
PRODUCT SELECTION GUIDE

Electrification UK

Contractor handbook



ABB's Electrification Business Area is a global leader in electrical products and solutions, operating in more than 100 countries, with over 200 manufacturing sites. Our 50,000+ employees are dedicated to delivering safe, smart and sustainable electrification. With ABB Ability™ enabled digital solutions at its core, our portfolio protects, connects and optimises the flow of electrical energy for smarter electricity distribution for utilities, industry, buildings, infrastructure and mobility.

Table of contents

| | |
|----------------|---|
| 004–017 | 1. Introduction |
| 018–045 | 2. Residential / Commercial distribution |
| 048–062 | 3. TPN Commercial / Industrial distribution |
| 063–088 | 4. Enclosed switching products |
| 089–093 | 5. Enclosed control products |
| 094–115 | 6. Industrial plugs and sockets |
| 116–130 | 7. Enclosures and switchboards |
| 131–135 | 8. Enclosed control products |
| 136–148 | 9. Electronic relays and controls |
| 149–164 | 10. Motor control and protection |
| 165–207 | 11. Cable management products |
| 208–237 | 12. Emergi-Lite - Emergency lighting |
| 238–259 | 13. Energy and lighting management |
| 260–263 | 14. EV charging - Terra AC Wallbox |
| 264–293 | 15. Smart home - Designed to make your life simpler |
| 294–310 | 15. Furse - Earthing, lightning and surge protection |
| 311–317 | 16. Jokab safety products |

A safer, more reliable flow of electricity

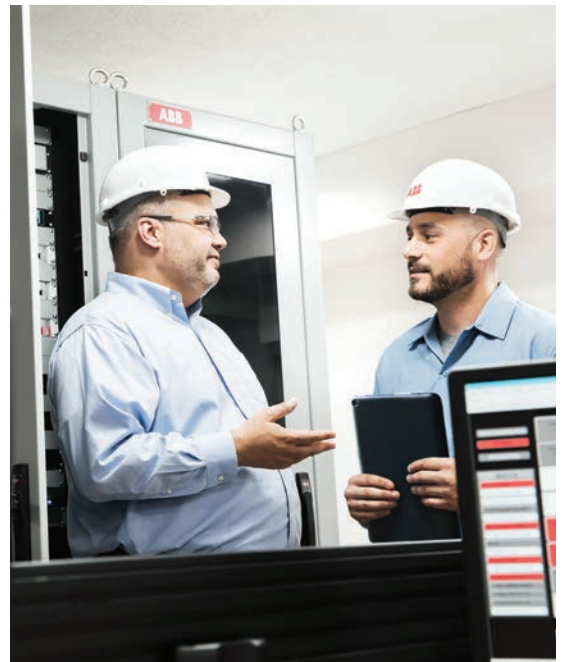


"We make our customers more successful by identifying the challenges they face and creating opportunities through intelligent solutions to improve insight and efficiency into power distribution."

To meet the needs of this changing world, ABB's Electrification business is dedicated to developing pioneering technologies that, from the substation to the point of consumption, create a safer, smarter, more sustainable electrical flow – for everyone

With a broad range of market-leading products and solutions, a global sales network and customised support, ABB provides flexibility that improves energy performance, whatever the requirements. Our trusted, high-quality products are intelligent and cloud-based, enabling them to control and protect power more effectively.

Our portfolio spans a wide range of industries, from solar plants, where our inverters convert electricity to be used at low- and medium-voltage, to integrated systems for industrial sites and remote locations, to products that protect and connect electricity in the world around us.



Buildings



Data Centres



EV Charging



Marine



Oil & Gas



Rail



Food & Beverage



Manufacturing



Solar



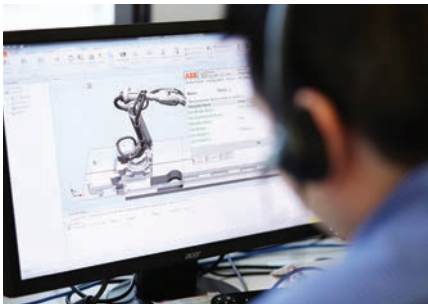
Wind

Digital services

Simplified business solutions

By digitalising our services, we are easing the transformation for our customers from traditional office based operations, towards a digitalised future, enabling a more efficient pro-active work environment.

E-Configure



With e-Configure, customers can completely integrate the ordering process, selecting, configuring and ordering their products more quickly and simply.

Learn more: <http://new.abb.com/low-voltage/software/e-configure>

ABB Connect

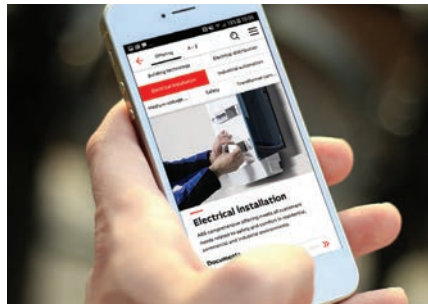
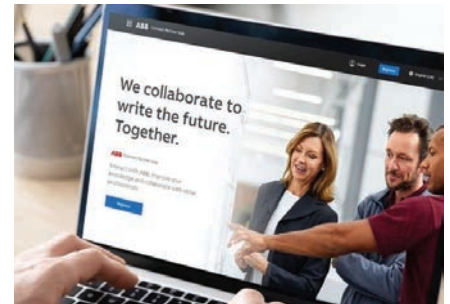


ABB Connect helps you to find product information and stay connected to ABB's latest news and tools.

Learn more: <https://go.abb/connect>

ABB Connect Partner Hub



Join our dynamic, online platform that connects customers directly with key professionals, such as system integrators, and ABB Ability™ digital solutions and services.

Learn more: <https://partnerhub.connect.abb.com/> and <https://new.abb.com/about/our-businesses/electrification/abb-ability/partner-hub>

Common Business OnLine (cBOL)



Business Online provides a common customer interface with electronic integration and order entry to ABB business lines - available to all business areas, and across all types of customers from channel partners to end-users.

Learn more: <https://bolservices.it.abb.com/CBOL/default>

Building Information Modeling



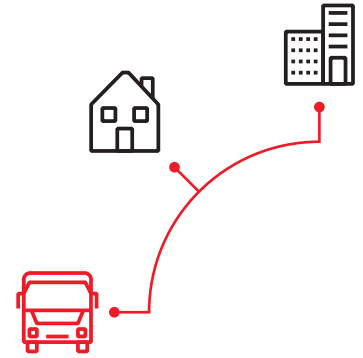
ABB BIM objects are just one click away. Find them stored along with supporting documentation in our download centre or via selected third party repositories.

Learn more: <http://new.abb.com/low-voltage/building-information-modeling>



Smarter mobility

Electric vehicle infrastructure solutions



As an innovator in EV infrastructure solutions, ABB is laying the foundations in the UK for a future of smarter, reliable, and emission-free mobility, accessible by everyone, everywhere.

Whether you're a home owner wanting to travel emission free, an out-of-town retailer looking to offer charging points for customers or looking to build en-route fast charging stations, ABB's future-proof charging technology with unrivalled connectivity offers a sustainable option for EV charging.

Charging systems for every application

DC fast-charging

Terra DC fast chargers. The most widely used EV fast chargers in the market, ideal for urban applications, retail and refueling stations.

- Compact footprint
- Maximized revenue generation
- Future ready



DC Wallbox

The Terra DC wallbox is a future-proof investment supporting current and future EVs with high voltage charging, applicable to a wide variety of use cases, in an ultra-compact footprint, that is safe and reliable, for residential use too.

- Intelligent design: compact, convenient, connected
- Future-proof: ROI maximized
- Safety: built-in protection



High power fast-charging

Terra HP charge post is a modular 175-350 kW high power charger ideally suited for highway corridor and EV fleet operations.

- Customizable branding
- Profitable operation
- Premium user experience



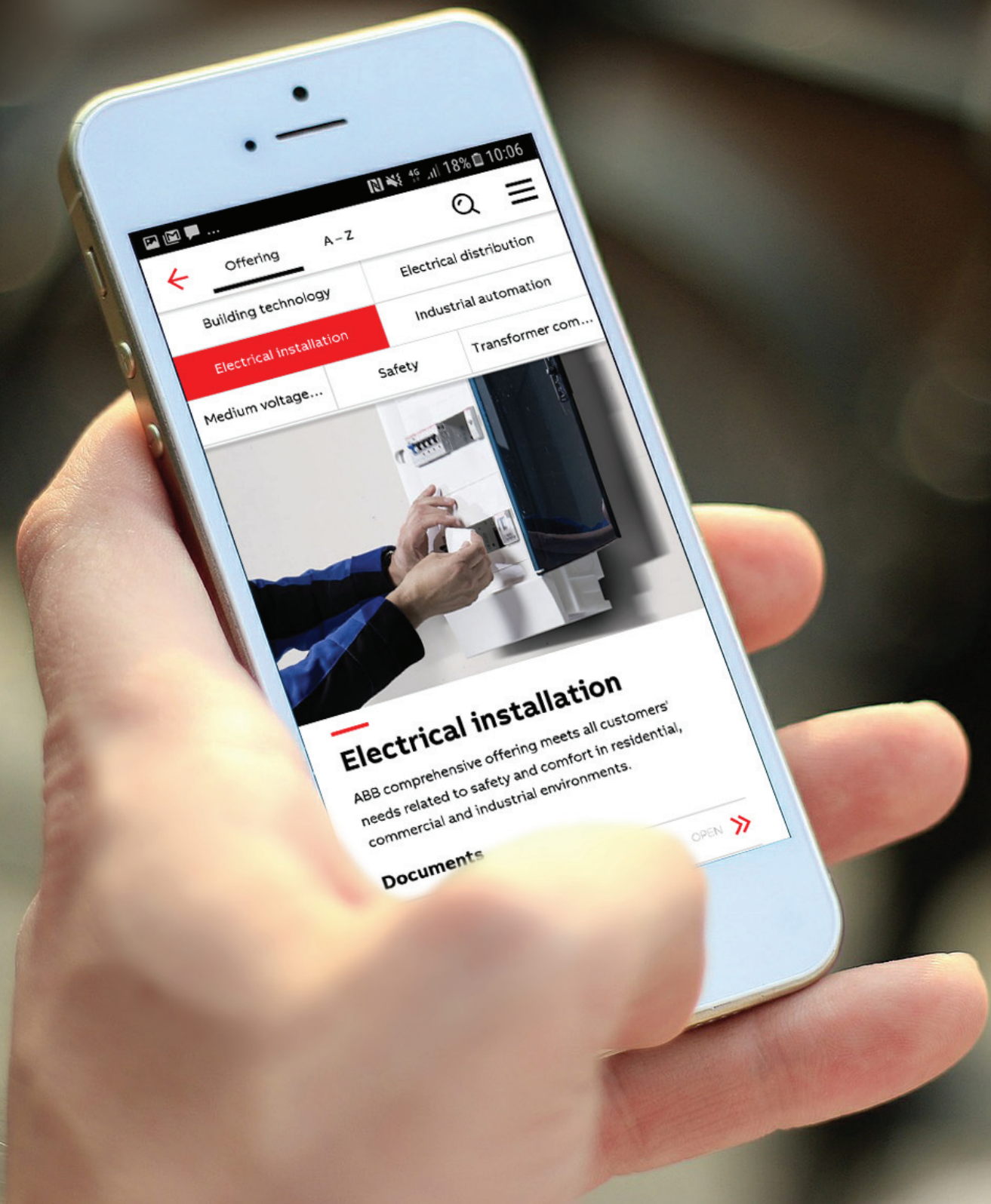
AC wallbox

Terra AC wallbox provides tailored, intelligent and networked charging solutions for any business, home or location.

- High-value quality
- Futureproof flexibility
- Safety and protection



Learn more: <https://new.abb.com/uk/smarter-mobility>



Offering A-Z

- Building technology
- Electrical distribution
- Electrical installation**
- Industrial automation
- Medium voltage...
- Safety
- Transformer com...



Electrical installation

ABB comprehensive offering meets all customers' needs related to safety and comfort in residential, commercial and industrial environments.

Documents

OPEN >>

ABB Connect

Electrification solutions at your fingertips

Whether you're exploring our product information, need technical data, installation videos or want to read the latest industry news, ABB Connect is the central resource for all your electrification needs.

With ABB Connect you can view



Product news



Literature



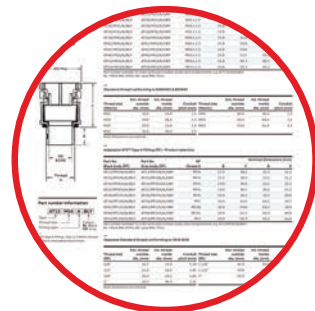
Training



Events



Installation videos



Technical information

Download ABB Connect for free:



iTunes
(iOS)



Google Play
(Android)



Microsoft Store
(Windows 10)

ABB Electrification business

Service facilities

The ABB Electrification Service facility in Coleshill demonstrates our commitment to customer experience, enabling faster response for investigation, repair and refurbishment of ABB's Electrification portfolio.

Your business efficiency depends on your choices. ABB's service agreements let you focus on what you do best, while your power distribution system runs smoothly. With your equipment performance optimised, your cost control improved, it's your way towards less unplanned downtime and easier maintenance budgeting.

Here are some examples of the service choice you can make:



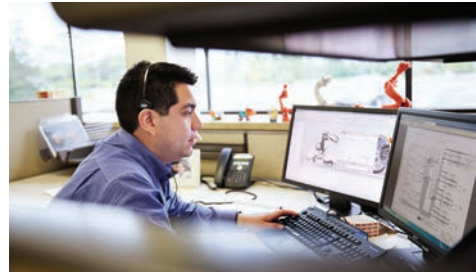
Delivered maintenance services

This is the essential maintenance to prolong the lifetime of your assets. We take precise maintenance actions, including providing genuine ABB parts in preventive maintenance kits.



Self maintenance services

We provide you with access to proprietary resources that allow you to manage your own maintenance. Resources include online troubleshooting tools, manuals and equipment histories.



Technical support

Expert help is only a phone call away. This solution is for all technical telephone assistance and rapid troubleshooting advice.



On-site response time

For those times when you need help, and you need it now. One phone call and an expert will be on-site within the time agreed.



Skills development services

Your investments improve performances when effectively used on a day-to-day basis. We share our expertise to elevate your operators' skills to maximise your investment.

Our centralised service facilities, located at Coleshill, Birmingham allow ABB to provide a faster and more efficient turnaround on maintenance, investigation and repair of electrical vehicle charging stations, solar inverters, low- and medium-voltage circuit breakers, low-voltage panels and other electrical apparatus including uninterruptible power supply (UPS) systems and emergency lighting.

Located directly opposite, our dedicated assembly site covers approximately 2,000 sq.m of warehouse space, and is used to pre-assemble and store our sub-distribution products, adding further added value from ABB services including all the testing facilities. Our centralised service facility produces both standard and custom variants of:



Assembled plastic and metal switches



Enclosed ATS panels



Assembled panel boards



Assembled distribution boards





Product Training & CPD Seminars

What courses and training are available?

We offer training in the following areas, among others:

- Products and systems
- Commissioning and user training
- Service and maintenance training
- Design and dimensioning
- Customer-specific tailored courses

ABB offer a wide range of free product training and support, providing informed decision making for your electrical installation needs.

With ABB Electrification Business you don't just have access to the most comprehensive range of Low and Medium Voltage products available - providing unlimited compatibility solutions - we also offer industry-leading support services.

These include structured training and seminars to help our customers develop a greater knowledge and understanding of their industry's legislation and standards - essential for making informed project specification decisions.

Our CPD seminars and training aim to:

- provide critical and relevant facts on changes in industry legislation
- address the impact of these changes on your business
- provide guidance on effective methodologies to simplify implementation
- address ways of reducing overall labour and maintenance costs



CPD Seminars and training

Selectivity & Coordination with Power Circuit Breakers

Selecting Circuit Breakers Using Software Based Sources

Advanced Circuit Protection In Buildings and Infrastructure

Protection Against Electric Shock & Thermal Effects According to BS 7671 18th Edition

Life Safety Transfer Switching

LV Switchboard Design to BS EN 61439

Electronic Power Breaker Trip Units

Smart & Connected Communications (Bus Communications)

Energy Management and Asset Management

De-carbonising buildings (Low & Zero Carbon Buildings)

Modern Solutions for LV Breaker Distribution Applications

EV Charging

ABB Emergency Lighting Standards & Guidance - BS5266--2016, EN1838:2013 & EN50172:2004

Lightning Protection Standards; IEC / BS EN 62305

Surge Protection to BS EN 62305 / BS 7671 18th edition

Product training

Lighting

Emergency lighting, testing & monitoring

Central power supply systems

ICEL risk assessment

Introduction to metering

KNX Introduction

LV Protection & control

BS 5266 Emergency lighting - Part 1

Emergency lighting testing & monitoring

ICEL risk assessment

Earthing & lightning protection overview

Earthing & lightning protection

Overvoltage protection to BS 7671

Central Power Supply System requirements

Lightning protection - Earthing

Lightning Protection - Surge Protection

New standards in lightning protection - Understanding BS EN 62305:2006

17th Edition first amendment - Surge protection

Other

Understanding hazardous areas - LFH Conduit

Energy saving with variable speed drives

ABB i-bus KNX

Free@home

Lunch & learn (technical seminars)

E-Max 2 MCCB

The new ATS

Discrimination study workshop

Fuse vs Fuseless

Introduction to circuit breakers

Zone selectivity

DOC software

Power quality

ABB breakers - A technical comparison

Directional, Differential and Zone Protection

Communications capabilities with ABB breakers

ABB Metering capability

MV Grid connection, MV switchgear and transformer offering

* For a full list of all training courses we offer visit our website: new.abb.com/low-voltage/service/training
Where requested, we can tailor a course, provide an informal briefing or supply specific training on our product lines.

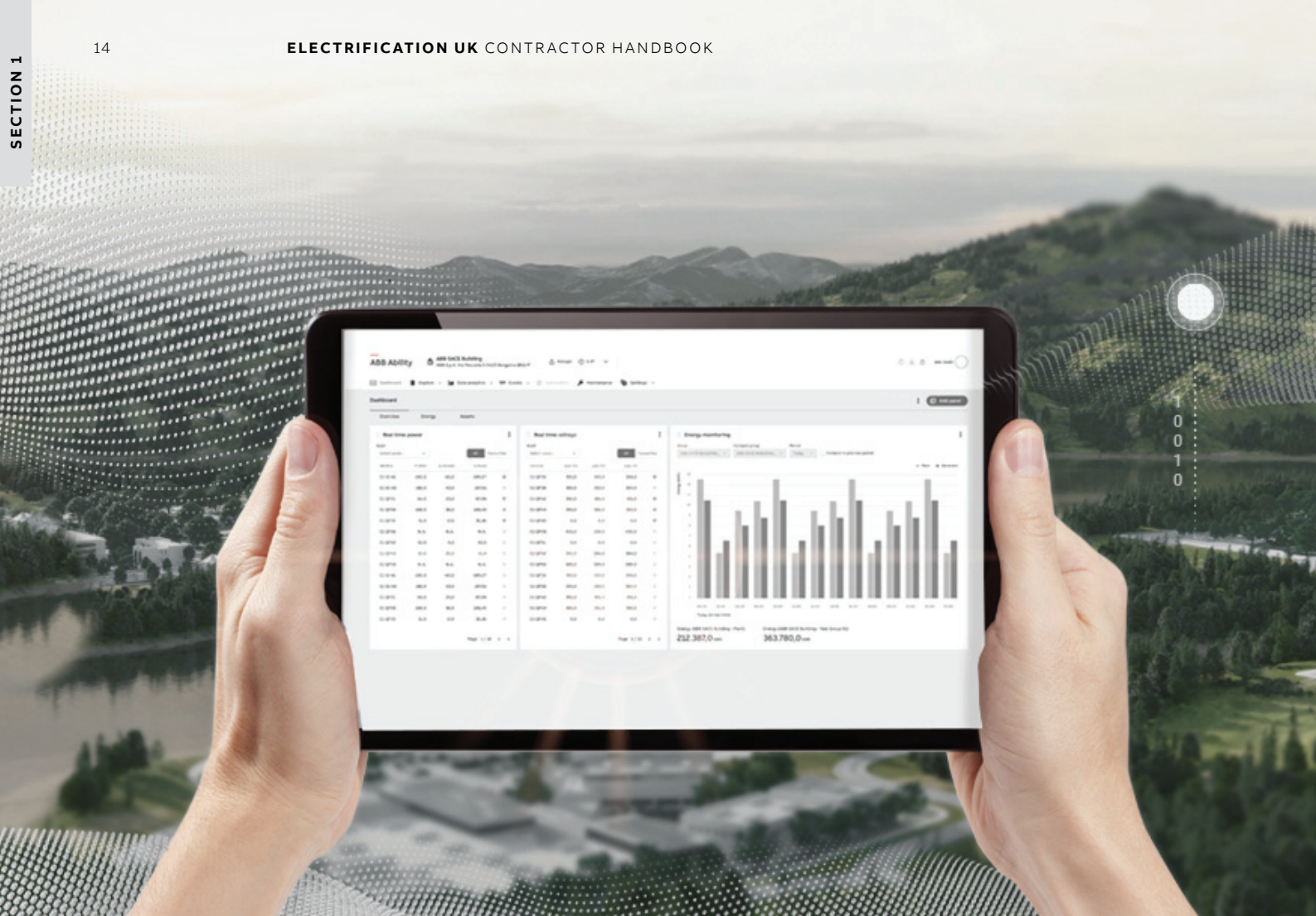


ABB Ability™ Digital Solutions

for safer, smarter and
more sustainable
electrification

ABB Ability™ solutions deliver a safer, smarter, more sustainable electrical infrastructure by providing data-driven insights that enable you to reduce costs, increase comfort, and drive efficiency.

With our solutions, you can unlock the full potential of your equipment by quickly and easily adding innovative new features and functionality.

Our digital transformation solutions for Smart buildings, E-Mobility, Data Center, Food & beverage, Chemicals, oil and gas and many other transform the way you work by:

- Empowering better decisions with data and Improving reliability
- Increasing flexibility and Reducing cost
- Optimising comfort and Improving ROI (return of investment)

ABB Ability™ Energy and Asset Manager

ABB Ability™ Energy and Asset Manager provides application-specific asset and energy management. Users can view and analyze data on facility performance and manage assets to optimise energy consumption in real time and improve overall site efficiency. This SaaS assist conformity to assessments like ISO 50001, LEED, CIBSE TM39, BREEAM.

With instant access, anytime, anywhere the new solution is suitable for small and midsize factories, shopping malls or data centers, and could save customers up to 30% on their energy bills and up to 40% on maintenance costs.

Dashboard of ABB Ability™ Energy and Asset Manager

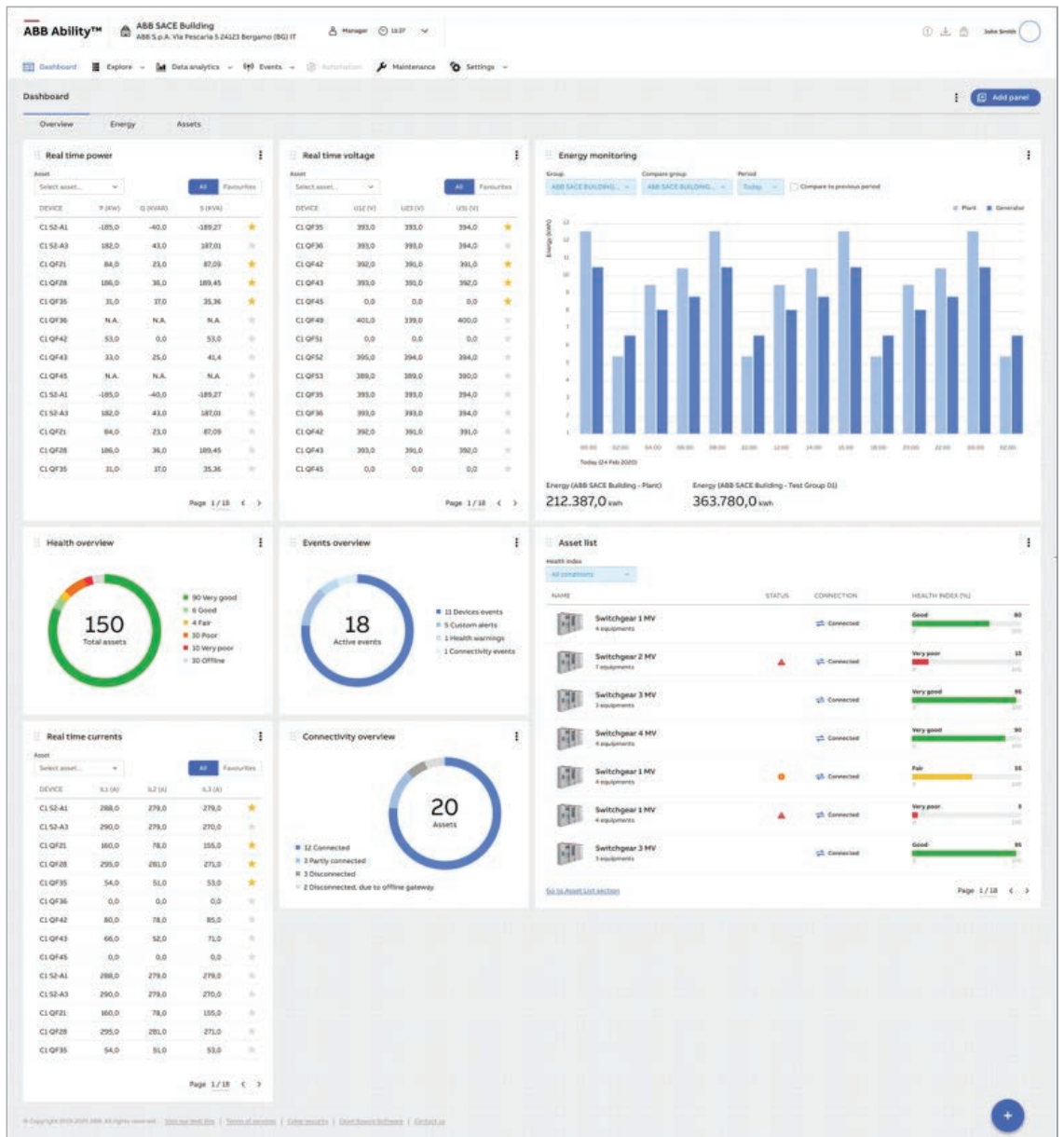
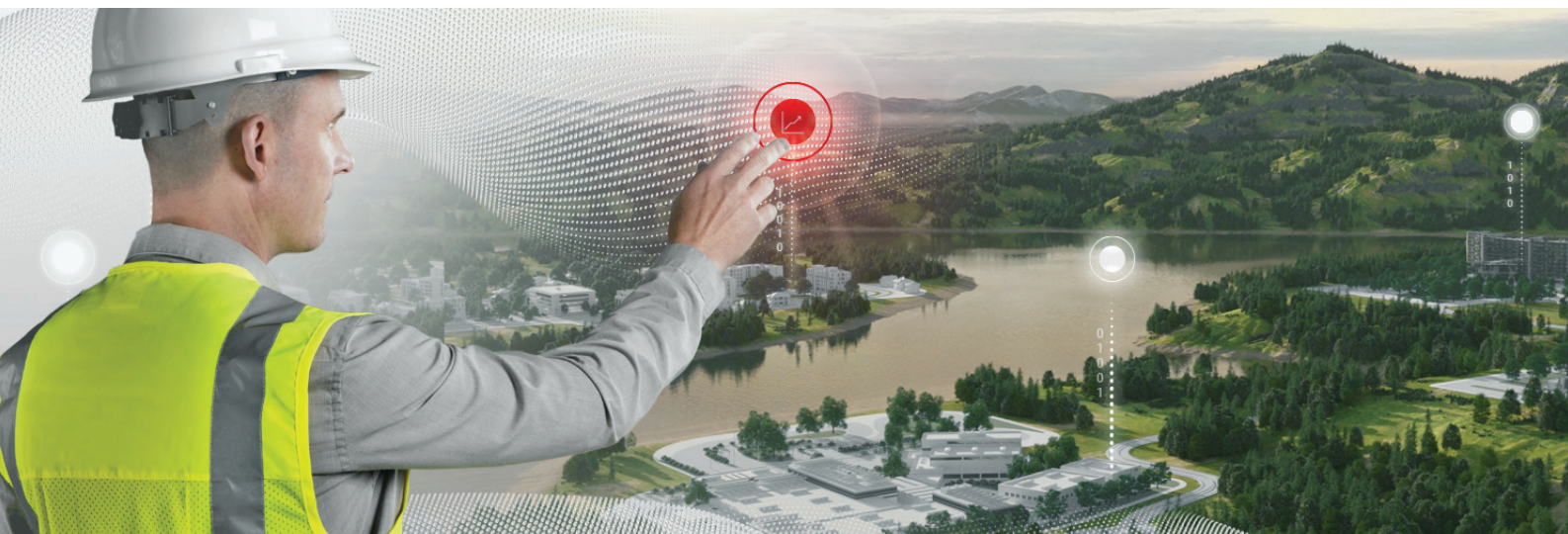


ABB is also delivering the future of electrification with **digital twin** solutions. In the near term, we'll be using digital twin solutions to integrate operations with the installation and commissioning of our products, ensuring our customers don't lose the connection between our pre- and post-sales support.



Ordering products

— Helping you to find the correct product at a glance



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

46 ELECTRIFICATION PRODUCTS CONTRACTOR HANDBOOK









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 | | Order Code |
|--|-------------------|----------------------|-------------|------------|
| | | 40-50 Hz | DC | |
| 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* |
| 4 N.C.  | 2 | 230...240 V | 230...240 V | ESB 24-04* |
| | | 12 V | 12 V | ESB 24-04* |
| | | 24 V | 24 V | ESB 24-04* |
| 2 N.O. 2 N.C.  | 2 | 110...120 V | 110...120 V | ESB 24-04* |
| | | 230...240 V | 230...240 V | ESB 24-04* |
| | | 12 V | 12 V | ESB 24-22* |
| 3 N.O. 1 N.C.  | 2 | 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* |
| 4 N.O. 3 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* |
| 4 N.O. 3 N.C.  | 2 | 230...240 V | 230...240 V | ESB 24-13* |
| | | 12 V | 12 V | ESB 24-13* |
| | | 24 V | 24 V | ESB 24-13* |
| 4 N.O. 3 N.C.  | 2 | 110...120 V | 110...120 V | ESB 24-13* |
| | | 230...240 V | 230...240 V | ESB 24-13* |
| | | 12 V | 12 V | ESB 24-13* |

* Ensure voltage is selected

Description

Item specific product description

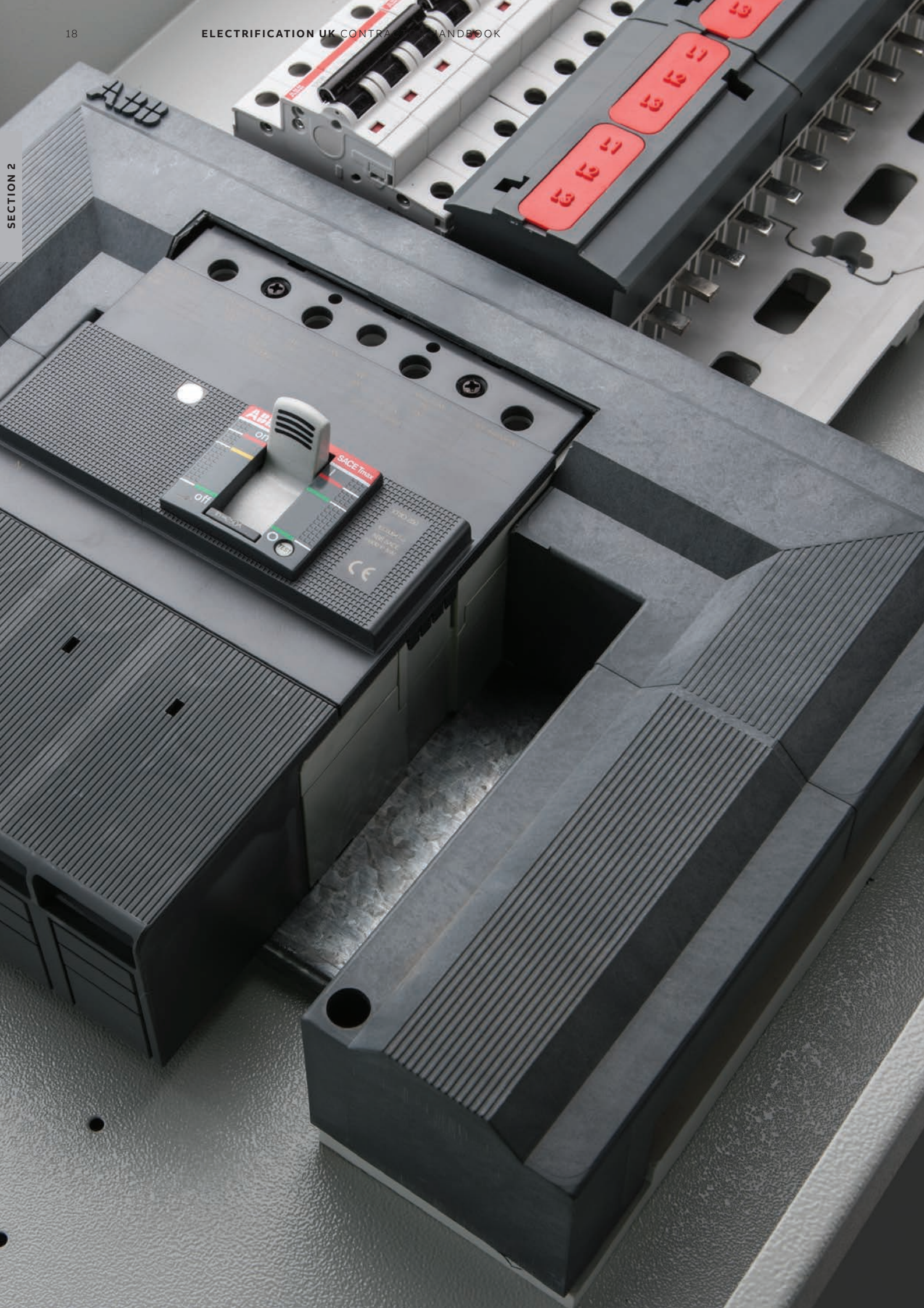
2 x Distribution boards

Order Code

When placing an order this is the number to quote

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 |



Residential/Commercial distribution

| | |
|------------|--|
| 020 | Introducing Arc Fault |
| 024 | Protecta Home consumer units |
| 026 | Protecta Plus distribution boards |
| 037 | Accessories & DIN rail products for Protecta Plus |
| 038 | MCB - S 200 M series |
| 039 | RCBO DSE201 M series - Type A |
| 040 | RCCB F 200 series - Type A |
| 041 | Metering |
| 043 | ESB installation contactors |
| 045 | D Line digital time switches |
| 046 | T Line modular twilight switches |
| 047 | Modular sockets |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933



Maximum safety and easy installation

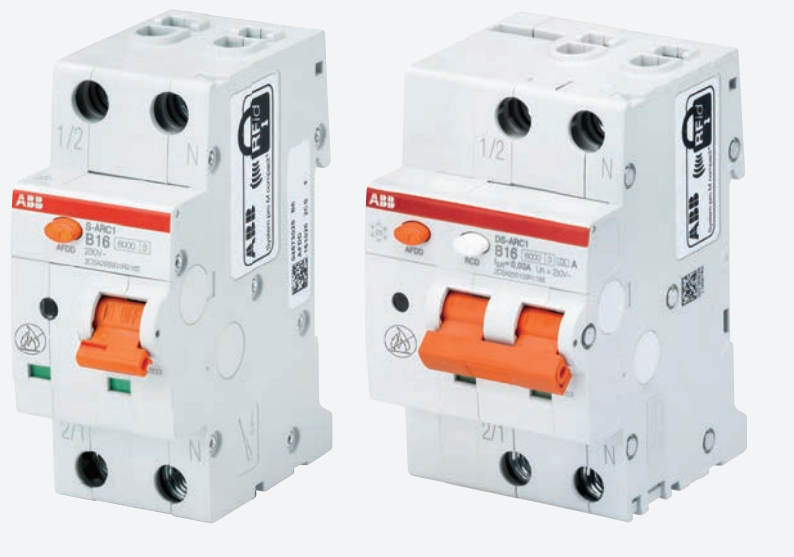
Arc fault detection devices
with integrated MCB and RCBO



- Complete protection against arc faults, overcurrent and earth faults
- Easy cross-wiring and installation
- Supply possible from both top and bottom side
- Family feeling in the System pro M compact® range
- LED for an easy troubleshooting of the network
- equipped also with memory recall function

Maximum safety in buildings

Extended fire protection in the electrical installation with AFDDs



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

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

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

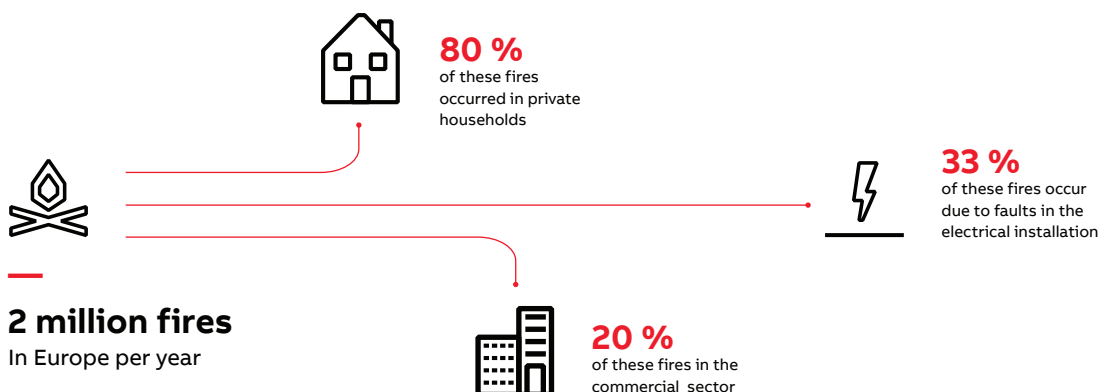
The best comprehensive protection

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

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

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

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



Protection for people and irreplaceable goods

Maximum safety in all kinds of applications

The majority of fires in buildings are caused by faults in the electrical installation. These fires are mainly caused by dangerous arc faults. The solution: S-ARC1 and DS-ARC1.

01 Areas of application for AFDDs Bedrooms and common rooms in nurseries.

02 Areas of application for the AFDDs Paper manufacturing plants, printers.

03 Causes of fire in Germany (2015).

S-ARC1 and DS-ARC1 provide maximum safety in all buildings, thus protecting people and valuable assets. By early detecting arc faults and disconnecting the affected circuit the AFDD's with integrated MCB or RCBO offers reliable and complete protection in any type of building.

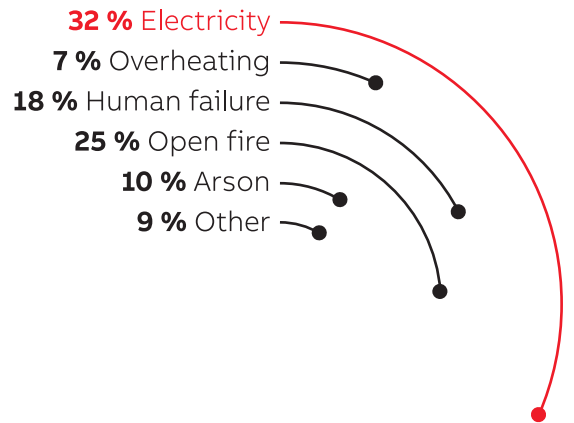
Safety in many building types

According to the wiring regulation IEC 60364-4-42, an arc fault detection device is strongly recommended in particular applications, as per example:

- **Sleeping and common rooms**
 - in nurseries
 - in senior and care homes
 - in equipment for disabled persons
- **Places and rooms with existing fire risks and flammable materials**, such as for example in production facilities, barns, carpenter workshops, paper manufacturing plants or printing shops where the fire risk is high
- **Places and rooms with prevalingly flammable building materials** like wood houses, flammable buildings or forced ventilation systems
- **Places and rooms with irreplaceable goods (cultural assets)**, such as those in museums, libraries, galleries, archives or architectural monuments

Recommendation for any room

The use of the AFDD is additionally recommended in any rooms with sleeping facilities in private apartments, houses, hospitals (does not apply in medically used areas) and hotels. This also includes places with a fire-disseminating structure, such as the chimney effect in high-rise buildings or final circuits with high connected load, e.g. dishwashers, washing machines or dryers.



03



01

02





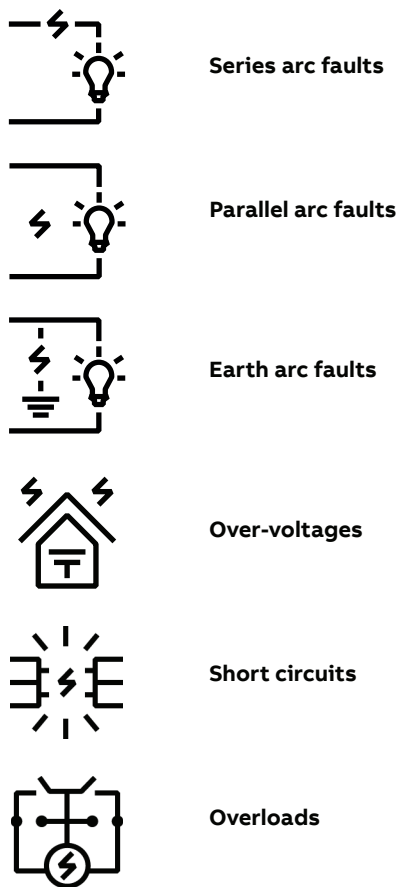
—
01

—
01 Security
in buildings with
flammable materials.

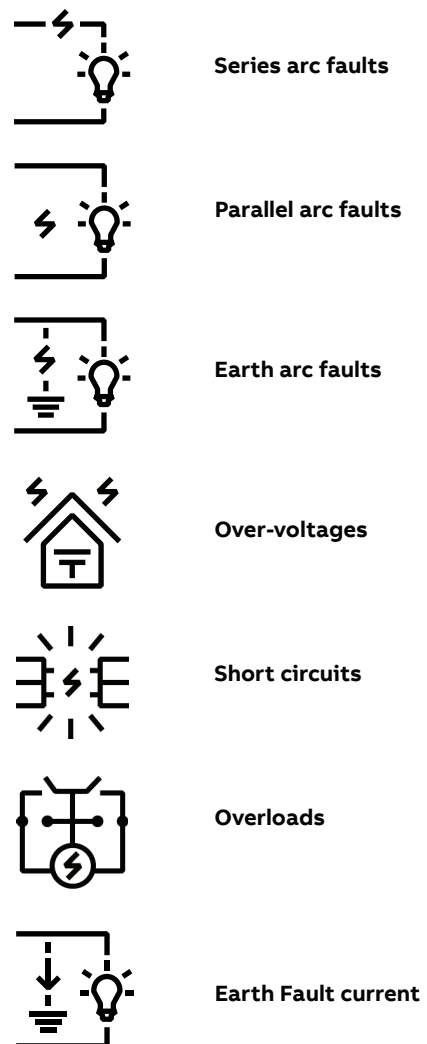
With AFDDs many hazards triggered by disruptions in the electrical installation are detected in advance. Thus, the existing gap of protection against arc faults is closed, leading to complete safety in buildings for persons, investments and irreplaceable goods.

In case the overvoltage level exceeds 275 V, both S-ARC1 and DS-ARC1 are equipped with an overvoltage protection. In addition, DS-ARC1 also offers protection against earth fault currents.

With S-ARC1 people and valuable assets are protected against:



With DS-ARC1 people and valuable assets are protected against:



Protecta Home - 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

| Way combinations | Incomer | | Split load | | Order Code | |
|------------------|----------|------|------------|------|------------|-----------|
| | Isolator | RCD | Isolator | RCD | | |
| 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 |


Protecta Home - Consumer units

Outgoing MCBs and RCBOs

SH201 MCBs


| | Breaking capacity kA | Rating Amps | Type B Order Code | Type C Order Code |
|---|----------------------|-------------|-------------------|-------------------|
|  | 6kA | 6 | SH201-B6 | SH201-C6 |
| | 6kA | 10 | SH201-B10 | SH201-C10 |
| | 6kA | 16 | SH201-B16 | SH201-C16 |
| | 6kA | 20 | SH201-B20 | SH201-C20 |
| | 6kA | 25 | SH201-B25 | SH201-C25 |
| | 6kA | 32 | SH201-B32 | SH201-C32 |
| | 6kA | 40 | SH201-B40 | SH201-C40 |
| | 6kA | 50 | SH201-B50 | SH201-C50 |
| | 6kA | 63 | SH201-B63 | SH201-C63 |

DSE201 - Type A RCBO

| | Breaking capacity kA | Rating Amps | Sensitivity | Type B Order Code | Type C Order Code |
|---|----------------------|-------------|-------------|-------------------|-------------------|
|  | 6kA | 6 | 30mA | DSE201-B6 A30 | DSE201-C6 A30 |
| | 6kA | 10 | 30mA | DSE201-B10 A30 | DSE201-C10 A30 |
| | 6kA | 16 | 30mA | DSE201-B16 A30 | DSE201-C16 A30 |
| | 6kA | 20 | 30mA | DSE201-B20 A30 | DSE201-C20 A30 |
| | 6kA | 25 | 30mA | DSE201-B25 A30 | DSE201-C25 A30 |
| | 6kA | 32 | 30mA | DSE201-B32 A30 | DSE201-C32 A30 |
| | 6kA | 40 | 30mA | DSE201-B40 A30 | DSE201-C40 A30 |
| | 6kA | 50 | 30mA | DSE201-B50 A30 | DSE201-C50 A30 |

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 |
| | Surge protector | EPH-SURGE |

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 standardised 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.

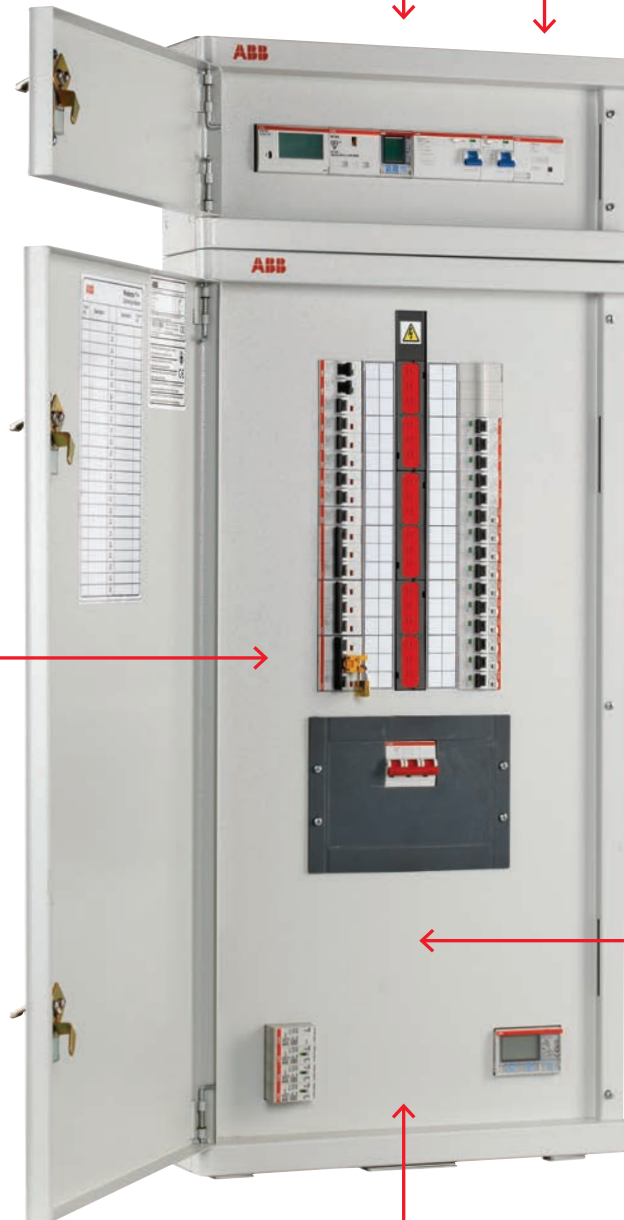
Maximum accessibility

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.

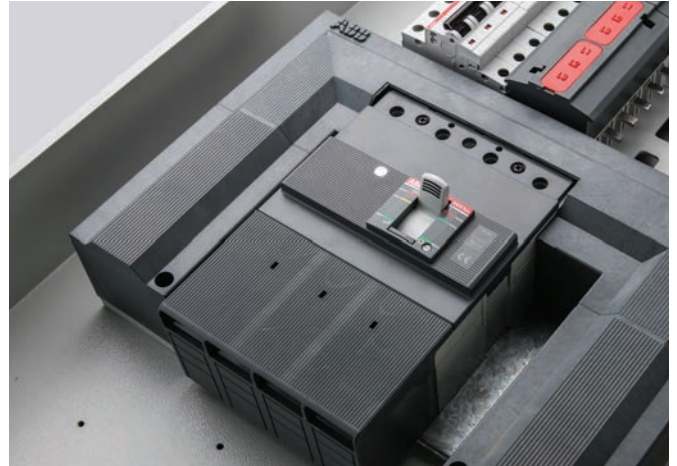
High output capacity
Primary branch capacity up to 100A.

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

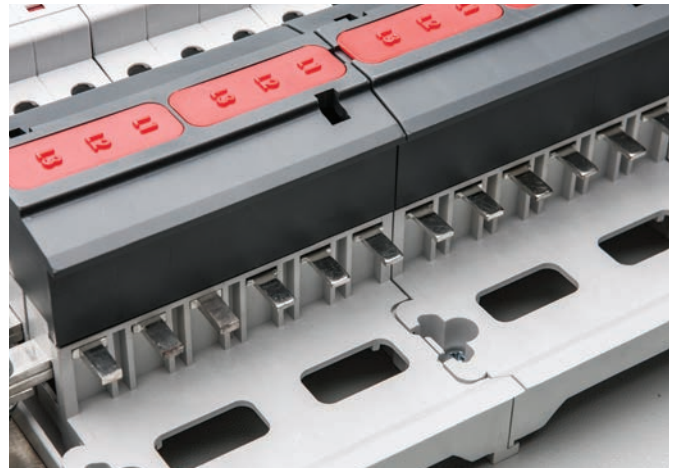
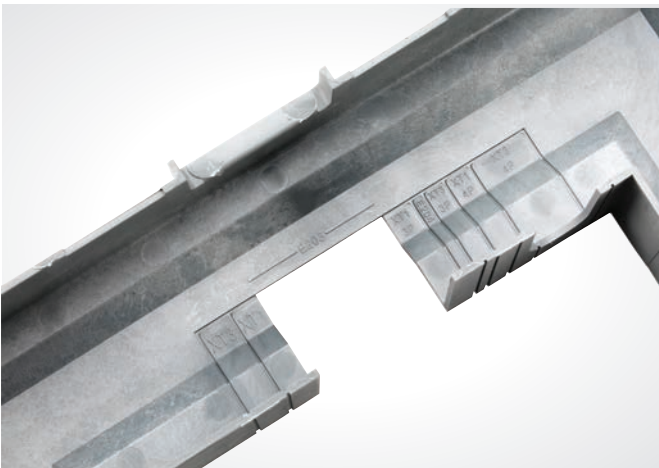


Board width

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.

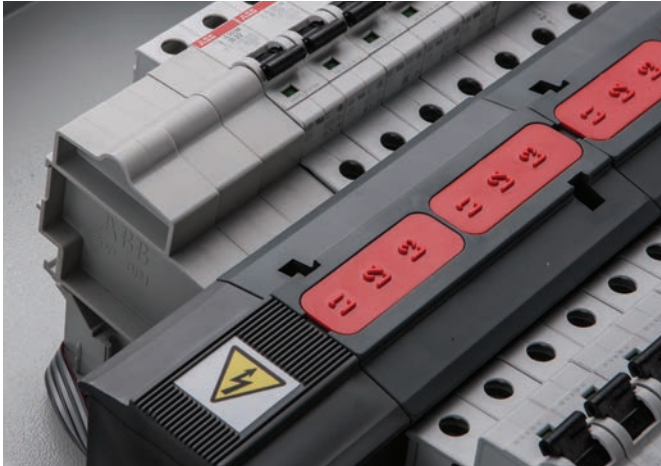


Incoming shroud

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.



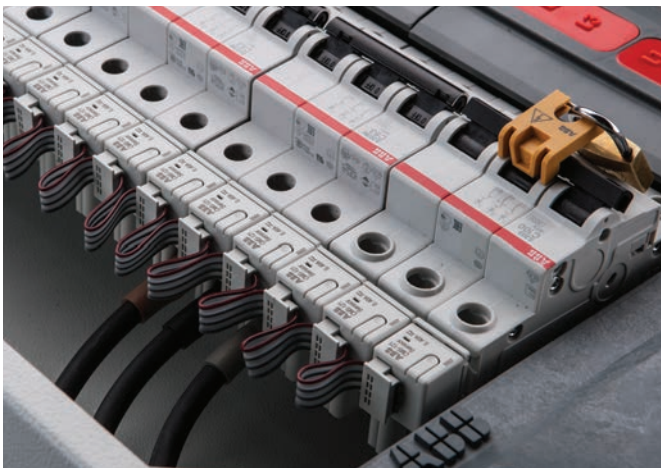
Full MCB blank

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



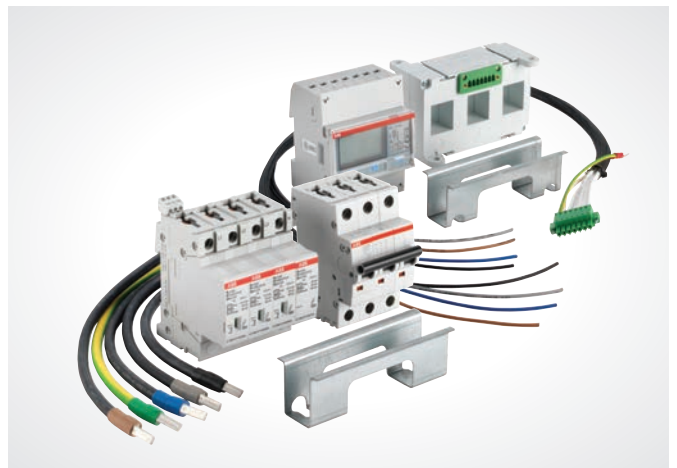
Clean earth

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



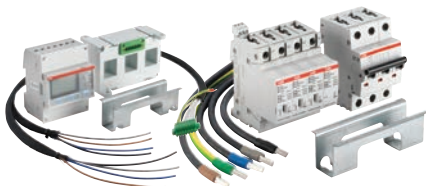
Vertical split-load board



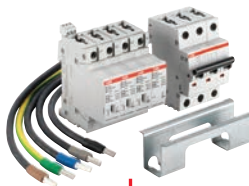
Horizontal split-load board



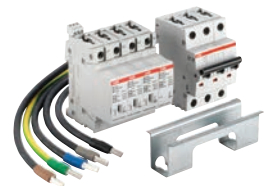
Incoming kit



Meter/surge kits (optional)



Surge kits (optional)



Surge kits (optional)



MCB/RCBO/Blanks



Accessories

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.

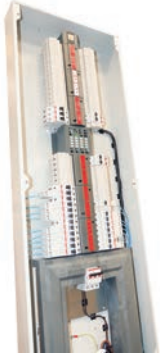
Horizontal split load kit

| 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 |

* M-Bus available on request.

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 ways | 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

* M-Bus available on request.



Pack contents

- 2 MID, Modbus (RS485) & pulse meters
- Incoming terminals
- Internal cables

Please note, no additional assembly is required.

| Order Code | Description | No. of outgoing ways | Incomer rating (A) | No. of poles |
|-------------------|-------------------------------------|----------------------|--------------------|--------------|
| EPP-SSL1412-1002P | Single Phase Power & Lighting 14+12 | 14+12 TPN | -100A | 2 P |
| EPP-SSL66-1002P | Single Phase Power & Lighting 6+6 | 6+6 TPN | -100A | 2 P |

* M-Bus available on request.

Protecta Plus

Order Codes

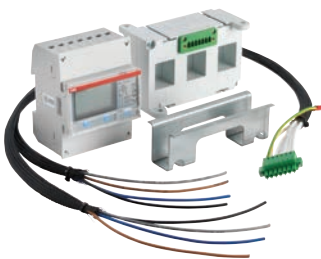


Pack contents: Incoming kit

- 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.

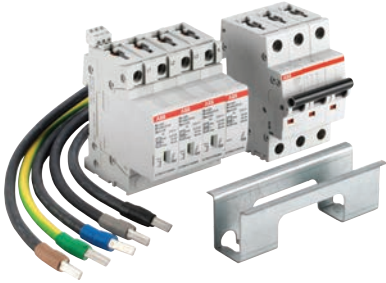
Incoming metering

| 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 |

* M-Bus available on request.

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 1+2 surge protection - including 63A 3P MCB | EPP-SOULET1-2 |
| 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) | | Order Code |
|-----------------------------|----------------|-----------------|-----------|------------|
| | | Height | (W x D) | |
| 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 disconnecter
- RAL7035 textured finish

MCB Distribution board - Type A

| Description | Order Code |
|-----------------------------|------------|
| Protecta Plus DB 2way 100A | EPP-W102 |
| Protecta Plus DB 4way 100A | EPP-W104 |
| Protecta Plus DB 8way 100A | EPP-W108 |
| Protecta Plus DB 12way 100A | EPP-W112 |
| Protecta Plus DB 16way 100A | EPP-W116 |
| Protecta Plus DB 20way 100A | EPP-W120 |

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) | | Order Code |
|----------------|-------------|-------------|-----------------|--------|------------|
| | | | Width | Height | |
| 36 | 2 | 4way DB | 300 | 590 | EPP-R2036 |
| 54 | 3 | 8way DB | 300 | 730 | EPP-R3054 |
| 72 | 4 | 12way DB | 300 | 870 | EPP-R4072 |
| 90 | 5 | 16way DB | 300 | 1050 | EPP-R5090 |
| 108 | 6 | 20way DB | 300 | 1220 | EPP-R6108 |
| 126 | 7 | 24way DB | 300 | 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-LKIT-04 |
| | 8 | EPP-LKIT-08 |
| | 12 | EPP-LKIT-12 |
| | 16 | EPP-LKIT-16 |
| | 24 | EPP-LKIT-24 |

Replacement doors

| Description | Order Code |
|---|------------|
| Protecta Plus 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 |
| | MCB Padlock Adaptor | SA 1 |
| | MCB 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 | | Order Code |
|---|--------------------|---------------------|-----------|------------|
| | | IEC/EN 60898-1 | | |
| | | IEC/EN 60947-2 | 1 Pole | |
|  | 6 | 10kA/15kA | S201M-B6 | S203M-B6 |
| | 10 | 10kA/15kA | S201M-B10 | S203M-B10 |
| | 13 | 10kA/15kA | S201M-B13 | S203M-B13 |
| | 16 | 10kA/15kA | S201M-B16 | S203M-B16 |
| | 20 | 10kA/15kA | S201M-B20 | S203M-B20 |
| | 25 | 10kA/15kA | S201M-B25 | S203M-B25 |
| | 32 | 10kA/15kA | S201M-B32 | S203M-B32 |
| | 40 | 10kA/15kA | S201M-B40 | S203M-B40 |
| | 50 | 10kA/15kA | S201M-B50 | S203M-B50 |
| | 63 | 10kA/15kA | S201M-B63 | S203M-B63 |
| | 80 | 6kA | S201-B80 | S203-B80 |
| | 100 | 6kA | S201-B100 | S203-B100 |

S 200 series M C

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

S 200 series M D

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

RCBO DSE201 M - Type A

Order Codes

DSE201 M - Type A



| Rated residual current $I_{\Delta n}$ [mA] | Rated current in A | Rated current in kA | | Order Code | |
|--|--------------------|---------------------|--|------------------|------------------|
| | | | | B Characteristic | C Characteristic |
| 10 | 6 | 10kA/15kA | | DSE201MB6A10 | DSE201MC6A10 |
| | 10 | 10kA/15kA | | DSE201MB10A10 | DSE201MC10A10 |
| | 16 | 10kA/15kA | | DSE201MB16A10 | DSE201MC16A10 |
| | 20 | 10kA/15kA | | DSE201MB20A10 | DSE201MC20A10 |
| | 25 | 10kA/15kA | | DSE201MB25A10 | DSE201MC25A10 |
| | 32 | 10kA/15kA | | DSE201MB32A10 | DSE201MC32A10 |
| | 40 | 10kA/15kA | | DSE201MB40A10 | DSE201MC40A10 |
| | 50 | 10kA | | DSE201MB50A10 | DSE201MC50A10 |
| 30 | 6 | 10kA/15kA | | DSE201MB6A30 | DSE201MC6A30 |
| | 10 | 10kA/15kA | | DSE201MB10A30 | DSE201MC10A30 |
| | 16 | 10kA/15kA | | DSE201MB16A30 | DSE201MC16A30 |
| | 20 | 10kA/15kA | | DSE201MB20A30 | DSE201MC20A30 |
| | 25 | 10kA/15kA | | DSE201MB25A30 | DSE201MC25A30 |
| | 32 | 10kA/15kA | | DSE201MB32A30 | DSE201MC32A30 |
| | 40 | 10kA/15kA | | DSE201MB40A30 | DSE201MC40A30 |
| | 50 | 10kA | | DSE201MB50A30 | DSE201MC50A30 |
| 100 | 6 | 10kA/15kA | | | DSE201MC6A100 |
| | 10 | 10kA/15kA | | | DSE201MC1 A100 |
| | 16 | 10kA/15kA | | | DSE201MC16A100 |
| | 20 | 10kA/15kA | | | DSE201MC20A100 |
| | 25 | 10kA/15kA | | | DSE201MC25A100 |
| | 32 | 10kA/15kA | | | DSE201MC32A100 |
| | 40 | 10kA/15kA | | | DSE201MC40A100 |
| | 50 | 10kA | | | DSE201MC50A100 |
| 300 | 6 | 10kA/15kA | | | DSE201MC6A300 |
| | 10 | 10kA/15kA | | | DSE201MC10A300 |
| | 16 | 10kA/15kA | | | DSE201MC16A300 |
| | 20 | 10kA/15kA | | | DSE201MC20A300 |
| | 25 | 10kA/15kA | | | DSE201MC25A300 |
| | 32 | 10kA/15kA | | | DSE201MC32A300 |
| | 40 | 10kA/15kA | | | DSE201MC40A300 |
| | 50 | 10kA | | | DSE201MC50A300 |

RCCB F 200 series A type

Order Codes

F 200 A type - F202



| Number of poles | Rated residual current $I_{\Delta n}$ [mA] | Rated current in A | Order Code |
|-----------------|--|--------------------|----------------|
| 2 | 10 | 16 | F202A-16/0.01 |
| | | 25 | F202A-25/0.01 |
| | | 25 | F202A-25/0.03 |
| | | 40 | F202A-40/0.03 |
| | | 63 | F202A-63/0.03 |
| | 100 | 80 | F202A-80/0.03 |
| | | 100 | F202A-100/0.03 |
| | | 25 | F202A-25/0.1 |
| | | 40 | F202A-40/0.1 |
| | | 63 | F202A-63/0.1 |
| | 300 | 80 | F202A-80/0.1 |
| | | 100 | F202A-100/0.1 |
| | | 25 | F202A-25/0.3 |
| | | 40 | F202A-40/0.3 |
| | | 63 | F202A-63/0.3 |
| 500 | 80 | F202A-80/0.3 | |
| | 100 | F202A-100/0.3 | |
| | 25 | F202A-25/0.5 | |
| | 40 | F202A-40/0.5 | |
| | 63 | F202A-63/0.5 | |
| | 80 | F202A-80/0.5 | |

F 200 A type - F204




| Number of poles | Rated residual current $I_{\Delta n}$ [mA] | Rated current in A | Order Code |
|-----------------|--|--------------------|----------------|
| 4 | 30 | 25 | F204A-25/0.03 |
| | | 40 | F204A-40/0.03 |
| | | 63 | F204A-63/0.03 |
| | | 80 | F204A-80/0.03 |
| | | 100 | F204A-100/0.03 |
| | 100 | 25 | F204A-25/0.1 |
| | | 40 | F204A-40/0.1 |
| | | 63 | F204A-63/0.1 |
| | | 80 | F204A-80/0.1 |
| | | 100 | F204A-100/0.1 |
| | 300 | 25 | F204A-25/0.3 |
| | | 40 | F204A-40/0.3 |
| | | 63 | F204A-63/0.3 |
| | | 80 | F204A-80/0.3 |
| | | 100 | F204A-100/0.3 |
| 500 | 25 | F204A-25/0.5 | |
| | 40 | F204A-40/0.5 | |
| | 63 | F204A-63/0.5 | |
| | 80 | F204A-80/0.5 | |
| | 100 | F204A-100/0.5 | |


Metering 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 |

Metering C series

Order Codes

C series - C11

| 40A SPN 1Mod | Description | Order Code |
|---|--------------|-------------|
|  | Pulse output | C11 110-101 |

C series - C13



| 40A TPN 3 Mod | Description | Order Code |
|---|--------------|-------------|
|  | Pulse output | C13 110-101 |

Metering EQmatic series

Order Codes

EQmatic Energy Analyzer the perfect solution for connecting all localized meters to a single connection point, with embedded data logging functions and TCIP internet gateway functionality. Designed for Modbus A & B EQ series meters with up to 16 or 64 devices connected to a single Eqmatic.

Eqmatic Gateway

| 40A TPN 3 Mod | Description | Order Code |
|---|------------------------------------|-------------|
|  | Energy Analyzer, 16 device, Modbus | QA/S 4.16.1 |
|  | Energy Analyzer, 64 device, Modbus | QA/S 4.64.1 |


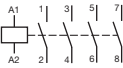
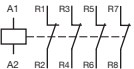
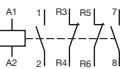

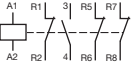
ESB installation contactors

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

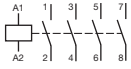
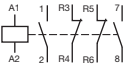

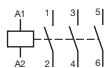

| Main poles | Number of modules | Control coil voltage | | Order Code |
|--|-------------------|----------------------|-------------|------------|
| | | 40-50 Hz | DC | |
| 2 N.O.  | 2 | 24 V | 24 V | ESB 24-20* |
| | | 230...240 V | 230...240 V | ESB 24-20* |
| 4 N.O.  | 2 | 12 V | 12 V | ESB 24-40* |
| | | 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

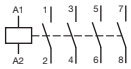
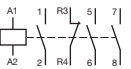
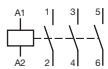


Order Codes

ESB 40

| Main poles | Number of modules | Control coil voltage | | Order Code |
|---|-------------------|----------------------|-------------|------------|
| | | 40-50 Hz | DC | |
| 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 | | Order Code |
|--|-------------------|----------------------|-------------|------------|
| | | 40-50 Hz | DC | |
| 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

| | | Channels no. | Type | Order Code |
|---|---------|--------------|------------|-----------------|
|  | D1 Plus | 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 |
|---|-----------------|---------|------------|
|  | 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 |
|---|-----------------|------------------|---------|------------|
|  | 1 | 32 | 1 | E 91/32 |
| | 1 | 32 | 1 | E 91/32s |
| | 3 | 32 | 3 | E 93/32 |
| | 3 | 32 | 3 | E 93/32s |
|  | | | | |

Fuses not included.

TPN Commercial / Industrial distribution

| | |
|------------|---|
| 049 | ArTu PB Panel board |
| 056 | Plug in bases and outgoing MCCBs |
| 059 | Accessories |
| 061 | Incoming metering kits, surge protection and side chambers |
| 062 | Outgoing metering kits, surge protection and other accessories |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

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/I_{cn}
- Up to 400A/35kA flat busbar
- Up to 800A/50kA profiled busbar
- Up to 1250A/65 kA profiled busbar
- Rated impulse withstand voltage U_{imp} 8Kv
- Rated short-circuit short-time withstand current I_{cn} up to 65kA
- Rated short-circuit peak current I_{cn} 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.

Adaptability

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

Wide range of metering options

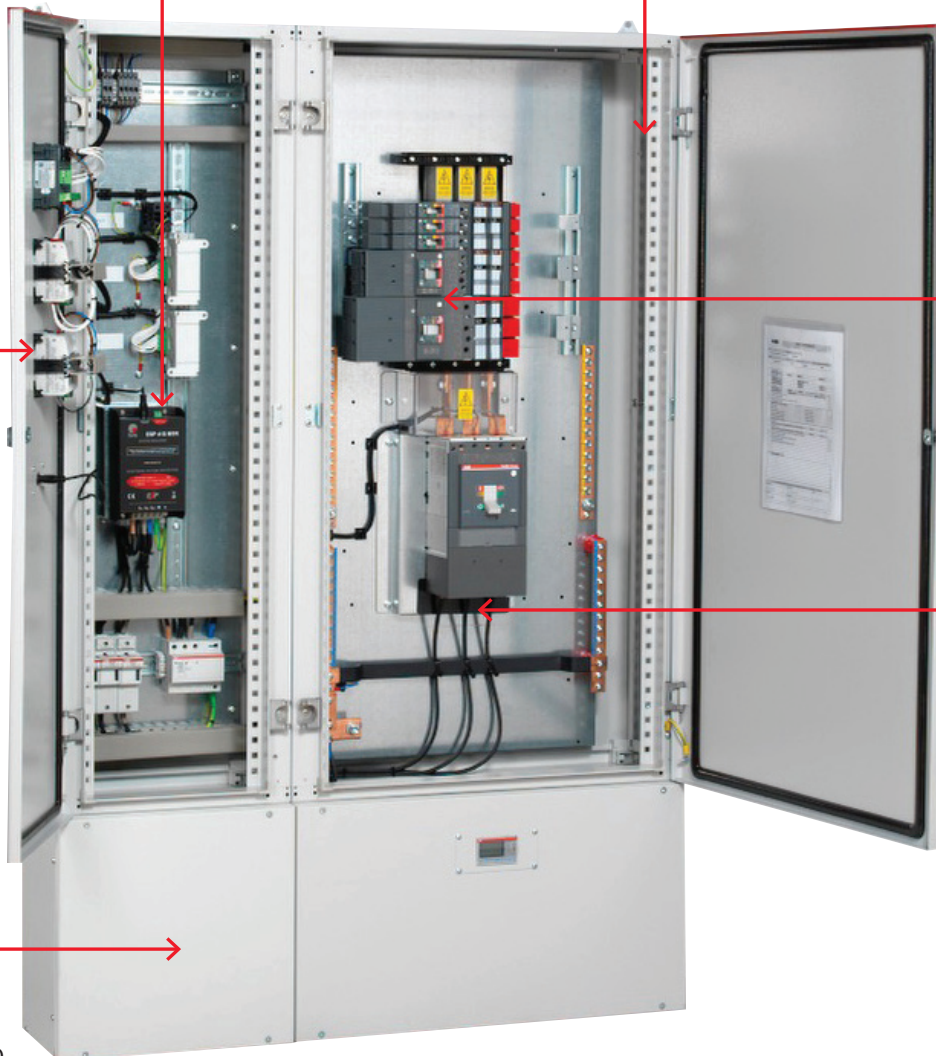
Metering chambers available with cutouts to house 96 x 96 meters. Blank cutout covers are also available for future addition.

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.



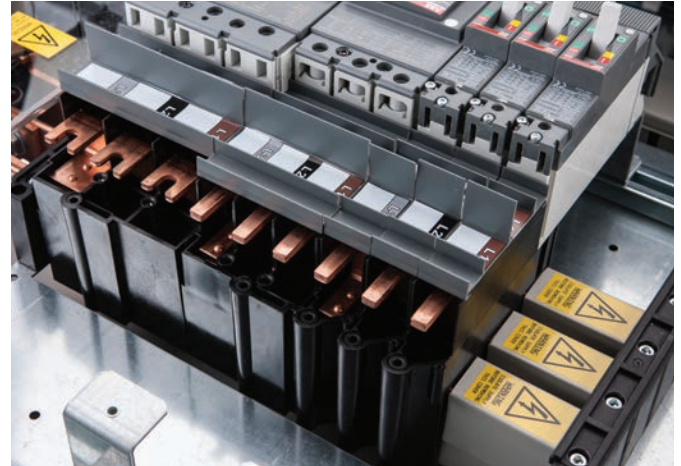
ArTu PB panelboard

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 achieves 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.

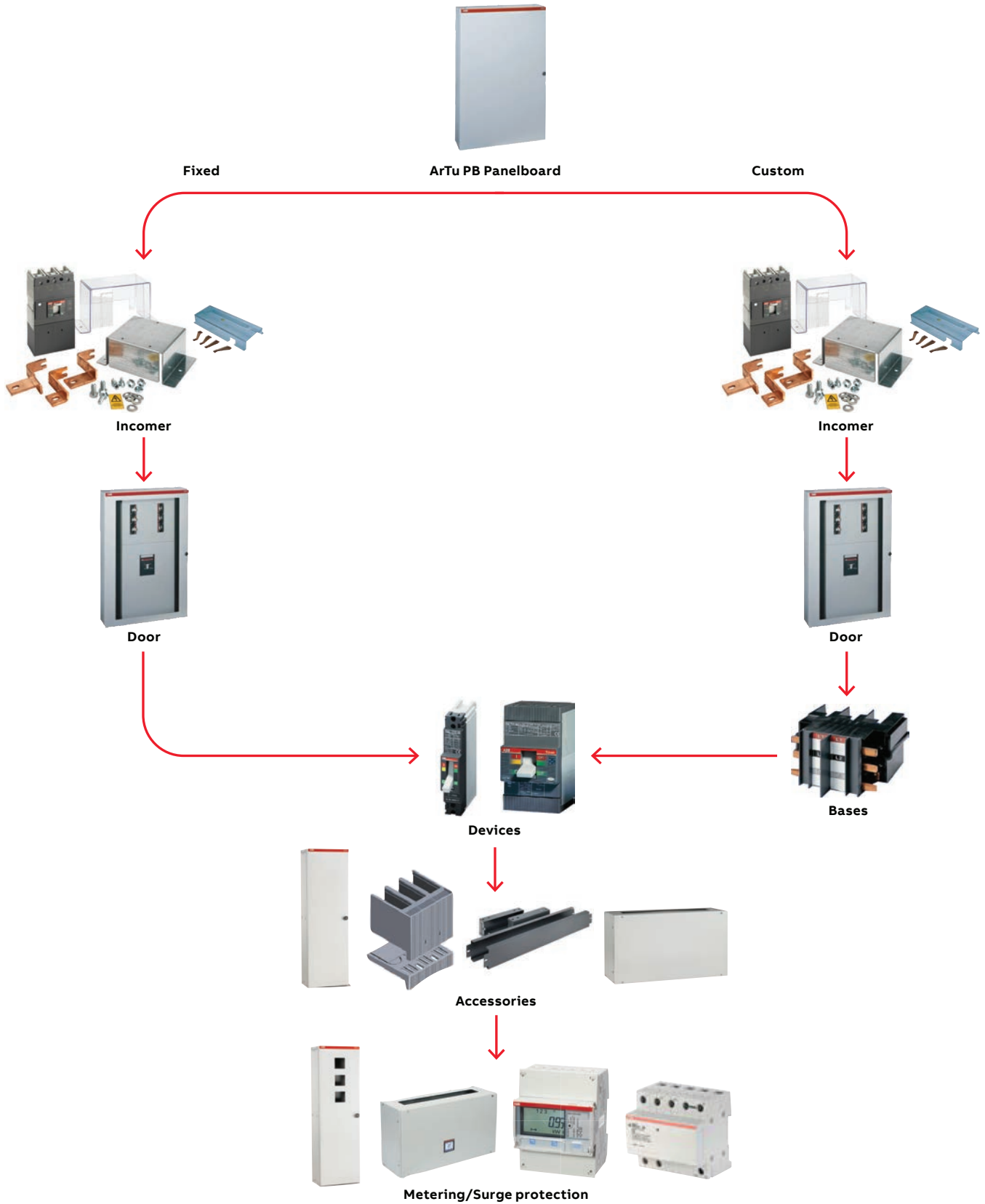


Modular design

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

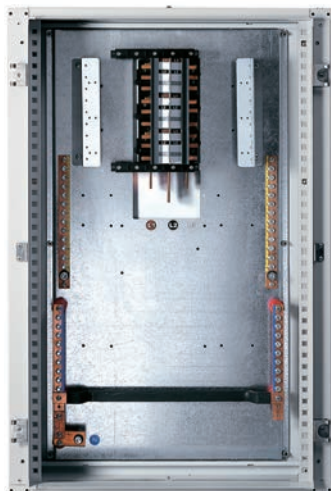


ArTu PB Panelboard

Order Codes

Fixed boards

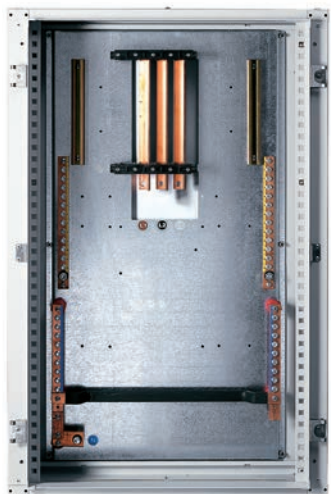
| Ways | Outgoing MCCB Type | Copper Rating (A) | Dimensions (mm) | | | Order Code |
|------|--------------------|-------------------|-----------------|-------|-------|------------|
| | | | Height | Width | Depth | |
| 6 | XT1 160A | 400A | 1250 | 690 | 240 | 640T1PB3MD |
| | XT3 250A | 400A | 1250 | 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) | | | Order Code |
|-------|---------------------|-------------------|-----------------|-------|-------|----------------|
| | | | Height | Width | Depth | |
| 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 disconnecter | 2 | PB-2503SD |
| 250A 4P Switch disconnecter | 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 disconnecter | 3 | PB-4003SD |
| 400A 4P Switch disconnecter | 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 disconnecter | 3 | PB-6303SD |
| 630A 4P Switch disconnecter | 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 disconnecter – T6D800 | 4 | PB-8003SD |
| 800A 4P Switch disconnecter – 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 disconnecter – T7D1000 | 6 | PB-10003SD |
| 1000A 3P 50kA Electronic (LS/I) MCCB – T7S1000-PR231/P LS/I | 6 | PB-10003MCCB |
| 1250A 3P Switch disconnecter – 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.

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 panelboard | 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.

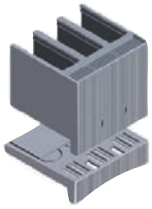
Selection and ordering guide

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 - 25mm ² | 1SDA066234R1 |
| F1 (Single pole) 25 - 50mm ² | 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 meter | 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. 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 |

Enclosed switching products

| | |
|------------|---|
| 064 | Introducing enclosed automatic transfer switches |
| 068 | Plug & play |
| 070 | Enclosed ATS |
| 074 | ATS accessories |
| 078 | TruONE |
| 080 | Technical data |
| 085 | TruONE accessories |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

Enclosed automatic transfer switches

General specification

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

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

| | |
|------------------------------------|------------------|
| • Type of equipment | ATSE |
| • Class of equipment | PC |
| • Rated operational voltage, | U_e Max. 415 V |
| • Rated impulse withstand voltage, | U_{imp} 6 kV |
| • Rated frequency | 50 - 60 Hz |
| • EMC environment | A and B |

Bypass Requirement

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

The bypass switches consist of the following;

Single or mains bypass

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

Dual Bypass

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



The one ATS with all these advantages



Easy to Install

Reduces installation time by up to 80%.

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



Safety and Protection

Reduces risk of operator injury.

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



Optimum Interface

Simplifies connectivity.

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

Even more advantages



Speed Up Your Project

Now you can speed up your project even more, thanks to TruONE® automatic commissioning capabilities. Pre-made configuration files can be uploaded from your PC to TruONE®, minimising the risk of human error and reducing programming time by 80%.



Continuous Operation

TruONE® features predictive maintenance, self-diagnostics and customer-replaceable critical modules to simplify service and significantly reduce downtime and service costs. Say goodbye to blinking lights and stopping motors. TruONE® provides a fast in-phase open transition of power, ensuring unnoticed generator use during business hours.



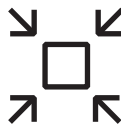
Energy Efficiency

Full compatibility with ABB Ability™ EDCS allows data processing from the site's electrical equipment to deliver analysis and make recommendations for optimising the electrical system's performance. This allows remote monitoring of plants, energy consumption and costs at a glance, making implementation of energy management strategies easier and faster.



Optimized Logistics

TruONE® features a wide voltage range from 200 to 480 Vac (with +/-20% tolerance), reducing the need to stock multiple SKUs, reducing inventory and saving space in the warehouse.



Space Saving

TruONE® features plug-in factory and field-mount accessorising, so you don't need extra space inside the panel. Even in the case of specialised customer needs, you can use standard cabinets.



ABB

Architecture

Truly plug & play

Embedded solution with Ekip Com Hub
 Emax 2 equipped with the new Ekip Com Hub establishes the cloud connection for the whole switchboard.

This dedicated cartridge-type communication module just needs to be inserted into the terminal box and connected to the internet.

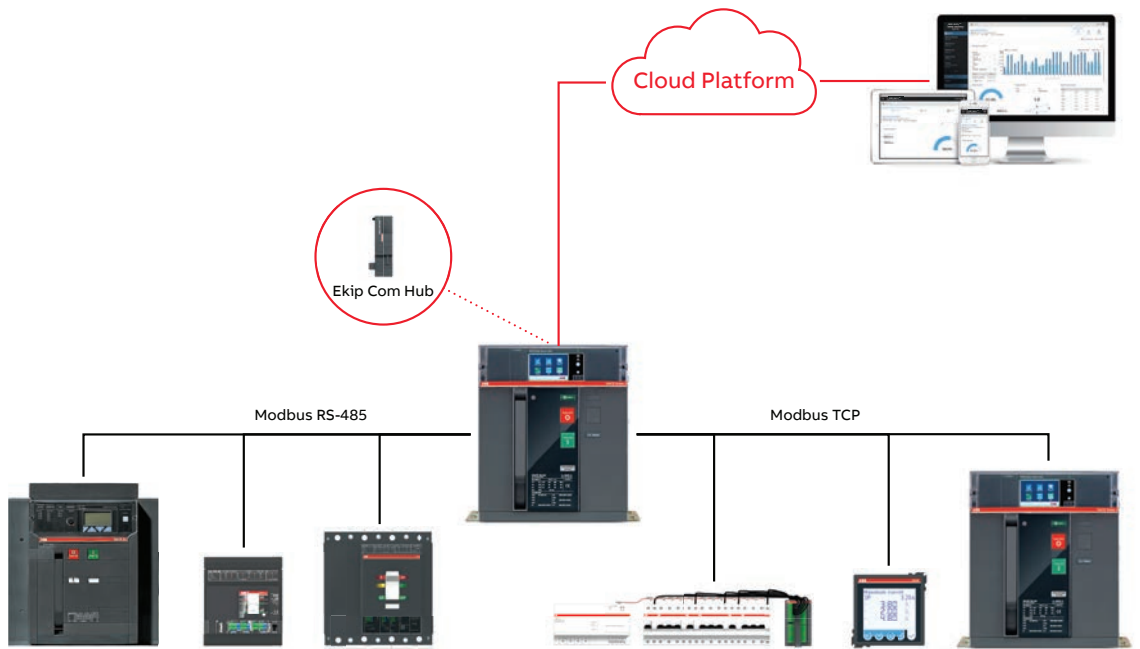


ABB showcases a further evolution in the low-voltage distribution business, setting a new benchmark in terms of simplicity and performance.

ABB Ability™ Electrical Distribution Control System enables the collection of relevant information from the ABB devices installed in the low-voltage power distribution system.

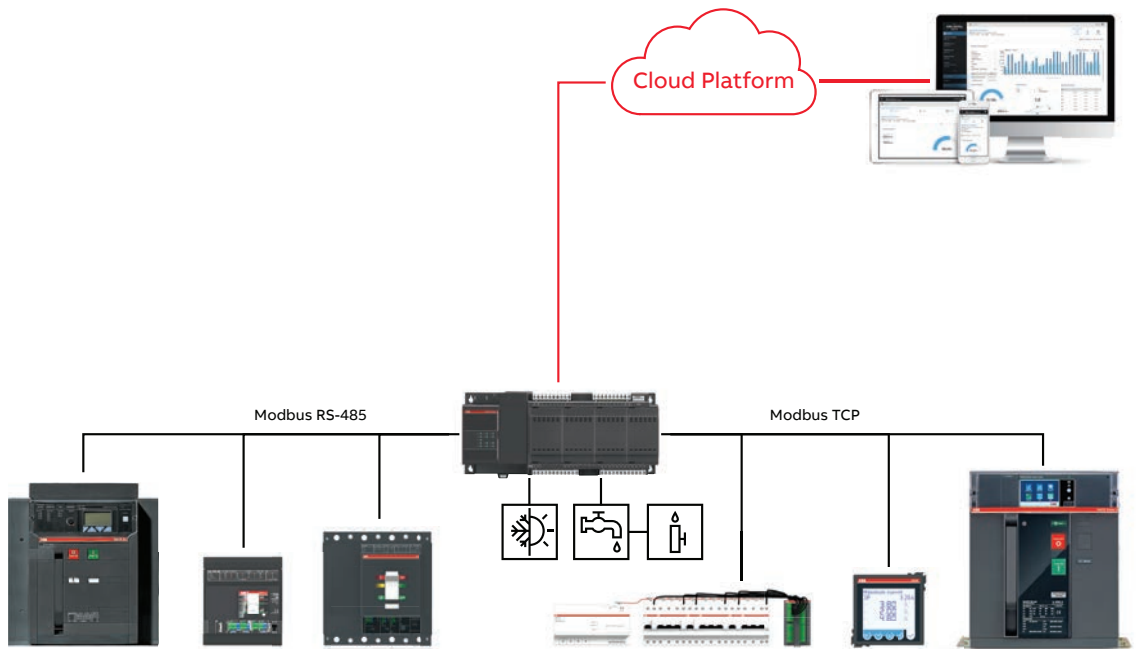
These devices can be connected, plug & play, to the cloud-computing platform by sharing data either with Emax 2 (equipped with Ekip Com Hub) or with Ekip E-Hub via Modbus RS-485, Modbus TCP and Ekip Link.

| Family | Device |
|---|----------------------------|
| ACB | Emax 2 (*) |
| ACB | New Emax (*) |
| MCCB | Tmax T (*) |
| MCCB | Tmax XT (*) |
| Metering device | M2M |
| Metering device | CMS 700 |
| Fusegear | Slimline XR ITS 2 |
| Signalling module for digital inputs (e.g. for MCCBs) | Ekip Signalling Modbus TCP |
| Digital Meters/Sensor | Pulse meter (**) |
| Analog Meters/Sensor | Analog meter (**) |
| Arc guard | TVOC-2 |
| And many others to come... | |

External solution with Ekip E-Hub

The Ekip E-Hub module can be mounted on DIN rail to collect data throughout the system. Moreover, it is possible to connect sensors for

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



| INFORMATION | | | | | | | | | | | | COMMUNICATION |
|-------------|---------|---------|-------|--------|--------------|--------|---------------------------|---------------|-----------------|--------------------------|--------------|--------------------------------------|
| State | Current | Voltage | Power | Energy | Power Factor | Alarms | Maintenance & Diagnostics | Power Quality | Load management | Environmental parameters | General Info | Protocol |
| • | • | • | • | • | • | • | • | • | • | | • | Modbus RS-485, Modbus TCP, Ekip Link |
| • | • | • | • | • | • | • | • | | | | • | Modbus RS-485 |
| • | • | • | • | • | • | • | • | | | | • | Modbus RS-485 |
| • | • | • | • | • | • | • | • | | | | • | Modbus RS-485 |
| | • | • | • | • | • | | | • | | | • | Modbus RS-485, Modbus TCP |
| | • | • | • | • | • | | | | | | • | Modbus RS-485, Modbus TCP |
| • | • | • | • | • | • | • | • | | | | • | Modbus RS-485 |
| • | | | | | | | | | | | • | Modbus TCP |
| | | | | | | | | | | • | • | Digital I/O |
| | | | | | | | | | | • | • | Analog I/O |
| • | | | | | | • | | | | | • | Modbus RS-485 |

* Provided the product with dedicated accessories for communication and metering functions

** only with Ekip E-Hub module

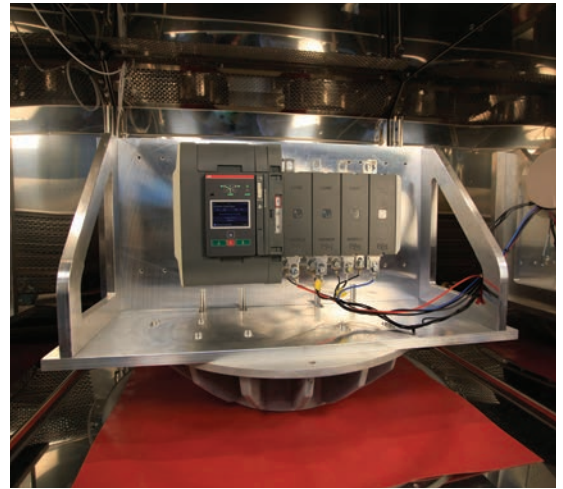
Reliable in extreme conditions

You can be sure TruONE® exceeds standard requirements for performance and reliability to bring you dependable operation in even the most challenging electrical, mechanical and environmental conditions.



TruONE® is the only ATS to guarantee safe and reliable operation during dramatic variations in temperature (-25–+70°C) and voltage (200–480 Vac with +/-20% tolerance), and it's tolerant of vibrations (acc. IEC 60068-2-6) and shocks (acc. IEC 60068-2-27). TruONE® also has true short-circuit resilience, able to take the hit and remain fully operational after exposure to even the most dangerous phenomena.

Site conditions can change due to unexpected situations, but the performance of TruONE® does not.



Testing for vibrations, shocks and a wide temperature range.

Enclosure

IP65 SR2 Sheet steel enclosures

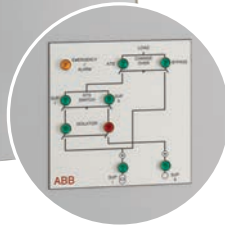
The SR2 enclosures come from years in building the experience IP65 metal structures (in accordance with the IEC 60529 Standard), together with the innovative new production process used for construction patented by ABB.

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.

Ordering Information

Enclosed ATS



Mimic panel on front door for easy identification.



Features and benefits:

- I-O-II –operation with stable OFF position between positions I and II
- HMI can be mounted on the door upon request, please add -H to part number (e.g. OTOne40E4L3SBSR-H)

I-O-II Delayed transition - Open style operation

| Enclosed ATS Part Number | Enclosed ATS with OMD300 or OMD800 Controller Description | Enclosure Size (mm) |
|--------------------------|---|---------------------|
| OTA40E4C3SR | 40A 4 pole ATS with OMD300 controller | 600 x 600 x 250 |
| OTA63E4C3SR | 63A 4 pole ATS with OMD300 controller | 600 x 600 x 250 |
| OTA125E4C3SR | 125A 4 pole ATS with OMD300 controller | 600 x 600 x 250 |
| OTA40E4C8SR | 40A 4 pole ATS with OMD800 controller | 600 x 600 x 250 |
| OTA63E4C8SR | 63A 4 pole ATS with OMD800 controller | 600 x 600 x 250 |
| OTA125E4C8SR | 125A 4 pole ATS with OMD800 controller | 600 x 600 x 250 |

Delayed transition – Open style, Level 2 DIP controls –

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

| Enclosed ATS with level 2 Controller Part Number | Enclosed ATS with OMD300 Controller Description | Enclosure Size (mm) |
|--|---|---------------------|
| OTOne160E4L2SR | 160A 4 pole ATS with level 2 controller | 600 x 600 x 250 |
| OTOne250E4L2SR | 250A 4 pole ATS with level 2 controller | 600 x 600 x 250 |
| OTOne400E4L2SR | 400A 4 pole ATS with level 2 controller | 800 x 600 x 300 |
| OTOne630E4L2SR | 630A 4 pole ATS with level 2 controller | 1000 x 800 x 400 |
| OTOne800E4L2SR | 800A 4 pole ATS with level 2 controller | 1000 x 800 x 400 |
| OTOne1000E4L2SR | 1000A 4 pole ATS with level 2 controller | 1400 x 800 x 500 |
| OTOne1250E4L2SR | 1250A 4 pole ATS with level 2 controller | 1400 x 800 x 500 |
| OTOne1600E4L2SR | 1600A 4 pole ATS with level 2 controller | 1400 x 800 x 500 |

Communication modules to be ordered separately.

Delayed transition – Open style, Level 3 LCD controls –

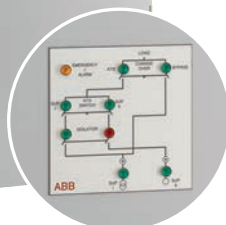
Bottom entry - Source 1 and Source 2 connections on bottom, load connections on top

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

Communication modules to be ordered separately.

Ordering Information

Enclosed ATS single and dual bypass



Mimic panel on front door for easy identification.

Features and benefits:

- I-O-II –operation with stable OFF position between positions I and II
- HMI can be mounted on the door upon request, please add -H to part number (e.g. OTOne40E4L3SBSR-H)



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

| Enclosed TruONE ATS Part Number | Enclosed ATS with single line bypass Description | Enclosure Size (mm) |
|---------------------------------|---|---------------------|
| OTOne40E4L3SBSR | 40A 4 pole level 3 controller ATS, single bypass | 1000 x 800 x 300 |
| OTOne63E4L3SBSR | 63A 4 pole level 3 controller ATS, single bypass | 1000 x 800 x 300 |
| OTOne100E4L3SBSR | 100A 4 pole level 3 controller ATS, single bypass | 1000 x 800 x 300 |
| OTOne160E4L3SBSR | 160A 4 pole level 3 controller ATS, single bypass | 1200 x 1000 x 400 |
| OTOne250E4L3SBSR | 250A 4 pole level 3 controller ATS, single bypass | 1200 x 1000 x 400 |
| OTOne400E4L3SBAM | 400A 4 pole level 3 controller ATS, single bypass | 1200 x 1000 x 400 |
| OTOne630E4L3SBAM | 630A 4 pole level 3 controller ATS, single bypass | 1600 x 1200 x 600 |
| OTOne800E4L3DBAM | 800A 4 pole level 3 controller ATS, single bypass | 1600 x 1200 x 600 |

| Enclosed TruONE ATS Part Number | Enclosed ATS with dual line bypass Description | Enclosure Size (mm) |
|---------------------------------|---|---------------------|
| OTOne40E4L3DBSR | 40A 4 pole level 3 controller ATS, dual bypass | 1000 x 800 x 300 |
| OTOne63E4L3DBSR | 63A 4 pole level 3 controller ATS, dual bypass | 1000 x 800 x 300 |
| OTOne100E4L3DBSR | 100A 4 pole level 3 controller ATS, dual bypass | 1000 x 800 x 300 |
| OTOne160E4L3DBSR | 160A 4 pole level 3 controller ATS, dual bypass | 1200 x 1000 x 400 |
| OTOne250E4L3SBSR | 250A 4 pole level 3 controller ATS, dual bypass | 1200 x 1000 x 400 |
| OTOne400E4L3DBAM | 400A 4 pole level 3 controller ATS, dual bypass | 1200 x 1000 x 400 |
| OTOne630E4L3DBAM | 630A 4 pole level 3 controller ATS, dual bypass | 1600 x 1200 x 600 |
| OTOne800E4L3DBAM | 800A 4 pole level 3 controller ATS, dual bypass | 1600 x 1200 x 600 |

Ordering Information

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

Features and benefits:

- I-II operation without stable OFF position
- Delivery includes handle for manual operation
- HMI can be mounted on the door upon request, please add -H to part number (e.g. OTOne40E4L3SBSR-H)

Open transition – Open style, Level 3 LCD controller with overlapping neutral. I-II Operation

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

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

| Part Number | Enclosed ATS with level 3 controller and single bypass Description | Enclosure Size (mm) |
|---------------------|---|------------------------|
| OTOne60E4L3OLNSBSR | 60A 4 pole with TruOne level 3 controller & overlapping neutral | 1000 x 800 x 300 |
| OTOne100E4L3OLNSBSR | 100A 4 pole with TruOne level 3 controller & overlapping neutral | 1000 x 800 x 300 |
| OTOne160E4L3OLNSBSR | 160A 4 pole with TruOne level 3 controller & overlapping neutral | 1000 x 800 x 300 |
| OTOne200E4L3OLNSBSR | 200A 4 pole with TruOne level 3 controller & overlapping neutral | 1200 x 1000 x 400 |
| OTOne250E4L3OLNSBSR | 250A 4 pole with TruOne level 3 controller & overlapping neutral | 1200 x 1000 x 400 |
| OTOne400E4L3OLNSBAM | 400A 4 pole with TruOne level 3 controller & overlapping neutral | 1200 x 1000 x 400 |
| OTOne630E4L3OLNSBAM | 630A 4 pole with TruOne level 3 controller & overlapping neutral | 1600 x 1200 x 600 |
| OTOne800E4L3OLNSBAM | 800A 4 pole with TruOne level 3 controller & overlapping neutral | 1600 x 1200 x 600 |

| Part Number | Enclosed ATS with level 3 controller and dual bypass Description | Enclosure Size (mm) |
|---------------------|---|------------------------|
| OTOne60E4L3OLNDBSR | 60A 4 pole with TruOne level 3 controller & overlapping neutral | 1000 x 800 x 300 |
| OTOne100E4L3OLNDBSR | 100A 4 pole with TruOne level 3 controller & overlapping neutral | 1000 x 800 x 300 |
| OTOne160E4L3OLNDBSR | 160A 4 pole with TruOne level 3 controller & overlapping neutral | 1000 x 800 x 300 |
| OTOne200E4L3OLNDBSR | 200A 4 pole with TruOne level 3 controller & overlapping neutral | 1200 x 1000 x 400 |
| OTOne250E4L3OLNDBSR | 250A 4 pole with TruOne level 3 controller & overlapping neutral | 1200 x 1000 x 400 |
| OTOne400E4L3OLNDBAM | 400A 4 pole with TruOne level 3 controller & overlapping neutral | 1200 x 1000 x 400 |
| OTOne630E4L3OLNDBAM | 630A 4 pole with TruOne level 3 controller & overlapping neutral | 1600 x 1200 x 600 |
| OTOne800E4L3OLNDBAM | 800A 4 pole with TruOne level 3 controller & overlapping neutral | 1600 x 1200 x 600 |

Accessories

Automatic transfer switches

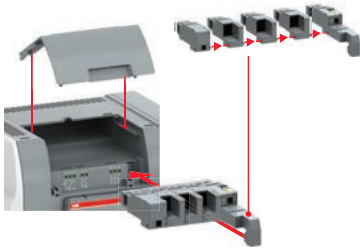


OXEA1

Auxiliary power supply module

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

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



Connectivity modules

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



EKIP COM

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

Communication modules for Level 3 and Level 4 controllers

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

SECTION 4

Accessories

Automatic transfer switches



EKIP 2K SIGNALLING

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

Signalling modules for Level 3 and Level 4 controllers

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



EKIP PROGRAMMING

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

Ekip programming module

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



EKIP COM HUB

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

Ekip com hub

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

Accessories

Automatic transfer switches



OXEB_

Phase barriers

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

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

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



OXEW1600_

Wide blade kit

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

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

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

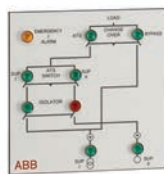
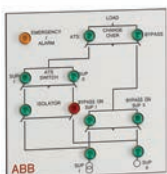


OXEC21

Wide blade kit

IP54 padlockable transparent cover, providing protection against accidental contact.

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



Mimic panels (Single/Dual Bypass)

| Part Number | Description | Dimensions |
|-------------|-----------------------------------|----------------|
| 01MimicDB | Mimic Panel for Dual ByPass ATS | 200 x 200 x 80 |
| 01MimicSB | Mimic Panel for Single ByPass ATS | 200 x 200 x 80 |

Note: Other options available upon request.

SECTION 4

Accessories

Automatic transfer switches



OA1G01AU

Auxiliary contacts

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



OA1G10

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

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



OA3G01

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

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



OA3G01AU

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

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

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



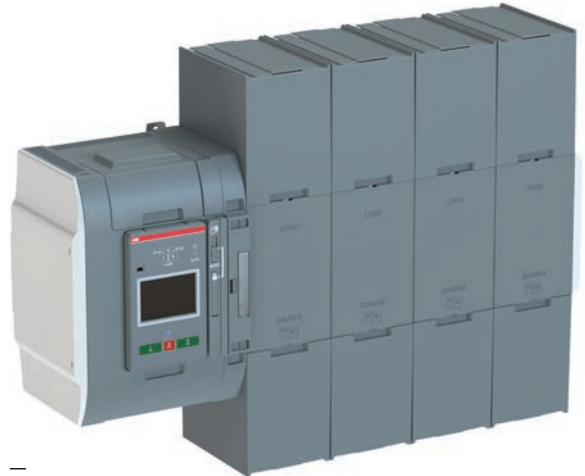
01



02



03



04



05

Targeted product performance

| ATS Frame Size | 30-400 A | 260-800 A | 800-1600 A |
|--|-----------|-----------|-------------|
| 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 |
| I _{cc} (rated conditional short-circuit current) | 100 kA | 100 kA | 100 kA |
| I _{cw} (rated short-time withstand current)/Short-time current ratings, 100ms | 18-30 kA | 42 kA | 50 kA |
| I _{cw} (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 UL: 30-1200 A | IEC: 200-1600 A UL: 30-1200 A | IEC: 200-1600 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

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



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/outputs | 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

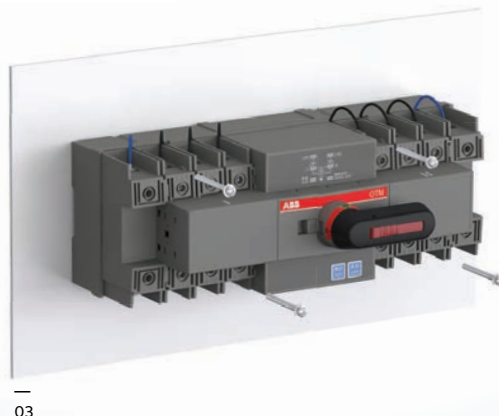
Compact ATS

Easy use and installation

01 Easy manual operation with the handle in case of emergency.

02 DIN- rail mounting.

03 Base mounting with screws.



Technical data

Compact automatic transfer switches OTM40...125_

Compact automatic transfer switches

| Data according to IEC 60947-3 | | | | Switch size | | |
|---|---|-----------------|-----------------|-----------------|---------|---------|
| | | | | 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 asynchronous 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 I _p (r.m.s.) and corresponding max. allowed cut-off current îc (peak) value. | I _p (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 |
| | I _p (r.m.s.) 18 kA, 690 V | îc (peak) | kA | 11 | 11 | 11 |
| | Max. OFA_ fuse size | gG | A | 125 | 125 | 125 |
| The cut-off current îc refers to values listed by fuse manufacturers (single phase test acc. to IEC60269). | I _p (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 | I _{cw} (r.m.s.) | 690 V 1s | kA | 2.5 | 2.5 | 2.5 |
| Rated short-time making capacity ²⁾ | I _{cm} (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

| Data according to IEC 60947-6-1 | | | | Switch size | | |
|------------------------------------|--------------------------|-------------|----|-------------|--------|---------|
| | | | | OTM40_ | OTM63_ | OTM125_ |
| Class of equipment | | | | PC | PC | PC |
| Rated short-time withstand current | I _{cw} (r.m.s.) | 690 V 0.1s | kA | 5 | 5 | 5 |
| Conditional short-circuit current | I _{cc} (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.

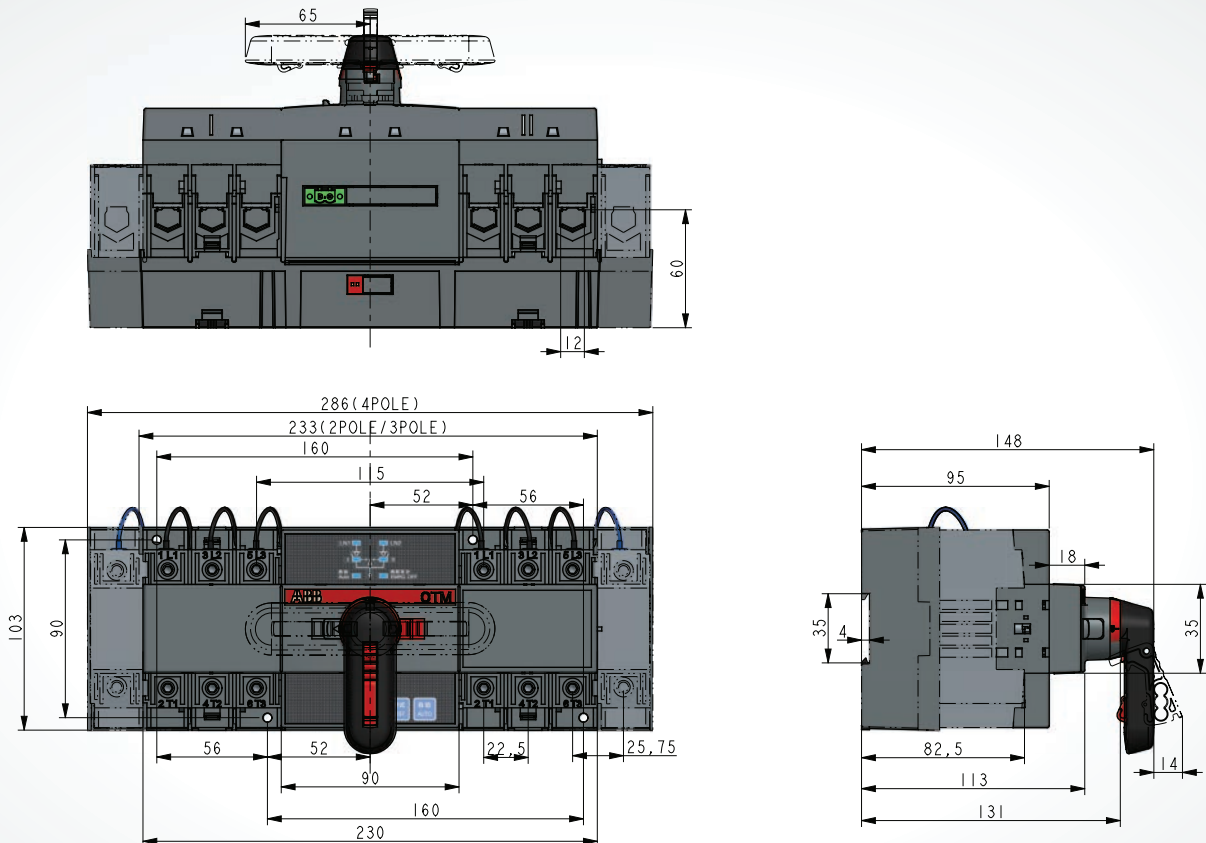
²⁾ Short circuit duration > 50ms, without fuse protection.

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 Code | 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 Code | 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. $2 \times 2.5 \text{ mm}^2$. Simultaneous action with the main contacts. The type and ordering number is for one piece.

| Suitable for switches | Contact function | Installation side | Type | Order Code | 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 Code | 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 Code | 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 Code | Units/type (pcs) | Weight/unit (kg) |
|-----------------------|---------------------------------------|--------|-----------------|------------------|------------------|
| OTM40F3CM_ | 2.5...25/2x2.5...16 | OMZC03 | 1SCA121324R1001 | 1 | 0.5 |
| OTM40F4CM_ | 2.5...25/2x2.5...16 | OMZC04 | 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.

Enclosed control products

- 090** **Loadbreak and safety switches**
- 093** **Switch fuses**



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

Enclosed switches

Switch solutions - Functionality and features

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

Plastic enclosures

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

Steel sheet enclosures

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

Stainless steel sheet enclosures

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

Aluminium alloy enclosures

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

Safety for personnel – reliable position indication

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



Switchgear - Loadbreak and safety switches

IP65 Double insulated enclosure



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

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

Polycarbonate enclosure 9kW ... 11kW 3 pole

| Rating@415v | | | Dimensions (mm) | | | Order Code |
|--|------|----|-----------------|-----|-----|------------|
| 1th A | AC22 | kW | H | W | D | |
| 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 | | | | No. Poles | Dimensions (mm) | | | Order Code |
|--|------|------|-----|-------------------|-----------------|-----|-----|------------|
| 1th A | AC22 | AC23 | kW | | H | W | D | |
| 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

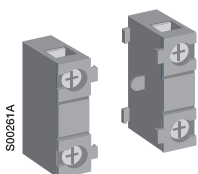
| Rating@415v | | | Dimensions (mm) | | | No. Poles | Order Code |
|-------------------|------|------|-----------------|-----|-----|-------------------|------------|
| 1 th A | AC22 | AC23 | H | W | D | | |
| 32 | 25 | 20 | 300 | 200 | 150 | 3 + solid neutral | OT20TPN-A |
| | | | | | | 4 | OT20FP-A |
| 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 |




S00261A

Switchgear - Switch fuses

IP65 Steel enclosure

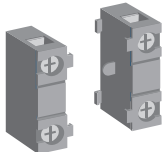
- IP65 rated (not suitable for external installation)
- Powder coated textured finish (RAL 7035)
- All switches are supplied with fuses and removable gland plates
- All 3 pole switches include detachable neutral link (OT160 solid link)
- Switch Fuses are internally rated IP20 on incoming terminals up 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) | | | No. Poles | Fuse Type | Order Code |
|--|-------------------|------|------|------|-----------------|-----|-----------------------|------------------------|-------------------------|-------------------------|
| | 1 th A | 400V | 500V | 690V | H | W | D | | | |
|  | 20 | 7.5 | 11 | 15 | 300 | 300 | 150 | 3+detach neutral 4 | A1 | OS20TPN-A OS20FP-A |
| | 32 | 15 | 18 | 25 | 300 | 300 | 150 | 3+detach neutral 4 | A2 | OS32TPN-A OS32FP-A |
| | 63 | 30 | 37 | 55 | 400 | 300 | 150 | 3+detach neutral 4 | A2/A3 | OS63TPN-A OS63FP-A |
| | 100 | 55 | 55 | 90 | 400 | 300 | 150 | 3+detach neutral 4 | A2/A3 | OS100TPN-A OS100FP-A |
| | 125 | 55 | 75 | 110 | 400 | 300 | 150 | 3+detach neutral 4 | A2/A3 | OS125TPN-A OS125FP-A |
| | 160 | 75 | 90 | 132 | 500 | 400 | 200 | 3 + solid neutral 4 | A3/A4 | OS160TPN-A OS160FP-A |
| | 200 | 110 | 132 | 200 | 600 | 400 | 250 | 3+detach neutral 4 | B1/B2 | OS200TPN-A OS200FP-A |
| | 315 | 160 | 220 | 220 | 600 | 400 | 250 | 3+detach neutral 4 | B1/B4 | OS315TPN-A OS315FP-A |
| | 400 | 220 | 280 | 400 | 600 | 400 | 250 | 3+detach neutral 4 | B1/B4 | OS400TPN-A OS400FP-A |
| | 630 | 355 | 450 | 560 | 600 | 600 | 300 | 3+detach neutral 4 | C1/C2 | OS630TPN-A OS630FP-A |
| 800 | 450 | 560 | 710 | 600 | 800 | 300 | 3+detach neutral 4 | C1/C2 | OS800TPN-A OS800FP-A | |

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

Spreader boxes

| | Suitable for Loadbreak Switches | | Spreader Box | | Spreader Box Gasket | |
|---|------------------------------------|--------------|--------------|--------------|---------------------|--------------|
| | Order Code | Order Code | Order Code | Order Code | Order Code | Order Code |
|  | OS20 - OS125 | Not Required | - | Not Required | Not Required | Not Required |
| | OS160 | SRN5420K | SRN5420K | GZ4020 | GZ4020 | GZ4020 |
| | OS200 - OS400 | SRN6425K | SRN6425K | GZ4025 | GZ4025 | GZ4025 |
| | OS630 - OS800 | SRN8530K | SRN8530K | GZ6030 | GZ6030 | GZ6030 |
| | Wall Mounting Brackets (Pack of 4) | | | AA1206 | 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_/OS32_ | OAZX1 | OAZX1 |

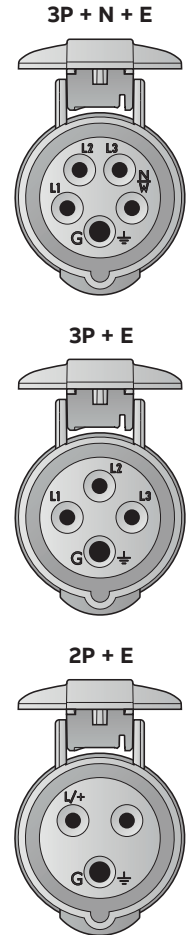
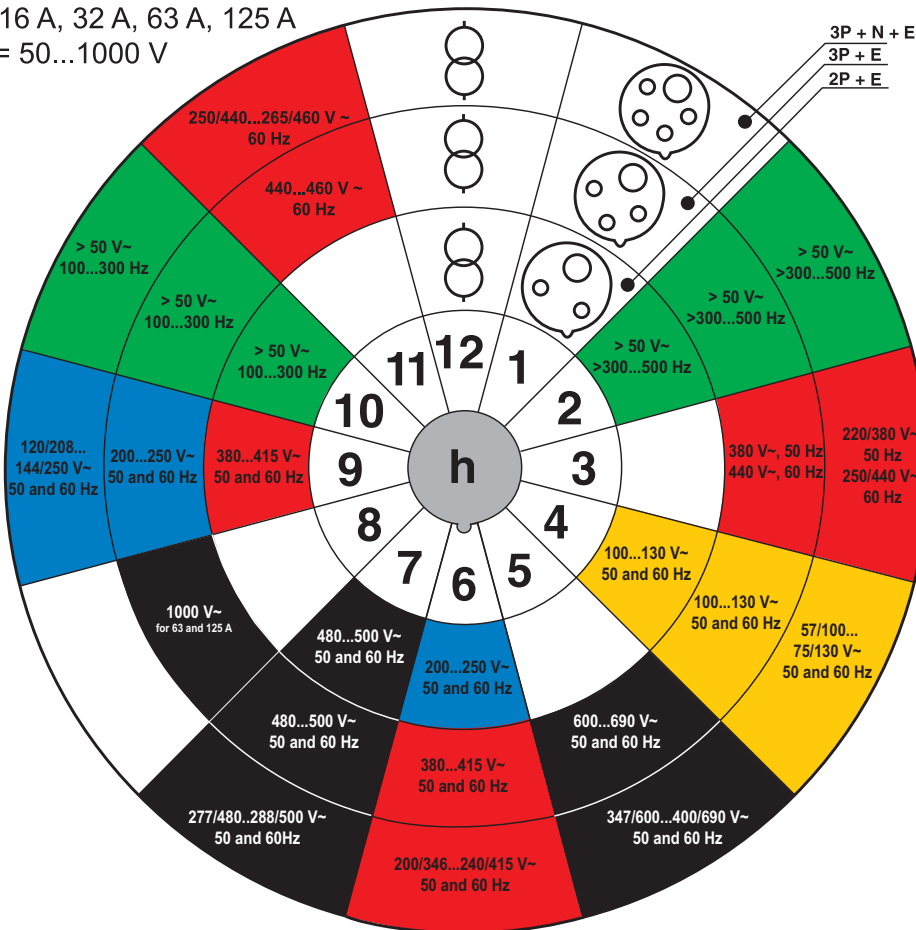
Industrial plugs and sockets

| | |
|------------|-------------------------------------|
| 096 | Plugs |
| 097 | Connectors |
| 098 | Inlets |
| 101 | Socket outlets |
| 105 | Watertight plugs and sockets |
| 113 | Modular Combi |

Industrial plugs and sockets

IEC 60309-2 “clock”

$I_e = 16\text{ A}, 32\text{ A}, 63\text{ A}, 125\text{ A}$
 $U_e = 50\text{...}1000\text{ V}$



Standard voltages - Colour codes according to IEC60309-1, -2

| Position of earthing sleeve according to IEC 60309-2 (clock) | 2P+E | 3P+E | 3P+N+E |
|--|---|---|---|
| 1 | <input type="checkbox"/> Optional voltage (not stated below) | <input type="checkbox"/> Optional voltage (not stated below) | <input type="checkbox"/> Optional voltage (not stated below) |
| 2 | <input checked="" type="checkbox"/> >300...500 V~ >50 Hz | <input checked="" type="checkbox"/> >300...500 V~ >50 Hz | <input checked="" type="checkbox"/> >300...500 V~ >50 Hz |
| 3 | <input type="checkbox"/> Not used | <input checked="" type="checkbox"/> 380 V~ 50 Hz, 440 V 60 Hz | <input checked="" type="checkbox"/> 220/380 V~ 50 Hz, 250/440 V 60 Hz |
| 4 | <input checked="" type="checkbox"/> 100...130 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 100...130 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 57/100...75/130 V~ 50 and 60 Hz |
| 5 | <input type="checkbox"/> Not used | <input checked="" type="checkbox"/> 600...690 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 347/600...400/690 V~ 50 and 60 Hz |
| 6 | <input checked="" type="checkbox"/> 200...250 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 380...415 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 200/346...240/415 V~ 50 and 60 Hz |
| 7 | <input checked="" type="checkbox"/> 480...500 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 480...500 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 277/480...288/500 V~ 50 and 60 Hz |
| 8 | <input type="checkbox"/> Not used | <input checked="" type="checkbox"/> 1000 V~ (for 63 A and 125 A) | <input type="checkbox"/> Not used |
| 9 | <input checked="" type="checkbox"/> 380...415 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 200...250 V~ 50 and 60 Hz | <input checked="" type="checkbox"/> 120/208...144/250 V~ 50 and 60 Hz |
| 10 | <input checked="" type="checkbox"/> 100...300 V~ >50 Hz | <input checked="" type="checkbox"/> 100...300 V~ >50 Hz | <input checked="" type="checkbox"/> 100...300 V~ >50 Hz |
| 11 Mainly for marine installations | <input type="checkbox"/> Not used | <input checked="" type="checkbox"/> 440...460 V~ 60 Hz | <input checked="" type="checkbox"/> 250/440...265/460 V~ 60 Hz |
| 12 Supply from isolating transformer | <input checked="" type="checkbox"/> Supply from isolating transformer | <input checked="" type="checkbox"/> Supply from isolating transformer | <input checked="" type="checkbox"/> Supply from isolating transformer |

Plugs

IP44



216EP6

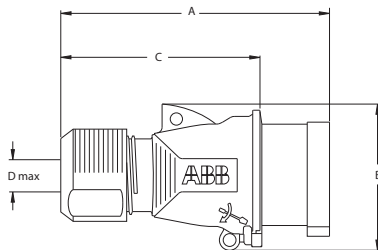


432EP6

16 A. / 32 A. Splashproof

Housing in plastic (PA). Cable entry with compression gland. Cable area 1...2.5 mm² (16A) / 2.5...6 mm² (32A)

| Terminals/ Poles | Colour code | Voltage V | Frequency Hz | Type: | | Pkg qty | Weight pkg (1pce) kg |
|---------------------|----------------|--------------|-----------------|---------|---------|------------|--------------------------------|
| | | | | 16A | 32A | | |
| 2P+E | | | | | | | |
| 3 | Grey | | AC | 216EP1 | 232EP1 | 10 | 0.11 (16A) 0.21 (32A) |
| | Green | >300...500 | >50 | 216EP2 | 232EP2 | | |
| | Yellow | 100...130 | 50 and 60 | 216EP4 | 232EP4 | | |
| | Blue | 200...250 | | 216EP6 | 232EP6 | | |
| | Red | 380...415 | | 216EP9 | 232EP9 | | |
| | Grey | transf | | 216EP12 | 232EP12 | | |
| 3P+E | | | | | | | |
| 4 | Grey | | AC | 316EP1 | 332EP1 | 10 | 0.16 (16A) 0.23 (32A) |
| | Green | >300...500 | >50 | 316EP2 | 332EP2 | | |
| | Red | 380/440 | 50/60 | 316EP3 | 332EP3 | | |
| | Yellow | 100...130 | 50 and 60 | 316EP4 | 332EP4 | | |
| | Black | 600...690 | | 316EP5 | 332EP5 | | |
| | Red | 380...415 | | 316EP6 | 332EP6 | | |
| | Black | 480...500 | | 316EP7 | 332EP7 | | |
| | Blue | 200...250 | | 316EP9 | 332EP9 | | |
| | Green | 100...300 | >50 | 316EP10 | 332EP10 | | |
| | Red | 440...460 | 60 | 316EP11 | 332EP11 | | |
| | Grey | transf | 50 and 60 | 316EP12 | 332EP12 | | |
| | 3P+N+E | | | | | | |
| 5 | Grey | | AC | 416EP1 | 432EP1 | 10 | 0.18 (16A) 0.24 (32A) |
| | Green | >300...500 | >50 | 416EP2 | 432EP2 | | |
| | Red | 380...440 | 50/60 | 416EP3 | 432EP3 | | |
| | Yellow | 100...130 | 50 and 60 | 416EP4 | 432EP4 | | |
| | Black | 600...690 | | 416EP5 | 432EP5 | | |
| | Red | 346...415 | | 416EP6 | 432EP6 | | |
| | Black | 480...500 | | 416EP7 | 432EP7 | | |
| | Blue | 208...250 | | 416EP9 | 432EP9 | | |
| | Red | 440...460 | 60 | 416EP11 | 432EP11 | | |



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 |

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

SECTION 6

Connectors

IP44



216EC6

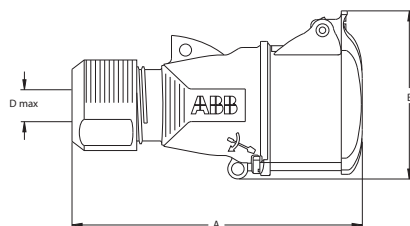


232EC9

16 A. / 32 A. Splashproof

Housing in plastic (PA). Cable entry with compression gland. Cable area 1...2.5 mm² (16A) / 2.5...6 mm² (32A)

| Terminals/ Poles | Colour code | Voltage V | Frequency Hz | Type: | | Pkg qty | Weight pkg (1pce) kg |
|---------------------|----------------|--------------|-----------------|---------|---------|------------|-------------------------------|
| | | | | 16A | 32A | | |
| 2P+E | | | | | | | |
| 3 | Grey | | AC | 216EC1 | 232EC1 | 10 | 0.16 (16A) |
| | Green | >300...500 | >50 | 216EC2 | 232EC2 | | |
| | Yellow | 100...130 | 50 and 60 | 216EC4 | 232EC4 | 10 | 0.26 (32A) |
| | Blue | 200...250 | | 216EC6 | 232EC6 | | |
| | Red | 380...415 | | 216EC9 | 232EC9 | | |
| | Grey | transf | | 216EC12 | 232EC12 | | |
| 3P+E | | | | | | | |
| 4 | Grey | | AC | 316EC1 | 332EC1 | 10 | 0.21 (16A) |
| | Green | >300...500 | >50 | 316EC2 | 332EC2 | | |
| | Red | 380/440 | 50/60 | 316EC3 | 332EC3 | 10 | 0.28 (32A) |
| | Yellow | 100...130 | 50 and 60 | 316EC4 | 332EC4 | | |
| | Black | 600...690 | | 316EC5 | 332EC5 | | |
| | Red | 380...415 | | 316EC6 | 332EC6 | | |
| | Black | 480...500 | | 316EC7 | 332EC7 | | |
| | Blue | 200...250 | | 316EC9 | 332EC9 | | |
| | Green | 100...300 | >50 | 316EC10 | 332EC10 | | |
| | Red | 440...460 | 60 | 316EC11 | 332EC11 | | |
| | Grey | transf | 50 and 60 | 316EC12 | 332EC12 | | |
| | 3P+N+E | | | | | | |
| 5 | Grey | | AC | 416EC1 | 432EC1 | 10 | 0.23 (16A) |
| | Green | >300...500 | >50 | 416EC2 | 432EC2 | | |
| | Red | 380...440 | 50/60 | 416EC3 | 432EC3 | 10 | 0.30 (32A) |
| | Yellow | 100...130 | 50 and 60 | 416EC4 | 432EC4 | | |
| | Black | 600...690 | | 416EC5 | 432EC5 | | |
| | Red | 346...415 | | 416EC6 | 432EC6 | | |
| | Black | 480...500 | | 416EC7 | 432EC7 | | |
| | Blue | 208...250 | | 416EC9 | 432EC9 | | |
| | Red | 440...460 | 60 | 416EC11 | 432EC11 | | |



Dimensions (mm)

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

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

Inlets

for wall mounting, IP44



416BS9

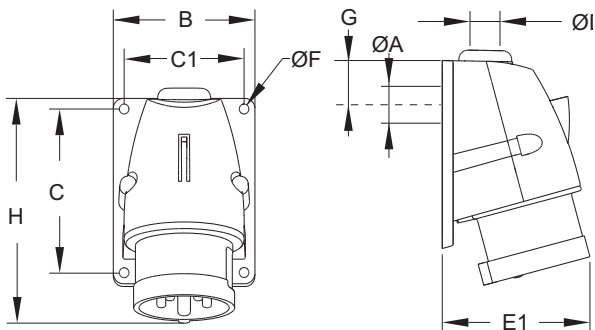


432BS9

16 A. / 32 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 (16A) / 2.5...6 mm² (32A)

| Terminals/ Poles | Colour code | Voltage V | Frequency Hz | Type: | | Pkg qty | Weight pkg (1pce) kg | | | |
|---------------------|----------------|--------------|-----------------|---------|---------|------------|--------------------------------|--------|----|--------------------------------|
| | | | | 16A | 32A | | | | | |
| 2P+E | | | | | | | | | | |
| 3 | Grey | | AC | 216BS1 | 232BS1 | 10 | 0.15 (16A) 0.25 (32A) | | | |
| | Yellow | 100...130 | 50 and 60 | 216BS4 | 232BS4 | | | | | |
| | Blue | 200...250 | | 216BS6 | 232BS6 | | | | | |
| | Red | 380...415 | | 216BS9 | 232BS9 | | | | | |
| | Grey | transf. | | 216BS12 | - | | | | | |
| 3P+E | | | | | | | | | | |
| 4 | Grey | | AC | 316BS1 | 332BS1 | 10 | 0.19 (16A) 0.27 (32A) | | | |
| | Red | 380/440 | 50/60 | - | 332BS3 | | | | | |
| | Yellow | 100...130 | 50 and 60 | 316BS4 | 332BS4 | | | | | |
| | Black | 600...690 | | 316BS5 | 332BS5 | | | | | |
| | Red | 380...415 | | 316BS6 | 332BS6 | | | | | |
| | Black | 480...500 | | 316BS7 | 332BS7 | | | | | |
| | Blue | 200...250 | | 316BS9 | 332BS9 | | | | | |
| | Green | 100...300 | >50 | 316BS10 | 332BS10 | | | | | |
| | Red | 440...460 | 60 | 316BS11 | 332BS11 | | | | | |
| | 3P+N+E | | | | | | | | | |
| | 5 | Grey | | AC | 416BS1 | | | 432BS1 | 10 | 0.20 (16A) 0.29 (32A) |
| Green | | >300...500 | >50 | 416BS2 | - | | | | | |
| Black | | 600...690 | 50 and 60 | 416BS5 | 432BS5 | | | | | |
| Red | | 346...415 | | 416BS6 | 432BS6 | | | | | |
| Blue | | 208...250 | | 416BS9 | 432BS7 | | | | | |
| Red | | 440...460 | 60 | 416BS11 | 432BS9 | | | | | |



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 |
| Type | A | B | C | C1 | Dmax | E1 | F | G | H |
| 232BS.. | 29 | 85 | 111 | 72 | 22/M25 | 94 | 5.5 | 34 | 153 |
| 332BS.. | 29 | 85 | 111 | 72 | 22/M25 | 94 | 5.5 | 34 | 153 |
| 432BS.. | 29 | 85 | 111 | 72 | 22/M25 | 96 | 5.5 | 34 | 154 |

Inlets

for panel mounting with minimized or unified straight flange, IP44

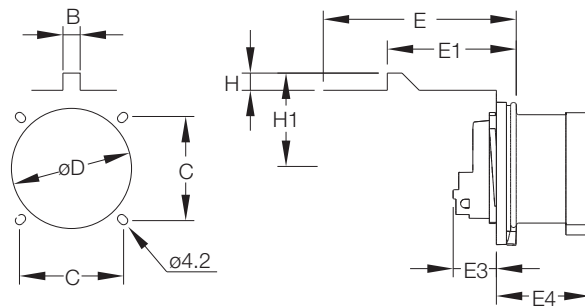


216B6

16 A. Splashproof

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

| Terminals/ Poles | Colour code | Voltage V | Frequency Hz | Type: 16A | Pkg qty | Weight |
|---------------------|----------------|--------------|-----------------|-----------|------------|---------------|
| | | | | | | pkg (1pce) |
| | | | | | | |
| 2P+E | | | | | | |
| 3 | Grey | | AC | 216B1 | 10 | 0.10 |
| | Blue | 200...250 | 50 and 60 | 216B6 | | |
| 3P+E | | | | | | |
| 4 | Grey | | AC | 316B1 | 10 | 0.13 |
| | Yellow | 100...130 | 50 and 60 | 316B4 | | |
| | Black | 600...690 | | 316B5 | | |
| | Red | 380...415 | | 316B6 | | |
| | Blue | 200...250 | | 316B9 | | |
| 3P+N+E | | | | | | |
| 5 | Grey | | AC | 416B1 | 10 | 0.14 |
| | Red | 346...415 | 50 and 60 | 416B6 | | |
| | Blue | 208...250 | | 416B9 | | |



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

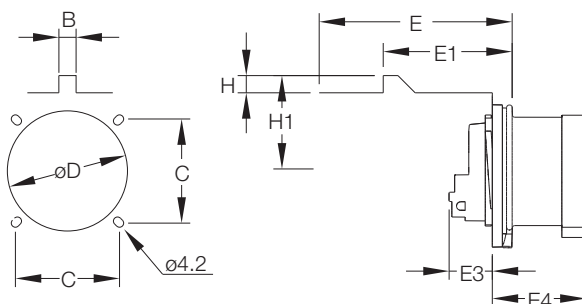


432BU6

16 A. / 32 A. IP44. Splashproof

Housing in plastic (PA). Unified flange, Cable area 1...2.5 mm² (16A) / 2.5...6 mm² (32A)

| Terminals/ Poles | Colour code | Voltage | | Frequency | | Type: 16A | Type: 32A | Pkg qty | Weight pkg (1pce) kg |
|---------------------|----------------|-----------|--|-----------|----|-----------|-----------|------------|-------------------------------|
| | | V | | Hz | | | | | |
| 2P+E | | | | | | | | | |
| 3 | Grey | | | | AC | - | 232BU1 | 10 | 0.15 |
| | Blue | 200...250 | | 50 and 60 | | - | 232BU6 | | |
| 3P+E | | | | | | | | | |
| 4 | Grey | | | | AC | - | 332BU1 | 10 | 0.17 |
| | Black | 600...690 | | 50 and 60 | | - | 332BU5 | | |
| | Red | 380...415 | | | | - | 332BU6 | | |
| | Blue | 200...250 | | | | 316BU9 | 332BU9 | | |
| 3P+N+E | | | | | | | | | |
| 5 | Grey | | | | AC | - | 432BU1 | 10 | 0.19 |
| | Black | 600...690 | | 50 and 60 | | 416BU5 | - | | |
| | Red | 346...415 | | | | 416BU6 | 432BU6 | | |



Dimensions (mm)

| Type | B | C | D | E | E1 | E3 | E4 | H | H1 |
|----------|---|-------|----|-----|------|------|------|---|------|
| 316BU... | 9 | 60-61 | 59 | 90 | 52.5 | 21.0 | 46.5 | 7 | 38.0 |
| 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

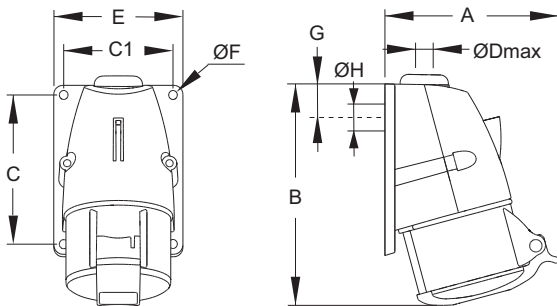


432RS6

16 A. / 32 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 (16A) / 2.5...10 mm² (32A)

| Terminals/ Poles | Colour code | Voltage V | Frequency Hz | Type: | | Pkg qty | Weight pkg (1pce) kg | | | |
|---------------------|----------------|--------------|-----------------|---------|---------|------------|--------------------------------|--------|----|--------------------------------|
| | | | | 16A | 32A | | | | | |
| 2P+E | | | | | | | | | | |
| 3 | Grey | | AC | 216RS1 | 232RS1 | 10 | 0.22 (16A) 0.30 (32A) | | | |
| | Yellow | 100...130 | 50 and 60 | 216RS4 | 232RS4 | | | | | |
| | Blue | 200...250 | | 216RS6 | 232RS6 | | | | | |
| | Red | 380...415 | | 216RS9 | 232RS9 | | | | | |
| | Grey | transf. | | 216RS12 | - | | | | | |
| 3P+E | | | | | | | | | | |
| 4 | Grey | | AC | 316RS1 | 332RS1 | 10 | 0.24 (16A) 0.32 (32A) | | | |
| | Yellow | 100...130 | 50 and 60 | 316RS4 | 332RS3 | | | | | |
| | Black | 600...690 | | 316RS5 | 332RS4 | | | | | |
| | Red | 380...415 | | 316RS6 | 332RS5 | | | | | |
| | Black | 480...500 | | 316RS7 | 332RS6 | | | | | |
| | Blue | 200...250 | | 316RS9 | 332RS7 | | | | | |
| | Green | 100...300 | >50 | 316RS10 | 332RS9 | | | | | |
| | Red | 440...460 | 60 | 316RS11 | 332RS10 | | | | | |
| | Grey | transf. | 50 and 60 | 316RS12 | 332RS11 | | | | | |
| | 3P+N+E | | | | | | | | | |
| | 5 | Grey | | AC | 416RS1 | | | 432RS1 | 10 | 0.26 (16A) 0.34 (32A) |
| | | Green | >300...500 | >50 | 416RS2 | | | - | | |
| Black | | 600...690 | 50 and 60 | 416RS5 | 432RS5 | | | | | |
| Red | | 346...415 | | 416RS6 | 432RS6 | | | | | |
| Blue | | 208...250 | | 416RS9 | 432RS7 | | | | | |
| Red | | 440...460 | 60 | 416RS11 | 432RS9 | | | | | |



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 |
| Type | A | B | C | C1 | Dmax | E | F | G | H |
| 232RS.. | 118 | 163 | 111 | 72 | 22/M25 | 85 | 5.5 | 34 | 29 |
| 332RS.. | 116 | 163 | 111 | 72 | 22/M25 | 85 | 5.5 | 34 | 29 |
| 432RS.. | 121 | 164 | 111 | 72 | 22/M25 | 85 | 5.5 | 34 | 29 |

Socket outlet

for panel mounting with unified angled flange, IP44



216RAU6

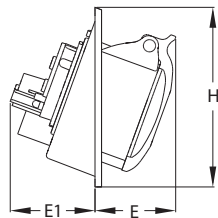
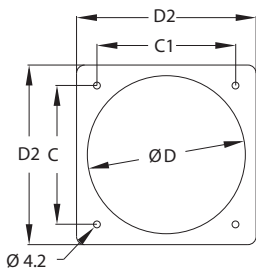


432RAU6

16 A. Splashproof

Housing in plastic (PA). Cable area 1.5...4 mm² (16A) / 2.5...10 mm² (32A)

| Terminals/ Poles | Colour code | Voltage V | Frequency Hz | Type: 16A | Type: 32A | Pkg qty | Weight | | |
|---------------------|----------------|--------------|-----------------|-----------|-----------|------------|---------------|----|------|
| | | | | | | | pkg (1pce) | | |
| | | | | | | | kg | | |
| 2P+E | | | | | | | | | |
| 3 | Grey | | AC | 216RAU1 | 232RAU1 | 10 | 0.19 | | |
| | Green | 300...500 | >50 | 216RAU2 | - | | (16A) | | |
| | Yellow | 100...130 | 50 and 60 | 216RAU4 | 232RAU4 | | 0.24 | | |
| | Blue | 200...250 | | 216RAU6 | 232RAU6 | | (32A) | | |
| | Red | 380...415 | | 216RAU9 | - | | | | |
| | Grey | transf. | | 216RAU12 | - | | | | |
| 3P+E | | | | | | | | | |
| 4 | Grey | | AC | 316RAU1 | 332RAU1 | 10 | 0.22 | | |
| | Yellow | 100...130 | 50 and 60 | 316RAU4 | - | | (16A) | | |
| | Black | 600...690 | | 316RAU5 | 332RAU5 | | 0.26 | | |
| | Red | 380...415 | | 316RAU6 | 332RAU6 | | (32A) | | |
| | Black | 480...500 | | 316RAU7 | 332RAU7 | | | | |
| | Blue | 200...250 | | 316RAU9 | 332RAU9 | | | | |
| | Green | >300...500 | >50 | 316RAU10 | - | | | | |
| | Red | 440...460 | 60 | 316RAU11 | - | | | | |
| | 3P+N+E | | | | | | | | |
| | 5 | Grey | | AC | 416RAU1 | | 432RAU1 | 10 | 0.24 |
| Green | | 300...500 | >50 | 416RAU2 | - | (16A) | | | |
| Yellow | | 100...130 | 50 and 60 | 416RAU4 | - | 0.28 | | | |
| Black | | 600...690 | | 416RAU5 | 432RAU5 | (32A) | | | |
| Red | | 346...415 | | 416RAU6 | 432RAU6 | | | | |
| Blue | | 208...250 | | 416RAU9 | - | | | | |



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 |

| 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

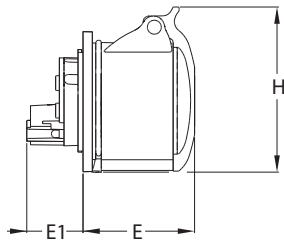
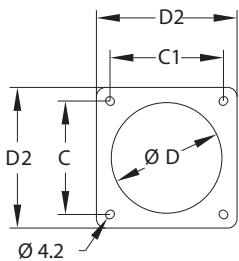


216R6

16 A. Splashproof

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

| Terminals/ Poles | Colour code | Voltage | | Frequency | Type: 16A | Pkg qty | Weight | |
|---------------------|----------------|------------|-----------|-----------|-----------|------------|---------------|----|
| | | V | Hz | | | | pkg (1pce) | kg |
| 2P+E | | | | | | | | |
| 3 | Yellow | 100...130 | 50 and 60 | | 216R4 | 10 | 0.14 | |
| | Blue | 200...250 | | | 216R6 | | | |
| | Red | 380...415 | | | 216R9 | | | |
| | Grey | transf. | | | 216R12 | | | |
| 3P+E | | | | | | | | |
| 4 | Grey | | | AC | 316R1 | 10 | 0.17 | |
| | Yellow | 100...130 | 50 and 60 | | 316R4 | | | |
| | Black | 600...690 | | | 316R5 | | | |
| | Red | 380...415 | | | 316R6 | | | |
| | Black | 480...500 | | | 316R7 | | | |
| | Blue | 200...250 | | | 316R9 | | | |
| | Green | 100...300 | >50 | | 316R10 | | | |
| | Red | 440...460 | 60 | | 316R11 | | | |
| | 3P+N+E | | | | | | | |
| 5 | Grey | | | AC | 416R1 | 10 | 0.19 | |
| | Green | >300...500 | >50 | | 416R2 | | | |
| | Red | 346...415 | | | 416R6 | | | |
| | Blue | 208...250 | 50 and 60 | | 416R9 | | | |



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

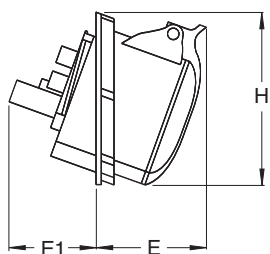
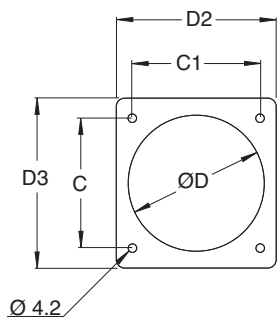


332RAM6

16 A. / 32 A. Splashproof

Housing in plastic (PA). Cable area 1.5...4 mm² (16A) / 2.5...10 mm² (32A)

| Terminals/ Poles | Colour code | Voltage V | Frequency Hz | Type: | | Pkg qty | Weight pkg (1pce) kg | | | |
|---------------------|----------------|--------------|-----------------|----------|---------|------------|-------------------------------|---------|----|------|
| | | | | 16A | 32A | | | | | |
| 2P+E | | | | | | | | | | |
| 3 | Grey | | AC | 216RAM1 | 232RAM1 | 10 | 0.21 | | | |
| | Grey | > 50...250 | DC | 232RAM3 | 232RAM3 | | | | | |
| | Yellow | 100...130 | 50 and 60 | 216RAM4 | 232RAM4 | | | | | |
| | Blue | 200...250 | | 216RAM6 | 232RAM6 | | | | | |
| | Red | 380...415 | | 216RAM9 | - | | | | | |
| | Grey | transf. | | 216RAM12 | - | | | | | |
| 3P+E | | | | | | | | | | |
| 4 | Grey | | AC | 316RAM1 | 332RAM1 | 10 | 0.22 | | | |
| | Yellow | 100...130 | 50 and 60 | 316RAM4 | - | | | | | |
| | Black | 600...690 | | 316RAM5 | 332RAM5 | | | | | |
| | Red | 380...415 | | 316RAM6 | 332RAM6 | | | | | |
| | Black | 480...500 | 316RAM7 | 332RAM7 | | | | | | |
| | Blue | 200...250 | 316RAM9 | 332RAM9 | | | | | | |
| | Green | 100...300 | > 50 | 316RAM10 | - | | | | | |
| | Red | 440...460 | 60 | 316RAM11 | - | | | | | |
| | 3P+N+E | | | | | | | | | |
| | 5 | Grey | | AC | 416RAM1 | | | 432RAM1 | 10 | 0.24 |
| | | Green | >300...500 | > 50 | 416RAM2 | | | - | | |
| Red | | 346...415 | 50 and 60 | 416RAM6 | 432RAM6 | | | | | |
| Blue | | 208...250 | | 416RAM9 | - | | | | | |



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 |

| 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 |

New watertight Easy and Safe

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.



Plugs

IP67



216EP6W

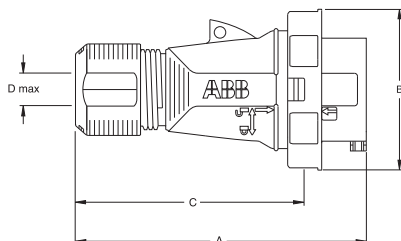


432EP6W

16 A. / 32 A. Watertight

Housing in plastic (PA). Cable entry with compression gland. Cable area 1...2.5 mm² (16A) / 2.5...6 mm² (32A)

| Terminals/ Poles | Colour code | Voltage V | Frequency Hz | Type: | | Pkg qty | Weight pkg (1pce) kg |
|---------------------|----------------|--------------|-----------------|----------|----------|------------|--------------------------------|
| | | | | 16A | 32A | | |
| 2P+E | | | | | | | |
| 3 | Grey | | AC | 216EP1W | 232EP1W | 10 | 0.13 (16A) 0.23 (32A) |
| | Yellow | 100...130 | 50 and 60 | 216EP4W | 232EP4W | | |
| | Blue | 200...250 | | 216EP6W | 232EP6W | | |
| | Red | 380...415 | | 216EP9W | 232EP9W | | |
| | Grey | transf | | 216EP12W | 232EP12W | | |
| 3P+E | | | | | | | |
| 4 | Grey | | AC | 316EP1W | 332EP1W | 10 | 0.19 (16A) 0.25 (32A) |
| | Green | >300...500 | >50 | 316EP2W | 332EP2W | | |
| | Red | 380/440 | 50/60 | 316EP3W | 332EP3W | | |
| | Yellow | 100...130 | 50 and 60 | 316EP4W | 332EP4W | | |
| | Black | 600...690 | | 316EP5W | 332EP5W | | |
| | Red | 380...415 | | 316EP6W | 332EP6W | | |
| | Black | 480...500 | | 316EP7W | 332EP7W | | |
| | Blue | 200...250 | | 316EP9W | 332EP9W | | |
| | Green | 100...300 | >50 | 316EP10W | 332EP10W | | |
| | Red | 440...460 | 60 | 316EP11W | 332EP11W | | |
| | 3P+N+E | | | | | | |
| 5 | Grey | | AC | 416EP1W | 432EP1W | 10 | 0.21 (16A) 0.25 (32A) |
| | Green | >300...500 | >50 | 416EP2W | 432EP2W | | |
| | Red | 380...440 | 50/60 | 416EP3W | 432EP3W | | |
| | Yellow | 100...130 | 50 and 60 | 416EP4W | 432EP4W | | |
| | Red | 346...415 | | 416EP6W | 432EP6W | | |
| | Black | 480...500 | | 416EP7W | 432EP7W | | |
| | Blue | 208...250 | | 416EP9W | 432EP9W | | |
| | Red | 440...460 | 60 | 416EP11W | 432EP11W | | |



Dimensions (mm)

| Type | A | B | C | Dmax |
|-----------|-----|----|-----|------|
| 216EP...W | 134 | 73 | 100 | 14 |
| 316EP...W | 161 | 81 | 127 | 17 |
| 416EP...W | 158 | 87 | 125 | 17 |
| Type | A | B | C | Dmax |
| 232EP...W | 183 | 91 | 141 | 22 |
| 332EP...W | 183 | 91 | 141 | 22 |
| 432EP...W | 183 | 99 | 141 | 22 |

Connectors

IP67



216EC6W

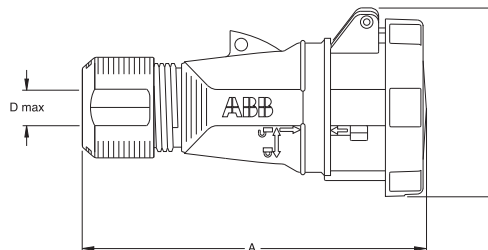


432EC6W

16 A. / 32 A. Watertight

Housing in plastic (PA). Cable entry with compression gland. Cable area 1...2.5 mm² (16A) / 2.5...6 mm² (32A)

| Terminals/ Poles | Colour code | Voltage | | Frequency | Type: 16A | Type: 32A | Pkg qty | Weight pkg (1pce) kg |
|---------------------|----------------|------------|-----------|-----------|-----------|-----------|------------|--------------------------------|
| | | V | Hz | | | | | |
| 2P+E | | | | | | | | |
| 3 | Grey | | | AC | 216EC1W | 232EC1W | 10 | 0.17 (16A) 0.28 (32A) |
| | Yellow | 100...130 | 50 and 60 | | 216EC4W | 232EC4W | | |
| | Blue | 200...250 | | | 216EC6W | 232EC6W | | |
| | Red | 380...415 | | | 216EC9W | 232EC9W | | |
| | Grey | transf | | | 216EC12W | 232EC12W | | |
| 3P+E | | | | | | | | |
| 4 | Grey | | | AC | 316EC1W | 332EC1W | 10 | 0.23 (16A) 0.30 (32A) |
| | Green | >300...500 | >50 | | 316EC2W | 332EC2W | | |
| | Red | 380/440 | 50/60 | | 316EC3W | 332EC3W | | |
| | Yellow | 100...130 | 50 and 60 | | 316EC4W | 332EC4W | | |
| | Black | 600...690 | | | 316EC5W | 332EC5W | | |
| | Red | 380...415 | | | 316EC6W | 332EC6W | | |
| | Black | 480...500 | | | 316EC7W | 332EC7W | | |
| | Blue | 200...250 | | | 316EC9W | 332EC9W | | |
| | Green | 100...300 | >50 | | 316EC10W | 332EC10W | | |
| | Red | 440...460 | 60 | | 316EC11W | 332EC11W | | |
| | 3P+N+E | | | | | | | |
| 5 | Grey | | | AC | 416EC1W | 432EC1W | 10 | 0.26 (16A) 0.30 (32A) |
| | Green | >300...500 | >50 | | 416EC2W | 432EC2W | | |
| | Red | 380...440 | 50/60 | | 416EC3W | 432EC3W | | |
| | Yellow | 100...130 | 50 and 60 | | 416EC4W | 432EC4W | | |
| | Red | 346...415 | | | 416EC6W | 432EC6W | | |
| | Black | 480...500 | | | 416EC7W | 432EC7W | | |
| | Blue | 208...250 | | | 416EC9W | 432EC9W | | |
| | Red | 440...460 | 60 | | 416EC11W | 432EC11W | | |



Dimensions (mm)

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

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

Inlets

for wall mounting, IP67



216EBS6W

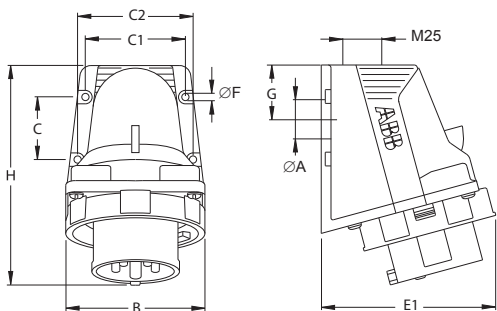


432EBS6W

16 A. / 32 A. Watertight

Housing in plastic (PA). Cable gland included. Cable area 1...2.5 mm² (16A) / 2.5...6 mm² (32A)

| Terminals/ Poles | Colour code | Voltage | | Frequency | Type: 16A | | Type: 32A | | Pkg qty | Weight pkg (1pce) kg |
|---------------------|----------------|------------|--|-----------|-----------|-----------|-----------|--------------------------------|------------|-------------------------------|
| | | V | | | | | | | | |
| 2P+E | | | | | | | | | | |
| 3 | Grey | | | AC | 216EBS1W | 232EBS1W | 10 | 0.20 (16A) 0.26 (32A) | | |
| | Yellow | 100...130 | | 50 and 60 | 216EBS4W | 232EBS4W | | | | |
| | Blue | 200...250 | | | 216EBS6W | 232EBS6W | | | | |
| | Red | 380...415 | | | 216EBS9W | 232EBS9W | | | | |
| | Grey | transf | | | 216EBS12W | 232EBS12W | | | | |
| 3P+E | | | | | | | | | | |
| 4 | Grey | | | AC | 316EBS1W | 332EBS1W | 10 | 0.23 (16A) 0.27 (32A) | | |
| | Green | >300...500 | | >50 | 316EBS2W | 332EBS2W | | | | |
| | Red | 380/440 | | 50/60 | 316EBS3W | 332EBS3W | | | | |
| | Yellow | 100...130 | | 50 and 60 | 316EBS4W | 332EBS4W | | | | |
| | Black | 600...690 | | | 316EBS5W | 332EBS5W | | | | |
| | Red | 380...415 | | | 316EBS6W | 332EBS6W | | | | |
| | Black | 480...500 | | | 316EBS7W | 332EBS7W | | | | |
| | Blue | 200...250 | | | 316EBS9W | 332EBS9W | | | | |
| | Green | 100...300 | | >50 | 316EBS10W | 332EBS10W | | | | |
| | Red | 440...460 | | 60 | 316EBS11W | 332EBS11W | | | | |
| | 3P+N+E | | | | | | | | | |
| 5 | Grey | | | AC | 416EBS1W | 432EBS1W | 10 | 0.25 (16A) 0.28 (32A) | | |
| | Green | >300...500 | | >50 | 416EBS2W | 432EBS2W | | | | |
| | Red | 380...440 | | 50/60 | 416EBS3W | 432EBS3W | | | | |
| | Yellow | 100...130 | | 50 and 60 | 416EBS4W | 432EBS4W | | | | |
| | Red | 346...415 | | | 416EBS6W | 432EBS6W | | | | |
| | Black | 480...500 | | | 416EBS7W | 432EBS7W | | | | |
| | Blue | 208...250 | | | 416EBS9W | 432EBS9W | | | | |
| | Red | 440...460 | | 60 | 416EBS11W | 432EBS11W | | | | |



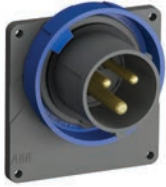
Dimensions (mm)

| Type | A | B | C | C1 | C2 | E1 | ØF | G | H |
|------------|----|------|----|------|------|-----|-----|-------|-----|
| 216EBS...W | 25 | 88.5 | 40 | 63.5 | 73.5 | 112 | 4.5 | 34.75 | 135 |
| 316EBS...W | 25 | 88.5 | 40 | 63.5 | 73.5 | 108 | 4.5 | 34.75 | 138 |
| 416EBS...W | 25 | 88.5 | 40 | 63.5 | 73.5 | 112 | 4.5 | 34.75 | 140 |

| Type | A | B | C | C1 | C2 | E1 | ØF | G | H |
|------------|----|----|----|------|------|-----|-----|-------|-----|
| 232EBS...W | 25 | 91 | 40 | 63.5 | 73.5 | 106 | 4.5 | 34.75 | 150 |
| 332EBS...W | 25 | 91 | 40 | 63.5 | 73.5 | 106 | 4.5 | 34.75 | 150 |
| 432EBS...W | 25 | 99 | 40 | 63.5 | 73.5 | 110 | 4.5 | 34.75 | 152 |

Inlets

for panel mounting with unified straight flange, IP67



216EBU6W

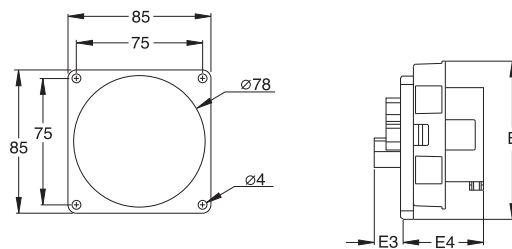


432EBU6W

16 A. / 32 A. Watertight

Housing in plastic (PA). Cable area 1...2.5 mm² (16A) / 2.5...6 mm² (32A)

| Terminals/ Poles | Colour code | Voltage | | Frequency | Type: 16A | Type: 32A | Pkg qty | Weight pkg (1pce) kg |
|---------------------|----------------|-----------|-----------|-----------|-----------|-----------|------------|--------------------------------|
| | | V | Hz | | | | | |
| 2P+E | | | | | | | | |
| 3 | Grey | | | AC | 216EBU1W | 232EBU1W | 10 | 0.11 (16A) 0.17 (32A) |
| | Yellow | 100...130 | 50 and 60 | | 216EBU4W | 232EBU4W | | |
| | Blue | 200...250 | | | 216EBU6W | 232EBU6W | | |
| | Red | 380...415 | | | 216EBU9W | 232EBU9W | | |
| 3P+E | | | | | | | | |
| 4 | Grey | | | AC | 316EBU1W | 332EBU1W | 10 | 0.14 (16A) 0.18 (32A) |
| | Yellow | 100...130 | 50 and 60 | | 316EBU4W | 332EBU3W | | |
| | Black | 600...690 | | | 316EBU5W | 332EBU4W | | |
| | Red | 380...415 | | | 316EBU6W | 332EBU6W | | |
| | Black | 480...500 | | | 316EBU7W | 332EBU7W | | |
| | Blue | 200...250 | | | 316EBU9W | 332EBU9W | | |
| | Red | 440...460 | 60 | | 316EBU11W | 332EBU11W | | |
| 3P+N+E | | | | | | | | |
| 5 | Grey | | | AC | 416EBU1W | 432EBU1W | 10 | 0.16 (16A) 0.19 (32A) |
| | Yellow | 100...130 | 50 and 60 | | 416EBU4W | 432EBU4W | | |
| | Red | 346...415 | | | 416EBU6W | 432EBU6W | | |
| | Black | 480...500 | | | 416EBU7W | 432EBU7W | | |
| | Blue | 208...250 | | | 416EBU9W | 432EBU9W | | |
| | Red | 440...460 | 60 | | 416EBU11W | 432EBU11W | | |



Dimensions (mm)

| Type | B | E3 | E4 |
|------------|------|----|------|
| 216EBU...W | 94 | 17 | 48.5 |
| 316EBU...W | 90 | 17 | 48.5 |
| 416EBU...W | 93.5 | 17 | 48.5 |

| Type | B | E3 | E4 |
|------------|----|----|----|
| 232EBU...W | 91 | 16 | 58 |
| 332EBU...W | 91 | 16 | 58 |
| 432EBU...W | 99 | 16 | 58 |

Socket outlet

for wall mounting, IP67



216ERS6W

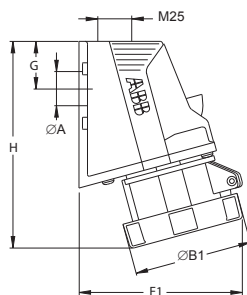
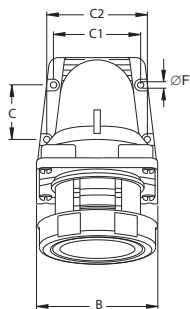


432ERS6W

16 A. / 32 A. Watertight

Housing in plastic (PA). Cable gland included. Cable area 1.5...4 mm² (16A) / 2.5...10 mm² (32A)

| Terminals/ Poles | Colour code | Voltage Frequency | | Type: 16A | Type: 32A | Pkg qty | Weight pkg (1pce) | |
|---------------------|----------------|-------------------|-----------|-----------|-----------|------------|--------------------------------|--|
| | | V | Hz | | | | kg | |
| 2P+E | | | | | | | | |
| 3 | Grey | | AC | 216ERS1W | 232ERS1W | 10 | 0.24 (16A) 0.31 (32A) | |
| | Yellow | 100...130 | 50 and 60 | 216ERS4W | 232ERS4W | | | |
| | Blue | 200...250 | | 216ERS6W | 232ERS6W | | | |
| | Red | 380...415 | | 216ERS9W | 232ERS9W | | | |
| | Grey | transf | | 216ERS12W | 232ERS12W | | | |
| 3P+E | | | | | | | | |
| 4 | Grey | | AC | 316ERS1W | 332ERS1W | 10 | 0.27 (16A) 0.32 (32A) | |
| | Green | >300...500 | >50 | 316ERB2W | 332ERS2W | | | |
| | Red | 380/440 | 50/60 | 316ERS3W | 332ERS3W | | | |
| | Yellow | 100...130 | 50 and 60 | 316ERS4W | 332ERS4W | | | |
| | Black | 600...690 | | 316ERS5W | 332ERS5W | | | |
| | Red | 380...415 | | 316ERS6W | 332ERS6W | | | |
| | Black | 480...500 | | 316ERS7W | 332ERS7W | | | |
| | Blue | 200...250 | | 316ERS9W | 332ERS9W | | | |
| | Green | 100...300 | >50 | 316ERS10W | 332ERS10W | | | |
| | Red | 440...460 | 60 | 316ERS11W | 332ERS11W | | | |
| | 3P+N+E | | | | | | | |
| 5 | Grey | | AC | 416ERS1W | 432ERS1W | 10 | 0.30 (16A) 0.32 (32A) | |
| | Green | >300...500 | >50 | 416ERS2W | 432ERS2W | | | |
| | Red | 380...440 | 50/60 | 416ERS3W | 432ERS3W | | | |
| | Yellow | 100...130 | 50 and 60 | 416ERS4W | 432ERS4W | | | |
| | Red | 346...415 | | 416ERS6W | 432ERS6W | | | |
| | Black | 480...500 | | 416ERS7W | 432ERS7W | | | |
| | Blue | 208...250 | | 416ERS9W | 432ERS9W | | | |
| | Red | 440...460 | 60 | 416ERS11W | 432ERS11W | | | |



Dimensions (mm)

| Type | A | B | ØB1 | C | C1 | C2 | E1 | ØF | G | H |
|------------|----|------|-----|----|------|------|-----|-----|-------|-----|
| 216ERS...W | 25 | 88.5 | 73 | 40 | 63.5 | 73.5 | 112 | 4.5 | 34.75 | 147 |
| 316ERS...W | 25 | 88.5 | 81 | 40 | 63.5 | 73.5 | 117 | 4.5 | 34.75 | 150 |
| 416ERS...W | 25 | 88.5 | 87 | 40 | 63.5 | 73.5 | 119 | 4.5 | 34.75 | 151 |

| Type | A | B | ØB1 | C | C1 | C2 | E1 | ØF | G | H |
|------------|----|------|-----|----|------|------|-----|-----|--------------|-----|
| 232ERS...W | 25 | 88.5 | 91 | 40 | 63.5 | 73.5 | 117 | 4.5 | 34.75 | 163 |
| 332ERS...W | 25 | 88.5 | 91 | 40 | 63.5 | 73.5 | 117 | 4.5 | 34.75 | 163 |
| 432ERS...W | 25 | 88.5 | 99 | 40 | 63.5 | 73.5 | 120 | 4.5 | 34.75 | 164 |

Socket outlet

for panel mounting with unified straight flange, IP67



216ERU6W

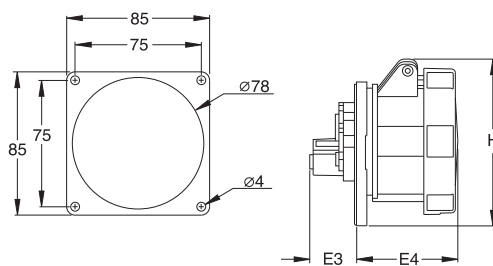


432ERU6W

16 A. / 32 A. Watertight

Housing in plastic (PA). Cable area 1.5...4 mm² (16A) / 2.5...10 mm² (32A)

| Terminals/ Poles | Colour code | Voltage | | Frequency | Type: 16A | Type: 32A | Pkg qty | Weight pkg (1pce) |
|---------------------|----------------|-----------|-----------|-----------|-----------|-----------|------------|--------------------------------|
| | | V | Hz | | | | | |
| 2P+E | | | | | | | | |
| 3 | Grey | | | AC | 216ERU1W | 232ERU1W | 10 | 0.15 (16A) 0.22 (32A) |
| | Yellow | 100...130 | 50 and 60 | | 216ERU4W | 232ERU4W | | |
| | Blue | 200...250 | | | 216ERU6W | 232ERU6W | | |
| | Red | 380...415 | | | 216ERU9W | 232ERU9W | | |
| 3P+E | | | | | | | | |
| 4 | Grey | | | AC | 316ERU1W | 332ERU1W | 10 | 0.18 (16A) 0.23 (32A) |
| | Yellow | 100...130 | 50 and 60 | | 316ERU4W | 332ERU3W | | |
| | Black | 600...690 | | | 316ERU5W | 332ERU4W | | |
| | Red | 380...415 | | | 316ERU6W | 332ERU6W | | |
| | Black | 480...500 | | | 316ERU7W | 332ERU7W | | |
| | Blue | 200...250 | | | 316ERU9W | 332ERU9W | | |
| | Red | 440...460 | 60 | | 316ERU11W | 332ERU11W | | |
| 3P+N+E | | | | | | | | |
| 5 | Grey | | | AC | 416ERU1W | 432ERU1W | 10 | 0.21 (16A) 0.23 (32A) |
| | Yellow | 100...130 | 50 and 60 | | 416ERU4W | 432ERU4W | | |
| | Red | 346...415 | | | 416ERU6W | 432ERU6W | | |
| | Black | 480...500 | | | 416ERU7W | 432ERU7W | | |
| | Blue | 208...250 | | | 416ERU9W | 432ERU9W | | |
| | Red | 440...460 | 60 | | 416ERU11W | 432ERU11W | | |



Dimensions (mm)

| Type | B | E3 | E4 |
|------------|-----|----|----|
| 216ERU...W | 103 | 27 | 60 |
| 316ERU...W | 98 | 28 | 60 |
| 416ERU...W | 99 | 28 | 60 |

| Type | B | E3 | E4 |
|------------|-----|----|----|
| 232ERU...W | 98 | 31 | 70 |
| 332ERU...W | 98 | 31 | 70 |
| 432ERU...W | 104 | 32 | 69 |

Industrial plugs and sockets for entertainment applications

Plugs



Type EP...B, 16 A...32 A, IP44

Connectors



Type EC...B, 16 A...32 A, IP44

Inlets



For wall mounting, Type BS...B
16 A...32 A, IP44

Socket outlet



For wall mounting, Type RS...B
16 A...32 A, IP44



For panel mounting with unified
straight flange, Type RU...B
16 A...32 A, IP44



For panel mounting with minimized
angled flange, Type RAM...B
16 A...32 A, IP44

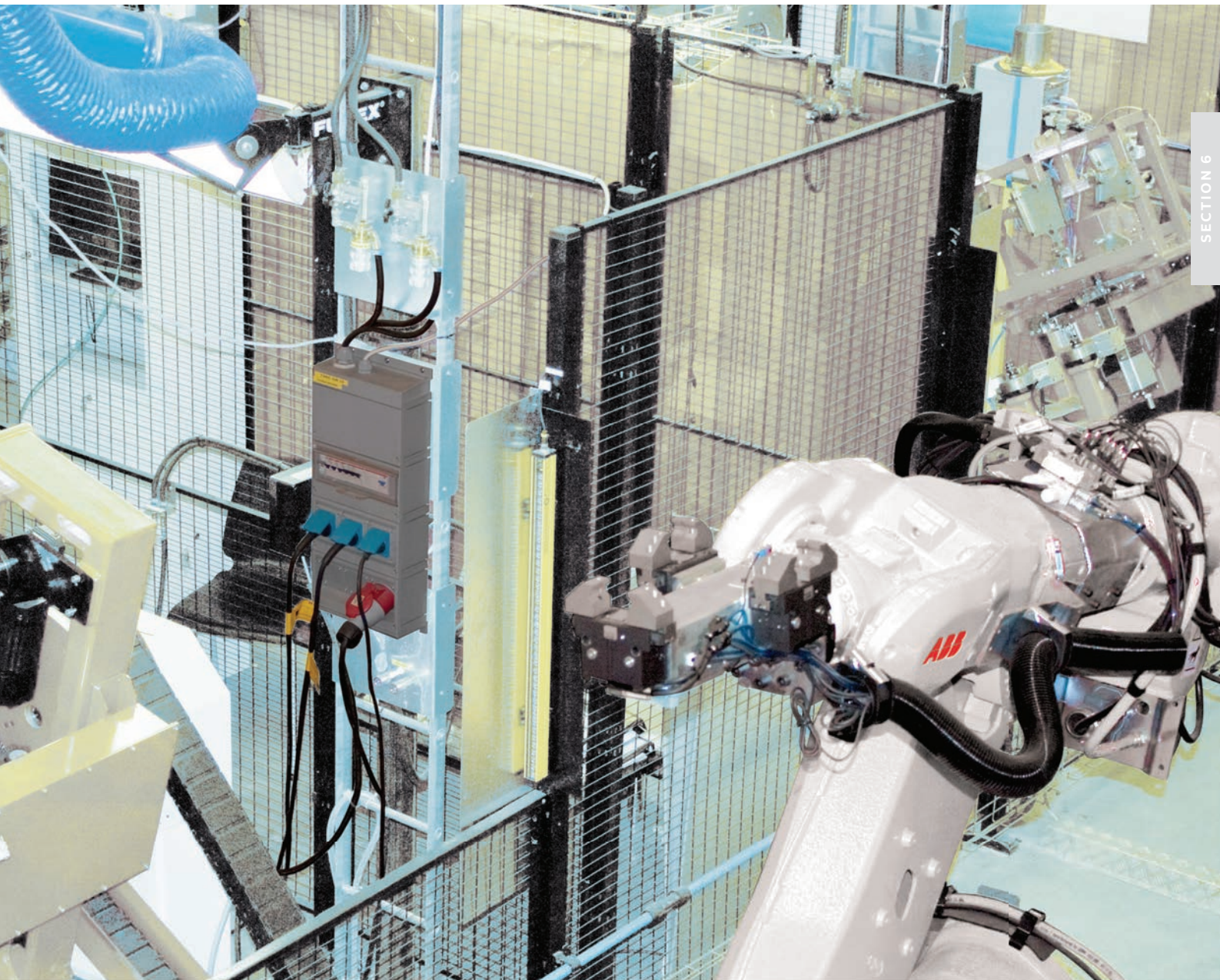
Industrial plugs and sockets

Modular Combi

Modular Combi is a system consisting of compact units replacing outlets that traditionally has been scattered around the walls. Modular combi is a cost effective system.

Modular Combi is a cost effective system with different types of outlets, RCDs and MCBs in one location. Modular Combi is very easy to install and, thanks to the solutions and design, it saves time and money. The Modular Combi range consists of two lines, one product line in plastic,

and the other one in metal. Common for them are among other features that you only need one feeding cable, it can be mounted with an already existing 4-wire as well as 5-wire cable and that the modules are easy to modify in the future for additional needs.



Modular Combi Plastic

The enclosure is in aluminium with front plates of galvanised steel. Modul Combi Metal is designed for different types of single phase domestic outlets and for IEC outlets up to and including 63 A.

Operating voltage 230/400 V ~

Enclosure: Plastic (PBT)

Dimensions: According to table

Outlets: Combi Plastic is designed for different types of single phase domestic outlets and for IEC outlets up to and including 63 A.

With or without mechanical interlocked IEC outlets.

Cable entry: 4 knock-outs at the top, suitable for 2xØ 40 mm and 2xØ 25 mm

At the bottom 3xØ 47 mm

Cable area: 2x16 mm² Cu. Designed for looping

Covers: For MCB/RCD, maximum 13 modules, 2 opened and knock-outs for the rest of the modules row. DIN-rail in bottom for terminals and MCB/RCDs.

With a distance at the bottom to allow wiring behind the rail. The lid is pad lockable.



Modular Combi Metal

The enclosure is in aluminium with front plates of galvanised steel. Modul Combi Metal is designed for different types of single phase domestic outlets and for IEC outlets up to and including 63 A.

Operating voltage 230/400 V~

Enclosure: Aluminium with front plates of galvanised steel.

Dimensions: According to table or customer order

Outlets: Combi Metal is designed for different types of single phase domestic outlets and for IEC outlets up to and including 63 A. With or without mechanical interlocked IEC outlets.

Cable entry: FL21 flange openings at top and bottom

Cable area: 2x16 mm² Cu. Designed for looping

Covers: For MCB/RCD, maximum 12 modules. DIN-rail in bottom for terminals and MCB/RCDs. With a distance at the bottom to allow wiring behind the rail. The lid is pad lockable.



Enclosures and switchboards

| | |
|------------|---|
| 117 | IP65 SR2 enclosures |
| 119 | IP66 SRX enclosures |
| 121 | IP66 Gemini enclosures |
| 123 | Mistral 65 Double insulated enclosures |
| 126 | Europa series IP65 enclosures |
| 128 | Europa series IP44, IP55 and IP65 thermoplastic enclosures |
| 130 | Europa series IP65 polycarbonate enclosures |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

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 | | | | | | | |
| 300 | 200 | 150 | SRN3215K | | | | | | | | | | | | | | |
| | 300 | | SRN3315K | | | | | | | | | | | | | | |
| | 400 | | SRN3415K | | | | | | | | | | | | | | |
| 400 | 300 | 150 | SRN4315K | | | | | | | | | | | | | | |
| | 300 | | SRN4320K | | | | | | | | | | | | | | |
| | 400 | 200 | SRN4420K | | | | | | | | | | | | | | |
| | 600 | | SRN4620K | | | | | | | | | | | | | | |
| 500 | 300 | 200 | SRN5320K | | | | | | | | | | | | | | |
| | 300 | | SRN5420K | SRN5420VK* | | | | | | | KC5040K | PF5040 | 2 | 14 | 28 | KD5040K | |
| | 500 | | SRN5520K | | | | | | | | | | | | | | |
| | 400 | | 250 | SRN5425K | | | | | | | SRN5425VK* | KC5040K | PF5040 | 2 | 14 | 28 | KD5040K |
| | 400 | | 200 | SRN6420K | | | | | | | SRN6420VK* | KC6040K | PF6040 | 3 | 14 | 42 | KD6040K |
| | 500 | | | SRN6520K | | | | | | | | | | | | | |
| 600 | 600 | 250 | SRN6620K | | | | | | | | | | | | | | |
| | 400 | | SRN6425K | SRN6425VK* | | | | | | | KC6040K | PF6040 | 3 | 14 | 42 | KD6040K | |
| | 500 | | SRN6520K | | | | | | | | | | | | | | |
| | 600 | | SRN6625K | | | | | | | | | | | | | | |
| | 600 | | 300 | SRN6630K | | | | | | | | | | | | | |
| 700 | 500 | 200 | SRN7520K | SRN7520VK* | KC7050K | PF7050 | | | | | | | | | | | |
| | 500 | 250 | SRN7525K | SRN7525VK* | KC7050K | PF7050 | | | | | | | | | | | |
| 800 | 600 | 250 | SRN8625K | SRN8625VK* | KC8060K | PF8060 | 4 | 25 | 100 | KD8060K | | | | | | | |
| | 600 | 300 | SRN8630K | SRN8630VK* | KC8060K | PF8060 | 4 | 25 | 100 | KD8060K | | | | | | | |
| | 800 | | SRN8830K | | | | | | | | | | | | | | |
| 1000 | 600 | 250 | SRN10625K | SRN10625VK* | KC1060K | PF1060 | 5 | 25 | 125 | KD1060K | | | | | | | |
| | 600 | 300 | SRN10630K | SRN10630VK* | KC1060K | PF1060 | 5 | 25 | 125 | KD1060K | | | | | | | |
| | 800 | | SRN10830K | SRN10830VK* | KC1080K | PF1080 | 5 | 36 | 180 | KD1080K | | | | | | | |
| 1200 | 600 | 300 | SRN12630K | SRN12630VK* | KC1260K | PF1260 | 6 | 25 | 150 | KD1260K | | | | | | | |
| | 800 | | SRN12830K | SRN12830VK* | KC1280K | PF1280 | 6 | 36 | 216 | KD1280K | | | | | | | |
| | 800 | | SRN12840K | | | | | | | | | | | | | | |

* No mounting plate included.



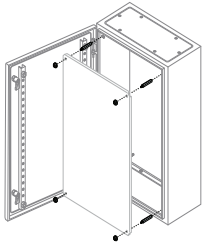
Technical characteristics

| | | | |
|---|--|---------------------|----------|
| 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 | UL LISTED CE II 3 GD | | 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

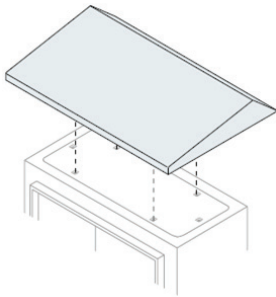
IP65 Sheet steel enclosures

Mounting plates



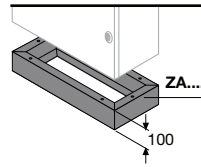
| For enclosure | H (mm) x W (mm) | Order Code |
|-----------------------|-----------------|------------|
| SRN5420K & SRN5425K | 500 x 400 | PF5040 |
| SRN6420K & SRN6425K | 600 x 400 | PF6040 |
| SRN7520K & SRN7525K | 700 x 500 | PF7050 |
| SRN8625K & SRN8630K | 800 x 600 | PF8060 |
| SRN10625K & SRN10630K | 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

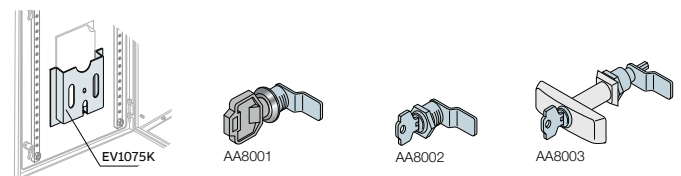


| W (mm) x D (mm) | Order Code |
|-----------------|------------|
| 400 x 200 | ZA4020 |
| 400 x 250 | ZA4025 |
| 600 x 250 | ZA6025 |
| 600 x 300 | ZA6030 |
| 800 x 300 | ZA8030 |

IP65 Combining gasket



| W (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

| 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 SRX 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 |
| | | 200 | SRN6620X | | | PF6060 | | | | |
| 700 | 600 | 300 | SRN6630X | | | | | | | |
| | | 200 | SRN7525X | SRN7525VX* | KC7050X | PF7050 | | | | |
| | 200 | SRN8620X | | | | | 25 | 100 | | |
| 800 | 600 | 250 | SRN8625VX* | KC8060X | PF8060 | 4 | 25 | 100 | | KD8060X |
| | | 300 | SRN8630X | | | | | 25 | 100 | |
| 1000 | 800 | 300 | SRN8830X | | | PF8080 | | | | |
| | | 300 | SRN10830X | SRN10830VX* | KC1080X | PF1080 | 5 | 36 | 180 | |
| 1200 | 600 | 300 | SRN12630X | | | PF1260 | | | | |
| | | 800 | 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 |   |
| 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 SRX 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) | | Order Code |
|--|-----------------|-----|------------|
| | H | W | |
| | 500 | 400 | PF5040 |
| | 600 | 400 | PF6040 |
| | 700 | 500 | PF7050 |
| | 800 | 600 | PF8060 |
| | 1000 | 800 | PF1080 |

SECTION 7

Enclosures

Gemini

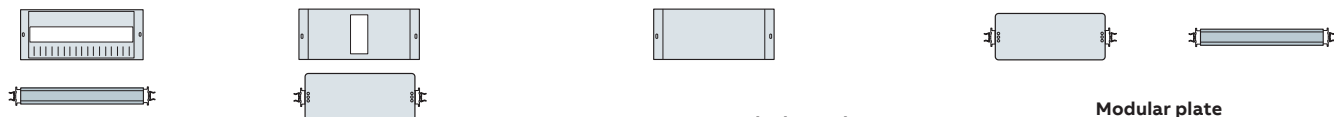
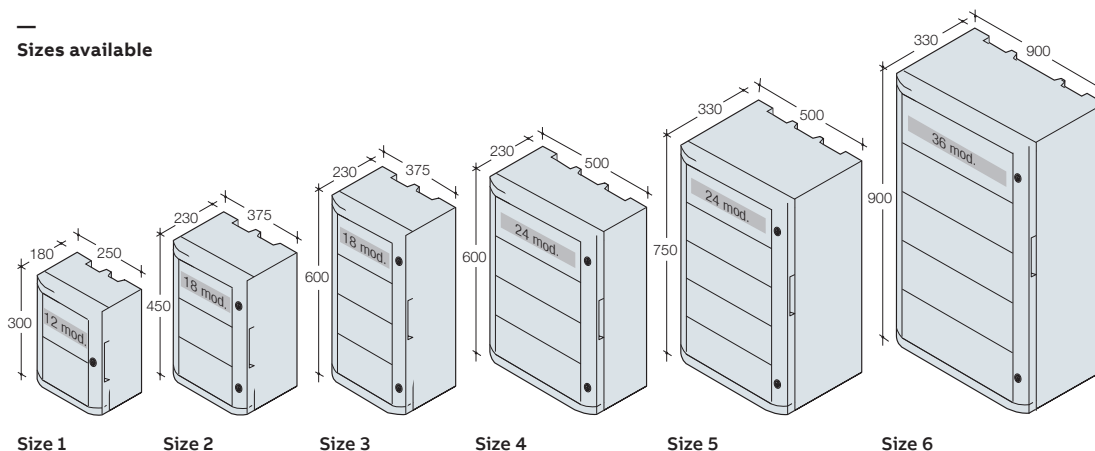


- Made of thermoplastic material, to which the co-injection moulding technique gives the same mechanical characteristics as polyester
- Extremely sturdy, with its rigid covering and expanded internal core
- IP66, IP30 with the door open afford a very high resistance to chemical and atmospheric agents
- Guarantees excellent performances even in severe operating conditions

Rapid selection table

| Size | No. of vertical mod. H=150mm | No. of DIN modules installable | External Dimensions | | | Internal Dimensions | | | Complete switchboard door | | Door | | | |
|------|------------------------------|--------------------------------|---------------------|--------|--------|---------------------|--------|--------|---------------------------|------------|------------|-------------|------------|------------|
| | | | (H) mm | (W) mm | (D) mm | (H) mm | (W) mm | (D) mm | Transparent | Opaque | Box | 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

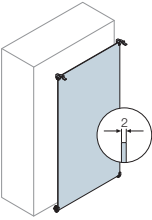
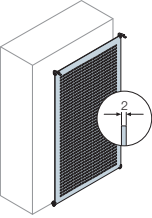
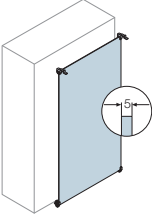


| Size | DIN rail kit DIN rail+drilled panel | | Kit for Tmax plate+drilled panel | | Blank panel | | | Blank panel | | |
|------|-------------------------------------|--------------------|----------------------------------|----------------|-----------------|----------------|----------------|----------------|----------------|----------------------|
| | 1 mod. H=150mm | 1+1/2 mod. H=225mm | 1 mod. H=150mm | 2 mod. H=300mm | 1/2 mod. H=75mm | 1 mod. H=150mm | 2 mod. H=300mm | 1 mod. H=150mm | 2 mod. H=300mm | Blank panel 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 |

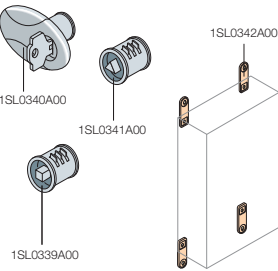
Gemini switchboards

Assembly kits

Base plates

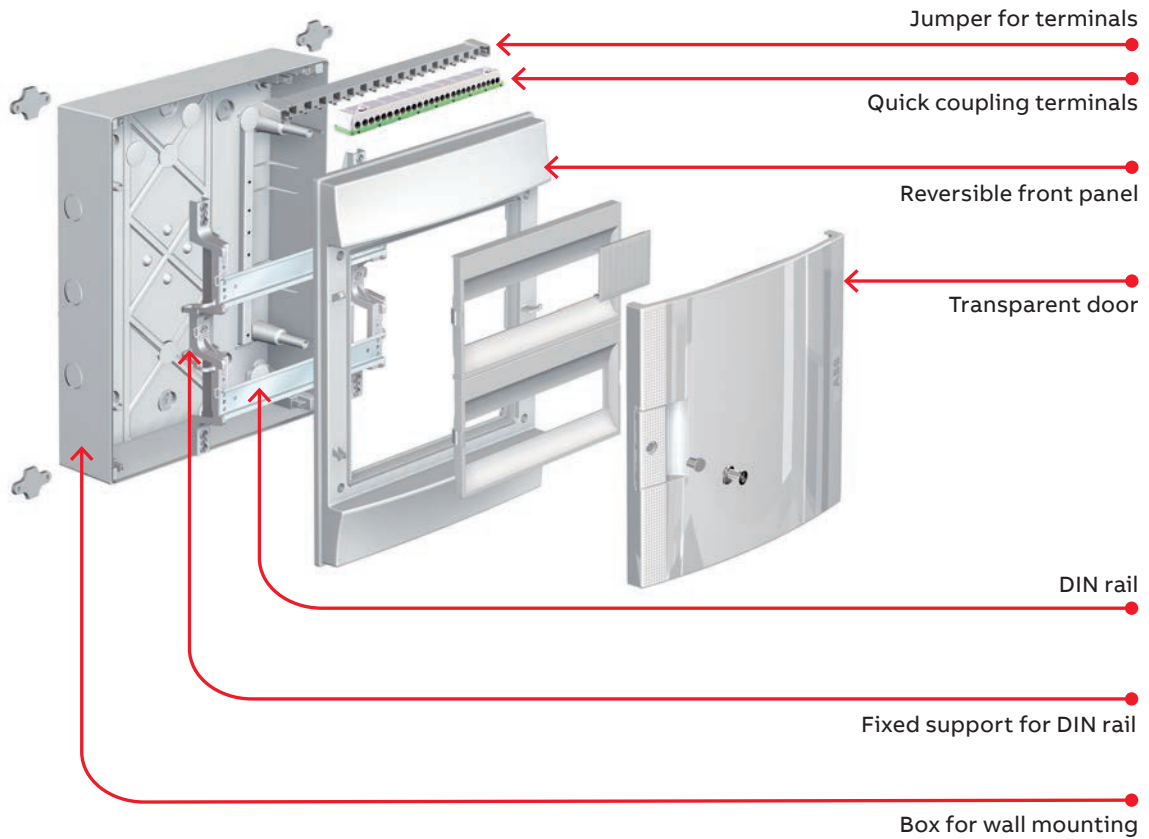
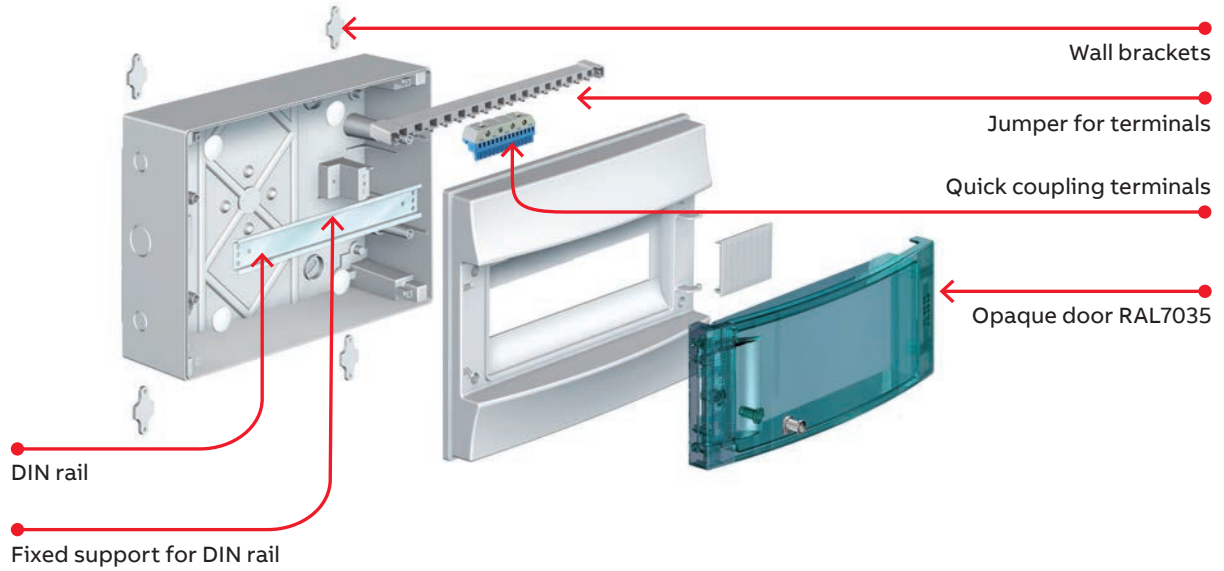
| | Size | Box Dimensions WxHxD (mm) | Order Code |
|---|----------------------------|---------------------------|------------|
|  | Blank metal | | |
| | 1 | | 1SL0259A00 |
| | 2 | | 1SL0260A00 |
| | 3 | | 1SL0261A00 |
| | 4 | | 1SL0262A00 |
| | 5 | | 1SL0263A00 |
| | 6 | | 1SL0264A00 |
|  | Drilled 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 |

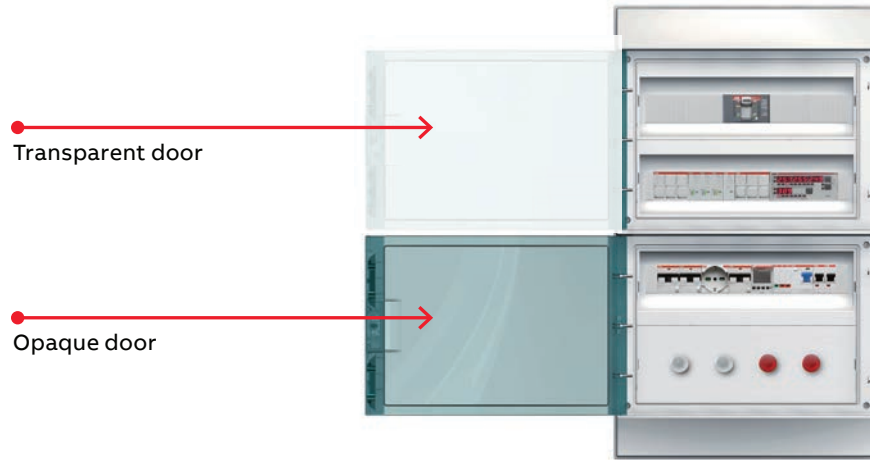
Mistral 65

Double insulated enclosures



Mistral 65

Double insulated enclosures



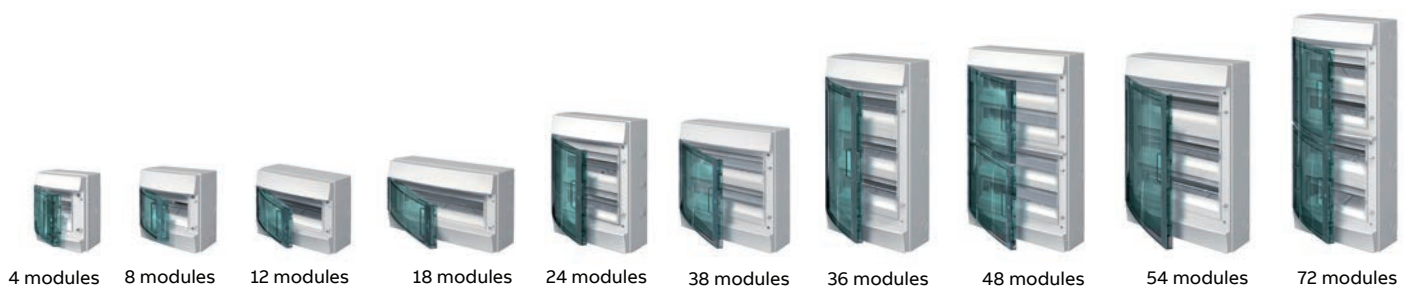
Enclosure with opaque door

| | Rows | Dimensions (mm) | | | Order Code |
|------------------------|------|-----------------|--------|-------|------------|
| | | Width | Height | Depth | |
| 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

| | Rows | Dimensions (mm) | | | Order Code |
|-----------------------------|------|-----------------|--------|-------|------------|
| | | Width | Height | Depth | |
| 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 |

SECTION 7

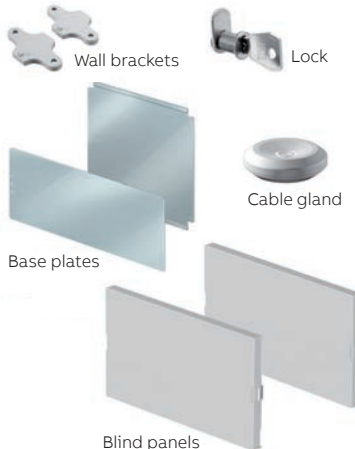


4 modules 8 modules 12 modules 18 modules 24 modules 38 modules 36 modules 48 modules 54 modules 72 modules

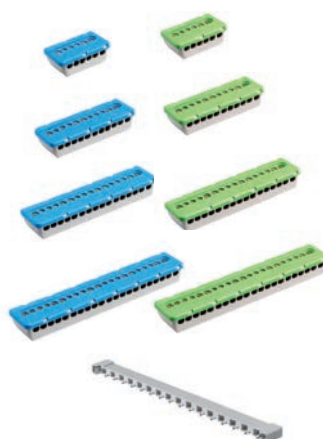
Mistral 65

Double insulated enclosures

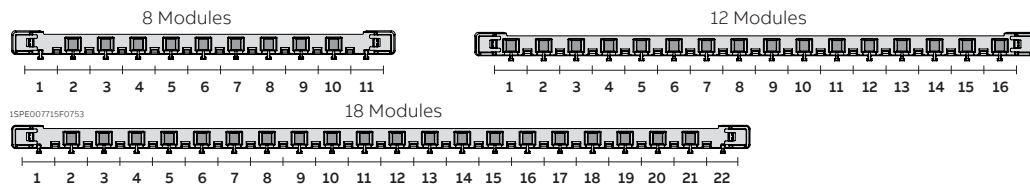
Accessories

| | | 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 | |

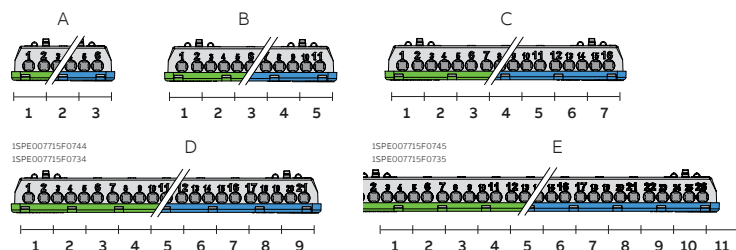
Terminal blocks

| | | Order Code | |
|---|---|------------|-----------------|
|  | Terminal block N 3*16mm ² +3*6mm ² | A | 1SPE007715F0731 |
| | Terminal block N 5*16mm ² +6*6mm ² | B | 1SPE007715F0732 |
| | Terminal block N 7*16mm ² +9*6mm ² | C | 1SPE007715F0733 |
| | Terminal block N 9*16mm ² +12*6mm ² | D | 1SPE007715F0734 |
| | Terminal block N 11*16mm ² +15*6mm ² | E | 1SPE007715F0735 |
| | Terminal block PE 3*16mm ² +3*6mm ² | A | 1SPE007715F0741 |
| | Terminal block PE 5*16mm ² +6*6mm ² | B | 1SPE007715F0742 |
| | Terminal block PE 7*16mm ² +9*6mm ² | C | 1SPE007715F0743 |
| | Terminal block PE 9*16mm ² +12*6mm ² | D | 1SPE007715F0744 |
| | Terminal block PE 11*16mm ² +15*6mm ² | E | 1SPE007715F0745 |
| | Terminal carrier, 8 modules | | 1SPE007715F0751 |
| | Terminal carrier, 12 modules | | 1SPE007715F0752 |
| | Terminal carrier, 18 modules | | 1SPE007715F0753 |

Terminal Carrier



Terminal Blocks



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 | Order Code | |
|---------------------------|-------------------------|------------|------------|
| | | 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 |

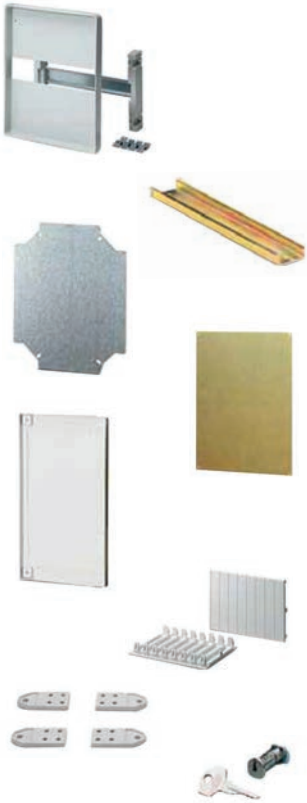


SECTION 7

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 |
| | Base plates Aluminium plated metal | – | 12772 - 12792 | |
| | | – | 12774 - 12794 | 12855 |
| | | – | 12776 - 12796 | |
| | | – | 12778 - 12798 | 12856 |
| | | – | 12764 - 12784 | 12842 |
| | | – | 12768 - 12788 | 12844 |
| | Base plates Insulated material | – | 12772 - 12792 | 12845 |
| – | | 12774 - 12794 | 12846 | |
| – | | 12776 - 12796 | 12847 | |
| – | | 12778 - 12798 | 12848 | |
| – | | 12764 - 12784 | 12832 | |
| – | | 12768 - 12788 | 12834 | |
| Inner doors | – | 12772 - 12792 | 12835 | |
| | – | 12774 - 12794 | 12836 | |
| | – | 12776 - 12796 | 12837 | |
| | – | 12778 - 12798 | 12838 | |
| 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 fire 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 fire 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







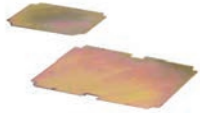
IP44, IP55 & IP65 Thermoplastic boxes

| 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 Thermoplastic 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 |
| | | 12808 |
| | | 12812 |
| | | 12814 |
| | | 12816 |
| | | 12818 |
|  | Insulated | 12804 |
| | | 12808 |
| | | 12812 |
| | | 12814 |
| | | 12816 |
| | | 12818 |

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 |

Enclosed control products

| | |
|------------|--|
| 132 | Direct online starters |
| 133 | Star delta starters |
| 134 | Push button stations |
| 134 | Terminal boxes |
| 135 | Heating and lighting enclosures |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation


or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933


Direct-on-line starters

IP66 plastic - IP55 metal enclosure


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

| | Three Phase 400V [AC3] | | Single Phase 230V [AC3] | | Dimensions (mm) | | | Part No. | Order Code |
|---|---------------------------|------|----------------------------|-----|-----------------|-----|--------|-----------------|-----------------|
| | KW | hp | KW | hp | H | W | D | | |
|  DL205P | 100-250v coil | | | | | | | | |
| | 5.5 | 7.5 | 1.5 | 2.0 | 230 | 106 | 127 | DL205P | 1TVC230050P5699 |
| | 7.5 | 10.0 | 2.2 | 3.0 | | | | DL207P | 1TVC230070P5699 |
| | 250-500v coil | | | | | | | | |
| 5.5 | 7.5 | | | 230 | 106 | 127 | DL405P | 1TVC400050P5699 | |
| 7.5 | 10.0 | | | | | | DL407P | 1TVC400070P5699 | |


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

| | Three Phase 400V [AC3] | | Single Phase 230V [AC3] | | Dimensions (mm) | | | Part No. | Order Code |
|---|---------------------------|------|----------------------------|-----|-----------------|-----|--------|-----------------|-----------------|
| | KW | hp | KW | hp | H | W | D | | |
|  DL205S | 100-250v coil | | | | | | | | |
| | 5.5 | 7.5 | 1.5 | 2.0 | 184 | 184 | 165 | DL205S | 1TVC230050S5699 |
| | 7.5 | 10.0 | 2.2 | 3.0 | | | | DL207S | 1TVC230070S5699 |
| | 250-500v coil | | | | | | | | |
| 5.5 | 7.5 | | | 184 | 184 | 165 | DL405S | 1TVC400050S5699 | |
| 7.5 | 10.0 | | | | | | DL407S | 1TVC400070S5699 | |

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

| | Three Phase 400V [AC3] | | Single Phase 230V [AC3] | | Dimensions (mm) | | | Part No. | Order Code |
|---|---------------------------|------|----------------------------|-----|-----------------|-----|--------|-----------------|-----------------|
| | KW | hp | KW | hp | H | W | D | | |
|  DI205S | 100-250v coil | | | | | | | | |
| | 5.5 | 7.5 | 1.5 | 2.0 | 184 | 184 | 180 | DI205S | 1TVC230051S5699 |
| | 7.5 | 10.0 | 2.2 | 3.0 | | | | DI207S | 1TVC230071S5699 |
| | 250-500v coil | | | | | | | | |
| 5.5 | 7.5 | | | 184 | 184 | 180 | DI405S | 1TVC400051S5699 | |
| 7.5 | 10.0 | | | | | | DI407S | 1TVC400071S5699 | |

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

| | Three Phase 400V [AC3] | | Single Phase 230V [AC3] | | Dimensions (mm) | | | Part No. | Order Code |
|---|---------------------------|------|----------------------------|-----|-----------------|-----|--------|-----------------|-----------------|
| | KW | hp | KW | hp | H | W | D | | |
|  DR207S | 100-250v coil | | | | | | | | |
| | 7.5 | 10.0 | 2.2 | 3.0 | 184 | 184 | 165 | DR207S | 1TVC230072S5699 |
| 250-500v coil | | | | | | | | | |
| 7.5 | 10.0 | | | 184 | 184 | 165 | DR407S | 1TVC400072S5699 | |

Note: Overload supplied separately

Star delta starters IP55 metal enclosure



SD2155

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 push buttons, and 100-250v or 250-500v coils.
- Overload for standard motor duty must be purchased separately

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



SD2155

| Three Phase 400V [AC3] | | Dimensions (mm) | | | Part No. | Order Code |
|---------------------------|------|-----------------|-----|-----|----------|-----------------|
| KW | hp | H | W | D | | |
| 100-250v coil | | | | | | |
| 15 | 20.0 | 184 | 284 | 165 | SD215S | 1TVC230153S5699 |
| 22.0 | 30.0 | 305 | 284 | 175 | SD222S | 1TVC230223S5699 |
| 250-500v coil | | | | | | |
| 15 | 20.0 | 184 | 284 | 165 | SD415S | 1TVC400153S5699 |
| 22.0 | 30.0 | 305 | 284 | 175 | SD422S | 1TVC400223S5699 |

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



SI215S

| Three Phase 400V [AC3] | | Dimensions (mm) | | | Part No. | Order Code |
|---------------------------|------|-----------------|-----|-----|----------|-----------------|
| KW | hp | H | W | D | | |
| 100-250v coil | | | | | | |
| 15 | 20.0 | 184 | 284 | 180 | SI215S | 1TVC230154S5699 |
| 22.0 | 30.0 | 305 | 284 | 190 | SI222S | 1TVC230224S5699 |
| 250-500v coil | | | | | | |
| 15 | 20.0 | 184 | 284 | 180 | SI415S | 1TVC400154S5699 |
| 22.0 | 30.0 | 305 | 284 | 190 | SI422S | 1TVC400224S5699 |

Note: All Direct on Line and Star Delta starters are supplied without overload fitted. Select TF42 overload based on motor rating from page 160.

Push button 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 push buttons



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

Emergency stops



| Description | Dimensions (mm) | | | Part No | Order Code |
|--|-----------------|-----|-----|---------|-----------------|
| | H | W | D | | |
| Emergency stop 30mm (twist release) - to IEC60947-5-5 | 75 | 101 | 92 | 1RSC | 1TVC101000P3203 |
| Emergency stop 40mm (twist release) - to IEC60947-5-5 | 75 | 101 | 107 | 1RSC-EN | 1TVC101000P3204 |
| Emergency stop 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) | | | Part No | Order Code |
|--|-----------------|-----|----|-----------|-----------------|
| | H | W | D | | |
| 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 push buttons



| Description | Dimensions (mm) | | | Part No | Order Code |
|---|-----------------|-----|-----|---------|-----------------|
| | H | W | D | | |
| 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 | | 1TVC211000P3112 |

IP55 stainless steel enclosures

Stainless enclosures



| Description | Dimensions (mm) | | | Part No | Order Code |
|---|-----------------|-----|-----|---------------|-----------------|
| | H | W | D | | |
| Emergency Stop 40mm (stay-put) - to EN418 | 100 | 140 | 100 | 1RSC-ENSS | 1TVC100000P5015 |
| 1 Gang empty enclosure | 91 | 91 | 55 | 01.001001.SS1 | 01.001001.SS1 |
| 2 Gang empty enclosure | 152 | 91 | 55 | 01.001002.SS2 | 01.001002.SS2 |
| 3 Gang empty enclosure | 207 | 91 | 55 | 01.001003.SS3 | 01.001003.SS3 |

Terminal boxes

Plastic IP65 enclosures

Terminals in enclosures



| Description | No of Terms | [A] 1th | Dimensions (mm) | | | Part No | Order Code |
|---|-------------|---------|-----------------|-----|----|-----------|-----------------|
| | | | H | W | D | | |
| 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 and 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 | Part No | Order Code |
|------------------|-----------------------------------|------------------------|------------|---------|-----------------|
| 25 | 16 | 16 | 4 | HL025P | 1TVC230025P5604 |
| 45 | 30 | 32 | 4 | HL045P | 1TVC230045P5604 |

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 | Part No | Order Code |
|------------------|-----------------------------------|------------------------|------------|---------|-----------------|
| 25 | 16 | 16 | 4 | HL025S | 1TVC230025S5604 |
| 45 | 30 | 32 | 4 | HL045S | 1TVC230045S5604 |
| 70 | 40 | 16 | 3 | HL063S | 1TVC230063S5603 |
| 100 | 70 | 32 | 3 | HL100S | 1TVC230100S5603 |

Dimensions

| Enclosure | Height (mm) | Width (mm) | Depth (mm) | Part No | Order Code |
|-----------|-------------|------------|------------|-----------------|------------|
| Plastic | 230 | 106 | 127 | HL025P - HL045P | |
| Metal | 180 | 185 | 145 | HL025S - HL100S | |

Electronic relays and controls

| | |
|------------|--|
| 137 | Monitoring relays - Three phase |
| 141 | Timers |
| 142 | Power supplies |
| 144 | Pluggable interface relays |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

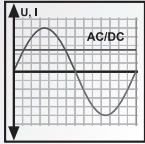
or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

Measuring and monitoring relays

Assortment overview

Single-phase current and voltage monitoring



Current monitoring

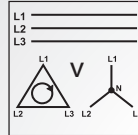
- Monitoring of motor current consumption
- Monitoring of lighting installations and heating circuits
- Monitoring of transportation equipment overload
- Monitoring of locking devices, electromechanical brake gear and locked rotors

Voltage monitoring

- Speed monitoring of DC motors
- Monitoring of battery voltages and other supply networks

Please contact us for more information.

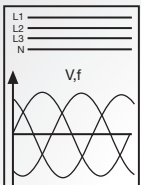
Three-phase monitoring



- Voltage monitoring of mobile three-phase equipment
- Protection of personnel and installations against phase reversal
- Monitoring of the supply voltage of machines and installations
- Protection of equipment against damage caused by unstable supply voltage
- Switching to emergency or auxiliary supply
- Protection of motors against damage caused by unbalanced phase voltages and phase loss

See “Ordering details - Singlefunctional” on page 149 or “Ordering details - Multifunctional” on page 150.

Grid feeding monitoring relays

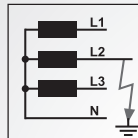


The CM-UFx range monitors all voltage and frequency parameters in a grid and ensures the safe feeding of decentral produced electrical energy into the grid.

- Monitoring of the voltage with up to 2 thresholds for over- and undervoltage
- Monitoring of the frequency with up to 2 thresholds for over- and underfrequency
- ROCOF (rate of change of frequency) and vector shift detection
- In compliance with several local standards

Please contact us for more information.

Insulation monitoring



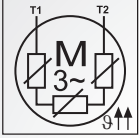
- Monitoring of electrically isolated supply mains for insulation resistance failure
- Detection of initial faults
- Protection against earth faults

Please contact us for more information.

Measuring and monitoring relays

Assortment overview

Thermistor motor protection

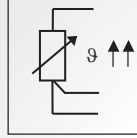


CM-MSE and CM-MSS provide full protection of motors with integrated PTC resistor sensors.

- Protection of motors against thermal overload, e. g. caused by insufficient cooling, heavy load starting conditions, undersized motors, etc.

Please contact us for more information.

Temperature monitoring

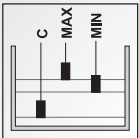


Acquisition, messaging and regulation of temperatures of solid, liquid and gaseous media in processes and machines.

- Motor and system protection
- Control panel temperature monitoring
- Frost monitoring
- Temperature limits for process variables, e.g. in the packing or electroplating industry
- Control of systems and machines like heating, air-conditioning and ventilation systems, solar collectors, heat pumps or hot water supply systems
- Monitoring of servomotors with KTY sensors
- Bearing and gear oil monitoring
- Coolant monitoring

Please contact us for more information.

Liquid level monitoring and control




- Protection of pumps against dry running
- Protection against container overflow
- Control of liquid levels
- Detection of leaks
- Control of mixing ratios

Please contact us for more information.

Three-phase monitoring relays

Selection table - Singlefunction

Rated control supply voltage U_s

|  <p>CM-PSS.41P</p> | Type | Order number |
|---|-----------------|-----------------|
| | CM-PBE | 1SVR550881R9400 |
| | CM-PBE | 1SVR550882R9500 |
| | CM-PVE | 1SVR550870R9400 |
| | CM-PVE | 1SVR550871R9500 |
| | CM-PFE | 1SVR550824R9100 |
| | CM-PFE.2 | 1SVR550826R9100 |
| | CM-PFS.S | 1SVR730824R9300 |
| | CM-PFS.P | 1SVR740824R9300 |
| | CM-PSS.31S | 1SVR730784R2300 |
| | CM-PSS.31P | 1SVR740784R2300 |
| | CM-PSS.41S | 1SVR730784R3300 |
| | CM-PSS.41P | 1SVR740784R3300 |
| | CM-PVS.31S | 1SVR730794R1300 |
| | CM-PVS.31P | 1SVR740794R1300 |
| CM-PVS.41S | 1SVR730794R3300 | |
| CM-PVS.41P | 1SVR740794R3300 | |
| CM-PVS.81S | 1SVR730794R2300 | |
| CM-PVS.81P | 1SVR740794R2300 | |
| CM-PAS.31S | 1SVR730774R1300 | |
| CM-PAS.31P | 1SVR740774R1300 | |
| CM-PAS.41S | 1SVR730774R3300 | |
| CM-PAS.41P | 1SVR740774R3300 | |

Rated control supply voltage U_s

| Phase to phase | | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 160-300 V AC | | | | | | | | | | | | | | ■ | ■ | |
| 200-400 V AC | | | | | | | | | | | | | | | ■ | ■ |
| 200-500 V AC | | | | | | ■ | ■ | | | | | | | | | |
| 208-440 V AC | | | | | | ■ | | | | | | | | | | |
| 300-500 V AC | | | | | | | | | | | | | | ■ | ■ | |
| 320-460 V AC | | | ■ | ■ | | | | | | | | | | | | |
| 380 V AC | | | | | | | | | ■ | ■ | | | | | | |
| 380-440 V AC | ■ | ■ | | | | | | | | | | | | | | |
| 400 V AC | | | | | | | | | | | | | | ■ | ■ | |
| Phase to neutral | | | | | | | | | | | | | | | | |
| 185-265 V AC | | | ■ | | | | | | | | | | | | | |
| 220-240 V AC | ■ | | | | | | | | | | | | | | | |
| Rated frequency | | | | | | | | | | | | | | | | |
| 50/60 Hz | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Suitable for monitoring | | | | | | | | | | | | | | | | |
| Single-phase mains | ■ | | ■ | | | | | | | | | | | | | |
| Three-phase mains | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Monitoring function | | | | | | | | | | | | | | | | |
| Phase failure | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Phase sequence | | | | | ■ | ■ | ■ | ■ | sel | sel | sel | sel | sel | sel | sel | sel |
| Overvoltage | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Undervoltage | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Unbalance | | | | | | | | | | | | | | | ■ | ■ |
| Neutral ¹⁾ | ■ | | ■ | | | | | | | | | | | | | |
| Thresholds | | | | | | | | | | | | | | | | |
| adjustable (adj) or fixed (fix) | fix | fix | fix | fix | fix | fix | fix | fix | fix | fix | fix | fix | fix | fix | adj | adj |
| Timing functions for tripping delay | | | | | | | | | | | | | | | | |
| ON delay | | | | | | | fix | fix | | | | | | | | sel |
| On and OFF delay | fix | fix | fix | fix | fix | fix | | | adj | adj | adj | adj | adj | adj | adj | |
| Connection type | | | | | | | | | | | | | | | | |
| Push-in terminals | | | | | | | | | | ■ | | ■ | | ■ | | ■ |
| Double-chamber cage connection terminals | | | | | | | | | | ■ | | ■ | | ■ | | ■ |

¹⁾ The external conductor voltage towards the neutral conductor is measured.

adj: adjustable.
sel: selectable.
fix: fixed.

Three-phase monitoring relays

Selection table - Multifunctional

Rated control supply voltage U_s



CM-MPS.23P

| Type | Order Code | 15VR730885R1300 | 15VR740885R1300 | 15VR730885R3300 | 15VR740885R3300 | 15VR730884R1300 | 15VR740884R1300 | 15VR730884R3300 | 15VR740884R3300 | 15VR730885R4300 | 15VR740885R4300 | 15VR730884R4300 | 15VR740884R4300 | 15VR750487R8300 | 15VR760487R8300 | 15VR750488R8300 | 15VR760488R8300 | 15VR750489R8300 | 15VR760489R8300 |
|---|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 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.72P | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | |
| Automatic phase sequence correction | | | | | | | | | | | | | | | | | | | |
| Overvoltage | | | | | | | | | | | | | | | | | | | |
| Undervoltage | | | | | | | | | | | | | | | | | | | |
| Unbalance | | | | | | | | | | | | | | | | | | | |
| Neutral ¹⁾ | | | | | | | | | | | | | | | | | | | |
| Thresholds | | | | | | | | | | | | | | | | | | | |
| adj | | | | | | | | | | | | | | | | | | | |
| Timing functions for tripping delay | | | | | | | | | | | | | | | | | | | |
| On and OFF delay | | | | | | | | | | | | | | | | | | | |
| Connection type | | | | | | | | | | | | | | | | | | | |
| Push-in terminals | | | | | | | | | | | | | | | | | | | |
| Double-chamber cage connection terminals | | | | | | | | | | | | | | | | | | | |

¹⁾ The external conductor voltage towards the neutral conductor is measured.

adj: adjustable.
sel: selectable.

Timers

Ordering details – CT-D range



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) |

Power Supplies

Ordering details – CP-D & CP-E range



The CP-D of modular power supply units in MDRC design (modular DIN rail components) is ideally suited for installation in distribution panels. This range offers devices with output voltages of 12 V DC and 24 V DC at output currents of 0.42 A to 4.2 A. Thanks to their high thermal efficiency, these power supplies have very low power and heat dissipation and can be operated without forced cooling. All power supply units in the CP-D range are approved according to all relevant international standards.

Ordering details - CP-D range

| Input voltage range | Rated output voltage / current | Type | Order Code | Weight (1 pce) kg (lb) |
|----------------------------|--------------------------------|--------------|-----------------|---------------------------|
| 90-264 V AC / 120-375 V DC | 12 V DC / 0.83 A | CP-D 12/0.83 | 1SVR427041R1000 | 0.06 (0.13) |
| 90-264 V AC / 120-375 V DC | 12 V DC / 2.1 A | CP-D 12/2.1 | 1SVR427043R1200 | 0.19 (0.41) |
| 90-264 V AC / 120-375 V DC | 24 V DC / 0.42 A | CP-D 24/0.42 | 1SVR427041R0000 | 0.06 (0.13) |
| 90-264 V AC / 120-375 V DC | 24 V DC / 1.3 A | CP-D 24/1.3 | 1SVR427043R0100 | 0.19 (0.41) |
| 90-264 V AC / 120-375 V DC | 24 V DC / 2.5 A | CP-D 24/2.5 | 1SVR427044R0200 | 0.25 (0.56) |
| 90-264 V AC / 120-375 V DC | 24 V DC / 4.2 A | CP-D 24/4.2 | 1SVR427045R0400 | 0.32 (0.71) |

Ordering details - CP-E range



| 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) |



| 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 / 5 A | 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) |

Power Supplies

Ordering details – CP-T range



2CDC 271 043 50009

CP-T 24/5.0



2CDC 271 045 50009

CP-T 24/10.0, CP-T 48/5.0



2CDC 271 047 50009

CP-T 24/20.0, CP-T 48/10.0

In terms of design and functionality, the CP-T range perfectly supplements the existing products and extends the range appropriately. The devices can be supplied with a three-phase voltage as well as with two-phase mains. Here, ABB offers power supply units with 24 V DC and 48 V DC outputs with 5 A, 10 A, 20 A and 40 A and efficiency of up to 93%.

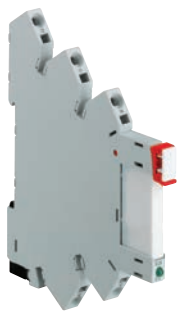
As in the case of all products, they are designed for an ambient temperature of up to 70°C. All products can be supplied within an AC supply voltage range between 340 to 575 V AC and a DC supply voltage range between 480 to 820 V DC.

Ordering details - CP-T range

| Input voltage range | Rated output voltage / current | Type | Order Code | Weight (1 pce) kg (lb) |
|-----------------------------|--------------------------------|--------------|-----------------|---------------------------|
| 340-575 V AC / 480-820 V DC | 24 V DC / 5 A | CP-T 24/5.0 | 1SVR427054R0000 | 0.80 (1.77) |
| 340-575 V AC / 480-820 V DC | 24 V DC / 10 A | CP-T 24/10.0 | 1SVR427055R0000 | 1.05 (2.31) |
| 340-575 V AC / 480-820 V DC | 24 V DC / 20 A | CP-T 24/20.0 | 1SVR427056R0000 | 1.75 (3.86) |
| 340-575 V AC / 480-820 V DC | 24 V DC / 40 A | CP-T 24/40.0 | 1SVR427057R0000 | 3.20 (7.05) |
| 340-575 V AC / 480-820 V DC | 48 V DC / 5 A | CP-T 48/5.0 | 1SVR427054R2000 | 1.05 (2.31) |
| 340-575 V AC / 480-820 V DC | 48 V DC / 10 A | CP-T 48/10.0 | 1SVR427055R2000 | 1.75 (3.86) |
| 340-575 V AC / 480-820 V DC | 48 V DC / 20 A | CP-T 48/20.0 | 1SVR427056R2000 | 3.40 (7.50) |

Pluggable interface relays and optocouplers

Ordering details – CR-S range



CR-S Interface relay

2CDC 291 005 50014



CR-S Optocoupler

2CDC 291 003 50016



CR-S Interface relay

2CDC 291 005 50014

The slim pluggable interface relays and optocouplers of the CR-S Range may be used for electrical isolation, amplification and signal matching. The CR-S relays are 6.2 mm wide and therefore allow for the switching high currents on a small footprint.

Ordering details - CR-S range pluggable interface relays

| Rated control supply voltage | Outputs | Contact ratings | Type | Order Code | Pkg qty | Weight (1 pc.) kg (lb) |
|------------------------------|-----------------------------------|---------------------------------|---------------|-----------------|---------|------------------------|
| 5 V DC | 1 c/o (SPDT) standard contacts | 250 V, 6 A | CR-S005VDC1R | 1SVR405501R1010 | 10 | 0.005 (0.011) |
| 12 V DC | | | CR-S012VDC1R | 1SVR405501R2010 | | |
| 24 V DC | | | CR-S024VDC1R | 1SVR405501R3010 | | |
| 48 V DC | | | CR-S048VDC1R | 1SVR405501R4010 | | |
| 60 V DC | | | CR-S060VDC1R | 1SVR405501R5010 | | |
| 5 V DC | 1 c/o (SPDT) gold plated contacts | 12 V, 250 mA (3W) ¹⁾ | CR-S005VDC1RG | 1SVR405501R1020 | 10 | 0.005 (0.011) |
| 12 V DC | | | CR-S012VDC1RG | 1SVR405501R2020 | | |
| 24 V DC | | | CR-S024VDC1RG | 1SVR405501R3020 | | |
| 48 V DC | | | CR-S048VDC1RG | 1SVR405501R4020 | | |
| 60 V DC | | | CR-S060VDC1RG | 1SVR405501R5020 | | |

Ordering details - CR-S range pluggable optocouplers

| Rated control supply voltage | Outputs | Type | Order Code | Pkg qty | Weight (1 pc.) kg (lb) |
|------------------------------|------------------------------|----------------|-----------------|---------|------------------------|
| 24 V DC | Transistor, 100 mA - 48 V DC | CR-S024VDC1TRA | 1SVR405510R3050 | 10 | 0.004 (0.009) |
| | MOS-FET, 2 A - 24 V DC | CR-S024VDC1MOS | 1SVR405510R3060 | | |
| | Triac, 2 A - 240 V AC | CR-S024VDC1TRI | 1SVR405510R3070 | | |

Ordering details - CR-S range sockets

| Rated control supply voltage | Connection type | Type | Order Code | Pkg qty | Weight (1 pc.) kg (lb) |
|------------------------------|-----------------|--------------------|-----------------|---------|------------------------|
| 6-24 V DC | Screw | CR-S006/024VDC1SS | 1SVR405521R1100 | 10 | 0.025 (0.055) |
| | Spring | CR-S006/024VDC1SZ | 1SVR405521R1200 | | |
| 12-24 V AC/DC | Screw | CR-S012/024VADC1SS | 1SVR405521R3100 | 10 | 0.025 (0.055) |
| | Spring | CR-S012/024VADC1SZ | 1SVR405521R3200 | | |
| 48-60 V AC/DC | Screw | CR-S048/060VADC1SS | 1SVR405521R5100 | 10 | 0.025 (0.055) |
| | Spring | CR-S048/060VADC1SZ | 1SVR405521R5200 | | |
| 110-125 V AC/DC | Screw | CR-S110/125VADC1SS | 1SVR405521R6100 | 10 | 0.025 (0.055) |
| | Spring | CR-S110/125VADC1SZ | 1SVR405521R6200 | | |
| 220-240 V AC/DC | Screw | CR-S220/240VADC1SS | 1SVR405521R7100 | 10 | 0.025 (0.055) |
| | Spring | CR-S220/240VADC1SZ | 1SVR405521R7200 | | |

Ordering details - CR-S range accessories

| Version | Type | Order Code | Pkg qty | Weight (1 pc.) kg (lb) |
|----------------------------------|----------------|-----------------|---------|------------------------|
| Jumper bar 20 pole, blue colour | CR-SJB20-BLUE | 1SVR405598R0700 | 10 | 0.008 (0.018) |
| Jumper bar 20 pole, red colour | CR-SJB20-RED | 1SVR405598R0800 | | |
| Jumper bar 20 pole, black colour | CR-SJB20-BLACK | 1SVR405598R0900 | | |
| Separator | CR-SSEP | 1SVR405599R0000 | 10 | 0.012 |

Pluggable interface relays and optocouplers

Ordering details – CR-P range



ZCDC 291.045 F0004

CR-P relay



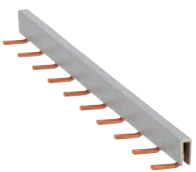
ZCDC 291.006 S0016

CR-P optocoupler



ZCDC 291.006 F0011

CR-PLS



ZCDC 291.004 F0007

CR-PJ



ZCDC291088F0004

CR-PLSX relay

The CR-P range offers the highest current switching in an IP67 rated relay housing. This range comprises of pluggable interface relays and optocouplers offered in 10 different control supply voltages. Additionally, gold plated contacts are available for applications where sensitive signals are to be switched. The CR-P range also includes complete versions consisting of a relay, socket, holder and functional module.

Ordering details - CR-P range relays

| Rated control supply voltage | Outputs | Contact ratings | Type | Order Code | Pkg | Weight (1 pc.) |
|------------------------------|--------------|-----------------|--------------|-----------------|-----|----------------|
| | | | | | qty | kg (lb) |
| 12 V DC | 1 c/o (SPDT) | 250 V, 16 A | CR-P012DC1 | 1SVR405600R4000 | 10 | 0.014 (0.031) |
| 24 V DC | | | CR-P024DC1 | 1SVR405600R1000 | | |
| 48 V DC | | | CR-P048DC1 | 1SVR405600R6000 | | |
| 110 V DC | | | CR-P110DC1 | 1SVR405600R8000 | | |
| 24 V AC | | | CR-P024AC1 | 1SVR405600R0000 | | |
| 48 V AC | | | CR-P048AC1 | 1SVR405600R5000 | | |
| 110 V AC | | | CR-P110AC1 | 1SVR405600R7000 | | |
| 120 V AC | | | CR-P120AC1 | 1SVR405600R2000 | | |
| 230 V AC | | | CR-P230AC1 | 1SVR405600R3000 | | |
| 12 V DC | | | 2 c/o (SPDT) | 250 V, 8 A | | |
| 24 V DC | CR-P024DC2 | 1SVR405601R1000 | | | | |
| 48 V DC | CR-P048DC2 | 1SVR405601R6000 | | | | |
| 110 V DC | CR-P110DC2 | 1SVR405601R8000 | | | | |
| 12 V AC | CR-P012AC2 | 1SVR405601R0200 | | | | |
| 24 V AC | CR-P024AC2 | 1SVR405601R0000 | | | | |
| 48 V AC | CR-P048AC2 | 1SVR405601R5000 | | | | |
| 110 V AC | CR-P110AC2 | 1SVR405601R7000 | | | | |
| 120 V AC | CR-P120AC2 | 1SVR405601R2000 | | | | |
| 230 V AC | CR-P230AC2 | 1SVR405601R3000 | | | | |

Ordering details - CR-P range pluggable optocouplers

| Rated control supply voltage (Us) | Outputs | Type | Order Code | Pkg | Weight (1 pc.) |
|-----------------------------------|------------------------|-------------|-----------------|-----|----------------|
| | | | | qty | kg (lb) |
| 10-32 V DC | MOS-FET, 5 A - 35 V DC | CR-P024MOS1 | 1SVR405610R4060 | 10 | 0.011 (0.618) |
| | Triac, 3 A - 275 V AC | CR-P024TRI1 | 1SVR405610R4070 | | |

Ordering details - Accessories

| Version | Connection terminal | Type | Order Code | Pkg | Weight (1 pc.) |
|--|---------------------|---------|-----------------|-----|-----------------|
| | | | | qty | kg (lb) |
| Logical socket with protective separation | screw | CR-PLS | 1SVR405650R0000 | 10 | 0.045 (0.099) |
| Logical socket | screw | CR-PLSx | 1SVR405650R0100 | | 0.043 (0.095) |
| | spring | CR-PLC | 1SVR405650R0200 | | 0.042 (0.093) |
| Standard socket | screw | CR-PSS | 1SVR405650R1000 | | 0.038 (0.084) |
| Plastic holder for socket | | CR-PH | 1SVR405659R0000 | 10 | 0.002 (0.004) |
| Metal holder | | CR-PH1 | 1SVR405659R0100 | | |
| Jumper bar for sockets with screw connection | | CR-PJ | 1SVR405658R5000 | | 0.018 (0.040) |
| Marker | | CR-PM | 1SVR405658R0000 | 10 | 0.0002 (0.0004) |

Pluggable interface relays and optocouplers

Ordering details – CR-M range



CR-M

2CDC29H 002 F0015

The CR-M range offers the possibility of switching up to 4 different circuits with a single relay. The integrated LED and test button allow for easy testing and commissioning. This range of relays are available at a wide range of different coil voltages and are accompanied by a wide variety of functional modules. The CR-M range also includes complete versions consisting of a relay, socket, holder and functional module.

Ordering details - CR-M range without LED

| Rated control supply voltage | Outputs | Contact ratings | Type | Order Code | Pkg | Weight | | | | |
|------------------------------|-----------------|-----------------|-----------------|-----------------|------------|--------------------|------------|------------------|----|------------------|
| | | | | | qty | (1 pc.) kg (lb) | | | | |
| 12 V DC | 2 c/o (SPDT) | 250 V, 12 A | CR-M012DC2 | 1SVR405611R4000 | 10 | 0.033 (0.073) | | | | |
| 24 V DC | | | CR-M024DC2 | 1SVR405611R1000 | | | | | | |
| 48 V DC | | | CR-M048DC2 | 1SVR405611R6000 | | | | | | |
| 60 V DC | | | CR-M060DC2 | 1SVR405611R4200 | | | | | | |
| 110 V DC | | | CR-M110DC2 | 1SVR405611R8000 | | | | | | |
| 125 V DC | | | CR-M125DC2 | 1SVR405611R8200 | | | | | | |
| 220 V DC | | | CR-M220DC2 | 1SVR405611R9000 | | | | | | |
| 24 V AC | | | CR-M024AC2 | 1SVR405611R0000 | | | | | | |
| 48 V AC | | | CR-M048AC2 | 1SVR405611R5000 | | | | | | |
| 110 V AC | | | CR-M110AC2 | 1SVR405611R7000 | | | | | | |
| 120 V AC | | | CR-M120AC2 | 1SVR405611R2000 | | | | | | |
| 230 V AC | | | CR-M230AC2 | 1SVR405611R3000 | | | | | | |
| 12 V DC | | | 3 c/o (SPDT) | 250 V, 10 A | | | CR-M012DC3 | 1SVR405612R4000 | 10 | 0.033 (0.073) |
| 24 V DC | | | | | | | CR-M024DC3 | 1SVR405612R1000 | | |
| 48 V DC | | | | | | | CR-M048DC3 | 1SVR405612R6000 | | |
| 60 V DC | | | | | | | CR-M060DC3 | 1SVR405612R4200 | | |
| 110 V DC | CR-M110DC3 | 1SVR405612R8000 | | | | | | | | |
| 125 V DC | CR-M125DC3 | 1SVR405612R8200 | | | | | | | | |
| 220 V DC | CR-M220DC3 | 1SVR405612R9000 | | | | | | | | |
| 24 V AC | CR-M024AC3 | 1SVR405612R0000 | | | | | | | | |
| 48 V AC | CR-M048AC3 | 1SVR405612R5000 | | | | | | | | |
| 60 V AC | CR-M060AC3 | 1SVR405612R5200 | | | | | | | | |
| 110 V AC | CR-M110AC3 | 1SVR405612R7000 | | | | | | | | |
| 120 V AC | CR-M120AC3 | 1SVR405612R2000 | | | | | | | | |
| 230 V AC | CR-M230AC3 | 1SVR405612R3000 | | | | | | | | |
| 12 V DC | 4 c/o (SPDT) | 250 V, 6 A | | | CR-M012DC4 | 1SVR405613R4000 | 10 | 0.033 (0.073) | | |
| 24 V DC | | | | | CR-M024DC4 | 1SVR405613R1000 | | | | |
| 48 V DC | | | | | CR-M048DC4 | 1SVR405613R6000 | | | | |
| 60 V DC | | | CR-M060DC4 | 1SVR405613R4200 | | | | | | |
| 110 V DC | | | CR-M110DC4 | 1SVR405613R8000 | | | | | | |
| 125 V DC | | | CR-M125DC4 | 1SVR405613R8200 | | | | | | |
| 220 V DC | | | CR-M220DC4 | 1SVR405613R9000 | | | | | | |
| 24 V AC | | | CR-M024AC4 | 1SVR405613R0000 | | | | | | |
| 48 V AC | | | CR-M048AC4 | 1SVR405613R5000 | | | | | | |
| 110 V AC | | | CR-M110AC4 | 1SVR405613R7000 | | | | | | |
| 120 V AC | | | CR-M120AC4 | 1SVR405613R2000 | | | | | | |
| 230 V AC | | | CR-M230AC4 | 1SVR405613R3000 | | | | | | |

Pluggable interface relays and optocouplers

Ordering details – CR-M range



CR-M

2CDC291.002.F0015

Ordering details - CR-M range with LED

| Rated control supply voltage | Outputs | Contact ratings | Type | Order Code | Pkg | Weight |
|------------------------------|--------------|-----------------|-------------|-----------------|-----|---------------|
| | | | | | qty | (1 pc.) |
| 12 V DC | 2 c/o (SPDT) | 250 V, 12 A | CR-M012DC2L | 1SVR405611R4100 | 10 | 0.033 (0.073) |
| 24 V DC | | | CR-M024DC2L | 1SVR405611R1100 | | |
| 48 V DC | | | CR-M048DC2L | 1SVR405611R6100 | | |
| 60 V DC | | | CR-M060DC2L | 1SVR405611R4300 | | |
| 110 V DC | | | CR-M110DC2L | 1SVR405611R8100 | | |
| 125 V DC | | | CR-M125DC2L | 1SVR405611R8300 | | |
| 220 V DC | | | CR-M220DC2L | 1SVR405611R9100 | | |
| 12 V AC | | | CR-M012AC2L | 1SVR405611R0300 | | |
| 24 V AC | | | CR-M024AC2L | 1SVR405611R0100 | | |
| 48 V AC | | | CR-M048AC2L | 1SVR405611R5100 | | |
| 110 V AC | | | CR-M110AC2L | 1SVR405611R7100 | | |
| 120 V AC | | | CR-M120AC2L | 1SVR405611R2100 | | |
| 230 V AC | | | CR-M230AC2L | 1SVR405611R3100 | | |
| 12 V DC | 3 c/o (SPDT) | 250 V, 10 A | CR-M012DC3L | 1SVR405612R4100 | 10 | 0.033 (0.073) |
| 24 V DC | | | CR-M024DC3L | 1SVR405612R1100 | | |
| 48 V DC | | | CR-M048DC3L | 1SVR405612R6100 | | |
| 60 V DC | | | CR-M060DC3L | 1SVR405612R4300 | | |
| 110 V DC | | | CR-M110DC3L | 1SVR405612R8100 | | |
| 125 V DC | | | CR-M125DC3L | 1SVR405612R8300 | | |
| 220 V DC | | | CR-M220DC3L | 1SVR405612R9100 | | |
| 12 V AC | | | CR-M012AC3L | 1SVR405612R0300 | | |
| 24 V AC | | | CR-M024AC3L | 1SVR405612R0100 | | |
| 48 V AC | | | CR-M048AC3L | 1SVR405612R5100 | | |
| 110 V AC | | | CR-M110AC3L | 1SVR405612R7100 | | |
| 120 V AC | | | CR-M120AC3L | 1SVR405612R2100 | | |
| 230 V AC | | | CR-M230AC3L | 1SVR405612R3100 | | |
| 12 V DC | 4 c/o (SPDT) | 250 V, 6 A | CR-M012DC4L | 1SVR405613R4100 | 10 | 0.033 (0.073) |
| 24 V DC | | | CR-M024DC4L | 1SVR405613R1100 | | |
| 48 V DC | | | CR-M048DC4L | 1SVR405613R6100 | | |
| 60 V DC | | | CR-M060DC4L | 1SVR405613R4300 | | |
| 110 V DC | | | CR-M110DC4L | 1SVR405613R8100 | | |
| 125 V DC | | | CR-M125DC4L | 1SVR405613R8300 | | |
| 220 V DC | | | CR-M220DC4L | 1SVR405613R9100 | | |
| 12 V AC | | | CR-M012AC4L | 1SVR405613R0300 | | |
| 24 V AC | | | CR-M024AC4L | 1SVR405613R0100 | | |
| 48 V AC | | | CR-M048AC4L | 1SVR405613R5100 | | |
| 110 V AC | | | CR-M110AC4L | 1SVR405613R7100 | | |
| 120 V AC | | | CR-M120AC4L | 1SVR405613R2100 | | |
| 230 V AC | | | CR-M230AC4L | 1SVR405613R3100 | | |

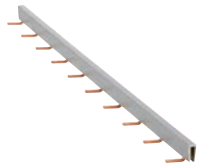
Pluggable interface relays and optocouplers

Ordering details – CR-M range



2CDC 291.009 F0011

CR-M4SS



2CDC 291.005 F0007

CR-MJ

Ordering details - Accessories

| Version | Connection terminal | Type | Order Code | Pkg | Weight (1 pc.) |
|--|---------------------|---------|-----------------|-----|----------------|
| | | | | qty | kg (lb) |
| Logical socket for 2 c/o | screw | CR-M2LS | 1SVR405651R1100 | 10 | 0.055 (0.121) |
| Logical socket for 3 c/o | | CR-M3LS | 1SVR405651R2100 | | 0.062 (0.137) |
| Logical socket for 2/4 c/o | | CR-M4LS | 1SVR405651R3100 | | 0.066 (0.146) |
| Logical socket for 2 c/o | spring | CR-M2LC | 1SVR405651R1200 | 10 | 0.065 (0.143) |
| Logical socket for 2/4 c/o | | CR-M4LC | 1SVR405651R3200 | | 0.066 (0.146) |
| Standard socket for 2 c/o | screw | CR-M2SS | 1SVR405651R1000 | 10 | 0.066 (0.146) |
| Standard socket for 3 c/o | | CR-M3SS | 1SVR405651R2000 | | 0.068 (0.150) |
| Standard socket for 2/4 c/o | | CR-M4SS | 1SVR405651R3000 | | 0.070 (0.154) |
| Standard socket for 2 c/o | fork type | CR-M2SF | 1SVR405651R1300 | 10 | 0.040 (0.088) |
| Standard socket for 2/4 c/o | | CR-M4SF | 1SVR405651R3300 | | 0.048 (0.106) |
| Plastic holder | | CR-MH | 1SVR405659R1000 | 10 | 0.003 (0.007) |
| Metal holder | | CR-MH1 | 1SVR405659R1100 | 10 | 0.0005 (0.001) |
| Jumper bar for sockets with screw connection | | CR-MJ | 1SVR405658R6000 | 10 | 0.029 (0.064) |
| Marker | | CR-MM | 1SVR405658R1000 | 10 | 0.0005 (0.001) |
| Plug for test button replacement | | CR-MP | 1SVR405658R2000 | 100 | 0.001 (0.002) |

Motor control and protection

| | |
|------------|--|
| 150 | Push buttons |
| 151 | Emergency stops, enclosures heavy duty push buttons |
| 152 | Standard and double push buttons |
| 153 | Emergency, stops and Selector switches |
| 154 | Key switches & pilot lights |
| 155 | Contacts, lamp blocks and accessories |
| 156 | 3-pole contactor overview |
| 158 | AF09 ... AF38 3 pole contactors |
| 159 | AF40 ... AF96 3 pole contactors |
| 160 | AF40 ... AF96 3 pole contactors |
| 162 | Overload protection |
| 163 | Limit switches |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

Pilot devices - compact 22mm

Push buttons

Push buttons black plastic bezel

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 |

| Type | Contacts | | Part No | Order Code |
|---------------------|----------|--------------|--------------|------------------|
| | N/O | N/C | | |
| Flush momentary | 1 | https://cdn. | CP1-10 ■ -10 | 1SFA619100R101 □ |
| | 2 | - | CP1-10 ■ -20 | 1SFA619100R102 □ |
| | - | 1 | CP1-10 ■ -01 | 1SFA619100R104 □ |
| | - | 2 | CP1-10 ■ -02 | 1SFA619100R105 □ |
| | 1 | 1 | CP1-10 ■ -11 | 1SFA619100R107 □ |
| Flush maintained | 1 | - | CP2-10 ■ -10 | 1SFA619101R101 □ |
| | 2 | - | CP2-10 ■ -20 | 1SFA619101R102 □ |
| | - | 1 | CP2-10 ■ -01 | 1SFA619101R104 □ |
| | - | 2 | CP2-10 ■ -02 | 1SFA619101R105 □ |
| | 1 | 1 | CP2-10 ■ -11 | 1SFA619101R107 □ |
| Extended momentary | 1 | - | CP3-10 ■ -10 | 1SFA619102R101 □ |
| | 2 | - | CP3-10 ■ -20 | 1SFA619102R102 □ |
| | - | 1 | CP3-10 ■ -01 | 1SFA619102R104 □ |
| | - | 2 | CP3-10 ■ -02 | 1SFA619102R105 □ |
| | 1 | 1 | CP3-10 ■ -11 | 1SFA619102R107 □ |
| Extended maintained | 1 | - | CP4-10 ■ -10 | 1SFA619103R101 □ |
| | 2 | - | CP4-10 ■ -20 | 1SFA619103R102 □ |
| | - | 1 | CP4-10 ■ -01 | 1SFA619103R104 □ |
| | - | 2 | CP4-10 ■ -02 | 1SFA619103R105 □ |
| | 1 | 1 | CP4-10 ■ -11 | 1SFA619103R107 □ |


Push buttons chrome metal bezel

| Type | Contacts | | Part No | Order Code |
|---------------------|----------|-----|--------------|------------------|
| | N/O | N/C | | |
| Flush momentary | 1 | - | CP1-30 ■ -10 | 1SFA619100R301 □ |
| | 2 | - | CP1-30 ■ -20 | 1SFA619100R302 □ |
| | - | 1 | CP1-30 ■ -01 | 1SFA619100R304 □ |
| | - | 2 | CP1-30 ■ -02 | 1SFA619100R305 □ |
| | 1 | 1 | CP1-30 ■ -11 | 1SFA619100R307 □ |
| Flush maintained | 1 | - | CP2-30 ■ -10 | 1SFA619101R301 □ |
| | 2 | - | CP2-30 ■ -20 | 1SFA619101R302 □ |
| | - | 1 | CP2-30 ■ -01 | 1SFA619101R304 □ |
| | - | 2 | CP2-30 ■ -02 | 1SFA619101R305 □ |
| | 1 | 1 | CP2-30 ■ -11 | 1SFA619101R307 □ |
| Extended momentary | 1 | - | CP3-30 ■ -10 | 1SFA619102R301 □ |
| | 2 | - | CP3-30 ■ -20 | 1SFA619102R302 □ |
| | - | 1 | CP3-30 ■ -01 | 1SFA619102R304 □ |
| | - | 2 | CP3-30 ■ -02 | 1SFA619102R305 □ |
| | 1 | 1 | CP3-30 ■ -11 | 1SFA619102R307 □ |
| Extended maintained | 1 | - | CP4-30 ■ -10 | 1SFA619103R301 □ |
| | 2 | - | CP4-30 ■ -20 | 1SFA619103R302 □ |
| | - | 1 | CP4-30 ■ -01 | 1SFA619103R304 □ |
| | - | 2 | CP4-30 ■ -02 | 1SFA619103R305 □ |
| | 1 | 1 | CP4-30 ■ -11 | 1SFA619103R307 □ |

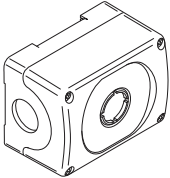
Pilot devices - compact 22mm

Emergency stops, enclosures and LED's


Emergency stop buttons

| | Type | Contacts | | Part No | Order Code |
|---|------------------------|----------|-----|-------------|-----------------|
| | | N/O | N/C | | |
|  | 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

Push buttons

Standard push buttons black plastic bezel

| Type | | | Part No | Order Code |
|----------|------------|-----------------|----------|------------------|
| Flush | Momentary | Non illuminated | MP1-10 ■ | 1SFA611100R100 □ |
| | Maintained | | MP2-10 ■ | 1SFA611101R100 □ |
| | Momentary | Illuminated | MP1-11 ■ | 1SFA611101R110 □ |
| | Maintained | | MP2-11 ■ | 1SFA611101R110 □ |
| Extended | Momentary | Non illuminated | MP3-10 ■ | 1SFA611102R100 □ |
| | Maintained | | MP4-10 ■ | 1SFA611103R100 □ |
| | Momentary | Illuminated | MP3-11 ■ | 1SFA611102R110 □ |
| | Maintained | | MP4-11 ■ | 1SFA611103R110 □ |

Standard push buttons chrome plastic bezel

| Type | | | Part No | Order Code |
|----------|------------|-----------------|----------|------------------|
| Flush | Momentary | Non illuminated | MP1-20 ■ | 1SFA611100R200 □ |
| | Maintained | | MP2-20 ■ | 1SFA611101R200 □ |
| | Momentary | Illuminated | MP1-21 ■ | 1SFA611100R210 □ |
| | Maintained | | MP2-21 ■ | 1SFA611101R210 □ |
| Extended | Momentary | Non illuminated | MP3-20 ■ | 1SFA611102R200 □ |
| | Maintained | | MP4-20 ■ | 1SFA611103R200 □ |
| | Momentary | Illuminated | MP3-21 ■ | 1SFA611102R210 □ |
| | Maintained | | MP4-21 ■ | 1SFA611103R210 □ |

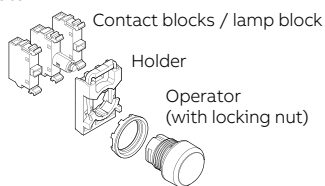
Standard push buttons metal bezel

| Type | | | Part No | Order Code |
|----------|------------|-----------------|----------|------------------|
| Flush | Momentary | Non illuminated | MP1-30 ■ | 1SFA611100R300 □ |
| | Maintained | | MP2-30 ■ | 1SFA611101R300 □ |
| | Momentary | Illuminated | MP1-31 ■ | 1SFA611100R310 □ |
| | Maintained | | MP2-31 ■ | 1SFA611101R310 □ |
| Extended | Momentary | Non illuminated | MP3-30 ■ | 1SFA611102R300 □ |
| | Maintained | | MP4-30 ■ | 1SFA611103R300 □ |
| | Momentary | Illuminated | MP3-31 ■ | 1SFA611102R310 □ |
| | Maintained | | MP4-31 ■ | 1SFA611103R310 □ |

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



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 |





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

Pilot devices - modular 22mm



Emergency stops and selector switches

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 Two position AC Two position spring return CB Two position BC Two position AC Two position spring return CB | Black | Short handle | M2SS1-10B | 1SFA611200R1006 |
| | | Black | Short handle | M2SS2-10B | 1SFA611201R1006 |
| | | Black | Short handle | M2SS3-10B | 1SFA611202R1006 |
| | | Black | Long handle | M2SS4-10B | 1SFA611203R1006 |
| | | Black | Long handle | M2SS5-10B | 1SFA611204R1006 |
| | | Black | Long handle | M2SS6-10B | 1SFA611205R1006 |
|  | Three position ABC Three position spring return A to B - C to B Three position stay put A, spring return C to B Three position stay put C, spring return A to B Three position ABC Three position spring return A to B - C to B Three position stay put A, spring return C to B Three position stay put C, spring return A to B | Black | Short handle | M3SS1-10B | 1SFA611210R1006 |
| | | Black | Short handle | M3SS2-10B | 1SFA611211R1006 |
| | | Black | Short handle | M3SS3-10B | 1SFA611212R1006 |
| | | Black | Short handle | M3SS7-10B | 1SFA611216R1006 |
| | | Black | Long handle | M3SS4-10B | 1SFA611213R1006 |
| | | Black | Long handle | M3SS5-10B | 1SFA611214R1006 |
| | | Black | Long handle | M3SS6-10B | 1SFA611215R1006 |
| | | Black | Long handle | M3SS8-10B | 1SFA611217R1006 |


Selector switches chrome metal bezel

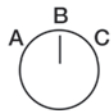
| | Type | | Part No | Order Code | |
|---|--|-------|--------------|------------|-----------------|
|  | Two position BC Two position AC Two position spring return CB Two position BC Two position AC Two position spring return CB | Black | Short handle | M2SS1-30B | 1SFA611200R3006 |
| | | Black | Short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

Pilot devices - modular 22mm


Key switches, pilot lights

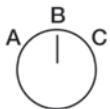
Key switches black plastic bezel

| 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 |



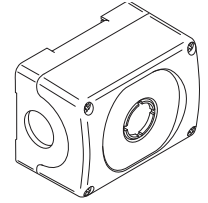
Pilot lights

| Part No | Order Code0 | |
|----------------------|-------------|-----------------|
| 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

| | Part No | Order Code | |
|---|--|------------|-----------------|
|  | Separate holder | | |
| | Holder for 3 blocks | MCBH-00 | 1SFA611605R1100 |
| | Holder for 5 blocks | MCBH-50 | 1SFA611601R1100 |
| Contact block holders | 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 included | | |
| | 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 |

3-pole contactor overview

Contactors for motor control and power switching



| | | | | | | | | | | | | | | |
|------------------------|--------------------------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| IEC (1) | AC-3 Rated operational power | ≤ 60 °C (2), 400 V | kW | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 18.5 | 22 | 30 | 37 | 45 |
| UL/CSA | 3-phase motor rating | 480 V | hp | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 60 |
| AC / DC Control supply | | | Type | AF09 | AF12 | AF16 | AF26 | AF30 | AF38 | AF40 | AF52 | AF65 | AF80 | AF96 |
| AC Control supply | | | Type | AF09 | AF12 | AF16 | AF26 | AF30 | AF38 | AF40 | AF52 | AF65 | AF80 | AF96 |
| DC Control supply | | | Type | AF09 | AF12 | AF16 | AF26 | AF30 | AF38 | AF40 | AF52 | AF65 | AF80 | AF96 |
| IEC | AC-3 Rated operational current | ≤ 60 °C (2), 400 V | A | 9 | 12 | 18 | 26 | 32 | 38 | 40 | 53 | 65 | 80 | 96 |
| | AC-1 Rated operational current | ≤ 40 °C, 690 V | A | 25 | 28 | 30 | 45 | 50 | 50 | 70 | 100 | 105 | 125 | 130 |
| UL/CSA | General use rating | 600 V | A | 25 | 28 | 30 | 45 | 50 | 50 | 60 | 80 | 90 | 105 | 115 |
| NEMA | NEMA Size | | | 00 | 0 | - | 1 | - | - | 2 | - | - | 3 | - |

Main accessories

| | | | | | |
|-----------------------------------|--------------------------|--|---------------------------|---------|---------|
| Auxiliary contact blocks | Front mounting | CA4-10 (1 x N.O.) CA4-01 (1 x N.C.) | | | |
| | Side mounting | CAL4-11 (1 x N.O. + 1 x N.C.) | | | |
| Timers | Electronic | TEF4-ON TEF4-OFF | | | |
| Interlocking units ⁽³⁾ | Mechanical | VM4 | VM96-4 | | |
| | Mechanical / Electrical | VEM4 | | | |
| Connection sets | For reversing contactors | BER16-4 | BER38-4 | BER65-4 | BER96-4 |
| Surge suppressors | Varistor (AC/DC) | | | | |
| | RC type (AC) | | Built-in surge protection | | |
| | Transil diode (DC) | | | | |

Overload relays

| | | | | | |
|-------------------|--|---|----------------------|---|---------------------------------------|
| Thermal relays | | Class 10 (Class 10A for TF140, TA200DU) | TF42 (0.10...38 A) | TF65 (22...67 A) | TF96 (40...96 A) |
| Electronic relays | | Class 10E, 20E, 30E | EF19 (0.10...18.9 A) | EF19 (0.10...18.9 A) EF45 (9...45 A) | EF65 (20...70 A) EF96 (36...100 A) |

Manual motor starters

| | | | |
|-------------|--|---|--|
| | Thermal / magnetic protection Class 10 | MS116 (0.10...32 A) lcs up to 50 kA for class 10 A | MS450 (28...50 A) lcs up to 50 kA |
| | | MS132 (0.10...32 A) lcs up to 100 kA | MO495 (63...100 A) lcs up to 50 kA |
| | | | MS497 (22...100 A) lcs up to 100 kA |
| | Magnetic only types | MO132 (0.16...32 A) lcs up to 100 kA | MO496 (32...100 A) lcs up to 100 kA |
| | | MO450 (40...50 A) lcs up to 50 kA | MO495 (63...100 A) lcs up to 50 kA |
| Accessories | For contactor mounting | BEA16-4 | BER38-4 |



| | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| 55 | 75 | 75 | 90 | 110 | 132 | 160 | 200 | 200 | 250 | 315 | 400 | - | 475 | 560 | - | - |
| 75 | 100 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 | - | 800 | 900 | - | - |
| AF116 | AF116 | AF146 | AF190 | AF205 | AF265 | AF305 | AF370 | AF400 | AF460 | AF580 | AF750 | AF1250 | AF1350 | AF1650 | AF2050 | AF2650 |
| AF116 | AF140 | AF146 | AF190 | AF205 | AF265 | AF305 | AF370 | AF400 | AF460 | AF580 | AF750 | AF1250 | AF1350 | AF1650 | AF2050 | AF2650 |
| AF116 | AF140 | AF146 | AF190 | AF205 | AF265 | AF305 | AF370 | AF400 | AF460 | AF580 | AF750 | AF1250 | AF1350 | AF1650 | AF2050 | AF2650 |
| 116 | 140 | 146 | 190 | 205 | 265 | 305 | 370 | 400 | 460 | 580 | 750 | - | 860 | 1050 | - | - |
| 160 | 200 | 225 | 275 | 350 | 400 | 500 | 600 | 600 | 700 | 800 | 1050 | 1260 | 1350 | 1650 | 2050 | 2650 |
| 160 | 200 | 200 | 250 | 300 | 350 | 400 | 520 | 550 | 650 | 750 | 900 | 1210 | 1350 | 1650 | 2100 | 2700 |
| - | 4 | - | - | - | 5 | - | - | - | 6 | - | 7 | - | - | 8 | - | - |

| | | | | | | | | | | | | | | | | |
|---------------------------------|--|----------|--|----------|--|-----------|--|--------------------------------|--|---------------------------|--|-----------------------------|--|--|--|--|
| CAL19-11 (1 x N.O. + 1 x N.C.) | | | | | | | | CAL18-11 (1 x N.O. + 1 x N.C.) | | | | | | | | |
| VM19 (for same size contactors) | | | | | | | | VM750H VM750V | | | | TEF4-ON TEF4-OFF VM1650H | | | | |
| BER140-4 | | BER205-4 | | BER370-4 | | BEM460-30 | | BEM750-30 | | Built-in surge protection | | | | | | |

| | | | | | | | | | | | |
|---------------------------------|--|-----------------------|--|------------------------|--|---------------------------------|--|------------------------|--|---------------------------|--|
| TF140DU (66...142 A) ≤ 55 °C | | | | | | TA200DU (66...200 A) ≤ 55 °C | | | | | |
| EF146 (54...150 A) | | EF205 (63...210 A) | | EF370 (115...380 A) | | EF460 (150...500 A) | | EF750 (250...800 A) | | E1250DU (375...1250 A) | |

Short-circuit protection devices





AF09 ... AF38 3 pole contactors

4 to 18.5kW AC/DC operated

AF09 ... AF38 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles.

- Control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...500V 50/60 Hz and 20...500 V DC

- Can manage large control voltage variations
- Reduced panel energy consumption
- Very distinct closing and opening
- Built-in surge suppression
- Add-on auxiliary contact blocks for front or side mounting and a wide range of accessories

| | IEC | | UL/CSA | | Rated control circuit voltage | | Auxiliary contacts fitted | | Part Number ⁽¹⁾ | Order Code | |
|---|--|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------|-----------------|---------------------------|---|----------------------------|-----------------|-----------------|
| | Rated operational power 400 V AC-3 kW | current ≤ 40 °C AC-1 A | 3-phase motor rating 480 V hp | General use rating 600 V AC A | Uc min. V 50/60 Hz | Uc max. V DC | 1 | 0 | | | |
|  AF09-30-10 | 4 | 25 | 5 | 25 | 24...60 | 20...60 | 1 | 0 | AF09-30-10-11 | 1SBL137001R1110 | |
| | | | | | 48...130 | 48...130 | 0 | 1 | AF09-30-01-11 | 1SBL137001R1101 | |
| | | | | | | 100...250 | 100...250 | 1 | 0 | AF09-30-10-12 | 1SBL137001R1210 |
| | | | | | | 250...500 | 250...500 | 0 | 1 | AF09-30-01-12 | 1SBL137001R1201 |
| | | | | | | 100...250 | 100...250 | 1 | 0 | AF09-30-10-13 | 1SBL137001R1310 |
| | | | | | | 250...500 | 250...500 | 0 | 1 | AF09-30-01-13 | 1SBL137001R1301 |
| | | | | | | 250...500 | 250...500 | 1 | 0 | AF09-30-10-14 | 1SBL137001R1410 |
| | | | | | | 250...500 | 250...500 | 0 | 1 | AF09-30-01-14 | 1SBL137001R1401 |
| |  AF26-30-00 | 5.5 | 28 | 7.5 | 28 | 24...60 | 20...60 | 1 | 0 | AF12-30-10-11 | 1SBL157001R1110 |
| | | | | | | 48...130 | 48...130 | 0 | 1 | AF12-30-01-11 | 1SBL157001R1101 |
| | | | | | | 100...250 | 100...250 | 1 | 0 | AF12-30-10-12 | 1SBL157001R1210 |
| | | | | | | 250...500 | 250...500 | 0 | 1 | AF12-30-01-12 | 1SBL157001R1201 |
| | | | | | | 100...250 | 100...250 | 1 | 0 | AF12-30-10-13 | 1SBL157001R1310 |
| | | | | | | 250...500 | 250...500 | 0 | 1 | AF12-30-01-13 | 1SBL157001R1301 |
| | | | | | | 250...500 | 250...500 | 1 | 0 | AF12-30-10-14 | 1SBL157001R1410 |
| | | | | | | 250...500 | 250...500 | 0 | 1 | AF12-30-01-14 | 1SBL157001R1401 |
| | | | | | | 24...60 | 20...60 | 1 | 0 | AF16-30-10-11 | 1SBL177001R1110 |
| | | | | | | 48...130 | 48...130 | 0 | 1 | AF16-30-01-11 | 1SBL177001R1101 |
| | | | | | 100...250 | 100...250 | 1 | 0 | AF16-30-10-12 | 1SBL177001R1210 | |
| | | | | | 250...500 | 250...500 | 0 | 1 | AF16-30-01-12 | 1SBL177001R1201 | |
| | | | | | 100...250 | 100...250 | 1 | 0 | AF16-30-10-13 | 1SBL177001R1310 | |
| | | | | | 250...500 | 250...500 | 0 | 1 | AF16-30-01-13 | 1SBL177001R1301 | |
| | | | | | 250...500 | 250...500 | 1 | 0 | AF16-30-10-14 | 1SBL177001R1410 | |
| | | | | | 250...500 | 250...500 | 0 | 1 | AF16-30-01-14 | 1SBL177001R1401 | |
| 11 | 45 | 15 | 45 | | 24...60 | 20...60 | 0 | 0 | AF26-30-00-11 | 1SBL237001R1100 | |
| | | | | | 48...130 | 48...130 | 0 | 0 | AF26-30-00-12 | 1SBL237001R1100 | |
| | | | | | 100...250 | 100...250 | 0 | 0 | AF26-30-00-13 | 1SBL237001R1300 | |
| | | | | | 250...500 | 250...500 | 0 | 0 | AF26-30-00-14 | 1SBL237001R1400 | |
| 15 | 50 | 20 | 50 | | 24...60 | 20...60 | 0 | 0 | AF30-30-00-11 | 1SBL277001R1100 | |
| | | | | | 48...130 | 48...130 | 0 | 0 | AF30-30-00-12 | 1SBL277001R1200 | |
| | | | | | 100...250 | 100...250 | 0 | 0 | AF30-30-00-13 | 1SBL277001R1300 | |
| | | | | | 250...500 | 250...500 | 0 | 0 | AF30-30-00-14 | 1SBL277001R1400 | |
| 18.5 | 50 | 25 | 50 | | 24...60 | 20...60 | 0 | 0 | AF38-30-00-11 | 1SBL297001R1100 | |
| | | | | | 48...130 | 48...130 | 0 | 0 | AF38-30-00-12 | 1SBL297001R1200 | |
| | | | | | 100...250 | 100...250 | 0 | 0 | AF38-30-00-13 | 1SBL297001R1300 | |
| | | | | | 250...500 | 250...500 | 0 | 0 | AF38-30-00-14 | 1SBL297001R1400 | |

¹⁾ For other auxiliary contacts arrangements, please contact your ABB local sales organization.



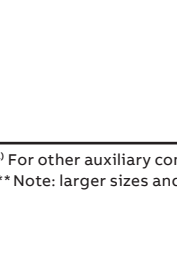

AF40 ... AF96 3 pole contactors

18.5 to 45kW AC/DC operated

AF40 ... AF96 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles.

- Control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...500V 50/60 Hz and 20...500 V DC

- Can manage large control voltage variations
- Reduced panel energy consumption
- Very distinct closing and opening
- Built-in surge suppression
- Add-on auxiliary contact blocks for front or side mounting and a wide range of accessories

| | IEC | | UL/CSA | | Rated control circuit voltage | | Auxiliary contacts fitted | | Part Number ⁽¹⁾ | Order Code |
|---|--|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------|-----------------|---------------------------|---|----------------------------|-----------------|
| | Rated operational power 400 V AC-3 kW | current ≤ 40 °C AC-1 A | 3-phase motor rating 480 V hp | General use rating 600 V AC A | Uc min. ... V 50/60 Hz | Uc max. V DC | Y | N | | |
|  AF40-30-00 | 18.5 | 70 | 30 | 60 | 24...60 | – | 0 | 0 | AF40-30-00-41 | 1SBL347001R4100 |
| | | | | | 24...60 | 20...60 | 0 | 0 | AF40-30-00-11 | 1SBL347001R1100 |
| | | | | | 48...130 | 48...130 | 0 | 0 | AF40-30-00-12 | 1SBL347001R1200 |
| | | | | | 100...250 | 100...250 | 0 | 0 | AF40-30-00-13 | 1SBL347001R1300 |
| | | | | | 250...500 | 250...500 | 0 | 0 | AF40-30-00-14 | 1SBL347001R1400 |
|  AF52-30-00 | 22 | 100 | 40 | 80 | 24...60 | – | 0 | 0 | AF52-30-00-41 | 1SBL367001R4100 |
| | | | | | 24...60 | 20...60 | 0 | 0 | AF52-30-00-11 | 1SBL367001R1100 |
| | | | | | 48...130 | 48...130 | 0 | 0 | AF52-30-00-12 | 1SBL367001R1200 |
| | | | | | 100...250 | 100...250 | 0 | 0 | AF52-30-00-13 | 1SBL367001R1300 |
| | | | | | 250...500 | 250...500 | 0 | 0 | AF52-30-00-14 | 1SBL367001R1400 |
|  AF65-30-00 | 30 | 105 | 50 | 90 | 24...60 | – | 0 | 0 | AF65-30-00-41 | 1SBL387001R4100 |
| | | | | | 24...60 | 20...60 | 0 | 0 | AF65-30-00-11 | 1SBL387001R1100 |
| | | | | | 48...130 | 48...130 | 0 | 0 | AF65-30-00-12 | 1SBL387001R1200 |
| | | | | | 100...250 | 100...250 | 0 | 0 | AF65-30-00-13 | 1SBL387001R1300 |
| | | | | | 250...500 | 250...500 | 0 | 0 | AF65-30-00-14 | 1SBL387001R1400 |
|  AF80-30-00 | 37 | 125 | 60 | 105 | 24...60 | – | 0 | 0 | AF80-30-00-41 | 1SBL397001R4100 |
| | | | | | 24...60 | 20...60 | 0 | 0 | AF80-30-00-11 | 1SBL397001R1100 |
| | | | | | 48...130 | 48...130 | 0 | 0 | AF80-30-00-12 | 1SBL397001R1200 |
| | | | | | 100...250 | 100...250 | 0 | 0 | AF80-30-00-13 | 1SBL397001R1300 |
| | | | | | 250...500 | 250...500 | 0 | 0 | AF80-30-00-14 | 1SBL397001R1400 |
| AF96-30-00 | 45 | 130 | 60 | 155 | 24...60 | – | 0 | 0 | AF96-30-00-41 | 1SBL407001R4100 |
| | | | | | 24...60 | 20...60 | 0 | 0 | AF96-30-00-11 | 1SBL407001R1100 |
| | | | | | 48...130 | 48...130 | 0 | 0 | AF96-30-00-12 | 1SBL407001R1200 |
| | | | | | 100...250 | 100...250 | 0 | 0 | AF96-30-00-13 | 1SBL407001R1300 |
| | | | | | 250...500 | 250...500 | 0 | 0 | AF96-30-00-14 | 1SBL407001R1400 |

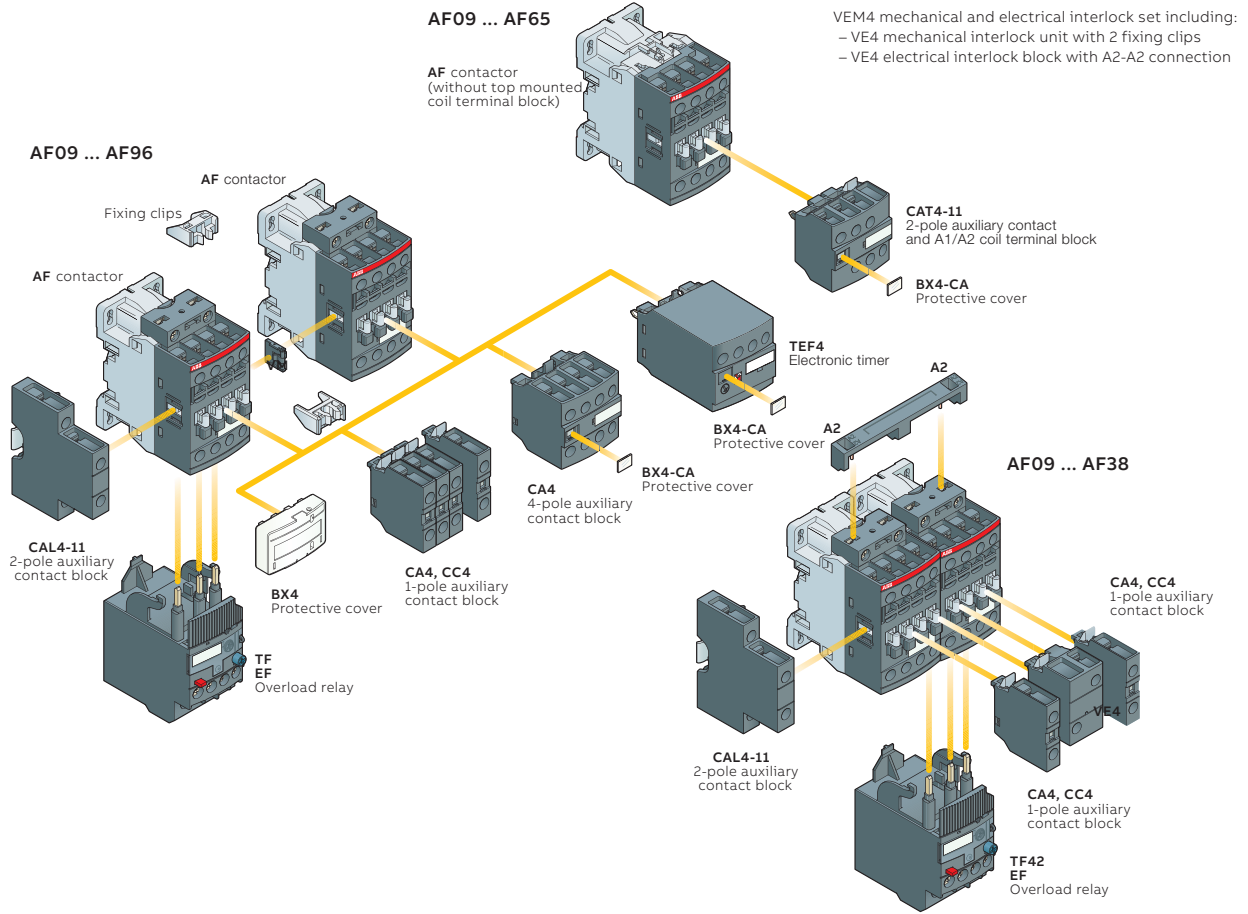
¹⁾ For other auxiliary contacts arrangements, please contact your ABB local sales organization.

** Note: larger sizes and 4 pole versions available - contact us for further information.

AF09 ... AF96 3 pole contactors

Main accessories

Contactor and main accessories (other accessories available)



Main accessory fitting details

Many configurations of accessories are possible depending on whether these are front-mounted or side-mounted.





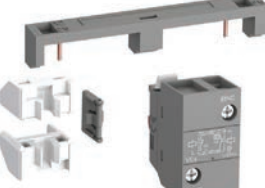

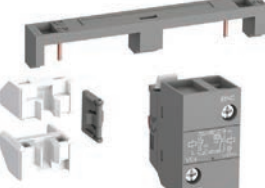

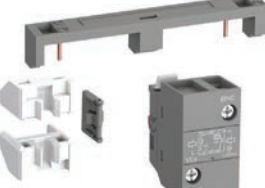

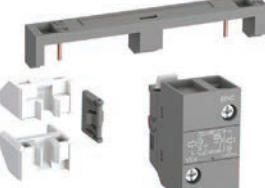

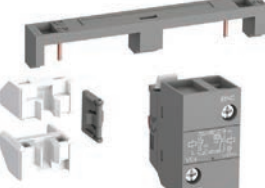





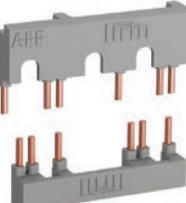

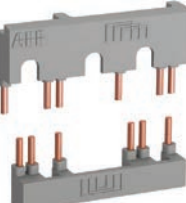

| Contactor types | Main poles | | | | Built-in auxiliary contacts | | | | Front-mounted accessories | | | Side-mounted accessories | |
|-----------------|------------|-----------------------------|--------------------------|----------------|-----------------------------|--|---|---|---------------------------|------|---|--------------------------|--|
| | Main poles | Built-in auxiliary contacts | Auxiliary contact blocks | | Electronic timer | Electrical & mechanical interlock set (between 2 contactors) | Auxiliary contact blocks | | | | | | |
| | | | 1-pole CA4 | 2-pole CAT4-11 | | | Left side | Right side | | | | | |
| | | | 1-pole CC4 | 4-pole CA4 | TEF4 | VEM4 | | 2-pole CAL4-11 | | | | | |
| | | | | | | | Max. N.C. built-in and add-on N.C. auxiliary contacts: 4 N.C. max. on positions 1, 2, 3, 4 and 3 N.C. max. on positions 1 ±30°, 5 | | | | | | |
| AF09 ... AF16 | 3 | 0 | 0 | 1 | 4 max. or | 1 or | 1 or | 1 | - + | 1 | - | | |
| AF09 ... AF16 | 3 | 0 | 1 | 0 | 2 max. or | 1 | - or | 1 | - + | 1 + | 1 | | |
| AF26 ... AF38 | 3 | 0 | 0 | 0 | 3 max. | - | - | - + | 1 + | 1 or | 1 | | |
| | | | | | | | | Max. add-on N.C. auxiliary contacts: 6 N.C. max. on positions 1, 1 ±30°, 2, 3, 4, 5 | | | | | |
| AF40 ... AF65 | 3 | 0 | 0 | 0 | 4 max. or | 1 | 1 | 1 | - + | 1 + | 1 | | |
| AF80, AF96 | 3 | 0 | 0 | 0 | 4 max. | - | 1 | 1 | - + | 1 + | 1 | | |

Overload relays fitting details (1)

| Contactor types | Thermal overload relays | Electronic overload relays |
|-----------------|-------------------------|----------------------------|
| AF09 ... AF38 | TF42 (0.10...38 A) | EF19 (0.10...19 A) |
| AF26 ... AF38 | TF42 (0.10...38 A) | EF45 (9...45 A) |
| AF40 ... AF65 | TF65 (22...67 A) | EF65 (20...70 A) |
| AF80, AF96 | TF96 (40...96 A) | EF96 (36...100 A) |

AF09 ... AF96 3 pole contactors

Main accessories

| | | Auxiliary contacts | | | | Part Number ⁽¹⁾ | Order Code | | |
|--|--|---|------------------------|---|----------------------------|----------------------------|------------|-----------------|-----------------|
| | | Y | L | Y | L | | | | |
| For contactors | | | | | | | | | |
| Front-mounted instantaneous auxiliary contact blocks | | | | | | | | | |
|  CA4-10 |  CAL4-11 | AF09 ... AF38 | 1 | 0 | - | - | CA4-10 | 1SBN010110R1010 | |
| | | | 1 | 0 | - | - | CA4-10-T | 1SBN010110T1010 | |
| | | | 0 | 1 | - | - | CA4-01 | 1SBN010110R1001 | |
| | | | 0 | 1 | - | - | - CA4-01-T | 1SBN010110T1001 | |
|  CA4-22E |  CAT4-11E | AF09 ... AF16...-30-10 | 2 | 2 | - | - | CA4-22M | 1SBN010140R1122 | |
| | | AF26 ... AF96...-30-00 | 2 | 2 | - | - | CA4-22E | 1SBN010140R1022 | |
| | | AF09 ... AF16...-30-01 | 2 | 2 | - | - | CA4-22U | 1SBN010140R1322 | |
| Front-mounted auxiliary contact blocks with N.O. leading contact and N.C. lagging contact | | | | | | | | | |
|  VEM4 |  VM4 | AF09 ... AF96 | - | - | 1 | 0 | CC4-10 | 1SBN010111R1010 | |
| | | | - | - | 0 | 1 | CC4-01 | 1SBN010111R1001 | |
| Side-mounted instantaneous auxiliary contact blocks | | | | | | | | | |
|  VEM4 |  VM4 | AF09 ... AF96 | 1 | 1 | - | - | CAL4-11 | 1SBN010120R1011 | |
| | | | | 1 | 1 | - | - | CAL4-11-T | 1SBN010120T1011 |
| Front-mounted instantaneous auxiliary contact and A1/A2 coil terminal blocks | | | | | | | | | |
|  VEM4 |  VM4 | AF09 ... AF16...-30-10 | 1 | 1 | - | - | CAT4-11M | 1SBN010151R1111 | |
| | | AF26 ... AF65...-30-00 | 1 | 1 | - | - | CAT4-11E | 1SBN010151R1011 | |
| | | AF09 ... AF16...-30-01 | 1 | 1 | - | - | CAT4-11U | 1SBN010151R1311 | |
| Note: CAT4 not suitable for AF..Z contactors with DC control voltage 12...20 V DC. | | | | | | | | | |
| Mechanical interlock unit | | | | | | | | | |
|  VEM4 |  VM4 | AF09 ... AF38 | | | | | VM4 | 1SBN030105T1000 | |
| | | AF40 ... AF96 | | | | | VM96-4 | 1SBN033405T1000 | |
| Note: VM4 and VM96-4 include 2 fixing clips (BB4) to maintain together both contactors. | | | | | | | | | |
| Mechanical and electrical interlock set | | | | | | | | | |
|  VEM4 |  VM4 | AF09 ... AF16 AF26 ... AF38 | 0 | 2 | - | - | VEM4 | 1SBN030111R1000 | |
| | | Note: - VEM4 includes a VM4 mechanical interlock unit with 2 fixing clips (BB4), a VE4 electrical interlock block. VE4 block must be used with A2-A2 connection to respect the electrical connection diagram. - VEM4 not suitable for AF..Z contactors with DC control voltage 12...20 V DC. | | | | | | | |
| | | Time delay range selected by switch | Auxiliary contacts | | Part Number ⁽¹⁾ | Order Code | | | |
| | | Delay type | Y | L | | | | | |
| Electronic timers | | | | | | | | | |
|  TEF4-ON |  BEA16-4 | AF09 ... AF96 | 0.1...1 s | ON-delay | - | - | TEF4-ON | 1SBN020112R1000 | |
| | | | 1...10 s | | | | | | |
| | | | 10...100 s | OFF-delay | - | - | TEF4-OFF | 1SBN020114R1000 | |
| Note: Rated control circuit voltage U _c 24...240 V 50/60 Hz or DC. | | | | | | | | | |
| Connecting links with manual motor starters | | | | | | | | | |
|  TEF4-ON |  BEA16-4 | AF09 ... AF16 | with | MS116-0.16 ... MS116-25, MS132-0.16 ... MS132-25 | BEA16-4 | 1SBN081306T1000 | | | |
| | | AF26 ... AF38 | with | MS116-0.16 ... MS116-16, MS132-0.16 ... MS132-10 | BEA26-4 | 1SBN082306T1000 | | | |
| | | | with | MS116-20 ... MS116-32, MS132-12 ... MS132-32 | BEA38-4 | 1SBN082306T2000 | | | |
| Connection sets for reversing contactors | | | | | | | | | |
|  BER16-4 |  VM4 | AF09 ... AF16 | | | | | BER16-4 | 1SBN081311R1000 | |
| | | AF26 ... AF38 | | | | | BER38-4 | 1SBN082311R1000 | |
| | | AF40 ... AF65 | | | | | BER65-4 | 1SBN083411R1000 | |
| | | AF80 ... AF96 | | | | | BER96-4 | 1SBN083911R1000 | |
| Mechanical interlock unit | | | | | | | | | |
|  BER16-4 |  VM4 | AF09 ... AF16 | With or without VM4 | | | | BEY16-4 | 1SBN081313R2000 | |
| | | AF26 ... AF38 | With or without VM4 | | | | BEY38-4 | 1SBN082713R2000 | |
| | | AF40 ... AF65 | With or without VM96-4 | | | | BEY65-4 | 1SBN083413R2000 | |
| | | AF80 ... AF96 | With or without VM96-4 | | | | BEY96-4 | 1SBN083913R2000 | |

¹⁾ For more information, refer to main catalogue "Accessories" section.

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:

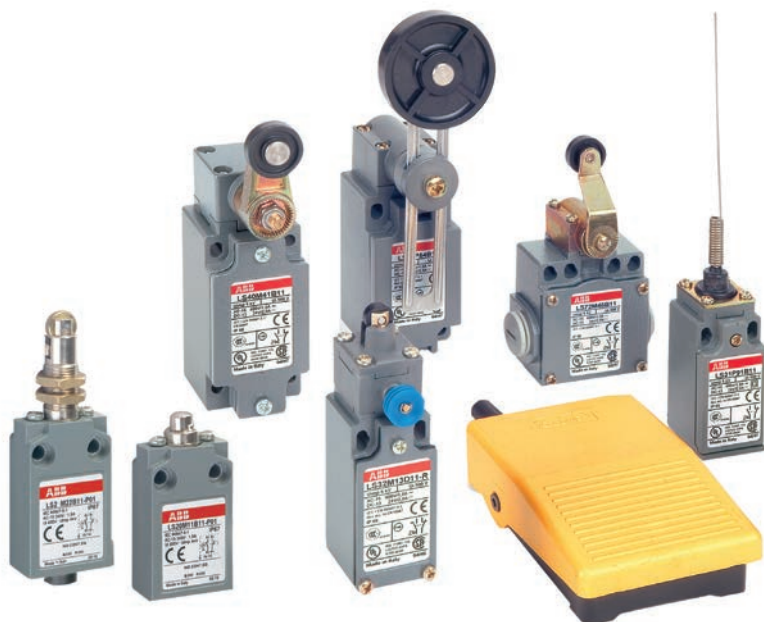
The overload in star delta starters should be fitted in the Delta loop, therefore overload rating equal to FLC x by 0.58*

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 |

Limit switches

Trustworthy detection devices



Using limit switches is the easiest way to convert mechanical movements into electrical signals. They combine different types of actuators, casings and contacts and are perfectly suited to a large variety of applications, whatever the environment.



Reliable in extreme conditions

Ready for anything

Limit switches are designed to operate in the most difficult environments. A high degree of protection up to IP66 and the positive contact opening, guarantees reliable operation.



Continuous operation

Keep your installation running 24h a day

Limit switches secure your uptime. Their high mechanical durability can handle up to 10 million operations with contacts that are mechanically linked to actuators.



Global availability

Wherever you are

Easy product selection from our core offering that covers most applications. Thanks to global certification, our products can be used everywhere to ensure your peace of mind.

Main applications

Sustainability of detection for a wide variety of applications

Material handling equipment (cranes, ramps, elevators...) Escalators, parking barriers and automatic doors Machine tools and manufacturing lines.








Limit switches

A simple core range selection covering 80% of the applications...








11 13 41 51 91

Width 30 mm - Plastic casing - Double insulation  - IP65

| Head type | Cable inlet | Type | Order Code |
|--|-------------|------------|-----------------|
|  11 Plain plunger steel | Iso 16 | LS32P11B11 | 1SBV010311R1211 |
| | Iso 20 | LS33P11B11 | 1SBV012211R1211 |
| | 1/2" NPT | LS35P11B11 | 1SBV012111R1211 |
|  13 Roller plunger plastic | Iso 16 | LS32P13B11 | 1SBV010313R1211 |
| | Iso 20 | LS33P13B11 | 1SBV012213R1211 |
| | 1/2" NPT | LS35P13B11 | 1SBV012113R1211 |
|  41 Roller lever plastic | Iso 16 | LS32P41B11 | 1SBV010341R1211 |
| | Iso 20 | LS33P41B11 | 1SBV012241R1211 |
| | 1/2" NPT | LS35P41B11 | 1SBV012141R1211 |
|  51 Adjustable roller lever plastic | Iso 16 | LS32P51B11 | 1SBV010351R1211 |
| | Iso 20 | LS33P51B11 | 1SBV012251R1211 |
| | 1/2" NPT | LS35P51B11 | 1SBV012151R1211 |
|  91 Flexible rod steel | Iso 16 | LS32P91B11 | 1SBV010391R1211 |
| | Iso 20 | LS33P91B11 | 1SBV012291R1211 |
| | 1/2" NPT | LS35P91B11 | 1SBV012191R1211 |

Width 40 mm - Plastic casing - Double insulation  - IP65






| Head type | Cable inlet | Type | Order Code |
|--|-------------|------------|-----------------|
|  11 Plain plunger steel | Iso 20 | LS43P11B11 | 1SBV010711R1211 |
| | 1/2" NPT | LS45P11B11 | 1SBV012411R1211 |
|  13 Roller plunger steel | Iso 20 | LS43P13B11 | 1SBV010713R1211 |
| | 1/2" NPT | LS45P13B11 | 1SBV012413R1211 |
|  41 Roller lever plastic | Iso 20 | LS43P41B11 | 1SBV010741R1211 |
| | 1/2" NPT | LS45P41B11 | 1SBV012441R1211 |
|  51 Adjustable roller lever plastic | Iso 20 | LS43P51B11 | 1SBV010751R1211 |
| | 1/2" NPT | LS45P51B11 | 1SBV012451R1211 |
|  91 Flexible rod steel | Iso 20 | LS43P91B11 | 1SBV010791R1211 |
| | 1/2" NPT | LS45P91B11 | 1SBV012491R1211 |

Cable inlet:






ISO 16 (standard version) equivalent to Pg11 – Cable diameter: 4.5 mm ... 10 mm (according to cable gland manufacturer).

ISO 20 (standard version) equivalent to Pg13.5 – Cable diameter: 7 mm ... 14 mm (according to cable gland manufacturer).

Metal casing - IP66

| Head type | Cable inlet | Type | Order Code |
|--|-------------|------------|-----------------|
|  11 Plain plunger steel | Iso 16 | LS32M11B11 | 1SBV011911R1211 |
| | Iso 20 | LS33M11B11 | 1SBV013811R1211 |
| | 1/2" NPT | LS35M11B11 | 1SBV013711R1211 |
|  13 Roller plunger plastic | Iso 16 | LS32M12B11 | 1SBV011912R1211 |
| | Iso 20 | LS33M12B11 | 1SBV013812R1211 |
| | 1/2" NPT | LS35M12B11 | 1SBV013712R1211 |
|  41 Roller lever plastic | Iso 16 | LS32M41B11 | 1SBV011941R1211 |
| | Iso 20 | LS33M41B11 | 1SBV013841R1211 |
| | 1/2" NPT | LS35M41B11 | 1SBV013741R1211 |
|  51 Adjustable roller lever plastic | Iso 16 | LS32M51B11 | 1SBV011951R1211 |
| | Iso 20 | LS33M51B11 | 1SBV013851R1211 |
| | 1/2" NPT | LS35M51B11 | 1SBV013751R1211 |
|  91 Flexible rod steel | Iso 16 | LS32M91B11 | 1SBV011991R1211 |
| | Iso 20 | LS33M91B11 | 1SBV013891R1211 |
| | 1/2" NPT | LS35M91B11 | 1SBV013791R1211 |

Metal casing - IP66

| Head type | Cable inlet | Type | Order Code |
|--|-------------|------------|-----------------|
|  11 Plain plunger steel | Iso 20 | LS43M11B11 | 1SBV011611R1211 |
| | 1/2" NPT | LS45M11B11 | 1SBV013111R1211 |
|  13 Roller plunger steel | Iso 20 | LS43M13B11 | 1SBV011613R1211 |
| | 1/2" NPT | LS45M13B11 | 1SBV013113R1211 |
|  41 Roller lever plastic | Iso 20 | LS43M41B11 | 1SBV011641R1211 |
| | 1/2" NPT | LS45M41B11 | 1SBV013141R1211 |
|  51 Adjustable roller lever plastic | Iso 20 | LS43M51B11 | 1SBV011651R1211 |
| | 1/2" NPT | LS45M51B11 | 1SBV013151R1211 |
|  91 Flexible rod steel | Iso 20 | LS43M91B11 | 1SBV011691R1211 |
| | 1/2" NPT | LS45M91B11 | 1SBV013191R1211 |

| Technical data | Plastic casing | Metal casing |
|--|---------------------------------------|--|
| Rated operational characteristics | AC-15: Ue = 400 V, Ie = 4 A ; A600 | AC-15: Ue = 400 V, Ie = 4 A ; A300 |
| | DC-13: Ue = 250 V, Ie = 0,27 A ; Q600 | DC-13: Ue = 250 V, Ie = 0,27 A ; Q300 |
| Casing material | UL-V0 thermoplastic | 30 mm casing: zinc alloy / 40 mm casing: aluminium alloy |
| Contact types | 1 N.O. + 1 N.C., snap action | |
| I _{the} conventional enclosed thermal current | 10 A | |
| Screw terminals with cable clamp | M3.5 - Screwdriver type: Pozidriv 2 | |

Cable management products

| | |
|------------|---|
| 164 | Adaptaflex - Introduction |
| 169 | Adaptaflex - Convenience packs |
| 170 | Adaptaflex - Metallic flexible conduit systems |
| 179 | Adaptaflex - Non-metallic flexible conduit systems |
| 189 | Cable glands |
| 197 | Speckon® lugs |
| 199 | Ty-Rap® Cable ties |
| 203 | Ty-Met™ Stainless steel cable ties |
| 205 | E-Klips - Mechanical and Electrical fixings |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

Introduction

Company overview

Adaptaflex flexible conduit systems are used to protect critical power and data cabling. Established in 1972, Adaptaflex has developed into a leading player within the flexible conduit market.

Adaptaflex is a market-leading flexible conduit system brand 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. With a choice of over 6000 products the range covers metallic and non-metallic flexible conduit systems for the protection of critical power and data cable.

The system solutions from Adaptaflex need to perform in a wide variety of environments, from high temperature to freezing conditions. The products are designed and tested to withstand constant vibrations, water ingress and offer corrosion and chemical resistance. Products are available in many different materials, including halogen free, low smoke and low toxicity materials. An extensive range of engineered solutions are designed to withstand the rigours of some of the most technically-demanding markets. So whatever your project involves, our experience will provide the answer, helping you to specify the correct flexible conduit system.

Markets and industries

Adaptaflex flexible conduit systems are used to protect critical power and data cabling throughout a wide range of markets including:

- Commercial contracting
- Machine & automation
- Rail/Infrastructure
- Marine
- Mechanical
- Security/CCTV
- Data cabling/Data centres
- Critical power
- Renewable energy
- Food & Beverage
- Construction

Our products are designed and engineered to meet a variety of market application requirements, providing product innovation that saves installation and component costs, improves quality and delivers integrity in the end product.



Introduction

Quality approvals & third party testing

Quality approvals

The company's commitment to independent testing across a wide range of applications has led to an impressive range of certifications and quality approvals:

- BSI Kitemark
- BS EN ISO14001 Environmental standard
- IEC 61386 Conduit standard covering the performance characteristics of flexible conduits
- ISO 60529 IP69 Rated, standard with its Adaptaflex range of non metallic fittings
- Offer non-metallic conduit that is fully compliant to the new dual listed UL 1696 standard. Required for any equipment destined for export to the USA and Canada

Industry standards

As one of the world's leading flexible conduit system manufacturers, Adaptaflex has achieved many international approvals, for our manufacturing as well as our product ranges.

Adaptaflex are able to use our experience and knowledge to ensure safety and quality levels are maintained now and in the future.

BSI Kitemark

Adaptaflex manufacture to third party accreditation through the BSI Kitemark scheme. The Kitemark is one of the world's premier symbols of trust, integrity and quality. Manufacturers with the Kitemark are an elite club of some of the world's best companies being annually tested to ensure continued compliance. Having the Kitemark associated with our products illustrates that we have satisfied the most rigorous of quality processes.

ISO9001 Quality standard

Adaptaflex conform to ISO 9001:2000, the internationally recognised standard for Quality Management Systems. This standard reflects the procedures and management processes throughout the whole of the company.

ISO14001 and ISO45001 Environmental standard

Controlling the impact of manufacturing activities on the environment is a major challenge. Again Adaptaflex lead the way by being the first conduit manufacturer to comply with this Standard.

Customer support

All our products are backed up by a full technical support team, sales teams, customer care team and in-house marketing specialists. All dedicated teams working together to ensure that you have the best support in the market place.

cmg.conduitsystems@abb.com for technical support.

Third party testing & approvals

IEC61386 Performance classification standard

Adaptaflex has achieved third party accreditation to the IEC61386 Standard from the British Standards Institution (BSI). IEC61386 conformance guarantees that products meet performance specifications for fatigue life, operating temperature, non-flame propagation, IP ratings amongst other criteria.



Flexible conduit systems

Quick selection guide



| Type | Metallic conduit | | | | Non-metallic conduit | | |
|---------------------|--|---|--|--|---|---|---|
| | Corrugated Metallic | Corrugated Metallic | Smooth Liquid-Tight Metallic | Anti-microbial Liquid Tight Metallic | Corrugated Plastic | Corrugated Plastic | Corrugated Plastic |
| Series | S | SP | SPL | SAM | PP | PR | PA |
| Usage | Heavy weight conduit for commercial building, light industrial or outdoor applications | Heavy-duty industrial, confined space and moving applications | Heavy-duty industrial, marine, extreme condition and hazardous explosive area applications | Food, Beverage, Pharmaceutical, Hygienic and high temperature applications | Medium weight conduit for commercial building, light industrial or outdoor applications | Standard weight conduit for construction, transport and rail infrastructures. | Commercial building, light industrial or outdoor applications |
| Core material | Galvanised Steel | Galvanised Steel | Galvanised Steel | Galvanised or Stainless Steel | Polypropylene | Modified nylon PA6 | Nylon PA6 |
| Jacket material | None | PVC | PVC | Thermoplastic | None | None | None |
| IP rating | Up to IP40 | Up to IP65 | Up to IP69 | Up to IP69 | Up to IP66 | Up to IP69 | Up to IP69 |
| Temperature range | -50 to +300 | -25 to +70 | -20 to +105 | -30 to +150 | -20 to +90 | -40 to +120 | -40 to +120 |
| Flexibility | High | High | Medium | Medium | High | High | High |
| Mechanical strength | Very High? | Very High | Very High | Very High | Low | Medium | Medium |
| UV Resistance | Very High | Very High | Very High | High | Medium | Very High | Very High |
| Zero Halogen | No | No | No | Yes | Yes | Yes | Yes |
| Self Extinguishing | Yes | Yes | Yes | Yes | No | Yes | Yes |

- This book contains an overview of conduit and fittings from the ABB adaptaflex range.

- Several more Conduit ranges available including Stainless Steel, Low fire hazard, Braided EMI screening, Food & Beverage specific, Accessories, etc.

- Please contact our office or visit <http://new.abb.com/low-voltage/products/conduit-fittings/adaptaflex>.

Convenience packs

Professional installer conduit systems

LFH Convenience



| Part No | Type | Conduit/fitting diameter (mm) | One-piece conduit fittings | Locknuts | IP rating |
|----------|--|-------------------------------|----------------------------|----------|-----------|
| CP-AF20A | 10m Black Type PA LFH Nylon 6, 20mm diameter | 20 | 10 | 10 | IP66 |
| CP-AF25A | 10m Black Type PA LFH Nylon 6, 25mm diameter | 25 | 10 | 10 | IP66 |

Convenience pack / Nylon Conduit with Adaptalok One-Piece, Fast Fit, Push & Twist Fittings.
Materials: Polyamide Nylon 6 / Colour: Black (BL).



Polypropylene Convenience



| Part No | Type | Conduit/fitting diameter (mm) | One-piece conduit fittings | Locknuts | IP rating |
|--------------|---|-------------------------------|----------------------------|----------|-----------|
| CP-AF20BS-PP | 10m Grey Type PP Polypropylene conduit, 20mm diameter | 20 | 10 | 10 | IP54 |
| CP-AF25BS-PP | 10m Grey Type PP Polypropylene conduit, 25mm diameter | 25 | 10 | 10 | IP54 |

Convenience Pack / Type PP Polypropylene Conduit with One-Piece, Fast Fit, Push & Twist Fittings.
Materials: PP Polypropylene / Colour: Grey (GR).

Retail / Office Convenience

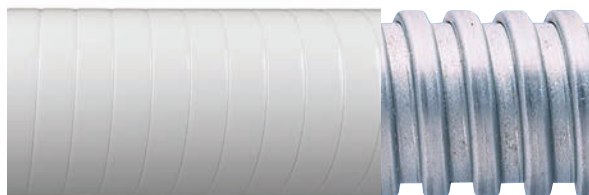


| Part No | Type | Conduit/fitting diameter (mm) | One-piece conduit fittings | Locknuts | IP rating |
|-----------|---------------------------------------|-------------------------------|----------------------------|----------|-----------|
| CP-AF20BS | 10m Grey Type KF PVCu, 20mm diameter | 20 | 10 | 10 | IP66 |
| CP-AF25BS | 10m Grey Type KF PVCu, 20mm diameter | 25 | 10 | 10 | IP66 |
| CP-KF20BS | 10m White Type KF PVCu, 25mm diameter | 20 | 10 | 10 | IP66 |
| CP-KF25BS | 10m White Type KF PVCu, 25mm diameter | 25 | 10 | 10 | IP66 |

Convenience Pack / Self-Extinguishing PVC Conduit & One-Piece Fittings & Locknuts.
Materials: PVC Pliable / Colour: White (W).

Anti-microbial metallic conduit systems

SAMHL series - Smooth anti-microbial liquid-tight conduit



Anti-microbial liquid tight high temperature covered steel flexible conduit. Suitable for indoor splash zone areas or food processing equipment. The biocidal coating attacks bacteria that comes into contact with it, including MRSA, E.coli, etc eliminating 99% in 2 hours.

Features




- **Type SAMHL** - Galvanized steel core string packed with Anti-microbial protection incorporated into a FDA, EC and FSA compliant DuPont Hytrel® thermoplastic jacket
- **Type SSAMHL** - Stainless steel string with Anti-microbial protection incorporated into a FDA, EC and FSA compliant DuPont Hytrel® thermoplastic jacket
- IP40 – IP69 rated
- Temperature range up to -50°C to +130°C
- Approvals: CE, BS EN 61386-1,-23, NSF 14159-1-2014 & NSF 169-2009

Type SAMHL and SSAMHL - Anti-microbial liquid tight conduit




| Part No | | Conduit size (mm) | Diameter Dimensions (mm) | | | Coil lengths | |
|-----------------------|----------------------|-------------------|--------------------------|--------|-------------|-----------------------|----------------------|
| Galvanised Steel Core | Stainless Steel Core | | Outside | Inside | Bend radius | Galvanised Steel Core | Stainless Steel Core |
| SAMHL16/25M | SSAMHL16/25M | 16 | 17.8mm | 12.5mm | 50mm | 25 | 25 |
| SAMHL20/25M | SSAMHL20/25M | 20 | 21.1mm | 15.9mm | 80mm | 25 | 25 |
| SAMHL25/25M | SSAMHL25/25M | 25 | 26.4mm | 21.0mm | 110mm | 25 | 25 |
| SAMHL32/25M | SSAMHL32/25M | 32 | 33.1mm | 26.7mm | 144mm | 25 | 25 |
| SAMHL40/25M | SSAMHL40/25M | 40 | 41.8mm | 35.4mm | 180mm | 25 | 25 |
| SAMHL50/25M | SSAMHL50/25M | 50 | 47.5mm | 40.4mm | 240mm | 25 | 25 |
| SAMHL63/25M | SSAMHL63/25M | 63 | 59.7mm | 51.6mm | 345mm | 25 | 25 |

Note: Conduit is fully cleanable and will maintain full ingress protection under normal wet cleaning conditions with associated fittings.

Type SAMHL

| Approvals | IP rating | Appropriate fitting | Temperature range | UV resistance |
|--|--------------------------------------|-----------------------------------|--|--------------------------------------|
|    NSF 14159-1-2014 NSF 169-2009 | For use with: Type SPL, SSPL and SAM | | Static applications: -50°C to +130°C | - |
| | IP66 | Type M, C45 & C90 | Moving applications: -5°C to +150°C | |
| | IP67 | Type A, B, M, C45 & C90 | Flexibility & fatigue life | High flexibility - High fatigue life |
| | IP68 | Type M, C45 & C90 (10 bar 30mins) | Fire Performance & EMI Screen | Self extinguishing |
| | IP69 | Type M, C45 & C90 | | |

Type SSAMHL

| Approvals | IP rating | Appropriate fitting | Temperature range | UV resistance |
|--|--------------------------------------|-----------------------------------|--------------------------------------|---------------|
|    NSF 14159-1-2014 NSF 169-2009 | For use with: Type SPL, SSPL and SAM | | Static applications: -50°C to +130°C | - |
| | IP66 | Type M, C45 & C90 | Moving applications: -5°C to +150°C | |
| | IP67 | Type A, B, M, C45 & C90 | | |
| | IP68 | Type M, C45 & C90 (10 bar 30mins) | | |
| | IP69 | Type M, C45 & C90 | | |

Anti-microbial metallic conduit systems

Type SAM for SAMHL series conduit



Single piece, liquid tight, high temperature Stainless Steel fitting suitable for indoor splash zone areas or food processing equipment

Features

- Unique single piece design
- 316 Stainless Steel
- Face seal materials adhere to FDA (Food and Drug Administration) and European Food Contact regulations
- IP67, IP68 & IP69 protection
- Approvals CE, BS EN 61386-1,-23, NSF14159-1-2014, NSF169-2009, UL514b
- Multiple thread type Metric/NPT

Fittings for SAMHL series conduit

| METRIC Part No | Conduit size | | Nominal Dimensions | | | | | | | Weight (g) |
|----------------|--------------|----------|--------------------|------|------|------|------|------|-------|------------|
| | METRIC (mm) | US (NPT) | B | C | D | E | F | G | | |
| SPL16/M16/SAM | 16 | 3/8" | 7.0 | 32.8 | 30.0 | 31.9 | 14.0 | 10.5 | 9.98 | |
| SPL20/M20/SAM | 20 | 1/2" | 10.0 | 35.6 | 32.0 | 35.0 | 18.0 | 14.5 | 11.34 | |
| SPL25/M25/SAM | 25 | 3/4" | 14.0 | 43.0 | 38.0 | 41.0 | 23.0 | 18.3 | 16.78 | |
| SPL32/M32/SAM | 32 | 1" | 15.0 | 51.5 | 45.0 | 49.0 | 30.0 | 24.1 | 29.94 | |
| SPL40/M40/SAM | 40 | 1 1/4" | 16.0 | 53.3 | 57.0 | 61.5 | 38.0 | 32.7 | 39.92 | |
| SPL50/M50/SAM | 50 | 1 1/2" | 18.0 | 60.2 | 64.0 | 69.0 | 48.0 | 37.7 | 45.36 | |
| SPL63/M63/SAM | 63 | 2" | 20.0 | 71.4 | 80.0 | 87.0 | 61.0 | 49.0 | 52.16 | |

Note: Parts are maintenance free, face seal can be replaced if damaged. Parts are fully cleanable and will maintain full ingress protection under normal wet cleaning conditions.

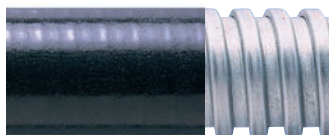
| Approvals | IP rating | Temperature range | UV resistance |
|--|---------------------------------------|--|--------------------------------------|
| <p>NSF 14159-1-2014 NSF 169-2009</p> <p>UL514b File No. E60625</p> | For use with: All liquidtight conduit | Static applications: -50°C to +130°C | - |
| | IP66 Yes | Moving applications: -5°C to +150°C | |
| | IP68 Yes (10 bar 30mins) | Flexibility & fatigue life | High flexibility - High fatigue life |
| | IP69 Yes | Fire Performance & EMI Screen | Self extinguishing |

Metallic conduit systems

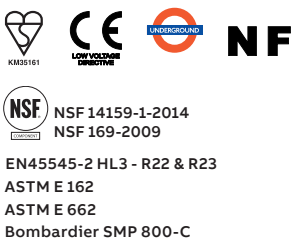

Type LFH-SPL & SPL - Adaptasteel

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

Type LFH-SPL - Adaptasteel

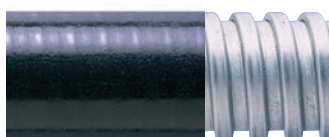
| | Part No | Nominal Conduit Size | Outside Diameter | US Conduit Size | Inside Diameter | Min. Bend Radius | Reel Length |
|---|------------|----------------------|------------------|-----------------|-----------------|------------------|-------------|
|  | LFH- SPL16 | 16mm | 17.0mm | 3/8" | 13.0mm | 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 rating | Appropriate fitting | Temperature range | UV resistance |
|---|---|-----------------------------------|--|---|
|  | For use with: Type SPL, SSPL and SAM | | Static applications: -20°C to +90°C | High |
| | IP66 | Type M, C45 & C90 | Moving applications: -5°C to +105°C | |
| | IP67 | Type A, B, M, C45 & C90 | Flexibility & fatigue life | |
| | IP68 | Type M, C45 & C90 (10 bar 30mins) | Medium flexibility – Medium fatigue life | |
| | IP69 | Type M, C45 & C90 | Fire performance & EMI screen | |
| | | | Self extinguishing |  |
| | | | Halogen free | |

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

Type SPL - Adaptasteel

| | Part No | 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 rating | Appropriate fitting | Temperature range | UV resistance |
|---|---|-----------------------------------|--|---------------|
|  | For use with: Type SPL, SSPL and SAM | | Static applications: -20°C to +105°C | Very high |
| | IP66 | Type M, C45 & C90 | Moving applications: -5°C to +105°C | |
| | IP67 | Type A, B, M, C45 & C90 | Flexibility & fatigue life | |
| | IP68 | Type M, C45 & C90 (10 bar 30mins) | Medium flexibility – Medium fatigue life | |
| | IP69 | Type M, C45 & C90 | Fire performance & EMI screen | |
| | | | Self extinguishing | |

Metallic conduit systems

Type A, B, M & U coupler - Adaptasteel

- **Type M** Straight fitting – Fixed external male thread
- **Type B** Straight fitting – Swivel external male thread
- **Type C90** Combined fitting and elbow
- For insertion into threaded entries & knockouts using a locknut (order locknuts separately)
- Materials: Nickel plated brass
- **Coupler** for coupling separate lengths of SPL conduit
- Materials: Nickel Plated Brass, Co-Polyester Seals

Type M - Adaptasteel

| Part no. | Nominal conduit size | US conduit size | Thread |
|----------------------|----------------------|-----------------|--------|
| Metric thread | | | |
| SPL10/M12/M | 10mm | 3/4" | M12 |
| SPL10/M16/M | 10mm | 3/4" | M16 |
| SPL12/M16/M | 12mm | 5/16" | M16 |
| SPL16/M16/M | 16mm | 3/8" | M16 |
| SPL16/M20/M | 16mm | 3/8" | M20 |
| SPL20/M20/M | 20mm | 1/2" | M20 |
| SPL25/M25/M | 25mm | 3/4" | M25 |
| SPL32/M32/M | 32mm | 1" | M32 |
| SPL40/M40/M | 40mm | 1 1/4" | M40 |
| SPL50/M50/M | 50mm | 1 1/2" | M50 |
| SPL63/M63/M | 63mm | 2" | M63 |
| PG thread | | | |
| SPL10/PG7/M | 10mm | 3/4" | PG7 |
| SPL12/PG9/M | 12mm | 5/16" | PG9 |
| SPL16/PG11/M | 16mm | 3/8" | PG11 |
| SPL16/PG13/M | 16mm | 3/8" | PG13,5 |
| SPL20/PG16/M | 20mm | 1/2" | PG16 |
| SPL25/PG21/M | 25mm | 3/4" | PG21 |
| SPL32/PG29/M | 32mm | 1" | PG29 |
| SPL40/PG36/M | 40mm | 1 1/4" | PG36 |
| SPL50/PG42/M | 50mm | 1 1/2" | PG42 |
| SPL63/PG48/M | 63mm | 2" | PG48 |
| NPT thread | | | |
| SPL16/038/M | 16mm | 3/8" | 3/8 |
| SPL20/050/M | 20mm | 1/2" | 1/2 |
| SPL25/075/M | 25mm | 3/4" | 3/4 |
| SPL32/100/M | 32mm | 1" | 1 |
| SPL40/125/M | 40mm | 1 1/4" | 1 1/4 |
| SPL50/150/M | 50mm | 1 1/2" | 1 1/2 |
| SPL63/200/M | 63mm | 2" | 2 |



Type B - Adaptasteel

| Part No | 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 |



Type C90 - Adaptasteel

| Part No | 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 |



* These parts are not UL listed.

Type U coupler - Adaptasteel

| Part No | 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

| | |
|--|----------------------|
| For use with: All liquidtight conduit | |
| IP66 | Yes |
| IP67 | Yes |
| IP68 | Yes (10 bar 30 mins) |
| IP69 | Yes |

Temperature range

Static applications: -65°C to +150°C
 Moving applications: -45°C to +150°C

UV resistance

-

Fitting characteristics

This applies to the Type U coupler only




Metallic conduit systems



Type LFH-SP & SP - Adaptasteel

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

Type LFH-SP - Adaptasteel


| | Part No | 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 | Fire Performance & EMI Screen |
|---|-----------------------|-------------------------------|---|---|------------------------------------|
|  EN45545-2 HL3 - R22 & R23 | For use with: Type SP | | Static applications: -25°C to +90°C | High | Self extinguishing Halogen free |
| | IP54 | Type SP - Type A, B, C, E & F | Moving applications: -5°C to +105°C | | |
| | IP65 | Type SP - Type M & C90 | Flexibility & fatigue life High flexibility - Medium fatigue life |  | |

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

Type SP - Adaptasteel

| | Part No | 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.

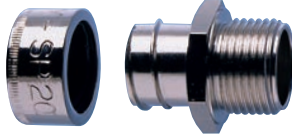
| Approvals | IP rating | Appropriate fitting | Temperature range | UV resistance |
|---|-----------------------|-------------------------------|---|--|
|  | For use with: Type SP | | Static applications: -25°C to +70°C | Very high |
| | IP54 | Type SP - Type A, B, C, E & F | Moving applications: -5°C to +90°C | |
| | IP65 | Type SP - Type M & C90 | Flexibility & fatigue life High flexibility - Medium fatigue life | Fire Performance & EMI Screen Self extinguishing |


Metallic conduit systems

Type A, B, & C90 - Adaptasteel

- **Type A / M** - Straight fitting - fixed external male thread
- For insertion into knockouts using a locknut
- **Type B** - Straight fitting - Fixed external male thread
- For insertion into threaded entries & knockouts using a locknut
- **Type F** - Straight swivel fitting - For external threads and other fittings
- Material: Nickel Plated Brass

Type A - Adaptasteel

| | Part No | 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 |

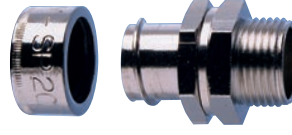
| Approvals | IP Rating | Appropriate Conduit |
|---|-------------------------------------|---------------------|
|  | | |
| | For use with: Type SP / SN / LFH-SP | |
| | IP54 | Yes |


Temperature Range

Static Applications: -50°C to +300°C

Moving Applications: -45°C to +250°C

Type B - Adaptasteel

| | Part No | 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 |

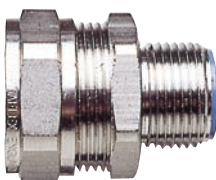
| Approvals | IP Rating | Appropriate Conduit |
|---|----------------------------------|---------------------|
|  | | |
| | For use with: Type / SN / LFH-SP | |
| | IP54 | Yes |


Temperature Range

Static Applications: -50°C to +300°C

Moving Applications: -45°C to +250°C

Type M - Adaptasteel

| | Part No | 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 |

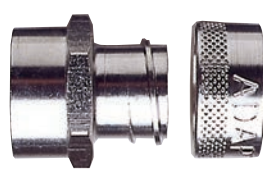
Temperature Range


Static Applications: -50°C to +150°C

Moving Applications: -45°C to +150°C



Type F - Adaptasteel

| | Part No | 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

Metallic conduit systems




Type S & SS - Adaptasteel

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

Type SS - Adaptasteel


| | Part No | 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 | Fire Performance & EMI Screen |
|---|----------------------|---------------------------|---------------------------------------|---------------|--|
|   | For use with: Type S | | Static applications: -50°C to +350°C | Very high |  |
| | IP40 | Type S - Type A, B, F & C | Moving applications: -45°C to +250°C | | |
| | | | Flexibility & fatigue life | | |
| | | | High flexibility - High fatigue life | | |

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

Type S - Adaptasteel

| | Part No | 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.

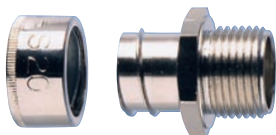
| Approvals | IP rating | Appropriate fitting | Temperature range | UV resistance | Fire Performance & EMI Screen |
|---|----------------------|---------------------------|---------------------------------------|---------------|---|
|   | For use with: Type S | | Static applications: -50°C to +300°C | Very high |  |
| | IP40 | Type S - Type A, B, F & C | Moving applications: -45°C to +250°C | | |
| | | | Flexibility & fatigue life | | |
| | | | High flexibility - High fatigue life | | |

Metallic conduit systems

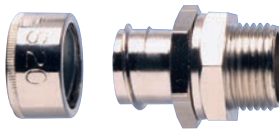
Type A, B, C & F - Adaptasteel


- **Type A** - Straight fitting - fixed external male thread
- For insertion into knockouts using a locknut
- Order locknuts separately
- Material: Nickel Plated Brass
- **Type B** - Straight fitting - swivel external male thread
- For insertion into threaded entries & knockouts using a locknut (order locknuts separately)
- Material: Nickel Plated Brass


Type A - Adaptasteel

| | Part No | 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 |

Type B - Adaptasteel

| | Part No | 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 | |


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


- Straight fitting - swivel external male thread


Type C - Adaptasteel

| | Part No | 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 |

Type F - Adaptasteel

| | Part No | 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 |

| 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 |

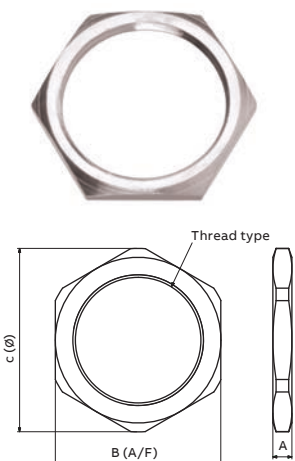
| Temperature Range |
|--------------------------------------|
| Static Applications: -50°C to +300°C |

Metallic conduit systems

Accessories

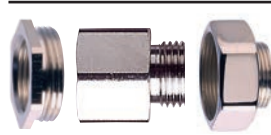
Stainless steel locknut

Female threaded locknut / Materials: 316 stainless steel

| | Part no. | Thread size | Nominal dimensions (mm) | | |
|---|---------------|-------------|-------------------------|------|------|
| | | | A | B | C |
|  | Metric | | | | |
| | LNSS/M16 | M16 x 1.5 | 3.0 | 20.0 | 21.1 |
| | LNSS/M20 | M20 x 1.5 | 3.5 | 24.0 | 26.6 |
| | LNSS/M25 | M25 x 1.5 | 4.0 | 30.0 | 33.2 |
| | LNSS/M32 | M32 x 1.5 | 5.0 | 36.0 | 39.9 |
| | LNSS/M40 | M40 x 1.5 | 5.0 | 47.2 | 52.3 |
| | LNSS/M50 | M50 x 1.5 | 5.0 | 60.3 | 66.5 |
| | LNSS/M63 | M63 x 1.5 | 6.0 | 69.8 | 77.6 |
| | NPSL | | | | |
| | LNSS/038 | 3/8" | 3.0 | 20.0 | 21.1 |
| | LNSS/050 | 1/2" | 3.0 | 27.0 | 30.0 |
| | LNSS/075 | 3/4" | 3.5 | 30.0 | 33.2 |
| | LNSS/100 | 1" | 5.0 | 38.0 | 42.0 |
| | LNSS/125 | 1 1/4" | 5.5 | 52.0 | 57.5 |
| LNSS/150 | 1 1/2" | 6.0 | 60.0 | 66.5 | |
| LNSS/200 | 2" | 7.0 | 69.8 | 77.0 | |

Enlargers, Reducers, Converters

Materials: Nickel Plated Brass

| | External thread | Internal thread | | | | | | |
|---|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | To M10 | To M12 | To M16 | To M20 | To M25 | To M32 | To M40 |
|  | M16 | - | B/M16-M12/R | - | B/M16-M20/E | - | - | - |
| | M20 | B/M20-M10/R | B/M20-M12/R | B/M20-M16/R | - | B/M20-M25/E | - | - |
| | M25 | - | - | - | B/M25-M20/R | - | B/M25-M32/E | - |
| | M32 | - | - | - | - | B/M32-M25/R | - | - |
| | M40 | - | - | - | - | - | B/M40-M32/R | - |
| | M50 | - | - | - | - | - | - | B/M50-M40/R |

Type P

P-clip conduit support /
Materials: Plated Steel construction with PVC Insert

| Plated steel Part No | Nominal conduit size (mm) |
|----------------------|---------------------------|
| PCLIP/10 | 10 |
| PCLIP/12 | 12 |
| PCLIP/16 | 16 |
| PCLIP/20 | 20 |
| PCLIP/25 | 25 |
| PCLIP/32 | 32 |
| PCLIP/40 | 40 |
| PCLIP/50 | 50 |
| PCLIP/63 | 63 |
| PCLIP/75 | 75 |

Female Coupler

Brass internal female coupler /
Materials: Nickel plated brass

| Part No | Metric thread | Part No | Metric thread |
|---------|---------------|---------|---------------|
| B/M16/C | M16 | B/M40/C | M40 |
| B/M20/C | M20 | B/M50/C | M50 |
| B/M25/C | M25 | B/M63/C | M63 |
| B/M32/C | M32 | B/M75/C | M75 |

Conduit cutting tool

Order Code

CUT-VICE



Features

Cut-vice offers the ability to produce a clean cut for conduit sizes 16mm to 40mm.

Place the conduit along the vice body and tighten the clamp. Holding the conduit and integral handle together, insert a hacksaw blade into the guide and cut. For braided conduit, wrap adhesive tape around the cutting point to secure braid. Remove tape after cutting.

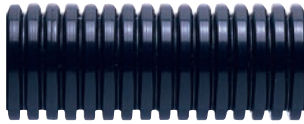
Non-metallic conduit systems

Type PR & PA

Type PR

Standard weight conduit / Materials: Modified polyamide (nylon) 6 / Colour: Black (BL) only

| Part no. | Nominal conduit size (mm) | NW conduit size (mm) | Conduit pitch | Outside diameter (mm) | Inside diameter (mm) | Minimum bend radius (mm) | Reel length (m) |
|---------------|---------------------------|----------------------|---------------|-----------------------|----------------------|--------------------------|-----------------|
| PRFS13/BL/50M | 10 | 7.5 | Fine | 10.0 | 6.2 | 20 | 50 |
| PRFS16/BL/50M | 13 | 10 | Fine | 13.0 | 9.9 | 30 | 50 |
| PRFS21/BL/50M | 16 | 13 | Fine | 15.8 | 11.7 | 35 | 50 |
| PRCS21/BL/50M | 21 | 17 | Fine | 21.2 | 16.6 | 40 | 50 |
| PRCS28/BL/50M | 28 | 23 | Coarse | 28.5 | 21.7 | 50 | 50 |
| PRCS34/BL/50M | 34 | 29 | Coarse | 34.5 | 27.7 | 60 | 50 |
| PRCS42/BL/25M | 42 | 36 | Coarse | 42.5 | 35.5 | 65 | 25 |
| PRCS54/BL/25M | 54 | 48 | Coarse | 54.5 | 46.6 | 75 | 25 |



If interested in different coil lengths, do not hesitate to inquire.

Approvals



EN45545-2 HL3 - R22 & R23

IP rating

Appropriate fitting

For use with: PC / ATS / Adaptalok AL / Adaptaseal / Adapting

IP40 Adaptating

IP66 PC, ATS, Adaptalok AL, Adaptaseal

IP67 PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal

IP68 PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal

IP69 PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal

Temperature range

Static applications: -40°C to +120°C

Moving applications: -5°C to +120°C

Flexibility & fatigue life

High flexibility - Medium fatigue life

Fire performance & EMI screen

Self extinguishing

Halogen free

UV resistance

Very high



Type PA - H

Heavy weight conduit / Materials: Polyamide (nylon) 6 / Colour: Black (BL), Grey (GR)

| Part No | Nominal conduit size (mm) | NW conduit size (mm) | Conduit pitch | Outside diameter (mm) | Inside diameter (mm) | Minimum bend radius (mm) | Reel length (m) |
|----------------|---------------------------|----------------------|---------------|-----------------------|----------------------|--------------------------|-----------------|
| PAFH13/BL/50M* | 13 | 10 | Fine | 13.0 | 9.0 | 35 | 50 |
| PAFH16/BL/50M | 16 | 13 | Fine | 15.8 | 11.3 | 45 | 50 |
| PACH21/BL/50M | 21 | 17 | Coarse | 21.2 | 14.5 | 60 | 50 |
| PACH28/BL/50M | 28 | 23 | Coarse | 28.5 | 21.3 | 70 | 50 |
| PACH34/BL/25M | 34 | 29 | Coarse | 34.5 | 26.8 | 75 | 50 |
| PACH42/BL/25M | 42 | 36 | Coarse | 42.5 | 34.6 | 90 | 25 |
| PACH54/BL/25M | 54 | 48 | Coarse | 54.5 | 46.0 | 95 | 25 |



For grey color version state "GR" instead of "BL" in Part no. If interested in different coil lengths, do not hesitate to inquire.

*These parts are not covered by the UR certification.

Approvals



EN45545- HL2

IP rating

Appropriate fitting

For use with: Type PC / ATS / Adaptalok AL / Adaptaseal / Adapting

IP40 Adaptating

IP66 PC, ATS, Adaptalok AL, Adaptaseal

IP67 PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal

IP68 PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal

Temperature range

Static applications: -40°C to +120°C

Moving applications: -5°C to +120°C

Flexibility & fatigue life

High flexibility - High fatigue life

Fire performance & EMI screen

Self extinguishing

Halogen free

UV resistance

Very high



Non-metallic conduit systems

Type PA & PA-Slit

Type PA - S

Standard weight conduit / Materials: Polyamide (nylon) 6 / Colour: Black (BL), Grey (GR)

| Part No | Nominal conduit size (mm) | NW conduit size | Conduit pitch | Outside diameter (mm) | Inside diameter (mm) | Minimum bend radius (mm) | Reel length (m) |
|----------------|---------------------------|-----------------|---------------|-----------------------|----------------------|--------------------------|-----------------|
| PAFS10/BL/50M* | 10 | 7.5 | Fine | 10.0 | 6.5 | 15 | 50 |
| PAFS13/BL/50M* | 13 | 10 | Fine | 13.0 | 9.6 | 25 | 50 |
| PAFS16/BL/50M | 16 | 13 | Fine | 15.8 | 11.8 | 35 | 50 |
| PAFS21/BL/50M | 21 | 17 | Fine | 21.2 | 16.5 | 45 | 50 |
| PAFS28/BL/50M | 28 | 23 | Fine | 28.5 | 22.6 | 50 | 50 |
| PACS28/BL/50M | 28 | 23 | Coarse | 28.5 | 21.7 | 50 | 50 |
| PAFS34/BL/50M | 34 | 29 | Fine | 34.5 | 28.8 | 60 | 50 |
| PACS34/BL/50M | 34 | 29 | Coarse | 34.5 | 27.7 | 60 | 50 |
| PACS42/BL/25M | 42 | 36 | Coarse | 42.5 | 35.2 | 65 | 25 |
| PACS48/BL/25M | 48 | 42 | Coarse | 48.2 | 40.9 | 70 | 25 |
| PACS54/BL/25M | 54 | 48 | Coarse | 54.5 | 46.5 | 75 | 25 |
| PACS80/BL/10M | 80 | 70 | Coarse | 79.3 | 67.0 | 160 | 10 |
| PACS106/BL/10M | 106 | 95 | Coarse | 106.0 | 91.5 | 210 | 10 |



For grey color version state "GR" instead of "BL" in Part no. If interested in different coil lengths, do not hesitate to inquire.
*These parts are not covered by the UR certification.

Approvals



EN45545- HL2

IP rating

Appropriate fitting

For use with: Type PC / ATS / Adaptalok AL / Adaptaseal / Adaptaring

| | |
|------|--|
| IP40 | Adaptaring & Jumbo |
| IP65 | Adaptalok AL Jumbo + SK Seal |
| IP66 | PC, ATS, Adaptalok AL, Adaptaseal |
| IP67 | PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal |
| IP68 | PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal |
| IP69 | PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal |

Temperature range

Static applications: -40°C to +120°C

Moving applications: -25°C to +150°C

Flexibility & fatigue life

High flexibility – High fatigue life

Fire performance & EMI screen

Self extinguishing

Halogen free



Very high

Type PA-Slit

Slit conduit / Materials: Polyamide (nylon) 6 / Colour: Black (BL) only

| Part no. | Nominal conduit size (mm) | NW conduit size | Conduit pitch | Outside diameter (mm) | Inside diameter (mm) | Minimum bend radius (mm) | Reel length (m) |
|-----------------|---------------------------|-----------------|---------------|-----------------------|----------------------|--------------------------|-----------------|
| PAFL13-S/BL/50M | 13 | 10 | Fine | 13.0 | 10.0 | 25 | 50 |
| PAFL16-S/BL/50M | 16 | 13 | Fine | 15.8 | 11.9 | 35 | 50 |
| PAFL21-S/BL/50M | 21 | 17 | Fine | 21.2 | 16.8 | 45 | 50 |
| PACL28-S/BL/50M | 28 | 23 | Coarse | 28.5 | 22.2 | 50 | 50 |
| PACL34-S/BL/50M | 34 | 29 | Coarse | 34.5 | 27.9 | 60 | 50 |
| PACL42-S/BL/25M | 42 | 36 | Coarse | 42.5 | 35.2 | 65 | 25 |
| PACL54-S/BL/25M | 54 | 48 | Coarse | 54.5 | 46.9 | 75 | 25 |



If interested in different coil lengths, do not hesitate to inquire.

Approvals



IP rating

Appropriate fitting

N/A

Temperature range

Static applications: -40°C to +120°C

Moving applications: -5°C to +120°C

Flexibility & fatigue life

High flexibility – High fatigue life

Fire performance & EMI screen

Self extinguishing

Halogen free


Very high

Non-metallic conduit systems

Type A, C90 & 45 - Adaptalok ATSTM™


- Straight, 45° and 90° fittings available - 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 ATSTM™

| | Part No | 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.

Type 45 - Adaptalok ATSTM™

| | Part No | 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.

Type C90 - Adaptalok ATSTM™

| | Part No | 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.

Approvals



IP rating

| IP rating | Appropriate conduit |
|---|--|
| For use with: Type PA / PR / PADL / PF | |
| IP40 | Yes |
| IP65 | Yes |
| IP68 | Yes 4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits |
| IP69 | Yes |

Temperature Range

Static Applications: -50°C to +120°C


Moving Applications: -45°C to +120°C

Non-metallic conduit systems

Type SA, CS90 & S45 - Adaptalok ATS™


- Straight, 45° and 90° fittings available - metal 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 SA - Adaptalok ATS™

| | Part No | 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.

Type S45 - Adaptalok ATS™


| | Part No | 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.

Type CS90 - Adaptalok ATS™

| | Part No | 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 | IP rating | Appropriate conduit |
|--|--|-------------------------|--|
|  | For use with: Type PA / PR / PADL / PF | IP40 | Yes |
| | | IP65 | Yes |
| | | IP68 | Yes |
| | | | 4 bar 30mins with Heavy Weight Conduits |
| | | | 2 bar 30mins with Standard Weight Conduits |
| | | 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 A & C90 - Adaptalok

- Straight, 45° and 90° fittings available - 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

| | Part No | 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 |

Type C90 - Adaptalok

| | Part No | 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.

Type 45 - Adaptalok

| | Part No | 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 |

Approvals



IP rating

| IP rating | Appropriate conduit |
|--------------------------------------|---------------------|
| For use with: Type PA / CP / PR / PF | |
| IP66 | Yes |
| IP67 | Yes + ALS Seal |
| IP68 | Yes + ALS Seal |
| IP69 | Yes + ALS Seal |

Temperature Range

Static Applications: -50 °C to +120 °C
 Moving Applications: -45 °C to +120 °C

Fitting Characteristics




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

Non-metallic conduit systems


Type A & C90 - Adaptalok

- Straight, 45° and 90° fittings available - swivel 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 SA - Adaptalok


| | Part No | 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 |

Type CS90 - Adaptalok

| | Part No | 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.

Type S45 - Adaptalok

| | Part No | 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



NF

IP rating

For use with: Type PA / PI / CP / PR / PF

| IP rating | Appropriate conduit |
|-----------|---------------------|
| IP66 | Yes |
| IP67 | Yes + ALS Seal |
| IP68 | Yes + ALS Seal |
| IP69 | Yes + ALS Seal |

Temperature Range

Static Applications: -50°C to +120°C

Moving Applications: -45°C to +120°C

Non-metallic conduit systems

Type KF PVCu conduits, Type KFA & Coupler - Korifit

Type KF

Lightweight, Standard weight & Medium weight conduit /
Materials: PVCu / Colour: Grey (GR), White (W), Black (BL)

| Part No | Nominal conduit size (mm) | NW conduit size (mm) | Conduit pitch | Outside diameter (mm) | Inside diameter (mm) | Min. bend radius (mm) | Reel length (m) |
|--|---------------------------|----------------------|---------------|-----------------------|----------------------|-----------------------|-----------------|
| Lightweight conduit - Grey (GR) | | | | | | | |
| KFL16/50M | 16 | 13 | Fine | 15.8 | 12.1 | 25 | 50 |
| KFL20/50M | 20 | 17 | Fine | 19.8 | 14.5 | 30 | 50 |
| KFL25/50M | 25 | 22 | Fine | 24.8 | 19.9 | 40 | 50 |
| Standard weight conduit - White (W) | | | | | | | |
| KFS16/W/50M | 16 | 13 | Fine | 15.8 | 11.9 | 25 | 50 |
| KFS20/W/50M | 20 | 17 | Fine | 19.8 | 14.3 | 30 | 50 |
| KFS25/W/50M | 25 | 22 | Fine | 24.8 | 19.7 | 40 | 50 |
| Medium weight conduit - Black (BL) | | | | | | | |
| KFM16/50M | 16 | 13 | Fine | 15.8 | 11.9 | 25 | 50 |
| KFM20/50M | 20 | 17 | Fine | 19.8 | 14.3 | 30 | 50 |
| KFM25/50M | 25 | 22 | Fine | 24.8 | 19.7 | 40 | 50 |

Approvals



IP rating

For use with: Korifit KC & KF

IP40

Appropriate fitting

Korifit KC

IP65

Korifit KC

Temperature range

Static applications: -5°C to +60°C

Moving applications: -5°C to +60°C

UV resistance

High

Flexibility & fatigue life

Pliable - Low fatigue life

Fire performance & EMI screen

Self extinguishing

Type KFA - Korifit

Straight fitting - fixed external male thread /
Materials: Polyamide (Nylon) 66 /
Colours: Black (BL), Grey (GR) or White (W)

| Part No | 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

Straight one piece coupler /
Materials: Polyamide (Nylon) 66 /
Colour: White (W) only

| Part No | Nominal Conduit Size | NW Conduit Size |
|---------|----------------------|-----------------|
| KF2020 | 20mm | 17 |

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

Approvals



IP rating

For use with: Korifit Type KF

IP65

Appropriate conduit

Yes

Temperature range

Static applications: -5°C to +60°C

Moving applications: -5°C to +60°C

Fitting characteristics




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


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

Type KC/A - Korifit

| | Part No | 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.

Type KC/C90 - Korifit

| | Part No | 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

For use with: Korifit Type KF

IP40

Appropriate conduit

Yes

Temperature range

Static applications: -5°C to +60°C

Moving applications: -5°C to +60°C

Fitting characteristics



Non-metallic conduit systems

Accessories

- Inspection T-piece
- Material: Polyamide (Nylon) 66
- Colour: Black (BL) only

Type T



| Part no. | Nominal conduit size (mm) |
|--------------|---------------------------|
| ASF10X3/T/BL | 10 |
| ASF13X3/T/BL | 13 |
| ASF16X3/T/BL | 16 |
| ASF21X3/T/BL | 21 |
| ASC21X3/T/BL | 21 |
| ASF28X3/T/BL | 28 |
| ASC28X3/T/BL | 28 |
| ASF34X3/T/BL | 34 |
| ASC34X3/T/BL | 34 |

For connection to corrugated flexible conduit.

Approvals



IP rating

Appropriate conduit

Temperature range

For use with: Type PA / CP / PR / PF

Static applications: -50°C to +120°C

IP66 Yes

Moving applications: -45°C to +120°C

IP67 Yes

Type AC

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



| Part No | Colour | | Impact Modified (Black only) | Nominal Conduit Size |
|---------|--------|---------|------------------------------|----------------------|
| | Black | Grey | | |
| ACB10 | | ACG10 | - | 10mm |
| ACB13 | | ACG13 | ACB13/ST | 13mm |
| ACB16 | | ACG16 | ACB16/ST | 16mm |
| ACB21V2 | | ACG21V2 | ACB21V2/ST | 21mm |
| ACB28 | | ACG28 | ACB28/ST | 28mm |
| ACB34 | | ACG34 | ACB34/ST | 34mm |
| ACB42V2 | | ACG42V2 | ACB42V2/ST | 42mm |
| ACB54V2 | | ACG54V2 | ACB54V2/ST | 54mm |

Type LNP

Nylon Locknuts / Material: Polyamide (nylon) 6 / Colour: Black (BL), Grey (GR)



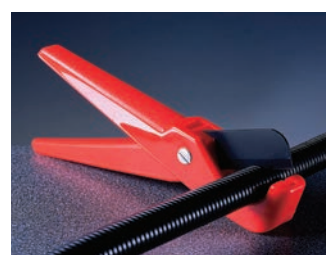
| Part No | Colour | | Metric Thread |
|----------|--------|----------|---------------|
| | Black | Grey | |
| LNPB/M12 | | | M12 |
| LNPB/M16 | | LNPG/M16 | M16 |
| LNPB/M20 | | LNPG/M20 | M20 |
| LNPB/M25 | | LNPG/M25 | M25 |
| LNPB/M32 | | LNPG/M32 | M32 |
| LNPB/M40 | | LNPG/M40 | M40 |
| LNPB/M50 | | LNPG/M50 | M50 |
| LNPB/M63 | | LNPG/M63 | M63 |

Kwikcut

Kwikcut cutting tool

Part no.

KWIKCUT



Kwikcut is the ideal cutting tool for non-metallic conduits (PA, PF, PR, PADL, CP, KFL, KFS, KFM, PP, XF & PK) up to 32mm.

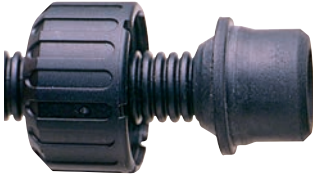
Place the conduit between the cutting blade and lower support, squeeze the handles and rotate the conduit for a clean, easy cut. Spare blades are available.

Non-metallic conduit systems




Accessories

- Reducing kit
- Materials: Polyamide (Nylon) 66 & neoprene rubber
- Colour: Black (BL) only

Type RK

| | Nominal conduit size (mm) | Conduit pitch | Part no. | | | | |
|---|---------------------------|---------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | Reducing to conduit size 10 | Reducing to conduit size 13 | Reducing to conduit size 16 | Reducing to conduit size 21 | Reducing to conduit size 28 |
|  | 10 | Fine | - | - | - | - | - |
| | 13 | Fine | RK13-10 | - | - | - | - |
| | 16 | Fine | RK16-10 | RK16-13 | - | - | - |
| | 21 | Fine | RK21-10 | RK21-13 | RK21-16 | - | - |
| | 21 | Coarse | RK21-10 | RK21-13 | RK21-16 | - | - |
| | 28 | Fine | - | RK28-13 | RK28-16 | RK28-21 | - |
| | 28 | Coarse | - | RK28-13 | RK28-16 | RK28-21 | - |
| | 34 | Fine | - | - | - | RK34-21 | RK34-28 |
| | 34 | Coarse | - | - | - | RK34-21 | RK34-28 |

For connection to a reduced conduit size.

| Approvals | IP rating | Appropriate conduit | Temperature range |
|---|--------------------------------------|---------------------|--------------------------------------|
|    | For use with: Type PA / CP / PR / PF | | Static applications: -40°C to +120°C |
| | IP66 | Yes | Moving applications: -5°C to +120°C |
| | IP67 | Yes | |
| | IP68 | Yes (2 bar 30mins) | |
| | IP69 | Yes | |

End sleeves

Materials: Polyamide (nylon) 6 / Colour: Black (BL) only

| Part No | Nominal conduit size (mm) |
|---------|---------------------------|
| GZ9 | 13 |
| GZ11 | 16 |
| GZ13 | 21 |
| GZ21 | 28 |
| GZ29 | 34 |
| GZ36 | 42 |

For sealing cables to non-metallic conduit

Removal tool for Adaptalok fittings

Materials: Polyamide (nylon) 6 / Colour: Black (BL) only

| Part No | Adaptalok fitting size (mm) |
|---------|-----------------------------|
| AL13RT | 13 |
| AL16RT | 16 |
| AL21RT | 21 |
| AL28RT | 28 |
| AL34RT | 34 |
| AL42RT | 42 |
| AL54RT | 54 |

To provide easy removal of Adaptalok & ATS Fittings.

Brass general purpose cable gland

BCG Series



Brass general purpose cable gland

- Low profile cable glands
- Wide cable clamping range
- Good corrosion resistance

BCG Series - Brass general purpose cable gland

| Approvals | Materials | Temperature range | IP Rating |
|-----------|----------------------------------|---|-------------------------|
| EN 62444 | Nickel plated brass construction | Normal use: -20°C to +100°C (-4°F to +212°F) | IP66 |
| UL514B | Chloroprene seals | Short term: -30°C to +150°C (-22°F to +302°F) | IP68 (5-Bar 30 mins) |
| | Colour | | NEMA 4 |
| | Self / Nickel | | |




Dimensions

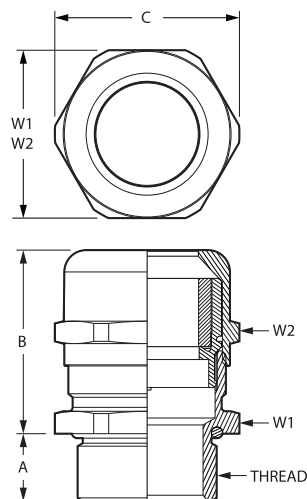
| Metric thread | Part no. | Metric thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|---------------|--------------------|---------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
| | BCG-M121 | M12x1.5 | 2.0 | 5.0 | 6.0 | 22.0 | 15.5 | 14.0 | 14.0 |
| | | | 0.079 | 0.197 | 0.236 | 0.866 | 0.610 | 0.551 | 0.551 |
| | BCG-M122 (cURus) | M12x1.5 | 3.0 | 6.5 | 6.0 | 22.0 | 15.5 | 14.0 | 14.0 |
| | | | 0.118 | 0.256 | 0.236 | 0.866 | 0.610 | 0.551 | 0.551 |
| | BCG-M122-L | M12x1.5 | 3.0 | 6.5 | 12.0 | 22.0 | 15.5 | 14.0 | 14.0 |
| | | | 0.118 | 0.256 | 0.472 | 0.866 | 0.610 | 0.551 | 0.551 |
| | BCG-M161 | M16x1.5 | 2.0 | 6.0 | 7.0 | 23.0 | 20.0 | 18.0 | 17.0 |
| | | | 0.079 | 0.236 | 0.276 | 0.906 | 0.787 | 0.709 | 0.669 |
| | BCG-M161-L | M16x1.5 | 2.0 | 6.0 | 12.0 | 23.0 | 20.0 | 18.0 | 17.0 |
| | | | 0.079 | 0.236 | 0.472 | 0.906 | 0.787 | 0.709 | 0.669 |
| | BCG-M162 (cURus) | M16x1.5 | 4.0 | 8.0 | 7.0 | 23.0 | 20.0 | 18.0 | 17.0 |
| | | | 0.157 | 0.315 | 0.276 | 0.906 | 0.787 | 0.709 | 0.669 |
| | BCG-M162-L | M16x1.5 | 4.0 | 8.0 | 12.0 | 23.0 | 20.0 | 18.0 | 17.0 |
| | | | 0.157 | 0.315 | 0.472 | 0.906 | 0.787 | 0.709 | 0.669 |
| | BCG-M163 (cURus) | M16x1.5 | 5.0 | 10.0 | 7.0 | 28.5 | 22.0 | 20.0 | 20.0 |
| | | | 0.197 | 0.394 | 0.276 | 1.122 | 0.866 | 0.787 | 0.787 |
| | BCG-M163-L (cURus) | M16x1.5 | 5.0 | 10.0 | 12.0 | 28.5 | 22.0 | 20.0 | 20.0 |
| | | | 0.197 | 0.394 | 0.472 | 1.122 | 0.866 | 0.787 | 0.787 |
| | BCG-M201 | M20x1.5 | 5.0 | 9.0 | 8.0 | 26.0 | 24.5 | 22.0 | 22.0 |
| | | | 0.197 | 0.354 | 0.315 | 1.024 | 0.965 | 0.866 | 0.866 |
| | BCG-M201-L | M20x1.5 | 5.0 | 9.0 | 12.0 | 26.0 | 24.5 | 22.0 | 22.0 |
| | | | 0.197 | 0.354 | 0.472 | 1.024 | 0.965 | 0.866 | 0.866 |
| | BCG-M202 (cULus) | M20x1.5 | 6.0 | 12.0 | 8.0 | 26.5 | 24.5 | 22.0 | 22.0 |
| | | | 0.236 | 0.472 | 0.315 | 1.043 | 0.965 | 0.866 | 0.866 |

Brass general purpose cable gland

BCG Series

Dimensions

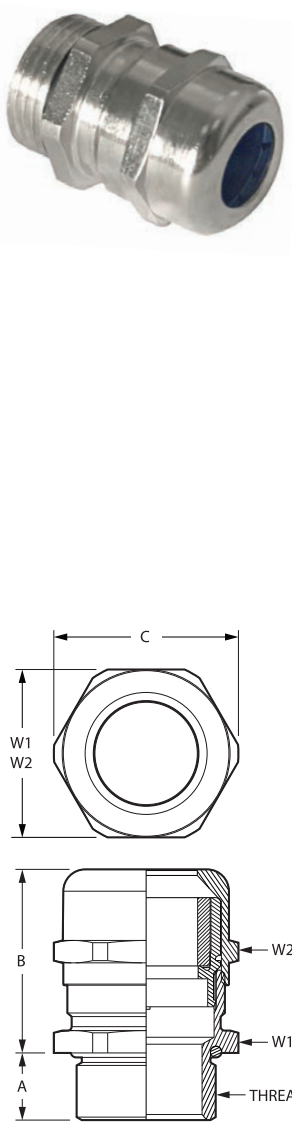
| Metric thread | Part no. | Metric thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|---|--------------------|---------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
|  | BCG-M202-L (cULus) | M20x1.5 | 6.0 | 12.0 | 12.0 | 26.0 | 24.5 | 22.0 | 22.0 |
| | | | 0.236 | 0.472 | 0.472 | 1.024 | 0.965 | 0.866 | 0.866 |
| | BCG-M203 (cULus) | M20x1.5 | 10.0 | 14.0 | 8.0 | 28.0 | 26.8 | 24.0 | 24.0 |
| | | | 0.394 | 0.551 | 0.315 | 1.102 | 1.055 | 0.945 | 0.945 |
| | BCG-M203-L | M20x1.5 | 10.0 | 14.0 | 12.0 | 28.0 | 26.8 | 24.0 | 24.0 |
| | | | 0.394 | 0.551 | 0.472 | 1.102 | 1.055 | 0.945 | 0.945 |
| | BCG-M251 | M25x1.5 | 7.0 | 12.0 | 8.0 | 28.0 | 29.8 | 27.0 | 24.0 |
| | | | 0.276 | 0.472 | 0.315 | 1.102 | 1.173 | 1.063 | 0.945 |
| | BCG-M251-L | M25x1.5 | 7.0 | 12.0 | 12.0 | 28.0 | 29.8 | 27.0 | 24.0 |
| | | | 0.276 | 0.472 | 0.472 | 1.102 | 1.173 | 1.063 | 0.945 |
| | BCG-M252 | M25x1.5 | 9.0 | 16.0 | 8.0 | 33.0 | 33.0 | 30.0 | 30.0 |
| | | | 0.354 | 0.630 | 0.315 | 1.299 | 1.299 | 1.181 | 1.181 |
| | BCG-M252-L | M25x1.5 | 9.0 | 16.0 | 12.0 | 33.0 | 33.0 | 30.0 | 30.0 |
| | | | 0.354 | 0.630 | 0.472 | 1.299 | 1.299 | 1.181 | 1.181 |
| | BCG-M253 (cULus) | M25x1.5 | 10.0 | 14.0 | 8.0 | 28.0 | 29.8 | 27.0 | 24.0 |
| | | | 0.394 | 0.551 | 0.315 | 1.102 | 1.173 | 1.063 | 0.945 |
| | BCG-M253-L | M25x1.5 | 10.0 | 14.0 | 12.0 | 28.0 | 29.8 | 27.0 | 24.0 |
| | | | 0.394 | 0.551 | 0.472 | 1.102 | 1.173 | 1.063 | 0.945 |
| | BCG-M254 (cULus) | M25x1.5 | 13.0 | 18.0 | 8.0 | 33.0 | 32.0 | 30.0 | 30.0 |
| | | | 0.512 | 0.709 | 0.315 | 1.299 | 1.260 | 1.181 | 1.181 |
| | BCG-M254-L | M25x1.5 | 13.0 | 18.0 | 12.0 | 33.0 | 32.0 | 30.0 | 30.0 |
| | | | 0.512 | 0.709 | 0.472 | 1.299 | 1.260 | 1.181 | 1.181 |
| | BCG-M321 | M32x1.5 | 9.0 | 16.0 | 9.0 | 33.0 | 37.5 | 34.0 | 30.0 |
| | | | 0.354 | 0.630 | 0.354 | 1.299 | 1.476 | 1.339 | 1.181 |
| BCG-M321-L | M32x1.5 | 9.0 | 16.0 | 15.0 | 33.0 | 37.5 | 34.0 | 30.0 | |
| | | 0.354 | 0.630 | 0.591 | 1.299 | 1.476 | 1.339 | 1.181 | |
| BCG-M322 | M32x1.5 | 12.0 | 20.0 | 9.0 | 44.0 | 44.5 | 40.0 | 40.0 | |
| | | 0.472 | 0.787 | 0.354 | 1.732 | 1.752 | 1.575 | 1.575 | |
| BCG-M322-L | M32x1.5 | 12.0 | 20.0 | 15.0 | 44.0 | 44.5 | 40.0 | 40.0 | |
| | | 0.472 | 0.787 | 0.591 | 1.732 | 1.752 | 1.575 | 1.575 | |
| BCG-M323 (cULus) | M32x1.5 | 13.0 | 18.0 | 9.0 | 33.0 | 37.5 | 34.0 | 30.0 | |
| | | 0.512 | 0.709 | 0.354 | 1.299 | 1.476 | 1.339 | 1.181 | |
| BCG-M323-L | M32x1.5 | 13.0 | 18.0 | 15.0 | 33.0 | 37.5 | 34.0 | 30.0 | |
| | | 0.512 | 0.709 | 0.591 | 1.299 | 1.476 | 1.339 | 1.181 | |
| BCG-M324 (cULus) | M32x1.5 | 15.0 | 21.0 | 8.0 | 36.0 | 37.0 | 34.0 | 34.0 | |
| | | 0.591 | 0.827 | 0.315 | 1.417 | 1.457 | 1.339 | 1.339 | |
| BCG-M324-L (cULus) | M32x1.5 | 15.0 | 21.0 | 15.0 | 36.0 | 37.0 | 34.0 | 34.0 | |
| | | 0.591 | 0.827 | 0.591 | 1.417 | 1.457 | 1.339 | 1.339 | |
| BCG-M325 (cULus) | M32x1.5 | 18.0 | 25.0 | 9.0 | 44.0 | 44.5 | 40.0 | 40.0 | |
| | | 0.709 | 0.984 | 0.354 | 1.732 | 1.752 | 1.575 | 1.575 | |
| BCG-M325-L | M32x1.5 | 18.0 | 25.0 | 15.0 | 44.0 | 44.5 | 40.0 | 40.0 | |
| | | 0.709 | 0.984 | 0.591 | 1.732 | 1.752 | 1.575 | 1.575 | |
| BCG-M401 | M40x1.5 | 12.0 | 20.0 | 9.0 | 38.5 | 48.5 | 43.0 | 40.0 | |
| | | 0.472 | 0.787 | 0.354 | 1.516 | 1.909 | 1.693 | 1.575 | |
| BCG-M401-L | M40x1.5 | 12.0 | 20.0 | 15.0 | 38.5 | 48.5 | 43.0 | 40.0 | |
| | | 0.472 | 0.787 | 0.591 | 1.516 | 1.909 | 1.693 | 1.575 | |
| BCG-M402 | M40x1.5 | 16.0 | 23.0 | 9.0 | 43.5 | 48.4 | 43.0 | 43.0 | |
| | | 0.630 | 0.906 | 0.354 | 1.713 | 1.906 | 1.693 | 1.693 | |
| BCG-M402-L | M40x1.5 | 16.0 | 23.0 | 15.0 | 43.5 | 48.4 | 43.0 | 43.0 | |
| | | 0.630 | 0.906 | 0.591 | 1.713 | 1.906 | 1.693 | 1.693 | |



Brass general purpose cable gland

BCG Series

Dimensions

| Metric thread | Part no. | Metric thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|--|--------------------|---------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
|  | BCG-M403 (cULus) | M40x1.5 | 19.0 | 28.0 | 9.0 | 43.5 | 48.4 | 43.0 | 43.0 |
| | | | 0.748 | 1.102 | 0.354 | 1.713 | 1.906 | 1.693 | 1.693 |
| | BCG-M403-L (cULus) | M40x1.5 | 19.0 | 28.0 | 15.0 | 43.5 | 48.4 | 43.0 | 43.0 |
| | | | 0.748 | 1.102 | 0.591 | 1.713 | 1.906 | 1.693 | 1.693 |
| | BCG-M404 (cULus) | M40x1.5 | 22.0 | 32.0 | 9.0 | 52.5 | 55.5 | 50.0 | 50.0 |
| | | | 0.866 | 1.260 | 0.354 | 2.067 | 2.185 | 1.969 | 1.969 |
| | BCG-M404-L (cULus) | M40x1.5 | 22.0 | 32.0 | 15.0 | 52.5 | 55.5 | 50.0 | 50.0 |
| | | | 0.866 | 1.260 | 0.591 | 2.067 | 2.185 | 1.969 | 1.969 |
| | BCG-M501 | M50x1.5 | 20.0 | 26.0 | 9.0 | 48.0 | 61.0 | 55.0 | 50.0 |
| | | | 0.787 | 1.024 | 0.354 | 1.890 | 2.402 | 2.165 | 1.969 |
| | BCG-M501-L (cULus) | M50x1.5 | 20.0 | 26.0 | 15.0 | 48.0 | 61.0 | 55.0 | 50.0 |
| | | | 0.787 | 1.024 | 0.591 | 1.890 | 2.402 | 2.165 | 1.969 |
| | BCG-M502 (cULus) | M50x1.5 | 22.0 | 32.0 | 9.0 | 48.0 | 61.0 | 55.0 | 50.0 |
| | | | 0.866 | 1.260 | 0.354 | 1.890 | 2.402 | 2.165 | 1.969 |
| | BCG-M502-L (cULus) | M50x1.5 | 22.0 | 32.0 | 15.0 | 48.0 | 61.0 | 55.0 | 50.0 |
| | | | 0.866 | 1.260 | 0.591 | 1.890 | 2.402 | 2.165 | 1.969 |
| | BCG-M503 (cULus) | M50x1.5 | 27.0 | 38.0 | 9.0 | 52.0 | 64.0 | 58.0 | 58.0 |
| | | | 1.063 | 1.496 | 0.354 | 2.047 | 2.520 | 2.283 | 2.283 |
| | BCG-M503-L (cULus) | M50x1.5 | 27.0 | 38.0 | 15.0 | 52.0 | 64.0 | 58.0 | 58.0 |
| | | | 1.063 | 1.496 | 0.591 | 2.047 | 2.520 | 2.283 | 2.283 |
| BCG-M504 | M50x1.5 | 34.0 | 44.0 | 9.0 | 52.8 | 75.0 | 68.0 | 64.0 | |
| | | 1.339 | 1.732 | 0.354 | 2.079 | 2.953 | 2.677 | 2.520 | |
| BCG-M504-L (cULus) | M50x1.5 | 34.0 | 44.0 | 15.0 | 52.8 | 75.0 | 68.0 | 64.0 | |
| | | 1.339 | 1.732 | 0.591 | 2.079 | 2.953 | 2.677 | 2.520 | |
| BCG-M631 | M63x1.5 | 29.0 | 35.0 | 10.0 | 54.0 | 75.0 | 68.0 | 64.0 | |
| | | 1.142 | 1.378 | 0.394 | 2.126 | 2.953 | 2.677 | 2.520 | |
| BCG-M631-L (cULus) | M63x1.5 | 29.0 | 35.0 | 18.0 | 54.0 | 75.0 | 68.0 | 64.0 | |
| | | 1.142 | 1.378 | 0.709 | 2.126 | 2.953 | 2.677 | 2.520 | |
| BCG-M632 (cULus) | M63x1.5 | 34.0 | 44.0 | 10.0 | 54.0 | 75.0 | 68.0 | 64.0 | |
| | | 1.339 | 1.732 | 0.394 | 2.126 | 2.953 | 2.677 | 2.520 | |
| BCG-M632-L (cULus) | M63x1.5 | 34.0 | 44.0 | 18.0 | 53.0 | 75.0 | 68.0 | 64.0 | |
| | | 1.339 | 1.732 | 0.709 | 2.087 | 2.953 | 2.677 | 2.520 | |
| BCG-M633 | M63x1.5 | 37.0 | 53.0 | 10.0 | 51.0 | 83.0 | 75.0 | 75.0 | |
| | | 1.457 | 2.087 | 0.394 | 2.008 | 3.268 | 2.953 | 2.953 | |
| BCG-M633-L (cULus) | M63x1.5 | 37.0 | 53.0 | 18.0 | 51.0 | 83.0 | 75.0 | 75.0 | |
| | | 1.457 | 2.087 | 0.709 | 2.008 | 3.268 | 2.953 | 2.953 | |


Dimensions

| NPT thread | Part no. | NPT thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|------------|----------|------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
| BCG-0381 | 3/8" NPT | | 2.0 | 6.0 | 11.5 | 23.0 | 21.0 | 19.0 | 17.0 |
| | | | 0.079 | 0.236 | 0.453 | 0.906 | 0.827 | 0.748 | 0.669 |
| BCG-0382 | 3/8" NPT | | 5.0 | 10.0 | 11.5 | 29.5 | 22.0 | 20.0 | 20.0 |
| | | | 0.197 | 0.394 | 0.453 | 1.161 | 0.866 | 0.787 | 0.787 |
| BCG-0501 | 1/2" NPT | | 5.0 | 9.0 | 13.0 | 25.5 | 24.5 | 22.0 | 22.0 |
| | | | 0.197 | 0.354 | 0.512 | 1.004 | 0.965 | 0.866 | 0.866 |

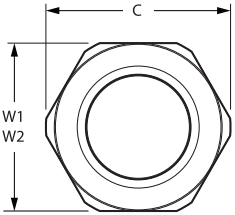
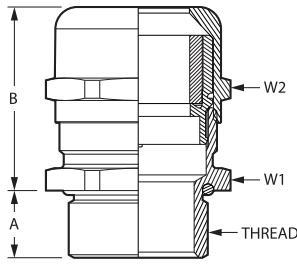
Brass general purpose cable gland

BCG Series

Dimensions

| NPT thread | Part no. | NPT thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|---|------------------|------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
|  | BCG-0502 (cULus) | 1/2" NPT | 6.0 | 12.0 | 13.0 | 25.5 | 24.5 | 22.0 | 22.0 |
| | | | 0.236 | 0.472 | 0.512 | 1.004 | 0.965 | 0.866 | 0.866 |
| | BCG-0503 | 1/2" NPT | 10.0 | 14.0 | 13.0 | 28.0 | 26.8 | 24.0 | 24.0 |
| | | | 0.394 | 0.551 | 0.512 | 1.102 | 1.055 | 0.945 | 0.945 |
| | BCG-0751 | 3/4" NPT | 9.0 | 16.0 | 13.0 | 36.0 | 33.0 | 30.0 | 30.0 |
| | | | 0.354 | 0.630 | 0.512 | 1.417 | 1.299 | 1.181 | 1.181 |
| | BCG-0752 (cULus) | 3/4" NPT | 13.0 | 18.0 | 13.0 | 36.0 | 33.0 | 30.0 | 30.0 |
| | | | 0.512 | 0.709 | 0.512 | 1.417 | 1.299 | 1.181 | 1.181 |
| | BCG-1001 | 1" NPT | 12.0 | 20.0 | 13.0 | 43.0 | 48.5 | 43.0 | 40.0 |
| | | | 0.472 | 0.787 | 0.512 | 1.693 | 1.909 | 1.693 | 1.575 |
| | BCG-1002 (cULus) | 1" NPT | 18.0 | 25.0 | 13.0 | 43.0 | 48.5 | 43.0 | 40.0 |
| | | | 0.709 | 0.984 | 0.512 | 1.693 | 1.909 | 1.693 | 1.575 |


Dimensions

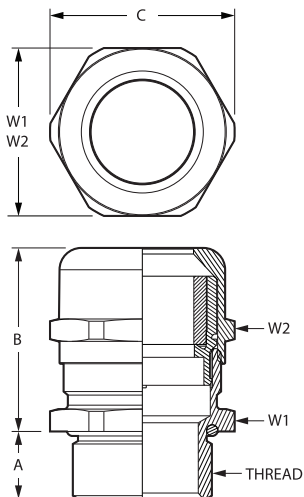
| PG thread | Part no. | PG thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|---|---------------------|-----------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
|  | BCG-PG71 | PG07 | 2.0 | 5.0 | 6.0 | 22.0 | 15.5 | 14.0 | 14.0 |
| | | | 0.079 | 0.197 | 0.236 | 0.866 | 0.610 | 0.551 | 0.551 |
| | BCG-PG71-L | PG07 | 2.0 | 5.0 | 10.0 | 22.0 | 15.5 | 14.0 | 14.0 |
| | | | 0.079 | 0.197 | 0.394 | 0.866 | 0.610 | 0.551 | 0.551 |
| | BCG-PG72 (cURus) | PG07 | 3.0 | 6.5 | 6.0 | 22.0 | 15.5 | 14.0 | 14.0 |
| | | | 0.118 | 0.256 | 0.236 | 0.866 | 0.610 | 0.551 | 0.551 |
| | BCG-PG72-L (cURus) | PG07 | 3.0 | 6.5 | 10.0 | 22.0 | 15.5 | 14.0 | 14.0 |
| | | | 0.118 | 0.256 | 0.394 | 0.866 | 0.610 | 0.551 | 0.551 |
| | BCG-PG91 | PG09 | 2.0 | 6.0 | 6.0 | 23.5 | 18.9 | 17.0 | 17.0 |
| | | | 0.079 | 0.236 | 0.236 | 0.925 | 0.744 | 0.669 | 0.669 |
| | BCG-PG91-L | PG09 | 2.0 | 6.0 | 10.0 | 23.5 | 18.9 | 17.0 | 17.0 |
| | | | 0.079 | 0.236 | 0.394 | 0.925 | 0.744 | 0.669 | 0.669 |
|  | BCG-PG92 (cURus) | PG09 | 4.0 | 8.0 | 6.0 | 23.5 | 18.9 | 17.0 | 17.0 |
| | | | 0.157 | 0.315 | 0.236 | 0.925 | 0.744 | 0.669 | 0.669 |
| | BCG-PG92-L (cURus) | PG09 | 4.0 | 8.0 | 10.0 | 23.5 | 18.9 | 17.0 | 17.0 |
| | | | 0.157 | 0.315 | 0.394 | 0.925 | 0.744 | 0.669 | 0.669 |
| | BCG-PG111 | PG11 | 3.0 | 7.0 | 6.0 | 26.0 | 22.0 | 20.0 | 20.0 |
| | | | 0.118 | 0.276 | 0.236 | 1.024 | 0.866 | 0.787 | 0.787 |
| | BCG-PG111-L | PG11 | 3.0 | 7.0 | 10.0 | 26.0 | 22.0 | 20.0 | 20.0 |
| | | | 0.118 | 0.276 | 0.394 | 1.024 | 0.866 | 0.787 | 0.787 |
| | BCG-PG112 (cURus) | PG11 | 5.0 | 10.0 | 6.0 | 26.0 | 22.0 | 20.0 | 20.0 |
| | | | 0.197 | 0.394 | 0.236 | 1.024 | 0.866 | 0.787 | 0.787 |
| | BCG-PG112-L (cURus) | PG11 | 5.0 | 10.0 | 10.0 | 26.0 | 22.0 | 20.0 | 20.0 |
| | | | 0.197 | 0.394 | 0.394 | 1.024 | 0.866 | 0.787 | 0.787 |
| | BCG-PG131 | PG13.5 | 5.0 | 9.0 | 6.5 | 24.5 | 24.5 | 22.0 | 22.0 |
| | | | 0.197 | 0.354 | 0.256 | 0.965 | 0.965 | 0.866 | 0.866 |
| | BCG-PG131-L | PG13.5 | 5.0 | 9.0 | 10.0 | 24.5 | 24.5 | 22.0 | 22.0 |
| | | | 0.197 | 0.354 | 0.394 | 0.965 | 0.965 | 0.866 | 0.866 |
| | BCG-PG132 (cULus) | PG13.5 | 6.0 | 12.0 | 6.5 | 24.5 | 24.5 | 22.0 | 22.0 |
| | | | 0.236 | 0.472 | 0.256 | 0.965 | 0.965 | 0.866 | 0.866 |

Brass general purpose cable gland

BCG Series

Dimensions

| PG thread | Part no. | PG thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|---|---------------------|-----------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
|  | BCG-PG132-L (cULus) | PG13.5 | 6.0 | 12.0 | 10.0 | 24.5 | 24.5 | 22.0 | 22.0 |
| | | | 0.236 | 0.472 | 0.394 | 0.965 | 0.965 | 0.866 | 0.866 |
| | BCG-PG161 | PG16 | 7.0 | 12.0 | 6.5 | 28.0 | 26.5 | 24.0 | 24.0 |
| | | | 0.276 | 0.472 | 0.256 | 1.102 | 1.043 | 0.945 | 0.945 |
| | BCG-PG161-L | PG16 | 7.0 | 12.0 | 10.0 | 28.0 | 26.5 | 24.0 | 24.0 |
| | | | 0.276 | 0.472 | 0.394 | 1.102 | 1.043 | 0.945 | 0.945 |
| | BCG-PG162 (cULus) | PG16 | 10.0 | 14.0 | 6.5 | 28.0 | 26.5 | 24.0 | 24.0 |
| | | | 0.394 | 0.551 | 0.256 | 1.102 | 1.043 | 0.945 | 0.945 |
| | BCG-PG162-L (cULus) | PG16 | 10.0 | 14.0 | 10.0 | 28.0 | 26.5 | 24.0 | 24.0 |
| | | | 0.394 | 0.551 | 0.394 | 1.102 | 1.043 | 0.945 | 0.945 |
| | BCG-PG211 | PG21 | 9.0 | 16.0 | 7.2 | 33.0 | 33.0 | 30.0 | 30.0 |
| | | | 0.354 | 0.630 | 0.283 | 1.299 | 1.299 | 1.181 | 1.181 |
| | BCG-PG211-L | PG21 | 9.0 | 16.0 | 10.0 | 33.0 | 33.0 | 30.0 | 30.0 |
| | | | 0.354 | 0.630 | 0.394 | 1.299 | 1.299 | 1.181 | 1.181 |
| | BCG-PG212 (cULus) | PG21 | 13.0 | 18.0 | 7.2 | 33.0 | 33.0 | 30.0 | 30.0 |
| | | | 0.512 | 0.709 | 0.283 | 1.299 | 1.299 | 1.181 | 1.181 |
| | BCG-PG212-L (cULus) | PG21 | 13.0 | 18.0 | 12.0 | 33.0 | 33.0 | 30.0 | 30.0 |
| | | | 0.512 | 0.709 | 0.472 | 1.299 | 1.299 | 1.181 | 1.181 |
| | BCG-PG291 | PG29 | 12.0 | 20.0 | 8.0 | 38.5 | 44.5 | 40.0 | 40.0 |
| | | | 0.472 | 0.787 | 0.315 | 1.516 | 1.752 | 1.575 | 1.575 |
| BCG-PG291-L | PG29 | 12.0 | 20.0 | 12.0 | 38.5 | 44.5 | 40.0 | 40.0 | |
| | | 0.472 | 0.787 | 0.472 | 1.516 | 1.752 | 1.575 | 1.575 | |
| BCG-PG292 (cULus) | PG29 | 18.0 | 25.0 | 8.0 | 38.5 | 44.5 | 40.0 | 40.0 | |
| | | 0.709 | 0.984 | 0.315 | 1.516 | 1.752 | 1.575 | 1.575 | |
| BCG-PG292-L (cULus) | PG29 | 18.0 | 25.0 | 12.0 | 38.5 | 44.5 | 40.0 | 40.0 | |
| | | 0.709 | 0.984 | 0.472 | 1.516 | 1.752 | 1.575 | 1.575 | |
| BCG-PG361 | PG36 | 20.0 | 26.0 | 9.0 | 48.0 | 55.5 | 50.0 | 50.0 | |
| | | 0.787 | 1.024 | 0.354 | 1.890 | 2.185 | 1.969 | 1.969 | |
| BCG-PG361-L | PG36 | 20.0 | 26.0 | 14.0 | 48.0 | 55.5 | 50.0 | 50.0 | |
| | | 0.787 | 1.024 | 0.551 | 1.890 | 2.185 | 1.969 | 1.969 | |
| BCG-PG362 (cULus) | PG36 | 22.0 | 32.0 | 9.0 | 48.0 | 55.5 | 50.0 | 50.0 | |
| | | 0.866 | 1.260 | 0.354 | 1.890 | 2.185 | 1.969 | 1.969 | |
| BCG-PG362-L (cULus) | PG36 | 22.0 | 32.0 | 14.0 | 48.0 | 55.5 | 50.0 | 50.0 | |
| | | 0.866 | 1.260 | 0.551 | 1.890 | 2.185 | 1.969 | 1.969 | |
| BCG-PG421 | PG42 | 25.0 | 31.0 | 12.0 | 49.0 | 64.0 | 58.0 | 58.0 | |
| | | 0.984 | 1.220 | 0.472 | 1.929 | 2.520 | 2.283 | 2.283 | |
| BCG-PG421-L | PG42 | 25.0 | 31.0 | 16.0 | 49.0 | 64.0 | 58.0 | 58.0 | |
| | | 0.984 | 1.220 | 0.630 | 1.929 | 2.520 | 2.283 | 2.283 | |
| BCG-PG422 (cULus) | PG42 | 30.0 | 38.0 | 12.0 | 49.0 | 64.0 | 58.0 | 58.0 | |
| | | 1.181 | 1.496 | 0.472 | 1.929 | 2.520 | 2.283 | 2.283 | |
| BCG-PG422-L (cULus) | PG42 | 30.0 | 38.0 | 16.0 | 49.0 | 64.0 | 58.0 | 58.0 | |
| | | 1.181 | 1.496 | 0.630 | 1.929 | 2.520 | 2.283 | 2.283 | |
| BCG-PG481 | PG48 | 29.0 | 35.0 | 14.0 | 52.5 | 70.0 | 64.0 | 64.0 | |
| | | 1.142 | 1.378 | 0.551 | 2.067 | 2.756 | 2.520 | 2.520 | |
| BCG-PG481-L | PG48 | 29.0 | 35.0 | 18.0 | 52.5 | 70.0 | 64.0 | 64.0 | |
| | | 1.142 | 1.378 | 0.709 | 2.067 | 2.756 | 2.520 | 2.520 | |
| BCG-PG482 (cULus) | PG48 | 34.0 | 44.0 | 14.0 | 52.5 | 70.0 | 64.0 | 64.0 | |
| | | 1.339 | 1.732 | 0.551 | 2.067 | 2.756 | 2.520 | 2.520 | |
| BCG-PG482-L (cULus) | PG48 | 34.0 | 44.0 | 18.0 | 52.5 | 70.0 | 64.0 | 64.0 | |
| | | 1.339 | 1.732 | 0.709 | 2.067 | 2.756 | 2.520 | 2.520 | |



General purpose nylon cable gland

NCG Series



General purpose nylon cable gland

- Low profile cable glands
- Wide cable clamping range
- Corrosion resistant

NCG Series - General purpose nylon cable gland

| Approvals | Materials | Temperature range | IP Rating |
|--------------------------------|--|---|-------------------------|
| EN 62444 | Halogen free nylon (PA6) construction | Normal use: -20°C to +100°C (-4°F to +212°F) | IP66 |
| UL514B (see table for details) | Chloroprene seals | Short term: -30°C to +150°C (-22°F to +302°F) | IP68 (5-Bar 30 mins) |
| CSA C22.2 No 18.3 | Colour Available in Black (B), Grey (G) and Light grey (LG) | | NEMA 4 |



Dimensions


| Metric thread | Part no. | Metric thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|---------------|---------------------|---------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
| | NCG-M161x | M16x1.5 | 2.0 | 6.0 | 8.0 | 26.5 | 21.9 | 19.0 | 19.0 |
| | NCG-M161x-L | M16x1.5 | 0.079 | 0.236 | 0.315 | 1.043 | 0.862 | 0.748 | 0.748 |
| | NCG-M162x (cURus) | M16x1.5 | 2.0 | 6.0 | 15.0 | 26.5 | 21.9 | 19.0 | 19.0 |
| | NCG-M162x-L | M16x1.5 | 0.079 | 0.236 | 0.591 | 1.043 | 0.862 | 0.748 | 0.748 |
| | NCG-M163x (cURus) | M16x1.5 | 4.0 | 8.0 | 8.0 | 26.5 | 21.9 | 19.0 | 19.0 |
| | NCG-M163x-L (cURus) | M16x1.5 | 0.157 | 0.315 | 0.315 | 1.043 | 0.862 | 0.748 | 0.748 |
| | NCG-M162x-L | M16x1.5 | 4.0 | 8.0 | 15.0 | 26.5 | 21.9 | 19.0 | 19.0 |
| | NCG-M162x-L | M16x1.5 | 0.157 | 0.315 | 0.591 | 1.043 | 0.862 | 0.748 | 0.748 |
| | NCG-M163x (cURus) | M16x1.5 | 5.0 | 10.0 | 10.0 | 30.0 | 25.0 | 22.0 | 22.0 |
| | NCG-M163x-L (cURus) | M16x1.5 | 0.197 | 0.394 | 0.394 | 1.181 | 0.984 | 0.866 | 0.866 |
| | NCG-M163x-L (cURus) | M16x1.5 | 5.0 | 10.0 | 15.0 | 30.0 | 25.0 | 22.0 | 22.0 |
| | NCG-M163x-L (cURus) | M16x1.5 | 0.157 | 0.315 | 0.591 | 1.043 | 0.862 | 0.748 | 0.748 |
| | NCG-M201x | M20x1.5 | 5.0 | 9.0 | 10.0 | 30.0 | 27.0 | 24.0 | 24.0 |
| | NCG-M201x | M20x1.5 | 0.197 | 0.354 | 0.394 | 1.043 | 1.063 | 0.945 | 0.945 |
| | NCG-M201x-L | M20x1.5 | 5.0 | 9.0 | 15.0 | 30.0 | 27.0 | 24.0 | 24.0 |
| | NCG-M201x-L | M20x1.5 | 0.197 | 0.354 | 0.591 | 1.043 | 1.063 | 0.945 | 0.945 |
| | NCG-M202x (cULus) | M20x1.5 | 5.0 | 9.0 | 10.0 | 30.0 | 27.0 | 24.0 | 24.0 |
| | NCG-M202x (cULus) | M20x1.5 | 0.197 | 0.354 | 0.394 | 1.043 | 1.063 | 0.945 | 0.945 |
| | NCG-M202x-L (cULus) | M20x1.5 | 6.0 | 12.0 | 10.0 | 30.0 | 27.0 | 24.0 | 24.0 |
| | NCG-M202x-L (cULus) | M20x1.5 | 0.236 | 0.472 | 0.394 | 1.181 | 1.063 | 0.945 | 0.945 |
| | NCG-M203x (cULus) | M20x1.5 | 6.0 | 12.0 | 15.0 | 30.0 | 27.0 | 24.0 | 24.0 |
| | NCG-M203x (cULus) | M20x1.5 | 0.236 | 0.472 | 0.591 | 1.181 | 1.063 | 0.945 | 0.945 |
| | NCG-M203x (cULus) | M20x1.5 | 10.0 | 14.0 | 10.0 | 33.5 | 31.0 | 27.0 | 27.0 |
| | NCG-M203x (cULus) | M20x1.5 | 0.394 | 0.551 | 0.394 | 1.319 | 1.22 | 1.063 | 1.063 |
| | NCG-M203x-L (cULus) | M20x1.5 | 10.0 | 14.0 | 15.0 | 33.5 | 31.0 | 27.0 | 27.0 |
| | NCG-M203x-L (cULus) | M20x1.5 | 0.394 | 0.551 | 0.591 | 1.319 | 1.22 | 1.063 | 1.063 |
| | NCG-M251x | M25x1.5 | 9.0 | 16.0 | 10.0 | 38.0 | 38.0 | 33.0 | 33.0 |
| | NCG-M251x | M25x1.5 | 0.354 | 0.63 | 0.394 | 1.496 | 1.496 | 1.299 | 1.299 |

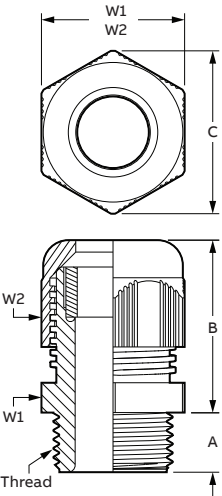
Note for colour: x in part number - B-Black (RAL 9001), G-Grey (RAL 7001), LG-Light grey (RAL 7035).

General purpose nylon cable gland

NCG Series

Dimensions

| Metric thread | Part no. | Metric thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|---|-------------------|---------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
|  | NCG-M251x-L | M25x1.5 | 9.0 | 16.0 | 15.0 | 38.0 | 38.0 | 33.0 | 33.0 |
| | | | 0.354 | 0.63 | 0.591 | 1.496 | 1.496 | 1.299 | 1.299 |
| | NCG-M252x (cULus) | M25x1.5 | 11.0 | 17.0 | 8.0 | 38.0 | 32.5 | 29.0 | 29.0 |
| | | | 0.433 | 0.669 | 0.315 | 1.496 | 1.28 | 1.142 | 1.142 |
| | NCG-M252x-L | M25x1.5 | 11.0 | 17.0 | 15.0 | 36.0 | 32.5 | 29.0 | 29.0 |
| | | | 0.433 | 0.669 | 0.591 | 1.417 | 1.28 | 1.142 | 1.142 |
| | NCG-M253x (cULus) | M25x1.5 | 13.0 | 18.0 | 10.0 | 38.0 | 38.0 | 33.0 | 33.0 |
| | | | 0.512 | 0.709 | 0.394 | 1.496 | 1.496 | 1.299 | 1.299 |
| | NCG-M253x-L | M25x1.5 | 13.0 | 18.0 | 15.0 | 38.0 | 38.0 | 33.0 | 33.0 |
| | | | 0.512 | 0.709 | 0.591 | 1.496 | 1.496 | 1.299 | 1.299 |
| | NCG-M321x | M32x1.5 | 11.0 | 15.0 | 10.0 | 42.5 | 41.0 | 36.0 | 36.0 |
| | | | 0.433 | 0.591 | 0.394 | 1.673 | 1.614 | 1.417 | 1.417 |
| | NCG-M321x-L | M32x1.5 | 11.0 | 15.0 | 15.0 | 42.5 | 36.0 | 36.0 | 36.0 |
| | | | 0.433 | 0.591 | 0.591 | 1.673 | 1.417 | 1.417 | 1.417 |
| | NCG-M322x (cULus) | M32x1.5 | 15.0 | 21.0 | 10.0 | 42.5 | 41.0 | 36.0 | 36.0 |
| | | | 0.591 | 0.827 | 0.394 | 1.673 | 1.614 | 1.417 | 1.417 |
| NCG-M322x-L | M32x1.5 | 15.0 | 21.0 | 15.0 | 42.5 | 41.0 | 36.0 | 36.0 | |
| | | 0.591 | 0.827 | 0.591 | 1.673 | 1.614 | 1.417 | 1.417 | |
| NCG-M323x (cULus) | M32x1.5 | 18.0 | 25.0 | 15.0 | 42.0 | 47.3 | 42.0 | 42.0 | |
| | | 0.709 | 0.984 | 0.591 | 1.654 | 1.862 | 1.654 | 1.654 | |
| NCG-M502x (cULus) | M50x1.5 | 30.0 | 38.0 | 18.0 | 53.5 | 67.8 | 60.0 | 60.0 | |
| | | 1.181 | 1.496 | 0.709 | 2.106 | 2.669 | 2.362 | 2.362 | |
| NCG-M631x | M63x1.5 | 29.0 | 35.0 | 18.0 | 53.0 | 72.9 | 65.0 | 65.0 | |
| | | 1.142 | 1.378 | 0.709 | 2.087 | 2.870 | 2.559 | 2.559 | |

| NPT thread | Part no. | NPT thread | Cable range | | Nominal dimensions (mm/in) | | | | |
|---|-------------------|------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
|  | NCG-0381x | 3/8" | 3.0 | 7.0 | 15.0 | 30.0 | 25.0 | 22.0 | 22.0 |
| | | | 0.118 | 0.276 | 0.591 | 1.181 | 0.984 | 0.866 | 0.866 |
| | NCG-0382x (cURus) | 3/8" | 5.0 | 10.0 | 15.0 | 30.0 | 25.0 | 22.0 | 22.0 |
| | | | 0.197 | 0.394 | 0.591 | 1.181 | 0.984 | 0.866 | 0.866 |
| | NCG-0501x | 1/2" | 5.0 | 9.0 | 15.0 | 30.0 | 27.0 | 24.0 | 24.0 |
| | | | 0.197 | 0.354 | 0.591 | 1.181 | 1.063 | 0.945 | 0.945 |
| | NCG-0502x (cULus) | 1/2" | 6.0 | 12.0 | 15.0 | 30.0 | 27.0 | 24.0 | 24.0 |
| | | | 0.236 | 0.472 | 0.591 | 1.181 | 1.063 | 0.945 | 0.945 |
| | NCG-0503x (cULus) | 1/2" | 10.0 | 14.0 | 11.0 | 33.5 | 30.9 | 27.0 | 27.0 |
| | | | 0.394 | 0.551 | 0.433 | 1.319 | 1.217 | 1.063 | 1.063 |
| | NCG-0504x | 1/2" | 9.0 | 16.0 | 15.0 | 38.0 | 38.0 | 33.0 | 33.0 |
| | | | 0.354 | 0.63 | 0.591 | 1.496 | 1.496 | 1.299 | 1.299 |
| | NCG-0505x | 1/2" | 13.0 | 18.0 | 15.0 | 38.0 | 38.0 | 33.0 | 33.0 |
| | | | 0.512 | 0.709 | 0.591 | 1.496 | 1.496 | 1.299 | 1.299 |
| | NCG-0751x | 3/4" | 9.0 | 16.0 | 15.0 | 38.0 | 38.0 | 33.0 | 33.0 |
| | | | 0.354 | 0.63 | 0.591 | 1.496 | 1.496 | 1.299 | 1.299 |
| NCG-0752x (cULus) | 3/4" | 13.0 | 18.0 | 15.0 | 38.0 | 38.0 | 33.0 | 33.0 | |
| | | 0.512 | 0.709 | 0.591 | 1.496 | 1.496 | 1.299 | 1.299 | |
| NCG-1001x | 1" | 12.0 | 20.0 | 18.0 | 42.0 | 47.3 | 42.0 | 42.0 | |
| | | 0.472 | 0.787 | 0.709 | 1.654 | 1.862 | 1.654 | 1.654 | |
| NCG-1002x (cULus) | 1" | 18.0 | 25.0 | 18.0 | 42.0 | 47.3 | 42.0 | 42.0 | |
| | | 0.709 | 0.984 | 0.709 | 1.654 | 1.862 | 1.654 | 1.654 | |

Note for colour: x in part number - B-Black (RAL 9001), G-Grey (RAL 7001), LG-Light grey (RAL 7035).

NPG Quick-Connect™

Cable glands

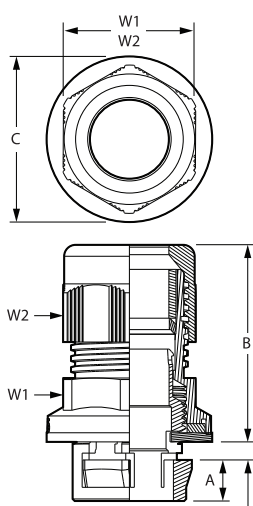


ABB's latest cable gland offering, the NPG Quick-Connect™, allows for fast and effective fitting without access to the inside of an enclosure, greatly speeding installation. The speed and ease of installation makes the NPG ideal for panel builders and volume installers of all types.

NPG Quick-Connect™ is a single-piece, corrosion resistant nylon gland suitable for non-armored, portable and tray cable types. When installed, the NPG achieves ingress protection of IP66 or IP68 (5 bar 30 mins).

Dimensions

| Metric thread Part no. | Metric thread | Cable range | | Hole size | | Nominal dimensions (mm/in) | | | | |
|---------------------------|---------------|--------------|--------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | Min. (mm/in) | Max. (mm/in) | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
| NPG-M161x (cURus) | M16 | 5.0 | 10.0 | 16.2 | 16.4 | 9.0 | 42.5 | 26.5 | 22.0 | 22.0 |
| | | 0.197 | 0.394 | 0.638 | 0.646 | 0.354 | 1.673 | 1.043 | 0.866 | 0.866 |
| NPG-M201x (cURus) | M20 | 6.0 | 12.0 | 20.2 | 20.4 | 9.0 | 41.5 | 30.3 | 24.0 | 24.0 |
| | | 0.236 | 0.472 | 0.795 | 0.803 | 0.354 | 1.634 | 1.193 | 0.945 | 0.945 |
| NPG-M202x (cURus) | M20 | 7.0 | 13.0 | 20.2 | 20.4 | 9.0 | 41.5 | 30.3 | 25.0 | 25.0 |
| | | 0.276 | 0.512 | 0.795 | 0.803 | 0.354 | 1.634 | 1.193 | 0.984 | 0.984 |
| NPG-M251x (cURus) | M25 | 11.0 | 17.0 | 25.2 | 25.4 | 9.0 | 43.5 | 36.3 | 29.0 | 29.0 |
| | | 0.433 | 0.669 | 0.992 | 1.000 | 0.354 | 1.713 | 1.429 | 1.142 | 1.142 |
| NPG-M321x (cURus) | M32 | 15.0 | 21.0 | 32.2 | 32.4 | 9.0 | 49.5 | 43.2 | 36.0 | 36.0 |
| | | 0.591 | 0.827 | 1.268 | 1.276 | 0.354 | 1.949 | 1.701 | 1.417 | 1.417 |



WALL THICKNESS
0.5mm to 4.0 mm
(0.020" to 0.157")

Quick-Connect™ - NPG Series - Nylon cable gland

| Approvals & certifications | | Conformity |
|---|--------------------------|--------------------------------|
| | | Conforms to: |
| | | EN 62444 |
| | | UL514B (see table for details) |
| | | CSA C22.2 No 18.3 |
| Temperature range | | |
| Normal Use: -20°C to +100°C (-4°F to +212°F) | | |
| Short Term: -30°C to +150°C (-22°F to +302°F) | | |
| IP Rating | Material | |
| IP66 | Halogen free nylon (PA6) | |
| IP68 (5-Bar 30 mins) | construction | |
| Available in black, grey, and light grey | | |
| Chloroprene seals | | |

Under normal use, NPG Quick-Connect™ glands are rated to perform from -20°C to 100°C (-4°F to 212°F), but in shorter bursts can withstand -30°C to 150°C (-22°F to 302°F).

| NPT thread Part no. | NPT thread | Cable range | | Hole size | | Nominal dimensions (mm/in) | | | | |
|------------------------|------------|--------------|--------------|--------------|--------------|----------------------------|-------|-------|-------|-------|
| | | Min. (mm/in) | Max. (mm/in) | Min. (mm/in) | Max. (mm/in) | A Min | B Min | C Min | W1 | W2 |
| NPG-0381x | 3/8" | 5.0 | 10.0 | 17.65 | 18.85 | 10.0 | 41.2 | 26.5 | 22.0 | 22.0 |
| | | 0.197 | 0.394 | 0.695 | 0.742 | 0.394 | 1.673 | 1.043 | 0.866 | 0.866 |
| NPG-0501x | 1/2" | 6.0 | 12.0 | 21.84 | 23.01 | 10.0 | 39.2 | 30.5 | 24.0 | 24.0 |
| | | 0.236 | 0.472 | 0.860 | 0.906 | 0.394 | 1.543 | 1.201 | 0.945 | 0.945 |
| NPG-0502x | 1/2" | 10.0 | 14.0 | 21.84 | 23.01 | 10.0 | 39.8 | 30.5 | 27.0 | 27.0 |
| | | 0.394 | 0.551 | 0.860 | 0.906 | 0.394 | 1.689 | 1.201 | 1.063 | 1.063 |
| NPG-0751x | 3/4" | 13.0 | 18.0 | 27.78 | 28.98 | 10.0 | 41.9 | 39.0 | 33.0 | 33.0 |
| | | 0.512 | 0.709 | 1.094 | 1.141 | 0.394 | 1.650 | 1.535 | 1.299 | 1.299 |
| NPG-1001x | 1" | 18.0 | 25.0 | 34.51 | 35.71 | 10.0 | 50.1 | 47.5 | 42.0 | 42.0 |
| | | 0.709 | 0.984 | 1.359 | 1.406 | 1.972 | 1.972 | 1.870 | 1.654 | 1.654 |

Note for colour: x in part number - B-Black (RAL 9001), G-Grey (RAL 7001), LG-Light grey (RAL 7035).

Spec-Kon® lugs

Copper/Straight – one hole type



Technical information

Application

- Copper tin plated Metric Compression Lug for power cables for rated voltage up to 36kV. From 6 to 400mm²
- Specially designed to accommodate both stranded (class 2) and flexible (class 5) power cables according to IEC 60228

Characteristics

- Straight – one hole lug with die code marking to assist installation work and inspection
- Hole inspection to ease installation control
- Chamfer barrel to assist installation work

Material: Copper. Comply to EN13600

Surface: Tin plated

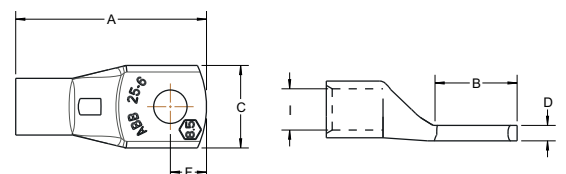
Certification: Comply to IEC 61238 - CE declaration

Copper/Straight – one hole type

| Nominal X-section (mm ²) | Stud bolt size number | Part number | GID number | Die selection | | | I | A | B | C | D | Dimensions mm/(in) | PCs per box |
|--------------------------------------|-----------------------|-------------|-----------------|---------------|---------------------|----------|-------------|-------------|-------------|-------------|------------|--------------------|-------------|
| | | | | Die code | Compression tooling | | | | | | | | |
| | | | | | H-C6 240 | H-CK 400 | | | | | | | |
| | | | | | B-IC6 240 | B-CK 400 | | | | | | | |
| | | | | | T-C6 240 | T-CK 400 | | | | | | F | |
| 6 | M5 | 6M5 | 7TCA302310R0017 | 6 | 6TC06M | | 3.8 (0.15) | 28.2 (1.11) | 14.0 (0.55) | 10.0 (0.39) | 1.2 (0.05) | 6.2 (0.24) | 100 |
| | M6 | 6M6 | 7TCA302310R0000 | | | | | 28.2 (1.11) | 14.0 (0.55) | 10.8 (0.43) | 1.2 (0.05) | 6.2 (0.24) | |
| | M8 | 6M8 | 7TCA302310R0001 | | | | | 32.0 (1.26) | 16.0 (0.63) | 13.0 (0.51) | 1.0 (0.04) | 8.0 (0.31) | |
| 10 | M5 | 10M5 | 7TCA302310R0002 | 7 | 6TC07M | 15507M | 4.5 (0.18) | 32.3 (1.27) | 15.8 (0.62) | 11.0 (0.43) | 1.2 (0.05) | 6.0 (0.24) | 100 |
| | M6 | 10M6 | 7TCA302310R0003 | | | | | 32.3 (1.27) | 15.8 (0.62) | 11.0 (0.43) | 1.2 (0.05) | 6.0 (0.24) | |
| | M8 | 10M8 | 7TCA302310R0004 | | | | | 32.3 (1.27) | 16.5 (0.65) | 13.0 (0.51) | 1.1 (0.04) | 8.0 (0.31) | |
| | M10 | 10M10 | 7TCA302310R0005 | | | | 4.4 (0.17) | 32.3 (1.27) | 16.5 (0.65) | 14.5 (0.57) | 1.7 (0.07) | 8.0 (0.31) | |
| 16 | M5 | 16M5 | 7TCA302310R0006 | 7,5 | 6TC075M | 155075M | 6.0 (0.24) | 35.7 (1.41) | 16.8 (0.66) | 13.0 (0.51) | 1.3 (0.05) | 6.5 (0.26) | 100 |
| | M6 | 16M6 | 7TCA302310R0007 | | | | | 35.7 (1.41) | 16.8 (0.66) | 13.0 (0.51) | 1.3 (0.05) | 6.5 (0.26) | |
| | M8 | 16M8 | 7TCA302310R0008 | | | | | 35.7 (1.41) | 16.8 (0.66) | 13.0 (0.51) | 1.2 (0.05) | 6.5 (0.26) | |
| | M10 | 16M10 | 7TCA302310R0009 | | | | | 37.9 (1.49) | 18.2 (0.72) | 15.0 (0.59) | 1.1 (0.04) | 8.0 (0.31) | |
| 25 | M6 | 25M6 | 7TCA302310R0010 | 8,5 | 6TC085M | 155085M | 7.3 (0.29) | 40.0 (1.57) | 18.0 (0.71) | 14.0 (0.55) | 1.6 (0.06) | 8.0 (0.31) | 100 |
| | M8 | 25M8 | 7TCA302310R0011 | | | | | 40.0 (1.57) | 18.0 (0.71) | 15.5 (0.61) | 1.6 (0.06) | 8.0 (0.31) | |
| | M10 | 25M10 | 7TCA302310R0012 | | | | | 40.0 (1.57) | 18.0 (0.71) | 15.5 (0.61) | 1.5 (0.06) | 8.0 (0.31) | |
| 35 | M6 | 35M6 | 7TCA302310R0013 | 11 | 6TC11M | 15511M | 8.9 (0.35) | 44.0 (1.73) | 19.5 (0.77) | 15.5 (0.61) | 2.1 (0.08) | 8.5 (0.33) | 100 |
| | M8 | 35M8 | 7TCA302310R0014 | | | | | 44.0 (1.73) | 19.5 (0.77) | 15.5 (0.61) | 2.1 (0.08) | 8.5 (0.33) | |
| | M10 | 35M10 | 7TCA302310R0015 | | | | | 44.0 (1.73) | 19.5 (0.77) | 15.5 (0.61) | 2.1 (0.08) | 8.5 (0.33) | |
| | M12 | 35M12 | 7TCA302310R0016 | | | | | 49.5 (1.95) | 25.0 (0.98) | 21.5 (0.85) | 1.5 (0.06) | 11.5 (0.45) | |
| 50 | M6 | 50M6 | 7TCA302320R0000 | 12 | 6TC12M | 15512M | 9.8 (0.39) | 49.0 (1.93) | 21.5 (0.85) | 18.0 (0.71) | 2.5 (0.10) | 10.0 (0.39) | 50 |
| | M8 | 50M8 | 7TCA302320R0001 | | | | | 49.0 (1.93) | 21.5 (0.85) | 18.0 (0.71) | 2.5 (0.10) | 10.0 (0.39) | |
| | M10 | 50M10 | 7TCA302320R0002 | | | | | 49.0 (1.93) | 21.5 (0.85) | 18.0 (0.71) | 2.5 (0.10) | 10.0 (0.39) | |
| | M12 | 50M12 | 7TCA302320R0003 | | | | | 52.5 (2.07) | 25.0 (0.98) | 23.0 (0.91) | 1.8 (0.07) | 11.0 (0.43) | |
| 70 | M6 | 70M6 | 7TCA302320R0004 | 14,5 | 6TC145M | 155145M | 12.2 (0.48) | 56.0 (2.20) | 26.0 (1.02) | 20.8 (0.82) | 2.9 (0.11) | 11.5 (0.45) | 50 |
| | M8 | 70M8 | 7TCA302320R0005 | | | | | 56.0 (2.20) | 26.0 (1.02) | 20.8 (0.82) | 2.9 (0.11) | 11.5 (0.45) | |
| | M10 | 70M10 | 7TCA302320R0006 | | | | | 56.0 (2.20) | 26.0 (1.02) | 20.8 (0.82) | 2.9 (0.11) | 11.5 (0.45) | |
| | M12 | 70M12 | 7TCA302320R0007 | | | | | 56.0 (2.20) | 26.0 (1.02) | 20.8 (0.82) | 2.8 (0.11) | 11.5 (0.45) | |



Dimensions



Spec-Kon® lugs

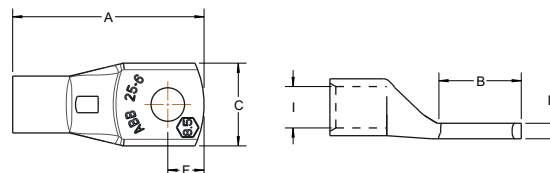
Copper/Straight – one hole type (continued)

Copper/Straight – one hole type (continued)

| Nominal X-section (mm ²) | Stud bolt size | Part number | GID number | Die selection | | | | Dimensions mm/(in) | | | | | | PCs per box |
|--|----------------------|----------------|-----------------|---------------|---------------------|----------|-------------|-----------------------|-------------|-------------|------------|-------------|----|-------------------|
| | | | | Die code | Compression tooling | | I | A | B | C | D | F | | |
| | | | | | H-C6 240 | H-CK 400 | | | | | | | | |
| | | | | | B-IC6 240 | B-CK 400 | | | | | | | | |
| 95 | M8 | 95M8 | 7TCA302320R0008 | 15 | 6TC15M | 15515M | 13.5 (0.53) | 62.0 (2.44) | 27.5 (1.08) | 24.5 (0.96) | 3.1 (0.12) | 13.0 (0.51) | 50 | |
| | M10 | 95M10 | 7TCA302320R0009 | | | | | 62.0 (2.44) | 27.5 (1.08) | 24.5 (0.96) | 3.1 (0.12) | 13.0 (0.51) | | |
| | M12 | 95M12 | 7TCA302320R0010 | | | | | 62.0 (2.44) | 27.5 (1.08) | 24.5 (0.96) | 3.0 (0.12) | 13.0 (0.51) | | |
| | M16 | 95M16 | 7TCA302320R0011 | | | | | 62.0 (2.44) | 27.5 (1.08) | 24.5 (0.96) | 2.9 (0.11) | 13.0 (0.51) | | |
| 120 | M8 | 120M8 | 7TCA302320R0012 | 18 | 6TC18M | 15518M | 15.2 (0.60) | 66.5 (2.62) | 28.0 (1.10) | 27.5 (1.08) | 3.5 (0.14) | 13.5 (0.53) | 50 | |
| | M10 | 120M10 | 7TCA302320R0013 | | | | | 66.5 (2.62) | 28.0 (1.10) | 27.5 (1.08) | 3.5 (0.14) | 13.5 (0.53) | | |
| | M12 | 120M12 | 7TCA302320R0014 | | | | | 66.5 (2.62) | 28.0 (1.10) | 27.5 (1.08) | 3.5 (0.14) | 13.5 (0.53) | | |
| | M16 | 120M16 | 7TCA302320R0015 | | | | | 66.5 (2.62) | 28.0 (1.10) | 27.5 (1.08) | 3.4 (0.13) | 13.5 (0.53) | | |
| 150 | M8 | 150M8 | 7TCA302330R0000 | 21 | 6TC21M | 15521M | 16.5 (0.65) | 73.0 (2.87) | 33.5 (1.32) | 30.5 (1.20) | 4.5 (0.18) | 15.5 (0.61) | 20 | |
| | M10 | 150M10 | 7TCA302330R0001 | | | | | 73.0 (2.87) | 33.5 (1.32) | 30.5 (1.20) | 4.5 (0.18) | 15.5 (0.61) | | |
| | M12 | 150M12 | 7TCA302330R0002 | | | | | 73.0 (2.87) | 33.5 (1.32) | 30.5 (1.20) | 4.5 (0.18) | 15.5 (0.61) | | |
| | M16 | 150M16 | 7TCA302330R0003 | | | | | 73.0 (2.87) | 33.5 (1.32) | 30.5 (1.20) | 4.3 (0.17) | 15.5 (0.61) | | |
| | M20 | 150M20 | 7TCA302330R0004 | | | | | 76.5 (3.01) | 37.0 (1.46) | 30.5 (1.20) | 4.3 (0.17) | 15.5 (0.61) | | |
| 185 | M10 | 185M10 | 7TCA302330R0005 | 23 | 6TC23M | 15523M | 18.6 (0.73) | 75.0 (2.95) | 33.5 (1.32) | 33.5 (1.32) | 4.6 (0.18) | 16.0 (0.63) | 20 | |
| | M12 | 185M12 | 7TCA302330R0006 | | | | | 75.0 (2.95) | 33.5 (1.32) | 33.5 (1.32) | 4.6 (0.18) | 16.0 (0.63) | | |
| | M16 | 185M16 | 7TCA302330R0007 | | | | | 75.0 (2.95) | 33.5 (1.32) | 33.5 (1.32) | 4.4 (0.17) | 16.0 (0.63) | | |
| | M20 | 185M20 | 7TCA302330R0008 | | | | | 80.0 (3.15) | 38.5 (1.52) | 33.5 (1.32) | 4.4 (0.17) | 17.5 (0.69) | | |
| 240 | M10 | 240M10 | 7TCA302330R0009 | 26 | | 15526M | 20.8 (0.82) | 89.0 (3.50) | 39.0 (1.54) | 37.5 (1.48) | 5.3 (0.21) | 18.0 (0.71) | 20 | |
| | M12 | 240M12 | 7TCA302330R0010 | | | | | 89.0 (3.50) | 39.0 (1.54) | 37.5 (1.48) | 5.3 (0.21) | 18.0 (0.71) | | |
| | M16 | 240M16 | 7TCA302330R0011 | | | | | 89.0 (3.50) | 39.0 (1.54) | 37.5 (1.48) | 5.3 (0.21) | 18.0 (0.71) | | |
| | M20 | 240M20 | 7TCA302330R0012 | | | | | 89.0 (3.50) | 39.0 (1.54) | 37.5 (1.48) | 5.2 (0.20) | 18.0 (0.71) | | |
| 300 | M10 | 300M10 | 7TCA302330R0013 | 29 | | 15529M | 23.5 (0.93) | 96.5 (3.80) | 39.0 (1.54) | 42.5 (1.67) | 5.4 (0.21) | 18.0 (0.71) | 10 | |
| | M12 | 300M12 | 7TCA302330R0014 | | | | | 96.5 (3.80) | 39.0 (1.54) | 42.5 (1.67) | 5.4 (0.21) | 18.0 (0.71) | | |
| | M16 | 300M16 | 7TCA302330R0015 | | | | | 96.5 (3.80) | 39.0 (1.54) | 42.5 (1.67) | 5.4 (0.21) | 18.0 (0.71) | | |
| | M20 | 300M20 | 7TCA302330R0016 | | | | | 96.5 (3.80) | 39.0 (1.54) | 42.5 (1.67) | 5.3 (0.21) | 18.0 (0.71) | | |
| 400 | M12 | 400M12 | 7TCA302330R0017 | 36 | | 15536M | 27.0 (1.06) | 109.5 (4.31) | 44.0 (1.73) | 49.5 (1.95) | 7.5 (0.30) | 20.0 (0.79) | 5 | |
| | M16 | 400M16 | 7TCA302330R0018 | | | | | 109.5 (4.31) | 44.0 (1.73) | 49.5 (1.95) | 7.5 (0.30) | 20.0 (0.79) | | |
| | M20 | 400M20 | 7TCA302330R0019 | | | | | 109.5 (4.31) | 44.0 (1.73) | 49.5 (1.95) | 7.5 (0.30) | 20.0 (0.79) | | |

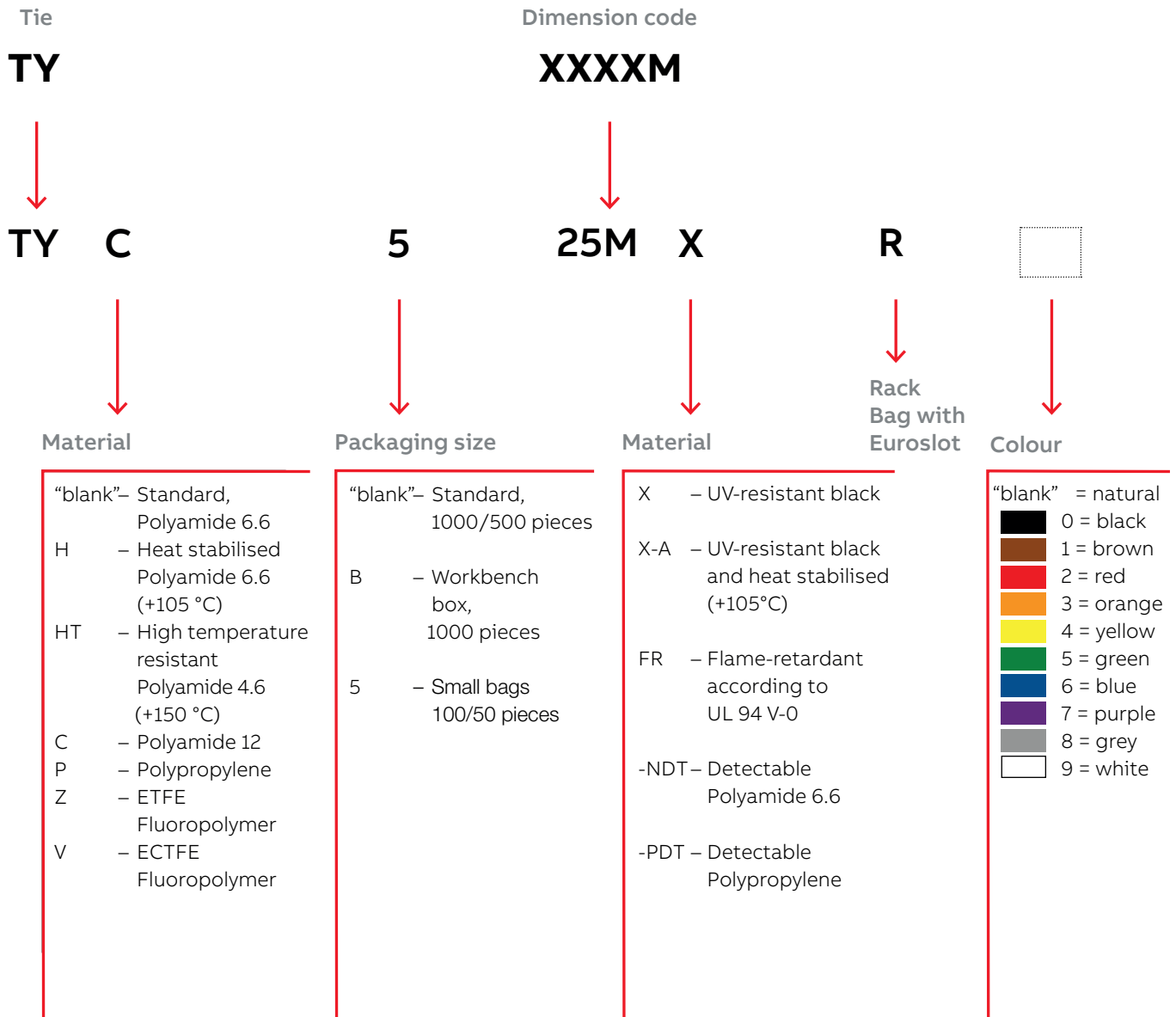


Dimensions



Ty-Rap® High Performance Cable Ties

Product code structure



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 | ERG50 |
| TY5253MR | MS-3367-7 | 295 | 4.8 | 1.3 | 3.5 - 78 | 220 | 100 | 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 |
| TY5277M* | - | 617 | 6.9 | 1.6 | 6 - 177 | 540 | 50 | L-500-EU |
| TY529M* | MS-3367-6 | 771 | 6.9 | 1.6 | 6 - 229 | 540 | 50 | |

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

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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



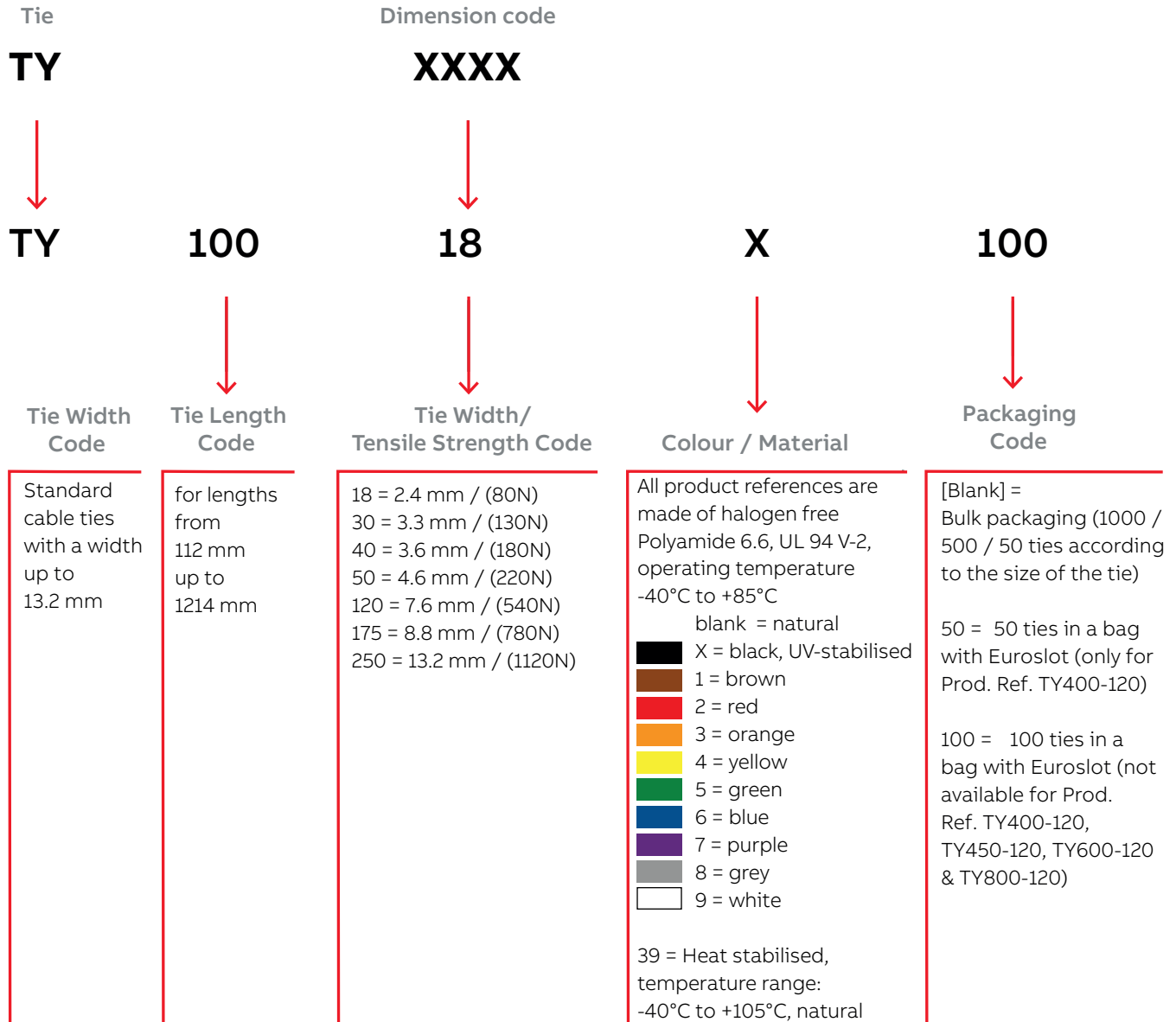
For example: TY23M-1 defines a brown TY23M cable tie. Contact your Sales Office for product availability.

** 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.

Ty-Rap® All plastic cable ties

Product code structure



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 | |

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

Ty-Met™ Stainless steel cable ties

Ball-Lock type – Standard widths, uncoated

01 Stainless steel cable ties

Characteristics

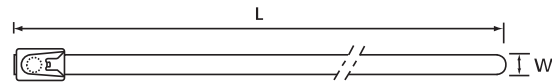
The Ball-Lock Type stainless steel ties from ABB are self-locking, requiring no time consuming crimping or folding operations.

- 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:
 - A: 304 grade non-magnetic stainless steel
 - B: 316 grade non-magnetic stainless steel
- Temperature range: -40°C to +300°C
- Colour: Metallic
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant



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

| Product Ref. Stainless steel 304 | Product Ref. Stainless steel 316 | Length (L) [mm] | Width (W) [mm] | Material thickness [mm] | Bundle ø from ... to [mm] | Min. tensile strength [N] | Quantity [pieces] | Tooling |
|----------------------------------|----------------------------------|-----------------|----------------|-------------------------|---------------------------|---------------------------|-------------------|---------|
| YLS-4.6-100A | YLS-4.6-100B | 100 | 4.6 | 0.26 | 20-25 | 778 | 100 | |
| YLS-4.6-125A | YLS-4.6-125B | 125 | 4.6 | 0.26 | 20-25 | 778 | 100 | |
| YLS-4.6-150A | YLS-4.6-150B | 150 | 4.6 | 0.26 | 20-35 | 778 | 100 | |
| YLS-4.6-200A | YLS-4.6-200B | 200 | 4.6 | 0.26 | 20-50 | 778 | 100 | |
| YLS-4.6-300A | YLS-4.6-300B | 300 | 4.6 | 0.26 | 20-83 | 778 | 100 | |
| YLS-4.6-360A | YLS-4.6-360B | 360 | 4.6 | 0.26 | 20-100 | 778 | 100 | |
| YLS-4.6-520A | YLS-4.6-520B | 520 | 4.6 | 0.26 | 20-150 | 778 | 100 | |
| YLS-4.6-680A | YLS-4.6-680B | 680 | 4.6 | 0.26 | 20-200 | 778 | 100 | |
| YLS-4.6-840A | YLS-4.6-840B | 840 | 4.6 | 0.26 | 20-250 | 778 | 100 | |
| YLS-4.6-1000A | YLS-4.6-1000B | 1000 | 4.6 | 0.26 | 20-300 | 778 | 100 | |
| YLS-4.6-1200A | YLS-4.6-1200B | 1200 | 4.6 | 0.26 | 20-365 | 778 | 100 | |
| YLS-4.6-1400A | YLS-4.6-1400B | 1400 | 4.6 | 0.26 | 20-425 | 778 | 100 | CT3 |
| YLS-7.9-100A | YLS-7.9-100B | 100 | 7.9 | 0.26 | 20-20 | 1112 | 100 | CT6 |
| YLS-7.9-125A | YLS-7.9-125B | 125 | 7.9 | 0.26 | 20-22 | 1112 | 100 | |
| YLS-7.9-150A | YLS-7.9-150B | 150 | 7.9 | 0.26 | 20-35 | 1112 | 100 | |
| YLS-7.9-200A | YLS-7.9-200B | 200 | 7.9 | 0.26 | 20-50 | 1112 | 100 | |
| YLS-7.9-300A | YLS-7.9-300B | 300 | 7.9 | 0.26 | 20-83 | 1112 | 100 | |
| YLS-7.9-360A | YLS-7.9-360B | 360 | 7.9 | 0.26 | 20-100 | 1112 | 100 | |
| YLS-7.9-520A | YLS-7.9-5200B | 520 | 7.9 | 0.26 | 20-150 | 1112 | 100 | |
| YLS-7.9-680A | YLS-7.9-680B | 680 | 7.9 | 0.26 | 20-200 | 1112 | 100 | |
| YLS-7.9-840A | YLS-7.9-840B | 840 | 7.9 | 0.26 | 20-250 | 1112 | 100 | |
| YLS-7.9-1000A | YLS-7.9-1000B | 1000 | 7.9 | 0.26 | 20-300 | 1112 | 100 | |
| YLS-7.9-1200A | YLS-7.9-1200B | 1200 | 7.9 | 0.26 | 20-365 | 1112 | 100 | |
| YLS-7.9-1400A | YLS-7.9-1400B | 1400 | 7.9 | 0.26 | 20-425 | 1112 | 100 | |

01

Ty-Met™ 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

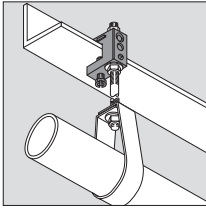


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| Order Code | Length [mm] | Width [mm] | Material thickness [mm] | Bundle ø from ... to [mm] | Min. tensile strength [N] | Quantity [pieces] | Tooling |
|--------------|-------------|------------|-------------------------|---------------------------|---------------------------|-------------------|---------|
| 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 | |
| LS-16-680B | 680 | 16.0 | 0.32 | 40-200 | 3110 | 50 | CT7 |
| 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 | |

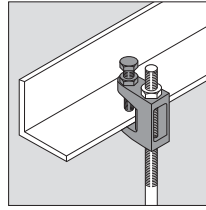
E-Klips mechanical and electrical fixings

Key products



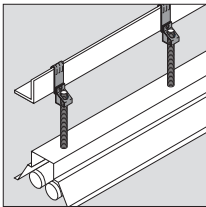
Girder clamps for threaded rod

| Part Code | Order Code | Quantity (pieces) |
|-----------|-----------------|-------------------|
| PPFH-65 | 7TCA084030R1720 | 25 |
| PPFH-107 | 7TCA084030R1719 | 25 |



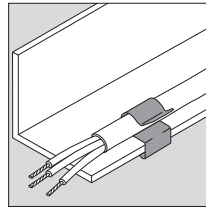
Girder clamps for threaded rod

| Part Code | Order Code | Quantity (pieces) |
|-----------|-----------------|-------------------|
| FC-11 | 7TCA084220R0153 | 25 |
| FC-10T | 7TCA084220R0152 | 25 |



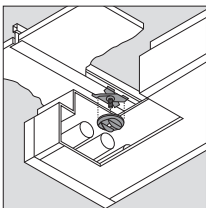
Purlin clips for threaded rod

| Part Code | Order Code | Quantity (pieces) |
|-------------|-----------------|-------------------|
| AV155-AM8T | 7TCA084030R0754 | 25 |
| AV155-AM10T | 7TCA084030R0742 | 25 |



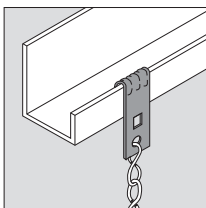
Girder clips for single cables

| Part Code | Order Code | Quantity (pieces) |
|------------|-----------------|-------------------|
| PPECS-89 | 7TCA084030R1714 | 25 |
| PPECS-1011 | 7TCA084030R1710 | 25 |
| PPECS-1214 | 7TCA084030R1711 | 25 |
| PPECS-1519 | 7TCA084030R1712 | 25 |
| PPECS-2024 | 7TCA084030R1713 | 25 |
| PPECM-89 | 7TCA084030R1709 | 25 |
| PPECM-1011 | 7TCA084030R1705 | 25 |
| PPECM-1214 | 7TCA084030R1706 | 25 |
| PPECM-1519 | 7TCA084030R1707 | 25 |
| PPECM-2024 | 7TCA084030R1708 | 25 |
| PPECL-89 | 7TCA084030R1704 | 25 |
| PPECL-1011 | 7TCA084030R1700 | 25 |
| PPECL-1214 | 7TCA084030R1701 | 25 |
| PPECL-1519 | 7TCA084030R1702 | 25 |
| PPECL-2024 | 7TCA084030R1703 | 25 |



Suspended ceiling clips

| Part Code | Order Code | Quantity (pieces) |
|-----------|-----------------|-------------------|
| PPJHX-165 | 7TCA084030R1721 | 25 |



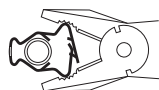
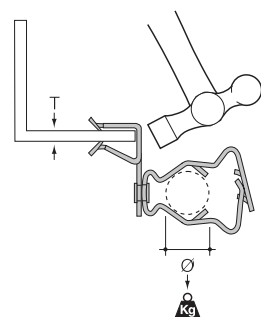
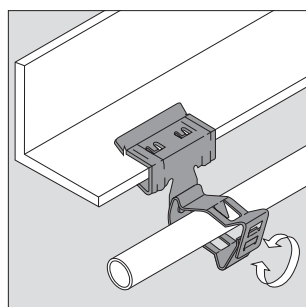
Purlin clips for chain or wire

| Part Code | Order Code | Quantity (pieces) |
|-----------|-----------------|-------------------|
| PPAV-155 | 7TCA084030R1699 | 25 |

Girder clips

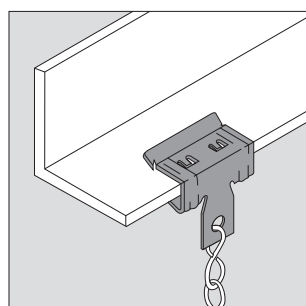
Key products

Girder clips for conduit

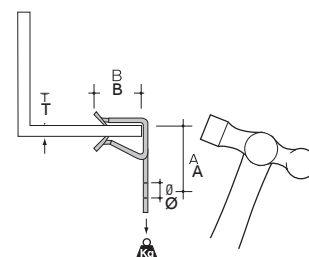


| Part Code | ABB order code | T (mm) | Ø (mm) | PG type | Load rating (kg) | Material finishes | Quantity (pieces) |
|---------------|-----------------|--------|--------|---------|------------------|-------------------|-------------------|
| AH153-GM1219 | 7TCA084030R1133 | 1.5-3 | 12-19 | 7/9/11 | 12 | F8+ | 25 |
| AH153-GM1926 | 7TCA084030R1135 | 1.5-3 | 19-26 | 13.5/16 | 12 | F8+ | 25 |
| AH153-GM2632 | 7TCA084030R1138 | 1.5-3 | 26-32 | 21 | 12 | F8+ | 25 |
| AH153-GM3240 | 7TCA084030R1140 | 1.5-3 | 32-40 | 29 | 12 | F8+ | 25 |
| AH153-GM4047 | 7TCA084030R1142 | 1.5-3 | 40-47 | 36 | 12 | F8+ | 25 |
| AH153-GM4757 | 7TCA084030R1144 | 1.5-3 | 47-57 | 36/42 | 12 | F8+ | 25 |
| AH38-GM1219 | 7TCA084030R1163 | 3-8 | 12-19 | 7/9/11 | 12 | F8+ | 25 |
| AH38-GM1926 | 7TCA084030R1165 | 3-8 | 19-26 | 13.5/16 | 12 | F8+ | 25 |
| AH38-GM2632 | 7TCA084030R1168 | 3-8 | 26-32 | 21 | 12 | F8+ | 25 |
| AH38-GM3240 | 7TCA084030R1170 | 3-8 | 32-40 | 29 | 12 | F8+ | 25 |
| AH38-GM4047 | 7TCA084030R1172 | 3-8 | 40-47 | 36 | 12 | F8+ | 25 |
| AH38-GM4757 | 7TCA084030R1174 | 3-8 | 47-57 | 36/42 | 12 | F8+ | 25 |
| AH814-GM1219 | 7TCA084030R1105 | 8-14 | 12-19 | 7/9/11 | 12 | F8+ | 25 |
| AH814-GM1926 | 7TCA084030R1107 | 8-14 | 19-26 | 13.5/16 | 12 | F8+ | 25 |
| AH814-GM2632 | 7TCA084030R1109 | 8-14 | 26-32 | 21 | 12 | F8+ | 25 |
| AH814-GM3240 | 7TCA084030R1111 | 8-14 | 32-40 | 29 | 12 | F8+ | 25 |
| AH814-GM4047 | 7TCA084030R1113 | 8-14 | 40-47 | 36 | 12 | F8+ | 25 |
| AH814-GM4757 | 7TCA084030R1115 | 8-14 | 47-57 | 36/42 | 12 | F8+ | 25 |
| AH1420-GM1219 | 7TCA084030R0487 | 14-20 | 12-19 | 7/9/11 | 12 | F8+ | 25 |
| AH1420-GM1926 | 7TCA084030R0489 | 14-20 | 19-26 | 13.5/16 | 12 | F8+ | 25 |
| AH1420-GM2632 | 7TCA084030R0493 | 14-20 | 26-32 | 21 | 12 | F8+ | 25 |
| AH1420-GM3240 | 7TCA084030R0495 | 14-20 | 32-40 | 29 | 12 | F8+ | 25 |
| AH1420-GM4047 | 7TCA084030R0497 | 14-20 | 40-47 | 36 | 12 | F8+ | 25 |
| AH1420-GM4757 | 7TCA084030R0499 | 14-20 | 47-57 | 36/42 | 12 | F8+ | 25 |

Girder clips for chain wire



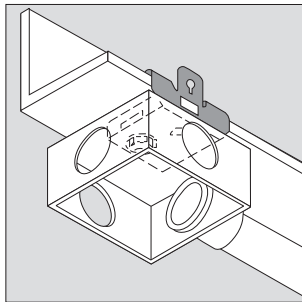
| Part No. | ABB order code | T (mm) | Ø (mm) | A (mm) | B (mm) | Load rating (kg) | Material finishes | Quantity (pieces) |
|----------|-----------------|--------|--------|--------|--------|------------------|-------------------|-------------------|
| AH-153 | 7TCA084030R0448 | 1.5-3 | 6.5 | 16 | 12.5 | 72 | F8+ | 100 |
| AH-38 | 7TCA084030R0452 | 3-8 | 6.5 | 18 | 20.3 | 90 | F8+ | 100 |
| AH-814 | 7TCA084030R0457 | 8-14 | 6.5 | 26 | 20.3 | 90 | F8+ | 100 |
| AH-1420 | 7TCA084030R0443 | 14-20 | 6.5 | 30 | 26.6 | 90 | F8+ | 100 |



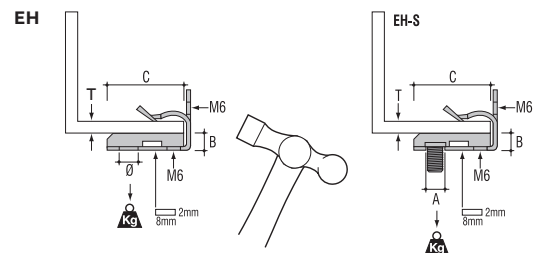
Girder clips and rod

Key products

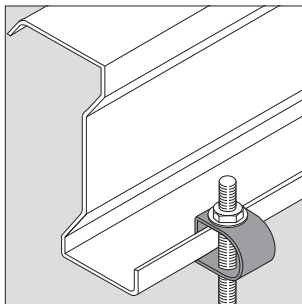
Girder clips for conduit box



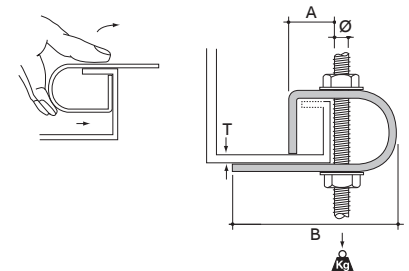
| Part No. | ABB order code | T (mm) | Ø (mm) | A (mm) | B (mm) | C (mm) | Load rating (kg) | Material finishes | Quantity (pieces) |
|----------|-----------------|--------|--------|--------|--------|--------|------------------|-------------------|-------------------|
| EH-38 | 7TCA084030R1091 | 3-8 | 7 | - | 7.5 | 33 | 45 | F8+ | 100 |
| EH-814 | 7TCA084030R1098 | 8-14 | 7 | - | 7.5 | 33 | 45 | F8+ | 100 |
| EH-1420 | 7TCA084030R1085 | 14-20 | 7 | - | 7.5 | 33 | 45 | F8+ | 100 |
| EH-38S | 7TCA084030R1095 | 3-8 | - | M6x10 | 7.5 | 33 | 45 | F8+ | 100 |
| EH-814S | 7TCA084030R1102 | 8-14 | - | M6x10 | 7.5 | 33 | 45 | F8+ | 100 |
| EH-1420S | 7TCA084030R1088 | 14-20 | - | M6x10 | 7.5 | 33 | 45 | F8+ | 100 |



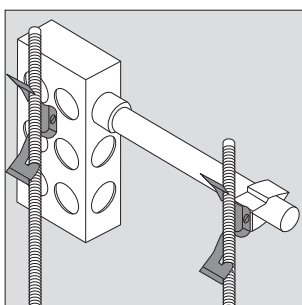
Purlin clamp for threaded rod



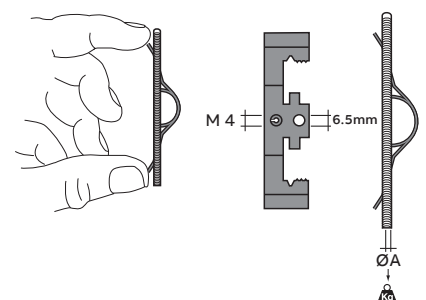
| Part No. | ABB order code | T (mm) | Ø (mm) | A (mm) | B (mm) | Load rating (kg) | Material finishes | Quantity (pieces) |
|----------|-----------------|--------|--------|--------|--------|------------------|-------------------|-------------------|
| PD | 7TCA084220R0299 | ≤4 | 12 | 15 | 85 | 40 | F2 | 50 |



Fastening clips for threaded rod



| Part No. | ABB order code | ØA (mm) | Load rating (kg) | Material finishes | Quantity (pieces) |
|----------|-----------------|-----------|------------------|-------------------|-------------------|
| FM-313T | 7TCA084030R1270 | M6/M8/M10 | 10 | F8+ | 100 |
| FM-320T | 7TCA084030R1274 | M6/M8/M10 | 10 | F8+ | 100 |





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For more detailed product information, please refer to our online technical brochures available at:
new.abb.com/low-voltage/support/documentation

or contact our sales team via email gb-leedsquotes@abb.com

or our technical team global-eml-technical@abb.com

Tel: +44(0)333 999 9900

Emergi-Lite - Emergency lighting

| | |
|------------|--------------------------------|
| 210 | PrimEvo |
| 214 | NaveoPro |
| 217 | DALI Control Unit (DCU) |
| 218 | Guideway |
| 219 | Serenga 2 |
| 220 | Aqualux |
| 221 | Ovano |
| 225 | Lutia |
| 226 | Indulux |
| 228 | MirEvo |
| 229 | Cordona |
| 230 | Camarque |
| 231 | Day-Lite Ex-cel |
| 232 | Silver-Scape |
| 234 | Navigator |
| 235 | Weatherforce |
| 236 | Horizon |
| 237 | Central Battery |

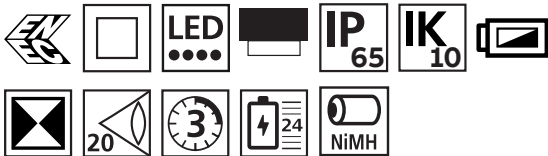
PrimEvo XT100

Productivity and reliability



PrimEvo XT100

- Available at your local wholesaler
- Plug and play, maintained and non-maintained in one
- Full LED range with best price/performance ratio
- Manual and Self-test



Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation duration (hrs) | Environment temperature (°C) | Weight (kg) |
|------------|----------------------------|----------------------|----------------|------------------|--------------------------|--------------------------|------------------------------|-------------|
| XT100E* | PrimEvo Bulkhead | 220 - 240 Vac, 50 Hz | 2 x LED 0.5W** | 110 | 5/2 | 3 | 0 - 40 | 0.6 |
| XT100ST* | PrimEvo Bulkhead Self-test | 220 - 240 Vac, 50 Hz | 2 x LED 0.5W** | 110 | 5/2 | 3 | 0 - 40 | 0.6 |

*configurable pictograms included.
** = 1W LED.

Accessories

| Order Code | Description |
|------------|--|
| 642 202 | Recess Kit 100% - Wall/Ceiling ⁽¹⁾ |
| 642 102 | Recess Kit 50% - Wall/Ceiling ⁽²⁾ |
| 663 325 | Pictogram holder with 3 legends |
| 663 330 | Pack of 3 legends for signaling (Left, right and down arrow) |
| 642 015 | Protective grid cover ⁽³⁾ |



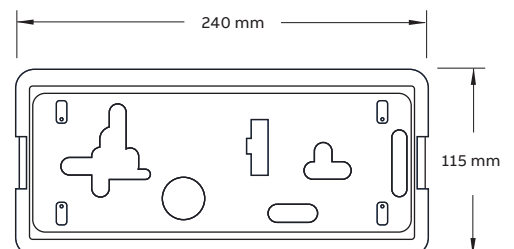
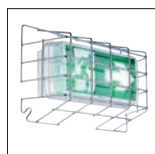
01



02



03



PrimEvo XT200

Productivity and reliability



PrimEvo XT200

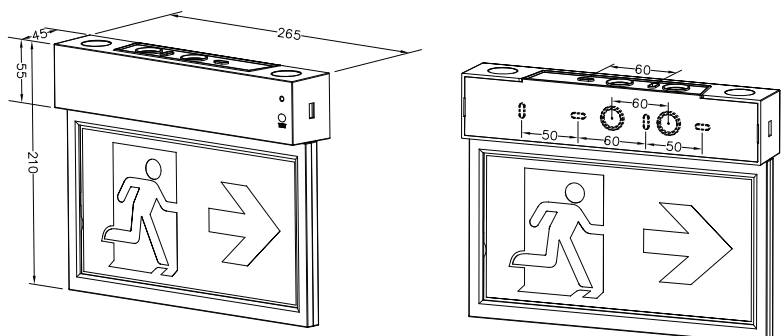
- Available at your local wholesaler
- Plug and play, maintained and non-maintained in one
- Full LED range with best price/performance ratio
- Manual and Self-test



Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation duration (hrs) | Environment temperature (°C) | Weight (kg) |
|------------|-----------------------------|----------------------|--------------|------------------|--------------------------|--------------------------|------------------------------|-------------|
| XT200E* | PrimEvo Exit Sign | 220 - 240 Vac, 50 Hz | 1 x LED 2W** | 120 | 5.2/2.4 | 3 | -5 - 45 | 0.95 |
| XT200ST* | PrimEvo Exit Sign Self-test | 220 - 240 Vac, 50 Hz | 1 x LED 2W** | 120 | 5.2/2.4 | 3 | -5 - 45 | 0.95 |

*configurable pictograms included.



PrimEvo RS100 & SM100

Productivity and reliability



RS100



SM100

PrimEvo RS100 & SM100

- Available at your local wholesaler
- Plug and play, maintained and non-maintained in one
- Full LED range with best price/performance ratio
- Manual and Self-test



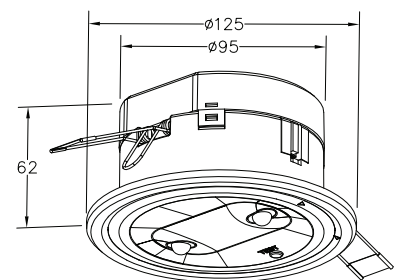
Luminaire

| Order Code | Description | Input voltage | Lamp type | Power consumption** (VA/W) | Operation duration (hrs) | Environment temperature (°C) | Weight (kg) |
|------------|-------------------------------------|----------------------|---------------|----------------------------|--------------------------|------------------------------|-------------|
| RS100E | PrimEvo Recessed downlite | 220 - 240 Vac, 50 Hz | 2 x LED 1.5W* | 10/4.8 | 3 | 0 - 25 | 0.425 |
| RS100ST | PrimEvo Recessed downlite self-test | 220 - 240 Vac, 50 Hz | | 10/4.8 | 3 | 0 - 25 | 0.425 |
| SM100E | PrimEvo Surface downlite | 220 - 240 Vac, 50 Hz | | 9/4.5 | 3 | 0 - 25 | 0.425 |
| SM100ST | PrimEvo Surface downlite self-test | 220 - 240 Vac, 50 Hz | | 9/4.5 | 3 | 0 - 25 | 0.425 |

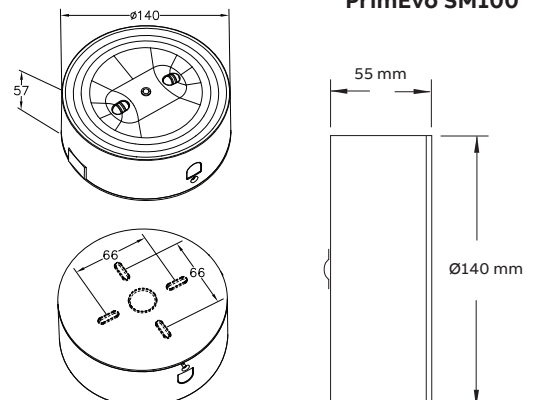
* = 3W LED.
** maintained mode.



PrimEvo RS100



PrimEvo SM100



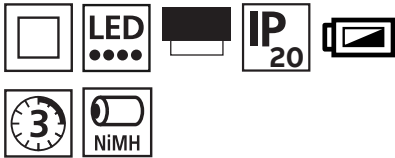
PrimEvo Twinspot

Productivity and reliability



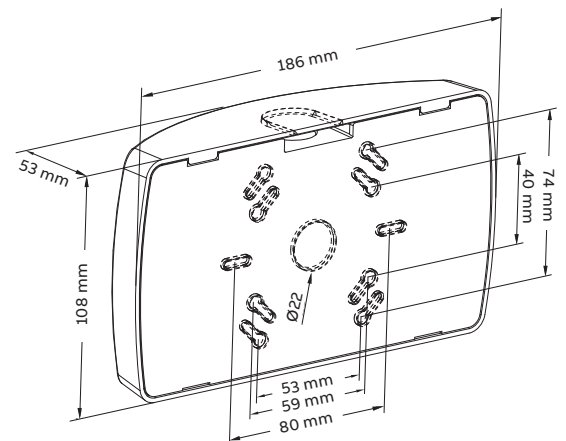
PrimEvo Twinspot

- Available at your local wholesaler
- Plug and play, maintained and non-maintained in one
- Full LED range with best price/performance ratio



Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation duration (hrs) | Environment temperature (°C) | Weight (kg) |
|------------|------------------|----------------------|------------|------------------|--------------------------|--------------------------|------------------------------|-------------|
| TW220E | PrimEvo Twinspot | 220 - 240 Vac, 50 Hz | 1 x LED 2W | 220 | 15.5/6.5 | 3 | 0 - 40 | 0.5 |



Naveo®Pro

The emergency lighting inspection and maintenance solution

The Naveo®Pro inspection and maintenance system provides a digital overview via the cloud – providing ready information to assist resource planning and enhance building safety. This information can be processed directly using a mobile device.

— 01 The ABB Ability™ platform is an integrated Internet platform and cloud infrastructure.

In practice, this will save you time on collecting and entering information. Utilising the ABB Ability™ platform gives you integrated cyber security for safety and reliability, enables better maintenance planning, and reduces operating costs.

Overview in inspection and maintenance

In practice, ongoing inspection, maintenance and testing of emergency lighting is a time-consuming process with a great deal of work that has to be carried out regularly during every year that the installation is in place. These costs can be out weighed with a centralised automatic test system.

With Naveo®Pro you can concentrate on what matters: letting your emergency lighting luminaire system manage itself and reduce the amount of time monitoring it. This will quickly save you a considerable amount of money on maintenance time, allowing you to focus on problems quickly and as they happen. In figures, this could have potential savings of up to 30% on costs each and every year.

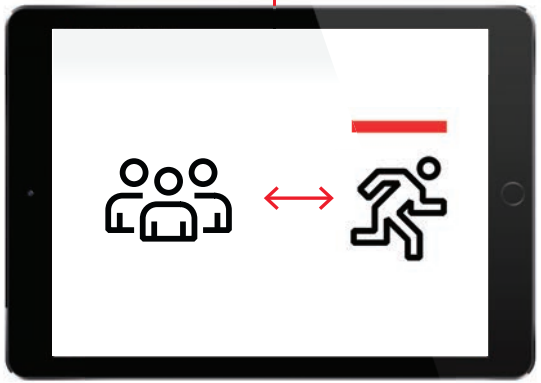
An overview of the advantages

- Inspection and maintenance software for mobile device
- Save time in planning maintenance ahead
- 24/7 overview of all monitored buildings via google maps
- Save administration time with on-site data entry using your mobile app
- Status alerts pushed to your mobile device
- Automatic list of (replacement) parts, including article numbers
- Ensuring that intended design of the emergency lighting installation is never compromised
- Documents can be used to prove safety of building to insurance companies, e.g. Liability and Buildings Insurance



Share information with your service team
All-in-one tool for Naveo®Pro users

ABB Ability™ enables Intelligent Buildings
ABB Ability™ connects our customers to the power of the Internet of Things and, through our services and expertise, goes further by turning data insights into the direct action that "closes the loop" and generates customer value in the physical world.



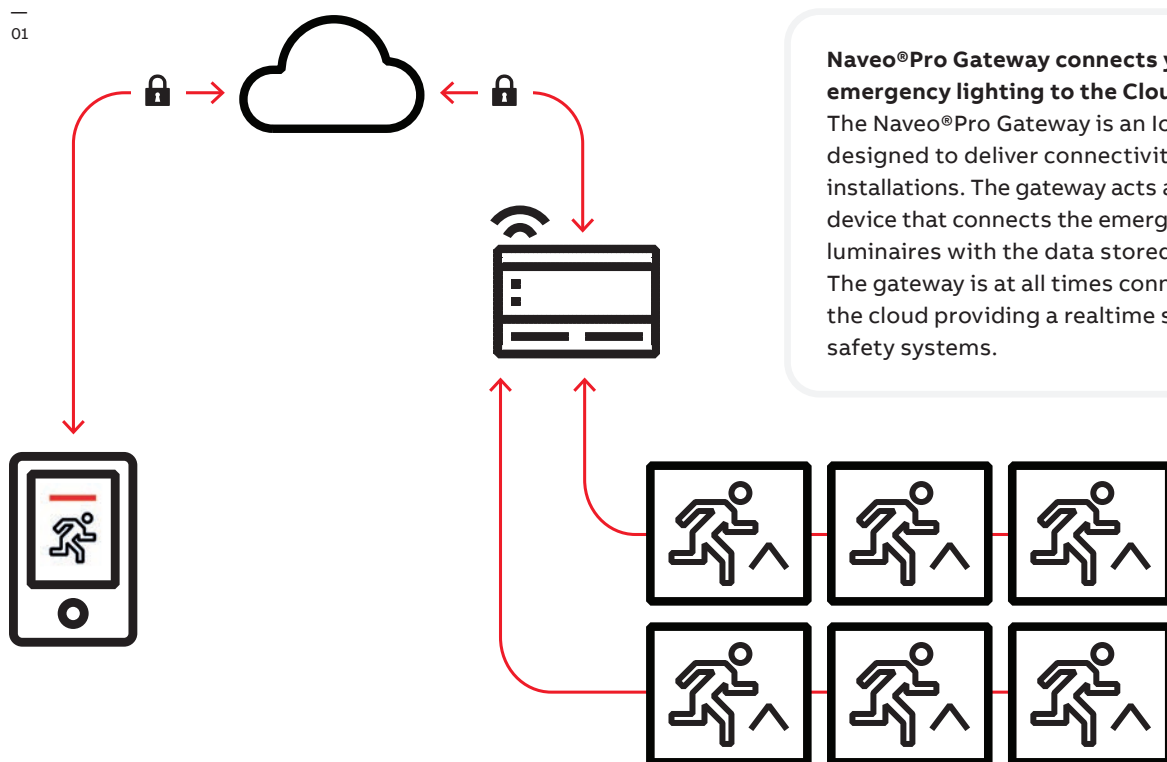
01 The Naveo®Pro architecture for emergency lighting consists of three tiers; emergency lighting luminaires, the ABB gateway and the cloud.

Connecting your emergency lighting luminaires to the ABB gateway is simple and makes real time system status information readily available and easy to process via the cloud. Having this information enables you to get status directly to your mobile device. This method of accessing controlling, and monitoring the status of your installation, makes maintenance of your installation a great deal easier.

How does it work?

With Naveo®Pro being connected all the time, your emergency lighting system is always fully up to date. You can easily set up the connection:

- The Gateway continuously receives all luminaires data and pushes this information to the Naveo®Pro app.
- On continuous request from the cloud the Gateway automatically sends all (test) data to the Naveo®Pro app. With Naveo®Pro you are therefore constantly in touch with your system status anytime and anywhere.
- During a visual inspection of your building you can add notes directly into the app which means you can record your visual risk assessments in one place.



Naveo®Pro Gateway connects your emergency lighting to the Cloud
 The Naveo®Pro Gateway is an IoT Gateway designed to deliver connectivity to all types of installations. The gateway acts as a networking device that connects the emergency lighting luminaires with the data stored in the cloud. The gateway is at all times connected to the cloud providing a realtime status of your safety systems.

* Up to 500 luminaires per gateway.

The Naveo®Pro app

Set up, maintain and fully control your entire emergency lighting installation with a new mobile app.

The Naveo®Pro App provides a real time overview of all systems, saving time, enabling better maintenance planning and enhancing building safety.

With the Naveo®Pro app, all types of emergency luminaires can be easily installed and programmed into a building in a fast and intuitive way using a QR code.

Through the ABB Ability™ platform, the system provides a digital overview via the cloud, giving instant information to assist resource planning and enhance building safety, which can be processed directly from a mobile device.

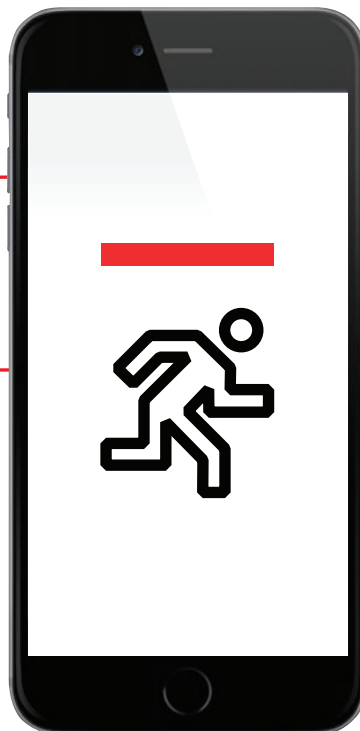
With emergency luminaire data stored in the cloud, the mobile app provides a 24/7 overview of all smart monitored buildings via Google maps. Building maps can be uploaded and overlaid onto Google maps, showing its current status and providing a clear and precise location of the emergency lighting luminaire.



Set-Up
Easily install and add new devices to your building through a list or map



Maintain
Defective devices are automatically detected and reported on your interface in addition to push notifications



Test
Run test instantly or program them to ensure that all your devices are working properly



Share
Easily share the results of tests with other people on your team

Naveo®Pro system components

| Order Code | Description |
|------------|----------------------------------|
| 51000040 | Naveo®Pro GW 1.0 |
| 758740 | Naveo®Pro Gateway mounting plate |

DALI control unit (DCU)

Productivity and reliability



DALI emergency lighting control panel

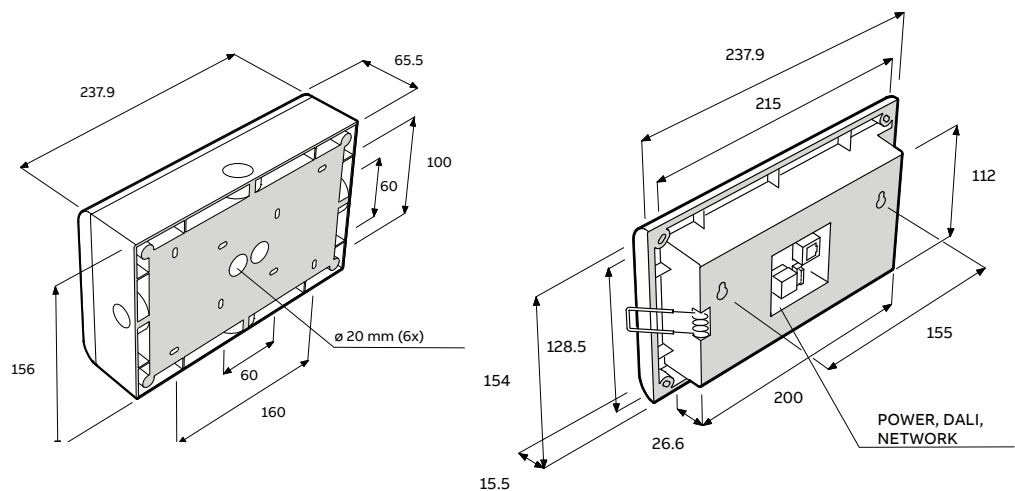
- Ensuring building occupant safety
- Touch screen to control, test and monitor emergency lighting
- Simple to group and easy to install



Control unit

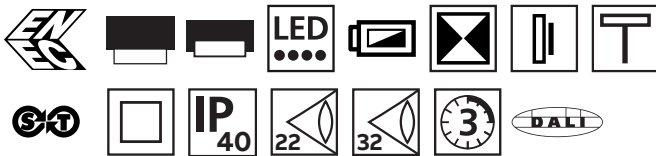
| Order Code | Description | Input voltage | Lamp type | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|----------------|-----------------------------|------------------|-----------|--------------------------|----------------------------|------------------------|-------------|
| ELDCS1/DALI/EL | DALI emergency control unit | 220-240 AC 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 and 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 |

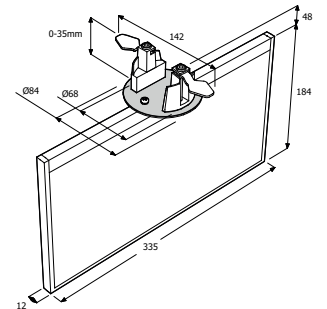
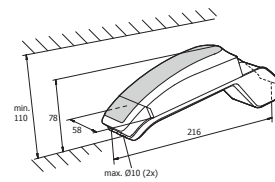
Includes back to wall mounting accessory as standard. 60 hrs charge at first commissioning, 24 hrs re-charge thereafter. Maintained and non maintained.

Single sided

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

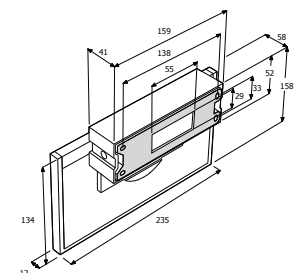
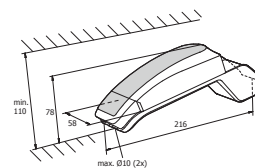
Flag mounted

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



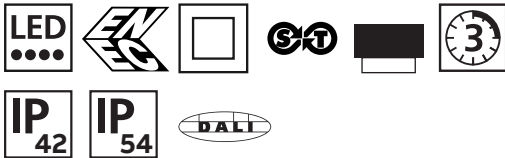
Accessories

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



Serenga 2

Project covering and 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

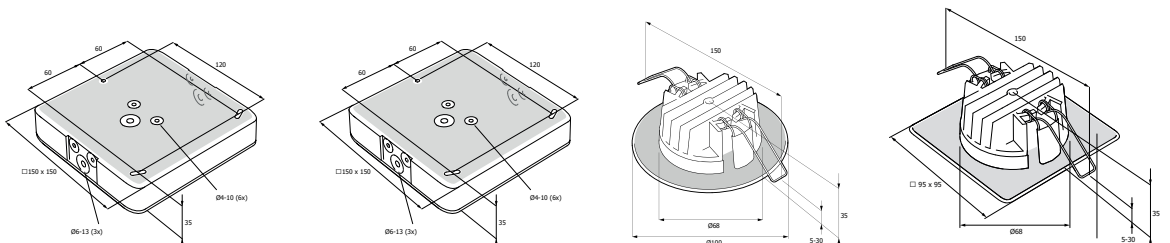
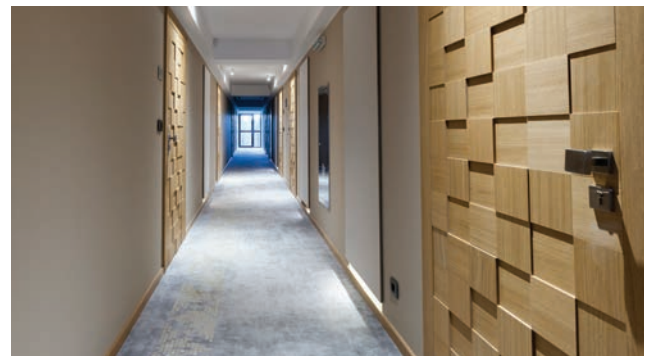
Luminaire

| 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 |



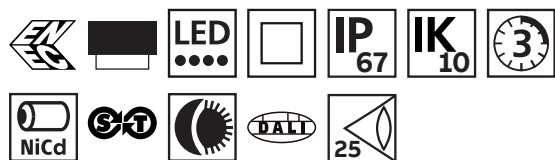
Aqualux

Durable and high performance



Back-lit LED exit sign

- Attractive aluminium modular enclosure
- Clear polycarbonate broad delivery diffuser
- Intelligent self-test as standard
- Complies to IEC 60598.2.22



LED base unit

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

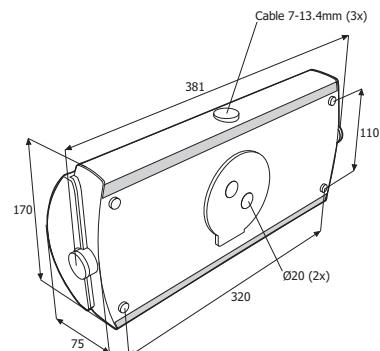
Legends

| Part No. | Pictogram |
|----------|-----------|
| XEN2W | |
| XEN3W | |
| XEN6W | |
| XEN5W | |
| XLF802W | |
| XLF803W | |



Accessories

| Order Code | Description |
|------------|---------------------------------|
| OW/BCM | Ceiling bracket, vertical mount |
| OW/BWA | Wall bracket, angled mount |



Ovano

Productivity and reliability



Compact emergency exit sign, wall mount

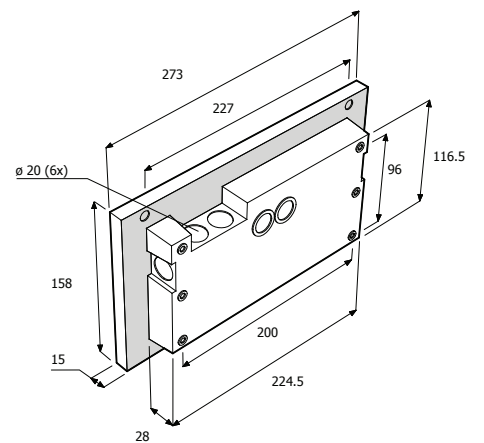
- Compatible with DALI control panel (DCU) to control, test & monitor emergency lighting
- Plug and play, maintained and non-maintained in one
- 25m viewing distance



Luminaire

| Order Code | Description | Input voltage | Lamp type | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|---------------|-------------|---------------------|--------------|--------------------------|----------------------------|------------------------|-------------|
| XT224SM/DALI* | XT224SM | 220-240 AC 50/60 Hz | 1 x LED 2.8W | 3.5 | 3 | -5-45 | 0.66 |

* Configurable pictograms included. Maintained and non maintained.



Ensure 3cm clearance above product when wall mounting

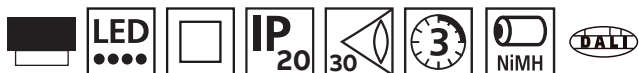
Ovano

Productivity and reliability



Compact emergency exit sign, surface mount

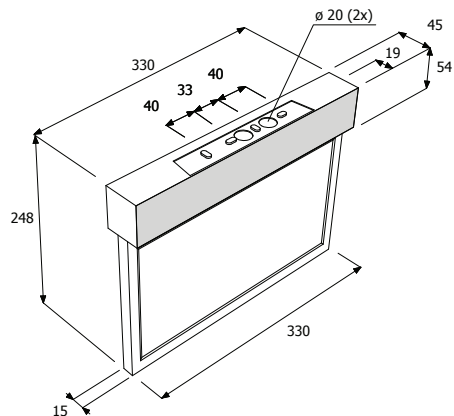
- Compatible with DALI control panel (DCU) to control, test & monitor emergency lighting
- Plug and play, maintained and non-maintained in one
- 30m viewing distance



Luminaire

| Order Code | Description | Input voltage | Lamp type | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|---------------|-------------|---------------------|------------|--------------------------|----------------------------|------------------------|-------------|
| XT230RS/DALI* | XT230RS | 220-240 AC 50/60 Hz | 1 x LED 2W | 3.5 | 3 | -5-45 | 1.24 |

* Configurable pictograms included. Maintained and non maintained.



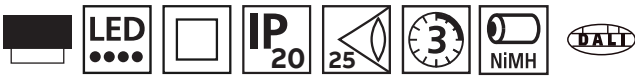
Ovano

Productivity and reliability



Compact emergency exit sign, wall mount

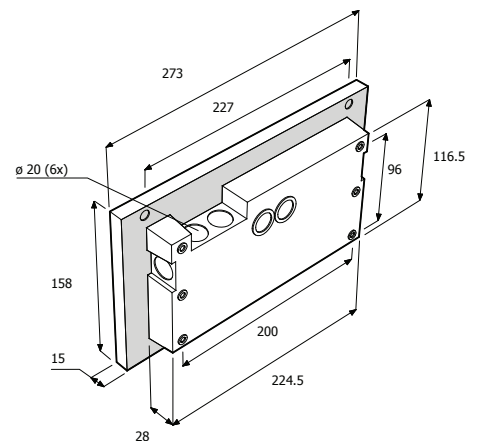
- Compatible with DALI control panel (DCU) to control, test & monitor emergency lighting
- Plug and play, maintained and non-maintained in one
- 25m viewing distance



Luminaire

| Order Code | Description | Input voltage | Lamp type | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|---------------|-------------|---------------------|--------------|--------------------------|----------------------------|------------------------|-------------|
| XT224SM/DALI* | XT224SM | 220-240 AC 50/60 Hz | 1 x LED 2.8W | 3.5 | 3 | -5-45 | 0.66 |

* Configurable pictograms included. Maintained and non maintained.



Ensure 3cm clearance above product when wall mounting.

Ovano

Productivity and reliability



XT200M3H
Anti-Panic version



XT201M3H
Escape route version

Escape route lighting

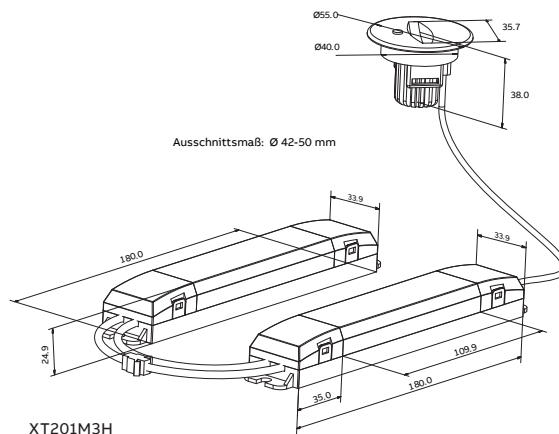
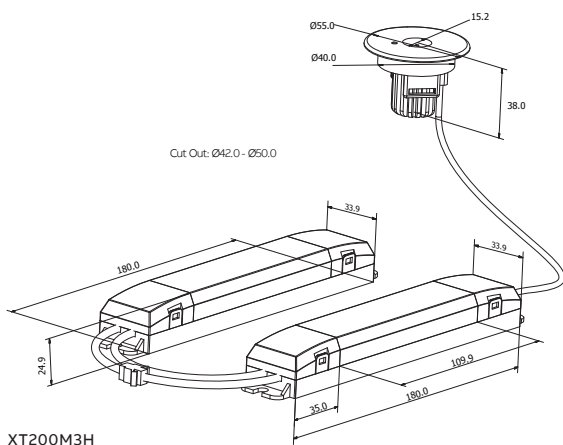
- Compatible with DALI control unit to control, test & monitor emergency lighting
- Plug and play, maintained and non-maintained in one
- Compact and decorative design



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.



Lutia

Reliable and Robust



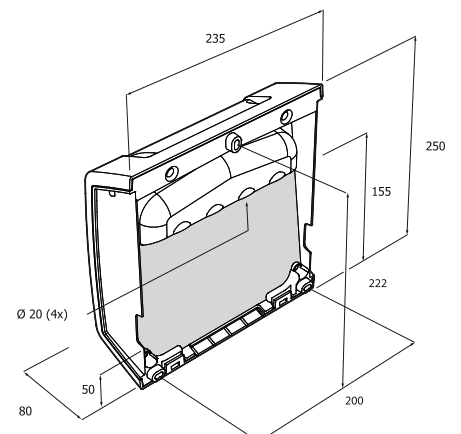
Ceiling and wall mounted luminaire

- First-fix and loop-in, loop-out systems minimise installation time
- One product concept for both wall and ceiling mounted
- Robust design developed for outdoor applications
- Complies to IEC 60598.2.22



Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp (°C) | Weight (kg) |
|------------|---------------------------|-----------------------|--------------|------------------|--------------------------|----------------------------|-----------------------|-------------|
| STLU3LB1E | Lutia LED ESC M3 ST | 230-240 Vac, 50/60 Hz | 2 x 0.95W | 97 | 6.1 / 5.5 | 3 | -20 +40 | 1.6 |
| LU1LB1E | Lutia LED ESC 230V | 230-240 Vac, 50/60 Hz | | 206 | 5.6 / 5 | 230V | -40 +40 | 1.3 |
| LTCLU1LB1E | Lutia LED ESC 230V LTC | 230-240 Vac, 50/60 Hz | | 206 | 5.6 / 5 | 230V | -40 +40 | 1.3 |
| CTLU3LB1E | Lutia LED ESC M3 CT-Naveo | 230-240 Vac, 50/60 Hz | | 97 | 6.1 / 5.5 | 3 | -20 +40 | 1.4 |
| DALU3LB1E | Lutia LED ESC M3 DALI | 230-240 Vac, 50/60 Hz | | 97 | 6.1 / 5.5 | 3 | -20 +40 | 1.4 |



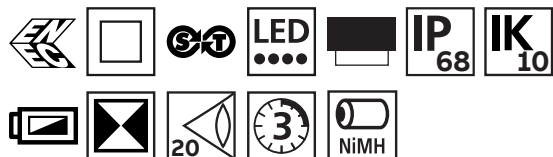
Indulux escape route signalisation

Industrial and design



All-in-one tubular emergency lighting

- Mounting, wiring and expanded flexibility
- Stainless steel solution resisting dust and water (IP68)
- Rapid maintenance with sliding electronic base module



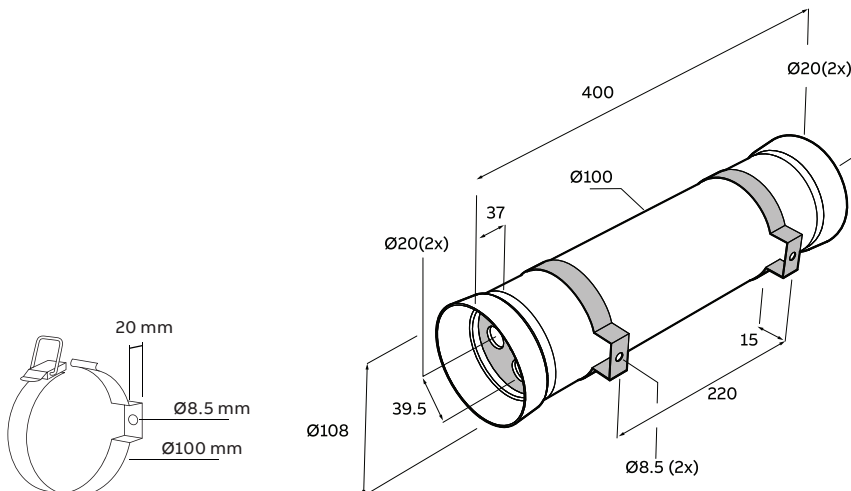
Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|--------------|----------------------------|----------------------|------------|------------------|--------------------------|----------------------------|------------------------|-------------|
| CTIND3LS5 | Indulux LED S/S M3 CT | 220-240 AC 50Hz | 1 x LED 4W | 200 | 7.5 / 3.5 | 3 | 0-40 | 1.6 |
| CTIND3LS5DS | Indulux LED D/S M3 CT | 220-240 AC 50Hz | 2 x LED 4W | 400 | 15 / 7 | 3 | 0-40 | 2.0 |
| IND1LS5 | Indulux LED S/S 230V Slave | 220-240 AC/DC 0-60Hz | 1 x LED 4W | 400 | 7 / 6.5 | 230V | -25-40 | 1.4 |
| IND1LS5DS | Indulux LED D/S 230V Slave | 220-240 AC/DC 0-60Hz | 2 x LED 4W | 800 | 14 / 13 | 230V | -25-40 | 1.4 |
| IND1LS5DSLTC | Indulux LED D/S 230V LTC | 220-240 AC 50/60Hz | 2 x LED 4W | 800 | 14 / 13 | 230V | -25-40 | 1.4 |
| IND1LSLTC | Indulux LED S/S 230V LTC | 220-240 AC 50/60Hz | 1 x LED 4W | 400 | 7 / 6.5 | 230V | -25-40 | 1.4 |
| IND3LS5 | Indulux LED S/S M3 ST | 220-240 AC 50Hz | 1 x LED 4W | 200 | 7.5 / 3.5 | 3 | 0-40 | 1.6 |
| IND3LS5DS | Indulux LED D/S M3 ST | 220-240 AC 50Hz | 2 x LED 4W | 400 | 15 / 7 | 3 | 0-40 | 2.0 |

Configurable pictograms included.

Accessories

| Order Code | Description |
|------------|-------------------------------|
| 102601K | Indulux Cable Entry Cover Kit |
| 102702K | Indulux Battery replacement |



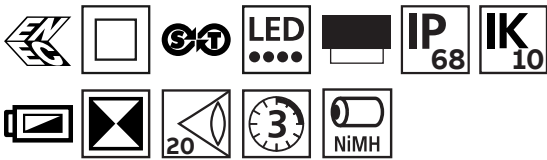
Indulux escape route lighting

Industrial and design



All-in-one tubular emergency lighting

- Mounting, wiring and expanded flexibility
- Stainless steel solution resisting dust and water (IP68)
- Rapid maintenance with sliding electronic base module



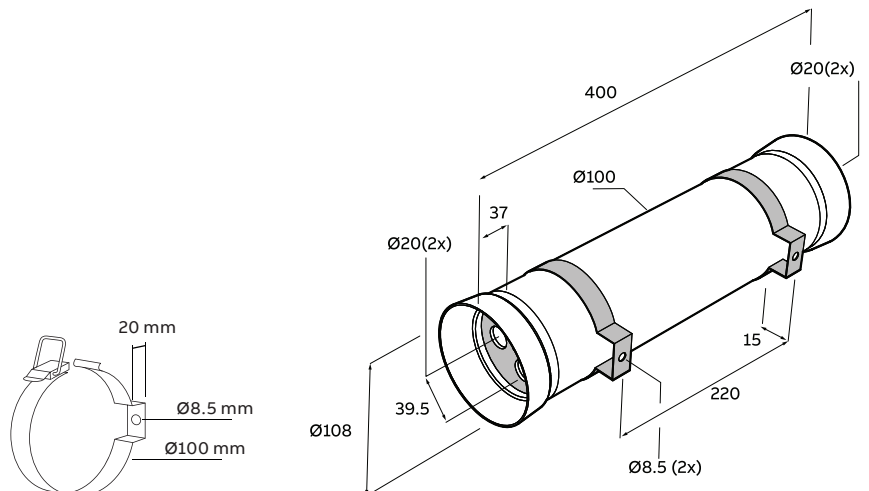
—
Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|--------------|----------------------------|----------------------|------------|------------------|--------------------------|----------------------------|------------------------|-------------|
| CTIND3LS5 | Indulux LED S/S M3 CT | 220-240 AC 50Hz | 1 x LED 4W | 200 | 7.5 / 3.5 | 3 | 0-40 | 1.6 |
| CTIND3LS5DS | Indulux LED D/S M3 CT | 220-240 AC 50Hz | 2 x LED 4W | 400 | 15 / 7 | 3 | 0-40 | 2.0 |
| IND1LS5 | Indulux LED S/S 230V Slave | 220-240 AC/DC 0-60Hz | 1 x LED 4W | 400 | 7 / 6.5 | 230V | -25-40 | 1.4 |
| IND1LS5DS | Indulux LED D/S 230V Slave | 220-240 AC/DC 0-60Hz | 2 x LED 4W | 800 | 14 / 13 | 230V | -25-40 | 1.4 |
| IND1LS5DSLTC | Indulux LED D/S 230V LTC | 220-240 AC 50/60Hz | 2 x LED 4W | 800 | 14 / 13 | 230V | -25-40 | 1.4 |
| IND1LSLTC | Indulux LED S/S 230V LTC | 220-240 AC 50/60Hz | 1 x LED 4W | 400 | 7 / 6.5 | 230V | -25-40 | 1.4 |
| IND3LS5 | Indulux LED S/S M3 ST | 220-240 AC 50Hz | 1 x LED 4W | 200 | 7.5 / 3.5 | 3 | 0-40 | 1.6 |
| IND3LS5DS | Indulux LED D/S M3 ST | 220-240 AC 50Hz | 2 x LED 4W | 400 | 15 / 7 | 3 | 0-40 | 2.0 |

Configurable pictograms included.

—
Accessories

| Order Code | Description |
|------------|-------------------------------|
| 102601K | Indulux Cable Entry Cover Kit |
| 102702K | Indulux Battery replacement |



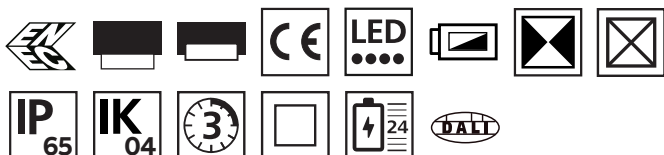
MirEvo Twinspot

Compact & reliable



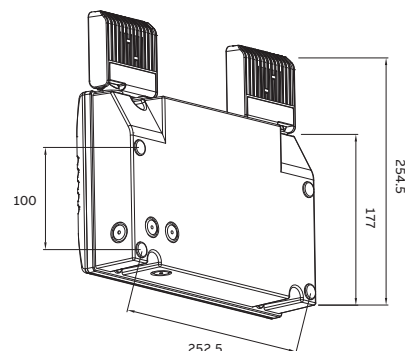
Surface mount luminaire

- Full adjustable heads with 140° beam angle
- Available with Lithium Ferrophosphate (LiFePO4) battery technology for a longer service life
- Suitable for commercial and industrial environments



Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp (°C) | Weight (kg) |
|-------------|---|----------------------|--------------|------------------|--------------------------|----------------------------|-----------------------|-------------|
| TW500E | Twinspot 500Lm Ip65 manual test Wht | 220-240 AC, 50/60 Hz | 8x LED 1W | 500 | 6 / 4.5 | 3 | 0-40 | 1.45 |
| TW500ST | Twinspot 500Lm Ip65 Self-test Wht | 220-240 AC, 50/60 Hz | | 500 | 5.5 / 4 | 3 | 0-40 | 1.45 |
| TW500DA | Twinspot 500Lm Ip65 DALI Wht | 220-240 AC, 50/60 Hz | | 500 | 5.5 / 4 | 3 | 0-40 | 1.45 |
| TW500230V | Twinspot 500Lm Ip65 Slave Wht | 220-240 AC, 50/60 Hz | | 500 | 7.5 / 6 | - | -20 -40 | 1.25 |
| TW500230VLT | Twinspot 500Lm Ip65 Slave Emex test LTC Wht | 220-240 AC, 50/60 Hz | | 500 | 7.5 / 7 | - | -20 -40 | 1.25 |



Cordona

Elegant LED lighting



IP65 decorative LED luminaire

- LED light source/optional fluorescent
- Designed for escape route and open area lighting
- Polycarbonate luminaire body with clear or translucent diffuser
- Semi-recessing accessory available
- Complies to IEC 60598.2.22 and IEC 60598-1
- Opal diffuser available



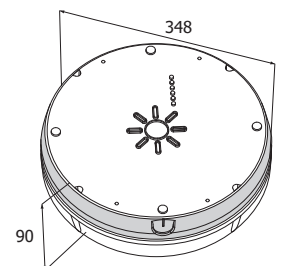
Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|-------------|-----------------------------|----------------------|-----------------|------------------|--------------------------|----------------------------|------------------------|-------------|
| CPW1LA1 | LED 2D WH/OPL-OPT HF | 110-230 AC/DC 0-60Hz | 1 x LED 20W | 1830 | 20.8 / 19.5 | 230V | 0-40 | 1.8 |
| CPW1LA11 | LED 2D WH/CLR-OPT HF | 110-230 AC/DC 0-60Hz | 1 x LED 20W | 2355 | 20.8 / 19.5 | 230V | 0-40 | 1.8 |
| CTCPW4LA1 | LED 2D M3 WH/OPL-OPT CT | 220-240 AC 50/60Hz | 1+1 x LED 20+2W | 1830/207 | 25.8 / 23 | 3 | 0-30 | 2.2 |
| CTCPW4LA11 | LED 2D M3 WH/CLR-OPT CT | 220-240 AC 50/60Hz | 1+1 x LED 20+2W | 2355/207 | 25.8 / 23 | 3 | 0-30 | 2.2 |
| IR2CPW4LA1 | LED 2D M3 WH/OPL-OPT IR2 | 220-240 AC 50/60Hz | 1+1 x LED 20+2W | 1830/207 | 25.8 / 23 | 3 | 0-30 | 2.2 |
| IR2CPW4LA11 | LED 2D M3 WH/CLR-OPT IR2 | 220-240 AC 50/60Hz | 1+1 x LED 20+2W | 2355/207 | 25.8 / 23 | 3 | 0-30 | 2.2 |
| LTCCPW1LA1 | LED 2D WH/OPL-OPT LTC | 220-240 AC 50/60Hz | 1 x LED 20W | 1830 | 20.8 / 19.5 | 230V | 0-40 | 1.9 |
| LTCCPW1LA11 | LED 2D WH/CLR-OPT LTC | 220-240 AC 50/60Hz | 1 x LED 20W | 2355 | 20.8 / 19.5 | 230V | 0-40 | 1.9 |
| STCPW4LA1 | LED 2D M3 WH/OPL-OPT SLFTST | 220-240 AC 50/60Hz | 1+1 x LED 20+2W | 1830/207 | 25.8 / 23 | 3 | 0-30 | 2.2 |
| STCPW4LA11 | LED 2D M3 WH/CLR-OPT SLFTST | 220-240 AC 50/60Hz | 1+1 x LED 20+2W | 2355/207 | 25.8 / 23 | 3 | 0-30 | 2.2 |



Accessories

| Order Code | Description |
|------------|----------------------|
| CPW/BZ | Semi-recessing bezel |



Ceiling cutout 346 mm when semi-recessing.

Camarque

Elegant LED lighting



Aesthetically pleasing, decorative LED luminaire

- Fire-resistant polycarbonate luminaire body with opal diffuser
- Angled and banded trim options in a range of finishes
- Semi-recessing accessory available
- Complies to IEC 60598.2.22 and IEC 60598-1



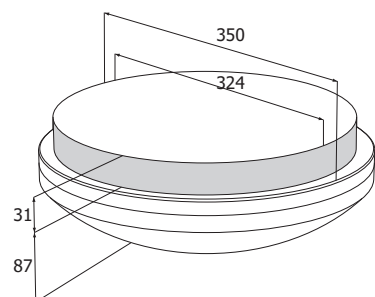
Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|------------|---------------------------|----------------------|-----------------|------------------|--------------------------|----------------------------|------------------------|-------------|
| CLQ1LA1 | CLQ LED 2D WH/OPAL HF | 110-230 AC/DC 0-60Hz | 1 x LED 20W | 1830 | 20.8 / 19.5 | 230V | 0-40 | 1.7 |
| CTCLQ4LA1 | CLQ LED 2D WH/OPAL CT | 220-240 AC 50/60Hz | 1+1 LED 20+2W | 1830/207 | 25.8 / 23 | 3 | 0-30 | 2.2 |
| IR2CLQ4LA1 | CLQ LED 2D WH/OPAL IR2 | 220-240 AC 50/60Hz | 1+1 x LED 20+2W | 1830/207 | 25.8 / 23 | 3 | 0-30 | 2.2 |
| LTCLQ1LA1 | CLQ LED 2D WH/OPAL LTC | 220-240 AC 50/60Hz | 1 x LED 20W | 1830 | 20.8 / 19.5 | 230V | 0-40 | 1.8 |
| STCLQ4LA1 | CLQ LED 2D WH/OPAL SLFTST | 220-240 AC 50/60Hz | 1+1 x LED 20+2W | 1830/207 | 25.8 / 23 | 3 | 0-30 | 2.1 |



Accessories

| Order Code | Description |
|------------|--------------------|
| CLQ/SR | Semi-recessing kit |



Cable entry via 20 mm hole on rear of unit. Ceiling cutout 330 mm when semi-recessing.

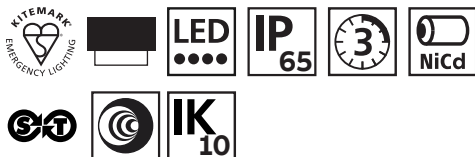
Day-Lite Ex-cel

Practical and durable



Surface mounted luminaire

- Sturdy, general use luminaire with screw-fix diffuser
- Light optimised diffuser
- LED version is suitable for fluorescent replacement requirements
- Complies to IEC 60598.2.22



Luminaire

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|-------------|----------------------------------|----------------------|------------|------------------|--------------------------|----------------------------|------------------------|-------------|
| CTXXW3LS1 | LED 2W M3 DAYLITE WHT/OPL CT | 220-240 AC 50/60Hz | 1 x LED 2W | 214 | 6.1 / 3.9 | 3 | 0-30 | 0.9 |
| CTXXW3LS11 | LED 2W M3 DAYLITE WHT/CLR CT | 220-240 AC 50/60Hz | 1 x LED 2W | 251 | 6.1 / 3.9 | 3 | 0-30 | 0.9 |
| IR2XXW3LS1 | SLIM IP65 LED 2W M3 WH/OPL IR2 | 220-240 AC 50/60Hz | 1 x LED 2W | 214 | 6.1 / 3.9 | 3 | 0-30 | 0.9 |
| IR2XXW3LS11 | SLIM IP65 LED 2W M3 WH/CLR IR2 | 220-240 AC 50/60Hz | 1 x LED 2W | 251 | 6.1 / 3.9 | 3 | 0-30 | 0.9 |
| LTCXXW1LS1 | LED 2W LTC DAYLITE WHT/OPL | 220-240 AC 50/60Hz | 1 x LED 2W | 214 | 4.6 / 4.4 | 230V | 0-40 | 0.7 |
| LTCXXW1LS11 | LED 2W LTC DAYLITE WHT/CLR | 220-240 AC 50/60Hz | 1 x LED 2W | 251 | 4.6 / 4.4 | 230V | 0-40 | 0.7 |
| STXXW3LS1 | LED 2W M3 DAYLITE WHT/OPL SLFTST | 220-240 AC 50/60Hz | 1 x LED 2W | 214 | 6.1 / 3.9 | 3 | 0-30 | 0.8 |
| STXXW3LS11 | LED 2W M3 DAYLITE WHT/CLR SLFTST | 220-240 AC 50/60Hz | 1 x LED 2W | 251 | 6.1 / 3.9 | 3 | 0-30 | 0.8 |
| XW8LS1 | LED 1W 50V ACDC DAYLITE WHT/OPL | 24-50 AC/DC 0-60Hz | 1 x LED 1W | 214 | 3.4 / 2.1 | Central Battery | 0-40 | 0.6 |
| XW8LS11 | LED 1W 50V ACDC DAYLITE WHT/CLR | 24-50 AC/DC 0-60Hz | 1 x LED 1W | 251 | 3.4 / 2.1 | Central Battery | 0-40 | 0.6 |
| XXW1LS1 | LED 2W HF DAYLITE WHT/OPL | 110-230 AC/DC 0-60Hz | 1 x LED 2W | 214 | 3.4 / 2.1 | 230V | 0-40 | 0.6 |
| XXW1LS11 | LED 2W HF DAYLITE WHT/CLR | 110-230 AC/DC 0-60Hz | 1 x LED 2W | 251 | 3.4 / 2.1 | 230V | 0-40 | 0.6 |

Slave versions available with LTC.

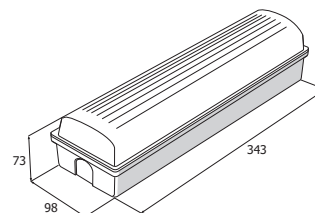
Legends

| Part No. | Pictogram |
|----------------------|-----------|
| RSEN2X | |
| RSEN3X | |
| RSEN6X | |
| RSEN5X | |
| Arabic legend format | |
| RSB1X | |

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order.

Accessories

| Order Code | Description |
|------------|-------------------------------|
| XTR | Semi-recessing bezel in white |



Cable entry via BESA on rear and 20 mm drill holes on rear and ends of unit. Ceiling cutout 342 mm x 95 mm when semi-recessing.

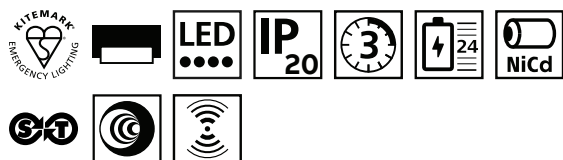
Silver-Scape

Practical and everyday



Recessed emergency luminaire

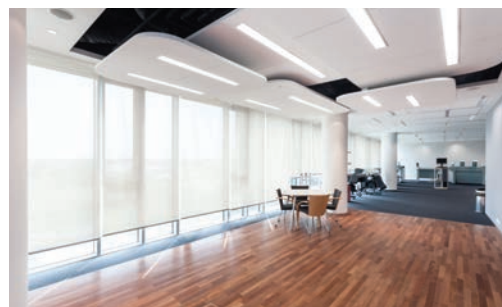
- Suitable for application in suspended ceilings
- Polycarbonate enclosure with wing fixings for recessed application
- Optically engineered diffuser
- Complies to IEC 60598.2.22



Recessed unit

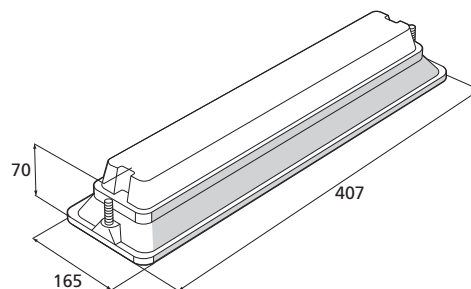
| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|-------------|------------------------------------|----------------------|---------------|------------------|--------------------------|----------------------------|------------------------|-------------|
| CTRRB3LS1X | RECSDB/HEAD 2W M3 LED WHT CT | 220-240 AC 50/60Hz | 1 x LED 2W | 241 | 6.1 / 3.9 | 3 | 0-30 | 1.09 |
| IR2RRB3LS1X | RECSDB/HEAD 2W M3 LED WHT IR2 | 220-240 AC 50/60Hz | | | 6.1 / 3.9 | 3 | 0-30 | 1.09 |
| LTCRRB1LS1X | LED 2W LTC SILVERSCAPE RECESS | 220-240 AC 50/60Hz | | | 4.6 / 4.4 | 230V | 0-40 | 0.9 |
| RB8LS1X | LED 2W 50V ACDC SILVERSCAPE RECESS | 24-50 AC/DC 0-60Hz | | | 3.4 / 2.1 | Central Battery | 0-40 | 0.79 |
| RRB1LS1X | LED 2W HF SILVERSCAPE RECESS | 110-230 AC/DC 0-60Hz | | | 3.4 / 3.2 | 230V | 0-40 | 0.81 |
| STRRB3LS1X | RECSDB/HEAD 2W M3 LED WHT SLFTST | 220-240 AC 50/60Hz | | | 6.1 / 3.9 | 3 | 0-30 | 1.09 |

Slave versions available with LTC.
Order recess unit and diffuser panel separately.



Accessories

| Order Code | Description |
|------------|---|
| RB00 | Recessed diffuser panel |
| RB011 | Rb metal diffuser trim - white |
| RB041 | Rb metal diffuser diff trim - gold/brass |
| RB051 | Rb metal diffuser diff trim - stainless steel |
| RB061 | Rb metal diffuser diff trim - silver |



Cable entry via 20 mm knockouts on rear of unit.
Ceiling cutout 380 mm x 136 mm.

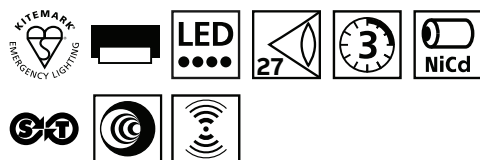
Silver-Scape

Practical and everyday



Recessed emergency exit sign

- Suitable for application in suspended ceilings
- Polycarbonate enclosure with wing fixings for recessed application
- Diffuser panel with slot for exit sign legend
- Complies to IEC 60598.2.22
- Metal trims designed to fit existing Silverlite aperture



Recessed unit

| Order Code | Description | Input voltage | Lamp type | Power consumption (VA/W) | Operation / duration (hrs) | Environ. temp. (°C) | Weight (kg) |
|-------------|------------------------------------|----------------------|------------|--------------------------|----------------------------|---------------------|-------------|
| CTRRB3LS1X | RECS D B/HEAD 2W M3 LED WHT CT | 220-240 AC 50/60Hz | 1 x LED 2W | 6.1 / 3.9 | 3 | 0-30 | 1.09 |
| IR2RRB3LS1X | RECS D B/HEAD 2W M3 LED WHT IR2 | 220-240 AC 50/60Hz | 1 x LED 2W | 6.1 / 3.9 | 3 | 0-30 | 1.09 |
| LTCRRB1LS1X | LED 2W LTC SILVERSCAPE RECESS | 220-240 AC/DC 0-60Hz | 1 x LED 2W | 4.6 / 4.4 | 230V | 0-40 | 0.9 |
| RB8LS1X | LED 2W 50V ACDC SILVERSCAPE RECESS | 24-50 AC/DC 0-60Hz | 1 x LED 1W | 3.4 / 2.1 | Central Battery | 0-40 | 0.79 |
| RRB1LS1X | LED 1W HF SILVERSCAPE RECESS | 110-230 AC/DC 0-60Hz | 1 x LED 2W | 3.4 / 3.2 | 230V | 0-40 | 0.81 |
| STRRB3LS1X | RECS D B/HEAD 2W M3 LED WHT SLFTST | 220-240 AC 50/60Hz | 1 x LED 2W | 6.1 / 3.9 | 3 | 0-30 | 1.09 |

Slave versions available with LTC.
Order recess unit, diffuser panel, trim and legend separately.

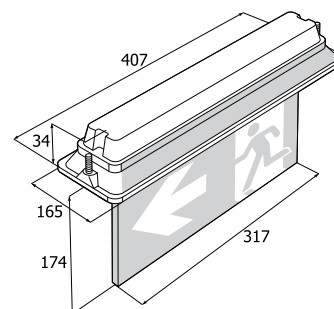
Legends

| Single sided | | Double sided | |
|----------------------|-----------|--|-----------|
| Part no. | Pictogram | Part no. | Pictogram |
| XEN2A31 | | XEN36A32 | |
| XEN3A31 | | XEN22A32 | |
| XEN6A31 | | ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order. | |
| XEN5A31 | | | |
| Arabic legend format | | | |
| XB01A31 | | | |



Accessories

| Order Code | Description |
|------------|--|
| RE01 | Recessed diffuser panel with sign panel slot |
| RE01P | Re plastic slot trim - white |
| RE04 | Re metal slot trim - gold/brass |
| RE05 | Re metal slot trim - stainless steel |
| RE06 | Re metal slot trim - silver |



Cable entry via 20 mm knockouts on rear of unit.
Ceiling cutout 380 mm x 136 mm.

Navigator compact

Practical and everyday



Compact, folded metal emergency exit sign

- Downlight panel provides additional illumination at floor level
- Available in white, gold and stainless steel colours
- Complies to IEC 60598.2.22.



Base unit

| Order Code | Description | Input voltage | Lamp type | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|-------------|-------------------------------------|----------------------|--------------|--------------------------|----------------------------|------------------------|-------------|
| CTVVE3LS1X | LED 2W M3 NAVI COMPACT WHT CT | 220-240 AC 50/60Hz | LED strip 2W | 6.1 / 3.9 | 3 | 0-30 | 1.97 |
| IR2VVE3LS1X | LED 2W M3 NAVI COMPACT WHT IR2 | 220-240 AC 50/60Hz | | 6.1 / 3.9 | 3 | 0-30 | 1.97 |
| LTCVVE1LS1X | LED 2W LTC NAVI COMPACT WHT | 220-240 AC 50/60Hz | | 4.6 / 4.4 | 230V | 0-40 | 1.78 |
| STVVE3LS1X | LED 2W M3 NAVI COMPACT WHT SLFTST | 220-240 AC 50/60Hz | | 6.1 / 3.9 | 3 | 0-30 | 1.86 |
| VVE1LS1X | LED 2W HF NAVI COMPACT WHT | 110-230 AC/DC 0-60Hz | | 3.4 / 3.2 | 230V | 0-40 | 1.69 |
| VVE8LS1X | LED 1W 24-50V ACDC NAVI COMPACT WHT | 24-50V | | 3.4 / 2.1 | Central Battery | 0-40 | 1.69 |

Legends

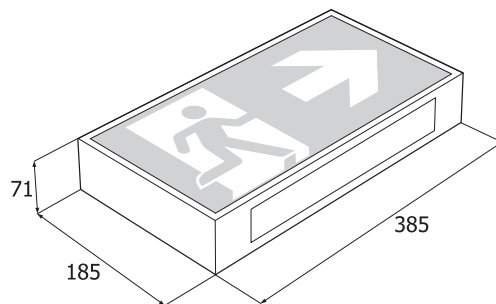
| Part no. | Pictogram |
|----------------------|-----------|
| XEN2V31 | |
| XEN3V31 | |
| XEN6V31 | |
| XEN5V31 | |
| Arabic legend format | |
| XB01V31 | |

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order.



Accessories

| Order Code | Description |
|------------|--|
| VEBACK | Rear trim plate for a flat back when required for ceiling mounting |



Cable entry via 20 mm knockouts on rear of unit.

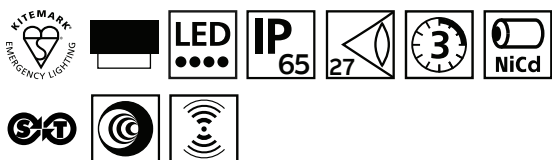
Weatherforce

Practical and durable



Practical, robust double sided exit sign

- High grade polycarbonate enclosure with fixed legends
- Semi-recessing accessory available
- Complies to IEC 60598.2.22
- Cast aluminium base



Exit sign

| Order Code | Description | Input voltage | Lamp type | Lamp output (lm) | Power consumption (VA/W) | Operation / duration (hrs) | Environment temp. (°C) | Weight (kg) |
|-------------|---------------------------------------|----------------------|------------|------------------|--------------------------|----------------------------|------------------------|-------------|
| CTWWA3LS1X | LED 2W M3 W/FORCE WHT/NO DIFF CT | 220-240 AC 50/60Hz | 1 x LED 2W | 207 | 6.1 / 3.9 | 3 | 0-30 | 1.5 |
| IR2WWA3LS1X | LED 2W M3 W/FORCE WHT/NO DIFF IR2 | 220-240 AC 50/60Hz | 1 x LED 2W | | 6.1 / 3.9 | 3 | 0-30 | 1.5 |
| LTCWWA1LS1X | LED 2W LTC W/FORCE WHT/NO DIFF LTC | 220-240AC 50/60Hz | 1 x LED 2W | | 4.6 / 4.4 | 230V | 0-40 | 1.3 |
| STWWA3LS1X | LED 2W M3 W/FORCE WHT/NO DIFF SLFTST | 220-240 AC 50/60Hz | 1 x LED 2W | | 6.1 / 3.9 | 3 | 0-30 | 1.5 |
| WWA1LS1X | LED 2W HF W/FORCE WHT/NO DIFF | 110-230 AC/DC 0-60Hz | 1 x LED 2W | | 3.4 / 3.2 | 230V | 0-40 | 1.2 |
| WWA8LS1X | LED 1W 24-50VACDC W/FORCE WHT/NO DIFF | 24-50 AC/DC 0-60Hz | 1 x LED 1W | | 3.4 / 2.1 | *CB | 0-40 | 1.2 |

*Central Battery.

Legends

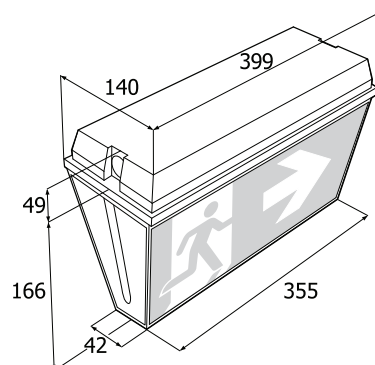
| ISO7010 | | |
|------------|---------------------------------|-----------|
| Part no. | Description | Pictogram |
| XEN2/2DV32 | DV COVER 7010 ARR DN EA SIDE | |
| XEN3/6DV32 | DV COVER 7010 ARR L 1-S, RT 2-S | |
| XEN5/5DV32 | DV COVER 7010 ARR UP EA SIDE | |

| Euro | | |
|------------|--------------------------------------|-----------|
| Part no. | Description | Pictogram |
| XE02/2DV32 | EURO PICT DV ARR DOWN/DOWN D/S | |
| XE03/6DV32 | EURO PICT DV ARR LEFT/RGT D/S | |
| XE05/5DV32 | EURO PICT DV ARR UP/UP D/S | |
| XE06/0DV32 | EURO PICT DV ARR RIGHT ONE SIDE ONLY | |

| Arabic | | |
|----------|-------------------------------------|-----------|
| Part no. | Description | Pictogram |
| XB10DV32 | DV LEG EXIT EN ARBC - BLNK GRN OVER | |
| XB11DV32 | DV COVER EXIT-EN ARABIC DSD | |
| XB23DV32 | DV DIFF EXIT EN-ARB AR L/R OVER | |
| XB50DV32 | DV LEG EXIT EN ARBC - UP-BLNK | |
| XB66DV32 | DV DIFF EXIT EN-ARB ARR DN D/S | |

Accessories

| Order Code | Description |
|------------|-----------------------------------|
| BBZ | Semi-recessing bezel kit in white |



Ceiling cutout 390 mm x 130 mm when semi-recessing.

Horizon

Traditional and versatile



Back-lit LED exit sign

- Choice of IP40 surface mount (OH) or IP20 recessed (OZ) installation with LED lamp
- Shaped diffuser and contoured reflector
- First-Fix aluminium base with white polycarbonate luminaire body
- Clip-on legend panel
- Complies to IEC 60598.2.22

LED base unit

| Order Code | Description | Input voltage | Lamp type | Power consumption / duration | | Environment temp. (°C) | Weight (kg) |
|------------|------------------------|----------------------|------------|------------------------------|-------|------------------------|-------------|
| | | | | (VA/W) | (hrs) | | |
| CTOH3L261 | CT 2LED SIGN M3 | 220-240 AC 50Hz | 2 x LED 1W | 9.9 / 5.1 | 3 | 0-25 | 1.3 |
| IR2OH3L261 | 2LED M3 IR2 | 220-240 AC 50Hz | | 9.9 / 5.1 | 3 | 0-25 | 1.3 |
| OH3L261 | 2LED SIGN M3 | 220-240 AC 50Hz | | 9.9 / 5.1 | 3 | 0-25 | 1.3 |
| OH1L261HF | 2XLED SIGN 230VHF | 220-240 AC/DC 0-60Hz | | 6.8 / 3.1 | 230V | 0-40 | 1.1 |
| OH1L261LTC | 2XLED SIGN 230VLTC | 220-240 AC 50/60Hz | | 6.8 / 3.1 | 230V | 0-40 | 1.1 |
| CTOZ3L261 | CT 2LED REC-SIGN M3 | 220-240 AC 50Hz | | 9.9 / 5.1 | 3 | 0-25 | 1.3 |
| IR2OZ3L261 | REC 2LED M3 IR2 | 220-240 AC 50Hz | | 9.9 / 5.1 | 3 | 0-25 | 1.3 |
| OZ3L261 | 2LED REC-SIGN M3 | 220-240 AC 50Hz | | 9.9 / 5.1 | 3 | 0-25 | 1.3 |
| OZ1L261HF | 2XLED REC-SIGN 230VHF | 220-240 AC/DC 0-60Hz | | 6.8 / 3.1 | 230V | 0-40 | 1.1 |
| OZ1L261LTC | 2XLED REC-SIGN 230VLTC | 220-240 AC 50/60Hz | | 6.8 / 3.1 | 230V | 0-40 | 1.1 |
| OH3L261V2 | 2LEDS SIGN M3 220V60HZ | 220-240 AC 50/60Hz | | 9.9 / 5.1 | 3 | 0-25 | 1.3 |
| OZ3L261V2 | 2LED REC-SIGN M3 60HZ | 220-240 AC 50/60Hz | | 9.9 / 5.1 | 3 | 0-25 | 1.3 |

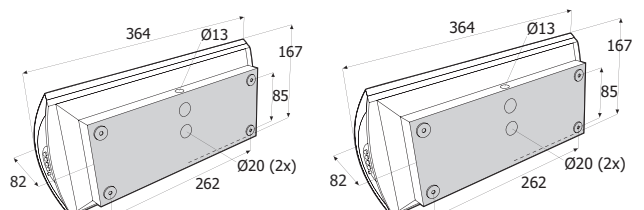
Legends

| Part No. | Pictogram |
|-----------------------------|-----------|
| XEN2H | |
| XEN3H | |
| XEN6H | |
| XEN5H | |
| XLF-SN802 | |
| XLF-SN803 | |
| Arabic legend format | |
| XB01H | |



Accessories

| Order Code | Description |
|------------|--|
| OH/BCM | Ceiling bracket, vertical mount, for back-lit sign |
| OH/WG | Protective wire guard |



Central battery

Reliable emergency power solutions

Our Central Power Supply Systems division offers a choice of reliable and high quality products which are designed to meet the relevant standards and specifications for both AC/AC and AC/DC applications.



01

02

—
01 EMEX 110
—
02 EMEX Mini

EMEX – AC/AC Static inverter range: 220-230V 50/60Hz, 400V. 3ph 50/60Hz

Static inverters in this range are true passive stand-by emergency lighting units, designed and built to exceed current emergency lighting standards and technical requirements, something with which most UPS based central power products do not comply. EMEX Power, EMEX TS static inverters and EMEX Mini power systems offer a low maintenance and extremely reliable central power supply solution with low running costs and a high degree of functionality to serve individual customer needs.

- Modular design, which makes maintenance or repair a simple task
- Manufactured in the UK
- Normal mains luminaires with electronic starters/high frequency ballasts may be driven by the system (glow wire starters cannot be used in accordance with BS EN 60598.2.22)
- Ideal for task lighting projects where normal (high) lighting levels are required to minimise business disruption

- High efficiency: Low running cost. This AC/AC type of system has been designed for an inherently long service life with associated significant cost benefits over alternative emergency lighting solutions
- Cost conservancy and design:
 1. Ventilation fan life is maximised, as they will only operate when required, during 'battery charge' or 'inverter active' cycles
 2. Battery life conserved by a temperature compensated constant voltage charger circuit in conjunction with passive stand-by inverter operation
- Functional features include sub-circuit monitoring, final exit input, MCB monitoring, M/NM operation (user selectable), fire alarm input and two volt-free common alarm outputs
- MCB protection devices are used throughout the equipment, eliminating the need for fuse spares
- Digital display for battery and output metering V & I
- Fully compliant with EN 50171
- EMEX TS includes integral touch-screen with EMEX Test capability

BS EN 50171
KM542294

The 'EMEX Power' and 'EMEX TS' static inverters, 'EMEX 110' AC/DC and 'Compact Power' product ranges are manufactured in our Leeds facility, supported by an experienced engineering, sales and commissioning team:



or contact our sales team via email gb-leedsquotes@abb.com

or our technical team global-eml-technical@abb.com

Tel: +44(0)333 999 9900

Energy and lighting management

| | |
|------------|--|
| 239 | Busch-Jaeger presence detectors |
| 250 | Wiring accessories |
| 256 | Royce Thompson |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

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

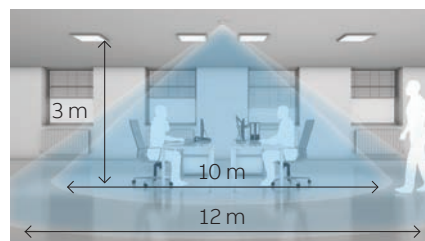
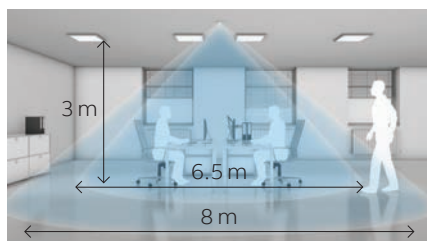


NEW

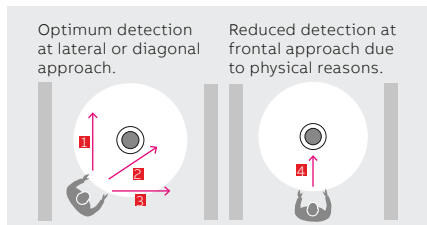


NEW

| 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 |
| Device type | 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 |
| Load²⁾: | | |
| 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 |
| Fluorescent 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 controllable | 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 height: | 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 lens and 4 PIR sensors. The maximum detection range depends on the mounting site and ambient conditions.



NEW

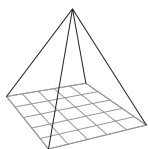
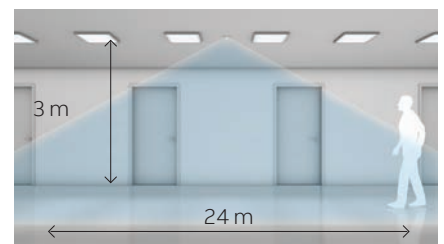
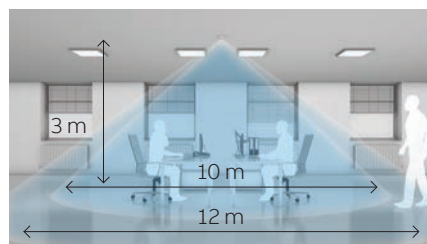
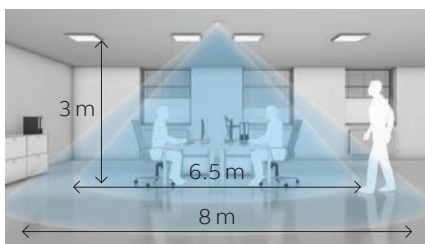


NEW

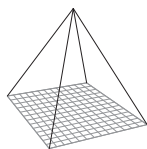


NEW

| Busch-Presence detector Compact, e-contact | Busch-Presence detector Universal, e-contact | Busch-Presence detector Corridor, relay |
|--|--|---|
| 6817/62-24-500 | 6817/32-24-500 | 6819/50-24-500 |
| 6817/62-183-500 | 6817/32-183-500 | 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



— 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

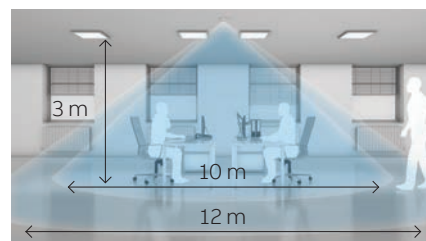
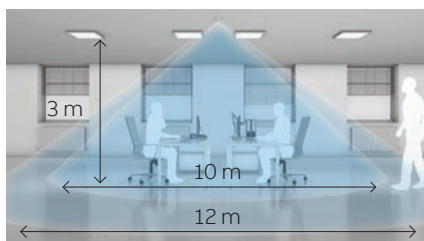


NEW



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 |
| Device type | 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 |
| Load²⁾: | | |
| 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 |
| Fluorescent 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 height: | 23 mm | 23 mm |
| Protection class (sensor / actuator) | IP 40 | IP 40 |





NEW

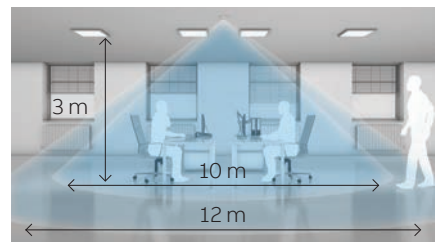
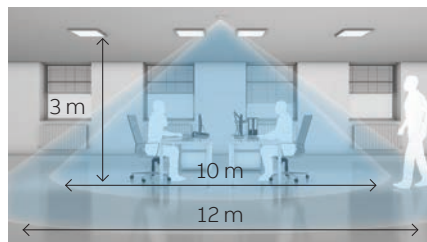
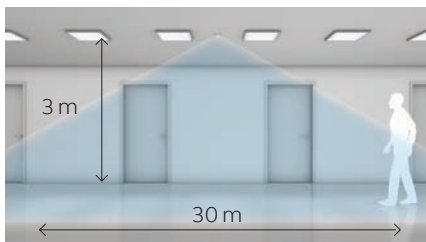


NEW



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 | 6817/93-24-500 | 6819/35-24-500 |
| 6819/51-183-500 | 6817/93-183-500 | 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.

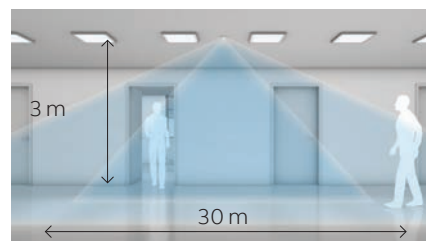
Technical data

Presence detectors 230 V



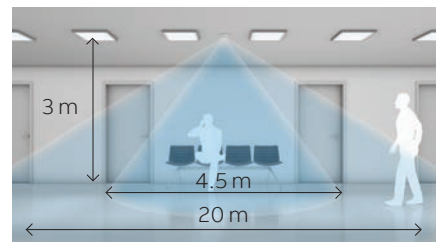
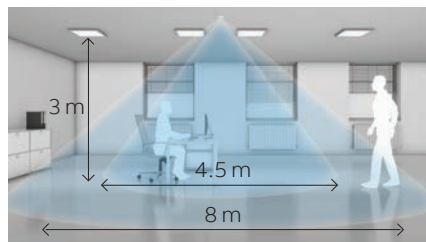
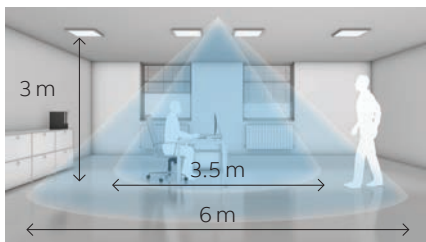
NEW

| Products | Busch-Presence detector Corridor BT, DALI |
|--|---|
| Article number | 6819/55-24-500 6819/55-183-500 |
| Device type | 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 |
| Load²⁾: | |
| 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 |
| Fluorescent 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 height: | 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⁾ |



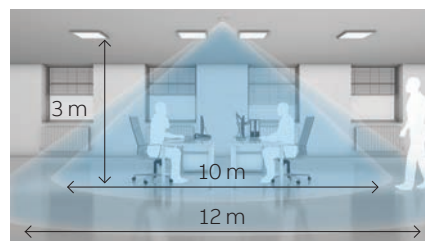
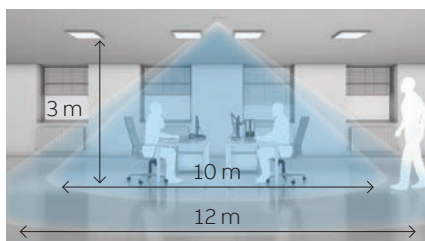
¹⁾ Slave version available.
²⁾ at 230 V~ main voltage.
³⁾ only with surface mount box.

Technical data

Presence detectors 230 V

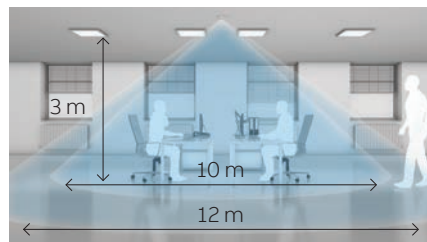
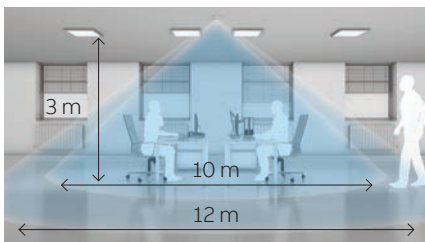


| Products | Busch-Watchdog Presence tech | Busch-Watchdog Presence tech |
|--|--|--|
| Article number | 6813-101-500 & 6401 U-102-500 6813-183-101-500 & 6401 U-102-500 | 6813-101-500 & 6402 U-500 6813-183-101-500 & 6402 U-500 |
| Device type | Master ¹⁾ | Master ¹⁾ |
| Half- / automatic / comfort automatic 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 |
| Load²⁾: | | |
| 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 |
| Fluorescent 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 height: | 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 | yes, via IR remote control |
| 6010-25 | 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

Busch-Watchdog outdoor



| Products | Busch-Watchdog 70 MasterLINE | Busch-Watchdog 110 MasterLINE | Busch-Watchdog 220 MasterLINE | Busch-Watchdog 280 MasterLINE |
|--|---------------------------------------|----------------------------------|---|--|
| Article number | 6854 AGM-xxx-500 | 6855 AGM-xxx-500 | 6847 AGM-xxx-500, 6847 / 8 AGM-204-500, 6847 / 11 AGM-xxx-500 | 6867 AGM-xxx-500 |
| Device type | - | - | 220° | 280° |
| Detection levels | 4 | 4 | 4 | 4 |
| Creep zone protection in the detection range | • | • | • | • |
| Coverage ³ | 12 m frontal, 4 m lateral | 12 m frontal, 4 m lateral | 16 m frontal, 16 m lateral | 16 m frontal, 16 m lateral |
| LED detection check | • | • | • | • |
| Light activation via break switch | • | • | • | • |
| Switching outputs | 1 x non-isolated | 1 x non-isolated | 1 x non-isolated | 1 x non-isolated |
| Back field detection | - | - | • | • |
| Remote operation via IR remote control, 6841-101-500 | - | • | • | • |
| Remote parameterisable IR service remote control, 6842-101-500 | - | • | • | • |
| Presence simulation via IR remote control | - | • | • | • |
| Continuous light switching (4 hours) via IR remote control | - | • | • | • |
| Continuous Off (4 hours) via IR remote control | • | • | • | - |
| Tripping delay | 1 / 3 / 5 minutes | 10 s to 30 minutes | 10 s to 30 minutes | 10 s to 30 minutes |
| Recommended mounting method | Screw-type terminals | Screw-type terminals | Wago screw terminals | Wago screw terminals |
| Twilight sensor | 3 / 15 lux / ∞ (daytime operation) | 3 lux / ∞ (daytime operation) | 0.5 – 300 lux / ∞ (daytime operation) | 0.5 – 300 lux / ∞ (daytime operation) |
| Mounting height | 2.50 m | 2.50 m | 2.50 m | 2.50 m |
| Dimensions (H x W x D) | 100 x 125 x 33 mm | 100 x 125 x 33 mm | 115 x 125 x 141 mm | 115 x 125 x 141 mm |
| Any type of loads | • | • | • | • |
| Suitable for wall and ceiling installation ² | • / - | • / - | • / • | • |
| Additional functions | - | - | -- | - |

¹ Depending on the switch actuator used.

² The use of the corner adapter 6868-xxx-500 may depend on the mounting location.

³ Mounting height of 2.50 m.



| Busch-Watchdog 220 MasterLINE premium | Busch-Watchdog 220 WaveLINE | Busch-Watchdog 220 MasterLINE select | Busch-Watchdog 220 MasterLINE KNX | Busch-Watchdog 220 MasterLINE KNX premium |
|--|---|---|--|---|
| 6848 AGM-xxx-500 | 6747 AGM-xxx-500 | 6847 AGS-xxx-500 | 6179/01-xxx-500 | 6179/02-xxx-500 |
| 220° | 220° | 220° | 220° | 220° |
| 4 | 4 | 1 | 4 | 4 |
| - | • | • | • | • |
| 16 m frontal, 16 m lateral | 16 m frontal, 16 m lateral | 16 m frontal, 16 m lateral | 16 m frontal, 16 m lateral | 16 m frontal, 16 m lateral |
| • | - | • | - | - |
| • | - | • | KNX | KNX |
| 1 x non-isolated 1 x floating | - ¹ | 1 x non-isolated | 2 movement channels | 4 movement channels |
| • | • | - | • | • |
| • | - | • | - | With 6179-500 |
| • | - | • | - | - |
| • | - | • | - | - |
| • | - | • | - | - |
| • | - | • | • | • |
| 10 s to 30 minutes | 10 s to 30 minutes ¹ | 10 s to 30 minutes | 10 s to 18 hours | 10 s to 18 hours |
| Wago screw terminals | Integrated battery compartment | Wago screw terminals | KNX screwless terminals | KNX screwless terminals |
| 0.5 – 300 lux/ ∞ (daytime operation) | 0.5 – 300 lux/ ∞ (daytime operation) | 0.5 – 300 lux/ ∞ (daytime operation) | 1 – 1,000 lux | 1 – 80,000 lux |
| 2.50 m | 2.50 m | 1.10 m – 1.50 m or 2.50 m | 2.50 m | 2.50 m |
| 115 × 125 × 141 mm | 115 × 125 × 141 mm | 115 × 125 × 141 mm | 115 × 125 × 141 mm | 115 × 125 × 141 mm |
| • | - | • | - | - |
| • | • | • | • | • |
| - | - | - | 3 x Twilight threshold | 3 × Twilight /brightness threshold 3 × Temperature threshold 10 × Logic functions |

MILLENNIUM WIRING ACCESSORIES

The Millennium series offers control, functionality and convenience that will always fit the desired look and feel of the building.



Wiring accessories

Millenium wiring accessories

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



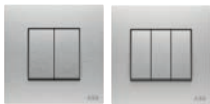
| Description | Technical data | Order code |
|---------------------|----------------|------------|
| 1 gang 1 way switch | 10 AX | AM10120-ST |
| 1 gang 2 way switch | 10 AX | AM10520-ST |
| Intermediate switch | 10 AX | AM11920-ST |
| 1 gang 1 way switch | 20 AX | AM11020-ST |
| 1 gang 2 way switch | 20 AX | AM11520-ST |

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 |
| 1 gang 1 way push button switch | 10 A | AM443044-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 2 way switch | 16 AX | AM111644-ST |
| 3 gang 2 way switch | 16 AX | AM112153-ST |
| 4 gang 2 way switch | 10 AX | AM119188-ST |
| 4 gang 2 way switch | 16 AX | AM119588-ST |

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

01



02



03







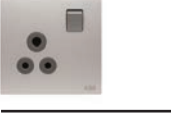

04



Wiring accessories

Millenium wiring accessories

Socket outlets

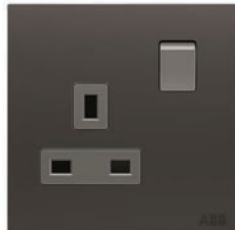
| | Description | Technical data | Order Code |
|---|--|---|-------------|
|  | BS single pole switched socket outlet | 13A SP dual earth terminals | AM23386-ST |
| | | with child safety shutter system. | AM23386-SB |
| | | | AM23386-MG |
| | | | AM23386-AG |
|  | BS double pole switched socket outlet | 13A DP dual earth terminals | AM23786-ST |
| | | with child safety shutter system. | AM23786-SB |
| | | | AM23786-MG |
| | | | AM23786-AG |
|  | BS double pole switched socket outlet with led | 13A SP dual earth terminals and LED with child safety shutter system. | AM23486-ST |
| | | | AM23486-SB |
| | | | AM23486-MG |
| | | | AM23486-AG |
|  | 2 Gang BS double pole switched socket outlet | 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 with led. | 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. | 5A DP round pin switched socket outlet. | AM240147-ST |
| | | | AM240147-SB |
| | | | AM240147-MG |
| | | | AM240147-AG |
| | | 5A DP round pin switched socket outlet. | AM22186-ST |
| | | | AM22186-SB |
| | | | AM22186-MG |
| | | | AM22186-AG |

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

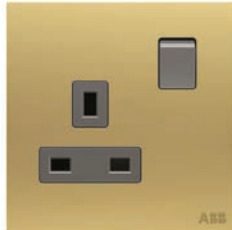
01



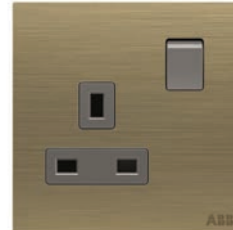
02



03




04




Wiring accessories

Millenium wiring accessories

USB Sockets

| | Description | Technical data | Order Code |
|---|------------------------------|--|------------|
|  | 1 Gang telephone outlet RJ11 | 13A SP 1 gang USB Charger Type A Charger output 10.5W | AM23586-ST |
| | | | AM23586-SB |
| | | | AM23586-MG |
| | | | AM23586-AG |

USB Sockets

| | Description | Technical data | Order Code |
|---|---------------------------------------|--|-------------|
|  | BS single pole switched socket outlet | 13A SP 2 gang USB Charger Type A Charger output 13W | AM235147-ST |
| | | | AM235147-SB |
| | | | AM235147-MG |
| | | | AM235147-AG |

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

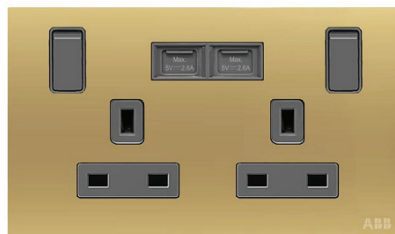
01



02



03











04



Wiring accessories

Millenium wiring accessories

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 secondary, outlet RJ11/RJ12 | 6 pole UTP | AM30644-ST |
| | | | AM30644-SB |
| | | | AM30644-MG |
| | | | AM30644-AG |
|  | 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 |

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

01



02



03






04





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 |

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 |

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





Royce Thompson

Photo-electronic controls

Royce Thompson continue to lead the way with our range of Photo Electric Controls

—
01 Oasis 2000.

—
02 Microstar 2000.

Royce Thompson has been at the forefront of the photo-electronic street lighting and amenity controls market since 1963.

With our extensive experience, Royce Thompson has given street and amenity lighting engineers the 'fit and forget' products that they know and trust. After all, they want to know they have products that will ensure years of exceptional performance on key transport, infrastructure and road network projects nationwide.

—

We have continually focused on high quality and reliability, long service life and delivering goods to our customers on time whilst providing value and a service you can trust.

Today's street lighting engineers agree that a photo-electronic control located many metres in the air on street or amenity architecture must be reliable and high quality. After all, who wants to have to replace or repair products that cannot meet the service lifetime of the luminaires they are controlling. Royce Thompson photo-electronic controls ensure peace of mind and the knowledge that their superior performance mean no expensive returns have to be undertaken to replace failed equipment.

Royce Thompson Photocells

A Photo-Electronic control unit or photocell is an electronic switch that is triggered according to a specific light level measured on the Lux scale. With our electronic or microprocessor technology, photocells operate in a number of ways depending on the level of accuracy required.

—
01



—
02



Range overview

Technical specification



Product selection guide

| Type | Premium Intelligent NEMA Microprocessor Photocells | | | | |
|--|--|-------------------------------|-----------------------------|-----------------------------|--|
| Reference | Oasis 1000 | Oasis 2000 | Monostar 1000 | Monostar 2000 | Nightstar |
| Sensor Type | Filtered Silicon Photodiode | Filtered Silicon Photodiode | Filtered Silicon Photodiode | Filtered Silicon Photodiode | Filtered Silicon Photodiode |
| Sensor Control | Microprocessor | Microprocessor | Microprocessor | Microprocessor | Microprocessor |
| Std Switching level | 70 Lux ON 35 Lux OFF | 70 Lux ON 35 Lux OFF | 70 Lux ON 35 Lux OFF | 70 Lux ON 35 Lux OFF | 70 Lux ON 35 Lux OFF 00:00 OFF - 05:30 ON |
| Operating Voltage Range | 198-270 VAC 50/60 Hz | 110-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz |
| Max Lamp Load | 3 x 400W Inductive (96uF) 8A | 3 x 400W Inductive (96uF) 10A | 2 x 250W inductive (60uF) | 2 x 400W inductive (60uF) | 2 x 400W Inductive (96uF) |
| Zero crossover voltage switching | Yes | Yes | Yes | Yes | Yes |
| Power consumption | 0.25w | 0.25w | 0.5w | 0.5w | 0.25w |
| Operating Temp range | minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C |
| Ingress protection | IP65 | IP67 | IP65 | IP67 | IP67 |
| Dimensions Dia x D | 85.5 x 72 mm | 85.5 x 72 mm | 85.5 x 72 mm | 81 x 75 mm | 85.5 x 72 mm |
| MOV Surge Protection | No | Yes | NO | Yes | Yes |
| Options 1 - Positive & Negative Differential | Yes | Yes | Yes | Yes | Yes |
| Options 2 - Kit | Yes | Yes | Yes | Yes | Yes |
| Options 3 - Conduit | Yes | Yes | Yes | Yes | Yes |
| Options 4 - 110Vac | Yes | Yes | No | No | Yes |
| Options 5 - 48Vac | Yes | Yes | No | No | Yes |
| Options 6 - 24Vac | Yes | Yes | No | No | Yes |
| Options 7 - Reverse Acting | Yes | Yes | No | No | N/A |
| Options 7 - Part Night | See Nightstar | See Nightstar | See Nightstar | See Nightstar | Yes |



Product selection guide

| Type | Economy Photocells | | | | |
|----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------------------------------|--------------------------------------|
| Reference | P12HE | P12RE | S300 | Astro Nova City | V16 |
| Sensor Type | Phototransistor | Phototransistor | Phototransistor | N/A | Phototransistor |
| Sensor Control | Discrete Components | Discrete Components | Discrete Components | Microprocessor | Discrete Components |
| Std Switching level | 70 Lux ON Within 1:1.570 Lux OFF | 70 Lux ON Within 1:1.570 Lux OFF | 70 Lux ON Within 1:1.5 Lux OFF | Astronomical & Fixed Time Schedule | Adjustable Lux ON Diff 1:1.5 Lux OFF |
| Operating Voltage Range | 220-270 VAC 50/60 Hz | 220-270 VAC 50/60 Hz | 220-270 VAC 50/60 Hz | 220-265VAC 50/60 Hz | 220-270 VAC 50/60 Hz |
| Max Lamp Load | 2 x 250W inductive (60uF) 2000w Res | 2 x 250W inductive (60uF) 2000w Res | 2 x 250W inductive (60uF) 2000w Res | 2 x 16A Res 10A Ind 250Vac | 2200VA/ 10A Res |
| Zero crossover voltage switching | No | No | No | No | No |
| Power consumption | 0.6w | 0.6w | 0.6w | 1w | 2.5w |
| Operating Temp range | minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C | minus 10° to + 45°C | minus 20° to + 45°C |
| Ingress protection | IP65 (Lens) IP54 (Casing) | IP65 (Detector) IP54 (Casing) | IP65 | IP20 | IP54 |

SECTION 13



| Miniature Intelligent Microprocessor Photocells | | | | | Two Part Remote Detector | |
|---|-------------------------------|--|-------------------------------|---|--|--|
| Microstar 2000* | Microstar Ultra HT | Nightstar Miniature | Q18 | ER4N | P42E | V400 |
| Filtered Silicon Photodiode | Filtered Silicon Photodiode | Filtered Silicon Photodiode | Filtered Silicon Photodiode | Filtered Silicon Photodiode | Phototransistor | LDR |
| Microprocessor | Microprocessor | Microprocessor | Microprocessor | Microprocessor | Discrete Components | Discrete Components |
| 70 Lux ON 35 Lux OFF | 70 Lux ON 35 Lux OFF | 70 Lux ON 35 Lux OFF 00:00 OFF - 05:30 ON | 70 Lux ON 35 Lux OFF | 70 Lux ON 35 Lux OFF | 70 Lux ON Within 1:1.5 Adjustable Lux ON Diff Lux OFF within 1:1.5 Lux OFF | |
| 198-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz | 198-270 VAC 50/60 Hz |
| 3 x 400W Inductive (96uF) 10A | 3 x 400W Inductive (96uF) 10A | 2 x 400W Inductive (96uF) | 3 x 400W Inductive (96uF) 10A | 3 x 400W Inductive (96uF) 10A | 2 x 250W inductive (60uF) 2000w Res | 2 x 250W inductive (60uF) 2000w Res |
| Yes | Yes | Yes | Yes | Yes | No | No |
| 0.25w | 0.25w | 0.25w | 0.25w | 0.25w | 0.25w | 0.25w |
| minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C | minus 20° to + 60°C |
| IP65 (Lens) IP54 (Casing) | IP65 (Detector) IP54 (Casing) | | ATEX Protection | IP65 (Detector) IP54 (Casing) | IP65 (Detector) IP54 (Casing) | IP65 (Lens) IP54 (Casing) |
| 57x31x25 mm | 57x31x25 mm | 57x31x25 mm | 195x130x109 mm | 68x75x92 mm (Controller). 25x35 mm (Detector) | 77x75x74 mm (Controller). 20x52 mm (Detector) | 68x75x92 mm (Controller). 68x68x86 mm (Detector) |
| On Request (Supplied loose) | On Request (Supplied loose) | On Request (Supplied loose) | | Yes | Yes | No |
| Yes | Yes | Yes | Yes | Yes | Yes | (Positive only) |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Yes | Yes | Yes | Yes | Yes | Yes | NO |
| Yes | Yes | Yes | Yes | Yes | Yes | NO |
| Yes | Yes | Yes | Yes | Yes | Yes | NO |
| Yes | Yes | Yes | Yes | Yes | Yes | NO |
| See Nightstar Mini | See Nightstar Mini | Yes | Yes | Yes | Yes | NO |

*Two part miniature version also available in this range - the ER12.

<< continued



| Type | Economy Photocells | | | | |
|--|--------------------|---|-----------------|-----------------|-----------------|
| Reference | P12HE | P12RE | S300 | Astro Nova City | V16 |
| Dimensions Dia x D | 57x31x25 mm | 57x31x25 mm (Controller). 25x26 mm (Detector) | 85.5 x 72 mm | 65x35x88 mm | 93x67x50 mm |
| MOV Surge Protection | No | No | No | N/A | No |
| Options 1 - Positive & Negative Differential | (Positive only) | (Positive only) | (Positive only) | N/A | (Positive only) |
| Options 2 - Kit | N/A | N/A | N/A | N/A | N/A |
| Options 3 - Conduit | N/A | N/A | Yes | N/A | N/A |
| Options 4 - 110Vac | Yes | Yes | Yes | N/A | N/A |
| Options 5 - 48Vac | Yes (dc only) | Yes (dc only) | Yes (dc only) | N/A | N/A |
| Options 6 - 24Vac | Yes (dc only) | Yes (dc only) | Yes (dc only) | N/A | N/A |
| Options 7- Reverse Acting | Yes (dc only) | Yes (dc only) | Yes (dc only) | N/A | N/A |
| Options 7- Part Night | | | | Yes | NO |



—
For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

Terra AC wallbox

To serve a growing market

Reducing cost of EVs

EVs will be cheaper than internal combustion engine (ICE) alternatives by the mid-to-late 2020s in almost every market



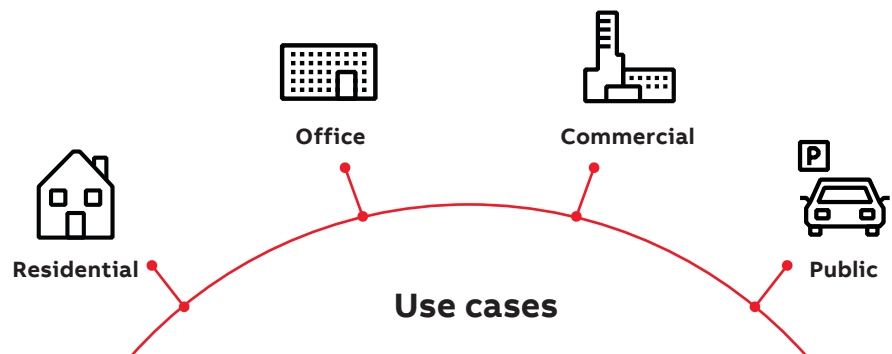
Passenger EV sales

Passenger EV sales will rise to 28 million in 2030 and 56 million by 2040

Global EV sales

Electric vehicles will represent 57% of global passenger car sales by 2040

Terra AC wallbox provides tailored, intelligent and networked charging solutions for any business, home or location.



At home

From private homes to multi-tenant homes and residential communities

At work

From small offices to large offices, business parks and complexes

Commercial locations

From hotels to sports institutions and shopping centres

While parking



While on the street or in a car park

Smarter charging

IEC portfolio

AC charger for electric vehicles, type 2

Power supply network: 220 ... 240 V single phase and 380 ... 415 V three phase, 50 / 60 Hz

| | Rated power (kW) | Max. current (A) | Socket outlet or connector type | Other features | Type | Order Code | Weight Pkg (1pce) (kg) |
|--|------------------|------------------|---------------------------------|--------------------------------|------------------------|---------------|------------------------|
|  | 7.4 | 32 | Socket, type 2 | - | Terra AC W7-T-0 | ABB6AGC081278 | 3 |
| | | | Socket, type 2 | RFID | Terra AC W7-T-R-0 | ABB6AGC085382 | 3 |
| | | | Socket, type 2 | RFID, 4G | Terra AC W7-T-R-C-0 | ABB6AGC085383 | 3 |
| Single phase with display and MID certification | | | | | | | |
| | 7.4 | 32 | Socket, type 2 | RFID, 4G, daisy-chain ethernet | Terra AC W7-T-RD-MC-0 | ABB6AGC082174 | 3 |
|  | 22 | 32 | Socket, type 2 | - | Terra AC W22-T-0 | ABB6AGC081279 | 3 |
| | | | Socket, type 2 | RFID | Terra AC W22-T-R-0 | ABB6AGC082152 | 3 |
| | | | Socket, type 2 | RFID, 4G | Terra AC W22-T-R-C-0 | ABB6AGC082153 | 3 |
| Three phase with display and MID certification | | | | | | | |
| | 22 | 32 | Socket, type 2 | RFID, daisy-chain ethernet | Terra AC W22-T-RD-M-0 | ABB6AGC081280 | 3 |
| | | | Socket, type 2 | RFID, 4G, daisy-chain ethernet | Terra AC W22-T-RD-MC-0 | ABB6AGC081281 | 3 |

Terra AC wallbox accessories

| Description | Current (A) | Type | Order Code | Weight Pkg (1pce) (kg) |
|--|-------------|----------------------------|---------------|------------------------|
| Pedestal | | | | |
| For floor standing installation | | | | |
| Metal pedestal for 1 charger, free-standing | - | TAC pedestal single | ABB6AGC085345 | 9.12 |
| Metal pedestal for 2 chargers, back to back free-standing | - | TAC pedestal back to back | ABB6AGC085684 | 11 |
| Metal pedestal for 2 chargers, back to back free-standing IP54 rated for housing DIN rail components | - | TAC-P 1-2 rectangular | ABB6AGC082326 | 15.61 |
| RFID card (MIFARE) | | | | |
| RFID cards with ABB logo, pack of 5 | - | SER-abbRFIDtags | ABB6AGC082175 | 0.07 |
| RFID cards, blank, pack of 5 | - | SER-blankRFIDtags | ABB6AGC082176 | 0.07 |
| Charge cables | | | | |
| Length: 7 m | | | | |
| Cables with 2 connectors of same or different types | | | | |
| Single phase | | | | |
| Type 2 to type 2 | 32 | TAC-cable T2-T2 7m1P32A | ABB6AGC082535 | 2.95 |
| Type 2 to type 1 | 32 | TAC-cable T2-T1 7m1P32A | ABB6AGC082539 | 3.77 |
| Three phase | | | | |
| Type 2 to type 2 | 32 | TAC-cable T2-T2 7m3P32A | ABB6AGC082537 | 4.18 |
| Warranty | | | | |
| Total warranty time of 4 years (standard warranty 3 years + 1 years) | | TAC extended warranty 4 yr | ABB6AGC084054 | - |
| Total warranty time of 5 years (standard warranty 3 years + 2 years) | | TAC extended warranty 5 yr | ABB6AGC084055 | - |

Terra AC wallbox

Technical specification

| Product information | |
|---|---|
| Charging type | Mode 3 charging, level 2 |
| Input/output power rating and current | IEC ratings: Single phase up to 7.4 kW / 32 A Three phase up to 22 kW / 32 A |
| Input/output voltage | UL ratings up to 7.7 kW / 32 A Single phase: 110 ... 240 V Three phase: 380 ... 415 V, 50 / 60 Hz |
| Network type | TT, TN |
| Socket outlet or connector type | Type 2 socket with or without shutter Type 1 or type 2 cable. Cable can be wrapped around the charger |
| Protection | Overcurrent, overvoltage, undervoltage, ground fault including DC residual current protection, integrated surge protection |
| Overvoltage category | III |
| Energy metering | Revenue grade energy meter Class B (+/- 1%) , MID certification on display variants only |
| Mobile communication with nano SIM socket | EU: GSM, 4G, LTE, WCDMA US: 4G, LTE, WCDMA |
| Available configurable contacts | 1 input, 1 output |
| User Interface | |
| Connectivity | Wifi, Ethernet (RJ45), Bluetooth, RS485, 4G / 3G |
| User authentication | ABB RFID card (1 included) or ChargerSync™ app and portal |
| User interface | TerraConfig app or portal for setup, ChargerSync™ app or portal for use |
| Communication protocols | OCPP 1.6 and RS485 for energy meter connection |
| Status indication | 5 LED's |
| Configuration | |
| Software update | OCPP 1.6, ABB web portal or App |
| Control and configuration | ABB web portal or App |
| General characteristics | |
| IP and IK rating | IP54, IK10 (IK8+ for operating temperature from -35 to -30 °C) |
| NEMA enclosure type | NEMA 3 |
| Operating altitude | 2000 m |
| Operating temperature range | -35...+50 °C (derating may apply) |
| Storage temperature range | -40...+80 °C |
| Mounting | Wall or floor using a pedestal |
| Dimensions | H x W x D 320 x 195 x 110 mm |
| | H x W x D 12.60 x 7.68 x 4.33 inches |
| Certification and standards | |
| Safety standards | IEC/EN 61851-1, EN 62311, EN 62479, IEC/EN 62955 TuV listed conforming to UL 2594, UL 2231-1, UL 2231-2, UL 1998, CSA C22.2. NO.280 |
| Codes and standards | IEC 61851-21-2, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12 CE RED- WLAN / RFID / E-UTRA: EN 300 328 V2.1.1, EN 300 330 V2.1.1, EN 301 908-1 V11.1.2, EN 301 908-13 EN 50470-1, EN 50470-3 FCC Part 15 Class B ENERGY STAR |
| Certification | CE, CB, MID, UL |
| Warranty | 36 months |

Smarter by design

- The ChargerSync app allows streamlined charger configuration
- Ready for integration with advanced smart building energy system
- Simple software updates via the App makes the charger future-ready

With the user in mind

- Enables users to authenticate their charger via the App or RFID card. Configuration is easily done via the App or ABB web portal
- Sends charging status via the App
- Provides information about the status of chargers (availability, number of sessions, energy delivery)



SECTION 15

Smart home - Designed to make your life simpler

| | |
|-----|--------------------|
| 266 | Smarter homes |
| 268 | The range |
| 283 | Door entry systems |
| 284 | ABB-tacteo® KNX |
| 286 | ABB i-bus® KNX |
| 284 | ABB secure@home |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

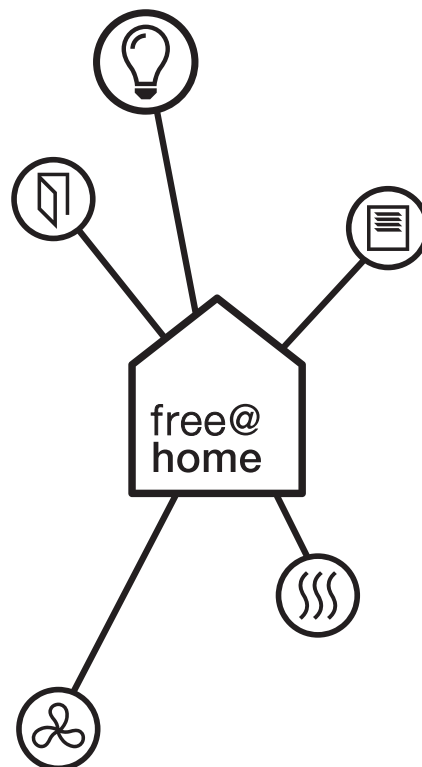
or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

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.

The range

Modularity makes everything possible



System Access Point 2.0

Article no. SAP/S.3

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 control 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.

Dimensions (H x W x D) 107 mm x 109 mm x 30 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



ABB-free@homeTouch 7"

black: DP7-S-625
white: DP7-S-611

Description 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.

155 mm x 218 mm x 29 mm

Display size: 17.8 cm (7")
Display resolution: 800 x 480
Display elements: TFT touch display
Protection type of device: IP 30



ABB-free@homeTouch 4.3"

Article no. black: DP4-1-625
white: DP4-1-611

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).

Dimensions (H x W x D) 104 mm x 143 mm x 53 mm

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



Installation box, FM

DP4-F

Description For flush-mounted and hollow-wall installation of the ABB-free@homeTouch 4.3" DP4-1-6XX. Windproof.

82 mm x 123 mm x 50 mm

Mounting depth: 50 mm



Temperature sensor

DP4-T-1

Description For use as remote sensor.

Cable length: 4 m

Line type: H03 VV-F
Type: NTC 10 kohm



wireless



wireless

| | External Antenna | Basic free@home radiator thermostat, wireless |
|------------------------|---|--|
| Article no. | SAP-1-WL | HA-S-1-WL |
| Description | To be used in combination with System Access Point SAP-S-2 and SAP/S.3. Transmits the wireless signal outside, in case the internal antenna of the System Access Point is shielded. With magnetic foot. | For temperature regulation of water-bearing heaters. With integrated temperature sensor, controller and actuating drive. Local operation for the switchover between comfort mode and Off. No wire laying required. Communication with the free@home system is carried out wireless. Setpoint adjustment via the free@home app or a free@home extension unit (e.g. XXXXXXX). Integrated "Window open" detection or can be linked with WBI-S-X-W |
| Dimensions (H x W x D) | cable lengths: 1.5 m | 63 mm x 48 mm x 84 mm |
| Technical data | | With lime protection function. With frost protection function. Noiseless running. Installation with sleeve nut M 30 x 1.5. Fits many popular valve bases (e.g. Braukmann, Heimeier, Honeywell, Junkers, MNG). The adapters for Danfoss RAV, Danfoss RA and Danfoss RAVL are included in the scope of supply. Adapters for additional valves are available as accessories. Battery included in scope supply. Battery type: 2 x AA Protection class (Device): IP 20 |



wireless



| | Comfort free@home radiator thermostat, wireless | Valve adapter Herz |
|------------------------|--|--|
| Article no. | HA-S-2-WL | AC-HA-1 |
| Description | For temperature regulation of water-bearing heaters. With integrated temperature sensor, controller and actuating drive. Local operation for the switchover between comfort mode and Off. No wire laying required. Communication with the free@home system is carried out wireless. Setpoint adjustment via the free@home app or a free@home extension unit (e.g. XXXXXXX). Integrated "Window open" detection or can be linked with WBI-S-X-WL. | Metal adapter for installation radiator thermostat. (HA-S-X-WL). For valve bodies Herz M 28 x 1,5. |
| Dimensions (H x W x D) | 63 mm x 48 mm x 84 mm | |
| Technical data | With lime protection function. With frost protection function. Noiseless running. Installation with sleeve nut M 30 x 1.5. Fits many popular valve bases (e.g. Braukmann, Heimeier, Honeywell, Junkers, MNG). The adapters for Danfoss RAV, Danfoss RA and Danfoss RAVL are included in the scope of supply. Adapters for additional valves are available as accessories. Battery included in scope supply. Battery type: 2 x AA Protection class (Device): IP 20 | |



Valve adapter Herz

Article no. AC-HA-1

Description Metal adapter for installation radiator thermostat. (HA-S-X-WL). For valve bodies Herz M 28 x 1,5.



Valve adapter Orkli

Article no. AC-HA-3

Description Metal adapter for installation radiator thermostat. (HA-S-X-WL). For valve bodies Orkli M 28 x 1,0.



wireless

free@home window sensor, wireless

Article no. studio white matt : WBI-S-1-64-WL
basalt black : WBI-S-1-65-WL
stainless steel : WBI-S-1-66-WL

Description For monitoring and transmission of the current window handle position (window open, closed, tilted). The status can be visualized on the free@home panel and in the free@home app. The window sensor is installed between the available window handle and the window frame. Existing window handle is used. Suitable for window handle: 7 mm square fastener, 43 mm attachment screw separation, lifter dia. 10 and 12 mm, max. mounting plate size 34 x 77 mm (WxH). No wire laying required. Mounting accessories (square extension, screws, adapter for cams) for the window sensor are included in scope of delivery.

Dimensions (H x W x D) 168 mm x 38 mm x 13 mm

Technical data Battery included in scope supply. Battery type: CR2
Notification in case of low battery capacity in the free@home app.
Protection class (Device): IP 43



wireless

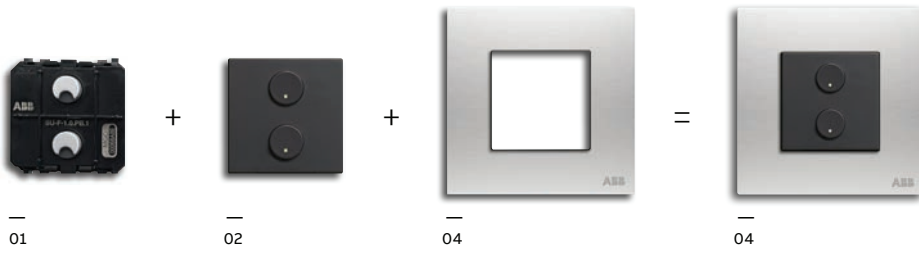
free@home universal detector, wireless

Article no. studio white matt: BI-S-1-64-WL
basalt black: BI-S-1-65-WL

Description For monitoring and transmission of the state (open, closed) of dormer windows, skylights, doors and gates. Additional connection option for an external, potential-free sensor (choice of normally closed or normally open contact). The status can be visualized on the free@home panel and in the free@home app. Isolated evaluation and monitoring of channels. The universal detector and the magnets are fixed with adhesive film or screws. Accessories (adhesive foil, screws, magnet) included in delivery.

Dimensions 118 mm x 30 mm x 22 mm

Technical data Battery type: CR2
Notification in case of low battery capacity in the free@home app.
External sensor max. wire length: 5 m
External sensor terminal connection diameter: 0.14...0.5 mm² (single wire)
Protection class (Device): IP 43



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



- 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.

Colour options for frames and cover plates
Millenium

| Colour | Code (c) | Colour | 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) | Colour | Code (i) |
|-----------|----------|--------|----------|
| No symbol | | Scene | S |
| Light | L | Dimmer | D |
| Blind | B | | |


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×D) 44 mm x 44 mm


Cover plate for 4 fold push buttons incl neutral symbols

SR-4-AMAN

As cover for ABB-free@home® 2/4gang switches of Millenium Range.

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×D) 44 mm x 44 mm


Cover Plate for Room Temperature Controller

CP-RTC-AMAN

As cover for ABB-free@home® room thermostat RTC-F-1.PB.

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×D) 86 mm x 86 mm

Colours (**c**) AG, MG, SB, ST

Symbols (**i**)


Icon for Millenium Rockers

SBI-AMAN

Interchangeable icons for Millenium rockers, available with several icon design options (**i**) in colour anthracite.

AN

L, , S, D


Sensor/Switch actuator 1/1gang

| | |
|--------------------|--|
| Article no. | SSA-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® 2 fold push buttons. |
| Dimensions (H×W×D) | 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 |


Sensor/Switch actuator 2/1gang

| | |
|--------------------|--|
| Article no. | 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® 4 fold push buttons. |
| Dimensions (H×W×D) | 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 |


Sensor/Switch actuator 2/2gang

| | |
|--------------------|--|
| Article no. | SSA-F-2.2.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. |
| 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 |


Sensor/Dim actuator 1/1gang

| | |
|--------------------|---|
| Article no. | SDA-F-1.1.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® 2 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/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 x W x 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

SBA-F-1.1.PB.1

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.

44 mm x 44 mm x 40.9 mm

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 x W x 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

RTC-F-1.PB

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.

44 mm x 44 mm x 29.4 mm

Display elements: LCD Display showing operation modes Protection class of device: IP 20
Mounting depth: 17.9 mm



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×44 mm×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

SU-F-1.0.PB.1

For sending switching, dimming and blind commands to an ABB-free@home® actuator. To be used with ABB-free@home® 2 fold push buttons.

44 mm×44 mm×23.5 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: 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×44 mm×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



Movement detector + 1 actuator

MSA-F-1.1.PB.1

With select lens for detection with animal access. Including an integrated actuator for switching 230 V~ devices. To be used with ABB-free@home® Zenit cover plates for movement detector.

44 mm×44 mm×47 mm

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
Detection range: frontal 6m, lateral 3m
Detection angle: 180°
Brightness limit value: 1 – 500 lux
Protection class of device: IP 20
Mounting depth: 31.5 mm



Movement detector

Article no. MD-F-1.0.PB.1

Description With select lens for detection with animal access. For automatic switching of ABB-free@home® actuators dependent on movement and brightness. To be used with ABB-free@home® Zenit cover plates for movement detector.

Dimensions (H x W x D) 44 mm x 44 mm x 29.6 mm

Technical data
Detection range: frontal 6 m, lateral 3 m
Detection angle: 180°
Brightness limit value: 1 – 500 lux
Protection class of device: IP 20
Mounting depth: 14.1 mm



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 x W x D) 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



Sensor/Switch actuator 2/1gang, wireless

SSA-F-2.1.PB.1-WL

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.

44 mm x 44 mm x 40.9 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, 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 x W x D) 44 mm x 44 mm x 40.9 mm

Technical data Outputs: 2x 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



Sensor/Dim actuator 1/1gang, wireless

SDA-F-1.1.PB.1-WL

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.

44 mm x 44 mm x 40.9 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



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

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

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

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

Display elements: LCD Display showing operation modes
 Protection class of device: IP 20
 Mounting depth: 17.9 mm



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 x W x 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 x W x 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 x W x 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

Movement detector + 1 actuator, wireless

Article no. MSA-F-1.1.1-WL

| | |
|------------------------|---|
| Description | With select lens for detection with animal access. Including an integrated actuator for switching 230 V~ devices. To be used with ABB-free@home® Zenit cover plates for movement detector. |
| Dimensions (H x W x D) | 44 mm x 44 mm x 47 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 Detection range: frontal 6 m, lateral 3 m Detection angle: 180° Brightness limit value: 1 – 500 lux Protection class of device: IP 20 Mounting depth: 31.5 mm |



Binary input 2gang

| | |
|------------------------|--|
| Article no. | BI-F-2.0.1 |
| Description | Conventional push-buttons or auxiliary contacts can be connected to 2 channels. The information of the contact enquiry can be used for activating ABB-free@home® actuators or for recording status information. The contact polling voltage is made available from the binary input itself. Extension of the connecting cables possible by a maximum of 10 m. Flush-mounted device for installation in a 60 mm device box or distribution box. |
| Dimensions (H x W x D) | 39 mm x 40 mm x 12 mm |
| Technical data | Inputs: 2 Polling voltage: 20 V- Protection type of device: IP 20 |



Binary input 4gang

| | |
|------------------------|--|
| Article no. | BI-F-4.0.1 |
| Description | Conventional push-buttons or auxiliary contacts can be connected to 4 channels. The information of the contact enquiry can be used for activating ABB-free@home® actuators or for recording status information. The contact polling voltage is made available from the binary input itself. Extension of the connecting cables possible by a maximum of 10 m. Flush-mounted device for installation in a 60 mm device box or distribution box. |
| Dimensions (H x W x D) | 39 mm x 40 mm x 12 mm |
| Technical data | Inputs: 4 Polling voltage: 20 V- Protection type of device: IP 20 |



Fan coil actuator, MDRC

| | |
|------------------------|--|
| Article no. | FCA-M-2.3.1 |
| Description | For controlling blower convectors. Supports 2-pipe and 4-pipe system for heating and cooling. The fan speed levels can be switched using a changeover or step switch function. Three contacts for switching a three-stage fan. Two contacts for activating the heating and cooling valves. With two binary inputs for connecting dewpoint and condensation contacts. The scanning voltage is provided by the device. The bus connection is provided via the enclosed bus terminal. |
| Dimensions (H x W x D) | 90 mm x 108 mm x 64 mm |
| Technical data | Supports 24 V and 230 V valves Outputs: 3x Normally open contact, potential free Suitable for: AC3 Rated current: 6 A Output voltage: 230 V~ Protection type of device: IP 20 Module width: 6 MW |



Power supply

| | |
|------------------------|---|
| Article no. | PS-M-64.1.1 |
| Description | Power supply with integrated choke. Fast diagnosis due to LED display for operational readiness and errors. |
| Dimensions (H x W x D) | 90 mm x 72 mm x 64 mm |
| Technical data | Display element: operating/overload LED Nominal voltage: 230 V~, +10%/-15 % Secondary: 30 V, +2 V/-2 V Rated frequency: 50 Hz/60 Hz Outputs: 1 Nominal current: 640 mA Protection type of device: IP 20 Module width: 4 MW |

**Binary input 4gang**

Article no. BI-M-4.0.1

Description Records 10 to 230 V AC/DC signals via 4 channels. The information of the signal evaluation can be used for activating ABB-free@home® actuators or for recording status information.

Dimensions (H × W × D) 90 mm × 36 mm × 64 mm

Technical data Inputs: 4
Protection type of device: IP 20
Module width: 2 MW

**Switch actuator 4gang**

SA-M-0.4.1

For switching 4 independent 230 V~ loads. Each contact has a manual operation function independent of auxiliary voltage for additionally displaying the contact setting.

90 mm × 72 mm × 64 mm

Outputs: 4
Type of load: AC1
Nominal current: 16 A, at $\cos \phi$ 0.8
Output voltage: 230 V~
Type of load: AC3
Nominal current: 8 A, at $\cos \phi$ 0.45
Protection type of device: IP 20
Module width: 4 MW

**Switch actuator 8gang**

Article no. SA-M-8.8.1

Description The binary inputs can be used as an interface for convenient operation of free@home systems via potential free push buttons or for reading technical binary signals. The switching outputs can be switched independently as a function of other sensors connected to the bus.

Dimensions (H × W × D) 90 mm × 144 mm × 64 mm

Technical data Inputs: 8
Polling voltage: 32 V
Max. cable length: ≤ 100m
Outputs: 8
Suitable for: AC1
Rated current: 6 A, at $\cos \phi$ 0.8
Output voltage: 230 V~
Suitable for: AC3
Rated current: 6 A, at $\cos \phi$ 0.45
Protection class of device: IP 20
Module width: 8 MW

**Blind actuator 4gang**

BA-M-0.4.1

For controlling 4 independent blind or roller shutter drives. The outputs are inversely blocked.

90 mm × 72 mm × 64 mm

Outputs: 4
Type of load: AC3
Nominal current: 6 A, at $\cos \phi$ 0.45
Output voltage: 230 V~
Protection type of device: IP 20
Module width: 4 MW



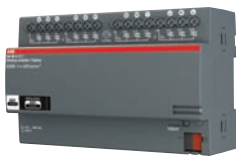
Dimming actuator, 4gang

| | |
|------------------------|---|
| Article no. | DA/M.4.210.2.1 |
| Description | Multichannel universal dimming actuator optimised for dimming retrofit LED lamps (LEDi). Also suitable for dimming incandescent lamps, low-voltage halogen lights with conventional or electronic transformers, 230 V halogen lamps and dimmable energy-saving halogen lamps. Automatic load detection (can be deactivated). Separate N-connection per channel. Parallel connection of the outputs possible to increase the output power. Outputs can be connected in parallel in any configuration. Minimum load: 2 W. |
| Dimensions (H x W x D) | 90 mm x 108 mm x 64 mm |
| Technical data | Rated voltage: 110 - 230 V~, +10 % / -10 % Rated frequency: 50 Hz - 60 Hz Outputs: 4x dimming channel Rated power: 2 - 210 W/VA Protection class (Device): IP 20 Temperature range (Device): -5 °C to 45 °C Dimensions: (L x W x D): 90 mm x 108 mm x 64 mm Mounting depth: 68 mm Module width: 6 MW |



Dimming actuator, 6gang

| | |
|------------------------|---|
| Article no. | DA/M.6.210.2.1 |
| Description | Multichannel universal dimming actuator optimised for dimming retrofit LED lamps (LEDi). Also suitable for dimming incandescent lamps, low-voltage halogen lights with conventional or electronic transformers, 230 V halogen lamps and dimmable energy-saving halogen lamps. Automatic load detection (can be deactivated). Separate N-connection per channel. Parallel connection of the outputs possible to increase the output power. Outputs can be connected in parallel in any configuration. Minimum load: 2 W. |
| Dimensions (H x W x D) | 90 mm x 144 mm x 64 mm |
| Technical data | Rated voltage: 110 - 230 V~, +10 % / -10 % Rated frequency: 50 Hz - 60 Hz Outputs: 6x dimming channel Rated power: 2 - 210 W/VA Protection class (Device): IP 20 Temperature range (Device): -5 °C to 45 °C Dimensions: (L x W x D): 90 mm x 144 mm x 64 mm Mounting depth: 68 mm Module width: 8 MW |



Heating actuator 12gang

| | |
|------------------------|---|
| Article no. | HA-M-0.12.1 |
| Description | For controlling thermoelectric actuating drives in heating/cooling systems. The outputs are protected against short-circuit and overload. |
| Dimensions (H x W x D) | 90 mm x 144 mm x 64 mm |
| Technical data | Outputs: 12 Type of load: resistive Nominal current: 160 mA Protection type of device: IP 20 Module width: 8 MW |



Heating actuator 6gang

| | |
|------------------------|---|
| Article no. | HA-M-0.6.1 |
| Description | For controlling thermoelectric actuating drives in heating/cooling systems. The outputs are protected against short-circuit and overload. |
| Dimensions (H x W x D) | 90 mm x 72 mm x 64 mm |
| Technical data | Outputs: 6 Type of load: resistive Nominal current: 160 mA Protection type of device: IP 20 Module width: 4 MW |

DOOR ENTRY SYSTEM

Your gateway to the world

ABB-Welcome

Your home is an expression of yourself. And with the ABB-Welcome system, you won't compromise impressive style for innovative technology. For Welcome is more than just a door video system – it is the future of home monitoring and security at your fingertips.



ABB-tacteo® KNX

The individual touch

Intelligent control that adapts to your individual needs.



Which functions do you need? Make a selection with our configurator.



The ABB-tacteo® KNX sensor is a capacitive control element for the intelligent building automation of high-end luxury hotels, offices and public and residential buildings.

ABB-tacteo® KNX meets all the requirements that a modern design demands – the highest levels of quality and above all comfort: from blinds, lighting and heating to media and access, everything is easy to control.

Are you an architect planning a building with maximum functionality and a personal touch? Do you desire a modern home that is as individual as you are? Design your KNX sensor with the ABB-tacteo® configurator, completely as you like. The number of functions is variable and can be determined according to your specific needs and wishes. Individually configured as required, each sensor is unique in design and function.

Product overview

You can find the complete product range online at abb.com/tacteo



Six symbol control element

86 x 86



Four symbol control element with room temperature control

86 x 157



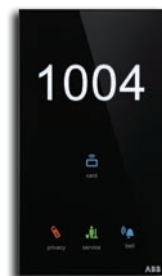
Room outside sensor with card reader

86 x 115



Motion detector Watch dog 180°

86 x 115



Room outside sensor with card reader and room number

86 x 157

SECTION 15



ABB-tacteo® KNX combines maximum functionality with a personal atmosphere. For first-class hotels, residential buildings and public buildings with the highest standards of design.

Advantages for you at a glance



Configurator and simple ordering process

Design your KNX sensors exactly as you want them. You determine the design and functions, you can define icons and texts and also select the colours of the housing and buttons – completely in keeping with the established colour control concept. As soon as the configuration is completed and the finished sensors are saved, you will receive an individual design ID. All of your project sensors, including ID, are added to a parts list. This list allows the wholesaler to produce your personal sensors. Thanks to the design ID, the unique sensors can be retrieved and ordered again at a later date. The configurator can be found at:

tacteo-configurator.
my.abb-livingspace.com



Hotel access control

The ABB-tacteo® KNX range offers secure access control for the hotel and hospitality industry. The sensor performs all the management tasks of a hotel operation, which can be controlled from a central point.



Flat and theft-proof

The frameless and extra-flat KNX sensor sits almost flush with the wall and blends harmoniously into any wall design. Peace of mind is provided by the optional removal guard, which protects the KNX sensor from theft.



Intuitive operation

The capacitive KNX glass sensors react without any touch or contact. When moving your hand towards the sensor, the status lighting switches on automatically. On the other hand, touching the sensor with the entire palm of your hand triggers a preprogrammed function. With a tap of the finger the desired function can be activated.

Smarter Solutions for Home and Building Automation

ABB i-bus® KNX – Power Supply



SV/S 30.160.1.1

Power Supply Standard, 160 mA, MDRC

KNX power supplies generate and monitor the KNX system voltage (SELV). The bus line is decoupled from the power supply by an integrated choke.

The voltage output is short-circuit and overload protected.

The two-colour LED indicates device output status. With two-coloured status indicator and wide range input from 85...265 V AC, 50/60 Hz.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|-----------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 4 | SV/S 30.160.1.1 | 2CDG110144R0011 | 0.30 | 1 |



SV/S 30.320.1.1

Power Supply Standard, 320 mA, MDRC

KNX power supplies generate and monitor the KNX system voltage (SELV). The bus line is decoupled from the power supply by an integrated choke.

The voltage output is short-circuit and overload protected.

The two-colour LED indicates device output status.

With two-coloured status indicator and wide range input from 85...265 V AC, 50/60 Hz.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|-----------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 4 | SV/S 30.320.1.1 | 2CDG110166R0011 | 0.30 | 1 |



SV/S 30.640.3.1

Power Supply Standard, 640 mA, MDRC

KNX power supplies generate and monitor the KNX system voltage (SELV). The bus line is decoupled from the power supply by an integrated choke. The voltage output is short-circuit and overload protected.

The two-colour LED indicates device output status.

Device type SV/S 30.640.3.1 has an additional 30 V DC short-circuit and overload protected voltage output that can be used to power an additional bus line (in combination with a separate choke).

With two-coloured status indicator and wide range input from 85...265 V AC, 50/60 Hz.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|-----------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 4 | SV/S 30.640.3.1 | 2CDG110167R0011 | 0.30 | 1 |

Smarter Solutions for Home and Building Automation

ABB i-bus® KNX – Power Supply



SV/S 30.320.2.1

Power Supply with Diagnostics, 320 mA, MDRC

Compact Power Supply with integrated choke. Quick diagnostics by LED display and ETS communication objects. Analysis of the operating state and the bus line possible by means of ABB i-bus® Tool.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|-----------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 4 | SV/S 30.320.2.1 | 2CDG110145R0011 | 0.26 | 1 |



SV/S 30.640.5.1

Power Supply with Diagnostics, 640 mA, MDRC

Compact Power Supply with integrated choke. Quick diagnostics by LED display and ETS communication objects. Analysis of the operating state and the bus line possible by means of ABB i-bus® Tool. Additional voltage output to supply an additional line in conjunction with an additional choke.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|-----------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 4 | SV/S 30.640.5.1 | 2CDG110146R0011 | 0.26 | 1 |



SU/S 30.640.1

Uninterruptible Power Supply, 640 mA, MDRC

Power supply with integrated choke for supplying a bus line from an uninterrupted supply. Quick diagnostics via LED display for operational readiness, fault and battery level as well as a floating contact for a fault signal indication. The accumulator module or up to 2 rechargeable batteries can be charged in normal operation by the voltage supply. The bus voltage is provided by the batteries in the event of a mains failure.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|-----------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 8 | SV/S 30.640.5.1 | GHQ6310049R0111 | 0.55 | 1 |



AM/S 12.1

Battery Module, 12 V DC, MDRC

With lead-gel battery for use in uninterruptible power supply SU/S 30.640.1 and for maintaining the bus voltage during a mains failure for 10 minutes (at full load). Connection is made via 4-core standard cable.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 8 | AM/S 12.1 | GHQ6310062R0111 | 0.81 | 1 |

Smarter Solutions for Home and Building Automation

ABB i-bus® KNX – System Infrastructure and Interfacing



LK/S 4.2

Line Coupler, MDRC

The line coupler is used in larger installations to connect KNX lines or areas. The lines or areas are galvanically isolated from one another. Telegrams can be filtered to simultaneously reduce the telegram traffic between lines or areas. With ETS 4 (V4.1.2 and higher) the complete group address range of the main groups 0...31 can be filtered. Within a line, the LK/S 4.2 can also be used as a line amplifier (repeater).

| Description | Mod. width | Order details | | Price | Weight | Pack |
|-------------|------------|---------------|-----------------|---------|---------|------|
| | | Type code | Order Code | 1 piece | 1 piece | unit |
| | | | | € | kg | pc. |
| | 2 | LK/S 4.2 | 2CDG110171R0011 | | 0.1 | 1 |



IPR/S 3.1.1

IP Router, MDRC

Connects the KNX bus with the Ethernet network. The device uses the KNXnet/IP protocol for communication (Routing and Tunneling). It can be used as a fast line and area coupler. The full filter table for main groups 0-31 is supported. KNX devices can be programmed via the LAN using ETS. For this and further clients 5 Tunneling Servers are available. The IP address can be fixed or can be received from a DHCP server. Power supply via 12...30 V DC or PoE (IEEE 802.3af class 1). The KNX Standard Communication (Multicast) can be switched off. In this case, up to 10 IPR/S 3.1.1 can communicate using unicast communication.

| Description | Mod. width | Order details | | Price | Weight | Pack |
|-------------|------------|---------------|-----------------|---------|---------|------|
| | | Type code | Order Code | 1 piece | 1 piece | unit |
| | | | | € | kg | pc. |
| | 2 | IPR/S 3.1.1 | 2CDG110175R0011 | | 0.11 | 1 |



IPR/S 3.5.1

IP Router Secure, MDRC

NEW

Connects the KNX bus with the Ethernet network and encrypts communication on the IP backbone. The device uses the KNXnet/IP Secure protocol for communication (Routing and Tunneling). It can be used as a fast line and area coupler. The full filter table for main groups 0-31 is supported. KNX devices can be programmed via the LAN using ETS. For this and further clients 5 Secure Tunneling Servers are available. The IP address can be fixed or can be received from a DHCP server. Power supply via 12...30 V DC or PoE (IEEE 802.3af class 1). The KNX Standard Communication (Multicast) can be switched off. In this case, up to 10 IPR/S 3.5.1 can communicate using unicast communication.

Available January 2019

| Description | Mod. width | Order details | | Price | Weight | Pack |
|-------------|------------|---------------|-----------------|---------|---------|------|
| | | Type code | Order Code | 1 piece | 1 piece | unit |
| | | | | € | kg | pc. |
| | 2 | IPR/S 3.5.1 | 2CDG110176R0011 | | 0.11 | 1 |

Smarter Solutions for Home and Building Automation

ABB i-bus® KNX – System Infrastructure and Interfacing



IPS/S 3.1.1

IP Interface, MDRC

Connects the KNX bus with the Ethernet network. The device uses the KNXnet/IP protocol for communication (Tunneling). KNX devices can be programmed via the LAN using ETS. For this and further clients 5 Tunneling Servers are available. The IP address can be fixed or can be received from a DHCP server. Power supply via 12..30 V DC or PoE (IEEE 802.3af class 1).

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 2 | IPS/S 3.1.1 | 2CDG110177R0011 | 0.11 | 1 |



8186/03-500

IP Patch Panel PoE, MDRC

For the setup of small and medium-sized network installations. For the power supply of up to 3 terminal devices such as IP telephone or IP webcams direct via the network cable. For all PoE applications of class 0 to 3, such as IP telephone, IP cameras, WLAN access points or PoE switches. External power supply via 8186/04 necessary.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 6 | 8186/03-500 | 2CKA008100A0344 | 0.28 | 1 |



8186/04-500

IP Power Supply PoE

For the setup of small and medium-sized network installations. For the power supply of patch panel PoE 3gang 8186/03. Nominal voltage: 100 – 240 V.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 6 | 8186/04-500 | 2CKA008100A0346 | | 1 |



SPD/S1.1 (OVR KNX)

Lightning & Surge Protection

SPD/S1.1 (OVR KNX) SPDs are applied to KNX i-bus data lines for protecting KNX i-bus systems against lightning and transient overvoltages (surges).

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 2 | SPD S1.1 | 7TCA085400R0448 | 0.1 | 1 |

Smarter Solutions for Home and Building Automation

ABB i-bus® KNX – System Infrastructure and Interfacing



BE/S 8.230.2.1

Binary Inputs, 10 – 230 V AC/DC, MDRC

Detects AC/DC signals in the voltage range from 12...230 V. The state of the input is displayed via yellow LEDs. The binary inputs enable detection of independent input signals. The devices feature a manual operation push button for each channel. The devices are powered via the ABB i-bus® and do not require an additional power supply.

| Description | Mod. width | Order details | | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|----------------|-----------------|---------------|----------------|-----------|
| | | Type code | Order Code | | | |
| 4-fold | 2 | BE/S 4.230.2.1 | 2CDG110091R0011 | € | kg | pc. |
| 8-fold | 4 | BE/S 8.230.2.1 | 2CDG110093R0011 | | 0.12 | 1 |
| | | | | | 0.23 | 1 |

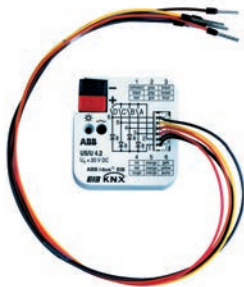


BE/S 4.20.2.1

Binary Inputs, Contact Scanning, MDRC

Scans floating contacts with internally generated scanning voltage. The state of the input is displayed via yellow LEDs. The binary inputs enable detection of independent input signals. The devices feature a manual operation push button for each channel. The devices are powered via the ABB i-bus® and do not require an additional power supply.

| Description | Mod. width | Order details | | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|---------------|----------------|-----------|
| | | Type code | Order Code | | | |
| 4-fold | 2 | BE/S 4.20.2.1 | 2CDG110090R0011 | € | kg | pc. |
| 8-fold | 4 | BE/S 8.20.2.1 | 2CDG110092R0011 | | 0.12 | 1 |
| | | | | | 0.23 | 1 |



US/U 4.2

Universal Interface, FM

The universal interface has 2, 4 or 12 channels which can be parametrised as inputs or outputs with the ETS software. Conventional push-buttons, auxiliary contacts, LEDs and the electronic relay ER/U can be connected. The connecting cables can be extended up to 10 m. The contact scanning voltage and the supply voltage for the LEDs are made available by the device, the series resistors for the LEDs are integrated.

| Description | Mod. width | Order details | | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|---------------|----------------|-----------|
| | | Type code | Order Code | | | |
| 2-fold | – | US/U 2.2 | GHQ6310074R0111 | € | kg | pc. |
| 4-fold | – | US/U 4.2 | GHQ6310070R0111 | | 0.06 | 1 |
| 12-fold | – | US/U 12.2 | 2CDG110065R0011 | | 0.06 | 1 |

Smarter Solutions for Home and Building Automation

ABB i-bus® KNX – Outputs – Combi Switch Actuators



SAH/S 8.6.7.1

Switch/Shutter Actuator, 6 A, MDRC

The compact 6 A combi switch actuator has 8, 16 or 24 independent switching relays. The outputs can be used individually via ABB i-bus® KNX for switching electrical loads or in pairs for controlling 230 V AC roller shutter or blind drives (no electromechanically interlocking). The device features a manual operation, which can also be disabled. Via the manual operation the outputs can be operated manually and the switching or driving status is displayed. The device is powered by KNX and requires no additional power supply.

| Description | Mod. width | Order details | | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|----------------|-----------------|---------------|----------------|-----------|
| | | Type code | Order code | | | |
| 8-fold | 4 | SAH/S 8.6.7.1 | 2CDG110244R0011 | | 0.35 kg | 1 pc. |
| 16-fold | 8 | SAH/S 16.6.7.1 | 2CDG110245R0011 | | 0.60 kg | 1 |
| 24-fold | 12 | SAH/S 24.6.7.1 | 2CDG110246R0011 | | 0.83 kg | 1 |



SAH/S 16.10.7.1

Switch/Shutter Actuator, 10 A, MDRC

The compact 10 A combi switch actuator has 8, 16 or 24 independent switching relays. The outputs can be used individually via ABB i-bus® KNX for switching electrical loads or in pairs for controlling 230 V AC roller shutter or blind drives (no electromechanically interlocking). The device features a manual operation, which can also be disabled. Via the manual operation the outputs can be operated manually and the switching or driving status is displayed. The device is powered by KNX and requires no additional power supply.

| Description | Mod. width | Order details | | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|-----------------|-----------------|---------------|----------------|-----------|
| | | Type code | Order code | | | |
| 8-fold | 4 | SAH/S 8.10.7.1 | 2CDG110247R0011 | | 0.35 kg | 1 |
| 16-fold | 8 | SAH/S 16.10.7.1 | 2CDG110248R0011 | | 0.60 kg | 1 |
| 24-fold | 12 | SAH/S 24.10.7.1 | 2CDG110249R0011 | | 0.83 kg | 1 |



SAH/S 24.16.7.1

Switch/Shutter Actuator, 16 A, MDRC

The compact 16 A combi switch actuator has 8, 16 or 24 independent switching relays. The outputs can be used individually via ABB i-bus® KNX for switching electrical loads or in pairs for controlling 230 V AC roller shutter or blind drives (no electromechanically interlocking). The device features a manual operation, which can also be disabled. Via the manual operation the outputs can be operated manually and the switching or driving status is displayed. The device is powered by KNX and requires no additional power supply.

| Description | Mod. width | Order details | | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|-----------------|-----------------|---------------|----------------|-----------|
| | | Type code | Order code | | | |
| 8-fold | 4 | SAH/S 8.16.7.1 | 2CDG110250R0011 | | 0.35 kg | 1 |
| 16-fold | 8 | SAH/S 16.16.7.1 | 2CDG110251R0011 | | 0.60 kg | 1 |
| 24-fold | 12 | SAH/S 24.16.7.1 | 2CDG110252R0011 | | 0.83 kg | 1 |

Smarter Solutions for Home and Building Automation

ABB i-bus® KNX – Lighting Control – DALI



DG/S 1.64.1.1

DALI-Gateway, Basic, 1-fold, MDRC

The device is used to interface between DALI and KNX installations and incorporates the DALI power supply. One DALI output for up to 64 DALI Slaves. Control and status feedback is carried out via KNX per DALI slave (64), with lighting groups (16), together in broadcast or per scenes (16). Extensive fault and error messages are available. Self-contained emergency converter (64) acc. EN 62386-202 will be supported. By means of KNX and emergency converter, different emergency tests (e.g. function and duration test) can be triggered. Feedback is sent. Slave-, staircase-, force-, block- and scene- function are integrated. DALI telegram rate can change. For diagnostic use and individual change of the DALI address or group assignment a separate ABB i-bus® Tool is available.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 4 | DG/S 1.64.1.1 | 2CDG110198R0011 | 0.133 | 1 |



DG/S 2.64.1.1

DALI-Gateway, Basic, 2-fold, MDRC

The device is used to interface between DALI and KNX installations and incorporates the DALI power supply. Two DALI output for up to 2 x 64 DALI Slaves. Control and status feedback is carried out via KNX per DALI slave (2 x 64), with lighting groups (2 x 16), together in two broadcasts or per scenes (2 x 16). Extensive fault and error messages are available. Self-contained emergency converter (2 x 64) acc. EN 62386-202 will be supported. By means of KNX and emergency converter, different emergency tests (e.g. function and duration test) can be triggered. Feedback is sent. Slave-, staircase-, force-, block- and scene- function are integrated. DALI telegram rate can change. For diagnostic use and individual change of the DALI address or group assignment a separate ABB i-bus® Tool is available.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 4 | DG/S 2.64.1.1 | 2CDG110199R0011 | 0.15 | 1 |



DG/S 8.1

DALI Gateway, 8-fold, MDRC

For controlling up to 128 DALI devices. There are 8 separate, independent DALI outputs/channels available. Up to 16 DALI devices can be connected per channel. The DALI power supply is integrated in the gateway. The functions of switching, dimming, set values and fault indication for lamps and electronic ballasts are available for each output. It is possible to set the lamp burn-in time and 16 light scenes. Commissioning is simplified as no addressing or commissioning of the DALI devices is necessary.

| Description | Mod. width | Order details | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|-----------------|----------------|-----------|
| | Type code | Order Code | € | kg | pc. |
| | 6 | DG/S 8.1 | 2CDG110025R0011 | 0.31 | 1 |

Smarter Solutions for Home and Building Automation

ABB i-bus® KNX – Lighting Control



UD/S 4.210.2.1

LED Dimmer, 4-fold, 210 W/VA, MDRC

NEW

Multichannel universal dimming actuator optimized for dimming of retrofit LED lamps (LEDi). Also suitable for dimming of incandescent lamps, low-voltage halogen lamps with conventional or electronic transformers, 230 V incandescent halogen lamps and dimmable halogen energy-saving lamps. Automatic load detection (deactivatable). One separate N-terminal per channel. Channel bridging possible in order to increase the maximum load. Outputs can be switched in parallel as required. Minimum load: 2 W. Manual operation on the device is possible also without bus voltage or in unprogrammed state. One LED control button per channel (including status indication) for ON and OFF switching as well as for up and down dimming. Programming of the device is possible without connecting 230 V supply voltage. Comprehensive test and diagnostic functions via the i-bus® Tool. Fast parameterization in the ETS by means of copyable channel templates. With integrated bus coupler.

Rated power at 230 V ~:

- 230 V ~ incandescent and halogen lamps: 4 x 210 W/VA to 1 x 600 W/VA.
 - Dimmable 230 V ~ LEDi: 4 x 210 W/VA to 1 x 600 W/VA in trailing edge mode, 4 x 80 W/VA to 1 x 200 W/VA in leading edge mode.
 - Inductive L-transformers with LED/low-voltage halogen lamps: 4 x 210 W/VA to 1 x 600 W/VA.
 - Electronic C-transformers with LED/low voltage halogen lamps: 4 x 210 W/VA to 1 x 600 W/VA.
 - Electronic LC transformers with LED/low-voltage halogen lamps: 4 x 80 W/VA to 1 x 200 W/VA.
- Recommendation: Always use bulbs of one type and manufacturer.

| Description | Mod. width | Order details | | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|----------------|-----------------|---------------|----------------|-----------|
| | | Type code | Order Code | | | |
| 4-fold | 6 | UD/S 4.210.2.1 | 2CKA006197A0047 | | | 1 |



UD/S 6.210.2.1

LED Dimmer, 6-fold, 210 W/VA, MDRC

NEW

Multichannel universal dimming actuator optimized for dimming of retrofit LED lamps (LEDi). Also suitable for dimming of incandescent lamps, low-voltage halogen lamps with conventional or electronic transformers, 230 V incandescent halogen lamps and dimmable halogen energy-saving lamps. Automatic load detection (deactivatable). One separate N-terminal per channel. Channel bridging possible in order to increase the maximum load. Outputs can be switched in parallel as required. Minimum load: 2 W. Manual operation on the device is possible also without bus voltage or in unprogrammed state. One LED control button per channel (including status indication) for ON and OFF switching as well as for up and down dimming. Programming of the device is possible without connecting 230 V supply voltage. Comprehensive test and diagnostic functions via the i-bus® Tool. Fast parameterization in the ETS by means of copyable channel templates. With integrated bus coupler.

Rated power at 230 V ~:

- 230 V ~ incandescent and halogen lamps: 6 x 210 W/VA to 1 x 800 W/VA.
 - Dimmable 230 V ~ LEDi: 6 x 210 W/VA to 1 x 800 W/VA in trailing edge mode, 6 x 80 W/VA to 1 x 240 W/VA in leading edge mode.
 - Inductive L-transformers with LED/low-voltage halogen lamps: 6 x 210 W/VA to 1 x 800 W/VA.
 - Electronic C-transformers with LED/low voltage halogen lamps: 6 x 210 W/VA to 1 x 800 W/VA.
 - Electronic LC transformers with LED/low-voltage halogen lamps: 6 x 80 W/VA to 1 x 240 W/VA.
- Recommendation: Always use bulbs of one type and manufacturer.

| Description | Mod. width | Order details | | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|----------------|-----------------|---------------|----------------|-----------|
| | | Type code | Order Code | | | |
| 6-fold | 8 | UD/S 6.210.2.1 | 2CKA006197A0049 | | | 1 |

Furse - Earthing, lightning and surge protection

| | |
|-----|--|
| 295 | Introduction |
| 296 | Conductors |
| 299 | Earth bonds and clamps |
| 301 | Earth electrodes |
| 303 | Earth bars |
| 305 | Electronic systems protection - Surge Protective Devices (SPDs) |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

Introduction

Lightning protection standard IEC/BS EN 62305

Within the field of lightning protection, developing a thorough understanding of IEC/BS EN 62305 is fundamental to ensure the design and implementation of safe systems against risk from lightning.

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* We hope you find this guide useful and should you require assistance or advice, please do not hesitate to contact ABB.

This guide has been developed therefore to improve understanding of lightning protection and to help industry professionals, including M&E engineers, lightning protection designers and contractors, to navigate through the principles of IEC/BS EN 62305 in a practical and pragmatic manner, considering the diverse and often complicated recommendations therein.

In conjunction with our other Furse technical material, such as CPD accredited seminars and risk assessment software, this guide is presented with the following aims:

- To briefly explain the theory and phenomenon of lightning
- To précis, and simplify where possible the four parts of IEC/BS EN 62305
- To provide an introduction to the transient overvoltage protection requirements defined within IEC60364 / BS 7671
- To outline the importance of lightning protection component performance to IEC 62561, which follows on from former product standard, BS EN 50164

All standards are open to individual interpretation. This guide therefore reflects Furse's own views on good practice and it is not the intention that these views replace, in any way, the recommendations contained in the IEC/BS EN 62305 series, but rather to be read in conjunction with the standard.

Development of the lightning protection standard

The International Electrotechnical Commission (IEC) is the body responsible for the recommendations and maintenance of IEC 62305, through its technical committee, TC 81. This committee includes many member countries including the UK. Additionally, the UK, as part of the European Union, is one of the 28 countries with membership of CEN (Comité Européen de Normalisation), which focuses on ensuring harmonisation of design and application standards throughout its member states.

The electrical arm of CEN is CENELEC (CLC), and it is this committee which is responsible for compiling and producing standards relevant to lightning protection. In 2006, a four-part suite of standards on lightning protection was compiled by CENELEC under the reference number 62305 series.

The UK's **British Standards Institution (BSI)** adopted this CENELEC standard as its own British Standard (with minor amendments), and introduced BS EN 62305 in August 2006. A second edition of each of the four parts of BS EN 62305 was introduced in 2011/2012.

British Standard, BS EN 62305, is a national standard developed from the international standard, IEC 62305 in agreement with TC/81 and CENELEC. This approach has been followed by many other countries worldwide, which have introduced their own national standards, and therefore the content of this guide shall be equally of interest to those working in the lightning protection industry in those countries.

Scope of IEC/BS EN 62305

IEC/BS EN 62305 considers lightning protection in much greater depth and detail than historic standards, such as BS 6651. Additionally, in two key areas, Part 2: Risk management and Part 4: Electrical and electronic systems within structures, it is radically different:

- **Part 2:** presents risk management in much greater detail and complexity and defines a single risk assessment process for protection against physical damage to structures, life hazard, and protection of electronic systems
- **Part 4:** is now a key part of the core IEC/BS EN 62305 standard with implementation driven by Part 2

Conductors

Bare conductors, hard drawn and tinned conductors

Bare copper tape

| Order Code | Conductor size (X x Y) (mm) | Order Code | Conductor size (X x Y) (mm) |
|------------|-----------------------------|------------|-----------------------------|
| | | | |
| TC010 | 12.5 x 3 | TC048 | 31.5 x 4 |
| TC015 | 20 x 1.5 | TC050 | 31 x 6 |
| TC020 | 20 x 3 | TC055 | 38 x 3 |
| TC020/100 | 20 x 3 | TC060-FU | 38 x 5 |
| TC025 | 25 x 1.5 | TC065 | 38 x 6 |
| TC026 | 25 x 2 | TC067 | 40 x 3 |
| TC030 | 25 x 3 | TC066 | 40 x 4 |
| TC030/50 | 25 x 3 | TC071 | 40 x 5 |
| TC030-UL | 1" x 1/8" | TC068 | 40 x 6 |
| TC035 | 25 x 4 | TC069 | 40 x 6.3 |
| TC040 | 25 x 6 | TC070 | 50 x 3 |
| TC040-UL | 1" x 1/4" | TC075 | 50 x 4 |
| TC039 | 30 x 2 | TC078 | 50 x 5 |
| TC042 | 30 x 3 | TC080 | 50 x 6 |
| TC044 | 30 x 4 | TC082 | 50 x 6.3 |
| TC043 | 30 x 5 | 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 |

Bare stranded copper cable

| Soft drawn stranded copper cable | Order Code | Cross sectional area (mm ²) |
|----------------------------------|------------|---|
| | 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 |

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 |

| Tinned soft drawn stranded copper cable | Order Code | Cross sectional area (mm ²) |
|---|------------|---|
| | CB070-T | 70 |

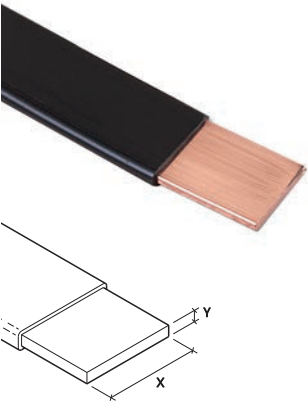
| Hard drawn stranded copper cable | Order Code | Cross sectional area (mm ²) |
|----------------------------------|------------|---|
| | CB071 | 70 |

Conductors

PVC and LSOH covered conductors

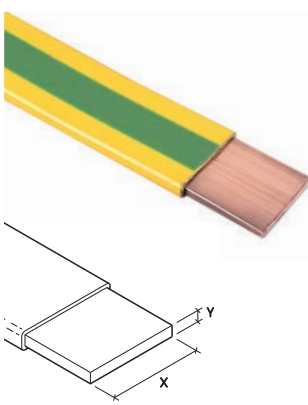
PVC covered copper tape

| 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 |



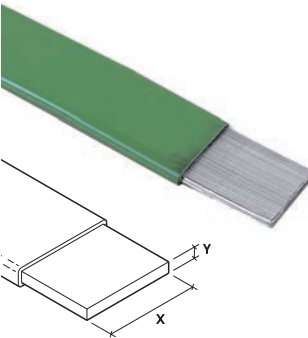
Green & yellow PVC insulated copper tape

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



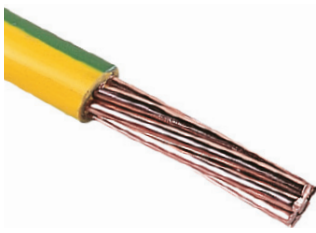
PVC covered aluminium tape

| 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 |



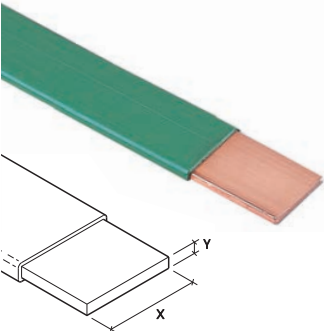
Green & yellow PVC insulated stranded copper cable

| 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


Metallic tape clip

| | Order Code | Conductor size (mm) |
|---|------------------------------------|---------------------|
|  | For use with bare copper | |
| | CP210 | 25 x 3-4 |
| | CP220 | 25 x 5-6 |
| | For use with bare aluminium | |
| | CP110 | 25 x 3-4 |
| | CP120-H | 25 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 |


Metallic tape clip

| | Order Code | Conductor size (mm) |
|---|---------------------------------|---------------------|
|  | For use with bare copper | |
| | CP230 | 30-32 x 3-4 |
| | CP240 | 38-40 x 3-4 |
| | CP260 | 50 x 5-6-5 |

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 |

Metallic 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 | 38-40 x 5-6-5 |
| | CP241 | 40 x 4 |
| | CP256 | 50 x 4 |
| | For use with PVC covered copper | |
| | CP215 | 25 x 3-4 |
| | 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 | |

* 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).


Crossover tape clamp

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

Cable to tape square clamp

| | Order Code | Conductor size | Conductor material |
|---|------------|-------------------------------|--------------------|
|  | CT125 | 25 x 3mm to 50mm ² | Copper |
| | CT130 | 25 x 3mm to 70mm ² | Copper |
| | CT135 | 25 x 3mm to 95mm ² | Copper |

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 and clamps

Mechanical clamps

Rod to tape clamp (type A)

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


Earth bonds and clamps

Mechanical clamps

Rod to tape clamp (type B)


| | Order Code | Nominal rod diameter | | Rod type |
|---|------------|----------------------|-------|--------------|
| | | (in.) | (mm) | |
|  | 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 | | Hole centres (mm) |
|--|------------|------------------------------|--------------------|-------------------|
| | | (in.) | (mm ²) | |
|  | 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 | | Conductor range (mm ²) |
|---|------------|------------------------------|------|------------------------------------|
| | | (in.) | (mm) | |
|  | 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 |
|--|------------|---------------------|--------------------|
| | | | |
| | BN005 | 26 | Aluminium |
| | BN113 | 31 | Copper |
| | BN114 | 40 | Copper |

Earth electrodes

Earth rod and 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) |
|---|------------|-------------------------------------|-------------|
|  | CM035 | FurseCEM® | 25kg |
| | CM040 | FurseCEM® (supplied with cement) | 25kg |


Bentonite moisture retaining clay

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


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) |

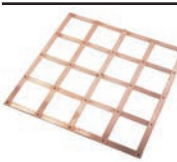
Concrete inspection pit

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

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 |

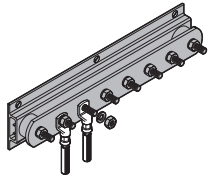
Earth mat (lattice copper)

| | Order Code | Size (mm) |
|---|------------|---------------|
|  | PE110 | 600 x 600 x 3 |
| | PE120 | 900 x 900 x 3 |
| | PE101 | 300 x 300 x 3 |

Earth bonds and clamps

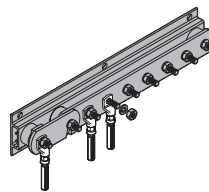
Earth bars

Earth bar



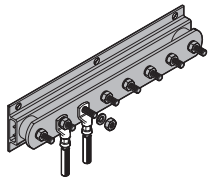
| Order Code | Description | Length (mm) |
|--------------------------------|-------------|-------------|
| Copper earth bar | | |
| LK245-6 | 6 way | 400 |
| LK245-8 | 8 way | 500 |
| LK245-10 | 10 way | 650 |
| LK245-12 | 12 way | 750 |
| LK245-14 | 14 way | 850 |
| LK245-16 | 16 way | 950 |
| LK245-18 | 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



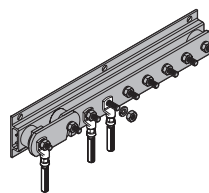
| Order Code | Description | Length (mm) |
|--------------------------------|-------------|-------------|
| Copper earth bar | | |
| LK243-6 | 6 way | 475 |
| LK243-8 | 8 way | 575 |
| LK243-10 | 10 way | 725 |
| LK243-12 | 12 way | 825 |
| LK243-14 | 14 way | 925 |
| LK243-16 | 16 way | 1025 |
| LK243-18 | 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 Bar with stainless steel fixings



| Order Code | Description | Length (mm) |
|--------------------------------|-------------|-------------|
| Copper earth bar | | |
| LK245-6SS | 6 way | 400 |
| LK245-8SS | 8 way | 500 |
| LK245-10SS | 10 way | 650 |
| LK245-12SS | 12 way | 750 |
| Tinned copper earth bar | | |
| LK245-6-TSS | 6 way | 400 |
| LK245-8-TSS | 8 way | 500 |
| LK245-10-TSS | 10 way | 650 |
| LK245-12-TSS | 12 way | 750 |

Earth Bar with stainless steel fixings and single disconnecting link

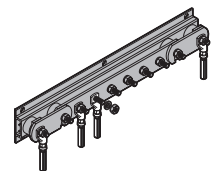


| Order Code | Description | Length (mm) |
|--------------------------------|-------------|-------------|
| Copper earth bar | | |
| LK243-6SS | 6 way | 475 |
| LK243-8SS | 8 way | 575 |
| LK243-10SS | 10 way | 725 |
| LK243-12SS | 12 way | 825 |
| Tinned copper earth bar | | |
| LK243-6-TSS | 6 way | 475 |
| LK243-8-TSS | 8 way | 575 |
| LK243-10-TSS | 10 way | 725 |
| LK243-12-TSS | 12 way | 825 |

Earth bonds and clamps

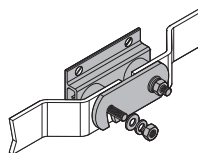
Earth bars

Earth bar with twin disconnecting link



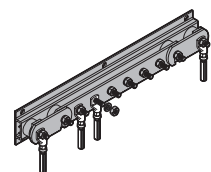
| Order Code | Description | Length (mm) |
|--------------------------------|-------------|-------------|
| Copper earth bar | | |
| LK207-6 | 6 way | 550 |
| LK207-8 | 8 way | 650 |
| LK207-10 | 10 way | 800 |
| LK207-12 | 12 way | 900 |
| LK207-14 | 14 way | 1000 |
| LK207-16 | 16 way | 1100 |
| LK207-18 | 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 |

Earth Bar with stainless steel fixings and twin disconnecting links





| Order Code | Description | Length (mm) |
|--------------------------------|-------------|-------------|
| Copper earth bar | | |
| LK207-6SS | 6 way | 550 |
| LK207-8SS | 8 way | 650 |
| LK207-10SS | 10 way | 800 |
| LK207-12SS | 12 way | 900 |
| Tinned copper earth bar | | |
| LK207-6 -TSS | 6 way | 550 |
| LK207-8 -TSS | 8 way | 650 |
| LK207-10 -TSS | 10 way | 800 |
| LK207-12 -TSS | 12 way | 900 |


Electronic systems protection

Surge protection devices (SPDs) for mains power supplies


Mains supplies - equipotential bonding

| | | Old part no. | NEW part no. | Comment | Description |
|---|-----------------|--------------------|--------------|---------------------------------|--|
|  | ESP 240/I/TNS | - | - | - | Enhanced Type 1+2 power SPD for Single Phase 240V TNS supplies, 50kA 10/350 |
| | ESP 240/III/TNS | ESP 240T1/25/TNS | - | Also replaces MMP B275B/2/S | Enhanced Type 1+2 power SPD for Single Phase 240V TNS supplies, 25kA 10/350 |
|  | ESP 240 /I/TT | - | - | - | Enhanced Type 1+2 power SPD for Single Phase 240V TT supplies, 50kA 10/350 |
| | ESP 240/III/TT | ESP 240T1/25/TT | - | Also replaces MMP B275B/1+1T/S | Enhanced Type 1+2 power SPD for Single Phase 240V TT supplies, 25kA 10/350 |
| | ESP 415/I/TNS | ESP 415T1/25/TNS | - | Also replaces MMP B275B/4/S | Enhanced Type 1+2 power SPD for Three Phase 415V TNS supplies, 25kA 10/350 |
| | ESP 415/III/TNS | ESP 415T1/12.5/TNS | - | Also replaces MMP 2B275A/4/S | Enhanced Type 1+2 power SPD for Three Phase 415V TNS supplies, 12.5kA 10/350 |
| | ESP 415/I/TT | ESP 415T1/25/TT | - | Also replaces MMP B275B/3+1T/S | Enhanced Type 1+2 power SPD for Three Phase 415V TT supplies, 25kA 10/350 |
| | ESP 415/III/TT | ESP 415T1/12.5/TT | - | Also replaces MMP 2B275A/3+1T/S | Enhanced Type 1+2 power SPD for Three Phase 415V TT supplies, 12.5kA 10/350 |


Mains supplies - DIN housing

| | | Part no. | Description |
|---|--------------|----------|---|
|  | ESP 240 D1 | - | Enhanced Type 1+2+3 Full Mode power SPD for 240V Single Phase supplies, Din Rail mounted |
| | ESP 415 D1 | - | Enhanced Type 1+2+3 Full Mode power SPD for 415V 3 Phase supplies, Din Rail mounted |
| Supplied with remote indication display | | | |
| | ESP 415 D1R | - | Enhanced Type 1+2+3 Full Mode power SPD for 3 Phase 415V supplies, LED status indication on remote display, Din Rail mounting |
| | ESP RLA HD-4 | - | 4 Metre display lead for ESP D1R Series |


Mains supplies (extra high maximum surge currents)

| | | Part no. | Description |
|---|------------|----------|---|
|  | ESP 415 M2 | - | Enhanced Type 1+2+3 Full Mode power SPD for 3 Phase 415V supplies, high surge current rating |
| | ESP 415 M4 | - | Enhanced Type 1+2+3 Full Mode power SPD for 3 Phase 415V supplies, very high surge current rating |

Mains supplies & power distribution system

| | | Part no. | Description |
|--|------------|----------|--|
|  | ESP 240 M1 | - | Enhanced Type 1+2+3 power SPD for 240V Single Phase supplies |
| | ESP 415 M1 | - | Enhanced Type 1+2+3 power SPD for 415V 3 Phase supplies |


Mains supplies - with remote display indication

| | | Part no. | Description |
|---|-------------|----------|--|
|  | ESP 415 M1R | - | Enhanced Type 1+2+3 power SPD for 3 Phase 415V supplies, with remote indication display |
| | ESP 415 M2R | - | Enhanced Type 1+2+3 power SPD for 3 Phase 415V supplies, 12.5KA 10/350, with remote indication display |
| | ESP 415 M4R | - | Enhanced Type 1+2+3 power SPD for 3 Phase 415V supplies, 25KA 10/350, with remote indication display |
| | ESP RLA-4 | - | 4 Metre display lead for ESP M1R, M2R and M4R Series |


Electronic systems protection

Surge protection devices (SPDs) for mains power supplies


T2 Series mains supplies - equipotential bonding

| | NEW part no. | Comment | Description |
|---|------------------|--------------------------------|---|
|  ESP 240T2/XXX ESP 415T2/XXX | ESP 240T2/50/TNS | Also replaces MMP B275B/2/S | Enhanced Type 1+2 power SPD for Single Phase 240V TNS supplies, 50kA 8/20 |
| | ESP 240T2/50/TT | Also replaces MMP B275B/1+1T/S | Enhanced Type 1+2 power SPD for Single Phase 240V TT supplies, 50kA 8/20 |
| | ESP 415T2/50/TNS | Also replaces MMP B275B/4/S | Enhanced Type 1+2 power SPD for Three Phase 415V TNS supplies, 50kA 8/20 |
| | ESP 415T2/50/TT | Also replaces MMP B275B/3+1T/S | Enhanced Type 1+2 power SPD for Three Phase 415V TT supplies, 50kA 8/20 |


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

| | Part no. | Description |
|--|--|--|
|  | Protectors rated at 10 amps or less | |
| | ESP 240D-10A | Enhanced mains SPD for 240V supplies up to 10A, with LED status indication |
| | ESP 240DS-10A | Enhanced mains SPD for 240V supplies up to 10A, with LED status indication and remote signal contact |
| | Protectors rated at 32 amps or less | |
| | ESP 240D-32A | Enhanced mains SPD for 240V supplies up to 32A, with LED status indication |
| | ESP 240DS-32A | Enhanced mains SPD for 240V supplies up to 32A, with LED status indication and remote signal contact |

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

| | Part no. | Description |
|---|--|--|
|  | Protectors rated at 5 amps or less | |
| | ESP 240-5A | Enhanced mains SPD for 240V supplies up to 5A |
| | ESP 240-5A/BX | Enhanced mains SPD for 240V supplies up to 5A, IP66 enclosure |
| | Protectors rated at 16 amps or less | |
| | ESP 240-16A | Enhanced mains SPD for 240V supplies up to 16A |
| | ESP 240-16A/BX | Enhanced mains SPD for 240V supplies up to 16A, IP66 enclosure |
| | ESP 240T3/SKT | Type 3 mains SPD for supplies up to 16A for installation behind socket outlets |

Plug-in SPD for mains power supplies, with telephone and computer line protection options

| | Part no. | Description |
|---|----------------|--|
|  | ESP MC/19BK | Brackets and fixings for mounting ESP MC SPD Series To 19" |
| | ESP MC | Plug-in power SPD with filtering for 220-240V systems up to 13A with UK plug |
| | ESP MC/TN/RJ11 | Plug-in power SPD with filtering for 220-240V systems up to 13A with UK plug and data SPD for telecom systems with RJ11 connection |
| | ESP MC/Cat-5e | Plug-in power SPD with filtering for 220-240V systems up to 13A with UK plug and data SPD for Cat-5E computer systems with RJ45 connection |


Electronic systems protection

Surge protection devices (SPDs) for data, signal and telephone lines


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

| | Part no. | Description |
|---|----------|--|
|  | ESP 06E | Data SPD for 2-Wire signal lines up to 6V, 1.25A |
| | ESP 15E | Data SPD for 2-Wire signal lines up to 15V, 1.25A |
| | ESP 30E | Data SPD for 2-Wire signal lines up to 30V, 1.25A |
| | ESP 50E | Data SPD for 2-Wire signal lines up to 50V, 1.25A |
| | ESP 110E | Data SPD for 2-Wire signal lines up to 110V, 1.25A |


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

| | Part no. | Description | |
|---|---|--|--|
|  | ESP SLTN | Data SPD for 2-Wire telephone lines up to 296V (ringing voltage) | |
| | Slim line protectors with removable protection module, LED status indication and isolated screen | | |
| | ESP SL06L/I | Data SPD for 2-Wire signal lines up to 6V, 750mA | |
| | ESP SL15L/I | Data SPD for 2-Wire signal lines up to 15V, 750mA | |
| | ESP SL30L/I | Data SPD for 2-Wire signal lines up to 30V, 750mA | |
| | ESP SL50L/I | Data SPD for 2-Wire signal lines up to 50V, 750mA | |
| | ESP SL110L/I | Data SPD for 2-Wire signal lines up to 110V, 750mA | |
| | Slim line, Intrinsically Safe protectors (ATEX approved) with removable protection module, LED status indication and isolated screen | | |
| | ESP SL15XL/I | Data SPD for 2-Wire signal lines up to 15V, 750mA | |
| | ESP SL30XL/I | Data SPD for 2-Wire signal lines up to 30V, 750mA | |
| Slim line SPD for 4-20mA current loops with removable protection module, LED status indication and isolated screen | | | |
| ESP SL30L/4-20/I | Data SPD for 4-20mA signal lines up to 30V, 75mA | | |


High density data, signal & telephone lines (/PT fast fit Push Terminal option)

| | Part no. | Description |
|---|-------------------------|---|
|  | ESP 06Q or ESP 06Q/PT | Data SPD for 8-Wire (4 pairs) 6V signal lines space saving design |
| | ESP 15Q or ESP 15Q/PT | Data SPD for 8-Wire (4 pairs) 15V signal lines space saving design |
| | ESP 30Q or ESP 30Q/PT | Data SPD for 8-Wire (4 pairs) 30V signal lines space saving design |
| | ESP 50Q or ESP 50Q/PT | Data SPD for 8-Wire (4 pairs) 50V signal lines space saving design |
| | ESP 110Q or ESP 110Q/PT | Data SPD for 8-Wire (4 pairs) 110V signal lines space saving design |
| | ESP 180Q or ESP 180Q/PT | Data SPD for 8-Wire (4 pairs) 180V signal lines space saving design |
| | ESP TNQ or ESP TNQ/PT | Data SPD for 4 twisted pair phone lines with a maximum (ringing) voltage of 296 volts |

Three wire RTD applications

| | Part no. | Description |
|---|-------------|--|
|  | ESP RTD | Data SPD for three 3-Wire RTD systems |
| | ESP SL RTD | Slim Line Data SPD for 3-Wire RTD systems |
| | ESP RTDQ | Data SPD for three of 3-Wire RTD systems space saving design |
| | ESP RTDQ/PT | |

RS485 & Fieldbus applications

| | Part no. | Description |
|--|---------------|--|
|  | ESP RS485 | Data SPD for RS485 signalling systems |
| | ESP SL RS485 | Slim Line Data SPD for RS485 signal lines |
| | ESP RS485Q | Data SPD for 8-Wire (4 pairs) RS485 signal lines space saving design |
| | ESP RS485Q/PT | |

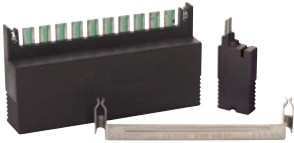
Electronic systems protection

Surge protection devices (SPDs) for computer and telephone lines


Plug-in protectors for telephone and ISDN lines

| | Part no. | Description |
|---|-------------------|---|
|  | ESP TN/JP | Data SPD for telephone line with BT UK connection |
| | ESP TN/RJ11-6/6 | Data SPD for 6-Wire telephone line with RJ11 connection |
| | ESP ISDN/RJ45-8/8 | Data SPD for 8-Wire ISDN telephone line, RJ45 connector |

PSTN and ISDN telephone lines with LSA-PLUS connections

| | Part no. | Description |
|--|-----------|---|
|  | ESP KE10 | Earth connection bar for up to 10 of ESP KT1 data SPDs for LSA-PLUS PBX systems |
| | ESP KT1 | Data SPD for one LSA-PLUS PBX phone line, use with ESP KE10 earth bar |
| | ESP K10T1 | Data SPD for 10 LSA-PLUS PBX telephone lines |

Computer networks up to Cat-6 cabling & PoE+

| | Part no. | Description |
|---|---------------|---|
|  | ESP Cat-6 | Data SPD for Cat-6 1000 Base T computer networks, RJ45 connector |
| | ESP Cat-6/PoE | Data SPD for Cat-6 1000 Base T computer networks with Power over Ethernet, RJ45 connector |

Electronic systems protection

Surge protection devices (SPDs) for specific systems

Mains supplies - wind turbine (WT) power distribution systems



| Part no. | Description |
|-----------------|--|
| ESP 690/25/WT | Type 1+2 power SPD for wind turbine systems, 25kA 10/350 |
| ESP 690/12.5/WT | Type 1+2 power SPD for wind turbine systems, 12.5kA 10/350 |
| 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 4 of ESP 690/12.5/WT protectors for TNS systems |
| ESP CE10 | Connection and earthing bar for use with 3 of ESP 690/25/WT protectors for TNC systems |
| ESP CE13 | Connection and earthing bar for use with 4 of ESP 690/25/WT protectors for TNS systems |

DC photo-voltaic (PV) power distribution systems



| Part no. | Description |
|--------------------|--|
| ESP DC1000/12.5/PV | Type 1+2 power SPD for 1000Vdc PV supplies, 12.5kA 10/350 surge current rating |
| ESP DC550/12.5/PV | Type 1+2 power SPD for 550Vdc PV supplies, 12.5kA 10/350 surge current rating |

Coaxial cable TV (CATV) systems



| Part no. | Description |
|-------------|--|
| ESP CATV/F | Data SPD for Cable TV 5-860Mhz with F Type connector |
| ESP TV/F | Data SPD for TV 5-860Mhz with F Type connector |
| ESP TV/EURO | Data SPD for TV 5-860Mhz with Euro-TV connector |
| ESP MATV/F | Data SPD for main antenna TV MATV 5-2450Mhz with F Type connector |
| ESP SMATV/F | Data SPD for satellite main antenna TV SMATV 860-2450Mhz with F Type connector |

Coaxial RF systems (for frequencies between DC and 2.7 GHz)



| Part no. | Description |
|---------------|--|
| ESP RF 111421 | RF Data SPD high performance N Type connection |
| ESP RF AA1421 | RF Data SPD 350V GDT with 7/16 Din connection |
| ESP RF 441421 | RF Data SPD 350V GDT with BNC connection |

Higher performance coaxial RF systems (for frequencies between 50 MHz and 2.7 GHz)



| Part no. | Description |
|---------------|--|
| ESP RF 111A11 | RF Data SPD high performance N Type connection |
| ESP RF AA1A11 | RF Data SPD high performance 7/16 Din connection |
| ESP RF 441A11 | RF Data SPD high performance BNC connection |

Closed circuit TV video lines

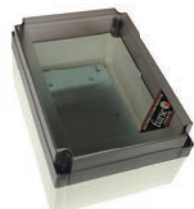


| Part no. | Description |
|------------|--|
| ESP CCTV/B | Data SPD for CCTV systems with BNC connection for Coax cable |
| ESP CCTV/T | Data SPD for CCTV systems with twisted pair cables |

Electronic systems protection

Accessories

Weatherproof enclosures



| Part no. | Description |
|------------|--|
| WBX 2/G | IP66 Enclosure for 2 single stud ESP D/E/H data SPDs or ESP TN telecom SPD, grey lid |
| WBX 3 | IP67 Enclosure for 3 single stud data SPDs or ESP Single Phase M1 mains SPD, clear lid |
| WBX 3/G | IP67 Enclosure for 3 single stud data SPDs, grey |
| WBX 4 | IP66 Enclosure for ESP 415 M1, ESP 208 M1 or ESP 480 M1 or 4 single stud ESP data/telecom SPDs using CME4 earth bar, clear lid |
| WBX 4/GS | IP66 Enclosure for 4 single stud ESP data/telecom SPDs using CME4 earth bar, grey lid, security screws |
| WBX 8 | IP66 Enclosure for 8 single stud ESP data/telecom SPDs using CME8 earth bar, grey lid |
| WBX 8/GS | IP66 Enclosure for 8 single stud ESP data/telecom SPDs using CME8 earth bar, grey lid, security screws |
| WBX 16/2/G | IP56 Enclosure for 1 or 2 CME16 earth bars for mounting and enclosing up to 32 of ESP single stud data/telecom SPDs, grey lid |
| WBX D4 | IP65 Enclosure for 72mm DIN (4TE) |
| WBX D8 | IP65 Enclosure for 144mm DIN (8TE) |
| WBX M2 | IP67 Enclosure for ESP 415 M2 or ESP 480 M2, clear lid |
| WBX M4 | IP67 Enclosure for ESP 415 M2 or ESP 480 M2, clear lid |
| WBX SLQ | IP66 Enclosure for up to 15 of ESP SL Series, or up to 6 of ESP Q Series, clear lid |
| WBX SLQ/G | IP66 Enclosure for up to 15 of ESP SL Series, or up to 6 of ESP Q Series, grey lid |
| MBX D4 | Metallic enclosure for 72mm DIN (4TE) |
| MBX D8 | Metallic enclosure for 144mm DIN (8TE) |

Combined mounting and earthing kits



| Part no. | Description |
|----------|--|
| CME 4 | 4 Hole combined mounting & earthing kit |
| CME 8 | 8 Hole combined mounting & earthing kit |
| CME 16 | 16 Hole combined mounting & earthing kit |
| CME 32 | 32 Hole combined mounting & earthing kit |

ABB SPD Order Code index

| Part no. | Order Code | Part no. | Order Code | Part no. | Order Code | Part no. | Order Code |
|-----------------|-----------------|--------------------|-----------------|--------------------|-----------------|------------------|-----------------|
| CME 16 | 7TCA085410R0002 | ESP 30E | 7TCA085400R0104 | ESP CE10 | 7TCA085460R0030 | ESP SL06L/I | 7TCA085400R0280 |
| CME 32 | 7TCA085410R0003 | ESP 30Q | 7TCA085400R0107 | ESP CE13 | 7TCA085460R0031 | ESP SL110L/I | 7TCA085400R0284 |
| CME 4 | 7TCA085400R0001 | ESP 30Q/PT | 7TCA085400R0476 | ESP CE7 | 7TCA085460R0032 | ESP SL15L/I | 7TCA085400R0064 |
| CME 8 | 7TCA085400R0002 | ESP 415 D1 | 7TCA085460R0105 | ESP CE9 | 7TCA085460R0033 | ESP SL15XL/I | 7TCA085400R0235 |
| ESP06E | 7TCA085400R0084 | ESP 415 DIR | 7TCA085460R0107 | ESP DC1000/12.5/PV | 7TCA085460R0146 | ESP SL30L/4-20/I | 7TCA085400R0237 |
| ESP06Q | 7TCA085400R0087 | ESP 415 M1 | 7TCA085460R0112 | ESP DC550/12.5/PV | 7TCA085460R0147 | ESP SL30L/I | 7TCA085400R0234 |
| ESP06Q/PT | 7TCA085400R0473 | ESP 415 M2 | 7TCA085460R0119 | ESP ISDN/RJ45-8/8 | 7TCA085460R0171 | ESP SL30XL/I | 7TCA085400R0236 |
| ESP110E | 7TCA085400R0007 | ESP 415 M4 | 7TCA085460R0124 | ESP K10T1 | 7TCA085400R0130 | ESP SL50L/I | 7TCA085400R0201 |
| ESP110Q | 7TCA085400R0088 | ESP 415/I/TNS | 7TCA085460R0101 | ESP KE10 | 7TCA085400R0134 | ESP SLTN | 7TCA085400R0195 |
| ESP110Q/PT | 7TCA085400R0478 | ESP 415/I/TT | 7TCA085460R0102 | ESP KT1 | 7TCA085400R0135 | ESP SMATV/F | 7TCA085450R0026 |
| ESP15E | 7TCA085400R0095 | ESP 415/III/TNS | 7TCA085460R0103 | ESP MATV/F | 7TCA085450R0000 | ESP TN/JP | 7TCA085400R0177 |
| ESP15Q | 7TCA085400R0098 | ESP 415/III/TT | 7TCA085460R0026 | ESP MC | 7TCA085430R0003 | ESP TN/RJ11-6/6 | 7TCA085400R0180 |
| ESP15Q/PT | 7TCA085400R0474 | ESP 415T1/12.5/TNS | 7TCA085460R0496 | ESP MC/19BK | 7TCA085460R0034 | ESP TV/EURO | 7TCA085450R0027 |
| ESP240 D1 | 7TCA085460R0086 | ESP 415T1/12.5/TT | 7TCA085460R0372 | ESP MC/CAT-5E | 7TCA085430R0004 | ESP TV/F | 7TCA085450R0028 |
| ESP240 M1 | 7TCA085460R0089 | ESP 415T1/25/TNS | 7TCA085460R0369 | ESP MC/TN/RJ11 | 7TCA085430R0005 | ESP RTDQ/PT | 7TCA085400R0488 |
| ESP240/I/TNS | 7TCA085460R0019 | ESP 415T1/25/TT | 7TCA085460R0498 | ESP RF 111421 | 7TCA085450R0005 | MBX D4 | 7TCA085400R0649 |
| ESP240/I/TT | 7TCA085460R0020 | ESP 415T2/50/TNS | 7TCA085460R0391 | ESP RF 111A11 | 7TCA085450R0007 | MBX D8 | 7TCA085400R0650 |
| ESP240/III/TNS | 7TCA085460R0022 | ESP 415T2/50/TT | 7TCA085460R0380 | ESP RF 441421 | 7TCA085450R0058 | WBX 16/2/G | 7TCA085410R0020 |
| ESP240/III/TT | 7TCA085460R0023 | ESP 415M1R | 7TCA085460R0115 | ESP RF 441A11 | 7TCA085450R0014 | WBX 2/G | 7TCA085410R0022 |
| ESP240-16A | 7TCA085460R0080 | ESP 415M2R | 7TCA085460R0123 | ESP RF AA1421 | 7TCA085450R0061 | WBX 3 | 7TCA085410R0023 |
| ESP240-16A/BX | 7TCA085460R0081 | ESP 415M4R | 7TCA085460R0126 | ESP RF AA1A11 | 7TCA085450R0016 | WBX 3/G | 7TCA085410R0024 |
| ESP240-5A | 7TCA085460R0083 | ESP 50E | 7TCA085400R0116 | ESP RLA HD-4 | 7TCA085460R0156 | WBX 4 | 7TCA085410R0027 |
| ESP240-5A/BX | 7TCA085460R0084 | ESP 50Q | 7TCA085400R0118 | ESP RLA-4 | 7TCA085460R0155 | WBX 4/GS | 7TCA085410R0028 |
| ESP240D-10A | 7TCA085460R0323 | ESP 50Q/PT | 7TCA085400R0477 | ESP R5485 | 7TCA085400R0191 | WBX 8 | 7TCA085410R0030 |
| ESP240D-32A | 7TCA085460R0322 | ESP 690/12.5/WT | 7TCA085460R0308 | ESP R5485Q | 7TCA085400R0192 | WBX 8/GS | 7TCA085410R0031 |
| ESP240DS-10A | 7TCA085460R0317 | ESP 690/25/WT | 7TCA085460R0309 | ESP R5485Q/PT | 7TCA085400R0475 | WBX D4 | 7TCA085410R0032 |
| ESP240T1/25/TNS | 7TCA085460R0499 | ESP Cat-6 | 7TCA085400R0023 | ESPRTD | 7TCA085460R0157 | WBX D8 | 7TCA085410R0033 |
| ESP240T1/25/TT | 7TCA085460R0370 | ESP Cat-6/PoE | 7TCA085400R0024 | ESPRTDQ | 7TCA085400R0158 | WBX M2 | 7TCA085410R0034 |
| SP 240T2/50/TNS | 7TCA085400R0388 | ESP CATV/F | 7TCA085400R0122 | ESPRTDQ/PT | 7TCA085400R0488 | WBX M4 | 7TCA085410R0035 |
| ESP240T2/50/TT | 7TCA085460R0404 | ESP CCTV/B | 7TCA085400R0123 | ESP SL R5485 | 7TCA085400R0193 | WBX SLQ | 7TCA085410R0037 |
| ESP240T3/SKT | 7TCA085450R0069 | ESP CCTV/T | 7TCA085400R0129 | ESP SL RTD | 7TCA085400R0232 | WBX SLQ/G | 7TCA085410R0036 |

Jokab safety products

| | |
|------------|-------------------------------------|
| 314 | Sentry safety relays |
| 315 | Eden safety sensors |
| 316 | Magne – Magnetic lock |
| 317 | Smile emergency stop buttons |



For more detailed product information, please refer to our online technical brochures available at: new.abb.com/low-voltage/support/documentation

or contact our sales team via email LV.enquiries@gb.abb.com

or call 0333 999 9933

Our range of safety products

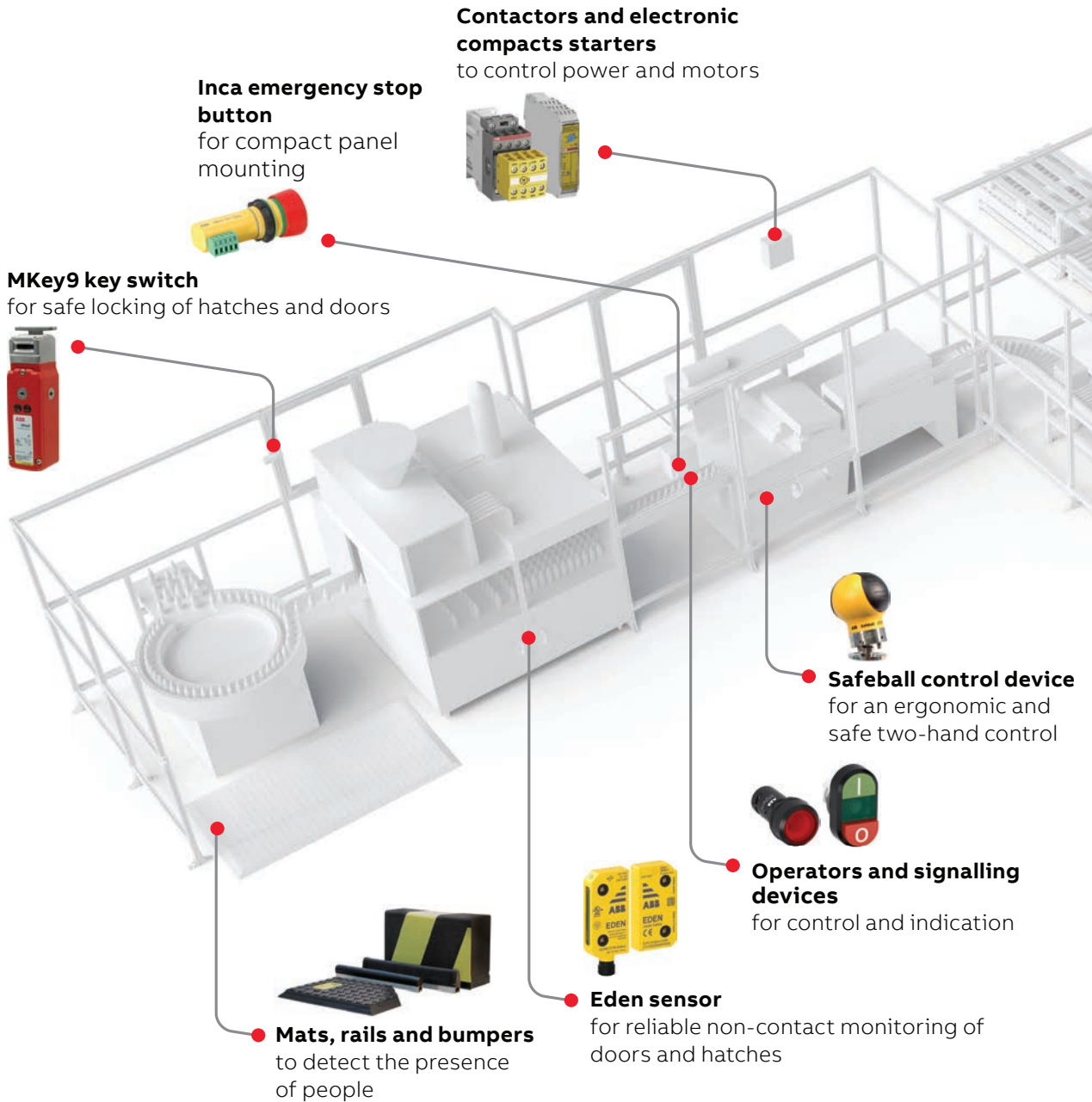
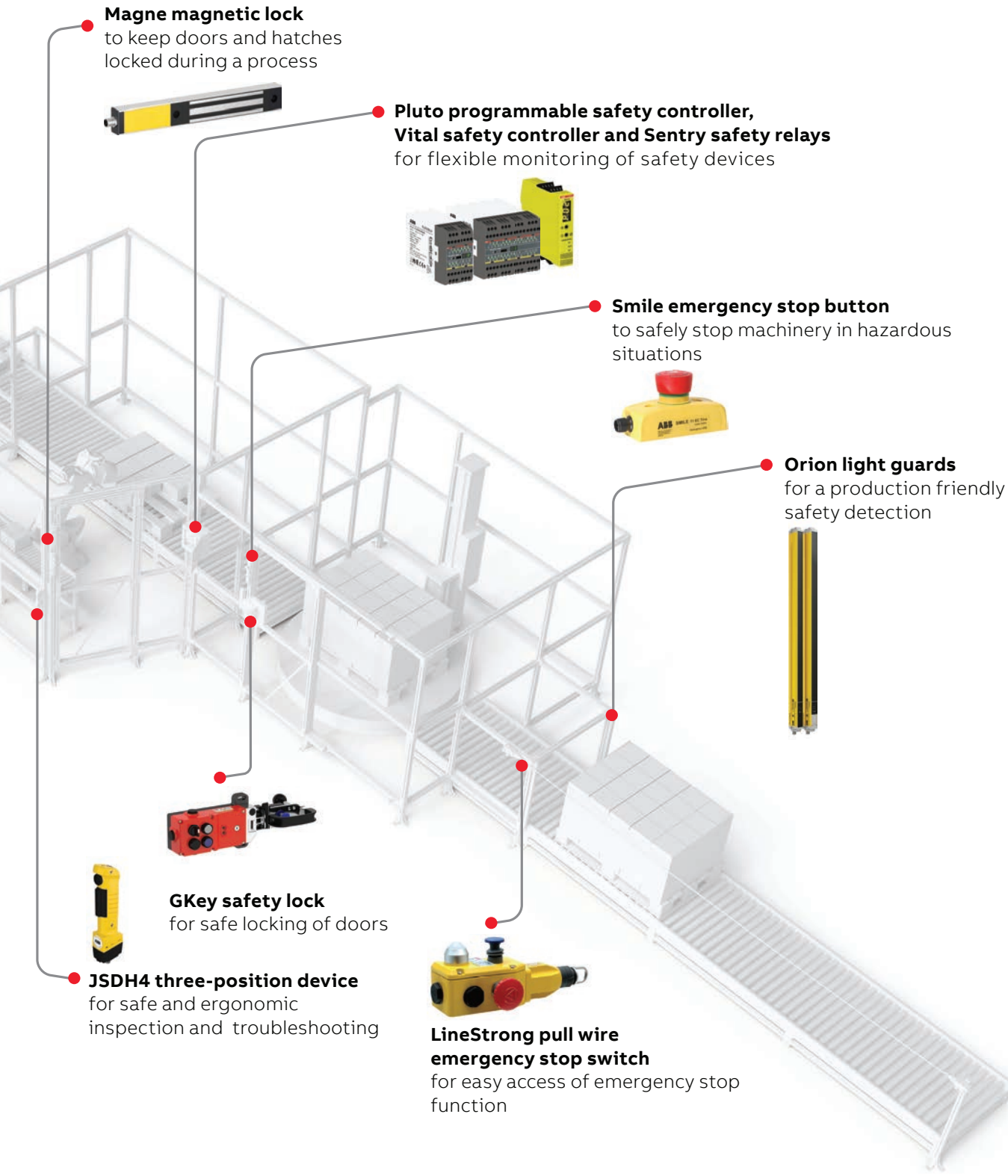



ABB can deliver all of the above safety solutions (including output devices such as contactors and frequency converters) together with automation solutions such as robotics, motors, drives and PLCs.



Sentry – Safety Relays

Ordering details

| | Expansion | Safety devices | Test/Reset | Safety relay outputs | Timer function | Feature | Power supply | Type | Order Code |
|---|--|--|---|-------------------------------|------------------------------------|---|-------------------------------------|---------------------|-----------------|
|  <p>BSR10</p> <p>2TLC172049V0201</p> | Expansion of safety controller outputs | 1 channel | Manual reset (all models have auto reset) Start/Test | 3 NO + 1 NC | Off-delay 0.5 s Off-delay 1.5 s | Advanced timer functions 0 – 999 s ^{d)} Configurable with display | 85-265 VAC / 120-375 VDC +24 VDC | BSR10 | 2TLA010040R0000 |
| | | 2 channels with equivalent contacts | | 4 NO | | | | BSR11 | 2TLA010040R0200 |
| | | 2 channels with antivalent contacts | | 2 NO + 2 delayed/delayable NO | | | | BSR23 ^{e)} | 2TLA010041R0600 |
| | | OSSD outputs / PNP outputs | | 4 NO + 1 NC | | | | SSR10 | 2TLA010050R0000 |
| | | Contact mats, bumpers and safety edges ^{c)} | | | | | | SSR10M | 2TLA010050R0100 |
| | | Two-hand devices | | | | | | SSR20 | 2TLA010051R0000 |
| | | | | | | | | SSR20M | 2TLA010051R0100 |
| | | | | | | | | SSR32 | 2TLA010052R0400 |
| | | | | | | | | SSR42 | 2TLA010053R0400 |
| | | | | | | | | TSR10 | 2TLA010060R0000 |
| | | TSR20 | 2TLA010061R0000 | | | | | | |
| | | TSR20M | 2TLA010061R0100 | | | | | | |
| | | USR10 | 2TLA010070R0000 | | | | | | |
| | | USR22 | 2TLA010070R0400 | | | | | | |

a) These models can also be used for expansion of Pluto safe transistor outputs (-24 VDC)

b) No monitoring of two-channel fault, i.e. max Category 3 without fault exclusion.

c) The safety relay detects a short-circuit, not a change in resistance.

d) Off-delay, On-delay, Time bypass or Time reset.

e) BSR23 must be monitored by another device in order to reach higher than Category 1/PL c according to EN ISO 13849-1, for example a safety relay, a safety PLC or an Orion light guard (EDM function).

Eden – Non-contact safety Sensors

Adam - Ordering details

| Type of safety controller | StatusBus | Info signal | Local reset | Series connection | Connector male | Type | Order Code |
|--|-----------|-------------|-------------|-------------------|----------------|----------------------|-----------------|
| OSSD compatible (incl. Pluto and Sentry) | | x | | | M12-5 | Adam OSSD-Info M12-5 | 2TLA020051R5400 |
| | | x | | x | M12-8 | Adam OSSD-Info M12-8 | 2TLA020051R5700 |



2TLC010045V0201

Adam DYN-Info M12-5

Eva - Ordering details

| Compatible Adam | Code description | Code level | Type | Order Code |
|-------------------|--|------------|------------------|-----------------|
| Adam DYN and OSSD | General code. (Eva is interchangeable) | Low level | Eva General code | 2TLA020046R0800 |
| | Unique code. (Prevents defeat/fraud) | High level | Eva Unique code | 2TLA020046R0900 |



2TLC010061V0201

Eva General code

Cables and connectors

Cable with connectors

| Connector | Female/male | Length | Special feature | Type | Order Code |
|-----------|---------------|--------|---------------------------------|------------|-----------------|
| M12-5 * | Female | 3 m | | M12-C31 | 2TLA020056R0500 |
| | | 6 m | | M12-C61 | 2TLA020056R0000 |
| | | 10 m | Harsh environment, halogen free | M12-C61HE | 2TLA020056R8000 |
| | | | | M12-C101 | 2TLA020056R1000 |
| | | 20 m | Harsh environment, halogen free | M12-C101HE | 2TLA020056R8100 |
| | | | | M12-C201 | 2TLA020056R1400 |
| M12-C61HE | Female + male | 0.3 m | | M12-C0312 | 2TLA020056R5800 |
| | | 0.06 m | | M12-C00612 | 2TLA020056R6300 |
| | | 1 m | | M12-C112 | 2TLA020056R2000 |
| | | 3 m | | M12-C312 | 2TLA020056R2100 |
| | | 6 m | | M12-C612 | 2TLA020056R2200 |
| | | 10 m | | M12-C1012 | 2TLA020056R2300 |



M12-C61

2TLC172951P0201



M12-C61HE


2TLC010008P0201

Magne – Magnetic lock

Ordering details

Ordering details

For a complete Magne lock both door part and frame parts are necessary. Magne 4 also requires a separate Eva sensor.

| | Safe interlocking with integrated Adam | Safety signal | Extra function | Connector | Type | Order Code |
|--|--|---------------|---|------------|----------------------|-----------------|
|  <small>2TLC00070V0201</small> | No | – | – | M12-5 male | Magne 3X M12-5 | 2TLA042022R2700 |
| | Yes | OSSD | "Locked" and "Closed" information outputs | M12-8 male | Magne 4 OSSD-Info | 2TLA042022R4600 |

Magne 3



Magne 4

Door part


| Description | Type | Order Code |
|--|------------------|-----------------|
| Anchor plate with permanent magnet. Delivered with cellular rubber. | Magne Anchor 32B | 2TLA042023R0400 |
| Anchor plate without permanent magnet. Delivered with cellular rubber. | Magne Anchor 32A | 2TLA042023R1300 |

Eva sensor for Magne 4 models

| Compatible Adam | Code description | Code level | Type | Order Code |
|----------------------|--|------------|------------------|-----------------|
| Adam DYN and OSSD | General code. (Eva is interchangeable) | Low level | Eva General code | 2TLA020046R0800 |
| | Unique code. (Prevents defeat/fraud) | High level | Eva Unique code | 2TLA020046R0900 |

Smile emergency stop buttons

Ordering details

| | Connection type | Feature | Type | Order Code |
|--|-----------------|------------|-------------|-----------------|
|  Smile 12 EA | 1 x M12-5 male | Status LED | Smile 11 EA | 2TLA030051R0000 |
| | 2 x M12-5 male | Status LED | Smile 12 EA | 2TLA030051R0200 |




2TLC1287F0001

Smile 12 EA

Smile safety stop buttons

Ordering details

| | Type of safety signal | Connection type | Feature | Type | Order Code |
|--|---------------------------------------|-----------------|------------|-------------|-----------------|
|  Smile 11 SA | 2 NC | 1 x M12-5 | Status LED | Smile 11 SA | 2TLA030051R0900 |
| | * Can be adapted to DYNlink with Tina | | | | |




2TLC1289F0001

Smile 11 SA

Smile reset buttons

Ordering details

| | Type of contact | Intended use | Connectors | Type | Order Code |
|--|--|-------------------------|------------|-------------|-----------------|
|  Smile 11 RA | 1 NO | Most reset applications | M12-5 male | Smile 11 RA | 2TLA030053R0000 |
| | * See Pluto hardware manual for more information about the light button function | | | | |



2TLC128018V0001

Smile 11 RA

Additional information

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