachment of lightning conductors

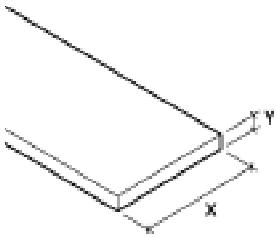




Conductors

Bare conductors, hard drawn & tinned conductors

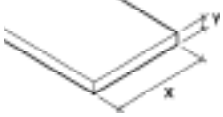
Bare copper tape



Order Code	Conductor size (X x Y) (mm)
TC005	12.5 x 1.5
TC010	12.5 x 3
TC015	20 x 1.5
TC020	20 x 3
TC020/100	20 x 3
TC025	25 x 1.5
TC026	25 x 2
TC030	25 x 3
TC030/50	25 x 3
TC030-UL	1" x 1/8"
TC035	25 x 4
TC040	25 x 6
TC040-UL	1" x 1/4"
TC039	30 x 2
TC042	30 x 3
TC044	30 x 4
TC043	30 x 5

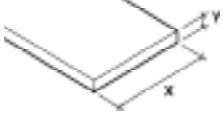
Order Code	Conductor size (X x Y) (mm)
TC045	31 x 3
TC048	31.5 x 4
TC050	31 x 6
TC055	38 x 3
TC060-FU	38 x 5
TC065	38 x 6
TC067	40 x 3
TC066	40 x 4
TC071	40 x 5
TC068	40 x 6
TC069	40 x 6.3
TC070	50 x 3
TC075	50 x 4
TC078	50 x 5
TC080	50 x 6
TC082	50 x 6.3
TC090	50 x 7

Bare aluminium tape



Order Code	Conductor size (X x Y) (mm)
TA005	12.5 x 1.5
TA020	20 x 3
TA030	25 x 3
TA042	30 x 3
TA040	25 x 6
TA068	40 x 6
TA080	50 x 6

Hard drawn copper bar



Order Code	Overall nominal size (X x Y) (mm)
BA205	25 x 3
BA210	25 x 6
BA225	38 x 6
BA230	50 x 6
BA235	50 x 10
BA240	75 x 6
BA250-FU	100 x 6

Bare stranded copper cable

Soft drawn stranded copper cable	Order Code	Cross sectional area (mm²)
	CB006	6
	CB016	16
	CB025	25
	CB035	35
	CB050-FU	50
	CB070	70
	CB095	95
	CB120	120
	CB150-FU	150
	CB185	185
	CB240	240
	CB300-FU	300
	CB400-FU	400

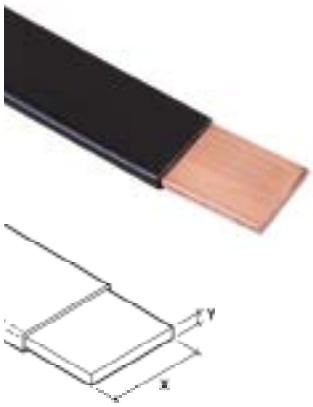
Tinned soft drawn stranded copper cable	Order Code	Cross sectional area (mm²)
	CB070-T	70

Hard drawn stranded copper cable		
	CB071	70

Conductors

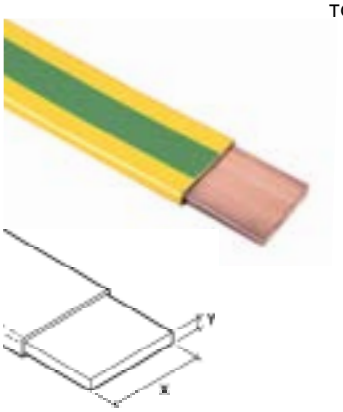
Bar, PVC & LSOH covered conductors

PVC covered copper tape



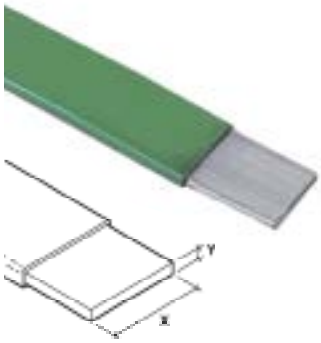
Order Code	Conductor size (X x Y) (mm)	Colour range
TC100	12.5 x 1.5	Black
TC105-FU	25 x 3	Black
TC110	25 x 3	Green
TC115-FU	25 x 3	Grey
TC120-FU	25 x 3	Stone
TC125-FU	25 x 3	White
TC130-FU	25 x 3	Brown
TC140-FU	25 x 6	Green
TC145	50 x 6	Green

Green & yellow PVC insulated copper tape



Order Code	Conductor size (X x Y) (mm)
TC111-FU	25 x 3

PVC covered aluminium tape

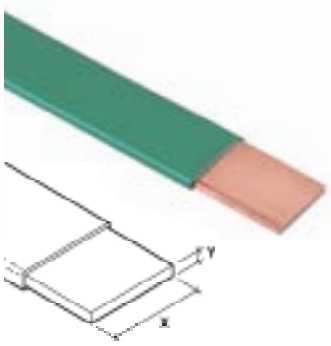


Order Code	Conductor size (X x Y) (mm)	Colour range
TC100	12.5 x 1.5	Black
TA104	20 x 3	Black
TA105	25 x 3	Black
TA110	25 x 3	Green
TA115	25 x 3	Grey
TA120	25 x 3	Stone
TA125	25 x 3	White
TA130	25 x 3	Brown

Green & yellow PVC insulated stranded copper cable

Order Code	Cross-sectional area) (mm^2)
CC016	16
CC025	25
CC035	35
CC050	50
CC070	70
CC095	95
CC120-FU	120
CC150-FU	150
CC185	185
CC240	240
CC300	300
CC400-FU	400

LSOH covered copper tape



Order Code	Conductor size (X x Y) (mm)	Colour range
TC910	25 x 3	Green
TC940	25 x 6	Green
TC980	50 x 6	Green

Conductor network

Conductor clips

Swing lid tape clip

Order Code	Conductor size (mm)
For use with bare copper	
CP210-H	25 x 3
CP220-H	25 x 6
For use with bare aluminium	
CP110-H	25 x 3
CP120-H	25 x 6

Adjustable tape clip

Order Code	Conductor size (mm)
For use with bare copper	
CP230-H	31 x 3 and 31 x 6
CP240-H	38 x 3, 38 x 6 and 40 x 6
CP260-H	50 x 3 and 50 x 6

Tape clip

Order Code	Conductor size (mm)
For use with bare copper	
CP205	20 x 3
CP216	25 x 4
CP227	30 x 5
CP245	38 x 5
CP241	40 x 4
CP256	50 x 4
For use with PVC covered copper	
CP215-H	25 x 3
CP225	25 x 6
CP265	50 x 6
CP256	50 x 4
For use with lead covered copper	
CP305	25 x 3
For use with bare aluminium	
CP105	20 x 3
CP125	50 x 6
For use with PVC covered aluminium	
CP115	25 x 3
CP130	50 x 6

Tape clip

Order Code	Conductor size (mm)
For use with bare copper	
CP510	20 x 3
CP515	25 x 3
For use with bare aluminium	
CP405	20 x 3
CP410	25 x 3
CP415	25 x 6
For use with PVC covered tape	
CP517	25 x 3

Non-metallic tape clip

Order Code	Conductor size (mm)	Colour
For use with bare tape		
CP005	20 x 3	Brown
CP010	20 x 3	Grey
CP015	25 x 3	Brown
CP020	25 x 3	Grey
CP060*	38 x 5	Brown
CP065*	50 x 6	Brown
For use with PVC covered tape		
CP025	25 x 3	Brown
CP030	25 x 3	Black
CP035	25 x 3	Green
CP040	25 x 3	Grey
CP045	25 x 3	Stone
CP050	25 x 3	White

* Not as illustrated (drawing available on request)

Conductor network

Conductor clamps

Square tape clamp

Order Code	Conductor size (mm)	Conductor material
CT105-H	25 x 3	Copper
CT110-H	25 x 6	Copper
CT115-H	50 x 6	Copper
CT005-H	25 x 3	Aluminium
CT010*	25 x 6	Aluminium

* Not as illustrated (drawing available on request)

Cable to tape square clamp

Order Code	Conductor size	Conductor material
CT125	25 x 3mm to 50mm²	Copper
CT130	25 x 3mm to 70mm²	Copper
CT135	25 x 3mm to 95mm²	Copper

Crossover tape clamp

Order Code	Conductor size (mm)	Conductor material
CX105-H	25 x 3	Copper
CX005-H	25 x 3	Aluminium

Test/ Junction clamp

Order Code	Max. conductor (mm)	Conductor material
CN105-H	26 x 8	Copper
CN005*	26 x 8	Aluminium

* Not as illustrated (drawing available on request)

Earth bonds & clamps

Mechanical clamps

Rod to tape clamp (type A)

Order Code	Nominal rod diameter (in.)	Nominal rod diameter (mm)	Max. conductor (mm)
CR105	Ø 1/2	Ø 12.7	26 x 12
CR105	Ø 5/8	Ø 16	26 x 12
CR105	Ø 3/4	Ø 20	26 x 10
CR108	Ø 5/8	Ø 16	30 x 2
CR108	Ø 3/4	Ø 20	30 x 2
CR110	Ø 5/8	Ø 16	40 x 12
CR115	Ø 5/8	Ø 16	51 x 8
CR125	Ø 3/4	Ø 20	51 x 12
CR130	Ø 1/2	Ø 12.7	26 x 20
CR130	Ø 5/8	Ø 16	26 x 18
CR130	Ø 3/4	Ø 20	26 x 10
CR130	Ø 1	Ø 25	26 x 10

Rod to tape clamp (type G)

Order Code	Nominal rod diameter (in.)	Nominal rod diameter (mm)	Conductor range (mm²)
CR505	Ø 3/8	Ø 9.5	6-35
CR510-FU	Ø 1/2	Ø 12.7	16-50
G5	Ø 5/8	Ø 16	5.2-33.6
CR515	Ø 5/8	Ø 16	16-70
G6	Ø 3/4	Ø 20	5.2-33.6
CR520	Ø 3/4	Ø 20	35-95
CR525	Ø 1	Ø 25	70-150

Earth bonds & clamps

Mechanical clamps (continued)

Rod to tape clamp (type B)

Order Code	Nominal rod diameter (in.)	Nominal rod diameter (mm)	Rod type
CR205	Ø 3/8	Ø 9.5	Copperbond
CR215	Ø 5/8	Ø 16	Copperbond
CR220	Ø 5/8	Ø 15	Solid copper
CR225	Ø 3/4	Ø 20	Copperbond
CR230	Ø 3/4	Ø 20	Solid copper

'U' bolt rod clamp (type E)

Order Code	Nominal rod / rebar diameter (in.)	Nominal rod / rebar diameter (mm²)	Hole centres (mm)
CR305	Ø 5/8	Ø 16	37
CR310	Ø 3/4	Ø 20	37
CR315	Ø 1	Ø 25	37
CR320*	Ø 5/8	Ø 16	37
CR325	Ø 1 1/2	Ø 38	54
CR330	Ø 2	Ø 50	64
CR326	Ø 1 1/2	Ø 38	54

* CR320 includes additional plate to allow tape to be clamped without drilling.

'U' bolt rod clamp (type GUV)

Order Code	Nominal rod / rebar diameter (in.)	Nominal rod / rebar diameter (mm)	Conductor range (mm²)
CR700	Ø 5/8	Ø 16	16-95
CR700	Ø 3/4	Ø 20	16-70
CR705	Ø 5/8	Ø 16	70-185
CR705	Ø 3/4	Ø 20	70-150
CR730	Ø 5/8	Ø 16	150-300
CR730	Ø 3/4	Ø 20	150-300
CR710	Ø 1	Ø 25	16-70
CR740	Ø 1	Ø 25	70-150
CR750	Ø 1	Ø 25	150-300

B bond

Order Code	Max tape width (mm)	Conductor material
BN105	26	Copper
BN005	26	Aluminium
BN113	31	Copper
BN114	40	Copper

Earth electrodes

Earth rod & earth rod seal

Threaded copperbond earth rod

Order Code	Nominal diameter (in.)	Length (mm)
RB105	Ø 1/2	1200
RB110	Ø 1/2	1500
RB115	Ø 1/2	1800
RB125	Ø 1/2	2400
RB205-FU	Ø 5/8	1200
RB210	Ø 5/8	1500
RB215	Ø 5/8	1800
RB220-FU	Ø 5/8	2100
RB225	Ø 5/8	2400
RB235	Ø 5/8	3000
RB305	Ø 3/4	1200
RB310	Ø 3/4	1500
RB315	Ø 3/4	1800
RB320-FU	Ø 3/4	2100
RB325	Ø 3/4	2400
RB335	Ø 3/4	3000

Fittings

Order Code	Type (in.)
CG170	1/2 Coupling
CG270	5/8 Coupling
CG370	3/4 Coupling
ST100	1/2 Driving stud
ST200	5/8 Driving stud
ST300	3/4 Driving stud

Earth rod seal

Order Code	Type
Earth rod seal assembly	
ES300	Earth rod seal and membrane seal
Earth rod seal pack	
ES300-12	Seal pack for 1/2" (Ø 12.7 mm) Copperbond rod
ES300-58	Seal pack for 5/8 " (Ø 14.2 mm) Copperbond rod
ES300-34	Seal pack for 3/4" (Ø 17.2 mm) Copperbond rod
ES300-15	Seal pack for Ø 15 mm solid copper rod
ES300-16	Seal pack for Ø 16 mm stainless steel rod
ES300-20	Seal pack for Ø 20 mm solid copper rod
Earth rod seal tube	
ES310-03	Seal tube, 300 mm length
ES310-05	Seal tube, 500 mm length
ES310-10	Seal tube, 1000 mm length
ES310-15	Seal tube, 1500 mm length
ES310-20	Seal tube, 2000 mm length
ES310-30	Seal tube, 3000 mm length
Accessory spanner set	
ES320	Membrane seal torque spanner set

Earth electrodes

Inspection pits, plate, lattice, backfill materials

FurseCEM® conductive aggregate

Order Code	Description	Weight (kg)
CM025	FurseCEM®	25kg
CM030	FurseCEM® (supplied with cement)	25kg

Concrete inspection pit

Order Code	Description
PT005	Concrete inspection pit
Accessories	
PT006	5 hole earth bar
PT007	7 hole earth bar

Bentonite moisture retaining clay

Order Code	Description	Weight (kg)
CM015	Bentonite powder	25kg
CM020	Bentonite granules	25kg

Earth plate (solid copper)

Order Code	Size (mm)
PE005	600 x 600 x 1.5
PE015	900 x 900 x 1.5
PE010	600 x 600 x 3
PE020	900 x 900 x 3

Lightweight inspection pit

Order Code	Description
PT205	Lightweight inspection pit with grey polymer lid
PT309-FU	Lightweight inspection pit with black (unbranded) polymer lid
PT110	Lightweight inspection pit with concrete lid
PT004	5 hole earth bar
Accessories for polymer lid	
AK005	6 mm Allen key
Accessories for concrete lid	
JH100	M8 x 100 mm long mild steel ‘J’ bolt lifting hook
AS100	M8 x 60 stainless steel Allen caphead screw (2 per lid)

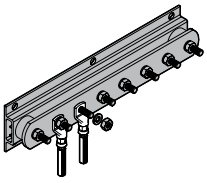
Earth mat (lattice copper)

Order Code	Size (mm)
PE110	600 x 600 x 3
PE120	900 x 900 x 3

Earth bonds & clamps

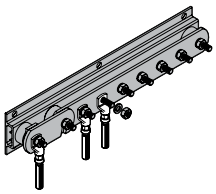
Earth bars

Earth bar



Order Code	Description	Length (mm)
Copper earth bar		
LK245-6	6 way	400
LK245-8	8 way	500
LK245-10	10 way	650
LK245-12	12 way	750
LK245-14	14 way	850
LK245-16	16 way	950
LK245-18	18 way	1050
LK245-20	20 way	1200
LK245-22	22 way	1300
LK245-24	24 way	1400
LK245-26	26 way	1500
LK245-28	28 way	1650
LK245-30	30 way	1750
Tinned copper earth bar		
LK245-6 -T	6 way	400
LK245-8 -T	8 way	500
LK245-10 -T	10 way	650
LK245-12 -T	12 way	750
LK245-14 -T	14 way	850
LK245-16 -T	16 way	950
LK245-18 -T	18 way	1050
LK245-20 -T	20 way	1200
LK245-22 -T	22 way	1300
LK245-24 -T	24 way	1400
LK245-26 -T	26 way	1500
LK245-28 -T	28 way	1650
LK245-30 -T	30 way	1750

Earth bar with single disconnecting link

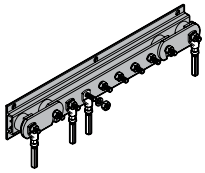


Order Code	Description	Length (mm)
Copper earth bar		
LK243-6	6 way	475
LK243-8	8 way	575
LK243-10	10 way	725
LK243-12	12 way	825
LK243-14	14 way	925
LK243-16	16 way	1025
LK243-18	18 way	1125
LK243-20	20 way	1275
LK243-22	22 way	1375
LK243-24	24 way	1475
LK243-26	26 way	1575
LK243-28	28 way	1725
LK243-30	30 way	1825
Tinned copper earth bar		
LK243-6 -T	6 way	475
LK243-8 -T	8 way	575
LK243-10 -T	10 way	725
LK243-12 -T	12 way	825
LK243-14 -T	14 way	925
LK243-16 -T	16 way	1025
LK243-18 -T	18 way	1125
LK243-20 -T	20 way	1275
LK243-22 -T	22 way	1375
LK243-24 -T	24 way	1475
LK243-26 -T	26 way	1575
LK243-28 -T	28 way	1725
LK243-30 -T	30 way	1825

Earth bonds & clamps

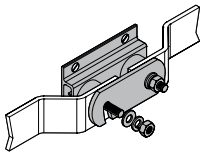
Earth bars

Earth bar with twin disconnecting link



Order Code	Description	Length (mm)
Copper earth bar		
LK207-6	6 way	550
LK207-8	8 way	650
LK207-10	10 way	800
LK207-12	12 way	900
LK207-14	14 way	1000
LK207-16	16 way	1100
LK207-18	18 way	1200
LK207-20	20 way	1350
LK207-22	22 way	1450
LK207-24	24 way	1550
LK207-26	26 way	1650
LK207-28	28 way	1800
LK207-30	30 way	1900
Tinned copper earth bar		
LK207-6 -T	6 way	550
LK207-8 -T	8 way	650
LK207-10 -T	10 way	800
LK207-12 -T	12 way	900
LK207-14 -T	14 way	1000
LK207-16 -T	16 way	1100
LK207-18 -T	18 way	1200
LK207-20 -T	20 way	1350
LK207-22 -T	22 way	1450
LK207-24 -T	24 way	1550
LK207-26 -T	26 way	1650
LK207-28 -T	28 way	1800
LK207-30 -T	30 way	1900

Earth bar accessories



Order Code	Description
Copper earth bar	
LK004	Swan-neck link
LK205	Disconnecting link
Tinned copper earth bar	
LK004-T	Swan-neck link
LK205-T	Disconnecting link

Electronic systems protection
Keeping you safe and connected

IEC/BS EN 62305 makes clear the need for a combined lightning protection solution including both structural and electronic systems protection.

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Electronic systems have become central to virtually every aspect of our lives from PCs and building management systems in the office to automated petrol pumps and barcode scanners at the supermarket.

The ever-changing pace of technological development, and especially the headlong quest for miniaturisation, has created the scenario where increasingly lightning sensitive systems are placed at the core of our society.

Both the threat of damage to vital electronic systems, and the seriousness of the consequences of that damage, are more real than ever.

Most modern electronic systems are at risk.

Transient overvoltages
The main risk to electronic systems is through transient overvoltages - large, very brief and potentially destructive increases in voltage within the electrical system. These can reach magnitudes of up to 6000 Volts in a well-insulated power distribution system, over eight times the level tolerated by many electronic systems.

Although lasting only thousandths or millionths of a second, without protection they can devastate these modern electronic systems:
- Disrupting system operations, through data loss, data corruption, and unexplained crashes
- Degrading equipment components and circuitry, shortening equipment lifetimes and increasing failures
- Causing costly and unnecessary system downtime

Transient overvoltages are caused by:
- The secondary effects of lightning strikes (either between clouds or to ground), from lightning energy induced on to above or below ground power, data and signal lines
- The electrical switching of large inductive loads (such as motors, transformers and electrical drives), or capacitive loads (such as power factor correction)

Protection benefits
Effective transient overvoltage protection can prevent:
- Lost or destroyed data
- Equipment damage
- Costly repair work - especially at remote/ unmanned installations
- The high cost of extended stoppages - lost sales, lost production, spoilage of work in progress
- Loss of essential services - fire alarm, security systems, building management systems
- Health and safety hazards caused by plant instability
- Fire risks and electric shock hazards

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Electronic systems protection

Mains power protection

Mains supplies - equipotential bonding

Order Code	Description
ESP 240/I/TNS	Enhanced single phase protector for level I/II LPS systems for 240 TNS/TNCS supplies
ESP 240/III/TNS	Enhanced single phase protector for level III/IV LPS systems for 240 TNS/TNCS supplies
ESP 240 /I/TT	Enhanced single phase protector for level I/II LPS system for 240 V TT supplies
ESP 240/III/TT	Enhanced single phase protector for level III/IV systems for 240 V TT supplies
ESP 415/I/TNS	Enhanced three phase protector for level I/II LPS systems for 415 TNS/TNCS supplies
ESP 415/III/TNS	Enhanced three phase protector for level III/IV LPS systems for 415 TNS/TNCS supplies
ESP415/I/TT	Enhanced three phase protector for level I/II LPS systems for 415 V TT supplies supplies
ESP415/III/TT	Enhanced three phase protector for level III/IV LPS systems for 415 V TT supplies

Mains supplies - DIN housing

Order Code	Description
ESP 240 D1	Enhanced protector for single phase supplies of 200-280 volts
ESP 415 D1	Enhanced protector for three phase supplies of 346-484 volts with LED indication supplies
Supplied with remote indication display	
ESP 415 D1R	Enhanced protector with remote LED display and 1 m lead, for three phase supplies of 346-484 volts
ESP RLA HD-4	4 m lead for use with three phase D1/D1R Series

Mains supplies (extra high maximum surge currents)

Order Code	Description
ESP 415 M2	Enhanced protector with a maximum surge current rating of 80 kA 8/20, for three phase supplies of 346-484 volts
ESP 415 M4	Enhanced protector with a maximum surge current rating of 160 kA 8/20, for three phase supplies of 346-484 volts

Mains supplies & power distribution systems

Order Code	Description
ESP 240 M1	Enhanced protector for single phase supplies of 200-280 volts
ESP 415 M1	Enhanced protector for three phase supplies of 346-484 volts

Electronic systems protection

Mains power protection

Mains supplies - with remote display indication

Order Code	Description
ESP 415 M1R	Enhanced protector with maximum surge current rating of 40 kA 8/20, with remote display and 1 m lead, for three phase supplies of 346-484 volts
ESP 415 M2R	Enhanced protector with maximum surge current rating of 80 kA 8/20, with remote display and 1 m lead, for three phase supplies of 346-484 volts
ESP 415 M4R	Enhanced protector with maximum surge current rating of 160 kA 8/20, with remote display and 1 m lead, for three phase supplies of 346-484 volts
ESP RLA-4	Optional 4 m lead for use with M1R, M2R and M4R Series

Mains supplies & fused connections up to 10 amps or up to 32 amps

Order Code	Description
Protectors rated at 10 amps or less	
ESP 240D-10A	For single phase supplies of 200-280 volts
ESP 240DS-10A	With remote contact, for single phase supplies of 200-280 volts
Protectors rated at 32 amps or less	
ESP 240D-32A	For single phase supplies of 200-280 volts
ESP 240DS-32A	With remote contact, for single phase supplies of 200-280 volts

Mains supplies & fused connections up to 5 amps or up to 16 amps

Order Code	Description
Protectors rated at 5 amps or less	
ESP 240-5A	For single phase supplies of 200-280 volts
ESP 240-5A/BX	Ready boxed for single phase supplies of 200-280 volts
Protectors rated at 16 amps or less	
ESP 240-16A	For single phase supplies of 200-280 volts
ESP 240-16A/BX	Ready boxed for single phase supplies of 200-280 volts

Plug-in protection for mains power supplies

Order Code	Description
ESP MC/19BK	Brackets to mount ESP MC series on 19” racks
ESP MC	Plug-in power conditioner, British style (3 square pin) plug and sockets, 220-260 volt supplies (13A or less) with telephone/fax protection
ESP MC/TN/RJ11	Plug-in power conditioner, British style (3 square pin) plug and sockets, 220-260 volt supplies (13A or less) with telephone/fax protection
ESP MC/Cat-5e	Plug-in power conditioner, British style (3 square pin) plug and sockets, 220-260 volt supplies (13A or less) with computer network protection

Electronic systems protection

Data & signal protection

Twisted pair data communication & signal lines (lower in-line resistance, higher current and higher bandwidth)

Order Code	Description
ESP 06E	Protector for twisted pair data communication or signal lines of up to 6 volts
ESP 15E	Protector for twisted pair data communication or signal lines of up to 15 volts
ESP 30E	Protector for twisted pair data communication or signal lines of up to 30 volts
ESP 50E	Protector for twisted pair data communication or signal lines of up to 50 volts
ESP 110E	Protector for twisted pair data communication or signal lines of up to 110 volts

Twisted pair data communication, signal & telecom lines - slim line, with removable protection module

Order Code	Description
ESP SLTN	Protector for twisted pair phone lines with a maximum (ringing) voltage of 296 volts
Slim line protectors with removable protection module, LED status indication and isolated screen	
ESP SL06L/I	Protector for twisted pair low current DC power lines of up to 6 volts
ESP SL15L/I	Protector for twisted pair low current DC power lines of up to 15 volts
ESP SL30L/I	Protector for twisted pair low current DC power lines of up to 30 volts
ESP SL50L/I	Protector for twisted pair low current DC power lines of up to 50 volts
ESP SL110L/I	Protector for twisted pair low current DC power lines of up to 110 volts
Slim line, Intrinsically Safe protectors (ATEX approved) with removable protection module, LED status indication and isolated screen	
ESP SL15XL/I	Protector for twisted pair low current DC power lines of up to 15 volts
ESP SL30XL/I	Protector for twisted pair low current DC power lines of up to 30 volts

High density data, signal & telephone lines

Order Code	Description
ESP 06Q	Protector for 4 twisted pair signal lines of up to 6 volts
ESP 15Q	Protector for 4 twisted pair signal lines of up to 15 volts
ESP 30Q	Protector for 4 twisted pair signal lines of up to 30 volts
ESP 50Q	Protector for 4 twisted pair signal lines of up to 50 volts
ESP 110Q	Protector for 4 twisted pair signal lines of up to 110 volts
ESP TNQ	Protector for 4 twisted pair signal lines of up to 296 volts

Three wire RTD applications

Order Code	Description
ESP RTD	Protector for three wire RTD lines
ESP SL RTD	Slim line protector for three wire RTD lines, with removable protection module
ESP RTDQ	Protector for 3 three wire RTD lines

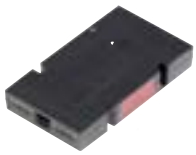
Three wire RTD applications

Order Code	Description
ESP RS485	Protector for RS 485 and Fieldbus
ESP SL RS485	Slim line protector for RS 485 and Fieldbus
ESP RS485Q	Protector for RS 485 and Fieldbus lines

Electronic systems protection

Telecoms & computer line protection

Plug-in protectors for telephone & ISDN lines



Order Code	Description
ESP TN/JP	Protection for all 6 conductors on phone lines with British style jack plug and socket connections
ESP TN/RJ11-6/6	Protection for all 6 conductors on phone lines with RJ11 connections
ESP ISDN/RJ45-8/8	Protection for all 8 conductors on ISDN lines with RJ45 connections

PSTN & ISDN telephone lines with LSA-PLUS connections

Order Code	Description
ESP KE10	Earth bar for connection of ESP KT1/2 to ten line LSA-PLUS disconnection modules
ESP KT1	Protector for PSTN and U interface ISDN lines with LSA-PLUS connections with LSA-PLUS connections
ESP K10T1	Protector for up to ten PSTN and U interface ISDN lines on a ten line LSA-PLUS disconnection module

Computer networks up to Cat-6 cabling & PoE+

Order Code	Description
ESP Cat-6	Protector for twisted pair Power over Ethernet PLUS PoE+ (10baseT, 100baseT and 1000baseT gigabit) networks with up to Cat-6 cabling and RJ45 connections
ESP Cat-6/PoE	Protector for twisted pair Power over Ethernet (10baseT, 100baseT, 1000baseT gigabit and 10GbaseT gigabit) networks with up to Cat-6 cabling and RJ45 connections

Specific systems protection

Mains supplies - wind turbine (WT) power distribution systems

Order Code	Description
ESP 690/25/WT	Enhanced single mode protector with maximum surge current rating of 25 kA 10/350 for 690 volt WT systems
ESP 690/12.5/WT	Enhanced single mode protector with maximum surge current rating of 12.5 kA 10/350 for 690 volt WT systems
ESP CE7	Connection and earthing bar for use with 3 of ESP 690/12.5/WT protectors for TNC systems
ESP CE9	Connection and earthing bar for use with 3 of ESP 690/25/WT protectors for TNC systems
ESP CE10	Connection and earthing bar for use with 4 of ESP 690/12.5/WT protectors for TNS systems
ESP CE13	Connection and earthing bar for use with 4 of ESP 690/25/WT protectors for TNS systems

Electronic systems protection

Specific systems protection

DC photo-voltaic (PV) power distribution systems

Order Code	Description
ESP DC1000/12.5/PV	Enhanced protector with maximum surge current rating of 12.5 kA 10/350 for 1000 V DC PV systems
ESP DC550/12.5/PV	Enhanced protector with maximum surge current rating of 12.5 kA 10/350 for 550 V DC PV systems
ESP CE7	Connection and earthing bar for use with 3 of ESP 690/12.5/WT protectors for TNC systems
ESP CE9	Connection and earthing bar for use with 3 of ESP 690/25/WT protectors for TNC systems
ESP CE10	Connection and earthing bar for use with 4 of ESP 690/12.5/WT protectors for TNS systems
ESP CE13	Connection and earthing bar for use with 4 of ESP 690/25/WT protectors for TNS systems

Coaxial cable TV (CATV) systems

Order Code	Description
ESP CATV/F	Protector with female F connectors for coaxial CATV lines
ESP TV/F	Protector with female F connectors for coaxial TV lines
ESP TV/EURO	Protector with female EURO-TV connectors for coaxial EURO-TV lines
ESP MATV/F	Protector with female F connectors for coaxial MATV lines
ESP SMATV/F	Protector with female F connectors for coaxial SMATV lines

Closed circuit TV video lines

Order Code	Description
ESP CCTV/B	Protector for coaxial CCTV video lines with BNC connections
ESP CCTV/T	Protector for twisted pair CCTV video lines with screw connections

Coaxial RF systems (for frequencies between DC and 2.7 GHz)

Order Code	Description
ESP RF 111x21	GDT-based protector with N female connectors for coaxial RF lines
ESP RF AA1x21	GDT-based protector with 7/16 DIN female connectors for coaxial RF lines
ESP RF 441x21	GDT-based protector with BNC female connectors for coaxial RF lines

NOTE - please refer to ESP RF data sheet to select correct GDT (number 1 to 6) to substitute for 'x' in product part. (Visit www.furse.com for details)

Coaxial RF systems (for frequencies between DC and 2.7 GHz)

Order Code	Description
ESP RF 111A11	Protector with N female connectors for coaxial RF lines
ESP RF AA1A11	Protector with 7/16 DIN female connectors for coaxial RF lines
ESP RF 441A11	Protector with BNC female connectors for coaxial RF lines

Electronic systems protection
Accessories

Weatherproof enclosures

Order Code	Description
WBX 2/G	Weatherproof enclosure, with grey lid, for up to 2 single earth stud protectors
WBX 3	Weatherproof enclosure, with clear lid, for ESP 120 M1, ESP 240 M1 or ESP 277 M1
WBX 3/G	Weatherproof enclosure, with grey lid, for 1 double earth stud or up to 3 single earth stud protectors
WBX 4	Weatherproof enclosure, with clear lid, for an ESP 208 M1, ESP 415 M1 or ESP 480 M1 or a CME 4 and protectors
WBX 4/GS	Weatherproof enclosure, with grey lid and secure head screws, for a CME 4 and protectors
WBX 8	Weatherproof enclosure, with clear lid, for a CME 8 and protectors
WBX 8/GS	Weatherproof enclosure, with grey lid and secure head screws, for a CME 8 and protectors
WBX 16/2/G	Weatherproof enclosure, with grey lid, for one or two CME 16 and protectors
WBX D4	Weatherproof enclosure for up to 4TE wide DIN mountable protectors, clear hinged inspection lid
WBX D8	Weatherproof enclosure for up to 8TE wide DIN mountable protectors, clear hinged inspection lid
WBX M2	Weatherproof enclosure, with clear lid, for an ESP 415 M2 or ESP 480 M2
WBX M4	Weatherproof enclosure, with clear lid, for an ESP 415 M4 or ESP 480 M4
WBX SLQ	Weatherproof enclosure, with clear lid, for an ESP SL or ESP Q protectors
WBX SLQ/G	Weatherproof enclosure, with grey lid, for an ESP SL or ESP Q protectors

Combined mounting & earthing kits

Order Code	Description
CME 4	Combined mounting and earthing kit with 4 mounting positions
CME 8	Combined mounting and earthing kit with 8 mounting positions
CME 16	Combined mounting and earthing kit with 16 mounting positions
CME 32	Combined mounting and earthing kit with 16 mounting positions

Jokab safety

Production-friendly safety systems

ABB offers an extensive range of innovative products and solutions for machine safety systems. Found in all types of industry across the globe, we have products and solutions especially well suited for Robotics, Food & beverage and General machinery (OEM). **new.abb.com/world-of-installation**

Jokab Safety
Production-friendly safety systems

Product family Jokab Safety

—
01 **Training and advice**
Practical application of standards and regulations, along with CE-labelling.

02 **Pluto Safety PLC**
A unique All-Master safety PLC for dynamic and static safety circuits.

03 **Pluto AS-i**
Programmable safety system AS-i where all units are connected to the same bus cable and the function of the unit is determined in the PLC program.

04 **Vital safety controller**
Dynamic safety circuit for multiple protection according to the highest safety category.

05 **Tina adapter units**
Transformation of static signals to dynamic safety signals, etc.

06 **Sentry saftey relays**
The market's most flexible safety relays for different protection purposes and categories.

07 **Light curtain/light beam**
Complete range of light beams, light curtains.

08 **Sensors/switches/locks**
Dynamic non-contact sensors, safety switches, magnetic switches and locks.

09 **Control devices**
Ergonomic three position control units, two-hand control units and foot pedals.

10 **Emergency stop devices**
Emergency stops, Safety Stops and Reset buttons for dynamic and static safety circuits.

11 **Contact strips/ Bumpers/Safety mats**
Sensitive edges, bumpers and safetys mats.

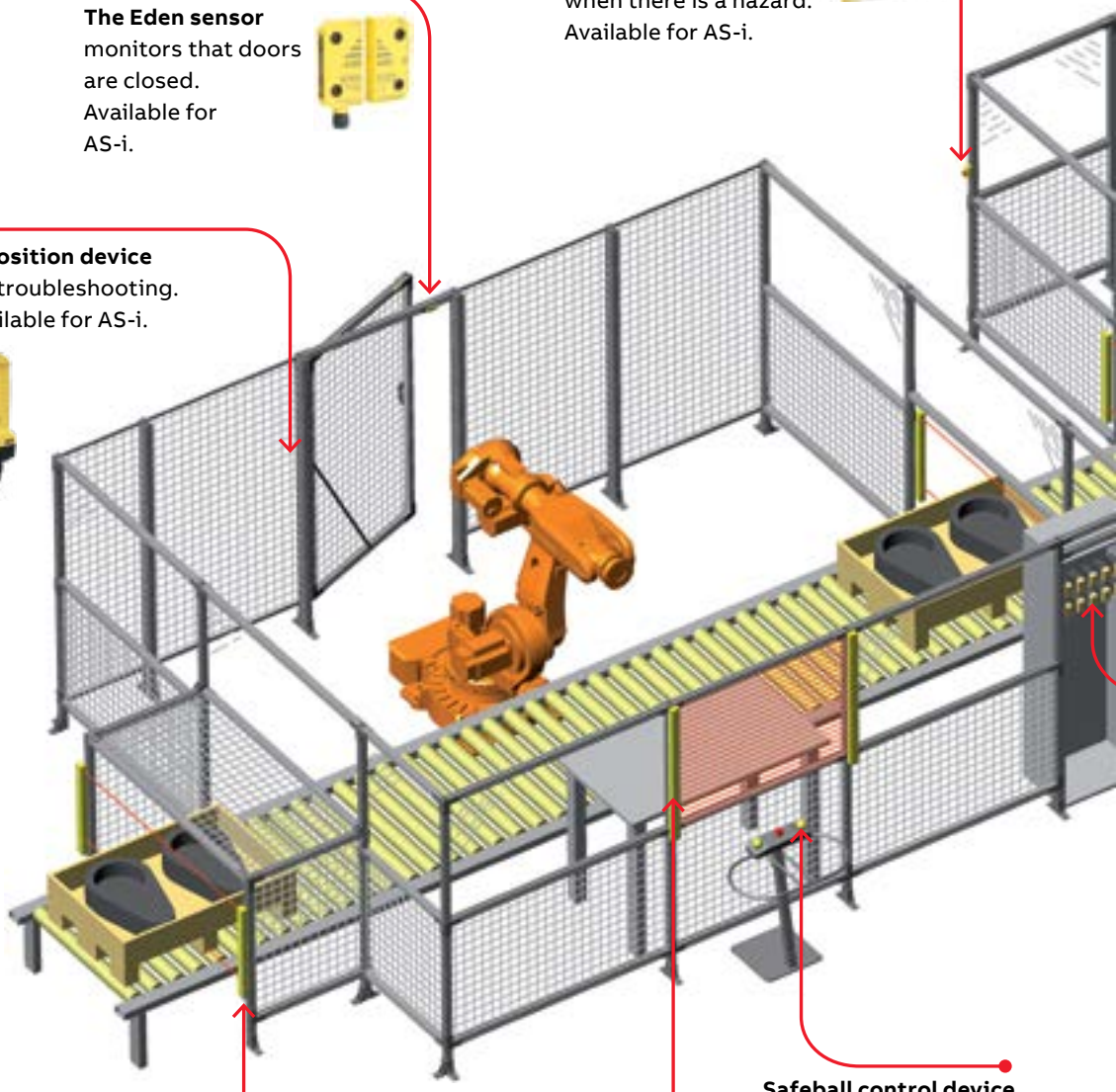
12 **Fencing systems/SafeCAD**
A stable and flexible fencing system that is easy to install.

Magne magnetic lock
to keep doors closed during a process

Smile emergency stop
to stop machinery when there is a hazard. Available for AS-i.

The Eden sensor
monitors that doors are closed. Available for AS-i.

3-position device
for troubleshooting. Available for AS-i.



Safeball control device
for ergonomic and safe two-handed control

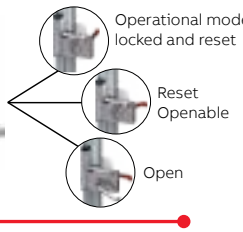
Orion light curtain with finger detection

Orion Light curtains with finger, hand or body detection

Quick-Guard fencing system prevents unauthorised access and offers noise

Dalton process lock to keep doors closed during a

Sensitive edges protect against trapping injuries

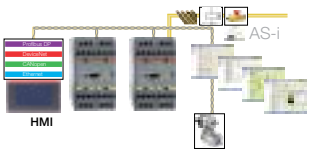


Knox safety lock ensures that door are locked

Pluto Safety PLC, Vital and safety relays ensures that door are locked

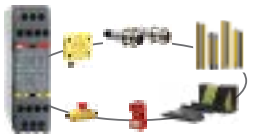
— 01

— 02



— 03

— 04



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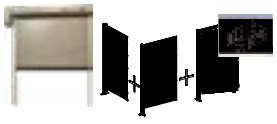


SECTION 18

SECTION 19

E-klips spring steel fastners

Electrical & mechanical fixing systems

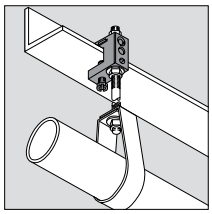
E-Klips spring steel fastenings range has been manufactured in the UK for over 30 years. Offering quick, easy and reliable method of fixing services to steelwork without the need for bracket making, drilling holes or the use of nuts and bolts. **new.abb.com/world-of-installation**

E-Klips®

ABB

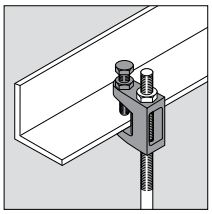
E-Klips mechanical and electrical fixings

Key products



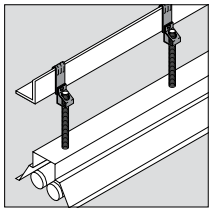
Girder clamps for threaded rod

Part Code	Order Code	Quantity (pieces)
FH65	7TCA084030R1720	25



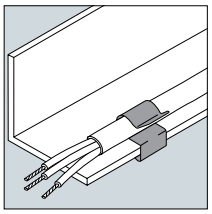
Girder clamps for threaded rod

Part Code	Order Code	Quantity (pieces)
FC-11	7TCA084220R0153	25



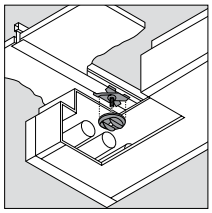
Purlin clips for threaded rod

Part Code	Order Code	Quantity (pieces)
AV155-AM6T	7TCA084030R0750	25
AV155-AM10T	7TCA084030R0742	25



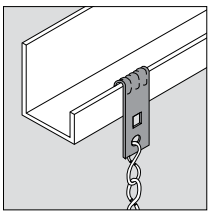
Girder clips for single cables

Part Code	Order Code	Quantity (pieces)
ECS89	7TCA084030R1714	25
ECS1011	7TCA084030R1710	25
ECS1214	7TCA084030R1711	25
ECS1519	7TCA084030R1712	25
ECS2024	7TCA084030R1713	25
ECM89	7TCA084030R1709	25
ECM1011	7TCA084030R1705	25
ECM1214	7TCA084030R1706	25
ECM1519	7TCA084030R1707	25
ECM2024	7TCA084030R1708	25
ECL89	7TCA084030R1704	25
ECL1011	7TCA084030R1700	25
ECL1214	7TCA084030R1701	25
ECL1519	7TCA084030R1702	25
ECL2024	7TCA084030R1703	25



Suspended ceiling clips

Part Code	Order Code	Quantity (pieces)
JHX16S	7TCA084030R1721	25

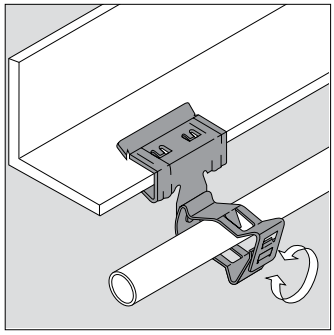


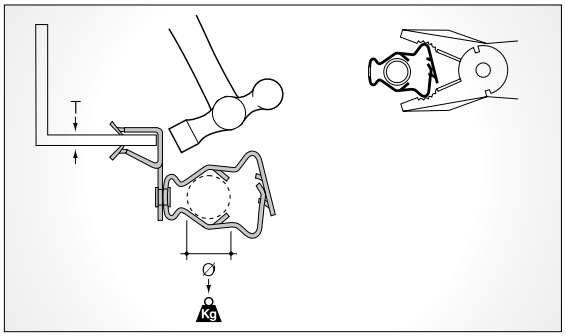
Girder clips for chain or wire

Part Code	Order Code	Quantity (pieces)
AV155	7TCA084030R1699	25

Girder clips for conduit

Type AH-GM





Girder clips for conduit

Order Code	T (mm)	Ø (mm)	PG type	Load rating (kg)	Material finishes	Quantity (pieces)
AH153-GM1219	1.5-3	12-19	7/9/11	12	F8+	25
AH153-GM1926	1.5-3	19-26	13.5/16	12	F8+	25
AH153-GM2632	1.5-3	26-32	21	12	F8+	25
AH153-GM3240	1.5-3	32-40	29	12	F8+	25
AH153-GM4047	1.5-3	40-47	36	12	F8+	25
AH153-GM4757	1.5-3	47-57	36/42	12	F8+	25
AH38-GM1219	3-8	12-19	7/9/11	12	F8+	25
AH38-GM1926	3-8	19-26	13.5/16	12	F8+	25
AH38-GM2632	3-8	26-32	21	12	F8+	25
AH38-GM3240	3-8	32-40	29	12	F8+	25
AH38-GM4047	3-8	40-47	36	12	F8+	25
AH38-GM4757	3-8	47-57	36/42	12	F8+	25
AH814-GM1219	8-14	12-19	7/9/11	12	F8+	25
AH814-GM1926	8-14	19-26	13.5/16	12	F8+	25
AH814-GM2632	8-14	26-32	21	12	F8+	25
AH814-GM3240	8-14	32-40	29	12	F8+	25
AH814-GM4047	8-14	40-47	36	12	F8+	25
AH814-GM4757	8-14	47-57	36/42	12	F8+	25
AH1420-GM1219	14-20	12-19	7/9/11	12	F8+	25
AH1420-GM1926	14-20	19-26	13.5/16	12	F8+	25
AH1420-GM2632	14-20	26-32	21	12	F8+	25
AH1420-GM3240	14-20	32-40	29	12	F8+	25
AH1420-GM4047	14-20	40-47	36	12	F8+	25
AH1420-GM4757	14-20	47-57	36/42	12	F8+	25

Notes

Additional information
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ABB Limited
Electrification Products Division
Tower Court
Foleshill Enterprise Park
Courtaulds Way
Coventry CV6 5NX
Tel: +44 (0) 333 999 9900
E-Mail: LV.Enquiries@gb.abb.com
Twitter: @ABBUKEP

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