

MEM® Memera Consumer Units, protective devices and energy measuring and monitoring

Consumer unit solutions to meet the demands of the new 17th edition regulations.



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MEM Memera Consumer Units, protective devices
and energy management and monitoring

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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.

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The result is an unparalleled integration of PowerChain Management® 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

MEM Memera Consumer Units

The Memera range of consumer units provide a broad scope of products to meet the requirements of the 17th edition of the wiring regulations. This well established range offers moulded and metalclad units for both surface and flush mounting applications.

All units have the ability to accommodate a wide range of ancillary and comfort function devices.

The moulded range provides a suite of boards with 1–19 outgoing ways which can be coupled together to make multi rail configurations. With a flexible design that enables speedy on-site configurations this installer friendly unit ensures speed and ease of installation.

All Memera consumer units comply to BSEN 60439 and are IP30 rated.

Moulded Unit Features:

- A solid base which can be fitted to all surfaces without the need for a separate back plate.
- Elongated keyhole fixings and optional flexing points compensate for irregularities in the surface and simplify alignment of the box.
- Quick release pan assembly including all neutral links and terminals.
- Quarter turn quick release cover screws.
- Base and cover provided with ample 'cut outs' which can be easily removed.
- A clip-in earth bar can be removed to give full access to the base.
- Snappable busbar enabling easy configuration on site.

All moulded consumer units are supplied with a combined pictorial installation guide and a high quality circuit identification way label which is easy to use and gives the finishing touch to a professional job.

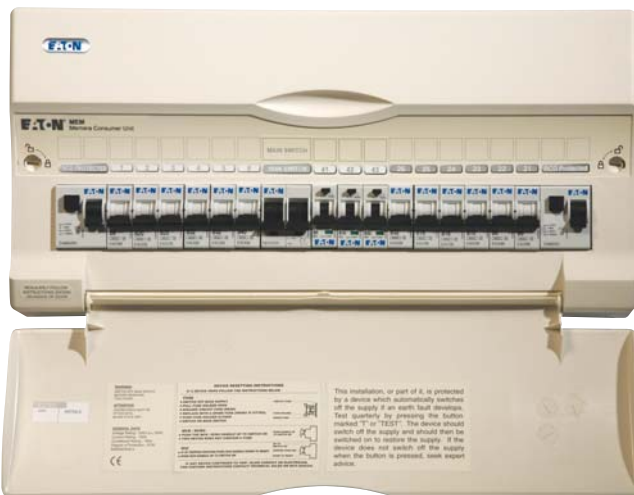
Metal clad unit features:

- Sturdy steel enclosure with ample circular knock outs to allow the mounting of conduit or cable glands.
- Large removable apertures in back of enclosure to allow cable access from the rear.
- Snappable busbar enabling easy configuration on site.
- Twin rail units available with up to 38 outgoing ways.

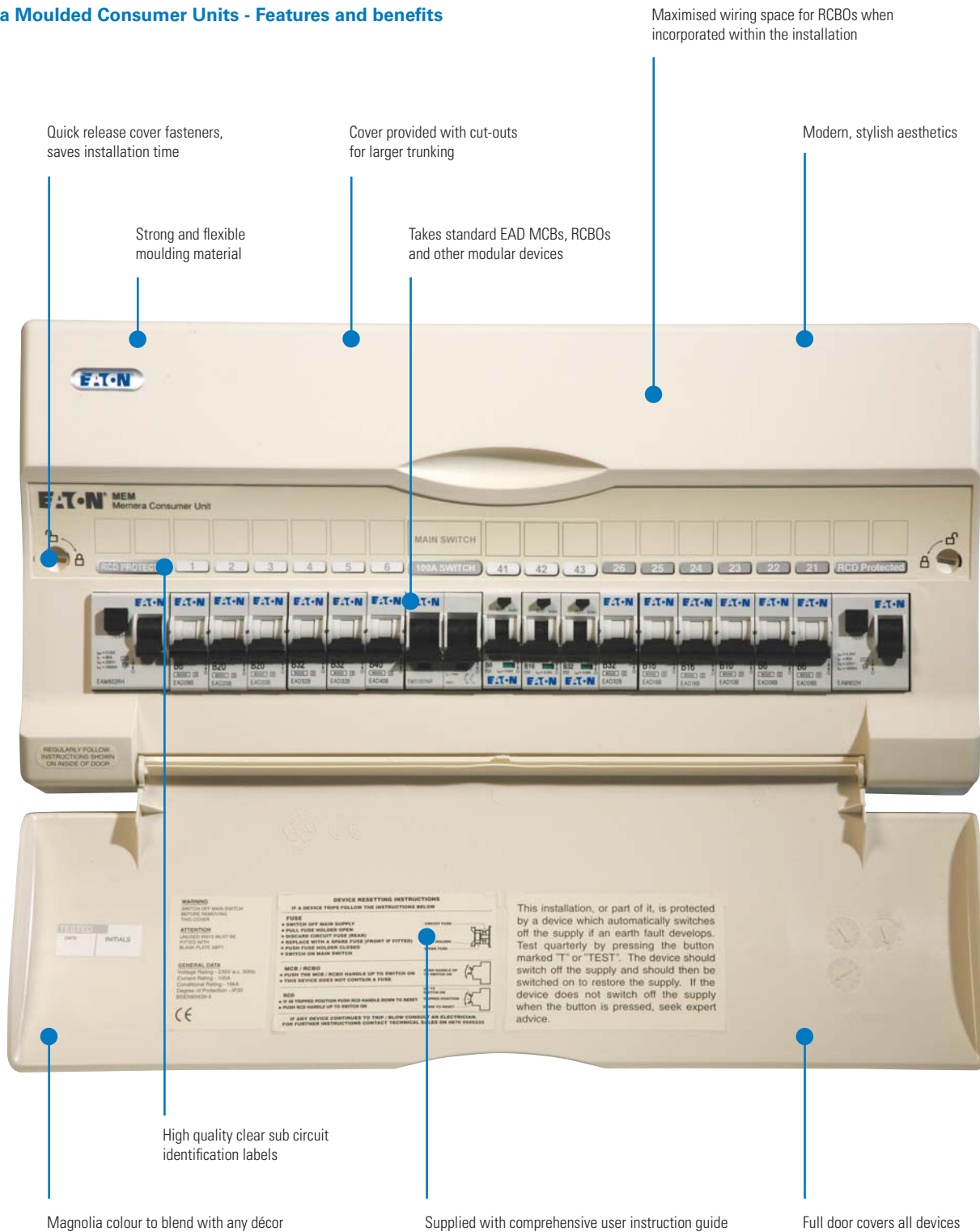
All metal clad consumer units are supplied with a comprehensive label kit to complete the installation.

Factory Built Assemblies (FBA) features:

- Moulded or metal case construction, single rail or dual rail metal.
- Configured with outgoing protective devices to customer requirements.
- Can be fitted with command and control devices including timers, contactors and relays.
- Can also be fitted with additional components including kWh meters, sensors, other devices and internal wiring as required.



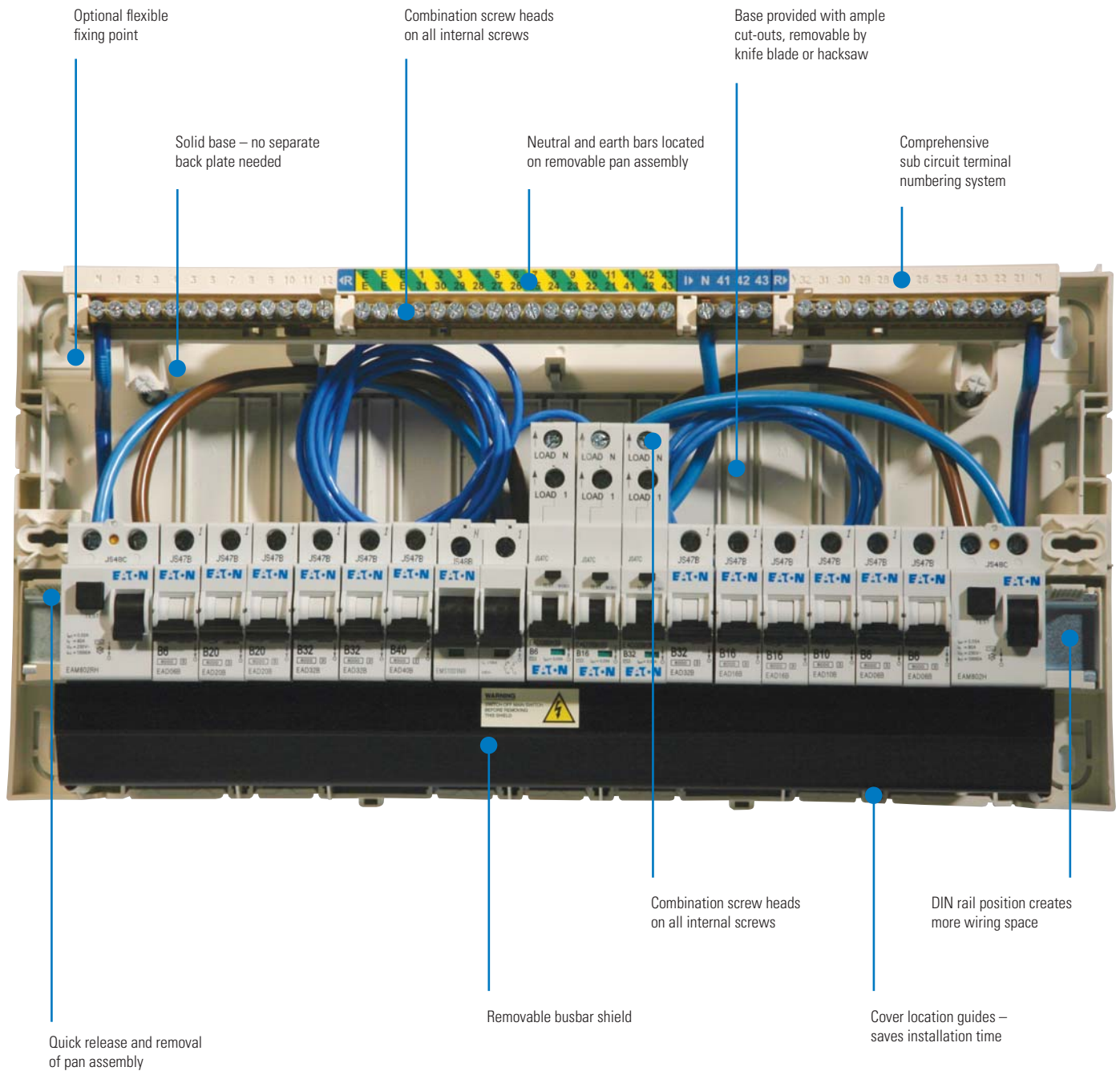
Memera Moulded Consumer Units - Features and benefits



- All Memera consumer units are factory assembled to include all the main controlling devices. All that's required is the fitting of the MCBs etc, and the busbar which is provided in every unit securely held in it's transit carrier.
- The compact Memera range is ideal for domestic and light commercial applications.

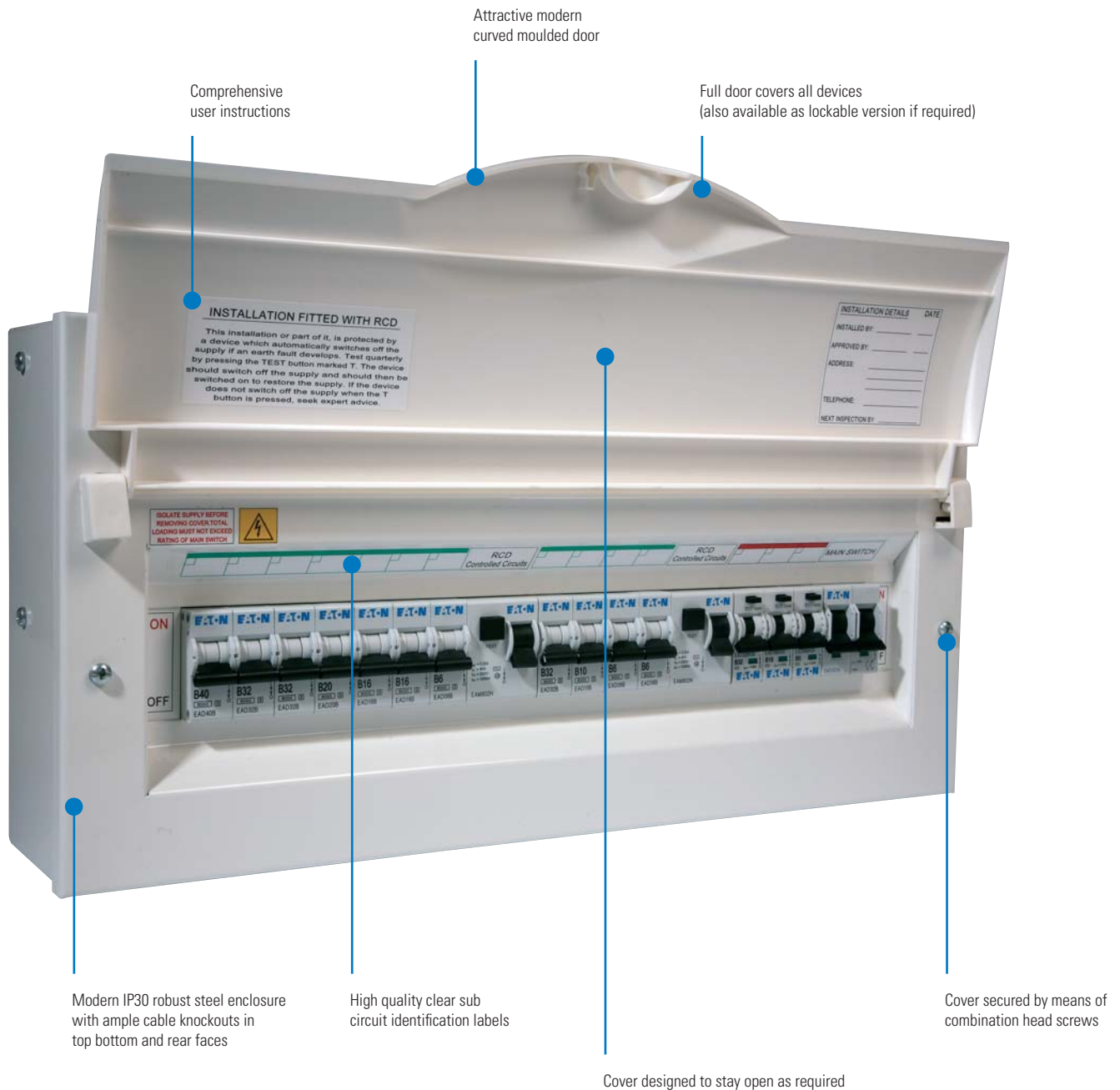
- The range of units provides various solutions to the 17th edition wiring regulations, with grouped RCD outgoing sections as well as accommodating multiple RCBO devices.
- Dual tariff units with multiple incoming devices are also available.
- Manufactured to BSEN 60439-3.
- Degree of protection IP30.

Memera Moulded Consumer Units – Features and benefits (continued)



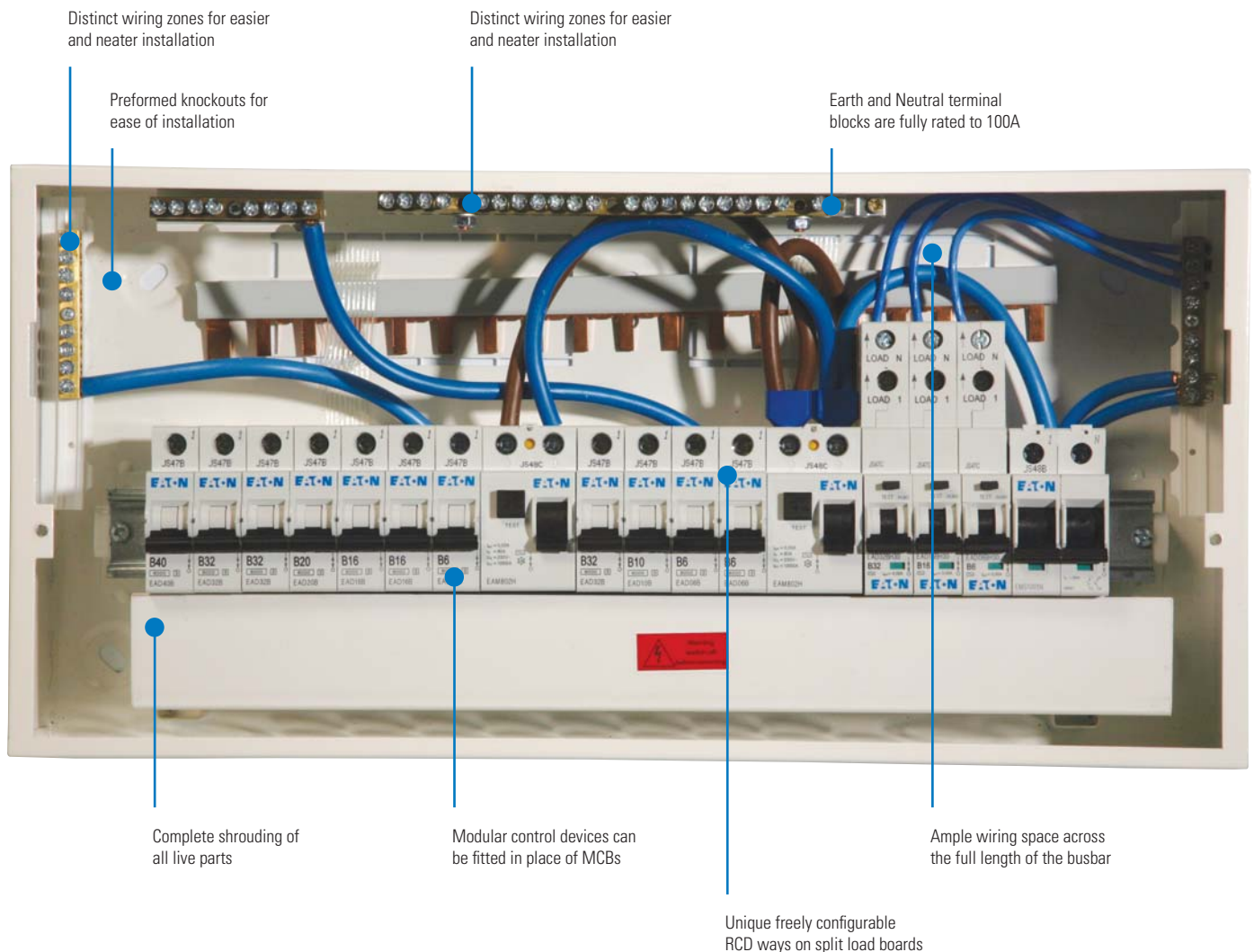
- All Memera consumer units use MCBs and RCBOs for final sub-circuit protection and feature the variable split load design which allows on-site configuration of the number of ways allocated to each main section.
- The units are supplied with a combined pictorial installation guide and a high quality circuit identification way label which is easy to use and gives the finishing touch to a professional job.
- Dual RCD isolator controlled units offer grouped 30mA protection on all circuits with the ability to also connect RCBOs directly off the main switch.
- Comprehensive sub circuit terminal numbering system. This easy, but clever way to distinguish individual circuit wiring terminations is as simple as 1,2,3. Typically, all isolator circuits utilise numbers from 1–16 whilst RCCB controlled circuits use 21–36. Therefore, no need for last minute re-numbering of circuits. All numbers work away from the main or secondary controlling devices in conjunction with the MCB etc. All variations of split load units are catered for ensuring each circuit has its own unique circuit number.

Memera Metalclad Consumer Units – Features and benefits



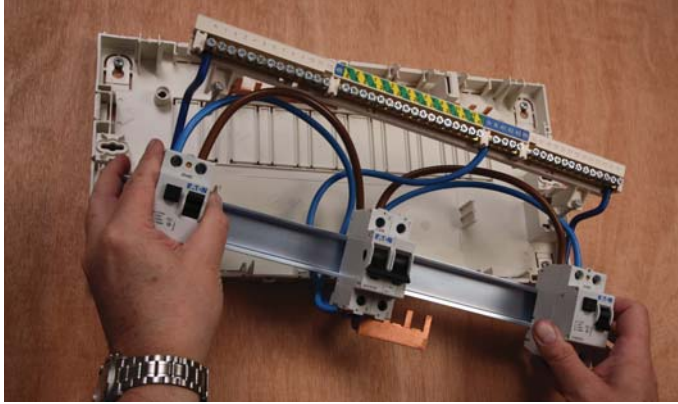
- Modern stylish appearance fully assembled with ample knock-outs in steel enclosure to suit all applications. The units are delivered factory assembled and fully equipped with all main controlling devices and interconnections. All that is required is to remove and install the busbar which is secured in the rear of the unit and fit the outgoing devices.
- The new Memera metalclad consumer units are ideal for both domestic and light commercial applications where a more robust metal enclosure is needed.
- The units are available with single or multiple incoming device options as well as the various dual RCD combinations widely used to enable compliance with the 17th Edition wiring regulations.
- Manufactured to BSEN 60439-3.
- Degree of protection IP 30.

Memera Metalclad Consumer Units – Features and benefits (continued)



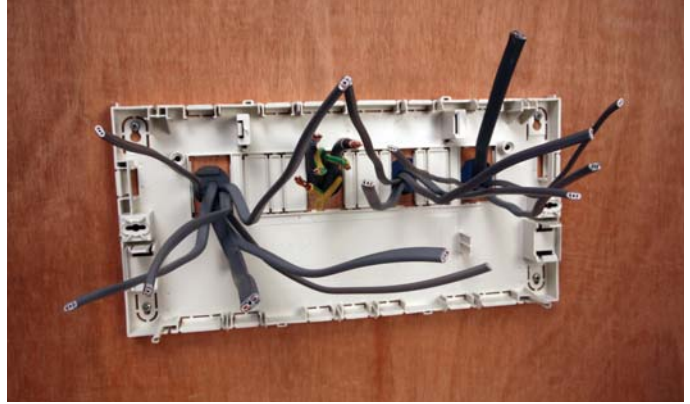
- The new Memera metalclad consumer units use MCBs and RCBOs for final sub circuit protection, and can also accommodate a wide range of command and control devices such as timers, contactors and relays.
- The split load and multiple RCD units all feature a variable split design with busbars that can be simply split on site to enable the exact configuration to be achieved.
- Dual RCD units incorporating an isolator main switch and providing grouped 30mA RCD protection in two zones, can also be configured with some high integrity ways fed directly off the isolator. Ideal for protecting selected circuits with independent RCBOs.
- Full instructions and a comprehensive labelling kit enable the installation to be completed professionally with all the appropriate internal warning and circuit identification labels.

Memera Moulded Consumer Units – quick and easy installation



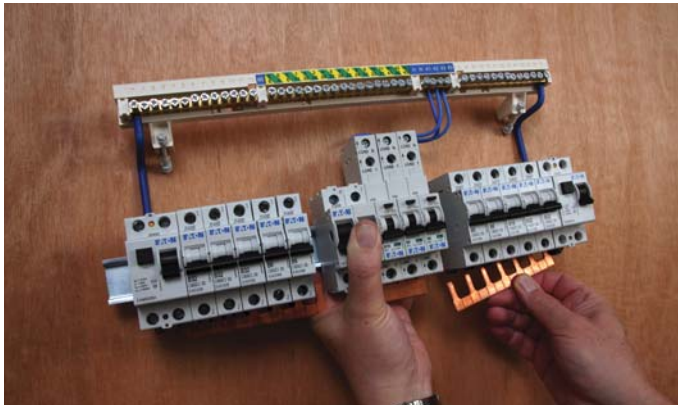
Step 1 – Prepare for base installation

On removal of the main cover using the quick release cover fasteners, the complete pan assembly can be withdrawn from the base by means of the unique clip feature. The busbar is then removed from its retaining clip.



Step 2 – Cut-out and cable preparation

Using any of the easily removable cut out sections, the cables may be prepared. The empty base is then fitted to the wall without obstruction to the cable bunch..



Step 3 – Pan assembly preparation

MCBs and RCBOs are fitted to the pan assembly in the appropriate positions. The busbar is then snapped to the required length (split load units only) and fixed to the device terminals. On completion the pan assembly is clipped into position.



Step 4 – Internal wiring

On re-fitting of the pan assembly, the pre-prepared cables can be wired to the devices. Circuit testing can then be carried out at the appropriate time.



Step 5 – Completion of internal wiring and labelling

Once all wiring is completed, the push-fit busbar cover is slotted into position and the internal labels can be applied.



Step 6 – External identification labels and fitting of main cover

The external circuit identification labels are now applied. The cover is then replaced easily and quickly using the quarter turn fasteners.

17th Edition Regulations and Consumer Units

The advent of the New 17th Edition of the Wiring regulations brings with it new challenges for installers and manufacturers alike, one such challenge involves the much greater use of RCDs within the electrical installation. The new regulations BS7671:2008 published in January 2008 came into force at the end of June 2008, when the previous version was withdrawn.

Regulation 411.3.3.

States that additional protection by means of a 30mA RCD is to be provided for all socket outlets with a rated current not exceeding 20A for use by ordinary persons. The only exceptions allowed are for socket outlets for use under the supervision of "skilled" or "instructed persons" e.g. some commercial / industrial locations, or a specific labelled socket provided for connection of a particular item of equipment, e.g. a freezer circuit.

Regulation 701.411.3.3

In specific locations such as those containing a bath or shower there is a requirement now to provide RCD protection on all circuits, including the lighting and shower circuits.

Regulation 314.1 & 2

Requires that every installation shall be divided into circuits as necessary to avoid danger and minimise inconvenience, in the event of a fault. Also reducing the possibility of unwanted RCD tripping, due to excessive protective conductor currents but not due to an Earth fault. Separate circuits may be required for parts of the installation, which need to be separately controlled in such a way that they are not affected by the failure of other circuits. The appropriate subdivision should take account of any danger arising from the failure of a single circuit eg. an RCD trip on a socket outlet causing the unwanted failure of a lighting circuit and its associated hazards.

Regulation 52 2.6.7

Now requires a much greater use of RCDs to protect the wiring concealed in walls or partitions even where installed in previously defined "Safe Zones". These regulations effectively mean that all concealed wiring at a depth of less than 50mm from the surface now requires protection by a 30mA RCD unless provided with earthed mechanical protection.

Application of RCDs

The 17th Edition of the IEE wiring regulations (BS7671), detail a number of regulations relating to protection against electric shock, including the need for additional protection.

The use of RCDs (Residual Current Devices) with a residual operating current not exceeding 30mA is the recognised means of providing this additional protection in the event of failure of the provision for basic protection and or the provision for fault protection or carelessness by users.

Such RCDs should not be used to provide the sole means of protection and do not obviate the need to apply one or more of the recognised protective measure as detailed in the regulations.

Under the new regulations an installation is required to incorporate one or more RCDs, depending upon the circumstances. Such instances include:-

- All socket outlets not exceeding 20A, but with certain exceptions. One such exception would be permitted for a specific labelled or otherwise suitably identified socket outlet for connection of a particular piece of equipment.
- Mobile equipment with a current rating not exceeding 32A for use outdoors
- Electrical circuits installed under "Special installations and locations" as defined in Part 7 of the regulations e.g. Swimming Pools / Saunas.
- All electrical circuits, including shower and lighting circuits etc. in rooms with a fixed bath or shower e.g. bedrooms and en-suite bathrooms.

In addition to the protection requirements of the outgoing circuits / loads, the requirements of the installed cabling also must be taken into account.

Where a cable is concealed in a wall or partition at a depth of less than 50mm from the surface, even if installed in the "safe zone", if not provided with earthed mechanical protection e.g. Metal trunking or conduit, it must be provided with additional protection by means of a 30mA RCD.

Whilst it may be desirable to have one or two circuits fed via an unprotected circuit e.g. an identified / dedicated freezer circuit, the installation of the wiring may still dictate that the circuit must be RCD protected. The protection of a circuit by means of a 30mA RCD is also required where cables are concealed in walls constructed with metal stud partitions which are common in modern buildings, irrespective of the depth from the surface, unless provided with protection in the form of earthed metallic covering, trunking, conduit or other mechanical protection so as to avoid damage to the cable during installation or construction of the wall.

IEE Regulations and British Standards are subject to amendments. This Eaton guide to consumer unit solutions is not a substitute for the regulations which should always be used for all types of electrical installations and design work.

In Summary

Regulations	Relating to	Example	Additional Protection
411.3.3	All socket outlets up to 20A rating for general use by ordinary persons	<ul style="list-style-type: none"> – Upstairs sockets – Downstairs sockets – Kitchen sockets – Cooker outlet with integral 13A socket outlet – Plus any other sockets rated up to 20A including garage sockets 	30mA RCD
701.411.3.3	All electrical circuits in a room with a fixed bath or shower	<ul style="list-style-type: none"> – Shower circuit – Lighting circuit – Heating circuit – Ventilation circuit – Shaver socket – Socket outlets 	30mA RCD
522.6.6 522.6.7 522.6.8	All electrical circuits buried in a wall or partition at less than 50mm and without mechanical protection	All concealed wiring <ul style="list-style-type: none"> – Socket outlets – Lighting circuits – Smoke alarm – Burglar alarm 	30mA RCD

Installation design

The 17th edition wiring regulations BS7671 must be applied to all new installations designed after 30th June 2008, and there are various options that must be considered in order to satisfy these requirements. Starting with the wiring scheme and the building design, consideration must be given to the purpose of the building, and to the persons who will be using the installation, as different regulations will be applicable, e.g. is the installation under the control of skilled or instructed persons, or ordinary persons, or perhaps the installed location contains a bath or shower. Answers to these points will start to focus in on the regulations that need to be followed.

Consideration must be given to the way cables will be fitted within the installation, either on the surface in trunking or conduit, or else concealed beneath the surface of the wall either buried within the plaster or inside the cavity of a hollow partition wall. The chosen installation methods and wiring accessories or loads being fed, will also dictate whether additional protection by means of 30mA RCDs is required on those circuits or not.

The wiring regulations are open to interpretation in some areas, where reference is made to “minimise inconvenience in the event of a fault”, acceptable levels of inconvenience can be somewhat subjective.

In most circumstances the regulations now dictate that a consumer unit will be required to have two or more 30mA RCDs, enabling the load circuits to be spread over a number of RCD protected zones or outgoing ways.

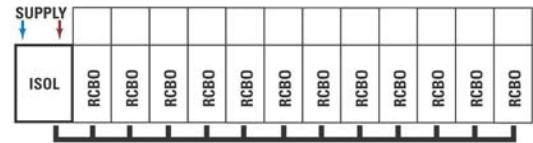
However, the most comprehensive and effective solution, and one that is guaranteed to fully meet the requirements of the regulations is to equip each and every circuit with it's own individual 30mA RCBO.

The examples shown on the next page illustrate just some of the many options available, to a contractor, to achieve a 17th Edition compliant installation. Some options provide a much higher level of circuit integrity than others. The final choice of which may well be made based on this and the cost / ease of the installation.

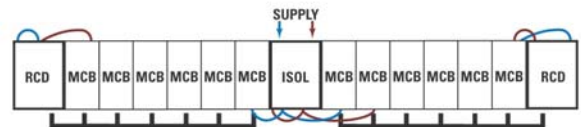
Consumer Unit solutions

There are many ways of providing RCD circuit protection to meet the demands of the new regulations.

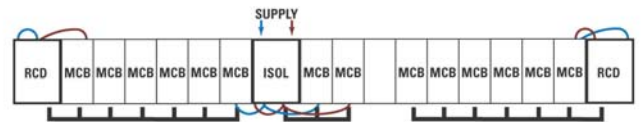
The most comprehensive solution would be to provide individual RCBO protection on each and every out going circuit from a consumer unit. Hence the use of a consumer unit such as a 12 way isolator controlled board. eg. **EAD12** fitted with up to **12 x RCBOs** or the **EAD11R** 11 way unit with additional cabling space to accommodate the RCBOs.



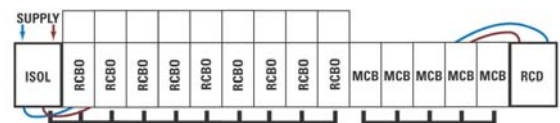
The next level down would be to provide an isolator controlled dual RCD consumer unit feeding two RCD board sections. eg. **EAD12H80H80D** or **EAD12H80H63D** fitted with up to **12 x MCBs**



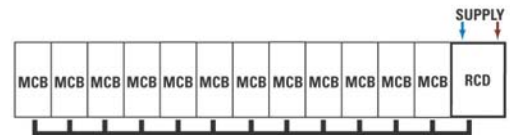
Such a dual RCD board could also be provided with some unprotected ways controlled by the main switch to enable a supply to any individual circuits that don't require RCD protection or else require individual RCBO circuit protection. eg. **EAD12H80H803D** or **EAD12H80H633D** fitted with up to **15 x MCBs**



A conventional split load board such as an **EAD14H80D** could have additional RCBOs fitted to the non protected side allowing a mixture of Group RCD protected circuits and Individual RCBO protected circuits.



Consumer units are already available with RCD incomers of 30mA sensitivity such as **EAD12H80**, **EAD12H100**. However, single RCD controlled units on their own are unlikely to satisfy regulation 314.1 and 2.



Switch and Protection Devices

**Miniature Circuit Breakers (MCBs)**

The Eaton range of 6kA high performance Miniature Circuit Breakers (MCBs) has been designed to meet the latest UK, European and International standards, with ratings from 2A up to 63A as standard.

The Eaton 6kA miniature circuit breakers are designed and tested in accordance with IEC/EN 60898 and are available in both B and C characteristic curve as standard

Technical Characteristics

- Modular design, DIN rail mountable, one module wide.
- Single pole MCB for commercial and residential applications.
- Rated Breaking Capacity 6kA to IEC/EN 60898
- 2 - 63A in both Type B and C characteristics
- Positive contact indication
- Box clamp barrier to prevent incorrect cable insertion
- Calibrated at 40°C
- Can be used with both pin and comb type busbars
- Suitable for use in Eaton consumer units and a wide range of other applications

**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 double pole RCDs are available with 10mA, 30mA, 100mA and 300mA sensitivities, and can be equipped with a range of modular accessories.

Technical Characteristics

- Modular design, DIN rail mountable, two modules wide.
- Double pole RCD for commercial and residential applications
- Rated short circuit capacity 10kA with fuse back up
- Manufactured and tested to IEC/EN 61008
- Trip sensitivities 10, 30, 100 and 300mA
- Positive contact indication
- Test button

**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 6kA RCBOs are available from 6A to 45A in both B and C curve with 30mA trip sensitivity and fully comply to IEC/EN 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 30mA (others available)
- Rated breaking capacity 6kA
- Test button

**Main Load Disconnect Switch (Isolator)**

The Eaton range of modular Isolators are available in Single Pole, Double Pole and Single Pole with Switched Neutral arrangements.

Technical Characteristics

- Compact modular design, DIN rail mountable, one or two modules wide.
- Positive Contact indication
- Rated at up to 12.5kA these switches are fully tested to IEC 60947-3 for AC23 duty at 240VAC
- Terminal capacity 2.5–50 mm²

**Single Pole & Neutral Switchfuses**

Eaton's wall mounted switch fuses are available in two styles, a 100A metalclad unit and an 80A moulded version. Both versions are rated at 230/240V AC and are designed and proven to EN 60947-3 for utilisation class AC22.

1000KMF is a metalclad wall mounted unit rated at 240V AC and is fitted with a 100A double pole isolating switch in combination with a BS88 -2 fully shrouded, moulded, fuse holder and HRC fuse link.

800KMF is a fully moulded, compact wall mounted, SP&N unit rated at up to 80A, complying with EN 60947-3 for duty AC22B, 240v AC. The unit is fitted with a fully insulated pull out fuse carrier, which will accommodate HRC fuse links complying with BS1361 and rated between 45 -80A.



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 protection on the operating coil.
- Equipped with contact indication.
- Optimal quality of contacts and low heat dissipation ensure a long life time.

Transformers



The Eaton bell transformer is a simple two module unit providing a dual voltage output (12V, 0.6A and 8V, 1.0A) and can be used with most commercially available door bells.

Wireless Electricity Monitor



Take control of your energy use by using the efergy wireless electricity monitor. It displays instant power, costs, historical and average data and estimated CO2 emissions. Discover and reduce the size of your carbon footprint by monitoring the cost of using your home appliances and lighting. It's also fun and educational for all the family.



Stylish and easy to fit, the Memera range of moulded and metal clad Consumer Units has been designed in accordance with BSEN 60439-3. A full and extensive range of outgoing devices are available to meet all possible application needs from MCBs, RCBOs, RCDs to DIN rail mountable control and switching devices.

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See pages 23–26 for Switch and protection devices selection.
See pages 27–30 for Control and switching devices selection.
See pages 34–40 for Consumer Unit technical data and overall dimensions

EAD2/3



Isolator controlled surface mounting consumer units

Description	Total no. of outgoing ways	Isolator rating (A)	Eaton list number
1 way moulded consumer unit 63A isolator	1	63	EAD1
2–3 way moulded consumer unit 100A isolator	2–3	100	EAD2/3
4 way moulded consumer unit 100A isolator	4	100	EAD4
6 way moulded consumer unit 100A isolator	6	100	EAD6
8 way moulded consumer unit 100A isolator	8	100	EAD8
12 way moulded consumer unit 100A isolator	12	100	EAD12
16 way moulded consumer unit 100A isolator	16	100	EAD16
19 way moulded consumer unit 100A isolator	19	100	EAD19

EAD6H63



RCCB controlled surface mounting consumer units - 30mA sensitivity

Description	Total no. of outgoing ways	RCD rating (A)	RCD sensitivity (mA)	Eaton list number
1 way moulded consumer unit 63A 30mA RCD	1	63	30	EAD1H63
2–3 way moulded consumer unit 63A 30mA RCD	2–3	63	30	EAD2/3H63
2–3 way moulded consumer unit 80A 30mA RCD	2–3	80	30	EAD2/3H80
4 way moulded consumer unit 63A 30mA RCD	4	63	30	EAD4H63
4 way moulded consumer unit 80A 30mA RCD	4	80	30	EAD4H80
6 way moulded consumer unit 63A 30mA RCD	6	63	30	EAD6H63
6 way moulded consumer unit 80A 30mA RCD	6	80	30	EAD6H80
8 way moulded consumer unit 63A 30mA RCD	8	63	30	EAD8H63
8 way moulded consumer unit 80A 30mA RCD	8	80	30	EAD8H80
12 way moulded consumer unit 80A 30mA RCD	12	80	30	EAD12H80
12 way moulded consumer unit 100A 30mA RCD	12	100	30	EAD12H100
16 way moulded consumer unit 80A 30mA RCD	16	80	30	EAD16H80
16 way moulded consumer unit 100A 30mA RCD	16	100	30	EAD16H100
19 way moulded consumer unit 80A 30mA RCD	19	80	30	EAD19H80
19 way moulded consumer unit 100A 30mA RCD	19	100	30	EAD19H100

EAD8M80



RCCB controlled surface mounting consumer units - 100mA sensitivity

Description	Total no. of outgoing ways	RCD rating (A)	RCD sensitivity (mA)	Eaton list number
2–3 way moulded consumer unit 63A 100mA RCD	2–3	63	100	EAD2/3M63
2–3 way moulded consumer unit 80A 100mA RCD	2–3	80	100	EAD2/3M80
4 way moulded consumer unit 63A 100mA RCD	4	63	100	EAD4M63
4 way moulded consumer unit 80A 100mA RCD	4	80	100	EAD4M80
6 way moulded consumer unit 63A 100mA RCD	6	63	100	EAD6M63
6 way moulded consumer unit 80A 100mA RCD	6	80	100	EAD6M80
8 way moulded consumer unit 63A 100mA RCD	8	63	100	EAD8M63
8 way moulded consumer unit 80A 100mA RCD	8	80	100	EAD8M80
12 way moulded consumer unit 80A 100mA RCD	12	80	100	EAD12M80
12 way moulded consumer unit 100A 100mA RCD	12	100	100	EAD12M100
16 way moulded consumer unit 80A 100mA RCD	16	80	100	EAD16M80
16 way moulded consumer unit 100A 100mA RCD	16	100	100	EAD16M100
19 way moulded consumer unit 80A 100mA RCD	19	80	100	EAD19M80
19 way moulded consumer unit 100A 100mA RCD	19	100	100	EAD19M100

EAD14H80D



Split load surface mounting consumer units – variable configuration

Description	Total no. of outgoing ways	RCD ways available	RCD rating (A)	RCD sensitivity (mA)	Eaton list number
10 way variable split load moulded consumer unit 1–9 ways	10	1–9	80	30	EAD10H80D
14 way variable split load moulded consumer unit 1–10 ways	14	1–10	80	30	EAD14H80D
17 way variable split load moulded consumer unit 1–10 ways	17	1–10	80	30	EAD17H80D

EAD12H80H80D



Dual RCD isolator controlled 17th edition surface mounting consumer units

Description	Total no. of outgoing ways	RCD ways available	RCD rating (A)	RCD rating (A)	RCD sensitivity (mA)	Eaton list number
8 way variable split dual RCD moulded consumer unit	8	8 variable	80	80	30	EAD8H80H80D
8 way variable split dual RCD moulded consumer unit	8	8 variable	80	63	30	EAD8H80H63D
12 way variable split dual RCD moulded consumer unit	12	12 variable	80	80	30	EAD12H80H80D
12 way variable split dual RCD moulded consumer unit	12	12 variable	80	63	30	EAD12H80H63D
15 way variable split dual RCD moulded consumer unit	15	15 variable	80	80	30	EAD15H80H80D
15 way variable split dual RCD moulded consumer unit	15	15 variable	80	63	30	EAD15H80H63D

EADH80H803D



High integrity 17th edition compliant consumer units

Description	Total no. of outgoing ways	RCD ways available	RCD rating (A)	RCD rating (A)	RCD sensitivity (mA)	Eaton list number
6+2 way variable split dual RCD moulded consumer unit	8	6 variable	80	80	30	EAD6H80H802D
6+2 way variable split dual RCD moulded consumer unit	8	6 variable	80	63	30	EAD6H80H632D
12+3 way variable split dual RCD moulded consumer unit	15	12 variable	80	80	30	EAD12H80H803D
12+3 way variable split dual RCD moulded consumer unit	15	12 variable	80	63	30	EAD12H80H633D

EAD11R



High integrity RCBO consumer unit

Description	Total no. of outgoing ways	Isolator Rating (A)	Pole	Eaton list number
11 way moulded RCBO consumer unit 100A isolator	11	100	DP	EAD11R

EAD10DD



Dual Tariff surface mounting consumer units

Description	Total no. of outgoing ways	Isolator Rating (A)	Pole	Eaton list number
10 way dual tariff moulded consumer unit 2 x 100A	10	100	DP	EAD10DD
14 way dual tariff moulded consumer unit 2 x 100A	14	100	DP	EAD14DD

ABP1



Accessories

Description	Eaton list number
Coupling kit for joining 2 x 6 module enclosures together	ADC6
Coupling kit for joining 2 x 8 module enclosures together	ADC8
Coupling kit for joining 2 x 10 module enclosures together	ADC10
Coupling kit for joining 2 x 14 module enclosures together	ADC14
Coupling kit for joining 2 x 18/21 module enclosures together	ADC18
Flexible interconnection links for coupling 2 standard consumer units	ADCSL
1 way blanking plate	ABP1
6 module blanking strip	EABP6

See pages 23–26 for Switch and protection devices selection.
See pages 27–30 for Control and switching devices selection.
See pages 34–40 for Consumer Unit technical data and overall dimensions.

- For Flush Mounted Units – Add **F** to the end of the reference number e.g. **EAS12F**
- For Lockable Units – Add **L** to the end of the reference number e.g. **EAS38L**
- For Flush Mounted Lockable Units – Add **FL** to the end of the reference number e.g. **EAS18FL**

EAS2



Isolator controlled surface mounting consumer units

Description	Total no. of outgoing ways	Isolator (A)	Pole	Eaton list number
2 way metal consumer unit 63A isolator	2	63	DP	EAS2
6 way metal consumer unit 100A isolator	6	100	DP	EAS6
10 way metal consumer unit 100A isolator	10	100	DP	EAS10
12 way metal consumer unit 100A isolator	12	100	DP	EAS12
18 way metal consumer unit	18	100	DP	EAS18
26 way metal consumer unit 100A isolator 2 rail	26	100	DP	EAS26
38 way metal consumer unit 100A isolator 2 rail	38	100	DP	EAS38

EAS6H63



RCD controlled metalclad surface mounting consumer units

Description	Total no. of outgoing ways	RCD rating (A)	RCD sensitivity (mA)	Pole	Eaton list number
2 way metal consumer unit 40A 30mA RCD	2	40	30	DP	EAS2H40
2 way metal consumer unit 63A 30mA RCD	2	63	30	DP	EAS2H63
6 way metal consumer unit 63A 30mA RCD	6	63	30	DP	EAS6H63
6 way metal consumer unit 80A 30mA RCD	6	80	30	DP	EAS6H80
6 way metal consumer unit 100A 30mA RCD	6	100	30	DP	EAS6H100
10 way metal consumer unit 100A 30mA RCD	10	100	30	DP	EAS10H100
12 way metal consumer unit 100A 30mA RCD	12	100	30	DP	EAS12H100
18 way metal consumer unit 100A 30mA RCD	18	100	30	DP	EAS18H100

EAS1080D



Split load metalclad surface mounting consumer units

Description	Total no. of outgoing ways	RCD ways available	RCD (A)	RCD sensitivity (mA)	Isolator rating (A)	Pole	Eaton list number
8 way split load metal consumer unit 63A 30mA RCD	8	1–7	63	30	100	DP	EAS8H63D
8 way split load metal consumer unit 80A 30mA RCD	8	1–7	80	30	100	DP	EAS8H80D
10 way split load metal consumer unit 63A 30mA RCD	10	1–9	63	30	100	DP	EAS10H63D
10 way split load metal consumer unit 80A 30mA RCD	10	1–9	80	30	100	DP	EAS10H80D
16 way split load metal consumer unit 80A 30mA RCD	16	1–15	80	30	100	DP	EAS16H80D

EAS24H80D



Split load dual rail metalclad surface mounting consumer unit

Description	Total no. of outgoing ways	RCD ways available	RCD (A)	RCD sensitivity (mA)	Isolator rating (A)	Pole	Eaton list number
24 way split load metal consumer unit 100A isolator controlled 80A 30mA RCD	24	16	80	30	100	DP	EAS24H80D
36 way split load metal consumer unit 100A isolator controlled 80A 30mA RCD	36	24	80	30	100	DP	EAS36H80D

EAS14H80H80D



Split load dual RCD metalclad surface mounting consumer units

Description	Total no. of outgoing ways	RCD ways available	RCD (A)	RCD (A)	RCD sensitivity (mA)	Isolator rating (A)	Pole	Eaton list number
14 way split load dual RCD metal consumer unit	14	up to 14	63	63	30	100	DP	EAS14H63H63D
14 way split load dual RCD metal consumer unit	14	up to 14	80	63	30	100	DP	EAS14H80H63D
14 way split load dual RCD metal consumer unit	14	up to 14	80	80	30	100	DP	EAS14H80H80D

EAS22H80H80D



Split load dual rail dual RCD metalclad surface mounting consumer unit

Description	Total no. of outgoing ways	RCD ways available	RCD (A)	RCD (A)	RCD (A)	Isolator rating (A)	Pole	Eaton list number
22 way split load dual RCD metal consumer unit	22	22	80	80	30	100	DP	EAS22H80H80D
22 way split load dual RCD metal consumer unit	22	22	80	63	30	100	DP	EAS22H80H63D
34 way split load dual RCD metal consumer unit	34	34	80	80	30	100	DP	EAS34H80H80D
34 way split load dual RCD metal consumer unit	34	34	80	63	30	100	DP	EAS34H80H63D

EAS10DD



Dual tariff metalclad surface mounting consumer units

Description	Total no. of outgoing ways	Isolator rating (A)	Pole	Eaton list number
10 way dual tariff metal consumer unit + 2 x 100A isolators	10	100	DP	EAS10DD
16 way dual tariff metal consumer unit + 2 x 100A isolators	16	100	DP	EAS16DD

Accessories

Description	Eaton list number
6 module blanking strip	EABP6
1 way blanking plate	ABP1

4QEL



Enclosures Moulded

Description	Additional Features	Finish	Number of modules	IP Rating	Eaton list number
Street lighting enclosure	Sealable terminal access	Moulded	2	55	A2SL
Street lighting enc with earth bar	Sealable terminal access	Moulded	2	55	A2SLE
DIN rail Enclosure 3 way	Transparent door	Moulded	2-3	55	3QEL
DIN rail Enclosure 4 way	Transparent door	Moulded	2-4	55	4QEL
DIN rail Enclosure 6 way	Transparent door	Moulded	1-6	55	6QEL
DIN rail enclosure 2 module	Sealable terminal access	Moulded	2	40	AN2
DIN rail enclosure 2 module	Fitted 100A SPSN isolator	Moulded	2	40	AN2D
DIN rail enclosure 2 module	Sealable access with earth bar	Moulded	2	40	AN25
Service Isolator 2 module	Fitted 100A SPSN isolator	Moulded	2	40	AN2EBD*
Service Isolator 4 module	Sealable front access	Moulded	4	40	AN4EBLS*
DIN rail Enclosure 4 module	Steel DIN rail fitted	Moulded	4	40	4EME

* Independently sealable supply and load terminal covers.

AN2ST



Enclosures Metalclad

Description	Additional Features	Finish	Number of modules	IP Rating	Eaton list number
Metalclad Enclosure 2 way	None	Metalclad	2	40	AN2ST
Metalclad Enclosure 4 way	Fitted moulded front cover	Metalclad	4	40	AN4S



Eaton provides a comprehensive range of modular solutions for circuit protection and control. The 6 kA MCB is a high performance current limiting device with the ability to disconnect overloads and short circuits, and is available with trip types B and C 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 RCCBs are available in a range of current ratings and four trip sensitivities, 10, 30, 100 and 300mA.

Isolators are available in SP, DP and SPSN versions with ratings up to 100A. These two module units complement Eaton's range of DIN rail mounted automation and control devices.

Wall mounted switchfuses for local circuit protection and isolation, complete the range.

3

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See pages 41–47 for technical data and overall dimensions.

EAD20B



Miniature Circuit Breakers – 6kA, trip type B, 1P

Description	Rating (A)	Trip type	Short circuit rating (kA)	Pole configuration	Width (mm)	Eaton list number
MCB	2	B	6	1P	18	EAD02B
MCB	4	B	6	1P	18	EAD04B
MCB	6	B	6	1P	18	EAD06B
MCB	10	B	6	1P	18	EAD10B
MCB	13	B	6	1P	18	EAD13B
MCB	16	B	6	1P	18	EAD16B
MCB	20	B	6	1P	18	EAD20B
MCB	25	B	6	1P	18	EAD25B
MCB	32	B	6	1P	18	EAD32B
MCB	40	B	6	1P	18	EAD40B
MCB	50	B	6	1P	18	EAD50B
MCB	63	B	6	1P	18	EAD63B

EAD20C



Miniature Circuit Breakers – 6kA, trip type C, 1P

Description	Rating (A)	Trip type	Short circuit rating (kA)	Pole configuration	Width (mm)	Eaton list number
MCB	2	C	6	1P	18	EAD02C
MCB	4	C	6	1P	18	EAD04C
MCB	6	C	6	1P	18	EAD06C
MCB	10	C	6	1P	18	EAD10C
MCB	13	C	6	1P	18	EAD13C
MCB	16	C	6	1P	18	EAD16C
MCB	20	C	6	1P	18	EAD20C
MCB	25	C	6	1P	18	EAD25C
MCB	32	C	6	1P	18	EAD32C
MCB	40	C	6	1P	18	EAD40C
MCB	50	C	6	1P	18	EAD50C
MCB	63	C	6	1P	18	EAD63C

EMS1001N



Main Load Disconnect Switch (Isolator)

Description	Rating (A)	Short circuit rating (kA)	Width	Eaton list number
EMS 100A SP isolator	100	10	1 module	EMS1001
EMS 100A SPN isolator	100	10	2 module	EMS1001N
EMS 100A SPN isolator reversed pole	100	10	2 module	EMS1001NR
EMS 100A DP isolator	100	10	1 module	EMS1002

EAM632H



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

Description	Rating (A)	Sensitivity (mA)	Eaton list number
EAM 16A 2 Pole RCCB 10mA	16	10	EAM162V
EAM 16A 2 Pole RCCB 30mA	16	30	EAM162H
EAM 25A 2 Pole RCCB 30mA	25	30	EAM252H
EAM 40A 2 Pole RCCB 30mA	40	30	EAM402H
EAM 63A 2 Pole RCCB 30mA	63	30	EAM632H
EAM 80A 2 Pole RCCB 30mA	80	30	EAM802H
EAM 80A 2 Pole RCCB 30mA Reversed Pole	80	30	EAM802RH
EAM 100A 2 Pole RCCB 30mA	100	30	EAM1002H
EAM 100A 2 Pole RCCB 30mA Reversed Pole	100	30	EAM1002RH

EAM252M



RCCBs - 2 Pole double module - 100mA sensitivity

Description	Rating (A)	Sensitivity (mA)	Eaton list number
EAM 25A 2 Pole RCCB 100mA	25	100	EAM252M
EAM 40A 2 Pole RCCB 100mA	40	100	EAM402M
EAM 63A 2 Pole RCCB 100mA	63	100	EAM632M
EAM 80A 2 Pole RCCB 100mA	80	100	EAM802M
EAM 100A 2 Pole RCCB 100mA	100	100	EAM1002M
EAM 100A 2 Pole RCCB 100mA Reversed Pole	100	100	EAM1002RM

EAM802M



RCCBs - 2 Pole double module - 300mA sensitivity

Description	Rating (A)	Sensitivity (mA)	Eaton list number
EAM 80A 2 Pole RCCB 300mA	80	300	EAM802L
EAM 80A 2 Pole RCCB 300mA Reversed Pole	80	300	EAM802RL
EAM 100A 2 Pole RCCB 300mA	100	300	EAM1002L
EAM 100A 2 Pole RCCB 300mA Reversed Pole	100	300	EAM1002RL

EAD16BH30



RCBOs Single Pole single Module - trip type B - 30mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
EAD 6A 6KA type B SP 30mA RCBO	6	B	30	EAD06BH30
EAD 10A 6KA type B SP 30mA RCBO	10	B	30	EAD10BH30
EAD 16A 6KA type B SP 30mA RCBO	16	B	30	EAD16BH30
EAD 20A 6KA type B SP 30mA RCBO	20	B	30	EAD20BH30
EAD 25A 6KA type B SP 30mA RCBO	25	B	30	EAD25BH30
EAD 32A 6KA type B SP 30mA RCBO	32	B	30	EAD32BH30
EAD 40A 6KA type B SP 30mA RCBO	40	B	30	EAD40BH30
EAD 45A 6KA type B SP 30mA RCBO	45	B	30	EAD45BH30

EAD16CH30



RCBOs Single Pole single Module - trip type C - 30mA sensitivity

Description	Rating (A)	Trip type	Sensitivity (mA)	Eaton list number
EAD 6A 6KA type C SP 30mA RCBO	6	C	30	EAD06CH30
EAD 10A 6KA type C SP 30mA RCBO	10	C	30	EAD10CH30
EAD 16A 6KA type C SP 30mA RCBO	16	C	30	EAD16CH30
EAD 20A 6KA type C SP 30mA RCBO	20	C	30	EAD20CH30
EAD 25A 6KA type C SP 30mA RCBO	25	C	30	EAD25CH30
EAD 32A 6KA type C SP 30mA RCBO	32	C	30	EAD32CH30
EAD 40A 6KA type C SP 30mA RCBO	40	C	30	EAD40CH30
EAD 45A 6KA type C SP 30mA RCBO	45	C	30	EAD45CH30

Switch and Protection Devices

Accessories, Single Pole and Neutral Switchfuses

ASPDL



Padlocking devices

Description

Universal device lockout attachment - fits EAD MCBs/RCBOs, EAM RCCBs and EMS isolators.

Eaton list
number

ASPDL

800KMF



Single Pole and Neutral Switchfuses

Description

80A SPN switchfuse (fuse fitted)

Fuse Rating
(A)

80

Fuse Type

BS1361

Eaton list
number

800KMF

80A SPN Switchfuse (no fuse fitted)

-

BS1361

800KMFNF

80A Switchfuse cable gland

-

-

1MGL

100A SPN Switchfuse

100

BS88-2

1000KMF

100A Switchfuse

80

BS88-2

1000KMF-80



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.

4

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See pages 48–55 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

See pages 56–60 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 MBP, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactors	20	230	–	18	1 NO + 1 NC	CR2011230A
Contactors	20	230	–	18	2 NC	CR2002230A
Contactors	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 MBP, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactors	20	230	220	18	1 NO + 1 NC	CR2011230
Contactors	20	230	220	18	2 NC	CR2002230
Contactors	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 MBP, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactors	25	230	–	36	2 NO + 2 NC	CR2522230A
Contactors	25	230	–	36	3 NO	CR2530230A
Contactors	25	230	–	36	4 NC	CR2504230A
Contactors	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 MBP, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactors	25	230	220	36	2 NO + 2 NC	CR2522230
Contactors	25	230	220	36	3 NO	CR2530230
Contactors	25	230	220	36	4 NC	CR2504230
Contactors	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 MBP, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactors	40	230	220	54	2 NC	CR4002230
Contactors	40	230	220	54	2 NO	CR4020230
Contactors	40	230	220	54	3 NO	CR4030230
Contactors	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 MBP, every two contactors.

Description	Rating (A)	Coil voltage (Vac)	Coil voltage (Vdc)	Width (mm)	Contacts	Eaton list number
Contactors	63	230	220	54	2 NO	CR6320230
Contactors	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
Contactors	20	230	18	2 NO	CRM2020230A
Contactors	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

CRC63

**Terminal covers (sealable)**

Description	Rating (A)	Width (mm)	Eaton list number
Terminal cover	For 20	18	CRC20
Terminal cover	For 25	36	CRC25
Terminal cover	For 40/63	54	CRC63

CRS

**Spacer**

Description	Mounting	Width (mm)	Eaton list number
Spacer	DIN rail	9	CRS
Spacer	DIN rail	18	MBP

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 8	0.6 1.0	36	1	AA2BT



Take control of your energy use by using the efergy wireless electricity monitor. It displays instant power, costs, historical and average data and estimated CO₂ emissions. Discover and reduce the size of your carbon footprint by monitoring the cost of using your home appliances and lighting. It's also fun and educational for all the family.

5	WIRELESS ELECTRICITY MONITOR	32
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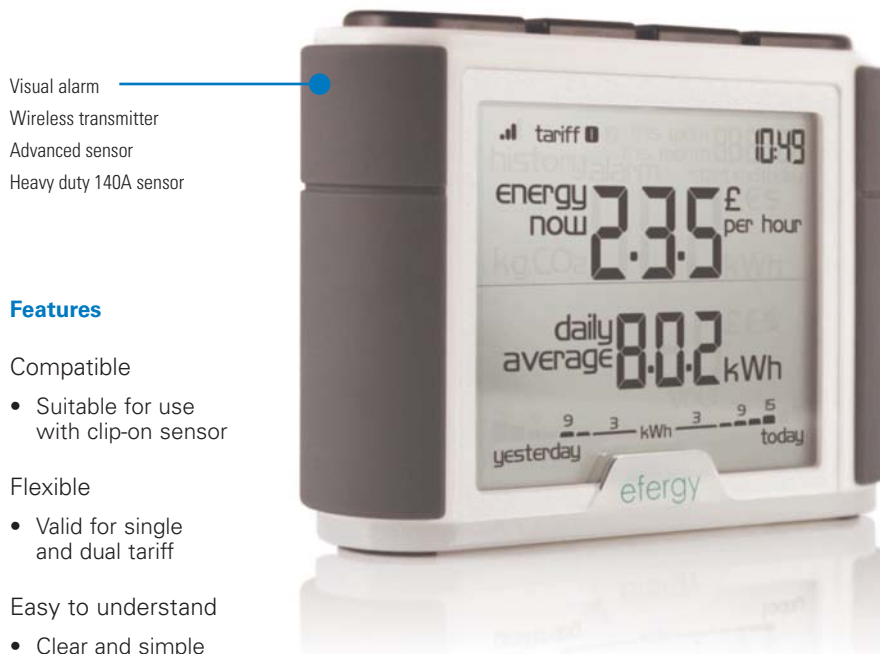
Energy Monitoring

Wireless Electricity Monitor

Wireless Electricity Monitor

Wireless electricity monitor displaying instant power, costs and estimated CO₂ emissions. It can also show historical and average data.

- Take control of your energy use
- Monitor the cost of using appliances and lights
- Discover and reduce the size of your carbon footprint



Features

Compatible

- Suitable for use with clip-on sensor

Flexible

- Valid for single and dual tariff

Easy to understand

- Clear and simple graphical display
- Simultaneous information
- Average daily (energy and costs),
- Instant information (power and costs)
- Historical consumption (energy, costs and CO₂)

History

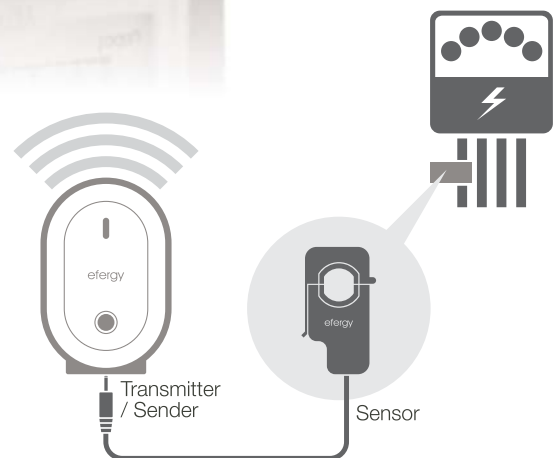
- Stores data for 7 days, 4 weeks and 24 months

Discover

- How much electricity is being used at a any given moment
- The total amount of money being spent on electricity
- The difference in electricity consumption by turning various appliances on or off
- How much money can be saved by reducing usage

Understand

- Daily average consumption
- Savings of 5–20% off typical energy consumption
- Consumption history
- Carbon footprint



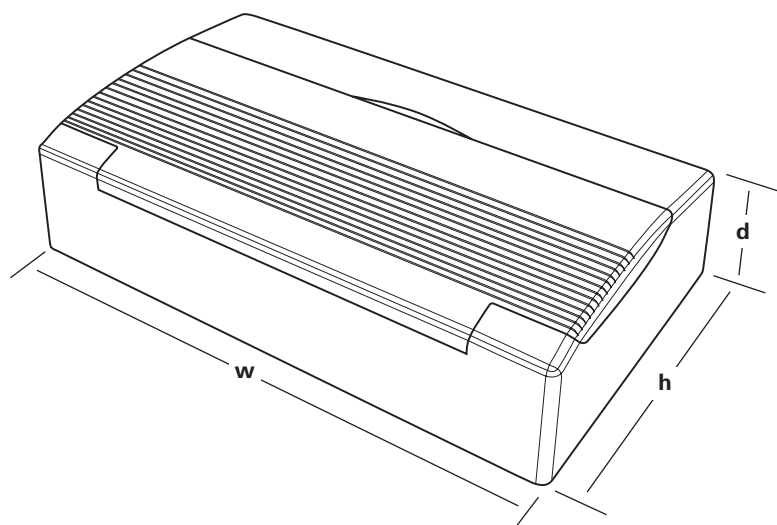
efergy wireless electricity monitor

Description	Eaton list number
efergy elite electricity monitor	70028865
Additional CTS (pack 2 pcs)	70031282



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.

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Isolator controlled surface mounting consumer units

Eaton list number	Dimensions (mm)		
	w	d	h
EAD1	98	94	153
EAD2/3	154	101	222
EAD4	235	223	120
EAD6	271	223	120
EAD8	307	223	120
EAD12	379	223	120
EAD16	450	223	120
EAD19	450	223	120

Note: **EAD1** depth dimension takes into account the fitted device's handle and its movement arc when operated

RCCB controlled surface mounting consumer units

Eaton list number	Dimensions (mm)		
	w	d	h
EAD1H63	98	94	153
EAD2/3H63 EAD2/3H80	154	101	222
EAD4H63 EAD4H80	235	223	120
EAD6H63 EAD6H80	271	223	120
EAD8H63 EAD8H80	307	223	120
EAD12H80 EAD12H100	379	223	120
EAD16H80 EAD16H100	450	223	120
EAD19H80 EAD19H100	450	223	120

RCCB controlled surface mounting consumer units

Eaton list number	Dimensions (mm)		
	w	d	h
EAD2/3M63 EAD2/3M80	154	101	222
EAD4M63 EAD4M80	235	223	120
EAD6M63 EAD6M80	271	223	120
EAD8M63 EAD8M80	307	223	120
EAD12M80 EAD12M100	379	223	120
EAD16M80 EAD16M100	450	223	120
EAD19M80 EAD19M100	450	223	120

Split load surface mounting consumer units – variable configuration

Eaton list number	Dimensions (mm)		
	w	d	h
EAD10H80D	379	223	120
EAD14H80D	450	223	120
EAD17H80D	450	223	120

Dual RCD isolator controlled 17th Edition surface mounting consumer units

Eaton list number	Dimensions (mm)		
	w	d	h
EAD8H80H80D EAD8H80H63D	379	223	120
EAD12H80H80D EAD12H80H63D	450	223	120
EAD15H80H80D EAD15H80H63D	450	223	120

High integrity dual RCD 17th edition compliant consumer units

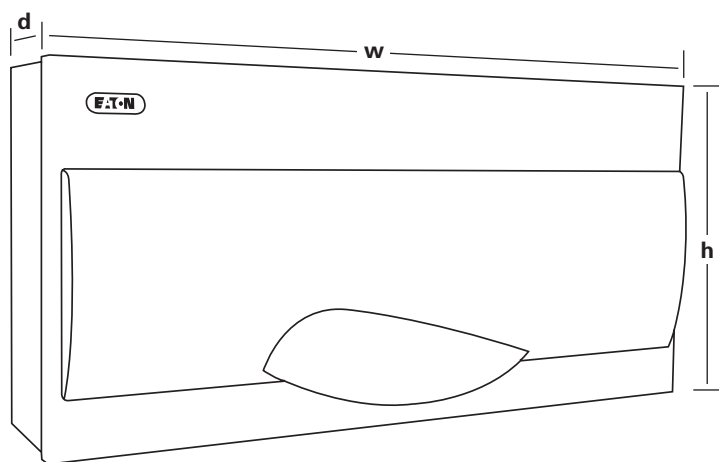
Eaton list number	Dimensions (mm)		
	w	d	h
EAD6H80H802D EAD6H80H632D	379	223	120
EAD12H80H803D EAD12H80H633D	450	223	120

High integrity RCBO consumer unit

Eaton list number	Dimensions (mm)		
	w	d	h
EAD11R	379	223	120

Dual tariff surface mounting consumer units

Eaton list number	Dimensions (mm)		
	w	d	h
EAD10DD	379	223	120
EAD14DD	450	223	120



Note: For lockable versions - add letter 'L' to end of list number, e.g. **EAS16DDFL**

Isolator controlled metalclad surface mounting consumer units

Eaton list number		Dimensions (mm)		
		w	h	d
EAS2		180	223	113
EAS6		252	223	113
EAS10		324	223	113
EAS12		359	223	113
EAS18		465	223	113
EAS26	Dual rail	359	420	113
EAS38	Dual rail	465	420	113

RCD controlled metalclad surface mounting consumer units

Eaton list number		Dimensions (mm)		
		w	h	d
EAS2H40		180	223	113
EAS2H63		180	223	113
EAS6H63		252	223	113
EAS6H80				
EAS6H100				
EAS10H100		324	223	113
EAS12H100		359	223	113
EAS18H100		465	223	113

Split load metalclad surface mounting consumer units

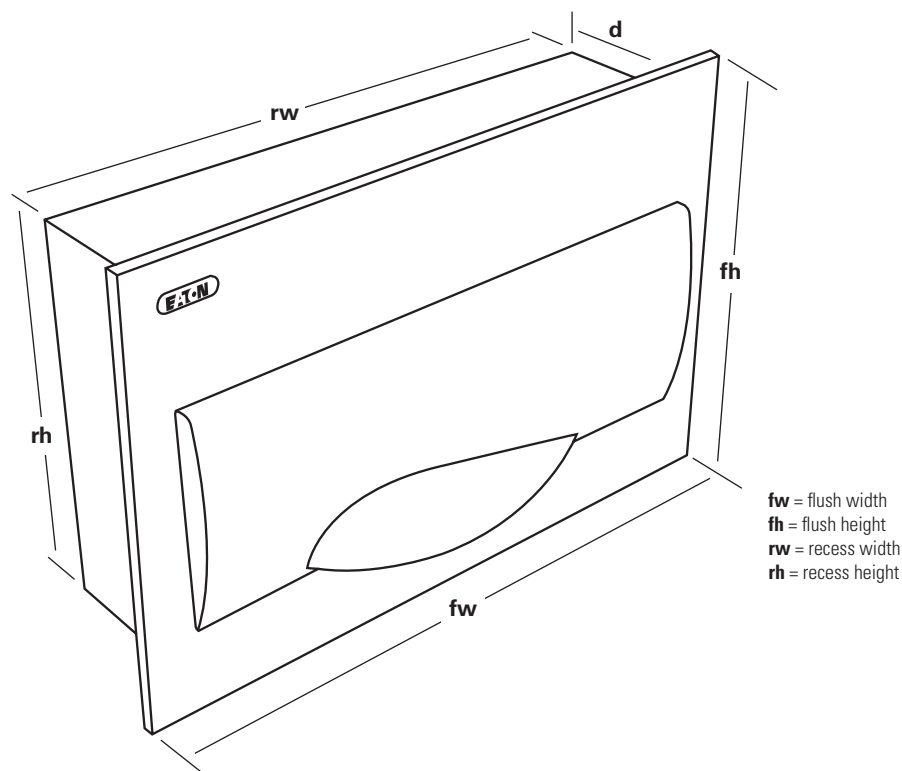
Eaton list number		Dimensions (mm)		
		w	h	d
EAS8H63D		324	223	113
EAS8H80D		324	223	113
EAS10H63D		359	223	113
EAS10H80D		359	223	113
EAS16H80D		465	223	113
EAS24H80D	Dual rail	359	420	113
EAS36H80D	Dual rail	465	420	113

Split load dual rail dual RCD metalclad surface mounting consumer unit

Eaton list number		Dimensions (mm)		
		w	h	d
EAS14H63H63D		465	223	113
EAS14H80H63D		465	223	113
EAS14H80H80D		465	223	113
EAS22H80H80D	Dual rail	359	420	113
EAS22H80H63D	Dual rail	359	420	113
EAS34H80H80D	Dual rail	465	420	113
EAS34H80H63D	Dual rail	465	420	113

Dual tariff metalclad surface mounting consumer units

Eaton list number		Dimensions (mm)		
		w	h	d
EAS10DD		359	223	113
EAS16DD		465	223	113



Note: For lockable versions - add letter 'L' to end of list number, e.g. **EAS16DDFL**

Isolator controlled metalclad flush mounting consumer units

Eaton list number		Recess Dimensions (mm)		Front Dimensions (mm)		
		rw	rh	fw	fh	d
EAS2F		180	223	215	264	113
EAS6F		252	223	287	264	113
EAS10F		324	223	359	264	113
EAS12F		359	223	394	264	113
EAS18F		465	223	500	264	113
EAS26F	Dual rail	359	420	394	460	113
EAS38F	Dual rail	465	420	500	460	113

RCD controlled metalclad flush mounting consumer units

Eaton list number		Recess Dimensions (mm)		Front Dimensions (mm)		
		rw	rh	fw	fh	d
EAS2H40F		180	223	215	264	113
EAS2H63F		180	223	215	264	113
EAS6H63F		252	223	287	264	113
EAS6H80F		252	223	287	264	113
EAS6H100F		252	223	287	264	113
EAS10H100F		324	223	359	264	113
EAS12H100F		359	223	394	264	113
EAS18H100F		465	223	500	264	113

Split load RCD and isolator controlled flush mounting consumer units

Eaton list number		Recess Dimensions (mm)		Front Dimensions (mm)		
		rw	rh	fw	fh	d
EAS8H63DF		324	223	359	264	113
EAS8H80DF		324	223	359	264	113
EAS10H63DF		359	223	394	264	113
EAS10H80DF		359	223	394	264	113
EAS16H80DF		465	223	500	264	113
EAS24H80DF	Dual rail	359	420	394	460	113
EAS36H80DF	Dual rail	465	420	500	460	113

Split load dual RCD metalclad flush mounting consumer units

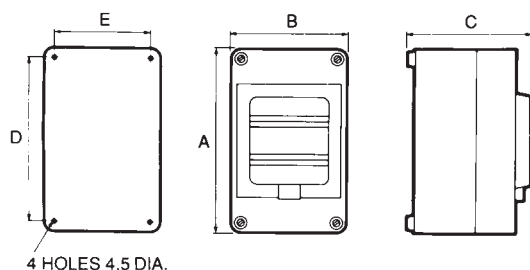
Eaton list number		Recess Dimensions (mm)		Front Dimensions (mm)		
		rw	rh	fw	fh	d
EAS14H63H63DF		465	223	500	264	113
EAS14H80H63DF		465	223	500	264	113
EAS14H80H80DF		465	223	500	264	113
EAS22H80H80DF	Dual rail	359	420	394	460	113
EAS22H80H63DF	Dual rail	359	420	394	460	113
EAS34H80H80DF	Dual rail	465	420	500	460	113
EAS34H80H63DF	Dual rail	465	420	500	460	113

Dual tariff metalclad flush mounting consumer units

Eaton list number		Recess Dimensions (mm)		Front Dimensions (mm)		
		rw	rh	fw	fh	d
EAS10DDF		359	223	394	264	113
EAS16DDF		465	223	500	264	113

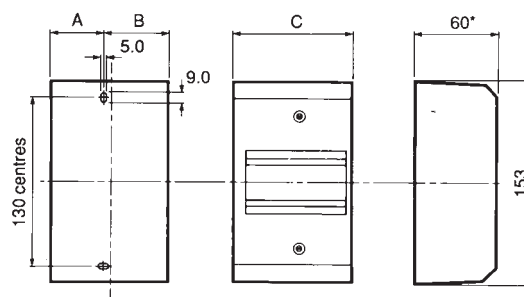
Enclosures, dimensional drawings

Enclosure type QEL



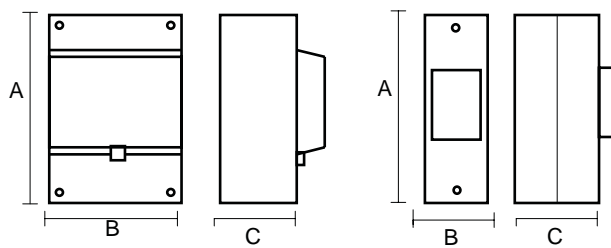
Eaton list number	A	B	C	D	E
3QEL	170	105	95	153	88
4QEL	170	105	112	153	88
6QEL	170	135	112	130	80

Enclosure type 4EME



Eaton list number	A	B	C
4EME	39	49	89

Enclosure type AN



Enclosures dimensions

Eaton list number	Finish	Number of modules	A	B	C
AN2	Moulded	2	135	40	65
AN2D	Moulded	2	135	40	65
AN25	Moulded	2	135	50	65
4EME	Moulded	4	135	89	60
AN2ST	Metalclad	2	186	105	72
AN4S	Metalclad	4	206	145	90
AN2EBD ^①	Moulded	2	135	40	65
AN4EBLS ^②	Moulded	4	135	110	88

^① Sealable supply terminal access, independent access to load terminals

^② Independent top and bottom sealable terminal access.

Consumer Units and Enclosures Technical Data

	Earth	Neutral	Isolator	RCCB	RCBO	MCB
Connection type	Pinch screw	Pinch screw	Box clamp	Box clamp	Box clamp	Box clamp
Screw type	Combination	Combination	Combination	Combination	Combination	Combination
Size	M5	M5	M6	M5	M5	M5
Min cable size	1mm ²	1mm ²	2.5mm ²	1mm ²	1mm ²	1mm ²
Max cable size	16mm ²	16mm ²	50mm ²	35mm ²	25mm ²	25mm ²
Recommended torque	Note 1	Note 1	2.5Nm	2.0Nm	2.0Nm	2.0Nm
Maximum torque	Note 1	Note 1	5.0Nm	2.4Nm	2.4Nm	2.4Nm

Note 1: As terminal is pinch screw, the torque will depend upon cable size and type and should be sufficient to secure termination without damaging conductor strands.

6kA Miniature Circuit Breakers (MCBs) Technical Data

Eaton's range of 6kA high performance Miniature Circuit Breakers (MCBs) are manufactured to IEC/EN 60898, meeting the latest UK, European and International standards, with ratings from 2A 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 230/240 V, AC 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's MEM consumer units and a wide range of other applications.

The Eaton 6kA MCBs are fitted with box clamp terminals suitable for use with cables up to 25mm².

The Eaton 6kA miniature circuit breakers are available with both B and C characteristic curves as standard. Type B MCBs are most commonly used in domestic applications, however the use of type C devices may be desirable e.g. on lighting circuits where high switching surges are involved. Type D devices are not commonly used in other than industrial applications.

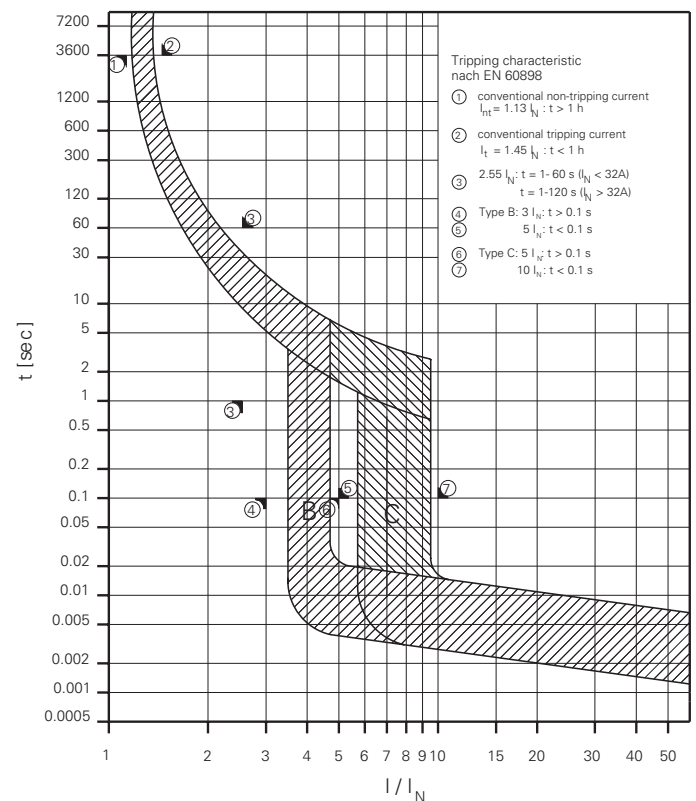
IEC/EN 60898 Type	Instantaneous Trip Current (x I _n)	Typical Application	Eaton 6kA MCB Type
B	3 to 5	Domestic	EAD B
C	5 to 10	Commercial Light Industrial	EAD C
D	10 to 20	General Industrial	—

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.

Tripping characteristic Type B and C



Earth fault loop impedance's (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.

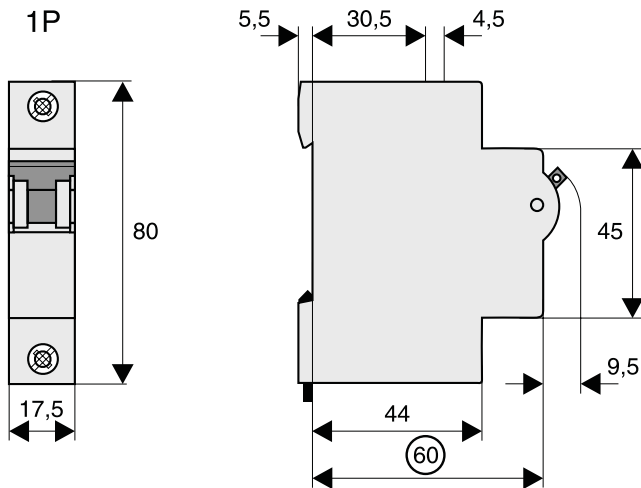
It can be seen that it is much easier to achieve adequate disconnection times with type B devices than it is with types C and indeed type D devices.

Maximum earth fault loop impedance i.e. Zs ohms for final circuits fed from Miniature Circuit Breakers MCBs or RCBOs with U_o 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

Table Zs Ohms

Device	Standard	2A	4A	6A	10A	13A	16A	20A	25A	32A	40A	45A	50A	63A
Type B MCB	BS EN 60898	23.00	11.50	7.67	4.60	3.54	2.88	2.30	1.84	1.44	1.15	-	0.92	0.73
Type C MCB	BS EN 60898	11.50	5.75	3.83	2.30	1.77	1.44	1.15	0.92	0.72	0.58	-	0.46	0.37
Type B RCBO	BS EN 61009	-	-	7.67	4.60	-	2.88	2.30	1.84	1.44	1.15	1.02	-	-
Type C RCBO	BS EN 61009	-	-	3.83	2.30	-	1.44	1.15	0.92	0.72	0.58	0.51	-	-

6kA MCB dimensional drawings



6kA MCB Technical Data

Product standard	IEC/EN 60898
No of poles	1P
Mechanical Specification	
Device width	17.7mm
Terminal type	Box clamp
Terminal capacity	1 – 25mm ²
Terminal Screw	M5 combination
Terminal torque recommended	2.0Nm - max 2.4Nm
Mounting	DIN rail
Degree of protection	IP 20
Positive contact indication	Yes (Toggle position)
Electrical Specification	
Rated voltage	230/240 V AC
Current ratings	2, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63 A
Rated impulse and withstand voltage	4kV (1.2/50 µ sec)
Rated short circuit capacity	6kA
Selectivity class	3 to IEC/ EN 60898
Tripping characteristic	
Instantaneous Tripping current I _{mt}	Type B: 3 I _n < I _{mt} < 5 I _n Type C: 5 I _n < I _{mt} < 10 I _n
Conventional non tripping current	I _{nt} = 1.13 I _n
Conventional tripping current	I _t = 1.45 I _n
Ref / Calibration temp	40° C
Number of operating cycles elec	>4000
Number of operating cycles mech	>20000

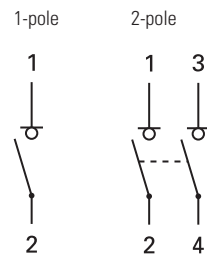
Main load disconnecter switch (Isolators)

The Eaton range of compact modular Isolators are available in Single Pole, Double Pole and Single Pole with Switched Neutral arrangements. Manufactured and tested in accordance with IEC/EN 60947-3 to meet the latest European and International standards.

DIN rail mountable in one or 2 modules width these Isolators are available in 63A and 100A ratings. Suiting with the complete range of Eaton's modular devices, providing positive contact position indication and terminal capacity up to 50 mm², these devices are the ideal choice as a Main switch in Eaton's MEM Memera consumer units and other applications.

With rated short circuit capacity at up to 12.5kA these switches are fully rated and tested to IEC/EN 60947-3 for AC23 duty at 240VAC

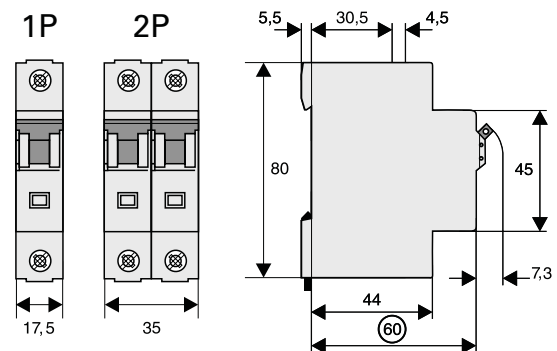
Connection diagram



Main load disconnecter switch (Isolators) Technical data

Specifications	
Product standard	IEC/EN 60947-3
No of poles	1P, 2P, 1P+N
Mechanical Specification	
Device width	
1p	17.7mm
2p	35mm
Terminal type	Box clamp
Terminal capacity	2.5 – 50mm ²
Terminal Screw	M6 combination
Terminal torque recommended	2.5Nm - max 5.0Nm
Mounting	DIN rail
Degree of protection	IP 10
Positive contact indication	Yes (Red/Green)
Electrical Specification	
Rated voltage	230/240 V AC
Rated Current	
AC23	63A, 100A (240V)
Rated peak withstand voltage	6kV
Rated insulation Voltage	690V
Rated short circuit capacity	
63A	12.5kA (fuse backup 125A gG max.)
100A	6kA (fuse backup 125A gG max.)
Rated short time withstand Icw	2kA
Rated short circuit making Icm	2.8kA
Endurance	
Number of operating cycles elec	>3000
Number of operating cycles mech	>16000

Main load disconnecter switch (Isolators) Technical data



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 module width 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 MEM Memera consumer units and other applications.

These devices will accommodate cables up to 35mm².

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 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 RCD which will cause disconnection of the electrical supply should it detect a residual current above a specified tripping current limit, combined with integral overload, overcurrent, 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

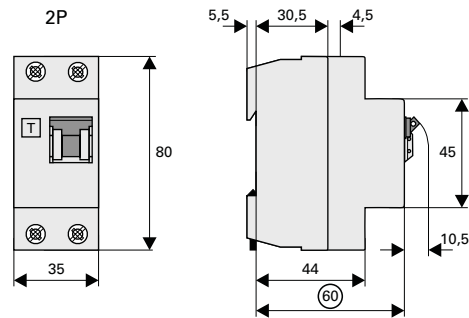
30mA – Provides a high degree of protection against electric shock due to direct and indirect contact. A 30mA RCD will trip within 40ms when a fault current of 150mA is detected.

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	
Product standard	IEC/EN 61008
No of poles	2P
Mechanical Specification	
Device width	35 mm
Terminal type	Box clamp
Terminal capacity	1.5 – 35mm ²
Terminal Screw	M5 combination
Terminal torque recommended	2.0Nm - max 2.4Nm
Mounting	DIN rail
Degree of protection	IP 20
Positive contact indication	Yes (Toggle position)
Electrical Specification	
Rated voltage	230/240 V AC
Current ratings	16, 40, 63, 80, 100 A
Rated impulse and withstand voltage	4kV (1.2/50 μ sec)
Rated short circuit capacity	10kA
Sensitivity	AC
Tripping characteristic	
Rated tripping currents	10, 30, 100, 300 mA
Tripping type	Instantaneous
Number of operating cycles elec	>4000
Number of operating cycles mech	>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. With standard current ratings from 6A to 45A, in both B and C Type characteristics and a trip sensitivity of 30mA, these devices are the ideal choice for domestic applications.

The Eaton RCBOs suite with the complete range of modular devices, and are for use within Eaton's MEM Memera consumer units and other applications.

These devices will accommodate cables up to 25mm².

Trip Sensitivity 30mA Standard

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.) Other sensitivities are available on request.

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 – 25mm ²
Terminal Screw	M5 combination
Terminal torque recommended	2.0Nm - max 2.4Nm
Mounting	DIN rail
Degree of protection	IP 20
Positive contact indication	Yes (Red/Green)

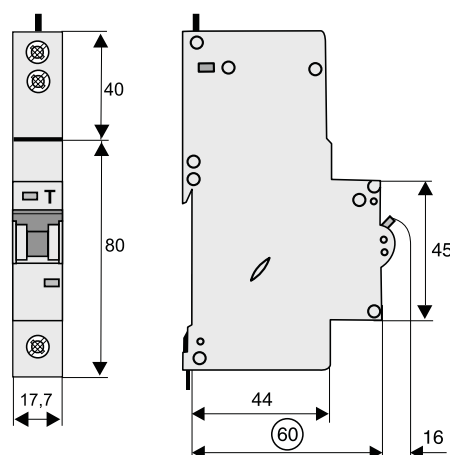
Electrical Specification

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 μ sec)
Rated short circuit capacity	6kA
Sensitivity	AC

Tripping characteristic

Instantaneous Tripping current I _{mt}	Type B: 3 I _n < I _{mt} < 5 I _n Type C: 5 I _n < I _{mt} < 10 I _n
Conventional non tripping current I _{nt}	1.13 I _n
Conventional tripping current I _t	1.45 I _n
Ref / Calibration temp	40° C
Rated residual tripping current	30mA
Residual tripping type	Instantaneous
Number of operating cycles elec	>4000
Number of operating cycles mech	>20000

RCBOs dimensions (mm)



Single pole & Neutral Switchfuses

Eaton's wall mounted switch fuses are available in two styles, a 100A metalclad unit and an 800A moulded version.

Both units are rated at 230/240V AC and are designed and proven to BS EN 60947-3 for utilisation class AC22.

1000KMF is a metalclad wall mounted unit rated at 240V AC and is fitted with a 100A double pole isolating switch in combination with a BS88 -2 fully shrouded, moulded, fuse holder and HRC fuse link.

This unit complies with EN 60947-3 with a conditional short circuit current rating of 16kA and utilisation category AC22: 240V AC.

800KMF is a fully moulded, compact wall mounted, SP&N switchfuse rated at up to 80A, complying with BS EN 60947-3 for duty AC22B, 240v AC. The unit is fitted with a fully insulated pull out fuse carrier, which will accommodate HRC fuse links complying with BS1361 and rated between 45 -80A.

Wall mounted Switch fuses Technical data**Specification**

Product standard	IEC/EN 60947-3		
No of poles	1P+N		
Rated Voltage	230/240VAC		
Terminal capacity: 1000KMF	Incoming terminals	50 mm ²	(Maximum)
	Outgoing terminals	35 mm ²	(Maximum)
800KMF	Main Terminals	25 mm ²	(Maximum)
	Earth terminals	16 mm ²	(Maximum)

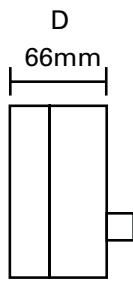
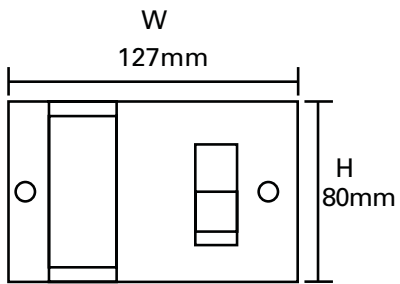
Rated current and fuse details

Type	Rating (A)	Class	Finish	IP rating	Fuse (A)	Standard
800KMF	80	AC22	Moulded	40	80	BS1361
800KMFNF	80	AC22	Moulded	40	Not fitted	BS1361
1000KMF	100	AC22	Metalclad	40	100	BS88-2
1000KMF-80	100	AC22	Metalclad	40	80	BS88-2

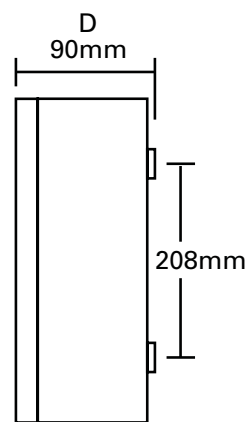
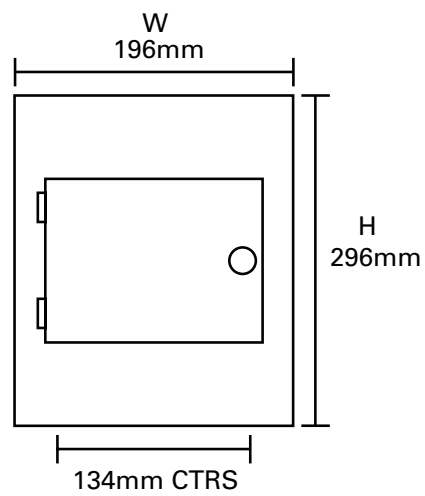
Replacement Fuse-links

Switch	Standard	Rating (A)	Ordering Reference
1000KMF	BS88	100	100RK (Fuselink and holder)
1000KMF	BS88	80	80RK (Fuselink and holder)
1000KMF	BS88	100	100SO
1000KMF	BS88	80	80SO
1000KMF	BS88	63	63SB4
1000KMF	BS88	50	50SB4
1000KMF	BS88	80	40SB4
800KMF	BS1361	80	804R
800KMF	BS1361	60	604R
800KMF	BS1361	50	504R
800KMF	BS1361	45A	454R

800KMF Dimensions (mm)



1000KMF Dimensions (mm)

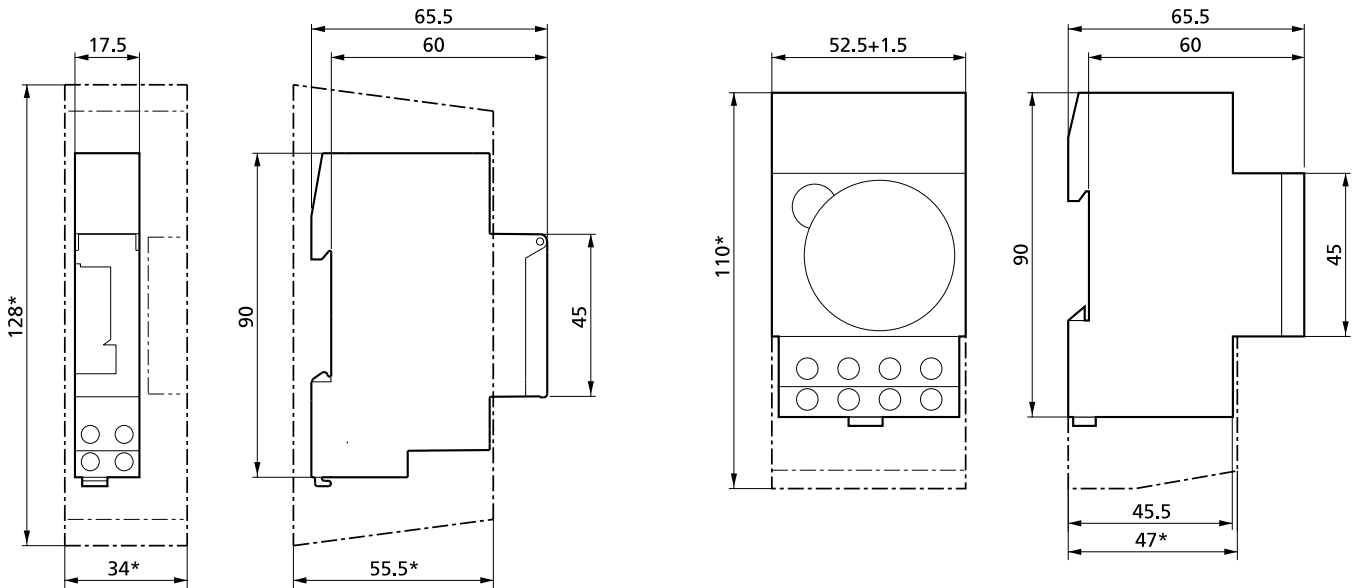


Analogue Timers, technical details

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 °C...+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	Width	52.5 mm	17.5 mm	52.5 mm	52.5 mm	17.5 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

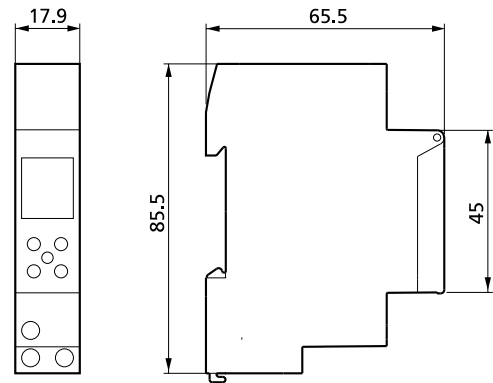
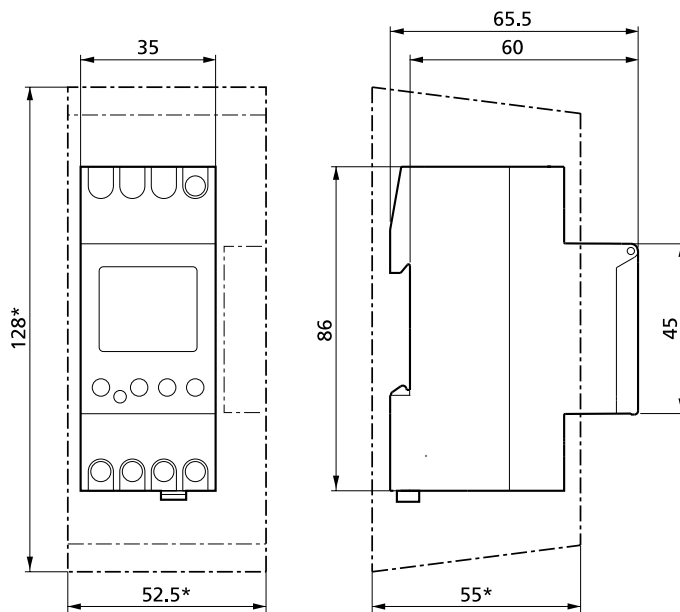
ON = Permanent ON

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.

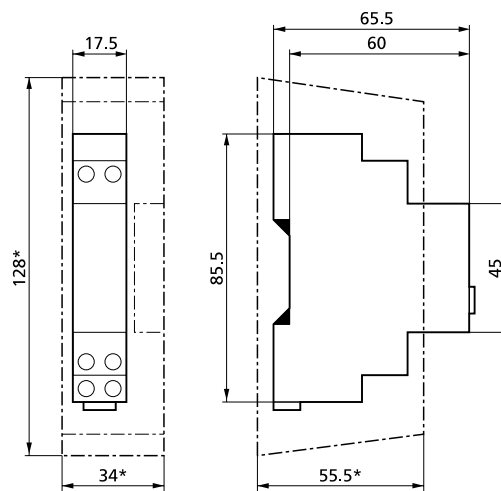
Digital week Timers, type TDW1S.

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 φ =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
Dimensions	17.5 mm	17.5 mm
	90 mm	90 mm
	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

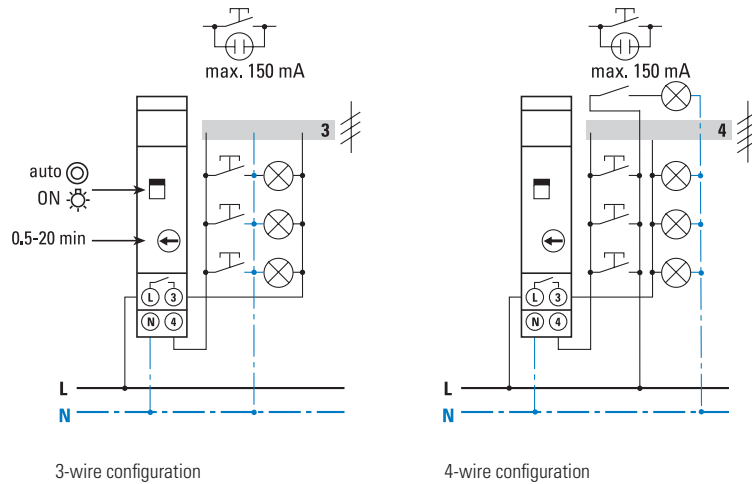


Staircase Timer, type TE7 and TE1.

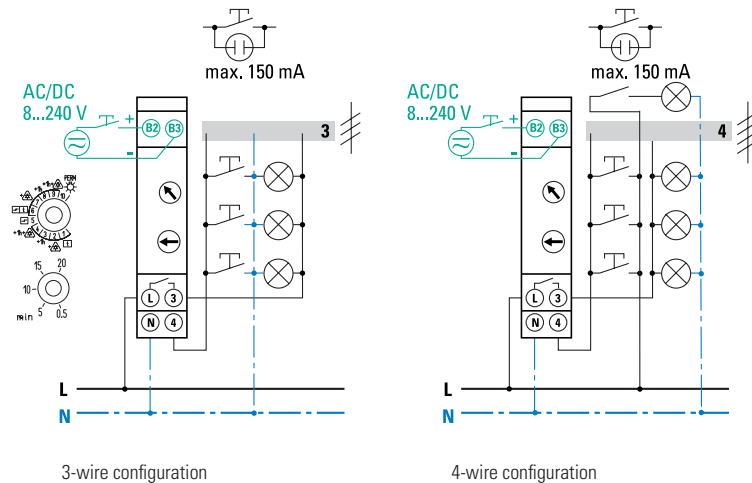
*) Dimension applicable when using terminal covers.

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.

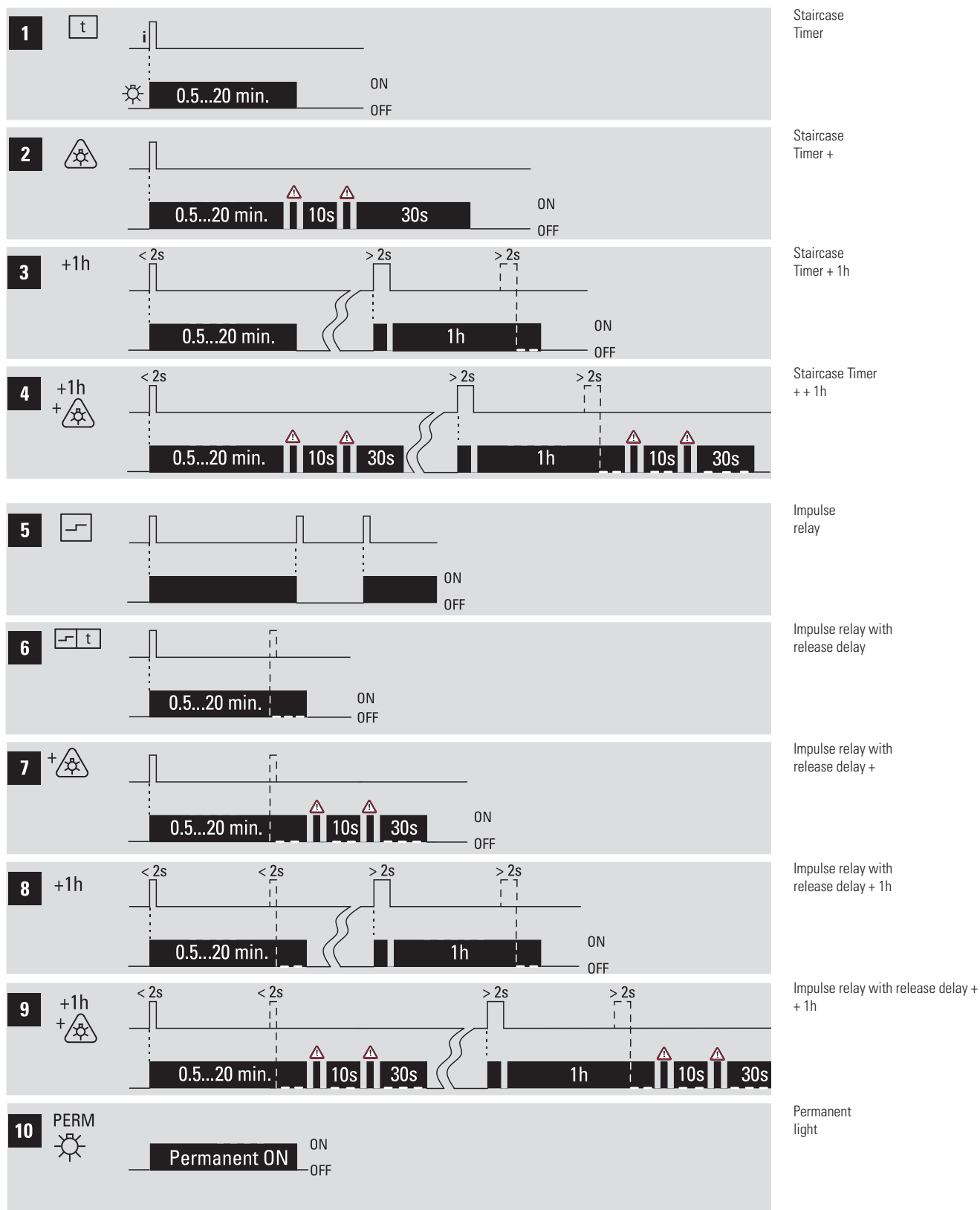
**Multifunctional Staircase Timer TE1, example wiring diagram**

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



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 U _e 1-ph.	230 V	230 V	230 V	230 V	230 V
Nominal operating voltage 3-phase U _e 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 U _i	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 U _{imp}	4 kV	4 kV	4 kV	4 kV	4 kV
Rated thermal current I _{th}	20 A	25 A	40 A	63 A	6 A
AC1 / AC7a Rated operational current I _e	20 A	25 A	40 A	63 A	-
AC1 / AC7a Operational power rating at U _e = 230 Vac P _{max}	4 kW	9 kW	16 kW	24 kW	-
AC1 / AC7a Operational power rating at U _e = 400 Vac P _{max}	16 kW	26 kW	40 kW	-	-
AC3 / AC7b Operational power rating at U _e = 230 Vac P _{max}	1,3 kW (*1)	2,2 kW	5,5 kW	8,5 kW	-
AC3 / AC7b Operational power rating at U _e = 400 Vac P _{max}	4 kW	11 kW	15 kW	-	-
DC1 Rated thermal current at U _e = 24 Vdc I _e	20 A	25 A	40 A	63 A	-
DC1 Rated thermal current at U _e = 110 Vdc I _e	1A	2A	4A	4A	-
DC1 Rated thermal current at U _e = 220 Vdc I _e	0,5 A	0,5 A	0,8 A	0,8 A	-
DC1 Rated thermal current at U _e = 24 Vdc (2-poles in series) I _e	20 A	25 A	40 A	63 A	-
DC1 Rated thermal current at U _e = 110 Vdc (2-poles in series) I _e	3 A	4 A	10 A	10 A	-
DC1 Rated thermal current at U _e = 220 Vdc (2-poles in series) I _e	1,5 A	1,5 A	6 A	6 A	-
DC1 Rated thermal current at U _e = 24 Vdc (3-poles in series)	-	25 A	40 A	63 A	-
DC1 Rated thermal current at U _e = 110 Vdc (3-poles in series)	-	6:00 AM	30 A	35 A	-
DC1 Rated thermal current at U _e = 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 I _n	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 & auxiliary 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 CR, lamp load table

Lighting Type	Lamp load (Watt) CR 20	CR 25	CR 40	CR 63	Maximum number of fittings per contactor type
Incandescent lamp					
	15	86	110	228	480
	25	52	72	180	290
	40	32	50	122	195
	60	21	33	86	130
	75	17	26	69	104
	100	13	20	52	78
	150	8	13	34	52
	200	6	10	26	39
	250	5	8	20	31
	300	4	6	17	26
	500	2	4	10	15
	1000	1	2	5	7
Energy saving lamp					
	3	42	52	83	120
	5	42	52	83	120
	7	42	52	83	120
	9	36	45	72	104
	11	33	41	65	94
	15	30	37	59	85
	20	29	36	57	82
	23	28	35	56	81

Contactors type CR, lamp load table (continued)

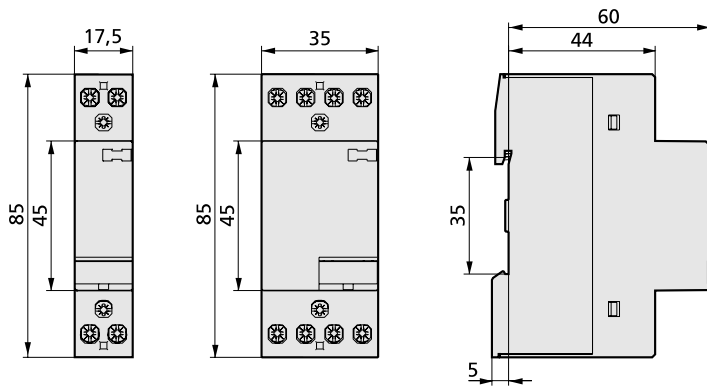
Lighting Type	Lamp load (Watt) CR 20	CR 25	CR 40	CR 63	Maximum number of fittings per contactor type
Fluorescent lamp – conventional supply					
Single fitting – Uncompensated (inductive)	18	22	24	90	140
	24	22	24	90	140
	36	17	20	65	95
	58	14	17	45	70
Single fitting – Compensated (capacitive)	18	7	8	48	73
	24	7	8	48	73
	36	7	8	48	73
	58	4	5	31	47
Double fitting – Series compensated	2 x 18	30	40	100	150
	2 x 24	24	31	78	118
	2 x 36	17	24	65	95
	2 x 58	10	14	40	60
Fluorescent lamp – HF electronic					
Single fitting – HF Electronic	18	25	31	49	71
	24	18	22	35	50
	36	14	17	27	39
	58	8	10	16	23
Double fitting – HF Electronic	2 x 18	12	15	24	35
	2 x 24	9	11	17	25
	2 x 36	7	8	13	19
	2 x 58	4	5	8	11
Compact fluorescent lamp					
Conventional supply	5	38	48	77	121
	7	27	34	54	86
	9	21	26	42	67
	11	17	21	35	55
Electronic supply	5	39	49	78	124
	7	39	49	78	124
	9	30	38	61	96
	11	25	31	50	79
High pressure mercury vapour lamp					
Uncompensated	50	14	18	38	55
	80	10	13	29	42
	125	7	9	20	29
	250	4	5	10	15
	400	2	3	7	10
Parallel compensated	50	4	5	31	47
	80	4	5	27	41
	125	3	4	22	33
	250	1	2	12	18
	400	1	1	9	13
Halogen metal vapour lamp					
Uncompensated	35	18	22	43	60
	70	10	12	23	32
	150	5	7	12	18
	250	3	4	7	10
	400	3	3	6	9
Parallel compensated	35	5	6	36	50
	70	2	3	18	25
	150	1	1	11	15
	250	-	1	6	9
	400	-	1	6	8

Contactors type CR, lamp load table (continued)

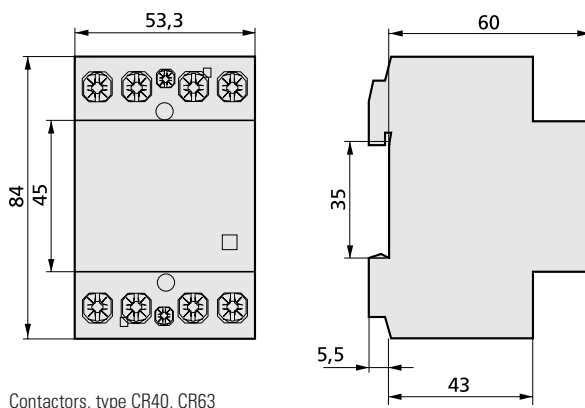
Lighting Type	Lamp load (Watt) CR 20	CR 25	CR 40	CR 63	Maximum number of fittings per contactor type
Low pressure sodium vapour lamp					
Uncompensated	18	22	27	71	90
	35	7	9	23	30
	55	7	9	23	30
	90	4	5	14	19
	135	3	4	10	13
	180	3	4	10	13
Parallel compensated	18	6	7	44	66
	35	1	1	11	16
	55	1	1	11	16
	90	1	1	8	12
	135	-	-	4	7
	180	-	-	4	7
High pressure sodium vapour lamp					
Uncompensated	150	5	6	17	22
	250	3	4	10	13
	400	2	2	6	8
	1000	-	1	3	3
Parallel compensated	150	1	1	11	16
	250	-	1	6	10
	400	-	-	4	6
	1000	-	-	2	3

General remarks:

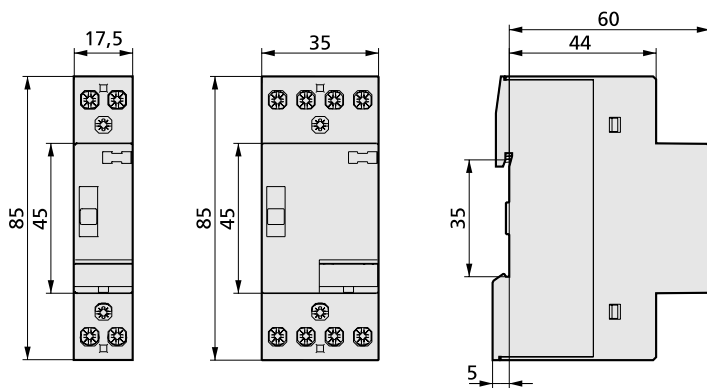
- 1) In case a 4-pole contactor is used (3 ph. + neutral) the above mentioned quantity of lamps need to be multiplied by 1,5 to obtain the maximum quantity of fittings for the contactor. The total quantity of fitting need to be split equally across the 3 poles.
- 2) In case multiple contactors are installed in one panel it is required to multiply the above mentioned fittings by the applicable load factor according the IEC 60439-1.
- 3) It is recommended to install one spacer between each 2 contactors installed (eg contactor, contactor, spacer, contactor, etc.)



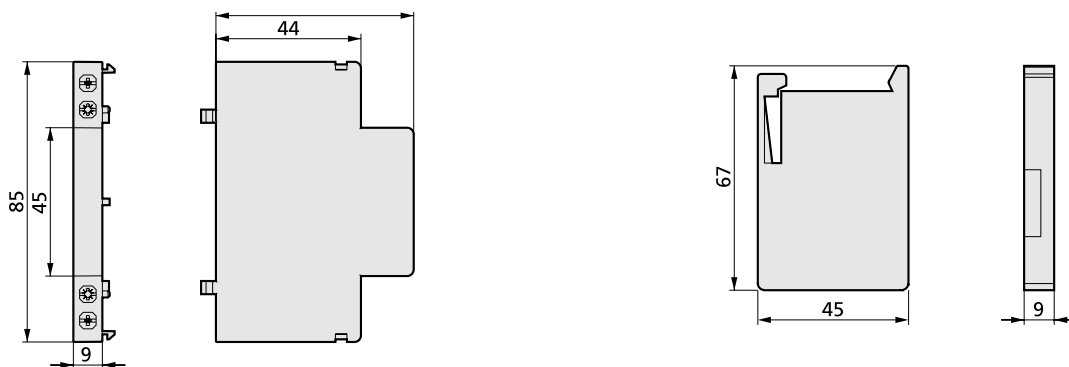
Contactors, type CR20, CR25



Contactors, type CR40, CR63



Day/Night contactors, type CRM20, CRM25



Auxiliary contact

Spacer

Eaton list number index

70028865	32	EAD06B	24	EAD40BH30	25	EAS14H80H80D	21,37
70031282	32	EAD06BH30	25	EAD40C	24	EAS14H80H80DF	39
1000KMF	26	EAD06C	24	EAD40CH30	25	EAS16DD	21,37
1000KMF-80	26	EAD06CH30	25	EAD45BH30	25	EAS16DDF	39
1MGL	26	EAD1	18,34	EAD45CH30	25	EAS16H80D	20,36
3QEL	22,40	EAD10B	24	EAD4H63	18,34	EAS16H80DF	39
4EME	22,40	EAD10BH30	25	EAD4H80	18,34	EAS18	20,36
4QEL	22,40	EAD10C	24	EAD4M63	18,35	EAS18F	38
6QEL	22,40	EAD10CH30	25	EAD4M80	18,35	EAS18H100	20,36
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800KMFNF	26	EAD10H80D	19	EAD50C	24	EAS2	20,36
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A2SLE	22	EAD11R	19,35	EAD63B	24	EAS22H80H63DF	39
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AA161RB	30	EAD12H100	18,34	EAD6H63	18,34	EAS22H80H80DF	39
AA2BT	30	EAD12H80	18,34	EAD6H80	18,34	EAS24H80D	20,36
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ADC10	19	EAD12H80H63D	19,35	EAD6H80H802D	19,35	EAS26	20,36
ADC14	19	EAD12H80H803D	19,35	EAD6M63	18,35	EAS26F	38
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ADC6	19	EAD12M100	18,35	EAD8	18,34	EAS2H40	20,36
ADC8	19	EAD12M80	18,35	EAD8H63	18,34	EAS2H40F	38
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AN25	22,40	EAD14DD	19,35	EAD8H80H80D	19,35	EAS2H63F	38
AN2D	22,40	EAD14H80D	19,35	EAD8M63	18,35	EAS34H80H63D	21,37
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CR2011024A	29	EAD16CH30	25	EAM162H	25	EAS6	20,36
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CR2522230A	29	EAD19H100	18,34	EAM632M	25	EAS6H80F	38
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