

PROTECTIVE DEVICES & ACCESSORIES

A comprehensive range of protective devices and accessories to complement both the Memera 2000 and Memera 2000 AD consumer unit range.

MEMERA

250



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6kA MCB's

AD MCB's 6kA Type B Single Pole



AD10B

Other MCB's



ALB061

side view

AD MCB's 6kA Type B

Ref No.	Rating	Cable Size
AD06B	6A	16mm
AD10B	10A	16mm
AD16B	16A	16mm
AD20B	20A	16mm
AD32B	32A	16mm
AD40B	40A	25mm
AD50B	50A	25mm
AD63B	63A	25mm

AL and ML MCB's 6kA Type B, C and D

Amp	Type B	Type C	Type D	Cable Size
6A	ALB061	ALC061	ALD061	25mm
10A	ALB101	ALC101	ALD101	25mm
16A	ALB161	ALC161	ALD161	25mm
20A	ALB201	ALC201	ALD201	25mm
32A	ALB321	ALC321	ALD321	25mm
40A	ALB401	ALC401	ALD401	25mm
50A	ALB501	ALC501	ALD501	25mm
63A	ALB631	ALC631	ALD631	25mm
6A	MBL106	MCL106	MDL106	25mm
10A	MBL110	MCL110	MDL110	25mm
16A	MBL116	MCL116	MDL116	25mm
20A	MBL120	MCL120	MDL120	25mm
32A	MBL132	MCL132	MDL132	25mm
40A	MBL140	MCL140	MDL140	25mm
50A	MBL150	MCL150	MDL150	25mm
63A	MBL163	MCL163	MDL163	25mm

Note: AL_ and M_L types are interchangeable

To BSEN 60898

Type B, C and D operating characteristics M6, 6kA duty.

Positive contact indication in accordance with 16th Edition IEE Wiring Regulations (BS 7671)

- Will accept the AH30 or AM100 pod's

- Will fit both MEMERA 2000 and 2000 AD consumer units

To BSEN 60898

Type B operating characteristics M6, 6kA duty.

Positive contact indication in accordance with 16th Edition IEE Wiring Regulations (BS 7671)

- Does not accept the AH30 or AM100 pod's.
- For pod requirements refer to standard ALB/MLB range of MCB's or RCB0's
- Will fit both MEMERA 2000 and 2000 AD consumer units manufactured after 2002

HRC's, RCCB's and RCBO's

HRC Fuse Modules



HRC Fuses

Current Rating Amps	HRC Fuse Module complete with Fuse Links	HRC Fuse Module c/w Fuse Link + Spare Fuse Fitted	Spare HRC Fuse Links
5	AC5	AC5C	5LC
10	AC10	AC10C	1510LC#
15	AC15	AC15C	15LC
20	AC20	AC20C	20LC
30	AC30	AC30C	30LC
35*	AC35	AC35C	35LC#
40*	AC40	AC40C	40LC#
45*	AC45	AC45C	45LCS

*Occupies 2 ways

To BS 1361: 1971

Cartridge fuse links to **BS 1361** and **BS 88**

*Occupies 2 ways

Fuses to BS88

For HRC modules with spare fuse fitted add suffix C to the part number, ie AC5C.

Independent RCCB's



Reversed Pole RCCB for AD Range



INDEPENDENT RCCB'S SPSN 2 MODULE WIDTH

	10mA trip	30mA trip	100mA trip	300mA trip
16A	A16UE	A16HE	-	-
25A	-	A25HE	A25ME	-
32A	-	A32HE	A32ME	-
40A	-	A40HE	-	-
63A	-	A63HE	A63ME	-
80A	-	A80HE	A80ME	A80LE
100A	-	A100HE	A100ME	A100LE
100A	-	-	A100MET (time delay)	A100LET (time delay)

INDEPENDENT RCCB'S SPSN 2 MODULE WIDTH

REVERSED POLES FOR AD RANGE ONLY

	30mA trip	100mA trip
100A	AD100HER	-
100A	-	AD100MER
100A	-	AD100METR (time delay)

To IEC 61008

240/415V AC22B

For mounting in suitable enclosures.

Isolators/Contactors and Relays

RCBO's 6kA Single Pole



ALB161H30

AH30

Complete RCBO's

Amp	30mA trip
16A	ALB161H30
32A	ALB321H30
RCBO Pod	30mA trip
	AH30
RCBO Pod	100mA
	AM100

Note: RCBO pods can be fitted to all single pole MCB's except AD type.

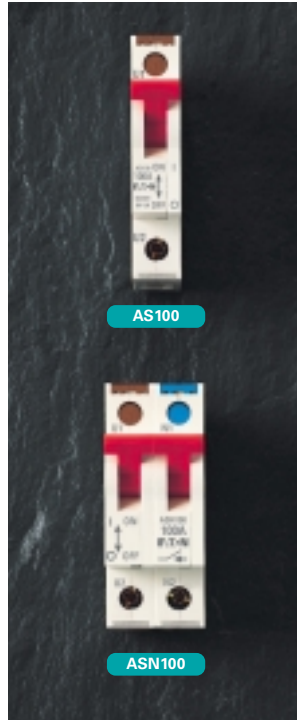
To BSEN 61009-1

Type B operating characteristics, 30mA trip current.

Field fittable 'pods' to BSEN 61009-2 when fitted to a single pole

BSEN 60898 MCB from Eaton MEM

Independent Isolators



AS100

ASN100

Isolators

Ref	Amp
AS100	100A S/Pole 1 module
ASN100	100A SPSN 2 modules
ASN100R	100A SPSN Reversed Pole 2 modules
ADSN100R	100A SPSN Reversed Pole 2 modules (Grey)

To BS 60947

240/415V AC22B

Positive contact indication in accordance with 16th Edition IEE Wiring Regulations (BS 7671)

Contactors and Impulse Relays: 240V 50Hz



AA161RA

AA203

Contactors and Relays

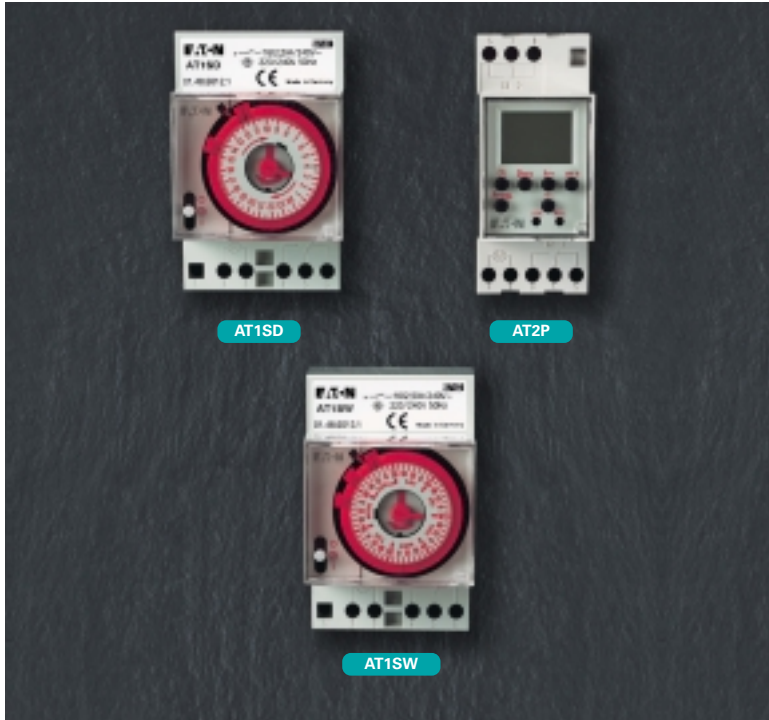
Ref	Amp	Pole	Module
AA161	16A	SP	1
AA202	25A	DP	1
AA203	25A	3P	2
AA204	25A	4P	2
AA402	40A	DP	2
AA403	40A	3P	3
AA404	40A	4P	3
AA633	63A	3P + 1 AUX N/C	3
AA634	63A	4P	3

Relays

Ref	Amp	Pole	Module
AA161RA	16A 1 N/O	SP	1
AA161RB	16A 1 N/O, 1 N/C	SP	1
AA2BT	Bell transformer 2 module (12V 0.6A; 8V 1.0A)		
AA7	16A staircase lighting 1 pole 1 module		

Timers and Accessories

Timers



Timers	Analogue Synchronous	Analogue Quartz Stabilised	Digital Quartz
Descriptions			
24hr, 1 channel, 3 modules	AT1SD	AT1QD	-
24hr, 1 channel, 1 module	AT11SD	-	-
7 day, 1 channel, 3 modules	AT1SW	AT1QW	-
Fully programmable, 1 channel, 1 module	-	-	AT11P
Fully Programmable, 1 channel, 2 modules	-	-	AT1P
Fully Programmable, 2 channel, 2 modules	-	-	AT2P
Minimum Programmable time, day/week	30min/3hr	30min/3hr	1min
Running reserve recharge time	-	150hr/70hr	100hr/140hr

Accessories



Accessories	
AL1	Locking device for isolators
AL2	Locking device for MCB's
AL3	Locking device for RCCB's
PD2	Padlock for locking devices/enclosure doors
ABP1	1 way unit blanking plate
AET1	Earth link kit (25mm ²)
ADKIT	Spare busbar and way label

Moulded and Metalclad Enclosures

Enclosures



4QEL

A2SL

AN4EBLS

AN2ST

Enclosure ranges available

Product Ref No.	Finish	No. of Modules	Dimensions (mm)			IP Rating	Earth Bar	Additional features
			H	W	D			
A2SL	Moulded	2	165	62	88	55	no	Sealable terminal access
A2SLE	Moulded	2	165	62	88	55	yes	Sealable terminal access
A2SL/ ALB062	Moulded	2	165	62	88	55	yes	6A DP MCB fitted Sealable terminal access

Above items complete with sealable transparent cover

Product Ref No.	Finish	No. of Modules	Dimensions (mm)			IP Rating	Earth Bar	Additional features
			H	W	D			
3QEL	Moulded	2-3	134	174	97	55	no	Blank plates provided
4QEL	Moulded	2-4	170	105	112	55	no	Blank plates provided
6QEL	Moulded	1-6	170	135	112	55	no	Blank plates provided

Product Ref No.	Finish	No. of Modules	Dimensions (mm)			IP Rating	Earth Bar	Additional features
			H	W	D			
AN2	Moulded	2	135	40	65	40	no	Sealable terminal access
AN2D	Moulded	2	135	40	65	40	no	ASN100 SPSN isolator fitted
AN25	Moulded	2	135	50	65	40	yes	Earth bar fitted Sealable terminal access
*AN2EBD	Moulded	2	135	40	65	40	no	AD100 SPSN isolator fitted
#AN4EBLS	Moulded	4	135	110	88	40	no	Lockable cover
4EME	Moulded	4	135	89	60	40	yes	Steel DIN rail fitted

*Sealable supply terminal access, independent access to load terminals
#Independent top and bottom sealable terminal access.

Product Ref No.	Finish	No. of Modules	Dimensions (mm)			IP Rating	Earth Bar	Additional features
			H	W	D			
AN2ST	Metalclad	2	186	105	72	40	yes	N/A
AN4S	Metalclad	4	206	145	90	40	yes	Plastic front cover fitted

SP & N Switchfuses

SP & N Switchfuses



SP & N Switchfuse

Ref	Rating	Finish	HRC Amp	Standard
800KMF	80A	Moulded	80A	BS 1361
800KMFNF	80A	Moulded	no	-
1000KMF	100A	Metalclad	100A	BS 88
1000KMF-80	100A	Metalclad	80A	BS 88

1000KMF - Maximum cable sizes are:- Incoming cables 50mm²; outgoing cables 35mm²

Replacement fuse link and holder for 1000KMF

Ref	HRC Amp	Standard
80RFK	80A	BS 88
100RFK	100A	BS 88

Locking Device for DP isolator

Ref
AL1

Padlock & key for AL1

Ref
PD2

800KMF - Maximum cable sizes are:- Main terminals 25mm², earth terminal 16mm²

HRC Fuselink for 800KMF

Ref	Amp	Standard
454R	45A	BS 1361
504R	50A	BS 1361
604R	60A	BS 1361
804R	80A	BS 1361

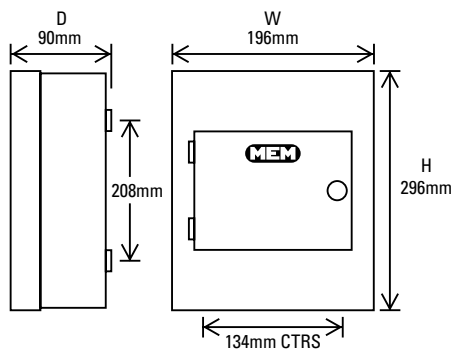
Moulded Cable Gland for 800KMF

Ref
1MGL

1000KMF

Each 1000KMF unit is IP41 rated with a 100A double pole isolating switch rated at 240V AC only, fitted as standard. Complying to BSEN 60947-3 with a conditional short circuit current rating of 16kA and utilisation category AC22, 240V. Units are supplied with fuselinks to BS 88 Part 2 designed for offset contact. The moulded fuse unit is shrouded to prevent accidental contact with live parts.

1000KMF Dimensions

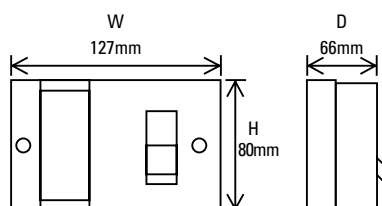


Maximum cable sizes are:- 50mm², outgoing cables 35mm²

800KMF Dimensions

Complying with BSEN 60947-3 for duty AC22B, 240V AC.

Compact SP & N moulded switchfuse rated at 80A and fitted with pull out HRC fuse link. Accommodates fuse links to BS 1361 (45-80A)



Maximum cable sizes are:- Main terminals 25mm², Earth terminal 16mm²

Switchgear Technical Data

Miniature Circuit Breakers

Eaton's MEM miniature circuit breakers (MCB's) are manufactured to - **BS EN 60898**. They have a maximum breaking capacity of 6kA and are available in a selection of current ratings from 6A to 63A. The maximum cable capacity being 16mm² upto 32A and 25mm² to 40A-63A.

Note: Maximum cable capacity 16mm² for AD range up to 32A.

The MCB's are suitable for 240V, AC, 50/60Hz systems and are calibrated at 40°C. All of the MCB ratings available are single module width.

AL/ML range MCB's are also available for use when field fitted pod mounted RCBO's are required.

Characteristics and Applications for MCB Types

Type B: suitable for domestic and commercial installations having little or no switching surges.

Type C: general use in commercial/industrial installations where the use of fluorescent lighting, small motors etc. can produce switching surges.

Type D: for use with equipment such as transformers, some fluorescent lighting, X-ray machines, industrial welding equipment and similar applications where very high inrush currents are experienced.

OPERATING CHARACTERISTICS FOR AD DOMESTIC RANGE OF TYPE B MCCB'S

BS EN 60898 TYPE	Instantaneous Trip Current Range (xIn)	Typical Application	Eaton's MEM MCB Prefix
B	3 to 5	Domestic	AD

OPERATING CHARACTERISTICS FOR AL/ML RANGE OF MCB'S

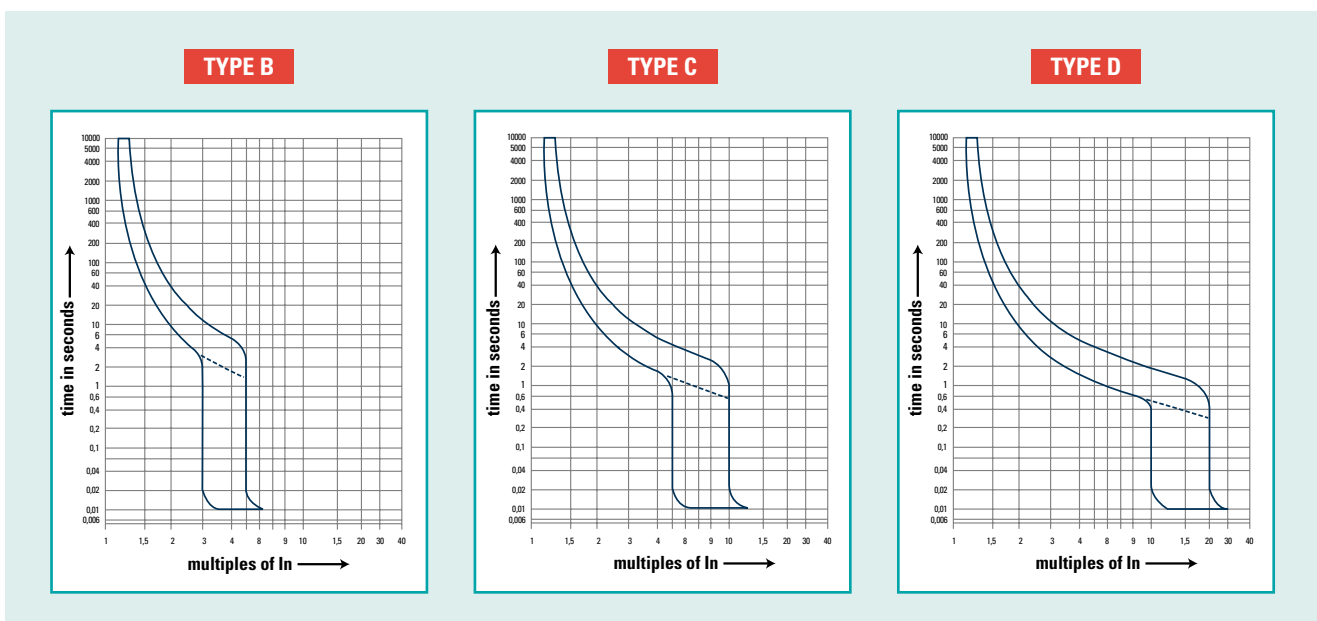
BS EN 60898 TYPE	Instantaneous Trip Current Range (xIn)	Typical Application	Eaton MEM MCB Prefix
B	3 to 5	Domestic	ALB/MBL
C	5 to 10	Commercial Light Industrial	ALC/MCL
D	10 to 20	General Industrial	ALD/MDL

Note: IEC 898 permits the upper limit for type D to extend to 50 x In.

BS 7671: 2001 requirements for Electrical installations (16th Edition of the IEE Wiring regulations) specifically identifies Type B & Type C. Lower earth fault loop impedance's (Zs) are generally necessary for Type D to achieve the operating times required by regulation 413-02-08. (Maximum Zs is calculated using the formula in the regulations and the characteristics of the circuit breaker).

Where the requirement cannot be achieved, use of the circuit breakers as overcurrent protective devices is not precluded, but the use of residual current circuit breakers (RCCB's) to provide protection against indirect earth fault condition is implied. Establishment of the value of the earth fault loop impedance (Zs) at the design stage of installation will determine which type of the circuit breakers should be used.

MCB OPERATING CHARACTERISTICS



Switchgear Technical Data

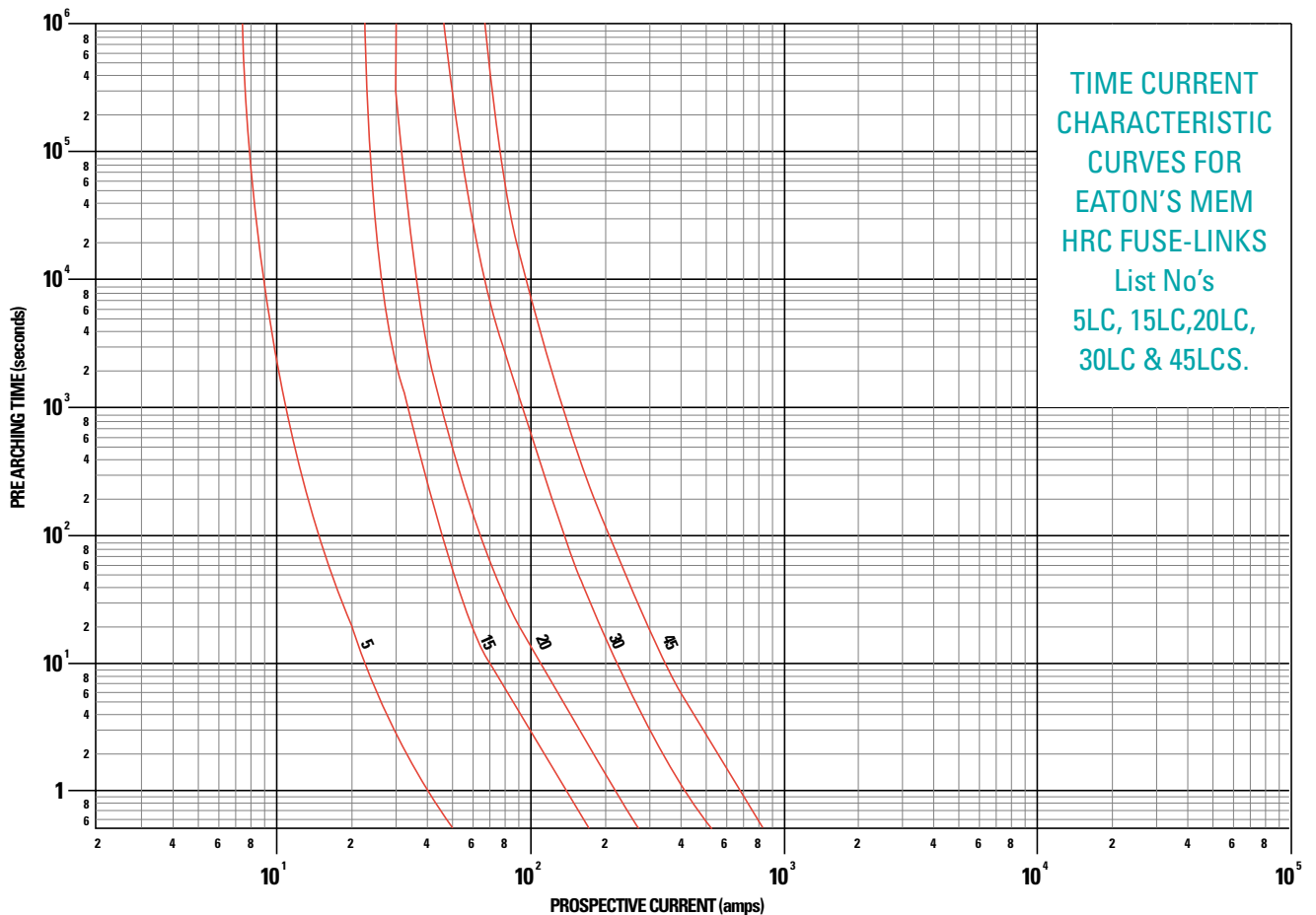
Earth fault loop impedance's (Zs) to give compliance with BS 7671 regulation 413-02-08 at 240V

Maximum Earth fault loop impedance ie Zs ohms for circuits supplying socket outlets in accordance with BS 7671 regulation 413-02-08 at 240V.

Device	Standard	5A	6A	10A	15A	16A	20A	30A	32A	35A	40A	45A	50A	63A
HRC Fuselink	BS88/1361	10.90	8.89	5.33	3.43	-	1.78	1.20	-	-	0.86	0.60	-	-
Type B MCB	BS EN 60898	-	8.00	4.80	-	3.00	2.40	-	1.50	-	1.20	-	0.96	0.76
Type C MCB	BS EN 60898	-	4.00	2.40	-	1.50	1.20	-	0.75	-	0.60	-	0.48	0.38
Type D MCB	BS EN 60898	-	2.00	1.20	-	0.75	-	-	0.38	-	0.30	-	0.24	0.19

At these levels of earth loop impedance, fuses and MCB's will provide disconnection times in accordance with BS 7671 for circuits supplying socket outlets (and fixed bathroom equipment).

HRC FUSE OPERATING CHARACTERISTICS



Switchgear Technical Data

Residual current circuit breakers (RCCB)

Explanation of abbreviations used

R.C.D. Residual Current Device is the generic term covering the range of devices incorporating sensing of residual currents and includes within it's scope R.C.C.B. and R.C.B.O. type products.

R.C.C.B. Residual Current Circuit Breaker is an RCD which will cause disconnection of electrical supply should a residual current passing through the device exceed a specified load.

R.C.B.O. Residual Current Circuit Breaker with overload protection is an RCD which will cause disconnection of electrical supply due to residual current exceeding specified limits together with integral overload; overcurrent and short circuit protection associated with a miniature circuit breaker.

When must an RCCB be used

- i) TT supply
- ii) Sockets to supply portable equipment outside the equipotential zone
- iii) Supply to caravan

BS 7671 (16th Edition IEE regs.)

- (471-08-06)
- (471-16-01)
- (608-13-05)

Current operated RCD's provide a high degree of protection against electrocution and fire risk due to electrical faults.

(RCCB) selection chart

To BS 4293. IEC 61008 also BS EN 61008. AC22B Duty. For mounting in suitable enclosures.

	Trip Current (mA)				
	10	30	100	300	300 TIME DELAY
RATING(A) 2 Pole 2 Module					
16	A16UE	A16HE			
25		A25HE	A25ME		
32		A32HE	A32ME		
40		A40HE			
63		A63HE	A63ME		
80		A80HE	A80ME		
100		A100HE	A100ME	A100LE	A100LET

Switchgear Technical Data

Trip current selection

10mA providing a high degree of protection against electric shock in hazardous environments where supplementary protection against shock from accidental direct contact is required.

This rating should only be used to supply final circuits where a high risk exists.

30mA providing a high degree of protection against electric shock due to direct contact. The device must be able to trip within 40 milliseconds when a fault current of 150mA is detected.

This will also satisfy the IEE/BS condition of sockets feeding portable equipment outside the equipotential zone.

100mA to give a degree of protection against electric shock due to indirect contact situation. Generally this rating should be used to protect groups of circuits and provide overall protection against fire risk. If lower rated RCD devices are employed downstream then a time delayed 100mA RCD can be employed to ensure discrimination between same.

300mA gives overall protection against risk of fire from electrical faults in wiring etc. only where sufficient current (typically less than 500mA) may cause incandescence of metal parts.

When is it advisable to install an RCD?

- For protection against risk of fire due to live to earth where fault current is insufficient to cause over-current protection device to operate.
- For protection against risk of shock from indirect contact with equipment suffering a live to earth fault.
- For protection against shock in potentially hazardous environment.
- As supplementary protection against shock from directly touching 'Live'.

RCD operation

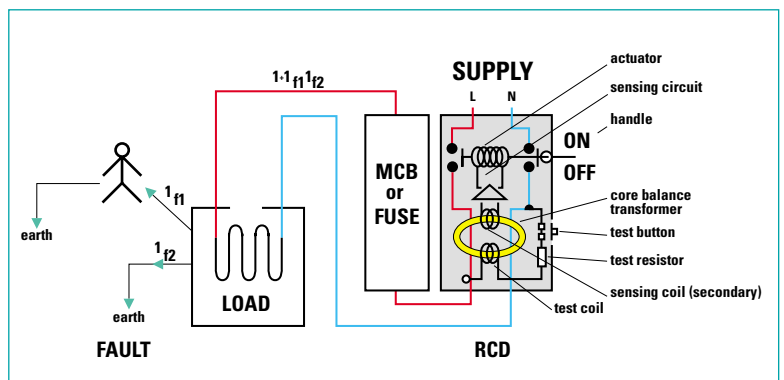
When a load is connected to the circuit supplied through an RCD, current flows from the supply through the RCD whereby both phase and neutral form the primaries of a core balance transformer arrangement. The secondary of its arrangement is used as a sensing coil to detect any out of balance between the current flowing through the live and neutral conductors in the circuit.

A test circuit also incorporated whereby connection is made from load phase to supply neutral via a test coil and resistor and activated by the test button.

If a fault occurs on the load side of the RCD whereby a fault current (I_{fn}) flows between Live and Earth. The Load demands a current return through neutral of the RCD of 1 amp, whilst the current flow through the Live becomes $1 + I_{fn}$ and from this imbalance a corresponding current will be induced in the sensing coil which if of sufficient magnitude and duration will cause the actuator to function and trip and RCD thereby disconnect supply.

However it should be noted that other disturbances that may cause the imbalance between phase and neutral can emanate from the upstream and/or down stream sources to give rise the effect of unwanted tripping as identified in 'RCD TROUBLE - SHOOTING'

SCHEMATIC DIAGRAM OF RCD



Schematic diagram of RCD connected to earth fault showing principle parts of installation.

Switchgear Technical Data

Residual current circuit breaker with overload protection (R.C.B.O.)

RCBO

The functionality of a standard MCB is maintained but with the added flexibility of residual current protection. Eaton's MEM RCBO's all comply to the latest standard **BS EN 61009-1**.

The RCBO 'pod' device can be fitted in situ to any single pole **BS EN 60898** MCB from Eaton's MEM ranges, other than the standard AD range.

RATING(A)	REF.	Trip Current (MA)
16	ALB161H30	30
32	ALB321H30	30
Pod Only	AH30	30
Pod Only	AM100	100

Loss of Supply Neutral

Under loss of supply neutral conditions, the R.C. element of the device will continue to provide earth leakage protection. With these conditions and upon detection of an earth leakage current the RCBO will operate within its normal characteristics.

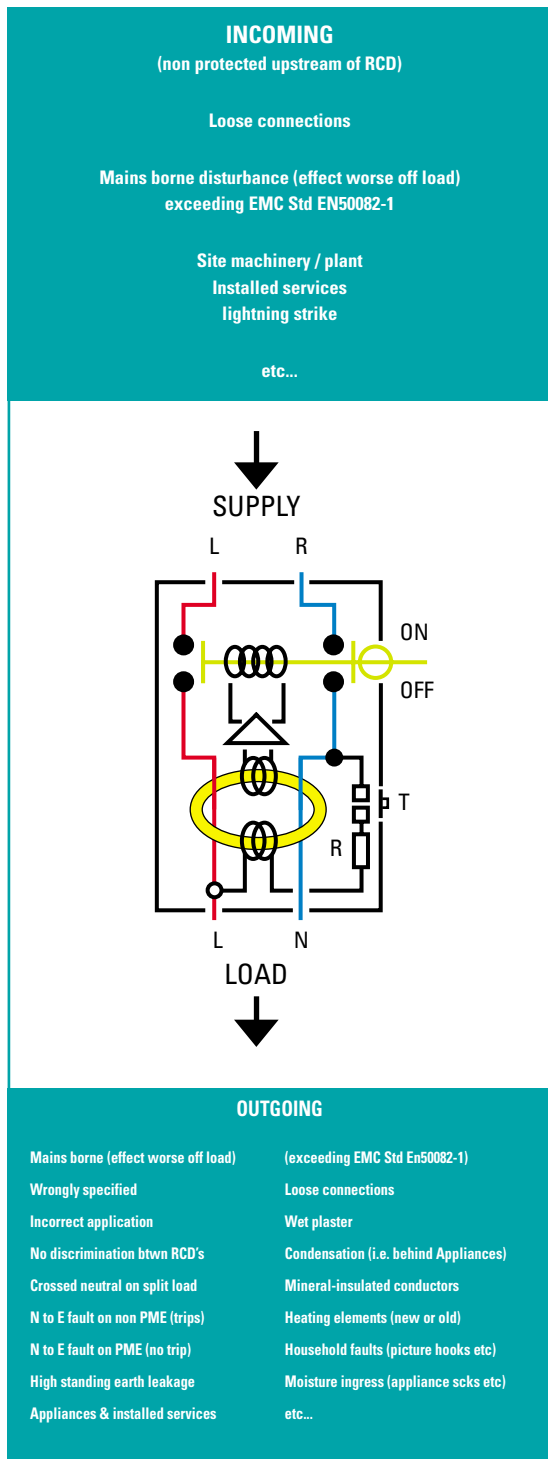
D.C. Components in the Load

The RCBO is capable of responding to the superimposed DC current in compliance with **BS EN 61009**.
eg. fault condition on equipment using rectified voltages.

Surge/Transient Suppression

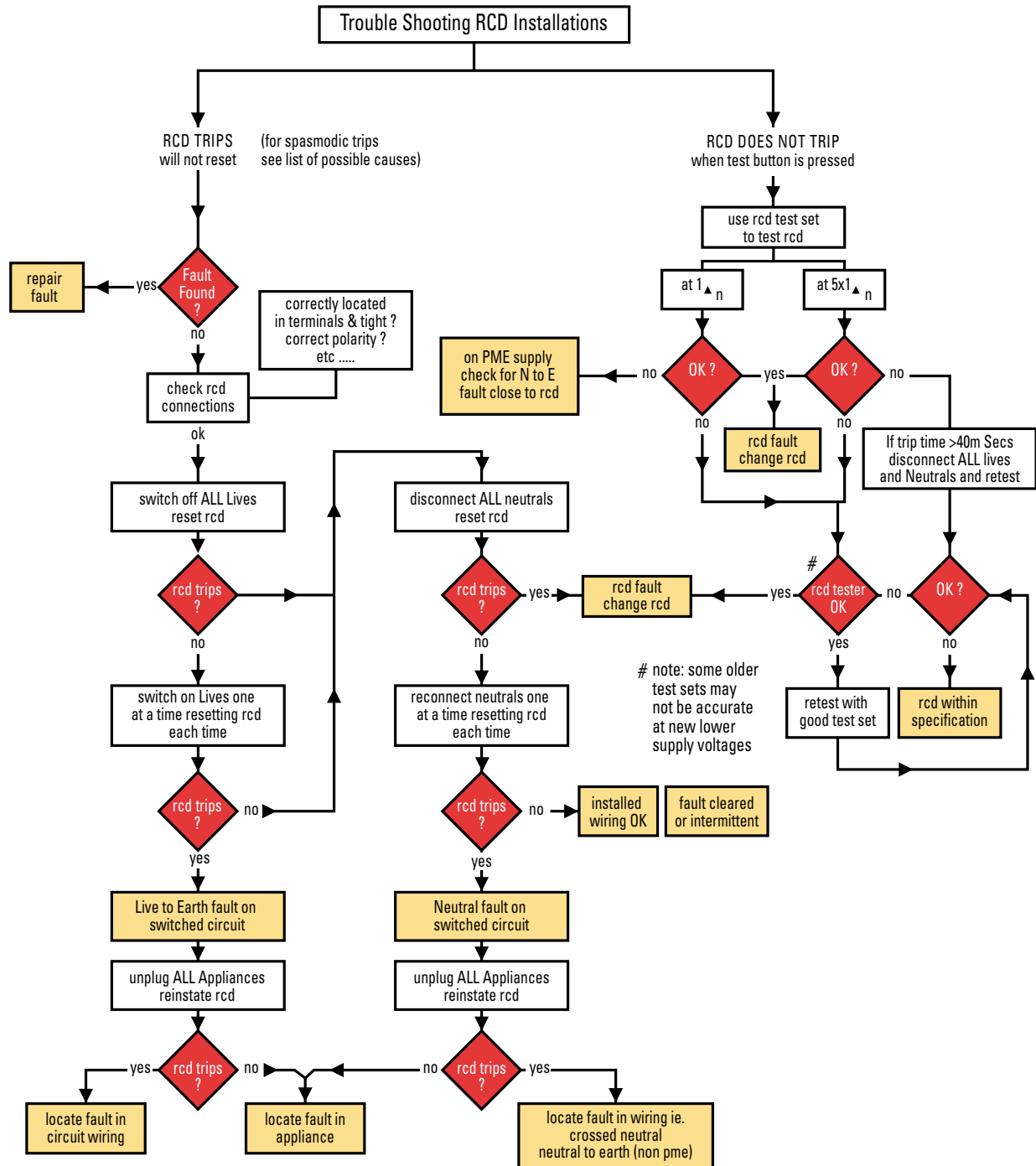
Surge/Transient Suppression is incorporated within the unit and is therefore suitable for use with supply equipment susceptible to such mains borne transients. (Within EMC tolerances).

SCHEMATIC DIAGRAM OF RCD INCLUDING CAUSES OF SPASMODIC TRIPPING



Switchgear Technical Data

RCD troubleshooting diagram



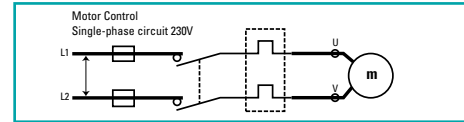
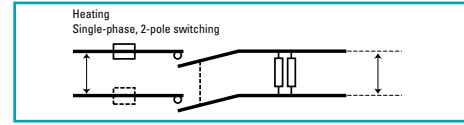
WARNING: Due to the requirement of working in close proximity to live parts these procedures should be carried out by persons who may be considered to be competent 'Electricians.'

Switchgear Technical Data

Technical information - modular contactor range for selection for heating and motor control circuits

Maximum Power in kW according to electrical durability

Electrical durability in opening cycles	Heating Circuits					contactor rating	230v single-phase capacitor motor (2 pole)
	100x10 ³	150x10 ³	200x10 ³	500x10 ³	10 ⁶		
Single Phase	3.5	3	2.2	1	0.8	16A	0.55
Switching	5.4	4.6	3.5	1.6	1.2	25A	1.1
230V	8.6	7.4	3.5	1.6	1.2	40A	2.2
(2 pole)	13.6	11.6	8.8	4	3	63A	4



Reference	Impulse Relay			Contactor								
	AA161RA	AA161RB	AA161	AA202	AA203	AA204	AA402	AA403	AA404	AA633	AA634	
Contact Configuration	1N/O	1N/O, 1N/C	1N/O, 1N/C	2N/O	3N/O	4N/O	2N/O	3N/O	4N/O	3N/O 1 AUX N/C	4N/O	
Rating Operating Voltage	V	240	240	240/415	240/415	240/415	240/415	240/415	240/415	240/415	240/415	
Rating Operating Current (AC1)	A	16	16	25	25	25	40	40	40	63	63	
Cabling No. of Conductors		2	2	2	2	2	1	1	1	1	1	
Cable C.S.A.	mm ²	1-4	1-4	1-4	1-4	1-4	4-25	4-25	4-25	4-25	4-25	
CONTROL CIRCUIT CHARACTERISTICS												
Control Circuit Voltage	V	230/240	230/240	230/240	230/240	230/240	230/240	230/240	230/240	230/240	230/240	
Average Consumption Inrush At Uc	VA	15	15	2.5	8	32	32	55	55	55	55	
POWER DISSIPATED												
Dissipated by Coil	W	1	1	1	1.3	1.3	1.7	1.7	1.7	1.7	1.7	
Dissipated by Pole	W	1.2	1.2	1.2	1.8	1.6	1.6	3.2	3.2	3.2	4	
Impedance Per Pole	M	4.5	4.5	4.5	4.5	4	2	2	2	1	1	
WIDTH												
Number of 18mm Modules		1	1	1	1	2	2	3	3	3	3	

Technical information - modular time switch range

Reference	Electromechanical					Digital			Time Delay
	AT1SD	AT11SD	AT10D	AT1SW	AT1QW	AT1P	AT11P	AT2P	
Supply Voltage	240V a.c. 50Hz	220-240V a.c. 50Hz	220-240V a.c. 50Hz	240V a.c. 50Hz	220-240V a.c. 50Hz	220-240V a.c. 50Hz	220-240V a.c. 50Hz	220-240V a.c. 50Hz	240V a.c. 50Hz
Maximum Power Consumption	1VA	1VA	1VA	1VA	1VA	5VA	5VA	5VA	-
SWITCHING CAPACITY PER CHANNEL									
Resistive	16A	16A	16A	16A	16A	16A	16A	16A	16A
Inductive	3A	4A (Cos 0.6)	3A	3A	3A	2.5A (Cos 0.6)	2.5A (Cos 0.6)	2.5A (Cos 0.6)	2A (Cos 0.6)
Fluorescent	2.5A	1350W	2.5A	2.5A	2.5A	1000W	1000W	1000W	3500W
Switching Arrangement	1 x c/o	1 x n/o	1 x c/o	1 x c/o	1 x c/o	1 x c/o	1 x c/o	2 x c/o	1 x n/o
No. of Switching Commands	48	48	48	56	56	20	42	42	-
Programme Options	-	-	-	-	-	-	r/h	r/h	-
Minimum Programme Time	30 mins	30 mins	30 mins	3 hrs	30 mins/3 hrs	1 min	1 min	1 min	30 secs/10 mins
Operating Temperature Range	-25 to +55C	-25 to +55C	-20 to +55C	-25 to +55C	-25 to +55C	-10 to +55C	-10 to +55C	-10 to +55C	-15 to +40C
Operating Accuracy @ 20 C	-	-	-	-	-	2.5sec/day	2.5sec/day	2.5sec/day	-
Summer / Winter Changeover	-	-	-	-	-	Yes	Yes	Yes	-
Running Reserve	-	-	150 hrs	-	150/70 hrs	150 hrs	150 hrs	150 hrs	-
Width of Unit (in 18mm modules)	3	1	3	3	3	2	1	2	1
Terminal Capacity	2 x 2.5mm	2 x 4mm	2 x 2.5mm	2 x 2.5mm	2 x 2.5mm	2 x 2.5mm	2 x 4mm	2 x 2.5mm	2 x 2.5mm
OR	4 x 1.5mm	-	4 x 1.5mm	4 x 1.5mm	4 x 1.5mm	4 x 1.5mm	-	4 x 1.5mm	-

c/o = Changeover Switch
n/o = Normally Open Contact
r/h = Random or Holiday

Other modular devices

BELL TRANSFORMER Ref:	AA2BT	ISOLATORS Ref:	AS100	ASN100	ASN100R	ADSN100R
Primary Voltage	240v. 50/60Hz	Voltage Range	240V	240V	240V	240V
Secondary Voltage	8V -1.00A 12V - 0.6A	No. of Poles	1	1 Live 1 Neutral	1 Live 1 Neutral	1 Live 1 Neutral
Modular Width	36mm (2 Modules)	No. of Modules	1	2	2 (Reversed Poles)	2 (Reversed Poles) (Grey)

Switchgear Technical Data

Technical information - modular contactor range

FLUORESCENT LAMPS WITH STARTER - SINGLE FITTING						Contactor rating
non-corrected (with parallel correction. In brackets)						
P In W	20	40	50	80	110	-
I In A	0.39 (0.19)	0.43 (0.29)	0.70 (0.46)	0.80 (0.57)	1.2 (0.79)	-
C In F	-, (5)	-, (5)	-, (7)	-, (7)	-, (16)	-
Maximum number of lamps	22 (15)	20 (15)	13 (10)	10 (10)	7 (5)	16A
	30 (20)	28 (20)	17 (15)	15 (15)	10 (7)	25A
	70 (40)	60 (40)	35 (30)	30 (30)	20 (14)	40A
	100 (60)	90 (60)	56 (43)	48 (43)	32 (20)	63A

FLUORESCENT LAMPS WITH STARTER - TWIN FITTING					Contactor rating
non-corrected (with parallel correction. In brackets)					
2 x 18	2 x 36	2 x 58	2 x 80	2 x 14	-
0.44 (0.26)	0.82 (0.48)	1.34 (0.78)	1.64 (0.96)	2.2 (1.3)	-
-, (3.5)	-, (4.5)	-, (7)	-, (9)	-, (18)	-
20 (30)	30 (30)	7 (10)	5 (9)	4 (6)	16A
30 (46)	16 (25)	10 (16)	8 (13)	6 (10)	25A
50 (80)	26 (43)	16 (27)	13 (22)	10 (16)	40A
75 (123)	42 (67)	25 (42)	21 (34)	16 (25)	63A

LOW PRESSURE SODIUM VAPOUR LAMPS						Contactor rating	
non-corrected (with parallel correction. In brackets)							
P In W	18	35	55	90	135	180	-
I In A	0.35 (0.35)	1.4 (0.6)	1.4 (0.6)	2.1 (0.9)	3.1 (0.9)	3.1 (0.9)	-
C In F	-, (5)	-, (20)	-, (20)	-, (26)	-, (45)	-, (40)	-
Maximum number of lamps	18 (14)	4 (3)	5 (3)	3 (2)	2 (1)	2 (1)	16A
	34 (21)	21 (9)	9 (5)	6 (4)	4 (2)	4 (2)	25A
	57 (40)	14 (10)	14 (10)	9 (8)	6 (4)	6 (5)	40A
	91 (60)	24 (15)	24 (15)	19 (10)	10 (6)	10 (7)	63A

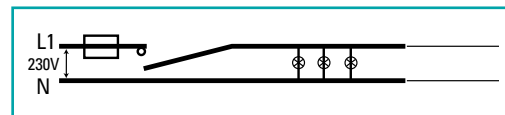
HIGH PRESSURE SODIUM VAPOUR LAMPS					Contactor rating
non-corrected (with parallel correction. In brackets)					
70	150	250	400	1000	-
1 (0.6)	1.8 (0.7)	3 (1.25)	4.4 (2.5)	10.3 (6)	-
-, (12)	-, (12)	-, (32)	-, (25)	-, (45)	-
8 (6)	4 (6)	2 (2)	1 (2)	-, (1)	16A
12 (9)	7 (9)	4 (3)	3 (4)	1 (2)	25A
20 (18)	13 (418)	8 (6)	5 (8)	2 (4)	40A
32 (25)	18 (25)	11 (9)	8 (12)	3 (6)	63A

HIGH PRESSURE MERCURY VAPOUR LAMPS							Contactor rating	
non-corrected (with parallel correction. In brackets)								
P In W	50	80	125	250	400	700	1000	-
I In A	0.6 (0.35)	0.8 (0.5)	1.15 (0.7)	2.15 (1.5)	3.25 (2.4)	5.4 (4)	-, (5.7)	-
C In F	-, (7)	-, (8)	-, (10)	-, (18)	-, (25)	-, (40)	-, (60)	-
Maximum number of lamps	15 (10)	10 (9)	8 (9)	4 (4)	2 (3)	2 (1)	-	16A
	20 (15)	15 (13)	10 (10)	6 (6)	4 (2)	4 (2)	1	25A
	34 (28)	27 (25)	20 (20)	10 (11)	6 (4)	6 (5)	3	40A
	53 (43)	40 (38)	28 (30)	15 (17)	10 (6)	10 (7)	5	63A

HALOGEN LAMPS USED WITH TRANSFORMER				Contactor rating
non-corrected (with parallel correction. In brackets)				
60	80	105	150	-
0.26	0.35	0.45	0.65	-
-	-	-	-	-
9	8	6	4	16A
14	12	9	6	25A
27	23	18	13	40A
40	35	27	19	63A

METAL IODINE OR HALOGEN VAPOUR LAMPS							Contactor rating	
non-corrected (with parallel correction. In brackets)								
P In W	35	70	150	250	400	1000	2000	-
I In A	0.3 (0.3)	0.5 (0.5)	1.0 (1.0)	1.5 (1.5)	2.5 (2.5)	6 (6)	-, (5.5)	-
C In F	-, (6)	-, (12)	-, (20)	-, (32)	-, (45)	-, (85)	-, (60)	-
Maximum number of lamps	27 (12)	16 (6)	8 (4)	5 (3)	3 (2)	1 (-)	1	16A
	40 (18)	24 (9)	12 (6)	8 (4)	5 (3)	2 (1)	2	25A
	68 (31)	42 (16)	20 (10)	14 (7)	8 (5)	4 (3)	3	40A
	106 (50)	64 (25)	32 (15)	21 (10)	13 (7)	5 (4)	5	63A

Presentation of Single Phase circuit



IB : Value of current drawn by each lamp at its rated operational voltage

C : Unit capacitance for each lamp

IB and C : Correspond to values normally quoted by lamp manufacturers

INCANDESCENT AND HALOGEN LAMPS								Contactor rating	
non-corrected (with parallel correction. In brackets)									
P In W	60	75	100	150	200	300	500	1000	-
I In A	0.26	0.32	0.44	0.65	0.87	1.3	2.17	4.4	-
Maximum number of lamps	30	25	19	12	10	7	4	2	16A
	45	38	28	18	14	10	6	3	25A
	85	70	50	35	26	18	10	6	40A
	125	100	73	50	37	25	15	8	63A

Switchgear Technical Data

MEMERA 2000 AD and MEMERA 2000

TERMINAL CAPACITIES	Cable size (mm ²)	Type of termination
Isolator	2.5 - 50	Box clamp with gripper ribs
MCB (AD Type)	Up to 32A 1 - 16 Above 32A 1 - 25	Box clamp with gripper ribs
MCB (AL/ML Types)	1 - 25	Box clamp with gripper ribs
RCBO	1 - 25	Box clamp with gripper ribs
HRC module	1 - 25	Box clamp with gripper ribs
RCCB & ISOLATORS	2.5 - 50	Box clamp with gripper ribs
RCD 25, 40 and 63A & 4P	2.5 - 25	Pinching screw
Earth/neutral bars (all holes)	1 - 16	Pinching screw

CABLE ENTRY FACILITIES MEMERA 2000 Moulded consumer units to BS 5486 Pt 13

Enclosure dimensions code	No. of entry positions Top/bottom*
a	3/2
b	3
c	5
d	5
e	7
f	5

* Each position has breakout provision for surface cable up to 25mm²; 25 x 16mm and 25 x 40mm surface plastic trunking. Additionally centre breakout provision top and bottom will accept 40mm x 40mm surface plastic trunking.

Back entry provisions are provided by a series of elongated breakouts in unit backplate.

CABLE ENTRY FACILITIES MEMERA 2000 AD Moulded consumer units to BSEN 60439-3

Enclosure dimensions code	No. of entry positions Top/bottom*
t	3
w	3
x	4/5
y	6/7

* Top and bottom cut outs are provided to accept either 16 x 25mm, 25 x 40mm or 40 x 40mm surface plastic trunking. 16 x 25mm side cut outs are provided. Ample back entry cut outs are provided to offer full cable access.