Sub-distribution solutions
MEM® series

- MCB single phase distribution boards
- MCB three phase distribution boards
- MCCB Panelboards
- Switch and protection devices
- Control and switching devices
- Metering solutions

Smart solutions for electrical distribution in commercial buildings

EATON
Powering Business Worldwide

Powering business worldwide

Eaton delivers the power inside hundreds of products that are answering the demands of today's fast changing world.

We help our customers worldwide manage the power they need for buildings, aircraft, trucks, cars, machinery and entire businesses. And we do it in a way that consumes fewer resources.

Next generation transportation

Eaton is driving the development of new technologies – from hybrid drivetrains and emission control systems to advanced engine components – that reduce fuel consumption and emissions in trucks and cars.

Higher expectations

We continue to expand our aerospace solutions and services to meet the needs of new aviation platforms, including the high-flying light jet and very light jet markets.

Building on our strengths

Our hydraulics business combines localised service and support with an innovative portfolio of fluid power solutions to answer the needs of global infrastructure projects, including locks, canals and dams.

Powering Greener Buildings and Businesses

Eaton's Electrical Group is a leading provider of power quality, distribution and control solutions that increase energy efficiency and improve power quality, safety and reliability. Our solutions offer a growing portfolio of "green" products and services, such as energy audits and real-time energy consumption monitoring. Eaton's Uninterruptible Power Supplies (UPS), variable-speed drives and lighting controls help conserve energy and increase efficiency.

Sub-distribution solutions MEM® series

Contents

Powering electrical systems worldwide

When it comes to making more efficient use of the world's electrical power Eaton is at the cutting edge. Our industry-leading electrical power control systems help you reduce power consumption – and its attendant greenhouse gas emissions.

Eaton can help you manage your complete electrical power system, whether it is contained within a manufacturing facility, university campus, healthcare centre, data centre, geographically dispersed set of office buildings or retail stores, residential or any other entity where electricity must function with high quality and without interruption.

The result is an unparalleled integration of PowerChain® solutions that optimise energy usage, reduce energy consumption and enhance the comfort and sustainability of your facility.

Government
Commercial property
Petrochemicals
Data centres
Healthcare
Pharmaceuticals
Education
Water and waste water
Residential
Utilities
Manufacturing
Retail
Pulp and paper
Telecommunications

Eaton's comprehensive range of MCB and MCCB solutions have been developed to meet today's challenging electrical sub-distribution applications in commercial and industrial buildings. Through a proven competency in electrical distribution, Eaton delivers an innovative approach to aid compliance with the wider regulatory requirements associated with modern buildings.

1.1 Product overview

Type A, SPN 125A distribution boards

Features & benefits

- Unique 'full form' blanking modules for unused MCB ways. Provides secure shrouding of unused busbar stabs for increased electrical safety. Blanking modules have interlinking form for improved positional security.
- Main busbar is removable for flexible installation.
- Fully shrouded Neutral busbar for increased safety.
- Choice of metering option to suit application needs and aid compliance with latest Building Regulation – part L2.
- Door opens 180° to provide easy access and device operation.
- New standard incomer Switch Disconnector rating of 125A provides higher rated solution for commercial buildings.
- Optional coupling kit available to electrically connect two distribution boards together vertically from a single supply cable to expand number of MCB ways.

General characteristics

Eaton's Memshield 3 MCB Distribution boards have evolved through an intimate knowledge and feedback from Electrical Contractors to provide solutions to a wide range of electrical distribution applications in commercial buildings. Memshield 3 delivers safe, reliable and high performance protection of electrical power distribution systems.

Type A Distribution boards are fully type tested with a conditional short circuit rating of 15kA to BS EN 60439. Associated devices are high performance MCBs, developed for Commercial and Industrial applications, dual rated at 10kA IEC – 60898 & 15kA IEC 60947-2 in B, C or D curves.

Type A SPN distribution boards

The SPN boards are rated at 125A as standard and available in 5 sizes with a choice of 4, 7, 10, 13 and 16 single pole outgoing ways. A choice of metering solutions are available as standard, providing clear electrical consumption information as well as a permanent capability of visualising information on a variety of other electrical parameters. The metering options have been developed to provide simple solutions to aid compliance with part L2 of the Building Regulations of England and Wales. A wide range of accessories including full profile blanking modules for unused MCB ways and door locking options, enhance electrical safety, whilst clean earth kits and vertical inter-connection kits to join two boards together, improves versatility of the range.

Type A SPN pan assemblies

The SPN pan assemblies offer a high degree of flexibility for custom applications and inclusion in other factory built assemblies. SPN types are rated at 125A and available with 4, 7, 10, 13, and 16 single pole outgoing ways.

Incoming devices

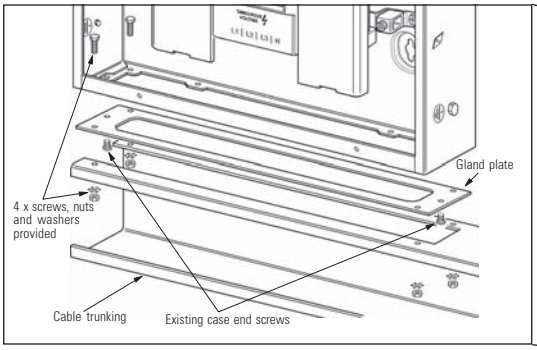
A range of incoming options are available, with the 125A SPSN switch disconnector being the most popular. In addition, there are a number of 100A RCCB options, which provide the added security of earth fault protection, covering 30mA–300mA applications. A direct connection terminal arrangement is also available for applications not requiring local isolation. Type A distribution boards can be stacked vertically to expand the number of outgoing ways using the vertical interconnection kit. For larger SP applications, requiring more outgoing ways – see our type B distribution boards with Single phase kit options.

Outgoing devices

For type A distribution boards, there is a choice of single pole MCBs plus RCBOs. MCBs are available in current ratings from 1A–63A, with trip types B, C and D, 10kA to IEC 60898 and 15kA to IEC 60947-2. RCBOs to IEC EN 61009 10kA are also available in a choice of trip sensitivity options from 10mA–100mA.

1.2 Product overview

Type B, TPN 125A/250A distribution boards



Cable trunking interface kit fitting diagram

Modern curved edges enhance appearance of board

IP4X robust steel enclosure to suit all applications. IP42 available with gland plate accesory

Removable gland plates are provided top/bottom for ease of installation. IP42 gland plate kit option

Twist action access handle, with optional door barrel locks also available

Covers fit within enclosure dimensions allowing adjacent mounting

Cable trunking interface kit available

Removable front door to aid accessibility to devices

High quality clear sub circuit identification labels

Secondary cover slides over two location screws at bottom of board for easier fastening

Features & benefits

- Welded 'case end' design board with removable gland plates provides super 'stiff' construction, even with gland plates removed. Construction virtually eliminates distortion during installation, ensuring final assembly fit and alignment.
- Unique cable trunking interface kit simplifies mounting of cable trunking and protects cables.
- Improved Neutral cable clamp design for simple & secure cable connection.
- Unique 'full form' blanking modules for unused MCB ways, provides secure shrouding of unused busbar stabs for increased safety. Blanking modules have interlinking form for improved positional security.
- Removable busbar assembly to assist installation.
- Additional Functional Earthing options and Clean Earth options available.
- Auto-formed, curved construction of main cover adds to board rigidity, with improved appearance.
- Removable door aids installation and 'easy hang' hinge design makes re-attachment of door simple.
- New 125A Switch Disconnector Incomer for general commercial building applications.
- 250A options on 18 and 24 way boards.
- Compact 250A options on 18 and 24 way boards, where used with cable trunking.

General characteristics

Eaton's Memshield 3 MCB distribution boards have evolved through an intimate knowledge and feedback from electrical contractors, consulting engineers and end users to provide solutions to a wide range of electrical distribution applications in commercial buildings. Memshield 3 delivers safe, reliable and high performance protection of electrical power distribution systems.

Type B distribution boards are fully type tested with a conditional short circuit rating of 25kA to BS EN 60439. Associated devices are high performance MCBs, developed for commercial and industrial applications, dual rated at 10kA IEC – 60898 & 15kA IEC 60947-2 in B, C or D curve.

A wide range of accessories including full profile blanking modules for unused MCB ways and door locking options, enhance electrical safety, whilst clean earth kits improve versatility of the range.

Where used with 250A sized incomers, an extension box or the provision of suitable sized cable trunking is required to accommodate incoming cabling. A new cable trunking interface kit is available to provide additional mechanical protection of incoming cables.

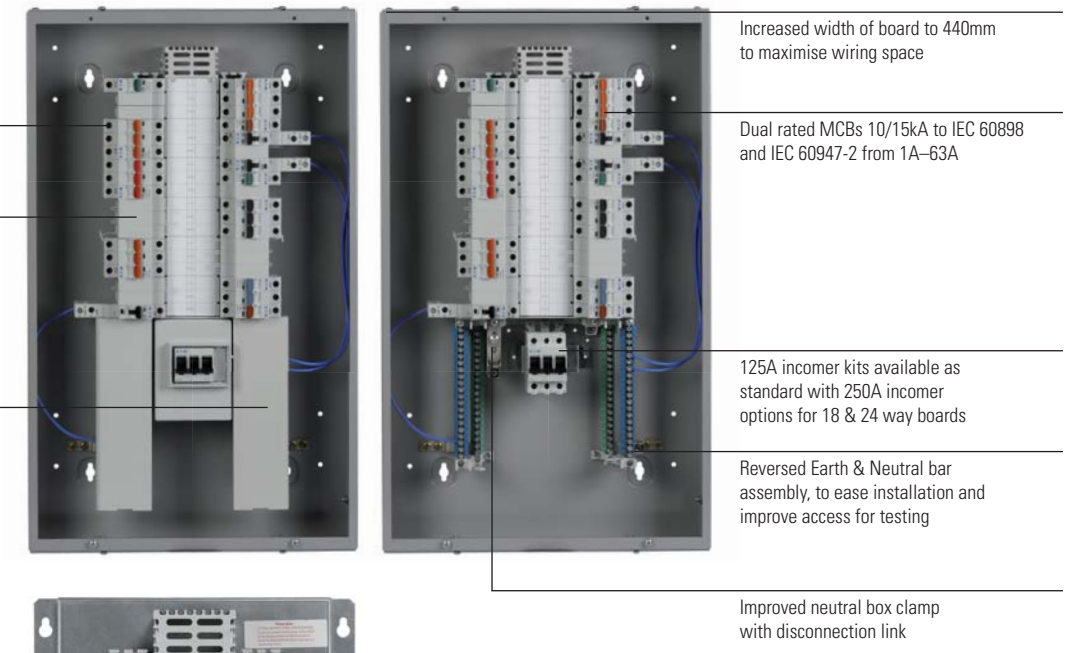
A choice of metering solutions are available as standard, providing clear electrical consumption information as well as a permanent capability of visualising information on a variety of other electrical parameters. The metering options have been developed to provide simple solutions to aid compliance with part L2 of the Building Regulations of England and Wales.

Type B TPN standard distribution boards

The optimised design for 125A TPN applications provides a choice of boards in sizes – 4, 6, 8, 12, 18 and 24 TP ways. 18 & 24 TP way variants are also suitable for 250A applications, where the number of MCB ways could require a larger supply current rating. A choice of incomers are available to suit different applications including RCCB options and a single phasing kit to provide a large single phase board arrangement.

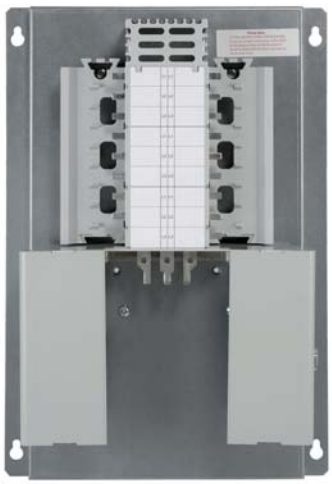
Incoming devices – 125A standard TPN board

The most popular choice will be the 125A switch disconnector incomer option, but other choices include a 4-pole TPSN, 2P SPSN, a range of RCCB switches and a contactor controlled incomer with switch disconnector for remote control of the supply to the board. A direct connection option is also available for applications that do not require local isolation.



Type B SPN pan assemblies

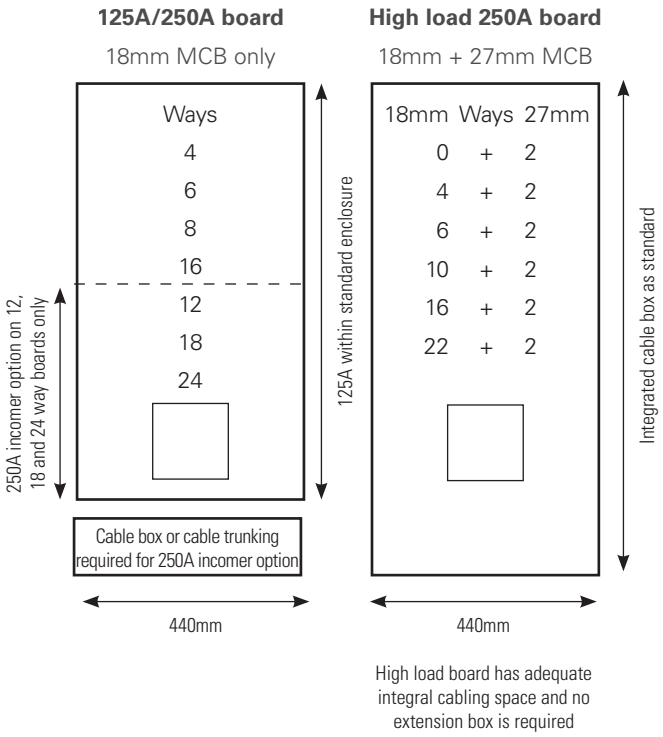
The TPN pan assemblies offer a high degree of flexibility for custom applications and inclusion in other factory built assemblies. 125A TPN types are available with 4, 6, 8, and 12 triple pole outgoing ways. 250A TPN types are available with 12, 18, and 24 triple pole outgoing ways.



1.3 Product overview

Type B, TPN 250A distribution boards

Type B, TPN 250A distribution board solutions



High load board has adequate integral cabling space and no extension box is required

Type B TPN 250A High Load distribution boards

Removable gland plates are provided top/bottom for ease of installation

Removable front door to aid accessibility to devices

Covers fit within enclosure dimensions allowing adjacent mounting

Modern, curved edges enhance appearance of board

Choice of SP & TP 18mm dual rated MCBs 10/15kA to IEC 60898 and IEC 60947-2 from 1A–63A

Two TP 27mm MCB ways, rated up to 125A

Secondary cover, slides over two location screws at bottom of board for easier fastening

Type B TPN 250A High Load distribution boards

Developed to respond to the needs of modern commercial building applications, a new 250A TPN range of MCB boards delivers increased versatility by having the ability to supply and protect sub loads up to 125A. Based principally around standard 18mm MCBs and RCBOs, this range has provision for two TP 27mm MCBs, up to 125A.

Available in sizes 2, 6, 8, 12, 18 and 24 TP ways, of which two ways are dedicated to the 27mm MCBs. 27mm MCBs are available SP or TP with ratings from 20A–125A.

Incoming devices – 250A TPN board and 18/24 way 125A board

These incomer options can be used with the 250A board or with the 18 or 24 way variant of the 125A board to provide a greater choice of solutions at 250A.

The most popular choice will be the 250A TPN switch disconnector incomer option, but other choices include a 4-pole TPSN switch disconnector, a choice of MCCB incomers from 160A to 250A and a contactor controlled incomer pack. There is also a direct connection option available for applications that do not require local isolation.

Outgoing devices

For type B distribution boards, there is a choice of single pole or triple pole MCBs plus SP RCBOs. MCBs are available in current ratings from 1A–63A, with trip types B, C and D, 10kA to IEC 60898 and 15kA to IEC 60947-2. RCBOs to IEC 61009 10kA are also available in a choice of trip sensitivity options from 10mA–100mA. For the 250A "High Load" board, provision is given to accommodate a number of 27mm MCBs available in SP or TP sizes from 20A–125A to IEC 60947-2 .

200A TPN type B distribution board, with integrated split meter for power/lighting

- TPN distribution board with 'smart' meter for power and lighting loads.
- Unique MID compliant meter design calculates net values for each busbar section and total board load.
- Pulsed output or Modbus versions available as standard.
- Embedded vt technology and RJ 11 connections at meter minimises visible wiring.
- Supplied complete with factory fitted 200A Switch Disconnector incomer switch.
- Suitable for TPN and SPN applications as supplied (shorting link included).
- Increased earthing options supplied as standard.

The feature packed Eaton meter packs and boards

To meet the needs of part L2 of the Building Regulations introduced in England and Wales in 2006, Eaton's Memshield 3 meter packs provide simple integration with matched aesthetics. The EBMMPCT250 employs a multi-function, DIN rail mounted meter to measure electrical parameters on LV supplies to TPN distribution boards. It can also be used to meter single-phase loads. The unit is supplied complete with CTs and wiring terminals. This version is suitable for 100A–250A applications and as well as a pulsed output for kWh, the meter can be used to monitor other parameters, including line voltage and current. Electrical connection to the associated distribution board does not occupy any of the outgoing circuits. Modbus and MID certified meter versions are also available – see page 22.

The **EBMMPDC120** is supplied as a 120A direct connection solution, not requiring CTs. Cabling is simple and the meter provides a pulsed output for kWh. The meter is an OFGEM Approved and certified unit, providing clear kWh information.

Double meter pack for two standard TPN distribution boards facilitate separate monitoring of "small power" and "lighting" from one main supply.

Triple meter pack **EBMMPSL3** adds the facility to meter two standard TPN distribution boards and one 12 way metered SPN board. Modbus version is also available.

For single phase EAM boards, a 65A meter pack provides simple integration. (Amps, kW, kWh, kVar and kVarh pulsed output, MID compliant. See page 18 for single phase EAM boards with factory fitted meters, including split power and lighting boards.)

Metering solutions – type A metered boards

- Type A SPN boards with integrated meter.
- Split load versions utilise a two channel meter, feeding two independent busbars and groups of MCB/RCBOs.
- Split load versions provide independent monitoring of "Power" and "Lighting" loads and total load.
- Aids compliance with Part L2 of the Building Regulations (England & Wales).
- See page 69 for dimensions.

Metering solutions – type B meter pack assemblies

Eaton's Memshield 3 meter packs provide simple integration with matched aesthetics. Split metering for separate small power and lighting has been added to the range to meet the needs of the L2 Regulations introduced in England and Wales in 2006. The meters provide a pulsed output for kWh and display other useful parameters, including line voltage and current. Modbus versions are also available and provide remote access to additional electrical parameters. For details refer to page 21. For dimensions refer to page 66.

Miniature circuit breakers (MCBs)

The Eaton range of 10kA/15kA high performance miniature circuit breakers (MCBs) have been designed to meet the latest UK, European and international standards, with ratings from 1A up to 63A.

The Eaton miniature circuit breakers are designed and tested in accordance with BS EN 60898 and are available in B, C and D characteristic curve as standard.

Technical characteristics

- Modular design, DIN rail mountable.
- 1, 2, 3, and 4-pole MCBs for commercial and Industrial applications.
- Rated braking capacity 10kA to IEC 60898 and 15kA to IEC 60947-2.
- Rated currents from 1–63A in both B, C and D characteristic.
- Positive contact indication.
- Box clamp barrier to prevent incorrect cable/busbar insertion.
- Calibrated at 40° C.
- Can be used with both pin and comb type busbars.
- Suitable for use in Eaton Memshield 3 distribution boards and a wide range of other applications.

Toggle colour for commercial MCBs changes dependant on the rating as shown below:

< 2A		16A	
2A		20A	
4A		25A	
6A		32A	
8A		40A	
10A		50A	
13A		63A	

Residual current circuit breakers with overcurrent protection (RCBOs)

The Eaton range of combined residual current circuit breakers with integral overload protection (RCBOs) , combine the highest level of protection for both people and circuits in a single one module device.

The Eaton range of RCBOs are available from 6A to 45A in both B and C curve with a choice of 10mA, 30mA, and 100mA trip sensitivities and fully comply to IEC 61009

Technical characteristics

- Compact modular design, DIN rail mountable, one module wide.
- Single module combined MCB/RCD unit.
- Solid neutral.
- Positive contact indication.
- Rated currents from 6–45A in both B and C characteristic.
- Trip sensitivity 10mA, 30mA, and 100mA available.
- Rated breaking capacity 10kA.
- Test trip button.

Residual current circuit breakers (RCCBs)

The Eaton range of residual current circuit breakers without integral overload protection (RCCBs), provide protection solutions to a wide range of applications.

The Eaton range of 2 and 4-pole RCDs are available with 10mA, 30mA, 100mA and 300mA sensitivities, and can be equipped with a wide range of modular accessories

Technical characteristics

- Modular design, DIN rail mountable, 2 or 4 modules wide.
- Double and four pole RCD for commercial and industrial applications.
- Rated short circuit capacity 10kA with fuse back up.
- Trip sensitivities 10, 30, 100 and 300mA.
- Positive contact indication.
- Test trip button.
- Rated currents from 16–100A.

1.6 Product overview

Control and switching devices

Timers

The Eaton range comprises of a wide variety of different products which include analogue timers, digital timers, twilight switches and staircase timers. Timers are available either with 50Hz net-synchronisation or quartz control. Except for net-synchronised timers all units do have self power reserve to secure the time setting and program storage in case a power interruption does occur. Twilight switches are supplied with a remote light sensor, which can be easily installed on the outside wall where the required light intensity threshold can be simply adjusted on the modular device itself. The multifunctional staircase timer TE1 with many advanced switching facilities completes our range of timer products.

Technical characteristics (depending on type)

- Modular design.
- Analogue and digital timers.
- Time adjustment by 50 Hz net, quartz.
- Maximum 2 channel output.
- Manual override switching function.
- Power reserve for all quartz and DCF controlled timers.
- Remote Light Sensor for Twilight Switching.

Advantages of Eaton timers

- Easily programmable on front of device.
- Computer aided programming software available.
- Compact 18 mm design for restricted space opportunities.
- Separate IP40 covers are available for direct wall mounting.
- High level of accuracy.
- Maximum lamp load test data is available for reference.
- Automatic summer and winter time adjustment.
- Holiday & Random program settings.
- High power reserve up to 10 years.

Contactors and impulse switches

Contactors are frequently applied for switching of lamp loads, fans or pumps in both utility as well as industrial areas.

Eaton's "CR" contactors are very specific due to the applied operating coil and the construction of the main contacts. All contactors with ac/dc coils ensure silent operation which is further enhanced by a low power consumption.

Optimal contacts and low heat dissipation guarantee a long lifetime of the contactor which is available in a wide range of characteristics.

Technical characteristics

- Designed according to IEC 60947-4-1 and IEC 61095 standards.
- Suitable for applications in general control, heating & lighting applications.
- Available in 20, 25, 40 & 63 A ratings with up to 4-pole contacts.
- Coil voltages: 12 Vac/dc, 24 Vac/dc, 48 Vac/dc, 230 V ac, 220 Vdc.
- Optional add-on auxiliary contact available.
- DIN modular profile.
- Spacers available to extend lifetime (it is recommended to use 1 spacer between every 2 contactors installed).
- Day/night contactors available with manual override function.

Advantages of Eaton contactors

- Low inrush power for all ac/dc types.
- Availability of combined ac/dc type contactors ensure silent operation.
- Contactors of ac/dc coil type are operable on both ac and dc voltage. The 20 A and 25 A versions are also available with ac coil. All combined ac/dc type versions are equipped with surge protecion on the operating coil.
- Equipped with contact indication.
- Optimal quality of contacts and low heat dissipation ensure a long life time.

The feature packed MCCB panelboard distribution system

A complete range of MCCB panelboards and pan assemblies providing all the options you need from a straightforward panelboard to a comprehensive panelboard system. The range now offers a greater choice of outgoing ways, and a variety of user or factory-fitted incoming devices are available providing more flexibility and choice to the user.

- 250A, 400A, 630A & 800A panelboard versions available.
- 3 to 18 outgoing ways.
- Outgoing MCCBs up to 400A, available in 18, 25 & 45kA.
- IP3X construction.
- Form 3B segregation (with terminal shields fitted).
- Tin–plated busbar systems throughout the range.
- Metering options.
- Reliable & safe operation assured through KEMA testing & certification.
- Optional side extension modules provide improved access for larger cables.
- Versatile solution, accommodating different size outgoing MCCBs to best match application needs.
- Enhanced safety through fully shrouded incoming devices, to protect against contact with live parts.
- Blanking plates finger protect unused outgoing ways.
- Outgoing metering solutions, applicable for types 2, 3, 4, 5 & 6 panelboards.

Factory built assemblies

- Complete factory built assemblies can be specified for individual projects, on which the factory will be pleased to advise.
- Simple derivatives include: The fitment of side extension boxes, dual incomers and metering options etc.
- Through a modular Panelboard system, more custom solutions can be accommodated to include:
  - 4-pole switching options.
  - Fused combination switch options for both incomers and outgoing ways.
  - Form 4 type 2 solutions.
- For more details on these services please contact our customer support team on 08700 545 333.

Individually enclosed Series G MCCBs

Incorporating Eaton's high performance Series 'G' MCCBs. These ready assembled enclosed MCCB units, including earth leakage versions offer simple and swift installation.

- Current ratings from 63A–630A.
- See page 97 for details.

Surge protection devices (SPD) for MCB distribution boards and MCCB panelboards

Eaton has a combined lightning current and surge arrester, as well as an individual surge arrester to provide a coordinated solution for lightning protection and surge suppression fully compliant to BS EN 62305. This range of coordinated enclosed kits provides peace of mind that all equipment has comprehensive transient overvoltage protection caused by lightning strokes and switching in low voltage systems.

Surge arrester protection for distribution boards

EM3SSK1T2 (SPN distribution boards) & **EM3SSK3T2** (TPN distribution boards) technical summary:

- For the protection of low voltage distribution systems against transient overvoltage caused by indirect lightning strike and switching operations.
- The 3+1 circuit offers a universal solution for surge protection in low voltage distribution systems.
- Suitable for TT- and TN-S systems according to IEC 60364-5-53 Clause 534.
- Test class II according to IEC 61643-1+A1.
- SPD-type T2 according to EN 61643-11.

Combined lightning arrester and surge arrester protection for distribution boards and panelboards

EM3SSK3T12 (TPN distribution boards) & **EM3SSK3T12L** (panelboards) technical summary:

- Lightning protection classes III and IV in accordance with IEC 62305.
- For the protection of low voltage distribution systems against transient overvoltage caused by direct and indirect lightning strike and switching operations.
- Application according to IEC 60364-5-53 Clause 534.
- Test class I, II, III in accordance with IEC 61643-1.
- SPD-type T1, T2, T3 in accordance with EN 61643-11.

Combined lightning arrester and surge arrester protection for panelboards

EM3SSK3T12P technical summary:

- Lightning protection classes I, II, III and IV in accordance with IEC 62305.
- For the protection of low voltage distribution systems against direct lightning strike into the overhead power supply line or external lightning protection system and against indirect lightning stroke and switching operations.
- Application according to IEC 60364-5-53 Clause 534.
- Test class I, II, III in accordance with IEC 61643-1.
- SPD-type T1, T2, T3 in accordance with EN 61643-11.
- No discharge of ionised gases during operation.

Memshield 3 MCB distribution boards and enclosures

Eaton's Memshield 3 MCB distribution boards have evolved through an intimate knowledge and feedback from electrical contractors, consulting engineers and end users to provide solutions to a wide range of electrical distribution applications in commercial buildings. Memshield 3 delivers safe, reliable and high performance protection of electrical power distribution systems in accordance with BS EN 60439-3.

2.1 Memshield 3 MCB distribution boards and enclosures

Type A, SPN distribution boards

See page 68 for technical data and overall dimensions

EAM10

125A SPN, type A distribution boards

- When more than 16 SP ways are required, see our TPN board ranges, complete with single phase kit options

Description	Rating (A)	Total no. of outgoing ways	Eaton list number
4 way SPN, type A distribution board	125	4	**EAM4**
7 way SPN, type A distribution board	125	7	**EAM7**
10 way SPN, type A distribution board	125	10	**EAM10**
13 way SPN, type A distribution board	125	13	**EAM13**
16 way SPN, type A distribution board	125	16	**EAM16**

EAMS1251N

Incoming devices for SPN, type A distribution boards

- Incoming devices supplied separate to distribution board

Description	Rating (A)	Poles	Sensitivity (mA)	Eaton list number
Switch-disconnector	125	SPSN	–	**EAMS1251N**
RCCB incoming device for SPN, type A distribution board	100	1P+N	30	**EAMS100HE**
RCCB incoming device for SPN, type A distribution board	100	1P+N	100	**EAMS100ME**
RCCB incoming device for SPN, type A distribution board	100	1P+N	300	**EAMS100LE**
Direct connection kit for SPN, type A distribution board	100	1P+N	–	**EAMBT1002**

EAMMP65

Metered SPN, type A distribution boards & standard meter packs

- Type A SPN boards, fitted with multifunction meters, can display; Amps, kW, kWh, kVar and kVarh pulsed output etc.
- Split load versions utilise a two channel meter, feeding two independent busbars and groups of MCB/RCBOs
- Split load versions provide independent monitoring of "Power" and "Lighting" loads and total load.
- Aids compliance with Part L2 of the building regulations (England & Wales)

Description	Rating (A)	Total no. of outgoing ways	Installed meter, characteristics	Eaton list number
Meterpack for SPN, type A distribution boards	65	–	Pulsed output, kWh	**EAMMP65**
9 way SPN, type A distribution board[1)]	65	9	Pulsed output, kWh	**EAM9M**
9 way SPN, type A distribution board[1)]	65	9	Modbus	**EAM9MB**
12 way SPN, type A distribution board[1)]	65	12	Pulsed output, kWh	**EAM12M**
12 way SPN, type A distribution board[1)]	65	12	Modbus	**EAM12MB**
Split metered SPN, type A distribution board[1), 2)]	100	9 + 3	Pulsed output, kWh	**EAMSL93M**
Split metered SPN, type A distribution board[1), 2)]	100	9 + 3	Modbus	**EAMSL93MB**
Split metered SPN, type A distribution board[1), 2)]	100	6 + 6	Pulsed output, kWh	**EAMSL66M**
Split metered SPN, type A distribution board[1), 2)]	100	6 + 6	Modbus	**EAMSL66MB**

[1)] Includes factory fitted switch disconnector and single channel meter
[2)] Includes two channel meter, 65A max load per channel

EM3SSK1T2

Surge protection device for SPN, type A distribution boards

Description	Eaton list number
Enclosed surge protection kit for SPN boards – type 2	**EM3SSK1T2**

EMDH104

Outgoing devices, MCBs – 10/15kA, single pole

- Trip types B, C and D
- Dual rated, 10kA to IEC 60898 and 15kA to IEC 60947-2

Description	Rated current (A)	Width (mm)	Short circuit rating (kA)	Eaton list number Trip type B	Trip type C	Trip type D
Miniature circuit breaker	1	18	10/15	**EMBH101**	**EMCH101**	**EMDH101**
Miniature circuit breaker	2	18	10/15	**EMBH102**	**EMCH102**	**EMDH102**
Miniature circuit breaker	4	18	10/15	**EMBH104**	**EMCH104**	**EMDH104**
Miniature circuit breaker	6	18	10/15	**EMBH106**	**EMCH106**	**EMDH106**
Miniature circuit breaker	8	18	10/15	**EMBH108**	**EMCH108**	**EMDH108**
Miniature circuit breaker	10	18	10/15	**EMBH110**	**EMCH110**	**EMDH110**
Miniature circuit breaker	13	18	10/15	**EMBH113**	**EMCH113**	**EMDH113**
Miniature circuit breaker	16	18	10/15	**EMBH116**	**EMCH116**	**EMDH116**
Miniature circuit breaker	20	18	10/15	**EMBH120**	**EMCH120**	**EMDH120**
Miniature circuit breaker	25	18	10/15	**EMBH125**	**EMCH125**	**EMDH125**
Miniature circuit breaker	32	18	10/15	**EMBH132**	**EMCH132**	**EMDH132**
Miniature circuit breaker	40	18	10/15	**EMBH140**	**EMCH140**	**EMDH140**
Miniature circuit breaker	50	18	10/15	**EMBH150**	**EMCH150**	**EMDH150**[1)]
Miniature circuit breaker	63	18	10/15	**EMBH163**	**EMCH163**	**EMDH163**[1)]

[1)] 15kA to IEC60947-2 rating only

EMCH116R30

Outgoing devices, RCBOs single pole – trip type C – 30mA sensitivity

- Eaton's range of residual current circuit breakers with integral overload protection (RCBOs), are manufactured to IEC/EN 61009 and meet the latest European and international standards.
- For other RCBO sensitivity options refer to full details on page 33.

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type C SP	6	C	30	**EMCH106R30**
Eaton RCBO 10A 10kA type C SP	10	C	30	**EMCH110R30**
Eaton RCBO 16A 10kA type C SP	16	C	30	**EMCH116R30**
Eaton RCBO 20A 10kA type C SP	20	C	30	**EMCH120R30**
Eaton RCBO 32A 10kA type C SP	32	C	30	**EMCH132R30**
Eaton RCBO 40A 6kA type C SP	40	C	30	**EMCH140R30**
Eaton RCBO 45A 6kA type C SP	45	C	30	**EMCH145R30**

EMBH116R30

Outgoing devices, RCBOs single pole – trip type B – 30mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type B SP	6	B	30	**EMBH106R30**
Eaton RCBO 10A 10kA type B SP	10	B	30	**EMBH110R30**
Eaton RCBO 16A 10kA type B SP	16	B	30	**EMBH116R30**
Eaton RCBO 20A 10kA type B SP	20	B	30	**EMBH120R30**
Eaton RCBO 32A 10kA type B SP	32	B	30	**EMBH132R30**
Eaton RCBO 40A 6kA type B SP	40	B	30	**EMBH140R30**
Eaton RCBO 45A 6kA type B SP	45	B	30	**EMBH145R30**

EMDL

EMPL

General accessories for SPN, type A distribution boards

Description	Eaton list number
MCB blanking module – 18mm	**EMBP**
Half MCB blanking strip – 9mm	**EMABP**
Universal device lockout attachment – fits MCBs, RCCBs and RCBOs	**ASPDL**
Padlock suitable for ASPDL	**PD2**
Door barrel lock with 2 keys	**EMDL**
Door padlocking kit	**EMPL**
Padlock suitable for EMPL	**PD1**
Vertical coupling kit for connecting 2 SPN Distribution boards (125A max. total load)[1)]	**EAMCK**
Clean earth for A board 5 terminals	**EAME5**
Clean earth for A board 11 terminals	**EAME11**

[1)] Incominging device required for each linked distribution boards

See page 68 for technical data and overall dimensions

EBM81

125A/250A TPN, type B distribution boards

Description	Rating (A)	Total no. of outgoing ways	Eaton list number
4 way TPN, type B distribution board	125	4	**EBM41**
6 way TPN, type B distribution board	125	6	**EBM61**
8 way TPN, type B distribution board	125	8	**EBM81**
12 way TPN, type B distribution board	125	12	**EBM121**
16 way TPN, type B distribution board	125	16	**EBM161**
12 way TPN, type B distribution board	125/250[1)]	12	**EBM122**
18 way TPN, type B distribution board	125/250[1)]	18	**EBM182**
24 way TPN, type B distribution board	125/250[1)]	24	**EBM242**

[1)] 250A option – if used with cable extension box or with cable trunking. See 250A incomer options below

EBM121D

125A SPSN, type B distribution board with SPSN main switch disconnector fitted

- Incoming devices supplied separate to distribution board.

Description	Rating (A)	Total no. of outgoing ways	Eaton list number
12 way SPSN type B distribution board	125	12	**EBM121D**

EBMS1253

125A incomer options for type B distribution boards

- Incoming devices supplied separate to distribution board.

Description	Rating (A)	Pole configuration	Eaton list number
Switch disconnector	125	TP	**EBMS1253**
Switch disconnector kit (including single phasing link)	125	SPSN	**EBMS1251N**
Switch disconnector	125	TPSN	**EBMS1253N**
Direct connection (lugs connector)	125/250	TP	**EBMBT2503**
30mA RCCB[1)]	100	TPSN	**EBMR30**
100mA RCCB[1)]	100	TPSN	**EBMR100**
300mA RCCB[1)]	100	TPSN	**EBMR300**
300mA RCCB with time delay	100	TPSN	**EBMR300T**
Switch disconnector feeding 125A TP AC1 contactor, housed in extension box	125	TP	**EBMCC1253**
125A MCCB (50kA adjustable NZM), housed in extension box	125	TP	**EBMMB1253**

[1)] Includes 50mm^2 terminal adapter

EBM62H

250A TPN, type B high load distribution board

- These boards include 2 TPN outgoing ways for 27mm MCB (upto 125A)
- Adequate integral cabling space means that no extension box is required.

Description	Rating (A)	Total no. of 18mm TP outgoing ways (63A max)	Total no. of 27mm TP outgoing ways (125A max)	Total no. of outgoing ways	Eaton list number
2 way TPN, type B distribution board	250	0	2	2	**EBM22H**
6 way TPN, type B distribution board	250	4	2	6	**EBM62H**
8 way TPN, type B distribution board	250	6	2	8	**EBM82H**
12 way TPN, type B distribution board	250	10	2	12	**EBM122H**
18 way TPN, type B distribution board	250	16	2	18	**EBM182H**
24 way TPN, type B distribution board	250	22	2	24	**EBM242H**

EBMMB250

250A incomer options for type B distribution boards

- Incoming devices supplied separate to distribution board.
- Where used with **EBM182** or **EBM242**, a separate cable extension box or suitable cable trunking is required

Description	Rating (A)	Pole configuration	Eaton list number
Switch-disconnector	250	TP	**EBMS2503**
Direct connection (lugs connector)	250	TP	**EBMBT2503**
MCCB incomer kit (includes MCCB)	250	TP	**EBMMB250**
MCCB incomer kit (includes MCCB)	200	TP	**EBMMB200**
MCCB incomer kit (includes MCCB)	160	TP	**EBMMB160**
Switch disconnector feeding 250A TP AC1 contactor, housed in extension box	250	TP	**EBMCC2503**
Single phase conversion kit for 250A rated board only (requires **EBMS2503** to be ordered seperately)			**EBMS25**

EBMMPCT250

Meterpack assemblies – TPN, type B distribution boards

Description	Rating (A) (total load)	Installed meter, characteristics	Eaton list number
Meterpack for TPN, type B distribution boards	250	Pulsed output, kWh	**EBMMPCT250**
Meterpack for TPN, type B distribution boards	250	Modbus + pulsed output, kWh	**EBMMPCT250M**
Meterpack for TPN, type B distribution boards	250	MID certified meter	**EBMMPCT250MID**
Double meterpack for 2 x TPN, type B distribution boards	250	Pulsed output, kWh	**EBMMPSL250**
Double meterpack for 2 x TPN, type B distribution boards	250	Modbus + pulsed output, kWh	**EBMMPSL250M**
Double meterpack for 2 x TPN, type B distribution boards	125	Pulsed output, kWh	**EBMMPSL125**
Double meterpack for 2 x TPN, type B distribution boards	125	Modbus + pulsed output, kWh	**EBMMPSL125M**
Meterpack for TPN, type B distribution boards	120	Ofgem approved	**EBMMPDC120**
Triple meterpack for 2 x TPN & 1 x 12-way SPN, distribution boards	125	Pulsed output, kWh	**EBMMPSL3**
Triple meterpack for 2 x TPN & 1 x 12-way SPN, distribution boards	125	Modbus + pulsed output, kWh	**EBMMPSL3M**

EBMSL642MB

Split metered power and lighting board – 200A TPN, type B

- Includes factory fitted 200A switch disconnector and two channel meter
- Adequate integral cabling space means that no extension box is required.

Description	Rating (A)	Total no. of outgoing ways	Installed meter, characteristics	Eaton list number
Split metered TPN, type B distribution board	200	6+4	Pulsed output, kWh	**EBMSL642M**
Split metered TPN, type B distribution board	200	6+4	Modbus	**EBMSL642MB**
Split metered TPN, type B distribution board	200	8+6	Pulsed output, kWh	**EBMSL862M**
Split metered TPN, type B distribution board	200	8+6	Modbus	**EBMSL862MB**
Split metered TPN, type B distribution board	200	10+8	Pulsed output, kWh	**EBMSL1082M**
Split metered TPN, type B distribution board	200	10+8	Modbus	**EBMSL1082MB**
Split metered TPN, type B distribution board	200	14+10	Pulsed output, kWh	**EBMSL14102M**
Split metered TPN, type B distribution board	200	14+10	Modbus	**EBMSL14102MB**

EM3SSK3T12

Surge protection device for type B distribution boards

Description	Eaton list number
Enclosed surge protection kit for TPN boards – type 1&2	**EM3SSK3T12**
Enclosed surge protection kit for TPN boards – type 2	**EM3SSK3T2**

EMDH104

Outgoing devices – MCBs – 10/15kA, single pole

- Trip types B, C and D
- Dual rated, 10kA to IEC 60898 and 15kA to IEC 60947-2

Description	Rated current (A)	Width (mm)	Short circuit rating (kA)	Eaton list number Trip type B	Trip type C	Trip type D
Miniature circuit breaker	1	18	10 /15	**EMBH101**	**EMCH101**	**EMDH101**
Miniature circuit breaker	2	18	10 /15	**EMBH102**	**EMCH102**	**EMDH102**
Miniature circuit breaker	4	18	10 /15	**EMBH104**	**EMCH104**	**EMDH104**
Miniature circuit breaker	6	18	10 /15	**EMBH106**	**EMCH106**	**EMDH106**
Miniature circuit breaker	8	18	10 /15	**EMBH108**	**EMCH108**	**EMDH108**
Miniature circuit breaker	10	18	10 /15	**EMBH110**	**EMCH110**	**EMDH110**
Miniature circuit breaker	13	18	10 /15	**EMBH113**	**EMCH113**	**EMDH113**
Miniature circuit breaker	16	18	10 /15	**EMBH116**	**EMCH116**	**EMDH116**
Miniature circuit breaker	20	18	10 /15	**EMBH120**	**EMCH120**	**EMDH120**
Miniature circuit breaker	25	18	10 /15	**EMBH125**	**EMCH125**	**EMDH125**
Miniature circuit breaker	32	18	10 /15	**EMBH132**	**EMCH132**	**EMDH132**
Miniature circuit breaker	40	18	10 /15	**EMBH140**	**EMCH140**	**EMDH140**
Miniature circuit breaker	50	18	10 /15	**EMBH150**	**EMCH150**	**EMDH150**[1)]
Miniature circuit breaker	63	18	10 /15	**EMBH163**	**EMCH163**	**EMDH163**[1)]

[1)] 15kA to IEC60947-2 rating only

EMCH310

Outgoing devices – MCBs – 10/15kA, three pole

- Trip types B, C and D
- Dual rated, 10kA to IEC 60898 and 15kA to IEC 60947-2

Description	Rated current (A)	Width (mm)	Short circuit rating (kA)	Eaton list number Trip type B	Trip type C	Trip type D
Miniature circuit breaker	1	54	10/15	**EMBH301**	**EMCH301**	**EMDH301**
Miniature circuit breaker	2	54	10/15	**EMBH302**	**EMCH302**	**EMDH302**
Miniature circuit breaker	4	54	10/15	**EMBH304**	**EMCH304**	**EMDH304**
Miniature circuit breaker	6	54	10/15	**EMBH306**	**EMCH306**	**EMDH306**
Miniature circuit breaker	8	54	10/15	**EMBH308**	**EMCH308**	**EMDH308**
Miniature circuit breaker	10	54	10/15	**EMBH310**	**EMCH310**	**EMDH310**
Miniature circuit breaker	13	54	10/15	**EMBH313**	**EMCH313**	**EMDH313**
Miniature circuit breaker	16	54	10/15	**EMBH316**	**EMCH316**	**EMDH316**
Miniature circuit breaker	20	54	10/15	**EMBH320**	**EMCH320**	**EMDH320**
Miniature circuit breaker	25	54	10/15	**EMBH325**	**EMCH325**	**EMDH325**
Miniature circuit breaker	32	54	10/15	**EMBH332**	**EMCH332**	**EMDH332**
Miniature circuit breaker	40	54	10/15	**EMBH340**	**EMCH340**	**EMDH340**
Miniature circuit breaker	50	54	10/15	**EMBH350**	**EMCH350**	**EMDH350**[1)]
Miniature circuit breaker	63	54	10/15	**EMBH363**	**EMCH363**	**EMDH363**[1)]

[1)] 15kA to IEC60947-2 rating only

EMCS1100

Outgoing devices (for 250A high load distribution board only) – MCBs, single pole

Rated current In (A)	Width (mm)	Short circuit rating (IEC/EN 60947-2)	Eaton list number Trip type B	Trip type C	Trip type D
20	27	25kA	**EMBS120**	**EMCS120**	**EMDS120**
32	27	25kA	**EMBS132**	**EMCS132**	**EMDS132**
40	27	25kA	**EMBS140**	**EMCS140**	**EMDS140**
50	27	25kA	**EMBS150**	**EMCS150**	**EMDS150**
63	27	25kA	**EMBS163**	**EMCS163**	**EMDS163**
80	27	20kA	**EMBS180**	**EMCS180**	**EMDS180**
100	27	20kA	**EMBS1100**	**EMCS1100**	**EMDS1100**
125	27	15kA	**EMBS1125**	**EMCS1125**	–

EMCS3125

Outgoing devices (for 250A high load distribution board only) – MCBs, three pole

Rated current In (A)	Width (mm)	Short circuit rating (IEC/EN 60947-2)	Eaton list number Trip type B	Trip type C	Trip type D
20	27	25kA	**EMBS320**	**EMCS320**	**EMDS320**
32	27	25kA	**EMBS332**	**EMCS332**	**EMDS332**
40	27	25kA	**EMBS340**	**EMCS340**	**EMDS340**
50	27	25kA	**EMBS350**	**EMCS350**	**EMDS350**
63	27	25kA	**EMBS363**	**EMCS363**	**EMDS363**
80	81	20kA	**EMBS380**	**EMCS380**	**EMDS380**
100	81	20kA	**EMBS3100**	**EMCS3100**	**EMDS3100**
125	81	15kA	**EMBS3125**	**EMCS3125**	–

EMCH116R30

Outgoing devices, RCBOs single pole – trip type C – 30mA sensitivity

- Eaton's range of residual current circuit breakers with integral overload protection (RCBOs), are manufactured to IEC/EN 61009 and meet the latest European and international standards.
- For other RCBO sensitivity options refer to full details on page 33.

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type C SP	6	C	30	**EMCH106R30**
Eaton RCBO 10A 10kA type C SP	10	C	30	**EMCH110R30**
Eaton RCBO 16A 10kA type C SP	16	C	30	**EMCH116R30**
Eaton RCBO 20A 10kA type C SP	20	C	30	**EMCH120R30**
Eaton RCBO 32A 10kA type C SP	32	C	30	**EMCH132R30**
Eaton RCBO 40A 6kA type C SP	40	C	30	**EMCH140R30**
Eaton RCBO 45A 6kA type C SP	45	C	30	**EMCH145R30**

EMBH116R30

Outgoing devices, RCBOs single pole – trip type B – 30mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type B SP	6	B	30	**EMBH106R30**
Eaton RCBO 10A 10kA type B SP	10	B	30	**EMBH110R30**
Eaton RCBO 16A 10kA type B SP	16	B	30	**EMBH116R30**
Eaton RCBO 20A 10kA type B SP	20	B	30	**EMBH120R30**
Eaton RCBO 32A 10kA type B SP	32	B	30	**EMBH132R30**
Eaton RCBO 40A 10kA type B SP	40	B	30	**EMBH140R30**
Eaton RCBO 45A 6kA type B SP	45	B	30	**EMBH145R30**

EMBP

EBMTK

General accessories, type B

Description	Eaton list number
MCB blanking module – 18mm	**EMBP**
Half MCB blanking strip – 9mm	**EMABP**
MCB blanking module – 27mm	**EMBPH**
Universal device lockout attachment – fits MCBs, RCCBs and RCBOs	**ASPDL**
Lockout attachment for 27mm MCBs	**ASPDL27**
Padlock suitable for ASPDL & ASPDL27	**PD2**
Door barrel lock with 2 keys	**EMDL**
Door padlocking kit	**EMPL**
Padlock suitable for EMPL	**PD1**
Top/bottom gland plate	**EBMGP4**
IP42 gland plate kit	**EMGP142**
Cable trunking interface kit	**EBMTK**
Spare way label 12 way – pack of 5	**EBLB1**
Spare way label 18 way – pack of 5	**EBLB2**
Enclosure for NZM1 3-pole MCCB incomer	**EBMMBKIT**

EBMXPC1

Cable extension boxes, type B

Description	Box height	Eaton list number
Cable spreader extension box	180mm	**EBMXPC1**
Cable spreader extension box	250mm	**EBMXPC2**

EBMNE8

High integrity/clean earth kit

Description	No. of ways	Eaton list number
High integrity/clean earth kit for type B Board	8	**EBMNE8**

Note: Up to 4 high integrity earth bars can be fitted to a type B distribution board

EBMXDC9

Modular enclosures

- Modular enclosures will accept MCBs, RCCBs, RCBOs, fuse modules and command control products.
- Modular enclosures **EBMXDC6** to **EBMXDC45** are fitted with earth and neutral bars as standard.
- Modular enclosures **EBMXDC15** and **EBMXDCG15** have same profile width suitable for mounting onto type A, SPN distribution board **EAM13** or any type B, TPN distribution board.

See page 69 for technical data and overall dimensions.

Description	Capactiy in 18mm modules	Glazed door	Eaton list number
Modular enclosure, 15 module din rail – glazed door	15	Yes	**EBMXDCG15**
Modular enclosure, 6 module din rail – unglazed door	6	No	**EBMXDC6**
Modular enclosure, 9 module din rail – unglazed door	9	No	**EBMXDC9**
Modular enclosure, 15 module din rail – unglazed door	15	No	**EBMXDC15**
Modular enclosure, 18 module din rail – unglazed door	18	No	**EBMXDC18**
Modular enclosure, 2 x 15 module din rail – unglazed door	30	No	**EBMXDC30**
Modular enclosure, 3 x 15 module din rail – unglazed door	45	No	**EBMXDC45**

EBMXE15

Enclosure accessories

Description	Eaton list number
Additional earth bar (15 additional holes)	**EBMXE15**
Door barrel lock with 2 keys	**EMDL**
Door padlocking kit	**EMPL**
Padlock suitable for **EMPL**	**PD1**

Distribution boards type A and type B – cable capacities

Cable capacities	Type A	Type B
125A switch disconnector	50mm^2	50mm^2
100A RCCB (type A = 90A)	35mm^2	50mm^2
250A switch disconnector	–	120mm^2 (+ lugs)
160A - 250A MCCB incomer	–	250A = 120mm^2 (+ lugs)
100A direct connection kit	35mm^2	–
250A direct connection lugs	–	120mm^2 (+ lugs)
Enclosure earth stud	M6	M8
Incoming earth terminal	25mm^2	125A = 25mm^2, 250A = 70mm^2
Incomming neutral terminal	90/100A = 35mm^2, 125A = 50mm^2	125A = 50mm^2, 250A = 120mm^2 (+ lugs)
Outgoing earth terminal	25mm^2	25mm^2
Outgoing neutral terminal	25mm^2	25mm^2

Interiors & incoming devices for single phase and three phase

Eaton MCB pan assemblies offer a high degree of flexibility for custom applications. SPN types are available with 4, 7, 10, 13, and 16 ways. TPN types are available with 4, 6, 8, 12,18 and 24 ways.

Technical characteristics

- Eaton MCB pan assemblies are suitable for inclusion in other factory built assemblies and as replacements for distribution board interiors.
- MCB pan assemblies feature fully shrouded busbars.

See page 71 for the technical details of Eaton MCB pan assemblies.

EAMP10

125A SPN type A pan assemblies with earth & neutral bars

Description	Rating (A)	Total no. of outgoing ways	Eaton list number
4 way SPN, type A pan assembly	125	4	**EAMP4**
7 way SPN, type A pan assembly	125	7	**EAMP7**
10 way SPN, type A pan assembly	125	10	**EAMP10**
13 way SPN, type A pan assembly	125	13	**EAMP13**
16 way SPN, type A pan assembly	125	16	**EAMP16**

EAMS1251N

Incoming devices for SPN, type A pan assemblies

- Incoming devices supplied separate to pan assembly

Description	Rating (A)	Poles	Sensitivity (mA)	Eaton list number
Switch-disconnector	125	SPSN	–	**EAMS1251N**
RCCB	100	1P+N	30	**EAMS100HE**
RCCB	100	1P+N	100	**EAMS100ME**
RCCB	100	1P+N	300	**EAMS100LE**
Direct connection kit	100	1P+N	–	**EAMBT1002**

EBMP61

125A/250A TPN type B pan assemblies with earth & neutral bars

Description	Rating (A)	Total no. of outgoing ways	Eaton list number
4 way TPN, type B pan assembly	125	4	**EBMP41**
6 way TPN, type B pan assembly	125	6	**EBMP61**
8 way TPN, type B pan assembly	125	8	**EBMP81**
12 way TPN, type B pan assembly	125	12	**EBMP121**
12 way TPN, type B pan assembly	250	12	**EBMP122**
18 way TPN, type B pan assembly	250	18	**EBMP182**
24 way TPN, type B pan assembly	250	24	**EBMP242**

EBMS1253

125A incomer options for type B pan assemblies

- Incoming devices supplied separate to pan assembly

Description	Rating (A)	Pole configuration	Eaton list number
Switch disconnector	125	TP	**EBMS1253**
Switch disconnector kit (including single phasing link)	125	SPSN	**EBMS1251N**
Switch disconnector	125	TPSN	**EBMS1253N**
Direct connection (lugs connector)	250	TP	**EBMBT2503**
30mA RCCB	100	TPSN	**EBMR30**
100mA RCCB	100	TPSN	**EBMR100**
300mA RCCB	100	TPSN	**EBMR300**
300mA RCCB with time delay	100	TPSN	**EBMR300T**

EBMMB250

250A incomer options for type B pan assemblies

- Incoming devices supplied separate to pan assembly

Description	Rating (A)	Pole configuration	Eaton list number
Switch-disconnector	250	TP	**EBMS2503**
Direct connection (lugs connector)	250	TP	**EBMBT2503**
MCCB incomer kit (includes mCCB)	250	TP	**EBMMB250**
MCCB incomer kit (includes MCCB)	200	TP	**EBMMB200**
MCCB incomer kit (includes mCCB)	160	TP	**EBMMB160**
Single phase conversion kit for 250A rated board only (requires **EBMS2503** to be ordered separately)			**EBMS25**

Eaton provides a comprehensive range of modular solutions for circuit protection and control. Eaton's 10/15kA MCBs are high performance current limiting devices with the ability to disconnect overloads and short circuits. They are available with trip types B, C and D with many features of benefit to all customers. RCBOs with overload protection combine protection for people and circuits in a single module width device where space is at a premium.

Double pole and four pole RCCBs are available in a range of current ratings and four trip sensitivities, 10, 30, 100 and 300mA.

MCBs are available in current ratings from 1A–63A, with trip types B, C and D, 10kA to IEC 60898 and 15kA to IEC 60947-2

See page 76 for technical data and overall dimensions

EMDH104

Miniature circuit breakers – dual rated 10/15kA, single pole

Description	Rated current (A)	Width (mm)	Short circuit rating (kA)	Eaton list number Trip type B	Trip type C	Trip type D
Miniature circuit breaker	1	18	10/15	**EMBH101**	**EMCH101**	**EMDH101**
Miniature circuit breaker	2	18	10/15	**EMBH102**	**EMCH102**	**EMDH102**
Miniature circuit breaker	4	18	10/15	**EMBH104**	**EMCH104**	**EMDH104**
Miniature circuit breaker	6	18	10/15	**EMBH106**	**EMCH106**	**EMDH106**
Miniature circuit breaker	8	18	10/15	**EMBH108**	**EMCH108**	**EMDH108**
Miniature circuit breaker	10	18	10/15	**EMBH110**	**EMCH110**	**EMDH110**
Miniature circuit breaker	13	18	10/15	**EMBH113**	**EMCH113**	**EMDH113**
Miniature circuit breaker	16	18	10/15	**EMBH116**	**EMCH116**	**EMDH116**
Miniature circuit breaker	20	18	10/15	**EMBH120**	**EMCH120**	**EMDH120**
Miniature circuit breaker	25	18	10/15	**EMBH125**	**EMCH125**	**EMDH125**
Miniature circuit breaker	32	18	10/15	**EMBH132**	**EMCH132**	**EMDH132**
Miniature circuit breaker	40	18	10/15	**EMBH140**	**EMCH140**	**EMDH140**
Miniature circuit breaker	50	18	10/15	**EMBH150**	**EMCH150**	**EMDH150**[1)]
Miniature circuit breaker	63	18	10/15	**EMBH163**	**EMCH163**	**EMDH163**[1)]

[1)] 15kA to IEC60947-2 rating only

EMBH125N

Miniature circuit breakers – dual rated 10/15kA, single pole + neutral

Description	Rated current (A)	Width (mm)	Short circuit rating (kA)	Eaton list number Trip type B	Trip type C	Trip type D
Miniature circuit breaker	1	36	10/15	**EMBH101N**	**EMCH101N**	**EMDH101N**
Miniature circuit breaker	2	36	10/15	**EMBH102N**	**EMCH102N**	**EMDH102N**
Miniature circuit breaker	4	36	10/15	**EMBH104N**	**EMCH104N**	**EMDH104N**
Miniature circuit breaker	6	36	10/15	**EMBH106N**	**EMCH106N**	**EMDH106N**
Miniature circuit breaker	8	36	10/15	**EMBH108N**	**EMCH108N**	**EMDH108N**
Miniature circuit breaker	10	36	10/15	**EMBH110N**	**EMCH110N**	**EMDH110N**
Miniature circuit breaker	13	36	10/15	**EMBH113N**	**EMCH113N**	**EMDH113N**
Miniature circuit breaker	16	36	10/15	**EMBH116N**	**EMCH116N**	**EMDH116N**
Miniature circuit breaker	20	36	10/15	**EMBH120N**	**EMCH120N**	**EMDH120N**
Miniature circuit breaker	25	36	10/15	**EMBH125N**	**EMCH125N**	**EMDH125N**
Miniature circuit breaker	32	36	10/15	**EMBH132N**	**EMCH132N**	**EMDH132N**
Miniature circuit breaker	40	36	10/15	**EMBH140N**	**EMCH140N**	**EMDH140N**
Miniature circuit breaker	50	36	10/15	**EMBH150N**	**EMCH150N**	**EMDH150N**[1)]
Miniature circuit breaker	63	36	10/15	**EMBH163N**	**EMCH163N**	**EMDH163N**[1)]

[1)] 15kA to IEC60947-2 rating only

EMCH220

Miniature circuit breakers – dual rated 10/15kA, double pole

Description	Rated current (A)	Width (mm)	Short circuit rating (kA)	Eaton list number Trip type B	Trip type C	Trip type D
Miniature circuit breaker	1	36	10/15	**EMBH201**	**EMCH201**	**EMDH201**
Miniature circuit breaker	2	36	10/15	**EMBH202**	**EMCH202**	**EMDH202**
Miniature circuit breaker	4	36	10/15	**EMBH204**	**EMCH204**	**EMDH204**
Miniature circuit breaker	6	36	10/15	**EMBH206**	**EMCH206**	**EMDH206**
Miniature circuit breaker	8	36	10/15	**EMBH208**	**EMCH208**	**EMDH208**
Miniature circuit breaker	10	36	10/15	**EMBH210**	**EMCH210**	**EMDH210**
Miniature circuit breaker	13	36	10/15	**EMBH213**	**EMCH213**	**EMDH213**
Miniature circuit breaker	16	36	10/15	**EMBH216**	**EMCH216**	**EMDH216**
Miniature circuit breaker	20	36	10/15	**EMBH220**	**EMCH220**	**EMDH220**
Miniature circuit breaker	25	36	10/15	**EMBH225**	**EMCH225**	**EMDH225**
Miniature circuit breaker	32	36	10/15	**EMBH232**	**EMCH232**	**EMDH232**
Miniature circuit breaker	40	36	10/15	**EMBH240**	**EMCH240**	**EMDH240**
Miniature circuit breaker	50	36	10/15	**EMBH250**	**EMCH250**	**EMDH250**[1)]
Miniature circuit breaker	63	36	10/15	**EMBH263**	**EMCH263**	**EMDH263**[1)]

[1)] 15kA to IEC60947-2 rating only

EMCH363

Miniature circuit breakers – dual rated 10/15kA, three pole

Description	Rated current (A)	Width (mm)	Short circuit rating (kA)	Eaton list number Trip type B	Trip type C	Trip type D
Miniature circuit breaker	1	54	10/15	**EMBH301**	**EMCH301**	**EMDH301**
Miniature circuit breaker	2	54	10/15	**EMBH302**	**EMCH302**	**EMDH302**
Miniature circuit breaker	4	54	10/15	**EMBH304**	**EMCH304**	**EMDH304**
Miniature circuit breaker	6	54	10/15	**EMBH306**	**EMCH306**	**EMDH306**
Miniature circuit breaker	8	54	10/15	**EMBH308**	**EMCH308**	**EMDH308**
Miniature circuit breaker	10	54	10/15	**EMBH310**	**EMCH310**	**EMDH310**
Miniature circuit breaker	13	54	10/15	**EMBH313**	**EMCH313**	**EMDH313**
Miniature circuit breaker	16	54	10/15	**EMBH316**	**EMCH316**	**EMDH316**
Miniature circuit breaker	20	54	10/15	**EMBH320**	**EMCH320**	**EMDH320**
Miniature circuit breaker	25	54	10/15	**EMBH325**	**EMCH325**	**EMDH325**
Miniature circuit breaker	32	54	10/15	**EMBH332**	**EMCH332**	**EMDH332**
Miniature circuit breaker	40	54	10/15	**EMBH340**	**EMCH340**	**EMDH340**
Miniature circuit breaker	50	54	10/15	**EMBH350**	**EMCH350**	**EMDH350**[1)]
Miniature circuit breaker	63	54	10/15	**EMBH363**	**EMCH363**	**EMDH363**[1)]

[1)] 15kA to IEC60947-2 rating only

EMCH410

Miniature circuit breakers – dual rated 10/15kA, four pole

Description	Rated current (A)	Width (mm)	Short circuit rating (kA)	Eaton list number Trip type B	Trip type C	Trip type D
Miniature circuit breaker	1	72	10/15	**EMBH401**	**EMCH401**	**EMDH401**
Miniature circuit breaker	2	72	10/15	**EMBH402**	**EMCH402**	**EMDH402**
Miniature circuit breaker	4	72	10/15	**EMBH404**	**EMCH404**	**EMDH404**
Miniature circuit breaker	6	72	10/15	**EMBH406**	**EMCH406**	**EMDH406**
Miniature circuit breaker	8	72	10/15	**EMBH408**	**EMCH408**	**EMDH408**
Miniature circuit breaker	10	72	10/15	**EMBH410**	**EMCH410**	**EMDH410**
Miniature circuit breaker	13	72	10/15	**EMBH413**	**EMCH413**	**EMDH413**
Miniature circuit breaker	16	72	10/15	**EMBH416**	**EMCH416**	**EMDH416**
Miniature circuit breaker	20	72	10/15	**EMBH420**	**EMCH420**	**EMDH420**
Miniature circuit breaker	25	72	10/15	**EMBH425**	**EMCH425**	**EMDH425**
Miniature circuit breaker	32	72	10/15	**EMBH432**	**EMCH432**	**EMDH432**
Miniature circuit breaker	40	72	10/15	**EMBH440**	**EMCH440**	**EMDH440**
Miniature circuit breaker	50	72	10/15	**EMBH450**	**EMCH450**	**EMDH450**[1)]
Miniature circuit breaker	63	72	10/15	**EMBH463**	**EMCH463**	**EMDH463**[1)]

[1)] 15kA to IEC60947-2 rating only

See page 79 for technical data and overall dimensions

EAM162H

RCCBs – 2-pole double module – 10mA–30mA sensitivity

Description	Poles	Rating (A)	Sensitivity (mA)	Eaton list number
16A 2-pole RCCB 10mA	2P	16	10	**EAM162V**
16A 2-pole RCCB 30mA	2P	16	30	**EAM162H**
25A 2-pole RCCB 30mA	2P	25	30	**EAM252H**
40A 2-pole RCCB 30mA	2P	40	30	**EAM402H**
63A 2-pole RCCB 30mA	2P	63	30	**EAM632H**
80A 2-pole RCCB 30mA	2P	80	30	**EAM802H**
100A 2-pole RCCB 30mA	2P	100	30	**EAM1002H**

EAM402M

RCCBs – 2-pole double module – 100mA sensitivity

Description	Poles	Rating (A)	Sensitivity (mA)	Eaton list number
25A 2-pole RCCB 100mA	2P	25	100	**EAM252M**
40A 2-pole RCCB 100mA	2P	40	100	**EAM402M**
63A 2-pole RCCB 100mA	2P	63	100	**EAM632M**
80A 2-pole RCCB 100mA	2P	80	100	**EAM802M**
100A 2-pole RCCB 100mA	2P	100	100	**EAM1002M**

EAM802L

RCCBs – 2-pole double module – 300mA sensitivity

Description	Poles	Rating (A)	Sensitivity (mA)	Eaton list number
25A 2-pole RCCB 300mA	2P	25	300	**EAM252L**
40A 2-pole RCCB 300mA	2P	40	300	**EAM402L**
80A 2-pole RCCB 300mA	2P	80	300	**EAM802L**
100A 2-pole RCCB 300mA	2P	100	300	**EAM1002L**

EAM404H

RCCBs – 4-pole – 30mA sensitivity

Description	Poles	Rating (A)	Sensitivity (mA)	Eaton list number
40A 4-pole RCCB 30mA	4P	40	30	**EAM404H**
63A 4-pole RCCB 30mA	4P	63	30	**EAM634H**
80A 4-pole RCCB 30mA	4P	80	30	**EAM804H**
100A 4-pole RCCB 30mA	4P	100	30	**EAM1004H**

EAM404M

RCCBs – 4-pole – 100mA sensitivity

Description	Poles	Rating (A)	Sensitivity (mA)	Eaton list number
40A 4-pole RCCB 100mA	4P	40	100	**EAM404M**
63A 4-pole RCCB 100mA	4P	63	100	**EAM634M**
80A 4-pole RCCB 100mA	4P	80	100	**EAM804M**
100A 4-pole RCCB 100mA	4P	100	100	**EAM1004M**

EAM404L

RCCBs – 4-pole – 300mA sensitivity

Description	Poles	Rating (A)	Sensitivity (mA)	Eaton list number
40A 4-pole RCCB 300mA	4P	40	300	**EAM404L**
63A 4-pole RCCB 300mA	4P	63	300	**EAM634L**
80A 4-pole RCCB 300mA	4P	80	300	**EAM804L**
100A 4-pole RCCB 300mA	4P	100	300	**EAM1004L**
100A 4-pole RCCB 300mA	4P	100	300, trip time delay	**EAM1004LT**

See page 80 for technical data and overall dimensions

EMBH106R10

RCBOs single pole – trip type B – 10mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type B SP	6	B	10	**EMBH106R10**
Eaton RCBO 10A 10kA type B SP	10	B	10	**EMBH110R10**
Eaton RCBO 16A 10kA type B SP	16	B	10	**EMBH116R10**
Eaton RCBO 20A 10kA type B SP	20	B	10	**EMBH120R10**
Eaton RCBO 32A 10kA type B SP	32	B	10	**EMBH132R10**

EMBH110R30

RCBOs single pole – trip type B – 30mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type B SP	6	B	30	**EMBH106R30**
Eaton RCBO 10A 10kA type B SP	10	B	30	**EMBH110R30**
Eaton RCBO 16A 10kA type B SP	16	B	30	**EMBH116R30**
Eaton RCBO 20A 10kA type B SP	20	B	30	**EMBH120R30**
Eaton RCBO 32A 10kA type B SP	32	B	30	**EMBH132R30**
Eaton RCBO 40A 6kA type B SP	40	B	30	**EMBH140R30**
Eaton RCBO 45A 6kA type B SP	45	B	30	**EMBH145R30**

EMBH116R100

RCBOs single pole – trip type B – 100mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type B SP	6	B	100	**EMBH106R100**
Eaton RCBO 10A 10kA type B SP	10	B	100	**EMBH110R100**
Eaton RCBO 16A 10kA type B SP	16	B	100	**EMBH116R100**
Eaton RCBO 20A 10kA type B SP	20	B	100	**EMBH120R100**
Eaton RCBO 32A 10kA type B SP	32	B	100	**EMBH132R100**

EMCH120R10

RCBOs single pole – trip type C – 10mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type C SP	6	C	10	**EMCH106R10**
Eaton RCBO 10A 10kA type C SP	10	C	10	**EMCH110R10**
Eaton RCBO 16A 10kA type C SP	16	C	10	**EMCH116R10**
Eaton RCBO 20A 10kA type C SP	20	C	10	**EMCH120R10**
Eaton RCBO 32A 10kA type C SP	32	C	10	**EMCH132R10**

EMCH110R30

RCBOs single pole – trip type C – 30mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type C SP	6	C	30	**EMCH106R30**
Eaton RCBO 10A 10kA type C SP	10	C	30	**EMCH110R30**
Eaton RCBO 16A 10kA type C SP	16	C	30	**EMCH116R30**
Eaton RCBO 20A 10kA type C SP	20	C	30	**EMCH120R30**
Eaton RCBO 32A 10kA type C SP	32	C	30	**EMCH132R30**
Eaton RCBO 40A 6kA type C SP	40	C	30	**EMCH140R30**
Eaton RCBO 45A 6kA type C SP	45	C	30	**EMCH145R30**

EMCH132R100

RCBOs single pole – trip type C – 100mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
Eaton RCBO 6A 10kA type C SP	6	C	100	**EMCH106R100**
Eaton RCBO 10A 10kA type C SP	10	C	100	**EMCH110R100**
Eaton RCBO 16A 10kA type C SP	16	C	100	**EMCH116R100**
Eaton RCBO 20A 10kA type C SP	20	C	100	**EMCH120R100**
Eaton RCBO 32A 10kA type C SP	32	C	100	**EMCH132R100**

MB1P

Comb busbar

For MCBs, RCCBs & RCBOs

Technical characteristics

- Comb busbar is available for specialist applications and can be supplied in both pin and fork type formats.
- Comb busbars are supplied in 1m lengths.
- Fork type comb busbar can be used with all Eaton MCBs and 4P RCCBs.
- Pin type comb busbar can be used with all Eaton MCBs, switch-disconnectors, terminal blocks 2P and 4P RCCBs.
- Due to a height difference 4P RCCBs cannot be inter-connected with comb busbar when mounted in combination with other devices.
- For incoming connections onto fork type comb busbar, MCB terminals clamp cable and busbar simultaneously.
- Busbar material: Copper.
- Rated operational voltage: 240/415 V.
- Rated operational current: 63 A (100 A centre fed).
- Unused ways on comb busbar can be shielded by fitting the Eaton blanking module, EMBP.

Description	Type	Quantity per carton	Eaton list number
Comb busbar, 16 mm^2, 1P, insulated	Pin	1	**MB1P**
Comb busbar, 20 mm^2, 1P, insulated	Fork	1	**MB1F**
Comb busbar, 16 mm^2, 2P, insulated	Pin	1	**MB2P**
	Fork	1	**MB2F**
Comb busbar, 16 mm^2, 3P, insulated	Pin	1	**MB3P**
	Fork	1	**MB3F**
Comb busbar, 16 mm^2, 4P, insulated	Fork	1	**MB4F**

MBEC23

Comb busbar end covers

For MCBs, RCCBs & RCBOs

- For 2P, 3P and 4P busbar configurations supplied in packs of 10.

Description	Quantity per carton	Eaton list number
For 2P and 3P comb busbars: MB2P, MB2F, MB3P and MB3F	10	**MBEC23**
For 4P comb busbars: MB4P and MB4F	10	**MBEC4**

ASPDL

Padlocking devices

For MCBs, RCCBs, RCBOs & switch disconnectors

- The wide range of Eaton devices are complimented by a range of padlocking devices.
- For MCBs and RCCBs the device mechanism is trip free which allows it to be padlocked 'ON' for security, but in the event of a fault condition the device will still operate to disconnect the fault. The device will move to the tripped position when the lock is removed. These devices can also be padlocked in the 'OFF' position.

Description	Eaton list number
Universal device lockout attachment – fits MCBs, RCCBs and RCBOs	**ASPDL**
Lockout attachment for 27mm MCBs	**ASPDL27**
Padlock	**PD2**

ASALMSN

Auxiliary and alarm contacts including test function

For 18mm MCB & RCBO

Auxiliary and alarm contact devices can be fitted together on one MCB. Each is incorporated in a 1/2 module (9 mm) casing with terminals protected to IP 20 capable of accepting cable up to 2.5 mm^2. These devices are designed and manufactured to IEC 60947-5-1 and incorporate a changeover switch providing remote indication of an MCB which has tripped under fault conditions.

Technical characteristics

- This auxiliary switch allows remote indication of the position of the MCB contacts.
- Auxiliary and Alarm contact ratings:
  - AC14 240 Vac 50Hz, 6A.
  - DC14 125 Vdc, 1A.
- The auxiliary contact will not differentiate between an MCB that is "off" or "tripped".
- The auxiliary contact can be used in conjunction with a remote supply and signal lamps, bells or buzzers.

Description	Quantity per carton	Eaton list number
Auxiliary switch incorporating a test function	1	**ASAUXSN**[1)]
Alarm switch incorporating reset and test function	1	**ASALMSN**[1)]

[1)] Not suitable for use in distribution boards

ASSNTSN415

Shunt trips

For 18mm MCB & RCBO

Technical characteristics

- Suitable for all Eaton MCBs including those with either auxiliary or alarm contacts.
- A shunt trip and undervoltage release can be fitted together on one MCB.
- Each is incorporated in a 1 module (18 mm) casing with terminals protected to IP 20 capable of accepting cable up to 2.5 mm^2.
- The shunt trip and UVR are simply clipped to the left hand side of an MCB and have terminals at one end to allow connection to pan assemblies and comb busbar.

A shunt release provides remote trippping of an MCB with three voltage options for AC & DC applications.

Description	dc characteristics	ac characteristics	Quantity per carton	Eaton list number
MCB shunt trip	48 V–60 Vdc	48 V–110 Vac	1	**ASSNTSN110**[1)]
MCB shunt trip	110 Vdc	240 Vac	1	**ASSNTSN415**[1)]

[1)] Not suitable for use in distribution boards
Other voltages are available.

ASUVRSC230

Under voltage release

For 18mm MCB & RCBO

- Under voltage release (UVR) for remote tripping of an emergency stop loop.
- The UVR is simply clipped to the left hand side of an MCB and have terminals at one end to allow connection to pan assemblies and comb busbar.

Description	ac characteristics	Quantity per carton	Eaton list number
Under voltage release	240 Vac	1	**ASUVRSC230**[1)]

[1)] Not suitable for use in distribution boards

Eaton's wide range of modular timers, twilight switches and staircase timers are suitable for any residential or commercial application offering automatic lighting control. Contactors, impulse switches and relays are frequently applied for switching of lamp loads, fans or pumps in both utility as well as industrial areas.

See page 81 for timers technical data and overall dimensions.

TAD1NC

Analogue day timers – 50Hz net synchronised

Program range	Type	Channels	Contact configuration	Power reserve	Min cycling time	Width (mm)	Eaton list number
Day	50Hz net	1	CO	–	30 min.	54	**TAD1NC**
Day	50Hz net, 18mm	1	NO	–	15 min	18	**TAD1NCS**

TAD1

Analogue day timers – quartz controlled

Program range	Type	Channels	Contact configuration	Power reserve	Min cycling time	Width (mm)	Eaton list number
Day	Quartz	1	CO	72 hrs.	30 min.	54	**TAD1**
Day	Quartz, 18 mm	1	NO	72 hrs.	15 min	18	**TAD1S**

TAW1

Analogue week timers – quartz controlled

Program range	Type	Channels	Contact configuration	Power reserve	Min cycling time	Width (mm)	Eaton list number
Week	Quartz	1	CO	72 hrs.	3 hrs.	54	**TAW1**
Week	Quartz, 18 mm	1	NO	72 hrs.	2 hrs.	18	**TAW1S**

TDW1S

Digital week timers – 1 & 2 channel

Program range	Type	Channels	Contact configuration	Power reserve	Min cycling time	Program steps	Width (mm)	Eaton list number
Week	Quartz	1	CO	10 yrs.	1 min.	28	36	**TDW1**
Week	Quartz, 18 mm	1	CO	3 yrs.	1 min.	28	18	**TDW1S**
Week	Quartz	2	2 CO	10 yrs.	1 min.	42	36	**TDW2**
Week	Quartz, advanced	2	2 CO	10 yrs.	1 min.	42	36	**TDW2E**

TE7

Staircase timer – standard version

Description	Delay off time adjustment	Contact configuration	Width (mm)	Eaton list number
Staircase timer basic function	0.5–20 min	NO	18	**TE7**

TE1

Staircase timer – multifunctional version

Description	Delay off time adjustment	Contact configuration	Width (mm)	Eaton list number
Staircase timer multi function	0.5–20 min	NO	18	**TE1**

- For other coil voltages contact technical support

See page 88 for contactors technical data and overall dimensions.

CR2011230A

Contactors, 20 A – ac coil

When several contactors are mounted it is advisable to fit a blanking module, List number **EMBP**, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactor	20	230	–	18	1 NO + 1 NC	**CR2011230A**
Contactor	20	230	–	18	2 NC	**CR2002230A**
Contactor	20	230	–	18	2 NO	**CR2020230A**

CR2020024

Contactors, 20 A – ac/dc coil

When several contactors are mounted it is advisable to fit a blanking module, List number **EMBP**, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactor	20	230	220	18	1 NO + 1 NC	**CR2011230**
Contactor	20	230	220	18	2 NC	**CR2002230**
Contactor	20	230	220	18	2 NO	**CR2020230**

CR2540230A

Contactors, 25 A – ac coil

When several contactors are mounted it is advisable to fit a blanking module, List number **EMBP**, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactor	25	230	–	36	2 NO + 2 NC	**CR2522230A**
Contactor	25	230	–	36	3 NO	**CR2530230A**
Contactor	25	230	–	36	4 NC	**CR2504230A**
Contactor	25	230	–	36	4 NO	**CR2540230A**

CR2504024

Contactors, 25 A – ac/dc coil

When several contactors are mounted it is advisable to fit a blanking module, List number **EMBP**, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactor	25	230	220	36	2 NO + 2 NC	**CR2522230**
Contactor	25	230	220	36	3 NO	**CR2530230**
Contactor	25	230	220	36	4 NC	**CR2504230**
Contactor	25	230	220	36	4 NO	**CR2540230**

CR4030024

Contactors, 40 A – ac/dc coil

When several contactors are mounted it is advisable to fit a blanking module, List number **EMBP**, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactor	40	230	220	54	2 NC	**CR4002230**
Contactor	40	230	220	54	2 NO	**CR4020230**
Contactor	40	230	220	54	3 NO	**CR4030230**
Contactor	40	230	220	54	4 NO	**CR4040230**

CR6320230

Contactors, 63 A – ac/dc coil

When several contactors are mounted it is advisable to fit a blanking module, List number EMBP, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactor	63	230	220	54	2 NO	**CR6320230**
Contactor	63	230	220	54	4 NO	**CR6340230**

CRM2540230A

Day/night contactors, 20–25 A – ac coil

When several contactors are mounted it is advisable to fit a blanking module or spacer every two contactors. Day/night contactors do have a manual override function, which enables the user to bring the contactor in either a forced "ON" or "OFF" position. The contactor can only be brought into the forced "ON" position when it is de-energised. When the contactor is energised the operation will return into the normal/automatic position.

Description	Rating (A)	Coil voltage (Vac)	Width (mm)	Contacts	Eaton list number
Contactor	20	230	18	2 NO	**CRM2020230A**
Contactor	25	230	36	4 NO	**CRM2540230A**

CRA611

Auxiliary contacts

Can be connected at the right-side of the contactor.

Description	Rating (A)	Width (mm)	Contacts	Eaton list number
Auxiliary	6	9	1 NO + 1 NC	**CRA611**
Auxiliary	6	9	2 NO	**CRA620**

AA161RA

Impulse switches/relays

Description	Rating (A)	Coil Voltage (Vac)	Poles	Width (mm)	Contacts	Eaton list number
Impulse relay	16	230	1P	18	1 NO	**AA161RA**
Impulse relay	16	230	1P	18	1 NO/1 NC	**AA161RB**

AA2BT

Transformers

Description	Volts	Amps	Width (mm)	Module	Eaton list number
Bell Transformer 2 module	12	0.6	36	1	**AA2BT**
	8	1.0			

Earth leakage relays & CTs

Suitable for use with all Eaton MCCBs & MCBs to provide add-on earth leakage protection functionality. The earth leakage relay is used with an **ELRCT** series current transformer (core balance) and an appropriate MCB/MCCB shunt trip or undervoltage release. Power supply required 220-240V ac, 50/60Hz. Output contacts (volt-free) rated at 250V ac, 6A. Power and system LEDs show status of the relay, CT continuity, level of earth leakage, earth leakage trip. Eaton earth leakage relays are designed & tested in accordance with IEC61008-1.

See page 90 for dimensional details.

ELR1ADJ

Earth leakage relays – adjustable trip

Description	Sensitivity	Time delay	Width	Eaton list number
Earth leakage relay	Adjustable 30mA,100mA, 300mA, 500mA, 1A, 3A, 5A	Adjustable 0.02, 0.1, 0.3, 0.5, 1, 3, 5s	36mm	**ELR1ADJ**

ELR30F

Earth leakage relays – fixed trip

Description	Sensitivity	Time delay	Width	Eaton list number
Earth leakage relay	Fixed 30mA	Instantaneous (0.02s)	36mm	**ELR30F**
Earth leakage relay	Fixed 300mA	Instantaneous (0.02s)	36mm	**ELR300F**

Current transformers (core balance)

- One current transformer required per relay.

Description	Inner dimension	Eaton list number
Current Transformer	20mm diameter	**ELRCT20**
	30mm diameter	**ELRCT30**
	35mm diameter	**ELRCT35**
	70mm diameter	**ELRCT70**
	105mm diameter	**ELRCT105**
	140mm diameter	**ELRCT140**
	210mm diameter	**ELRCT210**
	70mm x 175mm	**ELRCT70-175**
	115mm x 305mm	**ELRCT115-305**
	150mm x 350mm	**ELRCT150-350**
	200mm x 500mm	**ELRCT200-500**

A complete range of MCCB panelboards and pan assemblies providing all the options you need from a straightforward panelboard to a comprehensive panelboard system. The range now offers a greater choice of outgoing ways, and a variety of user or factory fitted incoming devices are available providing more flexibility and choice to the user.

5.1 Series G MCCB panelboards

Type 1 panelboard selection – 125A busbar

- IEC60439-1
- Tin-plated busbars
- Outgoing devices; 16A–125A SP & 16A–125A TP
- IP3X construction
- Busbar system KEMA certified **PBEG325** – 25kA Icc

See page 97 for technical data and overall dimensions

PBEG325

Panelboards – type 1, 125A

Description	Associated incoming device	Current rating (A)	No. of ways	Eaton list number
Type 1 panelboard	Series G E-frame	125	3	**PBEG325**

GEE3100FFG

MCCB – incoming devices

Panelboard	Incoming device	Current rating (A)	Frame size (kA)	Eaton list number
Type 1 panelboard	Series G E-Frame	100	18	**GEE3100FFG**
		125	18	**GEE3125FFG**

GEK3100KSG

Circuit breaker switch – incoming devices

Panelboard	Incoming device	Current rating (A)	Frame size (kA)	Eaton list number
Type 1 panelboard	Series G E-Frame	100	25	**GEK3100KSG**
		125	25	**GEK3125KSG**

GEE3100FFG

Outgoing devices, Series G E-frame, MCCB

Rating (A)	Pole configuration	Eaton list number Breaking capacity 18kA	Breaking capacity 25kA
16	SP	**GEB1016FFG**	**GEE1016FFG**
20	SP	**GEB1020FFG**	**GEE1020FFG**
32	SP	**GEB1032FFG**	**GEE1032FFG**
40	SP	**GEB1040FFG**	**GEE1040FFG**
50	SP	**GEB1050FFG**	**GEE1050FFG**
63	SP	**GEB1063FFG**	**GEE1063FFG**
80	SP	**GEB1080FFG**	**GEE1080FFG**
100	SP	**GEB1100FFG**	**GEE1100FFG**
125	SP	**GEB1125FFG**	**GEE1125FFG**
16	TP	**GEB3016FFG**	**GEE3016FFG**
20	TP	**GEB3020FFG**	**GEE3020FFG**
32	TP	**GEB3032FFG**	**GEE3032FFG**
40	TP	**GEB3040FFG**	**GEE3040FFG**
50	TP	**GEB3050FFG**	**GEE3050FFG**
63	TP	**GEB3063FFG**	**GEE3063FFG**
80	TP	**GEB3080FFG**	**GEE3080FFG**
100	TP	**GEB3100FFG**	**GEE3100FFG**
125	TP	**GEB3125FFG**	**GEE3125FFG**

PBEGSPKIT

Accessories

Description	Eaton list number
SP blanking module Series G E-frame (1pole per pack)	**PBEGB1**
Panel door lock with key	**PBDLK2**
MCCB accessory termination block for connection of shunt trips, UVRs, etc	**PBTB1**
Terminal shroud for outgoing MCCB Series G E type 3P	**EFTS3K**
Terminal shroud for outgoing MCCB Series G E type 1P	**EFTS1KA**
Single phase kit for type 1 & 2 panelboards	**PBEGSPKIT**

PBEGEX250

Cable extension boxes – top/bottom mounted

Description	Eaton list number
250mm high	**PBEGEX250**

Cable sizes for type 1 panelboards

	Max incoming copper cables (mm^2)	Recommended incoming copper cables (mm^2)	Incomer bolt size Phase	Neutral	Earth	Outgoing neutral max cable size mm^2
TYPE 1 – 125A						
GE incomer	70	50	Tunnel clamp Extn palms M8	Tunnel clamp	M10	50

5.2 Series G MCCB panelboards

Type 2 panelboard selection – 250A busbar

- IEC60439-1
- Tin–plated busbars
- Outgoing devices; 16A–125A SP & 16A–160A TP
- IP3X construction
- Busbar system KEMA certified **PBEG625M/825M/1225M** – 40kA Icc
- Can be configured for incomer device at top of panelboard

See page 97 for technical data and overall dimensions

PBEG625M

Panelboards – type 2, 250A

- Removable side gland plates as standard.

Description	Associated incoming device	Current rating (A)	No. of ways	Eaton list number
Type 2 panelboard	Series G J-frame	250	6	**PBEG625M**
			8	**PBEG825M**
			12	**PBEG1225M**

When used in conjunction with an incoming meter pack, a connection kit with CTs is required. See incomer connection kits table.

GJS3250AAG

MCCB – incoming devices

Panelboard	Incoming device	Current rating (A)	Frame size (kA)	Eaton list number
Type 2 panelboard	Series G J-Frame	160	45	**GJS3160AAG**
		200	45	**GJS3200AAG**
		250	45	**GJS3250AAG**

GJK3250KSG

Circuit breaker switch – incoming devices

Panelboard	Incoming device	Current rating (A)	Frame size (kA)	Eaton list number
Type 2 panelboard	Series G J-Frame	160	45	**GJK3160KSG**
		200	45	**GJK3200KSG**
		250	45	**GJK3250KSG**

Incomer connection kits

Panelboard	Incoming device	Eaton list number
Type 2 panelboard	Series G J-frame	**Not required**[1] **PBEGJG25M**[2]

[1] Incoming device must be used, i.e. no direct cable option on type 2 panelboards, but no incomer connection kit required.
[2] Metering version – includes CTs (meter packs to be ordered separately). See meter pack table on page 22.

GEE3100FFG

Outgoing devices, Series G E-frame, MCCB

Rating (A)	Pole configuration	Eaton list number Breaking capacity 18kA	Breaking capacity 25kA
16	SP	**GEB1016FFG**	**GEE1016FFG**
20	SP	**GEB1020FFG**	**GEE1020FFG**
32	SP	**GEB1032FFG**	**GEE1032FFG**
40	SP	**GEB1040FFG**	**GEE1040FFG**
50	SP	**GEB1050FFG**	**GEE1050FFG**
63	SP	**GEB1063FFG**	**GEE1063FFG**
80	SP	**GEB1080FFG**	**GEE1080FFG**
100	SP	**GEB1100FFG**	**GEE1100FFG**
125	SP	**GEB1125FFG**	**GEE1125FFG**
16	TP	**GEB3016FFG**	**GEE3016FFG**
20	TP	**GEB3020FFG**	**GEE3020FFG**
32	TP	**GEB3032FFG**	**GEE3032FFG**
40	TP	**GEB3040FFG**	**GEE3040FFG**
50	TP	**GEB3050FFG**	**GEE3050FFG**
63	TP	**GEB3063FFG**	**GEE3063FFG**
80	TP	**GEB3080FFG**	**GEE3080FFG**
100	TP	**GEB3100FFG**	**GEE3100FFG**
125	TP	**GEB3125FFG**	**GEE3125FFG**
160	TP	–	**GES3160AFG1**[1)]

[1)] 45kA breaking capacity

PBEGSPKIT

Accessories

Description	Eaton list number
SP blanking module Series G E-frame (1pole per pack)	**PBEGB1**
Panel door lock with key	**PBDLK2**
MCCB accessory termination block for connection of shunt trios, UVRs etc	**PBTB1**
Terminal shroud for outgoing MCCB Series G E type 3P	**EFTS3K**
Terminal shroud for outgoing MCCB Series G E type 1P	**EFTS1KA**
Single phase kit for type 1 & 2 panelboards	**PBEGSPKIT**

PBEGSX900M with one PBDIN96B (blank) fitted

Cable extension boxes – side mounted

Description	Eaton list number Standard cable chamber	Eaton list number[1)] Metering cable chamber
To fit panelboard **PBEG625M**	**PBEGSX900**	**PBEGSX900M**
To fit panelboard **PBEG825M**	**PBEGSX1050**	**PBEGSX1050M**
To fit panelboard **PBEG1225M**	**PBEGSX1150**	**PBEGSX1150M**

[1)] Suffix 'M' indicates cut-outs for meters and hinged door for outgoing metering applications suitable for left and right hand applications, can be double stacked if required.

PBEGEX250

Cable extension boxes – top/bottom mounted

Description	Eaton list number
250mm high	**PBEGEX250**

PBEGSX250

Corner filler box

Description	Eaton list number
For use where top/bottom/meter boxes are fitted in conjunction with side cable boxes	**PBEGSX250**

5.2 Series G MCCB panelboards

Type 2 panelboard selection – 250A busbar

PBEGMPA25

Incomer metering – analogue

- Incoming connection kit: metering version required.
- Meter packs include the meters and housing, cable loom and fuses. Where a meter pack is used with a GL incomer a cable extension box; **PBEGEX250**, will also be required to provide additional space for incoming cables. This will need to be ordered separately.
- Analogue voltmeter & selector switch.
- Analogue ammeter & selector switch.
- Phase indication lamps.

Description	Current rating (A)	Eaton list number
6, 8, 12 way Series G J-frame incomer	250	**PBEGMPA25**

PBEGMPD

Incomer metering – digital

- kW/hr, phase Amps, phase Volts, line Volts, per phase PF, per phase kW, 3 phase PF, 3 phase kW, frequency, import kWh (ie; pulsed output). Modbus option.

Description	Current rating (A)	Eaton list number
Series G J/L-frame incomer – Pulsed output	250/400	**PBEGMPD**
Series G J/L-frame incomer – Modbus	250/400	**PBEGMPDM**

PBMETER1

Outgoing metering – digital

- Select side cable extension boxes with hinged doors and meter cut-outs, add suffix 'M' eg, **PBEGSX900M**.
- Select meter(s) and CT module(s).

Description		Max cable capacity (mm^2)	Current rating (A)	Eaton list number
Multifunction meter din 96mm x 96mm	– Pulsed output	–	–	**PBMETER1**
Multifunction meter din 96mm x 96mm	– Modbus	–	–	**PBMETER2**
Blanking plate for unused meter ways	– Din 96mm x 96mm	–	–	**PBDIN96B**
3-in-1 CT module, complete with rapid installation cable looms	– G E frame MCCBs	70 single core & 50 multi core	160	**PBCTMT160**

PBCTMT250

MCCB pan assemblies, interiors, three phase, with earth & neutral bars

- Eaton MCCB pan assemblies offer a high degree of flexibility, suitable for inclusion in other factory built assemblies and as replacements for panelboard interiors.
- For outgoing MCCB compatibility see associated panelboard details.
- See page 95 for dimensions.

Description	Current rating (A)	Eaton list number
MCCB pan assembly, 6 way G E-frame	250	**PAEG625**
MCCB pan assembly, 8 way G E-frame	250	**PAEG825**
MCCB pan assembly, 12 way G E-frame	250	**PAEG1225**

Cable sizes for type 2 panelboards

	Max incoming copper cables (mm^2)	Recommended incoming copper cables (mm^2)	Incomer bolt size			Outgoing neutral max cable size mm^2
			Phase	Neutral	Earth	
TYPE 2 – 250A						
GJ incomer	150	120	Tunnel clamp	M8	M10	50
GJ incomer + CT	150	120	Tunnel clamp	M8	M10	50

- IEC60439-1
- Tin–plated busbars
- Outgoing devices; 16A–125A SP & 16A–160A TP
- IP3X construction
- Busbar system KEMA certified **PBEG640M/1240M** – 30kA Icw for 1s
- Can be configured for incomer device at top of panelboard

See page 97 for technical data and overall dimensions

PBEG640M

Panelboards – type 3, 400A

- Removable side gland plates as standard.

Description	Associated incoming device	Current rating (A)	No of ways	Eaton list number
Type 3 panelboard	Series G L-frame	400	6	**PBEG640M**
			12	**PBEG1240M**

When used in conjunction with an incoming meter pack, a connection kit with CTs is required. See incomer connection kits table.

GLS3250AAM

MCCB – incoming devices

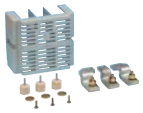
Panelboard	Incoming device	Current rating (A)	Frame size (kA)	Eaton list number
Type 3 panelboard	Series G L-Frame	250	50	**GLS3250AAM**
		320	50	**GLS3320AAM**
		400	50	**GLS3400AAM**

GLK3250KSM

Circuit breaker switch – incoming devices

Panelboard	Incoming device	Current rating (A)	Frame size (kA)	Eaton list number
Type 3 panelboard	Series G L-Frame	250	50	**GLK3250KSM**
		320	50	**GLK3320KSM**
		400	50	**GLK3400KSM**

PBEGLG40



Incomer connection kits

Panelboard	Incoming device	Eaton list number
Type 3 panelboard	Series G L-frame	**PBEGLG40**
		PBEGLG40M[1)]
	Direct connection lugs kit	**PBEGL40**
		PBEGL40M[1)]

[1)] Metering version – includes CTs (meter packs to be ordered separately). See meter pack table on page 22

PBEGLG40M

5.3 Series G MCCB panelboards

Type 3 panelboard selection – 400A busbar (max outgoer – 160A)

GEE3100FFG

Outgoing devices, Series G E-frame, MCCB

Rating (A)	Pole configuration	Eaton list number Breaking capacity 18kA	Eaton list number Breaking capacity 25kA
16	SP	**GEB1016FFG**	**GEE1016FFG**
20	SP	**GEB1020FFG**	**GEE1020FFG**
32	SP	**GEB1032FFG**	**GEE1032FFG**
40	SP	**GEB1040FFG**	**GEE1040FFG**
50	SP	**GEB1050FFG**	**GEE1050FFG**
63	SP	**GEB1063FFG**	**GEE1063FFG**
80	SP	**GEB1080FFG**	**GEE1080FFG**
100	SP	**GEB1100FFG**	**GEE1100FFG**
125	SP	**GEB1125FFG**	**GEE1125FFG**
16	TP	**GEB3016FFG**	**GEE3016FFG**
20	TP	**GEB3020FFG**	**GEE3020FFG**
32	TP	**GEB3032FFG**	**GEE3032FFG**
40	TP	**GEB3040FFG**	**GEE3040FFG**
50	TP	**GEB3050FFG**	**GEE3050FFG**
63	TP	**GEB3063FFG**	**GEE3063FFG**
80	TP	**GEB3080FFG**	**GEE3080FFG**
100	TP	**GEB3100FFG**	**GEE3100FFG**
125	TP	**GEB3125FFG**	**GEE3125FFG**
160	TP	–	**GES3160AFG1**[1)]

[1)] 45kA breaking capacity

PBEGSPKIT

Accessories

Description	Eaton list number
SP blanking module Series G E-frame (1pole per pack)	**PBEGB1**
Panel door lock with key	**PBDLK2**
MCCB accessory termination block for connection of shunt trios, UVRs etc	**PBTB1**
Terminal shroud for outgoing MCCB Series G E type 3P	**EFTS3K**
Terminal shroud for outgoing MCCB Series G E type 1P	**EFTS1KA**

PBEGSX900M with one PBDIN96B (blank) fitted

Cable extension boxes – side mounted

Description	Eaton list number Standard cable chamber	Metering cable chamber[1)]
To fit panelboard **PBEG640M**	**PBEGSX1050**	**PBEGSX1050M**
To fit panelboard **PBEG1240M**	**PBEGSX1300**	**PBEGSX1300M**

[1)] Suffix 'M' indicates cut-outs for meters and hinged door for outgoing metering applications suitable for left and right hand applications, can be double stacked if required.

PBEGEX250

Cable extension boxes – top/bottom mounted

Description	Eaton list number
250mm high	**PBEGEX250**

PBEGSX250

Corner filler box

Description	Eaton list number
For use where top/bottom/meter boxes are fitted in conjunction with side cable boxes	**PBEGSX250**

PBEGMPA25

Incomer metering – analogue

- Incoming connection kit: metering version required.
- Meter packs include the meters and housing, cable loom and fuses. Where a meter pack is used with a GL incomer a cable extension box; **PBEGEX250**, will also be required to provide additional space for incoming cables. This will need to be ordered separately.
- Analogue voltmeter & selector switch.
- Analogue ammeter & selector switch.
- Phase indication lamps.

Description	Current rating (A)	Eaton list number
6, 12way Series G L-frame incomer	400	**PBEGMPA40**

PBEGMPD

Incomer metering – digital

- kW/hr, phase Amps, phase Volts, line Volts, per phase PF, per phase kW, 3 phase PF, 3 phase kW, frequency, import kWh (ie; pulsed output). Modbus option.

Description	Current rating (A)	Eaton list number
Series G J/L-frame incomer – Pulsed output	250/400	**PBEGMPD**
Series G J/L-frame incomer – Modbus	250/400	**PBEGMPDM**

PBMETER1

Outgoing metering – digital

- Select side cable extension boxes with hinged doors and meter cut-outs, add suffix 'M' eg, **PBEGSX900M**.
- Select meter(s) and CT module(s).

Description		Max cable capacity (mm^2)	Current rating (A)	Eaton list number
Multifunction meter din 96mm x 96mm	– Pulsed output	–	–	**PBMETER1**
Multifunction meter din 96mm x 96mm	– Modbus	–	–	**PBMETER2**
Blanking plate for unused Meter ways	– Din 96mm x 96mm	–	–	**PBDIN96B**
3-in-1 CT module, complete with rapid installation cable looms	– G E frame MCCBs	70 single core & 50 multi core	160	**PBCTMT160**

PBCTMT250

MCCB pan assemblies, interiors, three phase, with earth & neutral bars

- Eaton MCCB pan assemblies offer a high degree of flexibility, suitable for inclusion in other factory built assemblies and as replacements for panelboard interiors.
- For outgoing MCCB compatibility see associated panelboard details.
- See page 95 for dimensions.

Description	Current rating (A)	Eaton list number
MCCB pan assembly, 6 way G E-frame	400	**PAEG640**
MCCB pan assembly, 12 way G E-frame	400	**PAEG1240**

Cable sizes for type 3 panelboards

	Max incoming copper cables (mm^2)	Recommended incoming copper cables (mm^2)	Incomer bolt size			Outgoing neutral max cable size mm^2
			Phase	Neutral	Earth	
TYPE 3 – 400A						
GL incomer	2 X 240	240	M12	M8	M10	50
Lugs	2 X 240	240	M12	M8	M10	50
GL incomer + CT	2 X 240	240	M12	M8	M10	50
Lugs + CT	2 X 240	240	M12	M8	M10	50

5.4 Series G MCCB panelboards

Type 4 panelboard selection – 400A busbar (max outgoer 250A)

- IEC 60439-1.
- Tin–plated busbars.
- Outgoing devices; these panelboards utilise two frame sizes of MCCB: 80A–250A TP and SP 16A–125A & TP 16A–160A.
- IP3X construction.
- Busbar system KEMA certified type 4 – 35kA Icw for 1s.
- Can be configured for incomer device at top of panelboard

See page 97 for technical data and overall dimensions.

PBJG640M

Panelboards – type 4, 400A

- Removable side gland plates as standard.

Description	Associated incoming device	Current rating (A)	No. of ways	Eaton list number
Type 4 panelboard	Series G J or L-frame	400A	6 (2 x 250A + 4 x 160A)	**PBJG640M**
			12 (2 x 250A + 10 x 160A)	**PBJG1240M**
			18 (2 x 250A + 16 x 160A)	**PBJG1840M**

When used in conjunction with an incoming meter pack, a connection kit with CTs is required. See incomer connection kits table.

GJS3250AAG

MCCB – incoming devices

Description	Incoming device	Current rating (A)	Breaking capacity (kA)	Eaton list number
Type 4 panelboard	Series G J-frame	250	45	**GJS3250AAG**
	Series G L-frame	250	50	**GLS3250AAM**
		320	50	**GLS3320AAM**
		400	50	**GLS3400AAM**
			70	**GLH3400AAM**

GLK3400KSM

Circuit breaker switch incomer – incoming devices

Description	Incoming device	Current rating (A)	Breaking capacity (kA)	Eaton list number
Type 4 panelboard	Series G J-frame	250	45	**GJK3250KSG**
	Series G L-frame	250	50	**GLK3250KSM**
		320	50	**GLK3320KSM**
		400	50	**GLK3400KSM**

PBJGLG40

Incomer connection kits

Panelboard	Incoming device	Current rating (A)	Eaton list number
Type 4 panelboard	Series G J-frame	250	**PBJGJG25**
			PBJGJG25M[1]
	Series G L-frame	400	**PBJGLG40**
			PBJGLG40M[1]
	Lugs connection	400	**PBJGL40**
			PBJGL40M[1]

PBJGLG40M

[1] Metering versions – includes CTs. (Meter pack must be ordered separately)

GJS3250AAG

Outgoing devices, Series G J-frame MCCB – 45kA

- Up to 2 for type 4 panelboards

Current rating (A)	Frame size (kA)	Pole configuration	Eaton list number
80	45	TP	**GJS3080AAG**
100	45	TP	**GJS3100AAG**
125	45	TP	**GJS3125AAG**
160	45	TP	**GJS3160AAG**
200	45	TP	**GJS3200AAG**
250	45	TP	**GJS3250AAG**

GEE1125FFG & GEE3100FFG

Outgoing devices, Series G E-frame MCCB

Current rating (A)	Pole configuration	Eaton list number Breaking capacity 18kA	Breaking capacity 25kA
16	SP	**GEB1016FFG**	**GEE1016FFG**
20	SP	**GEB1020FFG**	**GEE1020FFG**
32	SP	**GEB1032FFG**	**GEE1032FFG**
40	SP	**GEB1040FFG**	**GEE1040FFG**
50	SP	**GEB1050FFG**	**GEE1050FFG**
63	SP	**GEB1063FFG**	**GEE1063FFG**
80	SP	**GEB1080FFG**	**GEE1080FFG**
100	SP	**GEB1100FFG**	**GEE1100FFG**
125	SP	**GEB1125FFG**	**GEE1125FFG**
16	TP	**GEB3016FFG**	**GEE3016FFG**
20	TP	**GEB3020FFG**	**GEE3020FFG**
32	TP	**GEB3032FFG**	**GEE3032FFG**
40	TP	**GEB3040FFG**	**GEE3040FFG**
50	TP	**GEB3050FFG**	**GEE3050FFG**
63	TP	**GEB3063FFG**	**GEE3063FFG**
80	TP	**GEB3080FFG**	**GEE3080FFG**
100	TP	**GEB3100FFG**	**GEE3100FFG**
125	TP	**GEB3125FFG**	**GEE3125FFG**
160	TP	–	**GES3160AFG1**[1)]

[1)] 45kA breaking capacity

PBJGB3

Accessories

Description	Eaton list number
SP blanking module Series G E-frame (1pole per pack)	**PBEGB1**
TP blanking module Series G J-frame	**PBJGB3**
Panel door lock with key	**PBDLK2**
MCCB accessory termination block for connection of shunt trios, UVRs etc	**PBTB1**
Terminal shroud outgoing MCCB Series G E-frame type 3P	**EFTS3K**
Terminal shroud outgoing MCCB Series G E-frame type 1P	**EFTS1KA**
Terminal shroud outgoing MCCB Series G J-frame type 3P	**FJTS3K**

PBEGSX900M with one PBDIN96B (blank) fitted

Cable extension boxes – side mounted

Description	Eaton list number Standard cable chamber	Metering cable chamber[1)]
To fit panelboard **PBJG640M**	**PBJGSX1400**	**PBJGSX1400M**
To fit panelboard **PBJG1240M**	**PBSX1600**	**PBJGSX1600M**
To fit panelboard **PBJG1840M**	**PBSX1800**	**PBJGSX1800M**

[1)] Suffix 'M' indicates cut-outs for meters and hinged door for outgoing metering applications suitable for left and right hand applications, can be double stacked if required.

5.4 Series G MCCB panelboards

Type 4 panelboard selection – 400A busbar (max outgoer 250A)

PBEX250

Cable extension boxes – top/bottom mounted

Description	Eaton list number
250mm high	**PBEX250**

MCCB pan assemblies, interiors, three phase, with earth & neutral bars

- Eaton MCCB pan assemblies offer a high degree of flexibility, suitable for inclusion in other factory built assemblies and as replacements for panelboard interiors.
- For outgoing MCCB compatibility see associated panelboard details.
- See page 95 for dimensions.

Description	Current rating (A)	Eaton list number
MCCB pan assembly, 6 way (2 x 250A + 4 x 160A)	400	**PAJG640**
MCCB pan assembly, 12 way (2 x 250A + 10 x 160A)	400	**PAJG1240**
MCCB pan assembly, 18 way (2 x 250A + 16 x 160A)	400	**PAJG1840**

PBSX250

Corner filler box

Description	Eaton list number
For use where top/bottom/meter boxes are fitted in conjunction with side cable boxes	**PBSX250**

PBJGMPA25

Incomer metering – analogue

- Incoming connection kit: metering version required.
- Meter packs include the meter and housing, cable loom and fuses. Where a meter pack is used with a GL incomer a cable extension box; **PBEX250**, will also be required to provide additional space for incoming cables. This will need to be ordered separately.
- Analogue voltmeter & selector switch.
- Analogue ammeter & selector switch.
- Phase indication lamps.

Description	Current rating (A)	Eaton list number
Type 4 panelboard	250	**PBJGMPA25**
	400	**PBJGMPA40**

PBJGMPD

Incomer metering – digital

- kW/hr, phase Amps, phase Volts, line Volts, per phase PF, per phase kW, 3 phase PF, 3 phase kW, frequency, import kWh (ie; pulsed output). Modbus option.

Description	Current rating (A)	Eaton list number
Type 4 panelboard – Pulsed Output	250	**PBJGMPD**
	400	**PBJGMPD**
Type 4 panelboard – Modbus	250	**PBJGMPDM**
	400	**PBJGMPDM**

PBMETER1

PBCTMT250

Outgoing metering – digital

- Select side cable extension boxes with hinged doors and meter cut-outs, add suffix 'M' eg, **PBJGSX1400M**.
- Select meter(s) and CT module(s).

Description		Max cable capacity (mm^2)	Current rating (A)	Eaton list number
Multifunction meter din 96mm x 96mm	– Pulsed output	–	–	**PBMETER1**
Multifunction meter din 96mm x 96mm	– Modbus	–	–	**PBMETER2**
Blanking plate for unused Meter ways	– Din 96mm x 96mm	–	–	**PBDIN96B**
3-in-1 CT module, complete with rapid installation cable looms	– G E frame MCCBs	70 single core & 50 multi core	160A	**PBCTMT160**
	– G J frame MCCBs	150 multi core	250A	**PBCTMT250**

Cable sizes for type 4 panelboards

	Max incoming copper cables (mm^2)	Recommended incoming copper cables (mm^2)	Incomer bolt size			Outgoing neutral max cable size mm^2
			Phase	Neutral	Earth	
TYPE 4 – 400A						
GJ incomer	150	120	Tunnel clamp	M12	M10	70
GJ incomer + CT	150	120	Tunnel clamp	M12	M10	70
GL incomer	2 X 240	240	M12	M12	M10	70
Lugs	2 X 240	240	M12	M12	M10	70
GL incomer + CT	2 X 240	240	M12	M12	M10	70
Lugs + CT	2 X 240	240	M12	M12	M10	70

5.5 Series G MCCB panelboards

Type 5 panelboard selection – 630A busbar

- IEC 60439-1.
- Tin–plated busbars.
- Outgoing devices; these panelboards utilise two frame sizes of MCCB: 80A–250A TP and SP 16A–125A & TP 16A–160A.
- IP3X construction.
- Busbar system KEMA certified type 5 – 50kA Icw for 1s.
- Can be configured for incomer device at top of panelboard

See page 97 for technical data and overall dimensions.

PBJG863M

Panelboards – type 5, 630A

- Removable side gland plates as standard

Description	Associated incoming device	Current rating (A)	Number of ways	Eaton list number
Type 5 panelboard	Series G L-frame	630	8 (4 x 250A + 4 x 160A)	**PBJG863M**
			12 (4 x 250A + 8 x 160A)	**PBJG1263M**
			18 (4 x 250A + 14 x 160A)	**PBJG1863M**

When used in conjunction with a meter pack, an incoming connection kit with CTs is required. See incomer connection kits table.

GJS3250AAG

MCCB – incoming devices

Description	Incoming device	Current rating (A)	Breaking capacity (kA)	Eaton list number
Type 5 panelboard	Series G L-frame	250	50	**GLS3250AAM**
		320	50	**GLS3320AAM**
		400	50	**GLS3400AAM**
			70	**GLH3400AAM**
		630	50	**GLS3630AAM**
			70	**GLH3630AAM**
				GLH363032M[1)]

[1)] Electronic trip LS

GLK3400KSM

Circuit breaker switch incomer – incoming devices

Description	Incoming device	Current rating (A)	Breaking capacity (kA)	Eaton list number
Type 5 panelboard	Series G L-frame	250	50	**GLK3250KSM**
		320	50	**GLK3320KSM**
		400	50	**GLK3400KSM**
		630	50	**GLK3630KSM**

PBJGLG40

Incomer connection kits

Panelboard	Incoming device	Current rating (A)	Eaton list number
Type 5 panelboard	Series G L-frame	630	**PBJGLG63**
			PBJGLG63M[1)]
	Lugs connection	630	**PBJGL63**
			PBJGL63M[1)]

[1)] Metering versions – includes CTs. (Meter pack must be ordered separately)

PBJGLG40

GJS3250AAG

Outgoing devices, Series G J-frame MCCB – 45kA

- Up to 4 for type 5 panelboads.

Current rating (A)	Breaking capacity (kA)	Pole configuration	Eaton list number
80	45	TP	**GJS3080AAG**
100	45	TP	**GJS3100AAG**
125	45	TP	**GJS3125AAG**
160	45	TP	**GJS3160AAG**
200	45	TP	**GJS3200AAG**
250	45	TP	**GJS3250AAG**

GEE1125FFG & GEE3100FFG

Outgoing devices, Series G E-frame MCCB

Current rating (A)	Pole configuration	Eaton list number	
		Breaking capacity 18kA	Breaking capacity 25kA
16	SP	**GEB1016FFG**	**GEE1016FFG**
20	SP	**GEB1020FFG**	**GEE1020FFG**
32	SP	**GEB1032FFG**	**GEE1032FFG**
40	SP	**GEB1040FFG**	**GEE1040FFG**
50	SP	**GEB1050FFG**	**GEE1050FFG**
63	SP	**GEB1063FFG**	**GEE1063FFG**
80	SP	**GEB1080FFG**	**GEE1080FFG**
100	SP	**GEB1100FFG**	**GEE1100FFG**
125	SP	**GEB1125FFG**	**GEE1125FFG**
16	TP	**GEB3016FFG**	**GEE3016FFG**
20	TP	**GEB3020FFG**	**GEE3020FFG**
32	TP	**GEB3032FFG**	**GEE3032FFG**
40	TP	**GEB3040FFG**	**GEE3040FFG**
50	TP	**GEB3050FFG**	**GEE3050FFG**
63	TP	**GEB3063FFG**	**GEE3063FFG**
80	TP	**GEB3080FFG**	**GEE3080FFG**
100	TP	**GEB3100FFG**	**GEE3100FFG**
125	TP	**GEB3125FFG**	**GEE3125FFG**
160	TP	–	**GES3160AFG1**[1]

[1] 45kA breaking capacity

PBJGB3

Accessories

Description	Eaton list number
SP blanking module Series G E-frame (1pole per pack)	**PBEGB1**
TP blanking module Series G J-frame	**PBJGB3**
Panel door lock with key	**PBDLK2**
MCCB accessory termination block for connection of shunt trios, UVRs etc	**PBTB1**
Terminal shroud outgoing MCCB Series G E-frame type 3P	**EFTS3K**
Terminal shroud outgoing MCCB Series G E-frame type 1P	**EFTS1KA**
Terminal shroud outgoing MCCB Series G J-frame type 3P	**FJTS3K**

PBEGSX900M with one PBDIN96B (blank) fitted

Cable extension boxes – side mounted

Description	Eaton list number	
	Standard cable chamber	Metering cable chamber[1]
To fit panelboard PBJG863M	**PBJGSX1400**	**PBJGSX1400M**
To fit panelboard PBJG1263M	**PBSX1600**	**PBJGSX1600M**
To fit panelboard PBJG1863M	**PBSX1800**	**PBJGSX1800M**

[1] Suffix 'M' indicates cut-outs for meters and hinged door for outgoing metering applications suitable for left and right hand applications can be double stacked if required.

PBEX250

Cable extension boxes – top/bottom mounted

Description	Eaton list number
250mm high	**PBEX250**

MCCB pan assemblies, interiors, three phase, with earth & neutral bars

- Eaton MCCB pan assemblies offer a high degree of flexibility, suitable for inclusion in other factory built assemblies and as replacements for panelboard interiors.
- For outgoing MCCB compatibility see associated panelboard details.
- See page 95 for dimensions.

Description	Current rating (A)	Eaton list number
MCCB pan assembly, 8 way (4 x 250A + 4 x 160A)	630A	**PAJG863**
MCCB pan assembly, 12 way (4 x 250A + 8 x 160A)	630A	**PAJG1263**
MCCB pan assembly, 18 way (4 x 250A + 14 x 160A)	630A	**PAJG1863**

PBSX250

Corner filler box

Description	Eaton list number
For use where top/bottom/meter boxes are fitted in conjunction with side cable boxes	**PBSX250**

PBJGMPA25

Incomer metering – analogue

- Incoming connection kit: metering version required.
- Meter packs include the meter and housing, cable loom and fuses. Where a meter pack is used with a GL incomer a cable extension box; **PBEX250**, will also be required to provide additional space for incoming cables. This will need to be ordered separately.
- Analogue voltmeter & selector switch.
- Analogue ammeter & selector switch.
- Phase indication lamps.

Description	Current rating (A)	Eaton list number
Type 5 panelboard	630	**PBJGMPA63**

PBJGMPD

Incomer metering – digital

- kW/hr, phase Amps, phase Volts, line Volts, per phase PF, per phase kW, 3 phase PF, 3 phase kW, frequency, import kWh (ie; pulsed output). Modbus option.

Description	Current rating (A)	Eaton list number
Type 5 panelboard – Pulsed output	250	**PBJGMPD**
	400	**PBJGMPD**
	630	**PBJGMPD**
Type 5 panelboard – Modbus	250	**PBJGMPDM**
	400	**PBJGMPDM**
	630	**PBJGMPDM**

PBMETER1

PBCTMT250

Outgoing metering – digital

- Select side cable extension boxes with hinged doors and meter cut-outs, add suffix 'M' eg, **PBJGSX1400M**.
- Select meter(s) and CT module(s).

Description		Max cable capacity (mm^2)	Current rating (A)	Eaton list number
Multifunction meter din 96mm x 96mm	– Pulsed output	–	–	**PBMETER1**
Multifunction meter din 96mm x 96mm	– Modbus	–	–	**PBMETER2**
Blanking plate for unused Meter ways	– Din 96mm x 96mm	–	–	**PBDIN96B**
3-in-1 CT module, complete with rapid installation cable looms	– G E frame MCCBs	70 single core & 50 multi core	160A	**PBCTMT160**
	– G J frame MCCBs	150 multi core	250A	**PBCTMT250**

Cable sizes for type 5 panelboards

	Max incoming copper cables (mm^2)	Recommended incoming copper cables (mm^2)	Incomer bolt size			Outgoing neutral max cable size mm^2
			Phase	Neutral	Earth	
TYPE 5 – 630A						
GL incomer	2 X 240	2 x 185	M12	M12	M10	70
Lugs	2 X 240	2 x 185	M12	M12	M10	70
GL incomer + CT	2 X 240	2 x 185	M12	M12	M10	70
Lugs + CT	2 X 240	2 x 185	M12	M12	M10	70

5.6 Series G MCCB panelboards

Type 6 panelboard selection – 800A busbar

- IEC 60439-1.
- Tin–plated busbars.
- Outgoing devices; these panelboards utilise three frame sizes of MCCB: 250A–400A TP, 63A–250A TP, 16A–125A SP, 16A–160A TP.
- IP3X construction.
- Busbar system KEMA certified; 50kA Icw for 1s.
- Can be configured for incomer device at top of panelboard

See page 97 for technical data and overall dimensions.

PBLG880M

Panelboards – type 6, 800A

- Removeable side gland plates as standard.

Description	Current rating (A)	No. of ways	Eaton list number
Type 6 panelboard	800	8 (2 x 400A + 2 x 250A + 4 x 125A)	**PBLG880M**
		12 (2 x 400A + 4 x 250A + 6 x 125A)	**PBLG1280M**

GLW3800T32W

Incoming device – connection kit required

Description	Current rating (A)	Breaking capacity (kA)	Eaton list number
Moulded case circuit breaker	800	50	**GLW3800T32W**[1]
Circuit breaker switch	800	50	**GLK3800KSW**

[1] Electronic trip LS

PBLGLW80M

Incomer connection kits

Description	Incomer	Eaton list number
Type 6 panelboard	800A MCCB or CBS	**PBLGLW80**
	Direct connection lugs kit	**PBJGL63**
	800A MCCB or CBS	**PBLGLW80M**[1]
	800A direct connection lugs kit	**PBGL63M**[1]

[1] Metering versions – includes CTs.

GLS3250AAG

Outgoing devices, Series G L-frame MCCB – 50kA

- Up to 2 per panelboard
- Side cable box(es) required when fitting Series G L-frame MCCBs

Rating (A)	Breaking capacity (kA)	Pole configuration	Eaton list number
250	50	TP	**GLS3250AAG**
320	50	TP	**GLS3320AAG**
400	50	TP	**GLS3400AAG**

GJS3250AAG

Outgoing devices, Series G J-frame MCCB – 45kA

- Up to 2 for **PBLG880M**
- Up to 4 for **PLG1280M**

Rating (A)	Breaking capacity (kA)	Pole configuration	Eaton list number
80	45	TP	**GJS3080AAG**
100	45	TP	**GJS3100AAG**
125	45	TP	**GJS3125AAG**
160	45	TP	**GJS3160AAG**
200	45	TP	**GJS3200AAG**
250	45	TP	**GJS3250AAG**

GEE1125FFG & GEE3100FFG

Outgoing devices, Series G E-frame MCCB

Current rating (A)	Pole configuration	Eaton list number Breaking capacity 18kA	Breaking capacity 25kA
16	SP	**GEB1016FFG**	**GEE1016FFG**
20	SP	**GEB1020FFG**	**GEE1020FFG**
32	SP	**GEB1032FFG**	**GEE1032FFG**
40	SP	**GEB1040FFG**	**GEE1040FFG**
50	SP	**GEB1050FFG**	**GEE1050FFG**
63	SP	**GEB1063FFG**	**GEE1063FFG**
80	SP	**GEB1080FFG**	**GEE1080FFG**
100	SP	**GEB1100FFG**	**GEE1100FFG**
125	SP	**GEB1125FFG**	**GEE1125FFG**
16	TP	**GEB3016FFG**	**GEE3016FFG**
20	TP	**GEB3020FFG**	**GEE3020FFG**
32	TP	**GEB3032FFG**	**GEE3032FFG**
40	TP	**GEB3040FFG**	**GEE3040FFG**
50	TP	**GEB3050FFG**	**GEE3050FFG**
63	TP	**GEB3063FFG**	**GEE3063FFG**
80	TP	**GEB3080FFG**	**GEE3080FFG**
100	TP	**GEB3100FFG**	**GEE3100FFG**
125	TP	**GEB3125FFG**	**GEE3125FFG**
160	TP	–	**GES3160AFG1**[1]

[1] 45kA breaking capacity

PBJGB3

Accessories

Description	Eaton list number
SP blanking module Series G E-frame (1pole per pack)	**PBEGB1**
TP blanking module Series G J-frame	**PBJGB3**
TP blanking module Series G L-frame	**PBLGB3**
Panel door lock with key	**PBDLK2**
MCCB accessory termination block for connection of shunt trios, UVRs etc	**PBTB1**
Terminal shroud outgoing MCCB Series G E type 3P	**EFTS3K**
Terminal shroud outgoing MCCB Series G E type 1P	**EFTS1KA**
Terminal shroud outgoing MCCB Series G J type 3P	**FJTS3K**

PBLGSX900M with one PBDIN96B (blank) fitted

Cable extension boxes – side mounted

Description	Eaton list number Standard cable chamber	Metering cable chamber[1]
To fit panelboard PBLG880M	**PBSX1600**	**PBLGSX1600M**
To fit panelboard PBLG1280M	**PBSX1800**	**PBLGSX1800M**

[1] Suffix 'M' indicates cut-outs for meters and hinged door for outgoing metering applications suitable for left and right hand applications, can be double stacked if required.

PBEX250

Cable extension boxes – top/bottom mounted

Description	Eaton list number
250mm high	**PBEX250**

PBSX250

Corner filler box

Description	Eaton list number
For use where top/bottom/meter boxes are fitted in conjunction with side cable boxes	**PBSX250**

PBLGMPA63

Incomer metering – analogue

- Incoming connection kit: metering version required.
- Meter packs include the meter and housing, cable loom and fuses. Where a meter pack is used with a GL incomer a cable extension box; **PBEX250**, will also be required to provide additional space for incoming cables. This will need to be ordered separately.
- Analogue voltmeter & selector switch.
- Analogue ammeter & selector switch.
- Phase indication lamps.

Description	Current rating (A)	Eaton list number
Type 6 panelboard	800	**PBJGMPA63**

PBJGMPD

Incomer metering – digital

- kW/hr, phase Amps, phase Volts, line Volts, per phase PF, per phase kW, 3 phase PF, 3 phase kW, frequency, import kWh (ie; pulsed output). Modbus option.

Description	Current rating (A)	Eaton list number
Type 6 Panelboard – Pulsed output	800	**PBJGMPD**
Type 6 panelboard – Modbus	800	**PBJGMPDM**

PBMETER1

Outgoing metering – digital

- Select side cable extension boxes with hinged doors and meter cut-outs, add suffix 'M' eg, **PBJGSX1400M**.
- Select meter(s) and CT module(s).

PBCTMT250

Description		Max cable capacity (mm^2)	Current rating (A)	Eaton list number
Multifunction meter din 96mm x 96mm	– Pulsed output	–	–	**PBMETER1**
Multifunction meter din 96mm x 96mm	– Modbus	–	–	**PBMETER2**
Blanking plate for unused Meter ways	– Din 96mm x 96mm	–	–	**PBDIN96B**
3-in-1 CT module, complete with rapid installation cable looms	– G E-frame MCCBs	70 single core & 50 multi core	160	**PBCTMT160**
	– G J-frame MCCBs	150 multi core	250	**PBCTMT250**
	– G L-frame MCCBs	240 multi core	400	**PBCTMT400**

MCCB pan assemblies, interiors, three phase, with earth & neutral bars

- Eaton MCCB pan assemblies offer a high degree of flexibility, suitable for inclusion in other factory built assemblies and as replacements for panelboard interiors.
- For outgoing MCCB compatibility see associated panelboard details.
- See page 95 for dimensions.

Description	Current rating (A)	Eaton list number
MCCB pan assembly, 8 way (2 x 400A + 2 x 250A + 4 x 125A)	800A	**PALG880**
MCCB pan assembly, 12 way (2 x 400A + 4 x 250A + 6 x 125A)	800A	**PALG1280**

Cable sizes for type 6 panelboards

	Max incoming copper cables (mm^2)	Recommended incoming copper cables (mm^2)	Incomer bolt size			Outgoing neutral max cable size mm^2
			Phase	Neutral	Earth	
TYPE 6 – 800A						
LW incomer	2 X 300	2 x 240	M12	M12	M10	70
Lugs	2 X 240	2 x 240	M12	M12	M10	70
LW incomer + CT	2 X 300	2 x 240	M12	M12	M10	70
Lugs + CT	2 X 240	2 x 240	M12	M12	M10	70

5.7 Series G MCCB panelboards

Lightning & surge suppression for MCCB panelboards

Combined lightning arrester and surge suppression devices have been developed specifically for applications with MCCB panelboards ensuring outstanding product performance for all sensitive, mission critical and general purpose loads. Providing protection from direct and indirect lightning strikes, the IEC 61643 tested devices have impressive voltage protection levels (U_p), nominal discharge current (8/20) µs I_n & maximum discharge current I_{max} for transient surge suppression, combined with impulse current I_{imp} (10/350) µs for lightning strike protection. These devices are fully compliant with BS EN 62305.

EM3SSK3T12L technical summary:

- For the protection of low voltage distribution systems against transient overvoltage caused by direct and indirect lightning strike and switching operations.
- Application according to IEC 60364-5-53 Clause 534.
- Test class I, II, III in accordance with IEC 61643-1.
- SPD-type T1, T2, T3 in accordance with EN 61643-11.
- Lightning protection classes III and IV in accordance with IEC 62305.

EM3SSK3T12P technical summary:

- For the protection of low voltage distribution systems against direct lightning strike into the overhead power supply line or external lightning protection system and against indirect lightning strike and switching operations.
- Application according to IEC 60364-5-53 Clause 534.
- Test class I, II, III in accordance with IEC 61643-1.
- SPD-type T1, T2, T3 in accordance with EN 61643-11.
- No discharge of ionised gases during operation.
- Lightning protection classes I, II, III and IV in accordance with IEC 62305.

See page 94 for technical details.

EM3SSK3T12L

Description	Eaton list number
Enclosed lightning arrester and surge supression for MCCB panelboards III and IV	**EM3SSK3T12L**
Enclosed lightning arrester and surge supression for MCCB panelboards I, II, III, IV	**EM3SSK3T12P**

Incorporating Eaton's high performance Series G MCCBs. These ready assembled enclosed MCCB units, including earth leakage versions offer simple and swift installation.

The Earth leakage modules provide early indication of a potential ground fault, having an alarm function and built in indication that >50% of the set Earth leakage value has been reached. The modules have adjustable settings and adjustable time delay.

See page 95 for dimensional drawings

GJS4160AAGER

Characteristics

- Current ratings from 63A–630A.
- 1, 3 and 4P variants.
- Integrated earth leakage versions in current ratings – 100A, 160A & 250A.
- Type tested to IEC60439–1 KEMA short circuit tested.
- Clear large rating label fitted.
- Front access to earth leakage trip test and reset buttons.
- IP3X construction.
- KEMA short circuit testing – IEC60439–1 clause 8.2.3.
- 1.5mm steel industrial enclosure & 2mm steel cover.
- RAL 7004 epoxy polyester finish (light grey).
- Removable neutral link (1 & 3P).

Applications

- Industrial and commercial applications for control of power circuits.
- Earth leakage versions for enhanced protection. Adjustable sensitivity and time delay settings for discrimination with other RCD devices.
- For applications above 630A and for Earth Leakage applications above 250A, please contact technical support.

GLS3400AAGE

Product range

Description	Current rating (A)	Pole configuration	Eaton list number
Enclosed MCCB	63	1	**GEE1063FFGE**
		3	**GEE3063FFGE**
		4	**GEE4063FFGE**
	80	1	**GEE1080FFGE**
		3	**GEE3080FFGE**
		4	**GEE4080FFGE**
	100	1	**GEE1100FFGE**
		3	**GEE3100FFGE**
		4	**GEE4100FFGE**
	125	1	**GEE1125FFGE**
		3	**GEE3125FFGE**
		4	**GEE4125FFGE**
	160	3	**GJS3160AAGE**
		4	**GJS4160AAGE**
	200	3	**GJS3200AAGE**
		4	**GJS4200AAGE**
	250	3	**GJS3250AAGE**
		4	**GJS4250AAGE**
	400	3	**GLS3400AAGE**
		4	**GLS4400AAGE**
	630	3	**GLS3630AAGE**
		4	**GLS4630AAGE**
Enclosed MCCB with integrated earth leakage	100	4	**GJS4100AAGER**
	160	4	**GJS4160AAGER**
	250	4	**GJS4250AAGER**

With dimensional drawings, standards and specification data, the technical data chapter provides in depth information for all of our customers on all Eaton products displayed in this product guide.

6

Distribution boards type A and type B, technical overview

	Type A	Type B
IP Rating	IP3X	IP4X
Enclosure body type	Steel – welded case end with cable glad plate	Steel – welded case end with cable glad plate
Paint specification	RAL 7004 epoxy polyester	RAL 7004 epoxy polyester
Conditional short circuit rating	15kA to BS EN 60439	25kA to BS EN 60439
Busbar short time withstand (Icw)	5kA 0.1s	10kA 0.5s / 17kA 0.25s
Cable Capacities		
125A switch disconnector	50mm^2	50mm^2
100A RCCB (type A = 90A)	35mm^2	50mm^2
250A switch disconnector	–	120mm^2 (+ lugs)
160A - 250A MCCB incomer	–	250A = 120mm^2 (+ lugs)
100A direct connection kit	35mm^2	–
250A direct connection lugs	–	120mm^2 (+ lugs)
Enclosure earth stud	M6	M8
Incoming earth terminal	25mm^2	125A = 25mm^2, 250A = 70mm^2
Incomming neutral terminal	90/100A = 35mm^2, 125A = 50mm^2	125A = 50mm^2, 250A = 120mm^2 (+ lugs)
Outgoing earth terminal	25mm^2	25mm^2
Outgoing neutral terminal	25mm^2	25mm^2

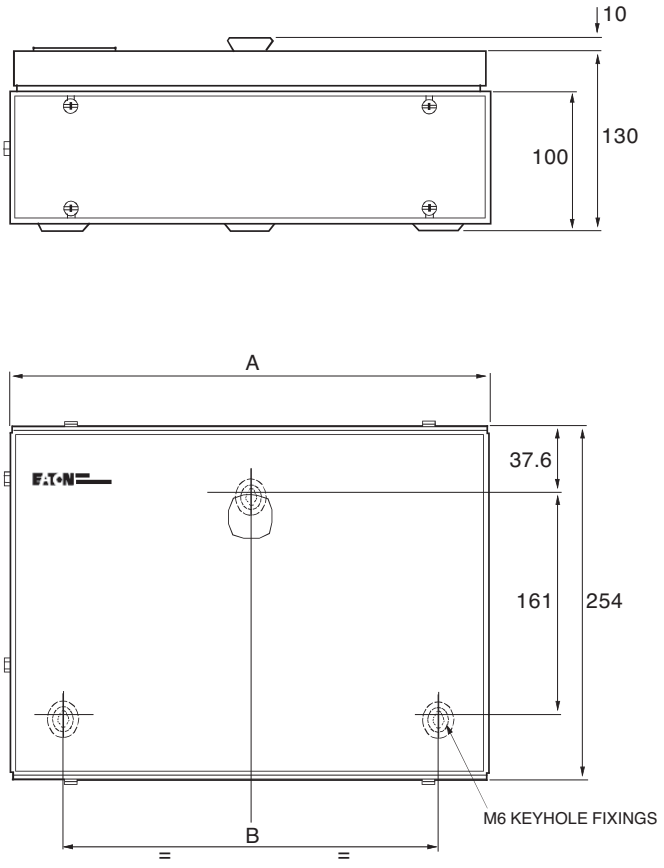
Type 1/type 2 combined lightning/surge arrester, technical data

Electrical		EM3SSK3T12 & EMSSK3T12L	EM3SSK3T12P
Lightning protection system class		III, IV	I, II, III, IV
Responding time (rate of voltage rise 5 kV/µs)	L-N/ N-PE	< 25 ns / < 100 ns	< 25 ns
Voltage protection level U_p	L-N/L-PE / N-PE	< 1.5kV	1.5 kV
Maximum continuous operating voltage U_C	L-N/N-PE	280 VAC/255 VAC	440 VAC / 260 VAC
Temporary overvoltage test value U_T (5 s)	L-N/L-PE	348 VAC/370 VAC	
(200 ms)	N-PE	1200 VAC	200 VAC (200 ms)
Rated frequency		50/60 Hz	50/60 Hz
Discharge current (8/20) µs I_{max}/I_n		–	100 kA
Open circuit voltage U_{oc}		20 kV	–
Nominal discharge current (8/20) µs I_n	L-N/N-PE	3x25 kA/100 kA	–
Maximum discharge current I_{max}	L-N/N-PE	3x50 kA/100 kA	–
Impulse current I_{imp} (10/350) µs:			
Peak current	L-N/N-PE	3x12.5 kA/100 kA	100 kA
Charge Q		50 As	50 As
Specific energy		2500 kJ/Ω	2500 kJ/Ω
Follow current interrupt rating I_{fi}	N-PE	100 $A_{r.m.s}$	–
at 260 V	L-(PE)N/N-PE	–	3kA_{rms}/100A_{rms}
at 440 V	L-(PE)N/N-PE	–	1,5kA_{rms}/–
Short-circuit current strength at max. back-up fuse		–	25kA_{rms}
Maximum back-up fuse		160 AgL/gG	125 AgL
Maximum short-circuit current		50 k$A_{r.m.s}$	–

Type 2 surge arrester technical data

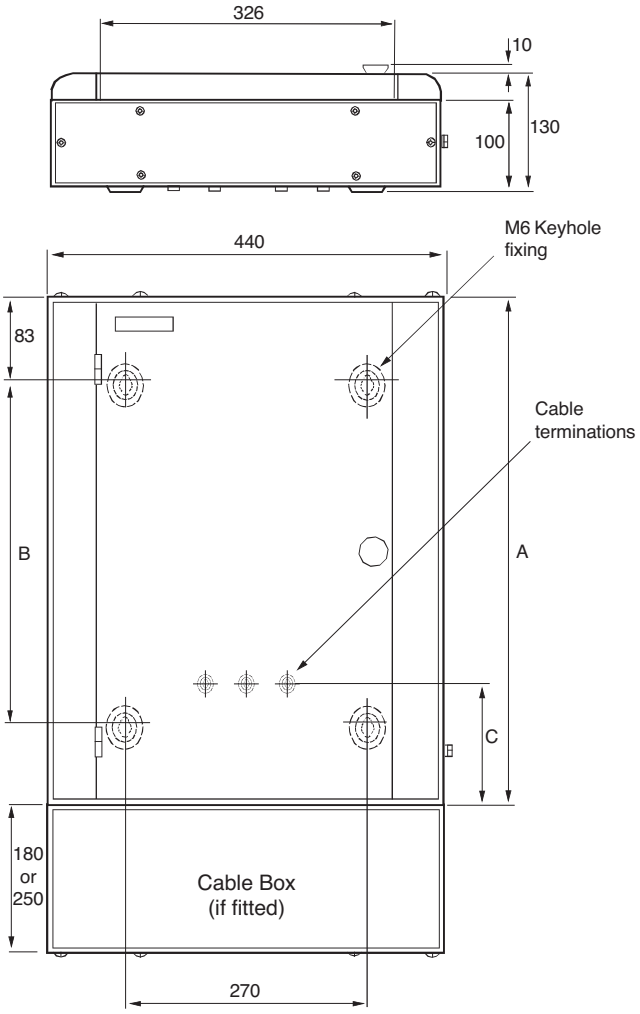
Electrical		EM3SSK1T2	EM3SSK3T2
Responding time (rate of voltage rise 5 kV/µs)	L-N/N-PE/L-PE	< 25ns/< 100ns/< 100ns	< 25ns/< 100ns/< 100ns
Maximum continuous operating voltage U_C	L-N/N-PE	335VAC/260VAC	280VAC/260VAC
Temporary overvoltage test value U_T (5 s)	L-N	415 VAC	350 VAC
(200 ms)	N-PE	1200 VAC	1200 VAC
Rated frequency		50/60 Hz	50/60 Hz
Nominal discharge current I_n	L-N/N-PE/L-PE	20 kA (8/20)µs	20 kA (8/20)µs
Voltage protection level U_p at I_n	L-N/N-PE/L-PE	≤1600V/≤1000V/≤1650V	≤1000V/≤1000V/≤1300V
Maximum discharge current I_{max}	L-N/N-PE/L-PE	40 kA (8/20)µs	40 kA (8/20)µs

Memshield 3 type A SPN Distribution Board, dimensional drawing



List No.	A (mm)	B (mm)
EAM4, EBMXDC6	238	163
EAMMP65	238	163
EAM7, EBMXDC9	292	217
EAM10	346	271
EAM13, EBMXDC15, EBMXDCG15	440	365
EAM9M/MB	440	365
EAM16, EBMXDC18	454	379
EAM12M/MB	454	379
EAMSL66M/MB	454	379
EAMSL93M/MB	454	379

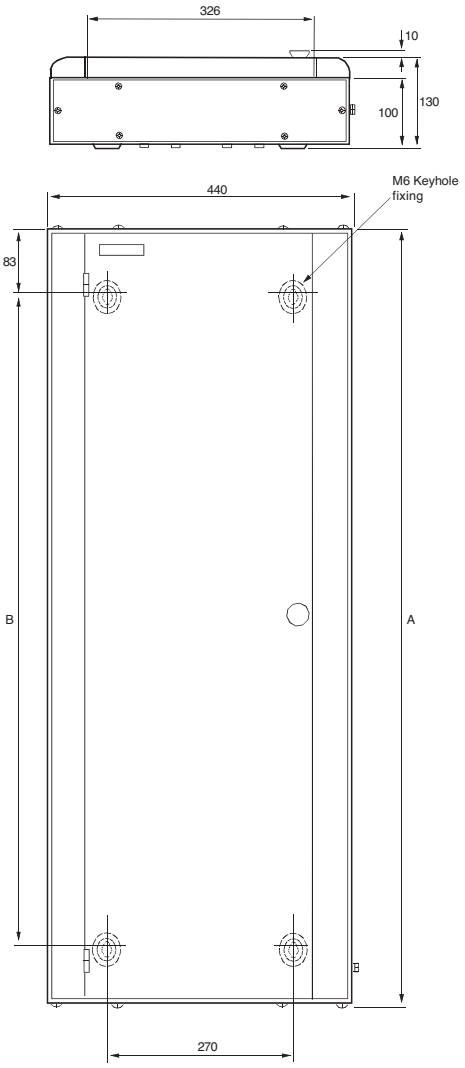
Memshield 3 type B TPN Distribution Board, dimensional drawing



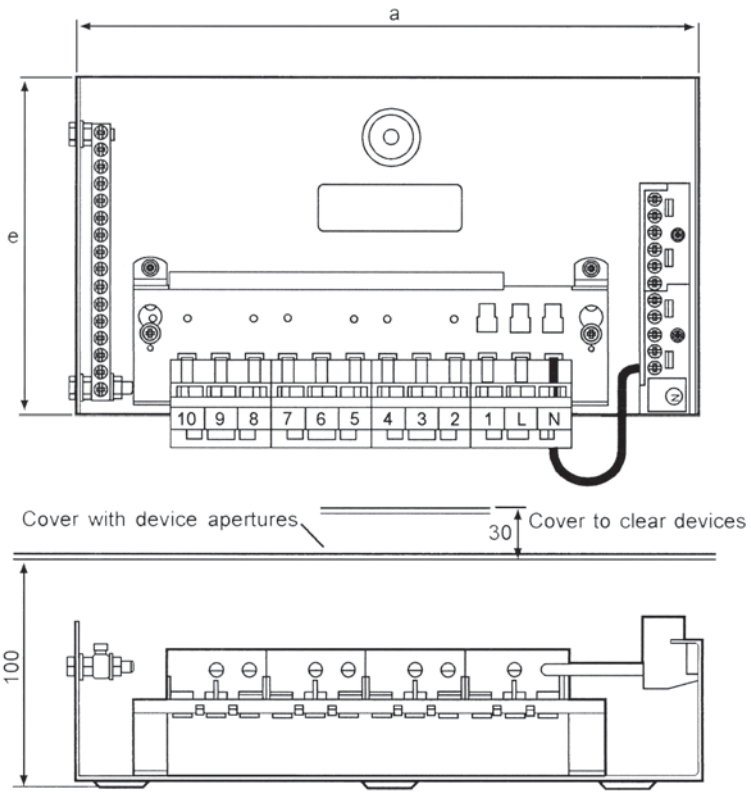
List No.	A (mm)	B (mm)	C (mm) 125A incomer	250A incomer	Lugs incomer
EBM41	429	245	144	–	150
EBM61	482	298	144	–	150
EBM81, EBMXDC30	564	380	173	–	179
EBM121, EBM121D, EBMXDC45	724	540	227	–	233
EBM161	830	540	227	–	233
EBM122	861	677	334	76	340
EBM182	1021	837	334	76	340
EBM242	1180	996	334	76	340
250A high load boards[1)]					
EBM22H	817	633	–	237	500
EBM62H	1020	836	–	296	559
EBM82H	1055	871	–	277	540
EBM122H	1180	996	–	296	559
EBM182H	1342	1158	–	298	561
EBM242H	1501	1317	–	298	561

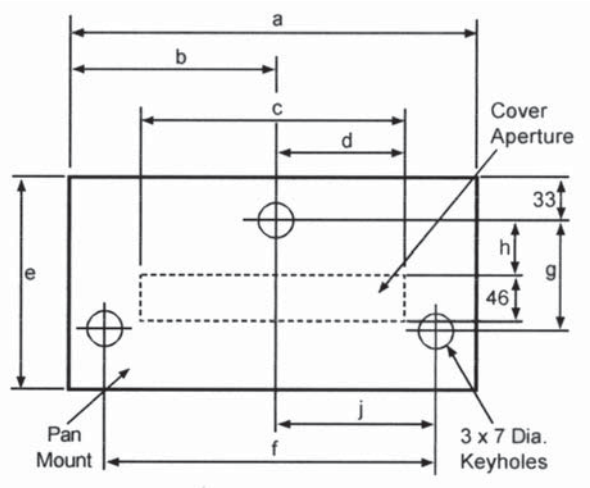
[1)] Cable box not required

Split metered power and lighting board – 200A TPN, dimensional drawing



List No.	A (mm)	B (mm)
EBMSL642M	1130	946
EBMSL642MB	1130	946
EBMSL862M	1236	1052
EBMSL862MB	1236	1052
EBMSL1082M	1342	1158
EBMSL1082MB	1342	1158
EBMSL14102M	1501	1317
EBMSL14102MB	1501	1317

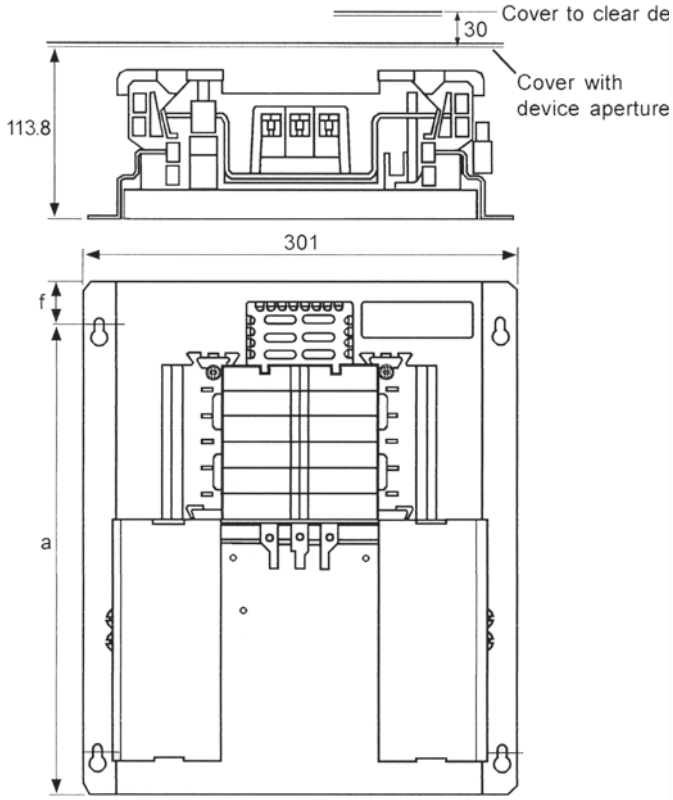


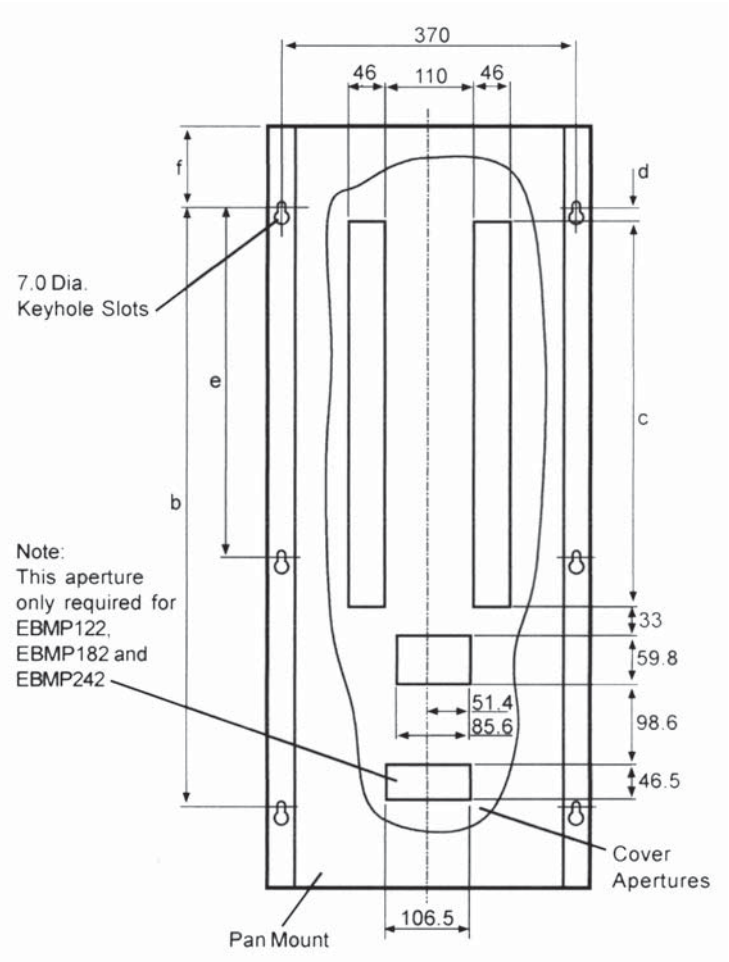


List No.	Dimensions (mm)									Minimum recommended enclosure size (mm)
	a	b	c	d	e	f	g	h	j	
EAMP4	190	105.5	107.7	48.8	180	160	96	70	77	238 (W) x 254 (L)
EAMP7	274	129.5	160.9	79	180	214	96	70	107	292 (W) x 254 (L)
EAMP10	328	164	214.1	127.5	180	266	96	70	127.5	346 (W) x 254 (L)
EAMP13	382	183.5	267.3	131.3	192	319	109	82	161	440 (W) x 260 (L)
EAMP16	435	226.5	320.5	141.5	198	372	105	79	171	495 (W) x 260 (L)

Technical data

Memshield 3 type B TPN pan assemblies

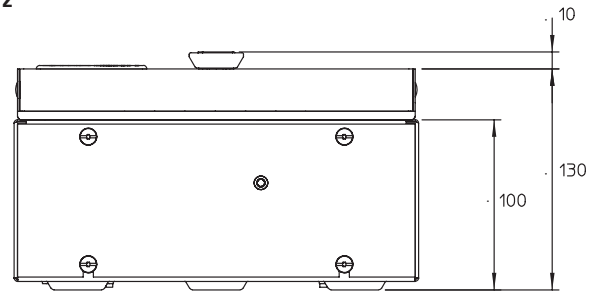


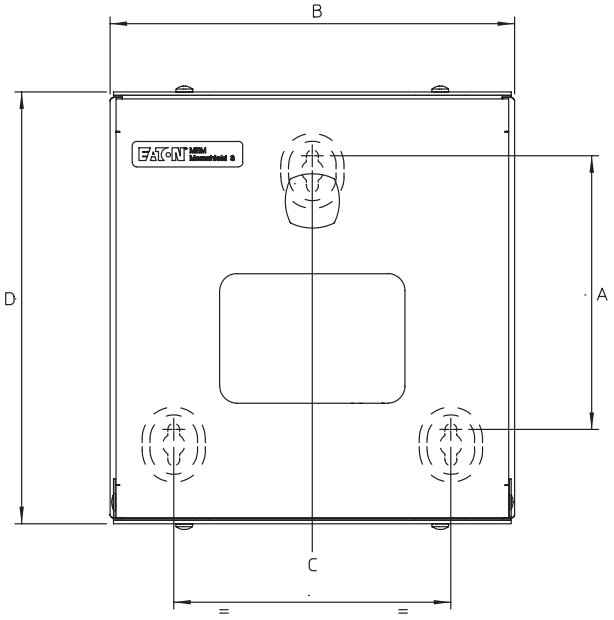


List No.	Dimensions (mm)						Minimum recommended enclosure size (mm)
	a	b	c	d	e	f	
EBMP41	333.6	303.3	107.5	35.7	–	21	440 (W) x 425 (L)
EBMP61	413.7	383.5	160.6	35.7	–	21	440 (W) x 478 (L)
EBMP81	511.5	481.2	213.7	53.2	–	21	440 (W) x 560 (L)
EBMP121	638.1	589.2	319.9	22.2	–	40	440 (W) x 720 (L)
EBMP122	750	710	319.9	16.7	336.5	40	440 (W) x 861 (L)
EBMP182	910	870	479.2	16.7	435	40	440 (W) x 1016 (L)
EBMP242	1070	1030	638.5	16.7	515	40	440 (W) x 1176 (L)

Memshield 3, surge protection devices, dimensional drawings

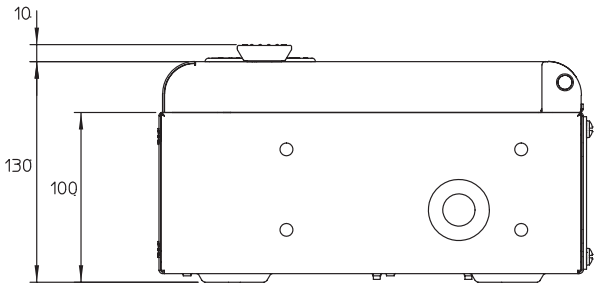
EM3SSK1T2

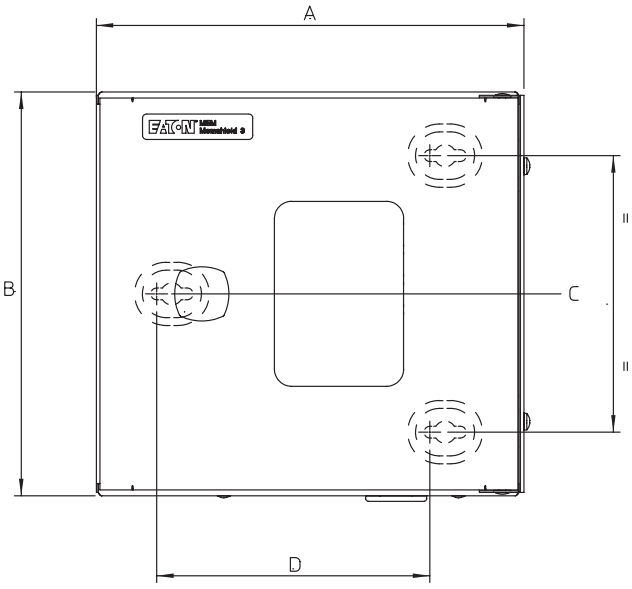




List No.	A (mm)	B (mm)	C (mm)	D (mm)
EM3SSK1T2	254	238	163	161

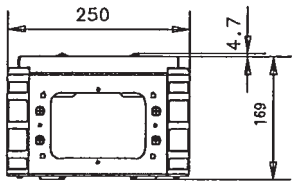
EM3SSKT2/EM3SSKT12

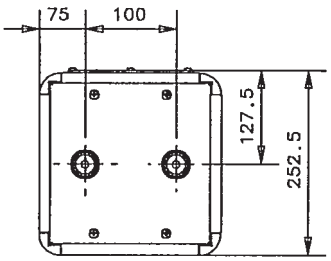




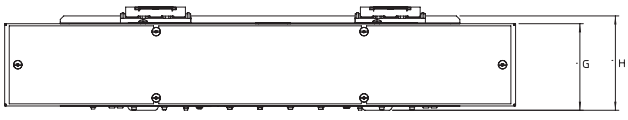
List No.	A (mm)	B (mm)	C (mm)	D (mm)
EM3SSK3T2	254	238	163	161
EM3SSK3T12	254	238	163	161

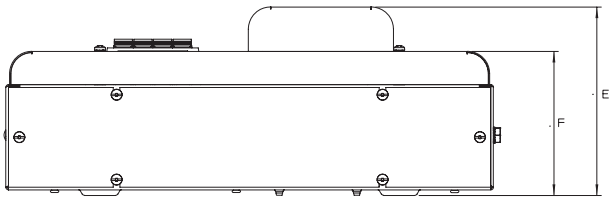
EM3SSK3T12L/EM3SSK3T12P

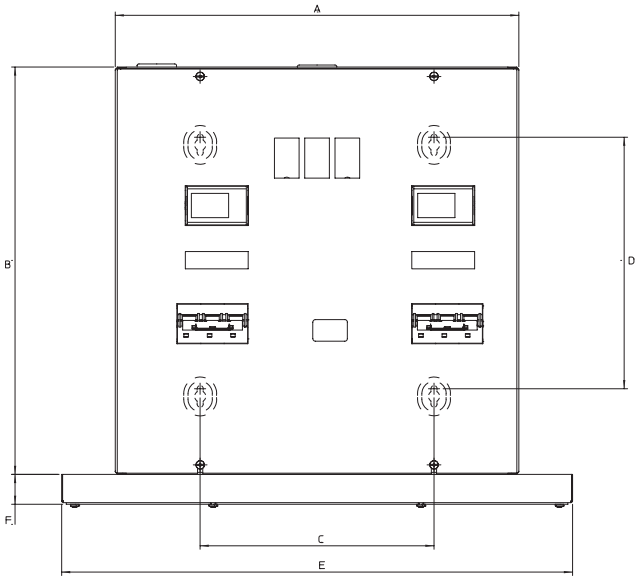


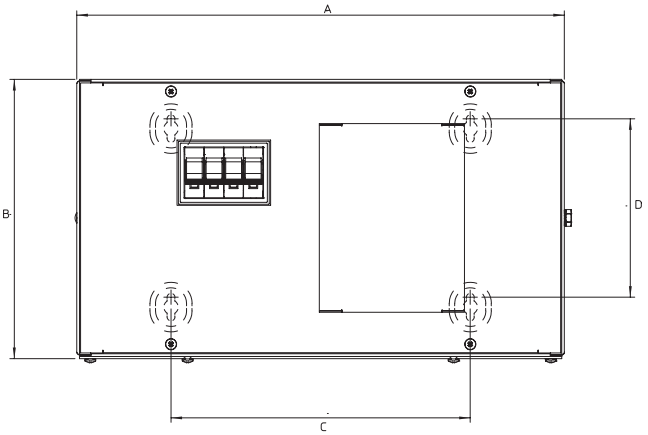


Memshield 3, Meter pack assemblies, dimensional drawings





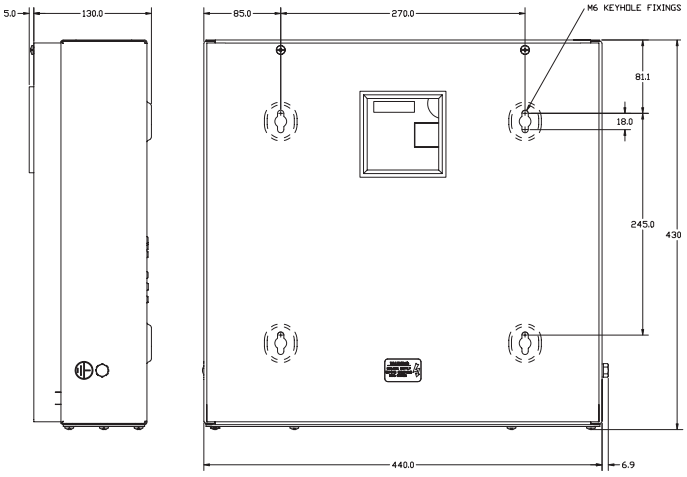




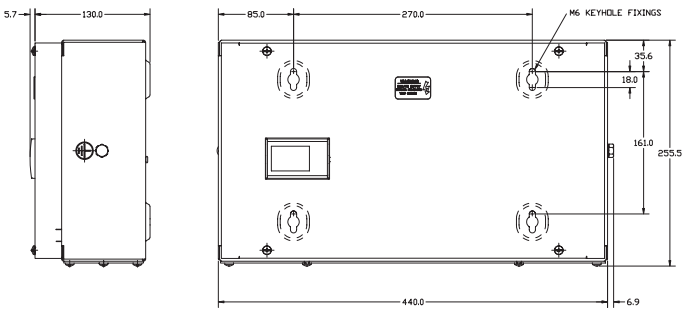
List No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
EBMMPSL3	466	470	240	290	590	35	101	109
EBMMPSL3M	466	470	240	290	590	35	101	109

List No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
EBMCC1253	440	252	270	161	170	130
EBMMPCT250MID	440	252	270	161	N/A	130

EBMMPCD120

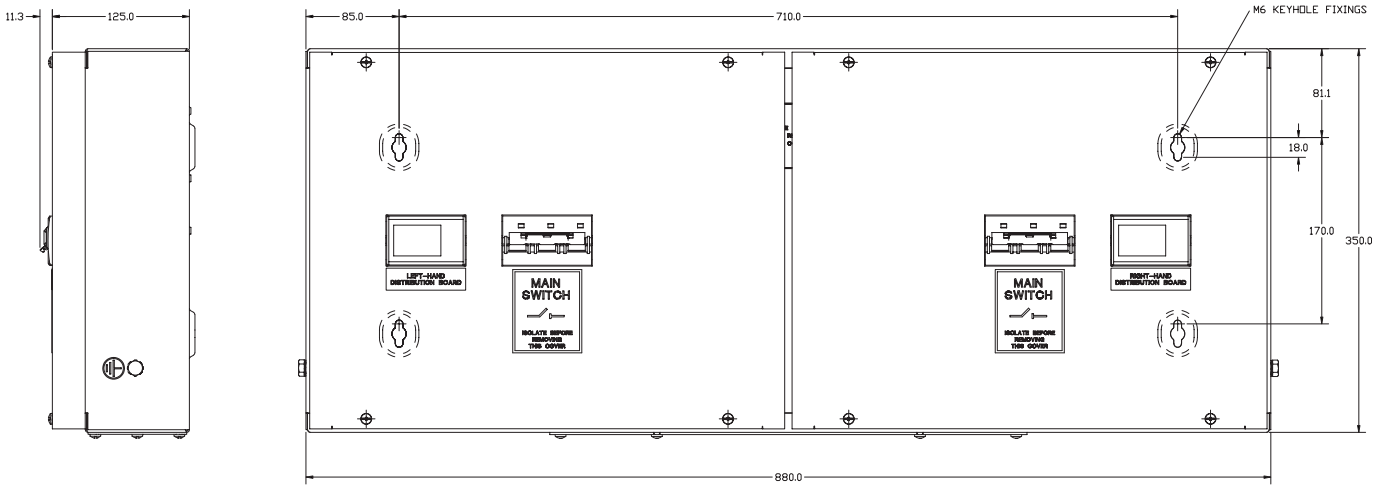


EBMMPCT250/EBMMPCT250M/EBMMPCT250MID

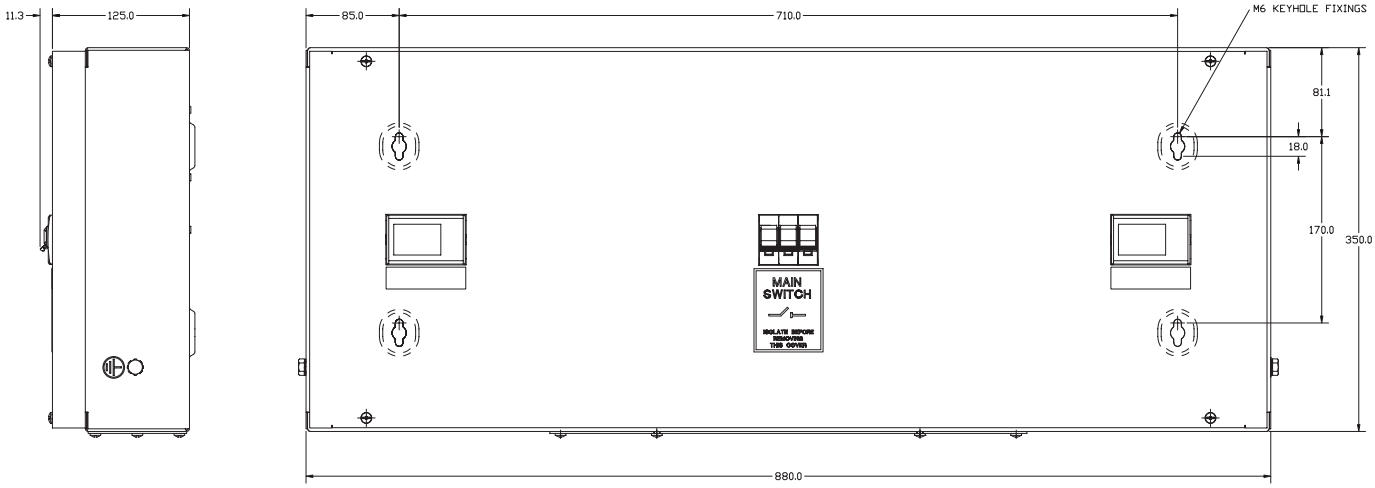


Memshield 3, Meter pack assemblies, dimensional drawings (contd)

EBMMPSL250/EBMMPSL250M



EBMMPSL125/EBMMPSL125M



18mm miniature circuit breakers (MCBs), technical data

Eaton's range of 10/15kA high performance miniature circuit breakers (MCBs) are manufactured and tested to IEC EN 60898, and IEC EN 60947-2, meeting the latest UK, European and international standards, with ratings from 1A to 63A as standard.

DIN rail mountable and suitable for use with both pin and comb type busbar systems, Eaton's MCBs are suitable for use on 230/400 VAC systems and are calibrated for use at 40°C. These devices suite with the other modular devices including RCBOs, RCCBs and isolators, for use within Eaton Memshield 3 Distribution boards and a wide range of other applications.

The Eaton MCBs are fitted with box clamp terminals suitable for use with cables up to 25mm^2, and have a unique box clamp barrier to prevent incorrect cable insertion.

Eaton miniature circuit breakers are available with B, C and D characteristic curve as standard. Type C MCBs are most commonly used in commercial and general applications where there are lighting or motor loads involving high switching surges that may cause unwanted operation of type B devices. Type D devices are more commonly used on general industrial applications with much higher inrush surges.

IEC/EN 60898 Type	Instantaneous Trip Current (x In)	Typical Application	Eaton 10/15A MCB type
B	3 to 5	General distribution	EMBH
C	5 to 10	Commercial Light industrial	EMCH
D	10 to 20	General Industrial	EMDH

Type B: Suitable for general, domestic and commercial installations having little or no switching surges.

Type C: Suitable for general use in commercial or industrial applications where the greater use of fluorescent lighting and small motors can produce switching surges, which may cause nuisance tripping of type B breakers.

Type D: Suitable for general industrial applications where there are a lot of high inrush switching surges associated with equipment such as transformers, large motors , welding and X ray equipment.

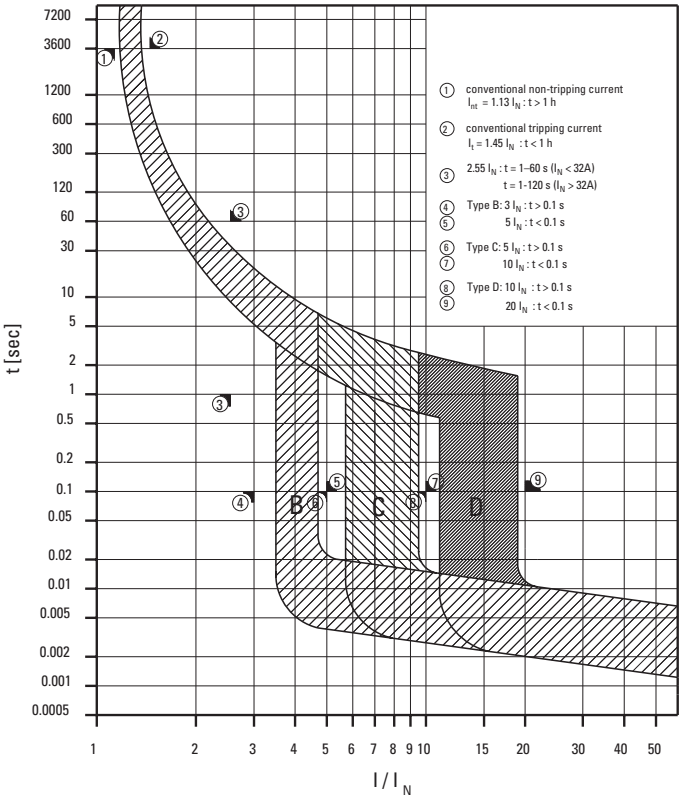
Earth fault loop impedances (Zs) to provide compliance with BS 7671

The wiring regulations BS 7671 makes specific reference to MCB types and the maximum earth loop impedance allowable to meet the required disconnection times.

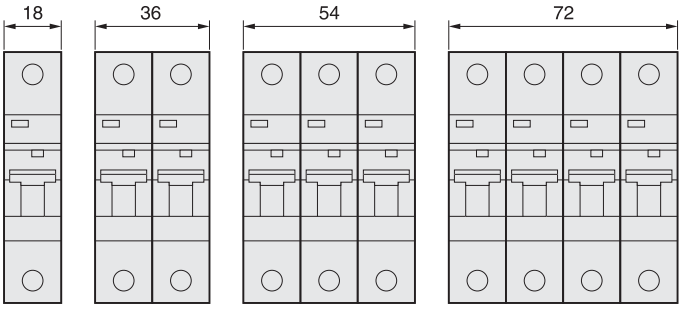
It can be seen that it is much easier to achieve adequate disconnection times with type B devices than it is with types C and indeed type D devices.

Maximum earth fault loop impedance i.e. Zs ohms for final circuits fed from miniature circuit breakers MCBs or RCBOs with Uo of 230V, for instantaneous operation giving compliance with 0.4s disconnection time of Reg 411.3.2.2 and 5s disconnection time of 411.3.2.3

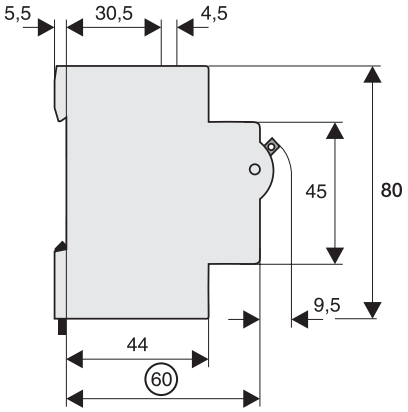
Tripping characteristic type B, C & D



10/15kA MCBs dimensional drawings



1-pole (1P) | 2-pole (2P), 1-pole+N (1P+N) | 3-pole (3P) | 4-pole (4P)



10/15kA MCBs technical data

Product standard	IEC EN 60898 & IEC EN 60947-2
No of poles	1p, 1p&N, 2p, 3p, 4p
Mechanical specification	
Device width (pole)	17.7mm
Terminal type	Box clamp
Terminal capacity	1–25mm2
Terminal Screw	M5 combination
Terminal torque	2.0Nm – 2.4Nm max
Mounting	DIN rail
Degree of protection	IP 20
Positive contact indication	Red/Green flag indicator
Electrical specification	
Rated voltage	230/240 V AC 48V DC (per pole)
Current ratings	1, 2, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63 A
Rated impulse and withstand voltage	4kV (1.2/50) u sec
Rated short circuit capacity	10kA to IEC EN 60898 and 15kA to IEC EN 60947-2
Selectivity class	3 to EN 60898
Tripping characteristic	
Instantaneous tripping current I mt	Type B: 3 In < Imt < 5 In Type C: 5 In < Imt < 10 In Type D: 10In < Imt < 20 In
Conventional non tripping current	I nt = 1.13 In
Conventional tripping current	It = 1.45 In
Ref/Calibration temp	40o C
Number of operating cycles elec	>4000
Number of operating cycles mech	>20000

MCB Max Zs (Ohms) figures

Range	In (A)	Disconnection 0.4s	Disconnection 5s
Type B (EMBH Series)	1	46.000	46.000
	2	23.000	23.000
	4	11.500	11.500
	6	7.667	7.667
	8	5.750	5.750
	10	4.600	4.600
	13	3.538	3.538
	16	2.875	2.875
	20	2.300	2.300
	25	1.840	1.840
	32	1.438	1.438
	40	1.150	1.150
	50	0.920	0.920
	63	0.730	0.730
Type C (EMCH Series)	1	23.000	41.071
	2	11.500	20.536
	4	5.750	10.268
	6	3.833	6.845
	8	2.875	5.134
	10	2.300	4.107
	13	1.769	3.159
	16	1.438	2.567
	20	1.150	2.054
	25	0.920	1.643
	32	0.719	1.283
	40	0.575	1.027
	50	0.460	0.821
	63	0.365	0.652
Type D (EMDH Series)	1	11.500	41.071
	2	5.750	20.536
	4	2.875	10.268
	6	1.917	6.845
	8	1.438	5.134
	10	1.150	4.107
	13	0.885	3.159
	16	0.719	2.567
	20	0.575	2.054
	25	0.460	1.643
	32	0.359	1.283
	40	0.288	1.027
	50	0.230	0.821
	63	0.183	0.652

27mm style miniature circuit breakers (for 250A distribution boards)

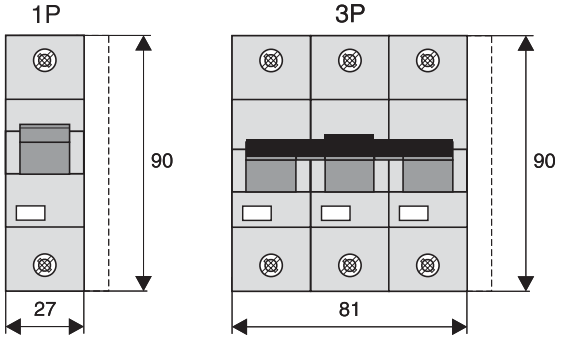
Eaton's 27mm style miniature circuit breakers (MCBs) are manufactured and tested to IEC EN 60947-2, meeting the latest UK, European and international standards, with ratings from 20A to 125A single and triple pole as standard.

Eaton's MCBs are suitable for use on 230/400 VAC systems and are calibrated for use at 40°C. and are available with B, C, and D characteristic curve, with breaking capacities up to 25kA.

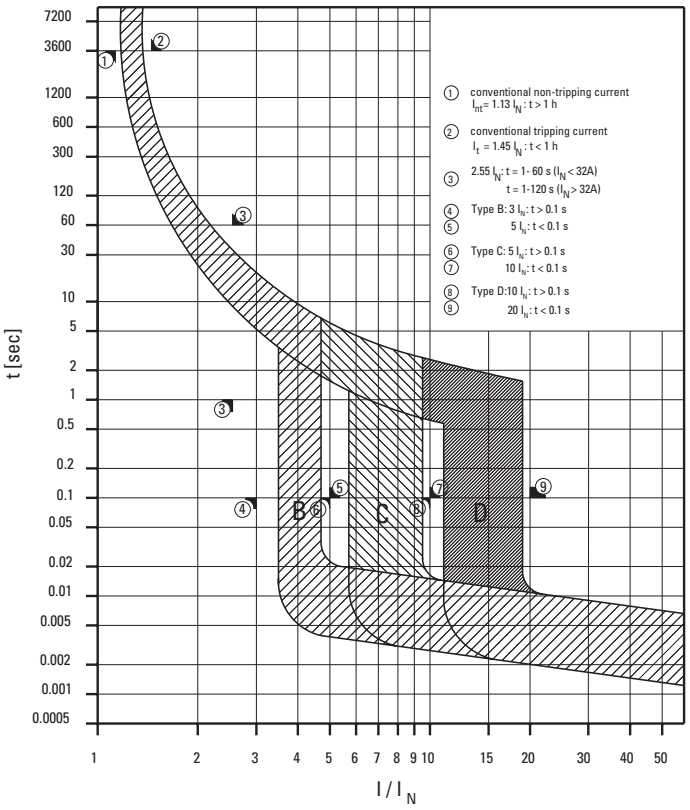
15/25kA MCBs technical data

Product standard	IEC EN 60947-2	
No of poles	1p, 3p	
Mechanical specification		
Device width (pole)	27mm	
Terminal type	Box clamp	
Terminal capacity	2.5–50mm2	
Terminal Screw	Combination head	
Terminal torque	2.0Nm – 2.4Nm max	
Mounting	DIN rail	
Degree of protection	IP 20	
Positive contact indication	Red/Green flag indicator	
Electrical specification		
Rated voltage	230/400 V AC	
	60V DC (per pole)	
Current ratings	63, 80, 100, 125 A	
Rated impulse and withstand voltage	4kV (1.2/50) u sec	
Rated short circuit capacity		
Types B and C	20–63A	– 25kA
	80–100A	– 20kA
	125A	– 15kA
Rated short circuit capacity		
Type D	20–63A	– 25kA
	80A	– 20kA
	100A	– 15kA
Selectivity class	In accordance with class C	
Tripping characteristic		
Instantaneous Tripping current I mt	Type B: 3 In < Imt < 5 In Type C: 5 In < Imt < 10 In Type D: 10In < Imt < 20 In	
Conventional non tripping current	I nt = 1.13 In	
Conventional tripping current	It = 1.45 In	
Ref/Calibration temp	40o C	
Number of operating cycles elec	>20000	

Miniature circuit breakers – dimensional drawings



Tripping characteristic type B, C & D



Eaton Memshield-3 MCB Max Zs (Ohms)

Range	In (A)	Disconnection 0.4s	Disconnection 5s
Type B (EMBS Series)	20	2.300	2.300
	32	1.438	1.438
	40	1.150	1.150
	50	0.920	0.920
	63	0.730	0.730
	80	0.575	0.575
	100	0.460	0.460
	125	0.368	0.368
Type C (EMCS Series)	20	1.150	2.054
	32	0.719	1.283
	40	0.575	1.027
	50	0.460	0.821
	63	0.365	0.652
	80	0.288	0.513
	100	0.230	0.411
	125	0.184	0.329
Type D (EMDS Series)	20	0.575	2.054
	32	0.359	1.283
	40	0.288	1.027
	50	0.230	0.821
	63	0.183	0.652
	80	0.144	0.513
	100	0.115	0.411

Residual current circuit breakers (RCCBs) technical data

Eaton's range of residual current circuit breakers without integral Overload protection (RCCBs), are manufactured to IEC EN/61008 and meet the latest European and International standards.

DIN rail mountable in 2 and 4 module widths these RCCBs provide protection solutions to a wide range of applications. With standard thermal ratings of 16A to 100A and trip sensitivities of 10mA, 30mA, 100mA and 300mA, these devices can be equipped with a range of modular accessories.

The Eaton RCCBs suite with the complete range of modular devices, and are for use within Eaton's Memshield 3 distribution boards and other applications.

These devices will accommodate cables up to 35mm^2.

Terminology

RCD – Residual current device:-This is the generic term covering a range of devices that are able to detect residual currents sometimes also referred to as earth leakage current. The residual current is measured by detecting the difference between the current flowing in the live and neutral conductors of a circuit and where the residual current is above a predefined level the RCD will trip. RCDs are available in a range of trip sensitivities for different applications.

RCCB – Residual current circuit breaker is an RCD which will cause disconnection of the electrical supply should it detect a residual current passing through the device, above a specified tripping current limit e.g. 30mA. This device does not provide over current protection and is therefore also referred to as an RCCB without integral over-current protection.

RCBO – Residual current circuit breaker, with overload protection, is an RCCB which will cause disconnection of the electrical supply should it detect a residual current above a specified tripping current limit, combined with integral overload, over-current, and shortcircuit protection associated with a miniature circuit breaker.

The 17th Edition of the IEE wiring regulations BS7671 now places much greater emphasis on the use of 30mA RCDs to provide "additional protection" in many areas covered by the regulations, such as circuits feeding socket outlets and for the protection of concealed wiring.

Trip sensitivities

10mA – Provides the highest degree of RCD protection in hazardous environments where supplementary protection against electric shock is required. This very high sensitivity should only be applied to final circuits where a high degree of risk exists.

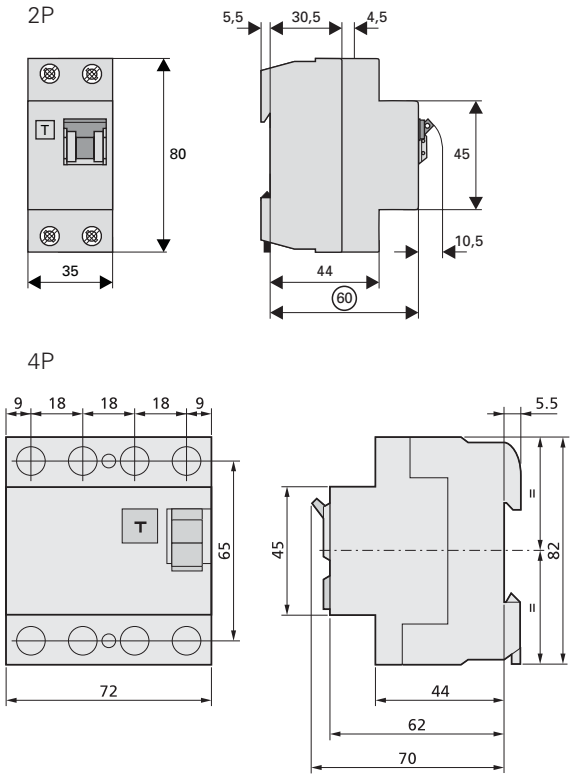
30mA – Provides a high degree of protection against electric shock due to direct and indirect contact. A 30mA RCD will trip within 40mS when a fault current of 150mA is detected.

This type of RCD is required to satisfy the requirements for "additional protection" in accordance with BS7671 (IEE wiring regs.)

100mA – Provides a degree of protection against electric shock resulting from indirect contact, and is generally used to protect a group of circuits as well as providing overall protection against Fire risk.

300mA – Provides a lower level of RCD protection in the form of an overall protection against the risk of fire resulting from faults in electrical wiring etc.

RCCB dimensions (mm)



RCCB technical data

Specifications	2-pole RCCB	4-pole RCCB
Product standard	IEC EN 61008	IEC EN 61008
No of poles	2p	4p
Mechanical specification		
Device width	35 mm	70 mm
Terminal type	Box clamp	Box clamp
Terminal capacity	1.5–35mm^2	50mm^2
Terminal Screw	M5 combination	M5 combination
Terminal torque	2.4Nm max	2.4Nm max
Mounting	DIN rail	DIN rail
Degree of protection	IP 20	IP 20
Positive contact indication	Yes (toggle position)	Red/green flag
Electrical specification		
Rated voltage	230/400 V AC	230/400 V AC
Current ratings	16, 40, 63, 80,100 A	16, 40, 63, 80,100 A
Rated impulse and withstand voltage	4kV (1.2/50) u sec	4kV (1.2/50) u sec
Rated short circuit capacity	10kA (with back up)	10kA (with back up)
Sensitivity	AC	AC
Tripping characteristic		
Rated tripping currents	10, 30, 100, 300 mA	10, 30, 100, 300 mA
Tripping type	Instantaneous	Instantaneous
Number of operating cycles elec	>4000	>4000
Number of operating cycles mech	>20000	>20000

Residual current circuit breakers – with overload protection (RCBOs) technical data

Eaton's range of residual current circuit breakers with integral overload protection (RCBOs), are manufactured to IEC EN 61009 and meet the latest European and International standards.

DIN rail mountable in a single module width these RCBOs provide a comprehensive protection solution to a wide range of applications. Range is available with standard current ratings from 6A to 45A, in both B and C type characteristics and trip sensitivities of 10, 30 and 100mA.

The Eaton RCBOs suite with the complete range of modular devices, and are for use within Eaton's Memshield 3 distribution boards and other applications, and will accommodate cables up to 25mm^2.

Trip Sensitivity

Provides a high degree of protection against electric shock due to direct contact. A 30mA RCD will trip within 40mS when a fault current of 150mA is detected.

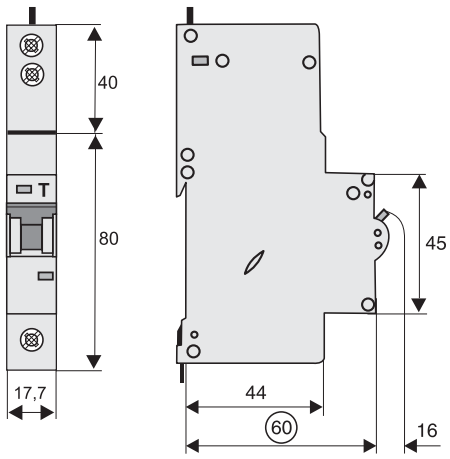
This type of RCD is required to satisfy the requirements for "additional protection" in accordance with BS7671 (IEE wiring regs.)

10mA and 100mA trip sensitivities are also available for a wide range of applications.

RCBOs technical data

Specifications	
Product standard	IEC EN 61009
No of poles	1p & solid N
Mechanical specification	
Device width	17.7 mm
Terminal type	Box clamp
Terminal capacity	1–25mm2
Terminal Screw	M5 combination
Terminal torque	2.4Nm max
Mounting	DIN rail
Degree of protection	IP 20
Positive contact indication	Yes (Red/Green flag)
Electrical specification	
Rated voltage	230/240 V AC
Current ratings	6, 10, 16, 20, 25, 32, 40, 45A
Rated impulse and withstand voltage	4kV (1.2/50) u sec
Rated short circuit capacity	6kA, 10kA
Sensitivity	AC
Tripping characteristic	
Instantaneous Tripping current I mt	Type B: 3 In < Imt < 5 In Type C: 5 In < Imt < 10 In
Conventional non tripping current	I nt = 1.13 In
Conventional tripping current	It = 1.45 In
Ref/Calibration temp	40o C
Rated tripping currents	10, 30, 100mA
Tripping type	Instantaneous
Number of operating cycles elec	>4000
Number of operating cycles mech	>20000

RCBOs dimensions (mm)

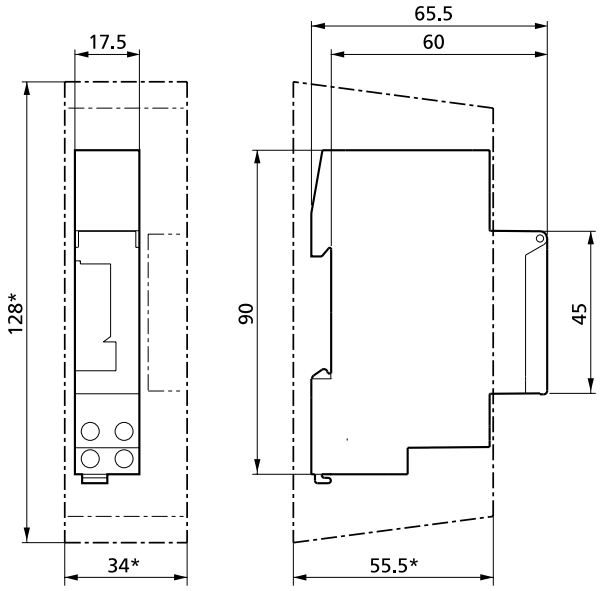


Analogue Timers, technical details

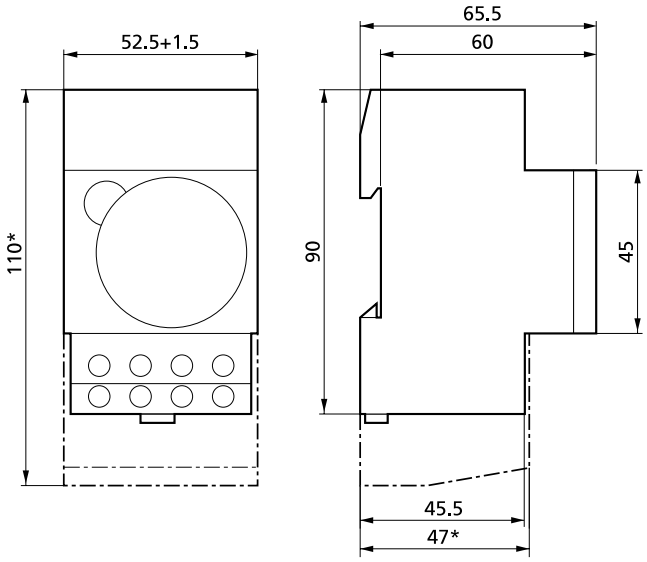
Analogue Timers	TAD1NC	TAD1NCS	TAW1	TAD1	TAD1S	TAW1S
General						
Standards	EN 60730-2-7, EN 60730-1					
Nominal operating voltage & tolerance	230 Vac ± 10 %	230 Vac ± 10 %	230 Vac ± 10%	230 Vac ± 10 %	230 Vac ± 10 %	230 Vac ± 10 %
Frequency	50 Hz	50 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
Power consumption	max. 2.5 VA	max. 2.5 VA	max. 2.5 VA	max. 2.5 VA	max. 2.5 VA	max. 2.5 VA
Time base control	Net	Net	Quartz	Quartz	Quartz	Quartz
Accuracy at 20 °C	acc. Net	acc. Net	£_-± 1 sec./day	£_-± 1 sec./day	£_-± 1 sec./day	£_-± 1 sec./day
Power reserve at 20 °C	-	-	±3 days	±3 days	±3 days	±3 days
Type of battery	-	-	NiMH	NiMH	NiMH	NiMH
Mechanical endurance (switching cycles)	> 30.000	> 30.000	> 30.000	> 30.000	> 30.000	> 30.000
Electrical endurance (switching cycles)	> 10.000	> 10.000	> 10.000	> 10.000	> 10.000	> 10.000
Protection class (acc. EN 60529)	IP20	IP20	IP20	IP20	IP20	IP20
Permissible ambient temperature	-20 °C...+50 °C	-25 °C…+50 °C	-20 °C…+50 °C	-20 °C…+50 °C	-10 °C…+50 °C	-10 °C…+50 °C
Storage temperature	-20 °C...+50 °C	-25 °…+50 °C	-20 °C…+50 °C	-20 °C…+50 °C	-10 °C…+50 °C	-10 °C…+50 °C
Protection class (acc. EN 60 730-1) at proper installation	II	II	II	II	II	II
Switching contact(s)						
Type of switching contact	1 x CO	1 x NO	1 x CO	1 x CO	1 x NO	1 x NO
Contact material	Hard silver	Hard silver	Hard silver	Hard silver	Hard silver	Hard silver
Switching capacity at 250 Vac, cos j = 1	16 A	16 A	16 A	16 A	16 A	16 A
Switching capacity at 250 Vac, cos j = 0,6	4A	4A	4A	4A	4A	4A
Programming features						
Period of program	Day	Day	Week	Day	Day	Week
Number of channels	1	1	1	1	1	1
Minimum cycle time	30 min.	15 min.	4 hours	30 min.	15 min.	2 hours
Maximum programming steps in memory	48	96	42	48	96	84
Manual/Hand/Permanent switching 1)	ON, OFF,					
Hand, Auto	ON, Auto	ON, OFF,				
Hand, Auto	ON, OFF,					
Hand, Auto	ON, Auto	ON, Auto				
Dimensions & Weight						
Number of module width	3	1	3	3	1	1
Dimensions 17.5 mm	Width	52.5 mm	17.5 mm	52.5 mm	52.5 mm	17.5 mm
Height	90 mm	90 mm	90 mm	90 mm	90 mm	90 mm
Depth	65.5 mm	65.5 mm	65.5 mm	65.5 mm	65.5 mm	65.5 mm
Weight	135 gr.	120 gr.	175 gr.	150 gr.	120 gr.	120 gr.
Terminals						
Terminal capacity – fine stranded wire	1…2.5 mm^2	1…2.5 mm^2	1…2.5 mm^2	1…2.5 mm^2	1…2.5 mm^2	1…2.5 mm^2
Terminal capacity – solid wire	1…4 mm^2	1….4 mm^2	1…4 mm^2	1…4 mm^2	1…4 mm^2	1…4 mm^2
Terminal screw size	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
Terminal screw head type (Pozidrive)	PZ Size 1	PZ Size 1	PZ Size 1	PZ Size 1	PZ Size 1	PZ Size 1
Maximum torque	0.8 Nm	0.8 Nm	0.8 Nm	0.8 Nm	0.8 Nm	0.8 Nm

1) Remark
ON = Permanent ON
OFF = Permanent OFF
Hand = ON or OFF, valid until next program cycle overrules
Auto = According program

Analogue Timers, technical drawings



Analogue day and week Timers, type TAD1NCS, TAD1S and TAW1S.
Dimensions are applicable when using terminal covers.



Analogue day and week Timers, types TAD1NC, TAD1 and TAW 1.
Dimensions are applicable when using terminal covers.

Digital week timers, technical details

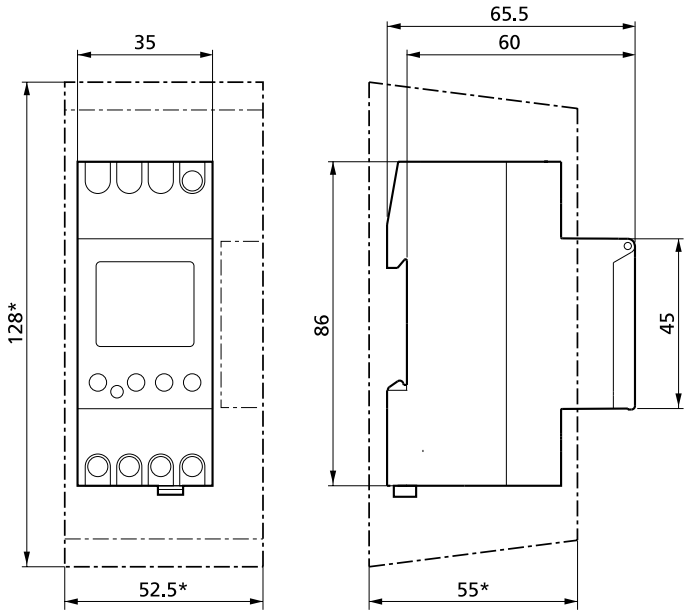
Digital Timers – week program	TDW1	TDW1S	TDW2	TDW2E
General				
Standards	EN 60730-2-7, EN 60730-1			
Nominal operating voltage	230…240 Vac	230 Vac	230…240 Vac	230…240 Vac
Nominal operating voltage tolerance	-10%…+6%	-10%…+10%	-10%…+6%	-10%…+6%
Frequency	50…60 Hz	50…60 Hz	50…60 Hz	50…60 Hz
Power consumption	max. 6 VA	± 2.5 VA	max. 6 VA	max. 6 VA
Time base control	Quartz	Quartz	Quartz	Quartz
Accuracy at 20 °C	£_-± 1 sec./day	£_-± 1 sec./day	£_-± 1 sec./day	£_-± 1 sec./day
Power reserve at 20 °C	10 years	3 years	10 years	10 years
Type of battery	Lithium	Lithium (CR2032)	Lithium	Lithium
Mechanical endurance (switching cycles)	> 100.000	> 100.000	> 100.000	> 100.000
Electrical endurance (switching cycles)	> 40.000	> 40.000	> 40.000	> 40.000
Protection class (acc. EN 60529)	IP20	IP20	IP20	IP20
Permissible ambient temperature	-10 °C…+50 °C	-10 °C…+50 °C	-10 °C…+50 °C	-10 °C…+50 °C
Storage temperature	-25 °C…+50 °C	-25 °C…+50 °C	-25 °C…+50 °C	-25 °C…+50 °C
Protection class at proper installation	II (acc. EN 60730-1)	II (acc. EN 60355-1)	II (acc. EN 60730-1)	II (acc. EN 60730-1)

Digital week timers, technical details (continued)

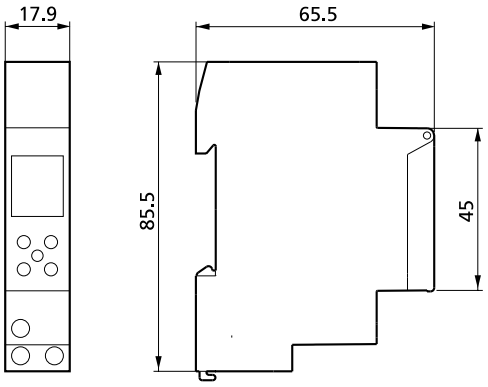
Digital Timers – week program	TDW1	TDW1S	TDW2	TDW2E
Switching contact(s)				
Type of switching contact	1 x CO	1 x CO	2 x CO	2 x CO
Contact material	Ag Sn O2	Ag Sn O2	Ag Sn O2	Ag Sn O2
Switching capacity at 250 Vac, cosj = 1	16 A	16 A	16 A	16 A
Switching capacity at 250 Vac, cosj = 0,6	10:00 AM	6:00 AM	10:00 AM	10:00 AM
Digital Timers – week program	TDW1	TDW1S	TDW2	TDW2E
Switching capacity for lighting :				
-Incandescent lamp	2300 W	1000 W	2300 W	2300 W
-Halogen lamp	2300 W	1000 W	2300 W	2300 W
– Fluorescent lamp :				
single fitting uncompensated (inductive)	1000 W	800 W	1000 W	1000 W
single fitting compensated (capacitive 42mF)	400 W	200 W	400 W	400 W
double fitting series compensated	1000 W	800 W	1000 W	1000 W
– Compact fluorescent lamp electronic				
7 W	9 x	7 x	9 x	9 x
11 W	7 x	6 x	7 x	7 x
15 W	7 x	5 x	7 x	7 x
20 W	7 x	5 x	7 x	7 x
23 W	7 x	5 x	7 x	7 x
Programming features				
Period of program	Week	Week	Week	Week
Number of channels	1	1	2	2
Minimum cycle time	1 min.	1 min.	1 min.	1 min.
Maximum programming steps in memory	28	28	42	42
Summer –/wintertime automatic (or manual on/off)	Yes	Yes	Yes	Yes
Random program	No	No	No	Yes
Holiday program	No	No	No	Yes
Cycle program	No	No	No	Yes
Pulse switching	No	No	No	Yes
Manual/Hand/Permanent switching 1)	ON, OFF, Hand, Auto	ON, OFF, Hand, Auto	ON, OFF, Hand, Auto	ON, OFF, Hand, Auto
LCD backlighting	No	No	No	Yes
Dimensions & weight				
Number of module width	2	1	2	2
Width	35 mm	17.9 mm	35 mm	35 mm
Height	86 mm	85.5 mm	86 mm	86 mm
Depth	65.5 mm	65.5 mm	65.5 mm	65.5 mm
Weight	170 gr.	85 gr.	170 gr.	170 gr.
Terminals				
Terminal capacity – fine stranded wire	1…2.5 mm^2	1…2.5 mm^2	1…2.5 mm^2	1…2.5 mm^2
Terminal capacity – solid wire	1…4 mm^2	1…4 mm^2	1…4 mm^2	1…4 mm^2
Terminal screw size	M3.5	M3.5	M3.5	M3.5
Terminal screw head type (Pozidrive)	PZ Size 1	PZ Size 1	PZ Size 1	PZ Size 1
Maximum torque	0.8 Nm	0.8 Nm	0.8 Nm	0.8 Nm

1) Remark
ON = Permanent ON
OFF = Permanent OFF
Hand = ON or OFF, valid until next program cycle overrules
Auto = According program

Digital week timers, technical drawings



Digital week Timers, types TDW1, TDW2 and TDW2E.
Dimensions are applicable when using terminal covers.



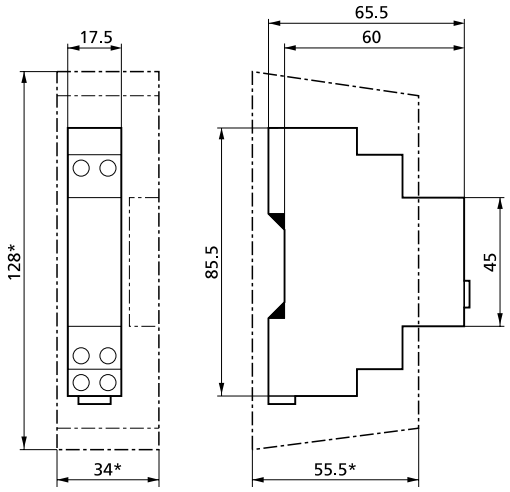
Digital week Timers, type TDW1S.

Staircase timers, technical details

Staircase Timer	TE7	TE1
General		
Standards	EN 60669-2-3, EN 60669-2-1, EN 60669-1	
Nominal operating voltage	220…240 Vac	220…240 Vac
Nominal operating voltage tolerance	-15%…+10%	-15%…+10%
Frequency	50…60 Hz	50…60 Hz
Power consumption	± 6 VA	± 6 VA
Time setting	0.5–20 min.	0.5–20 min.
Mechanical endurance (switching cycles)	> 100.000	> 100.000
Electrical endurance (switching cycles)	> 40.000	> 40.000
Protection class (acc. EN 60529)	IP20	IP20
Permissible ambient temperature	-10 °C…+50 °C	-25 °C…+50 °C
Storage temperature	-25 °C…+50 °C	-25 °C…+50 °C
Protection class at proper installation	II	II
Switching contact(s)		
Type of switching contact	1 x NO (not potential free)	1 x NO (not potential free)
Contact material	Ag Sn O2	Ag Sn O2
Switching capacity at 250 Vac, cos j =1	16 A	16 A
Switching capacity for lighting :		
–	2300 W	3600 W
–	2300 W	3600 W
–		
Single fitting uncompensated (inductive)	2300 W	3600 W *
Single fitting compensated (capacitive 120 mF)	400 W	1200 W *
Double fitting series compensated	2300 W	3600 W *
Single/double fitting electronic supply	300 W	1000 W
7 W	9 x	34 x
9 W	7 x	27 x
11 W	7 x	27 x
15 W	7 x	24 x
20 W	7 x	22 x
23 W	7 x	22 x
Features		
Maximum load for push button illumination (incandescent lamp)	150 mA	150 mA
Automatic 3/4 wire detection	Yes	Yes
Separate control input 8–240 Vac/dc	No	Yes
galvanic separated (e.g. for intercom)		
Permanent on function	Yes	Yes
Warning before switching off (2 times flashing) *	No	Yes
Time extension (1 hour)	No	Yes
Pulse switching (on & off)	No	Yes
Dimensions & weight		
Number of module width	1	1
Width	17.5 mm	17.5 mm
Height	90 mm	90 mm
Depth	65.5 mm	65.5 mm
Weight	99 gr.	99 gr.
Staircase Timer	TE7	TE1
Terminals		
Terminal capacity – fine stranded wire	1…2.5 mm^2	1…2.5 mm^2
Terminal capacity – solid wire	1…4 mm^2	1…4 mm^2
Terminal screw size	M3.5	M3.5
Terminal screw head type (Pozidrive)	PZ Size 1	PZ Size 1
Maximum torque	0.8 Nm	0.8 Nm

Note : Lamp load marked with * may not be used in combination with 'warning function'

Staircase timers, technical drawings

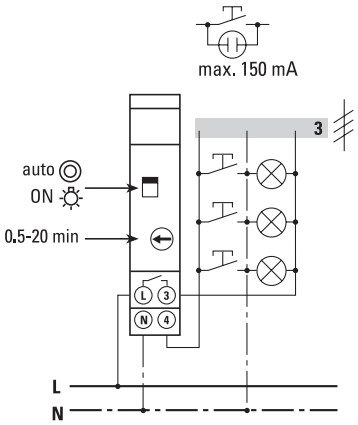


Staircase Timer, type TE7 and TE1.

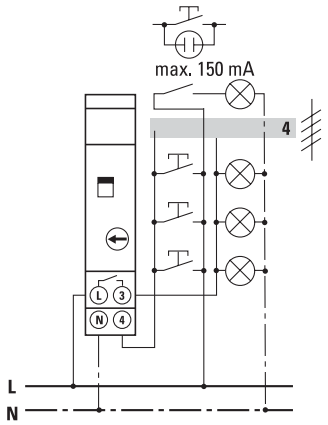
*) Dimension applicable when using terminal covers.

Staircase timer TE7, example wiring diagrams

The staircase timers can be wired utilising either the 3-wire or 4-wire configuration as shown in the wiring diagrams below.



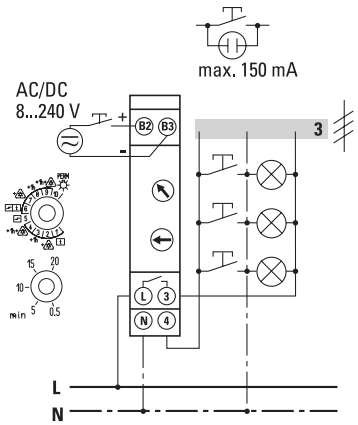
3-wire configuration



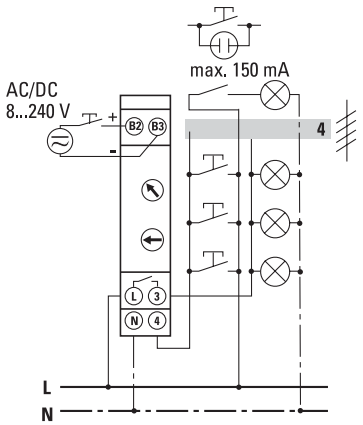
4-wire configuration

Multifunctional staircase timer TE1, example wiring diagram

The staircase timers can be wired utilising either the 3-wire or 4-wire configuration as shown in the wiring diagrams below.



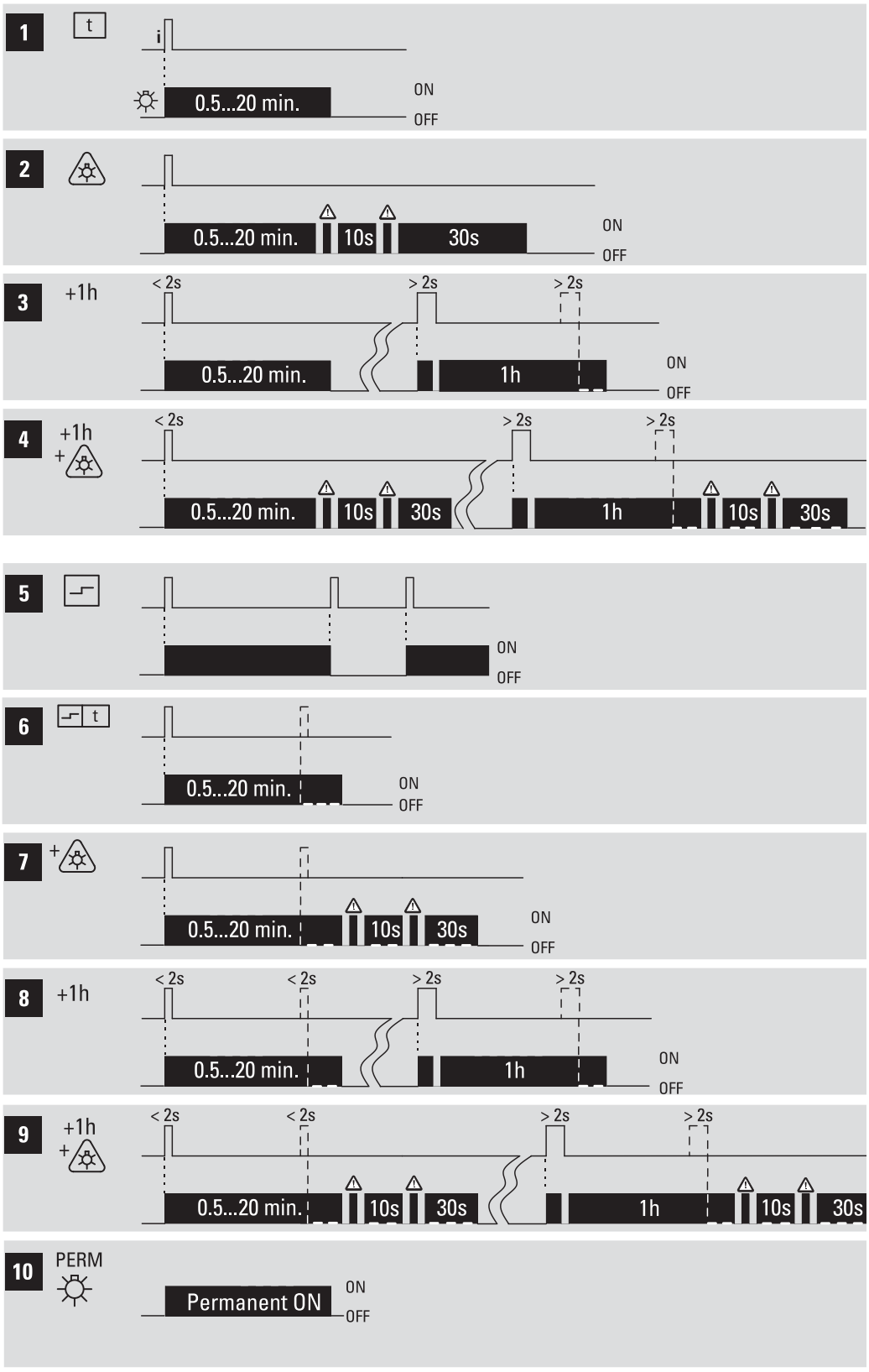
3-wire configuration



4-wire configuration

Multifunctional staircase timer TE1, available functions

Following functions can be set on the multifunctional staircase timer



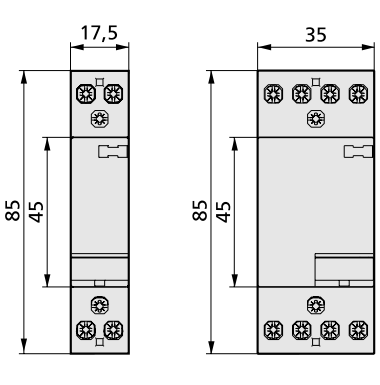
Contactors type CR, technical data

Products	Contactors				Aux. contact
Rating	20 A	25 A	40 A	63 A	6A
General					
Standards	IEC 60947-4-1, IEC 61095				IEC 60947-5-1
Nominal operating voltage 1-phase Ue 1-ph.	230 V	230 V	230 V	230 V	230 V
Nominal operating voltage 3-phase Ue 3-ph.	400 V	400 V	400 V	-	-
Overvoltage protection on coil	430 V (*5)	430 V (*5)	430 V	430 V	
Mechanical endurance (switching cycles)	3.000.000	3.000.000	3.000.000	3.000.000	3.000.000
Protection class (acc. DIN 40 050, IEC 529)	IP20	IP20	IP20	IP20	IP20
Permissible ambient temperature	-5…+55 °C	-5…+55 °C	-5…+55 °C	-5…+40 °C	-5…+55 °C
Storage temperature	-30…+80 °C	-30…+80 °C	-30…+80 °C	-30..+80 °C	-30…+80 °C
Contact rating					
Rated insulation voltage Ui	440 V	440 V	500 V	500 V	500 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz'	50/60 Hz
Rated impulse withstand voltage Uimp	4 kV	4 kV	4 kV	4 kV	4 kV
Rated thermal current Ith	20 A	25 A	40 A	63 A	6 A
AC1/AC7a Rated operational current Ie	20 A	25 A	40 A	63 A	–
AC1/AC7a Operational power rating at Ue = 230 Vac Pmax	4 kW	9 kW	16 kW	24 kW	–
AC1/AC7a Operational power rating at Ue = 400 Vac Pmax	16 kW	26 kW	40 kW	–	–
AC3/AC7b Operational power rating at Ue = 230 Vac Pmax	1,3 kW (*1)	2,2 kW	5,5 kW	8,5 kW	–
AC3/AC7b Operational power rating at Ue = 400 Vac Pmax	4 kW	11 kW	15 kW	-	–
DC1 Rated thermal current at Ue = 24 Vdc Ie	20 A	25 A	40 A	63 A	–
DC1 Rated thermal current at Ue = 110 Vdc Ie	1A	2A	4A	4A	–
DC1 Rated thermal current at Ue = 220 Vdc Ie	0,5 A	0,5 A	0,8 A	0,8 A	–
DC1 Rated thermal current at Ue = 24 Vdc (2-poles in series) Ie	20 A	25 A	40 A	63 A	–
DC1 Rated thermal current at Ue = 110 Vdc (2-poles in series) Ie	3 A	4 A	10 A	10 A	–
DC1 Rated thermal current at Ue = 220 Vdc (2-poles in series) Ie	1,5 A	1,5 A	6 A	6 A	–
DC1 Rated thermal current at Ue = 24 Vdc (3-poles in series)	–	25 A	40 A	63 A	–
DC1 Rated thermal current at Ue =110 Vdc (3-poles in series)	–	6:00 AM	30 A	35 A	–
DC1 Rated thermal current at Ue = 220 Vdc (3-poles in series)	–	2,5 A	20 A	30 A	–
Electrical endurance					
Maximum operating cycles at AC1/AC7a application	200.000 x	200.000 x	100.000 x	100.000 x	–
Maximum operating cycles at AC3/AC7b application	300.000 x	500.000 x	150.000 x	150.000 x	–
Maximum operating cycles at AC5a application	100.000 x	100.000 x	100.000 x	100.000 x	–
Maximum operating cycles at AC5b application	100.000 x (*2)	100.000 x (*2)	100.000 x (*3)	100.000 x (*4)	–
Maximum operating cycles per hour	600 x	600 x	600 x	600 x	600 x
Power dissipation per contact at In	1,7 W	2,2 W	4 W	8 W	–
Maximum back-up fuse	25 A gL	35 A gL	63 A gL	80 A gL	–
Rating	20 A	25 A	40 A	63 A	6 A
Operating coil (for combined ac/dc types only – CR…)					
Coil inrush power (for all voltage ratings)	2,5 W	3 W	5 W	5 W	–
Coil consumption (for all voltage ratings)	2,5 W	3 W	5 W	5 W	–
Closing delay	15-25 ms	15-30 ms	15-20 ms	15-20 ms	–
Opening delay	35-45 ms	50-80 ms	35-45 ms	35-45 ms	–
Operating coil (for ac types only – CR…A)					
Coil inrush power (for all voltage ratings)	13 W/15 VA	17 W/27 VA			–
Coil consumption (for all voltage ratings)	2 W/5 VA	1 W/2.7 VA	–	–	–
Closing delay	15 ms	15-25 ms	–	–	–
Opening delay	10 ms	35-45 ms	–	–	–

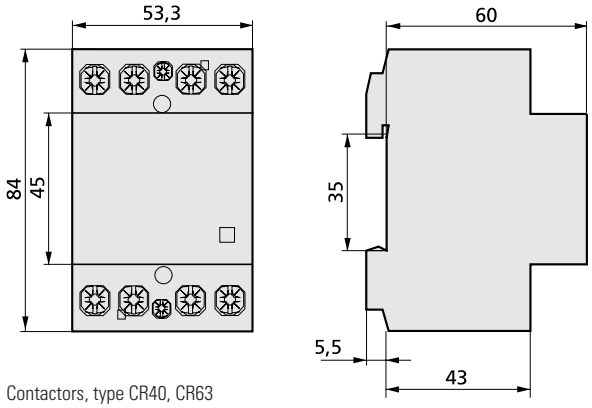
Contactors type CR, technical data (continued)

Products	Contactors				Aux. contact
Dimensions					
Width	18 mm	35 mm	54 mm	54 mm	9 mm
Height	85 mm	85 mm	85 mm	85 mm	85 mm
Depth	60 mm	60 mm	60 mm	60 mm	60 mm
Terminals for main & auxiliairy contacts					
Terminal capacity – fine stranded wire	1…6 mm^2	1…6 mm^2	1…16 mm^2	1…16 mm^2	1…2,5 mm^2
Terminal capacity – solid wire	1…10 mm^2	1…10 mm^2	1…25 mm^2	1…25 mm^2	1…2,5 mm^2
Terminal screw size	M3,5	M3,5	M5	M5	M3
Terminal screw head type (Pozidrive)	PZ Size 1	PZ Size 1	PZ Size 2	PZ Size 2	PZ Size 1
Maximum torque	1,2 Nm	1,2 Nm	2,0 Nm	2,0 Nm	0,8 Nm
Terminals for operating coils					
Terminal capacity – fine stranded wire	1…2,5 mm^2	1…2,5 mm^2	1…2,5 mm^2	1…2,5 mm^2	
Terminal capacity – solid wire	1…2,5 mm^2	1…2,5 mm^2	1…2,5 mm^2	1…2,5 mm^2	
Terminal screw size	M3	M3	M3	M3	
Terminal screw head type (Pozidrive)	PZ Size 1	PZ Size 1	PZ Size 1	PZ Size 1	
Maximum torque	0,6 Nm	0,6 Nm	0,6 Nm	0,6 Nm	

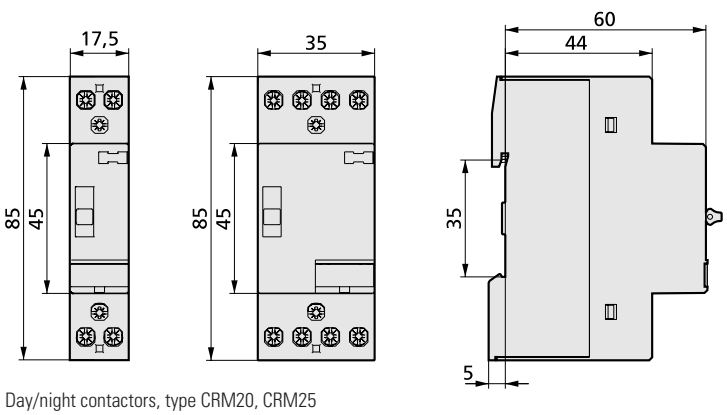
Remarks:
*1) Only applicable for normally open contact(s)
*2) At 1,5 kW
*3) At 3 kW
*4) At 5 kW
*5) For CR… types only (combined ac/dc types), NOT for CR… A types



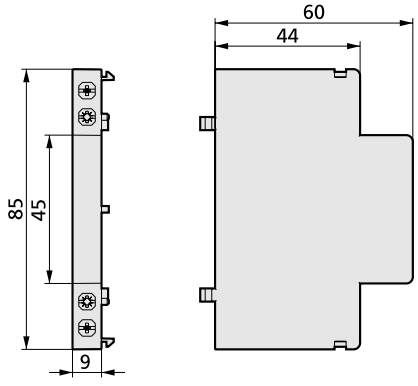
Contactors, type CR20, CR25



Contactors, type CR40, CR63

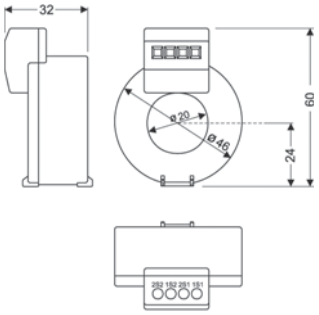


Day/night contactors, type CRM20, CRM25

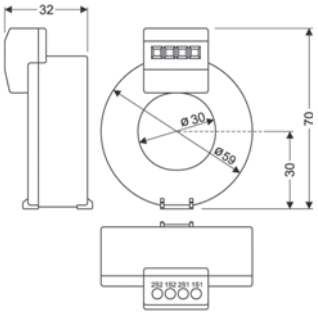


Auxiliairy contact

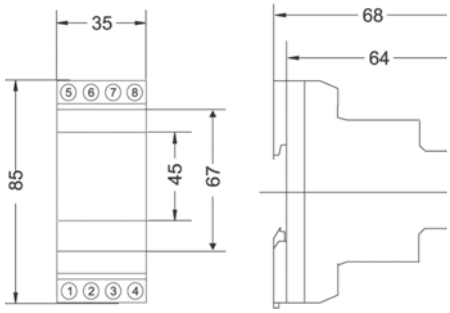
Earth leakage relays and CTs, dimensional drawings



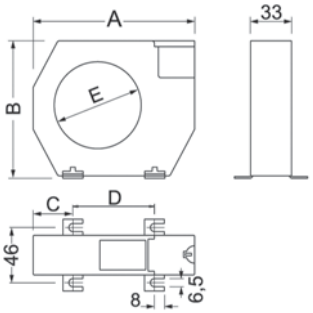
ELRCT20



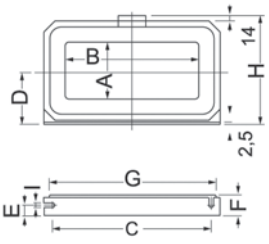
ELRCT30



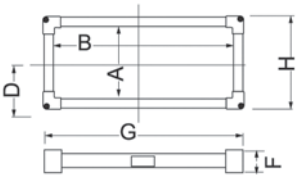
ELRCT30



Type	A	B	C	D	E
ELRCT35	100	79	26	48.5	35
ELRCT70	130	110	32	66	70
ELRCT105	170	146	38	94	105
ELRCT140	220	196	48.5	123	140
ELRCT210	299	284	69	161	210

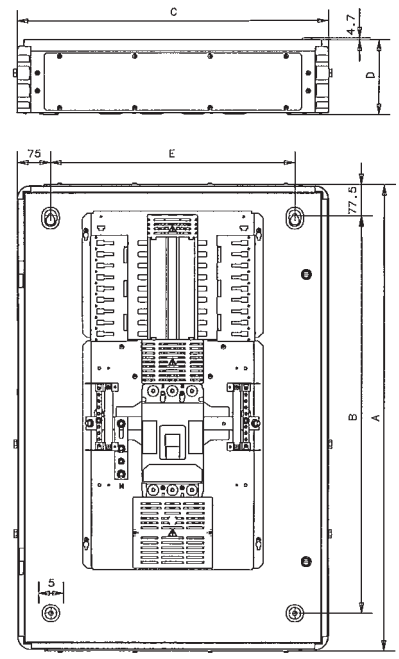


Type	A	B	C	D	E	F	G	H	I
ELRCT70–175	70	175	225	85	22	46	261	176	7.5
ELRCT115–305	115	305	360	116	25	55	402	240	8
ELRCT150–350	150	350	415	140	28	55	460	285	8

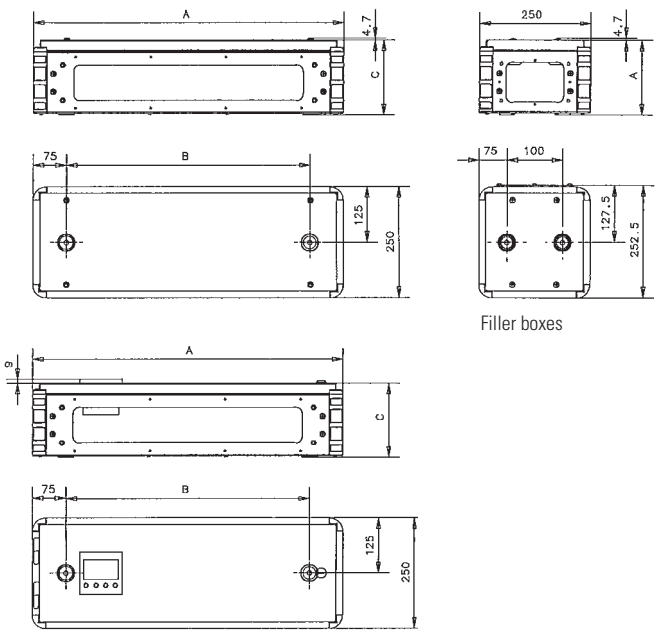


Type	A	B	C	D	E	F	G	H	I
ELRCT200–500	200	500	–	120	–	40	556	239	–

Panelboard dimensional drawings



Panelboards



Filler boxes

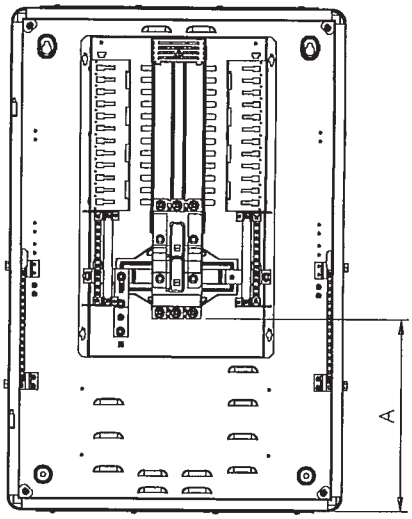
Extension boxes

Panelboard dimensions

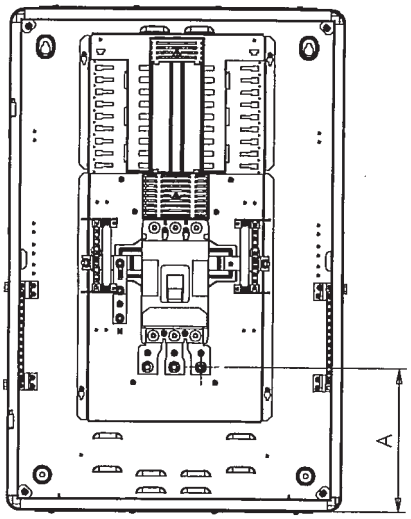
Description	Eaton list number	Dimensions (mm) A	B	C	D	E
Extension boxes	**PBEGEX250**	700	550	169	–	–
	PBEX250	850	700	209	–	–
Filler boxes	**PBEGSX250**	169	–	–	–	–
	PBSX250	209	–	–	–	–
Panelboards	**PBEG325**	455	300	700	169	550
	PBEG625M	905	750	700	169	550
	PBEG825M	1055	900	700	169	550
	PBEG1225M	1155	1000	700	169	550
	PBEG640M	1055	900	700	169	550
	PBEG1240M	1305	1150	700	169	550
	PBJG640M	1405	1250	850	209	700
	PBJG1240M	1605	1450	850	209	700
	PBJG1840M	1805	1650	850	209	700
	PBJG863M	1405	1250	850	209	700
	PBJG1263M	1605	1450	850	209	700
	PBJG1863M	1805	1650	850	209	700
	PBLG880M	1605	1450	850	209	700
	PBLG1280M	1805	1650	850	209	700
Side cable boxes	**PBEGSX900**	905	750	169	–	–
	PBEGSX1050	1055	900	169	–	–
	PBEGSX1150	1155	1000	169	–	–
	PBEGSX1300	1305	1150	169	–	–
	PBJGSX1400	1405	1250	209	–	–
	PBSX1600	1605	1450	209	–	–
	PBSX1800	1805	1650	209	–	–
Meter packs	**PBEGMPA25**	700	550	169	–	–
	PBEGMPD	700	550	169	–	–
	PBEGMPA40	700	550	169	–	–
	PBJGMPA25	850	700	209	–	–
	PBJGMPD	850	700	209	–	–
	PBJGMPA40	850	700	209	–	–
	PBJGMPA66	850	700	209	–	–

Technical data

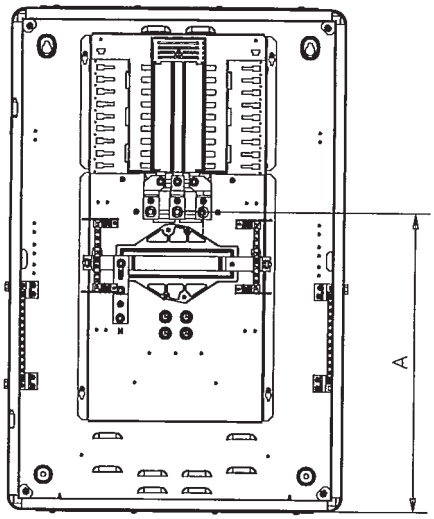
Panelboard dimensional drawings



250A frame size incomer



630A/800A frame size incomer



Lug incomer

Panelboard	Incomer	Eaton list number	Dimensions A (mm)
Type 1	250A frame size	**PBEG325**	–
Type 2	250A Frame size	**PBEG625M**	327
		PBEG825M	401
		PBEG1225M	347
Type 3	400A frame size	**PBEG640M + PBEGLG40**	300
		PBEG1240M + PBEGLG40	318
	Lug	**PBEG640M + PBEGL40**	624
		PBEG1240M + PBEGL40	642
Type 4 & 5	400A frame size	**PBJG640M + PBJGJG25**	689
		PBJG1240M + PBJGJG25	657
		PBJG1840M + PBJGJG25	585
		PBJG640M + PBJGLG40	465
		PBJG1240M + PBJGLG40	433
		PBJG1840M + PBJGLG40	361
	630A frame size	**PBJG863M + PBJGLG63**	347
		PBJG1263M + PBJGLG63	393
		PBJG1863M + PBJGLG63	361
	Lug	**PBJG640M + PBJGL40**	844
		PBJG1240M + PBJGL40	814
		PBJG1840M + PBJGL40	741
		PBJG863M + PBJGL63	727
		PBJG1263M + PBJGL63	773
		PBJG1863M + PBJGL63	741
Type 6	800A frame size	**PBLG880M + PBLGLW80**	484
		PBLG1280M + PBLGLW80	484
	Lugs	**PBLG880M + PBJGL63**	905
		PBLG1280M + PBJGL63	905

MCCBs, max Zs (Ohms) figures

Type	In (A)	Disconnection 0.4s	Disconnection 5s
Series G E-frame In (A)	16	0.488	3.158
	20	0.484	2.553
	25	0.484	2.017
	32	0.484	1.589
	40	0.484	1.250
	50	0.484	1.000
	63	0.380	0.803
	80	0.299	0.625
	100	0.242	0.506
	125	0.192	0.399
	160	0.150	0.310
Series G J-frame thermal/magnetic trip unit (magnetic trip set to min)	80	0.600	0.600
	100	0.480	0.480
	125	0.384	0.384
	160	0.300	0.300
	200	0.240	0.240
	250	0.192	0.192
Series G J-frame thermal/magnetic trip unit (magnetic trip set to max)	80	0.300	0.300
	100	0.240	0.240
	125	0.192	0.192
	160	0.150	0.150
	200	0.120	0.120
	250	0.096	0.096
Series G J-frame electronic trip (set to min)	50	2.400	2.400
	100	1.200	1.200
	160	0.750	0.750
	250	0.480	0.480
Series G J-frame electronic trip (set to max)	50	0.343	0.343
	100	0.171	0.171
	160	0.107	0.107
	250	0.069	0.069
Series G L-frame thermal/magnetic trip unit (magnetic trip set to min)	250	0.192	0.192
	320	0.150	0.150
	400	0.120	0.120
	500	0.096	0.096
	630	0.076	0.076
Series G L-frame thermal/magnetic trip unit (magnetic trip set to max)	250	0.096	0.096
	320	0.075	0.075
	400	0.060	0.060
	500	0.048	0.048
	630	0.038	0.038
Series G L-frame electronic trip (set to min)	250	0.480	0.480
	400	0.300	0.300
	630	0.190	0.190
Series G L-frame electronic trip (set to max)	250	0.120	0.120
	400	0.075	0.075
	630	0.048	0.048
Series G LW-frame electronic trip (set to min)[1]	800	0.150	0.150
Series G LW-frame electronic trip (set to max)[1]	800	0.150	0.150
Series G N-frame electronic trip (set to min)	800	0.150	0.150
	1250	0.096	0.096
	1600	0.075	0.075
Series G N-frame electronic trip (set to max)	800	0.038	0.038
	1250	0.024	0.024
	1600	0.019	0.019
Series G N-frame electronic trip (set to max)	800	0.038	0.038
	1250	0.024	0.024
	1600	0.019	0.019

[1]Panelboard incomer use only

- 3 phase 3 or 4 wire system.
- 3 line back-lit display.
- 96 x 96mm panel mount, 72mm rear panel.
- Modbus comms & pulse output options.
- Rising cage 4mm^2 connectors.
- Identifies reverse CT wiring.
- Measures Volts, Amps, Amps neutral, kW/kVA/kVAr actual MD & Peak, kWh/kVAh/kVArh import & export, PF, Freq, Hours Run.
- Front panel indicator when Pulse Output or Comms operates.

The range of meter is a class 1 multi-function, panel mounting meter to measure electrical parameters on LV supplies to and from TP&N distribution boards. It can also be used to meter single phase loads. It is ideal for applications such as:

- Energy monitoring.
- Costing and billing.
- Power factor analysis.
- Supply capacity.
- Building regs part L2.
- Building performance.
- Environmental standards e.g. IS14001, EMAS, ECA.
- Climate change levy.
- Carbon trading.
- Carbon footprints.

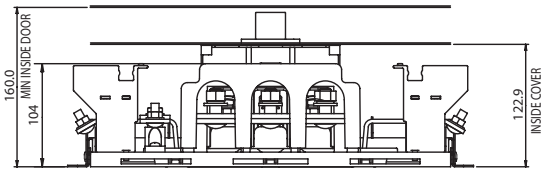
The meter measures 3 phase supplies via standard 5A secondary current transformers. Measurements and displays as follows:

	Measurements available via:			
	Button 1 [I]	**Button 2 [V]**	**Button 3 [P]**	**Button 4 [E]**
Display buttons:	Amps 1,2,3	VL-N 1,2,3	kW 1,2,3,sum	kWh
	Amps Pk hold 1,2,3	VL-L 1,2,3	kVA 1,2,3,sum	kVArh
	Amps T-Avg 1,2,3	Volts Pk hold 1,2,3	kVAr 1,2,3,sum	kVAh
	Amps Pk hold T-Avg 1,2,3	Volts T-Avg 1,2,3	PF 1,2,3,sum	Hours Run
		Volts Pk hold T-Avg 1,2,3	Frequency	kWh export
			kW MD&Pk hold sum	kVArh export
			kVA MD&Pk hold sum	
			kVAr MD&Pk hold sum	
			Amps neutral	

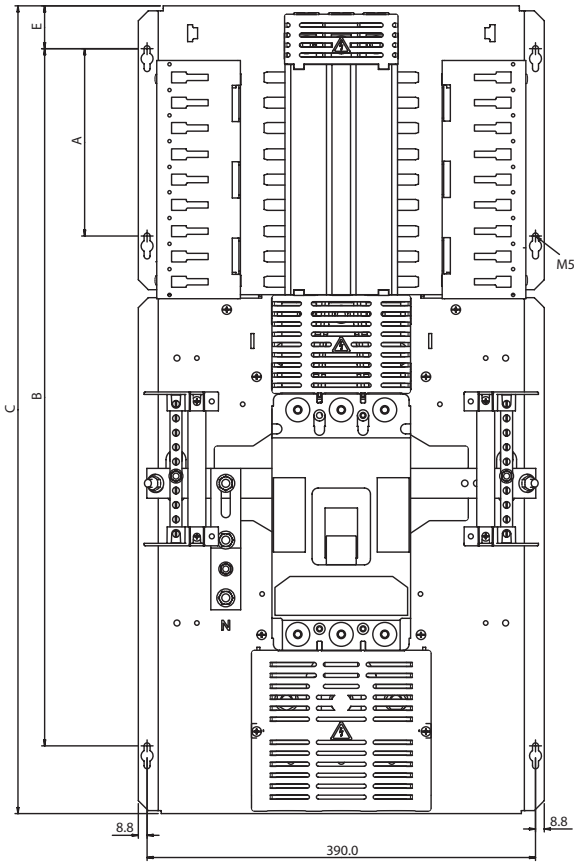
Panelboard multifunction meter, specification

Energy	kWh class 1 EN62053-21 & BS8431, kVArh class 2 EN62053-23 & BS8431, kVAh class 2
Voltage	230Vac phase-neutral, 400Vac phase-phase. Burden ≤0.1VA per phase. Overload x 4 for 1 hour. Measurement 50-120%, ±0.3% accuracy
Current	3 x 5A input, fully isolated to 2.5kV per phase, Burden ≤0.1VA per phase. Overload x 40 for 0.5 second. 10mA to 6A range, ±1% accuracy
Meter Supply	230Vac ±15% 45-65Hz Loading ≤2VA
Display	Custom supertwist liquid crystal display (LCD); 8 digits energy, 4 digits other
Pulse Output	Normally Open volt-free pulse of kWh+kVAh or kVArh. 100Vac/dc, 100mAac/dc max, 2.5kV isolated. ON period 0.1 to 20 seconds.
General	250g, Mablex UL V94-V-O material, IP54 -10 to 65oC operating, <75% RH non-condensing
Options	Modbus RTU protocol 4800-19200 baud, high-speed RS485. 110V measurement. 208V measurement.

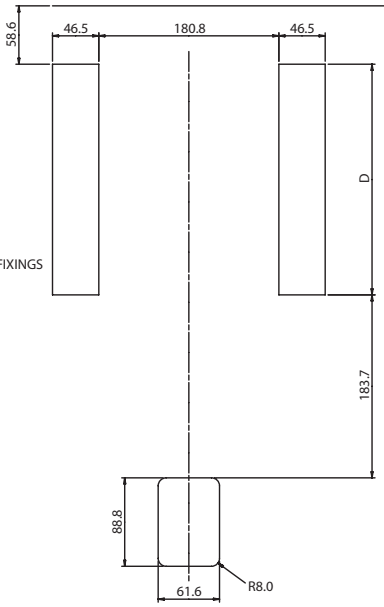
MCCB pan assemblies, dimensions – type 2 & 3



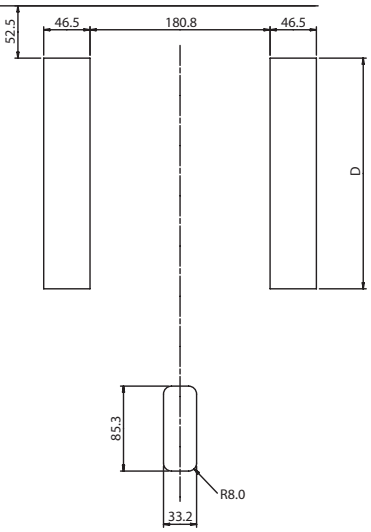
400A 6 WAY PAN SHOWN



COVER APERTURES FOR -
PBEG640M
PBEG1240M

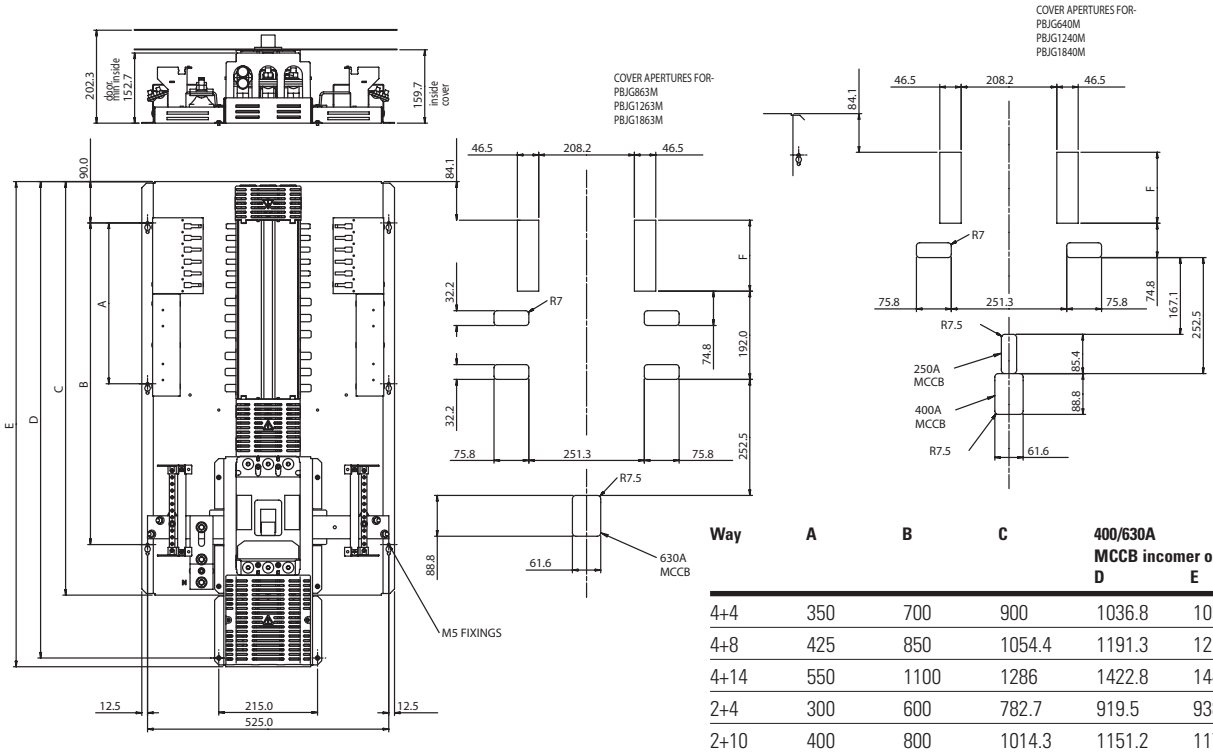


COVER APERTURES FOR -
PBEG625M
PBEG825M
PBEG1225M



Rating (A)	Way	A	B	C	D	E
400	6	290.4	700	811	231.6	43
	12	400	961.6	1042.6	463.2	43
250	6	–	500	594.4	231.6	36.8
	8	–	575	671.6	308.8	36.8
	12	350	725	826	463.2	36.8

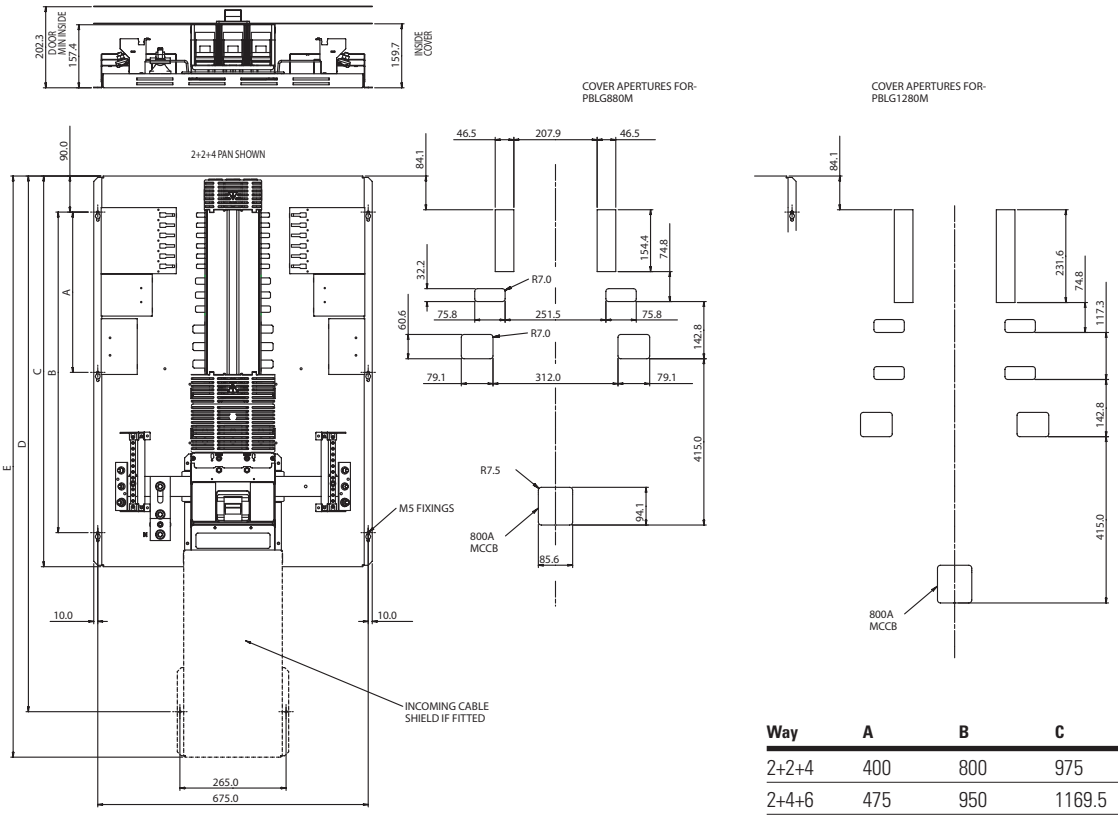
MCCB pan assemblies, dimensions – type 4 & 5



Way	A	B	C	400/630A MCCB incomer only D	E	
4+4	350	700	900	1036.8	1055.8	154.4
4+8	425	850	1054.4	1191.3	1210.3	308.8
4+14	550	1100	1286	1422.8	1441.8	540.4
2+4	300	600	782.7	919.5	938.5	154.4
2+10	400	800	1014.3	1151.2	1170.2	386
2+16	525	1050	1245.9	1382.8	1401.8	617.6

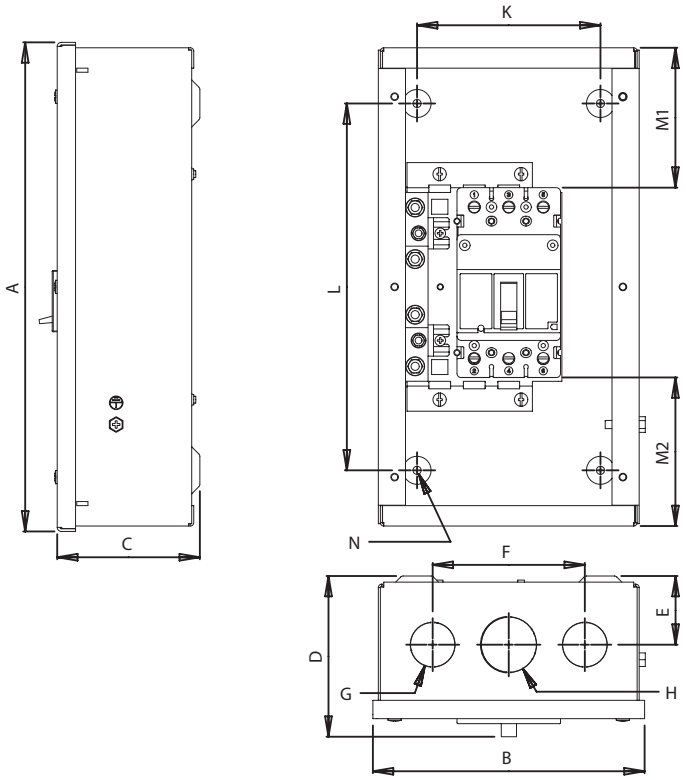
Note: Incoming MCCB apertures shown are for top and bottom entry variants

MCCB pan assemblies, dimensions – type 6



Way	A	B	C	D	E
2+2+4	400	800	975	1336.9	1450.4
2+4+6	475	950	1169.5	1531.4	1644.9

Enclosed Series G MCCB, dimensional information



Type dim	GEE1…FFGE.. GEE4…FFGE	GJS3…AAGE GJS4…AAGE	GJS4…AAGER[1]	GLS3…AAGE GLS4…AAGE
A	360	590	700	1000
B	200	260	260	400
C	105	119	119	150
D	120	146	146	184
E	50.5	56.5	56.5	–
F	112	–	–	–
G	33dia.	–	–	–
H	41dia.	41dia/51dia	41dia/51dia	RGP*
K	135	170	170	310
L	270	500	610	900
N	6dia.	6dia.	6dia.	6dia.
M1	103	205	202	363
M2	109	198	202	372
Neutral stud	M6	M8	–	M12
Earth stud	M6	M8	M8	M10

[1]RCD fitted
*Removable gland plate

Cabling information

MCCB frame	Rating (A) Max	Cable Size
Series G E-frame sizes	63A–125A	70mm^2
Series G J-frame sizes	100A–250A	150mm^2
Series G L-frame size	400A–630A	240mm^2

Indices

Product type index

Indices

Eaton list number index

Indices

Eaton list number index

EATON

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