



Crabtree

2001

wiring accessories
circuit protection

Includes

Britmac

wiring accessories

Acknowledged as one of Britain's leading manufacturers of wiring accessories and circuit protection equipment. Crabtree's diverse product range is renowned for its outstanding quality and excellent value for money. Specified worldwide, Crabtree products are designed to satisfy the needs of specifiers, wholesalers, contractors and end-users in domestic, commercial and industrial markets alike.

Crabtree

Crabtree's reputation for pioneering new concepts in the electrical industry – right from the acclaimed Lincoln Switch in 1919 to the launch of the Starbreaker Modular Circuit Protection System, and Lifestar Safety Sockets, put us at the forefront of manufacturing technology. It is this insight into our customers' needs, together with the technical expertise to turn innovative ideas into top quality products that has made Crabtree a market leader.



Members of



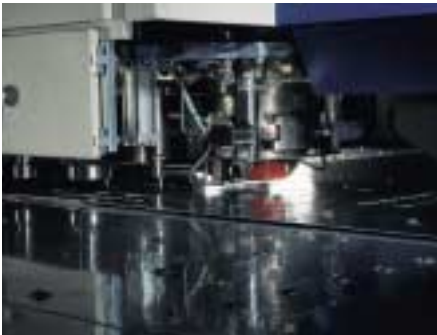
Every Crabtree product is rigorously tested before being despatched to the customer. This excellence is reinforced by the company's registration of compliance with ISO 9001: 1994 which ensures that these procedures are maintained at the highest level.

Crabtree's product ranges are developed with flexibility in mind, and with the evolution of more modular ranges, customers can be confident of obtaining the right product for each application. The same attention to detail can be seen in the company's commitment to customer service. With up-to-the minute technology at the heart of its management information systems, the company is able to manufacture and despatch in the shortest possible time, whilst a communications network in its Central Sales Office ensures that customer enquiries are dealt with speedily and effectively.

The company's commitment does not end there. Specifying Crabtree products ensures not only a first class product, but also the benefit of a wide range of support services. For example, comprehensive product and technical literature, a highly qualified sales force and extensive wholesaler training. Crabtree's Technical Services Department is able to offer expert advice on technical issues, and the preparation of individual quotes.



It is the practice of the Electrium Group of companies to protect new ideas by seeking patent protection, and to protect new designs by seeking registered design protection, and the products listed or described in this publication may in consequence be protected by one or more patents, and/or registered designs and/or applications. A full list of patents, registered designs and applications may be obtained from the Company Secretary of Electrium Limited.



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All Crabtree products comply with the applicable British Standard specification and should be installed by suitably qualified personnel in accordance with the requirements of relevant legislation, regulations (including IEE Wiring Regulations) and the accepted practice in the industry.

For ease of product selection, the catalogue is divided into sections. Each has its own introduction and contains relevant product information.



Printed on paper and board which has been classified as 'environmentally friendly'. It has been tested to contain no detectable dioxins and uses only pulp from forests managed on a sustainable basis.

CAPITAL

POWER & CONTROL



Wide concave rockers are easy to operate.

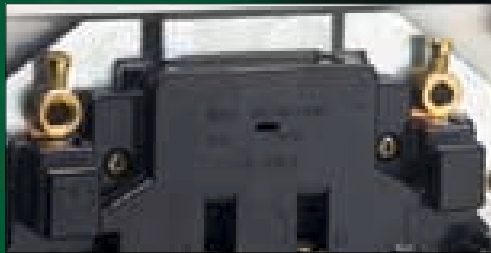
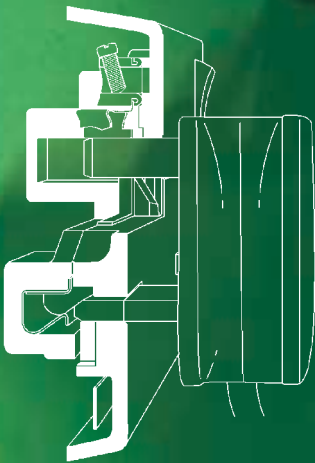


Unique labyrinth switch design minimises visible arc flash and prevents front access to live parts.

Positive drive switch action prevents balancing between the 'on' and 'off' position and gives reliable indication of the contact position.



Shutter mechanism is operated by earth pin of plug.



Two earth terminals (optional) on sockets for use where compliance with section 607 (IEE Wiring Regs.), High integrity earthing is necessary.

Capital power and control accessories are fully design co-ordinated to offer consistent styling and inherent safety features across a broad range of applications.

The range of socket outlets, fused connection units and switches is complemented by products which cater for specific applications such as cooker control units, shaver units, fan control switches and shower control switches.



20A & 32A switches and fused connection units incorporate a knock-out facility which enables use of the same unit with or without cord outlet.





4304/3

4306



4306/D/TE rear view

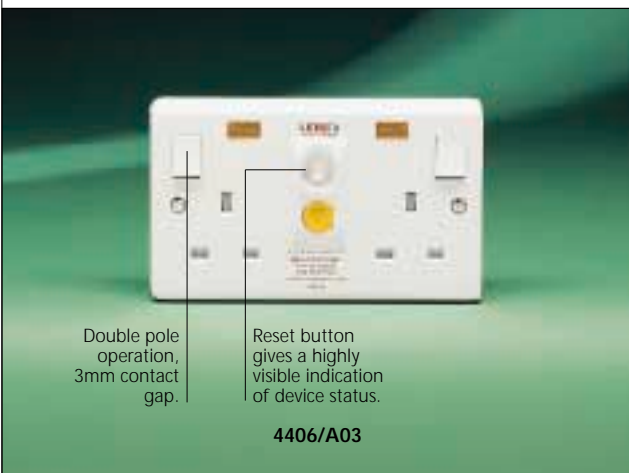


7255



4828

4827/3



Double pole operation, 3mm contact gap.

Reset button gives a highly visible indication of device status.

4406/A03

13A SWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
4304	1 gang SP	10
4304/3	1 gang SP fitted with neon indicator	10
4304/D	1 gang DP	10
4304/3D	1 gang DP fitted with neon indicator	10
4304/TE	1 gang SP fitted with two earth terminals	10
4304/D/TE	1 gang DP fitted with two earth terminals	10
4306	2 gang SP	5
4306/3	2 gang SP fitted with neon indicator	5
4306/D	2 gang DP	5
4306/3D	2 gang DP fitted with neon indicator	5
4306/TE	2 gang SP fitted with two earth terminals	5
4306/D/TE	2 gang DP fitted with two earth terminals	5
Dimensions	1 gang 86mm x 86mm 2 gang 146mm x 86mm	
Mounting boxes	1 gang 9047 surface, SB655 flush galv. or SB619 dry lining 2 gang 9048 surface, SB665 flush galv. or SB629 dry lining	

- Large capacity tunnel type terminals for easy wiring.
- Shallow back projection for ease of installation in a 25mm deep box.
- Two Earth terminals for use where compliance with section 607 (IEE wiring Regs.), high integrity earthing is necessary.

13A UNSWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
7255	1 gang unswitched	10
7255/TE	1 gang unswitched with two earth terminals	10
7257	2 gang unswitched	5
7257/TE	2 gang unswitched with two earth terminals	5
Dimensions	1 gang 86mm x 86mm 2 gang 146mm x 86mm	
Mounting boxes	1 gang 9047 surface, SB655 flush galv. or SB619 dry lining 2 gang 9048 surface, SB665 flush galv. or SB629 dry lining	

13A FUSED CONNECTION UNITS

BS 1363		PACK QTY
4827	DP Switched	10
4827/3	DP Switched with neon indicator	10
4828	Unswitched	10
4828/3	Unswitched with neon indicator	10
Dimensions	86mm x 86mm	
Mounting boxes	9047 surface, SB655 flush galv. or SB619 dry lining	

- Fitted with knock-out position in bottom edge of plate for use with or without cord outlet. Suitable for flexible cord up to 10mm outside diameter.
- Fused on the line side with a 13A fuse link.
- Fuse ASTA certified and marked to BS1362. For spare fuse links see page 6.
- With fuse removed, carrier may be padlocked for extra on site 'maintenance' safety.
- Suitable padlock see page 73.
- Shallow back projection for ease of installation in a 25mm deep box.

13A SAFETY SOCKET WITH RCD PROTECTION

BS 7288		PACK QTY
4404/A01	1 gang switched with neon indicator 10mA tripping current	1
4404/A03	1 gang switched with neon indicator 30mA tripping current	1
4406/A01	2 gang switched with neon indicator 10mA tripping current	1
4406/A03	2 gang switched with neon indicator 30mA tripping current	1
Dimensions	146mm x 86mm	
Mounting boxes	9048 surface, SB665 flush galv. or SB629 dry lining	

See page 80 for further information.

Can be installed to replace any 2 gang size socket outlet on 25mm deep box.

All available with two earth terminals to enable installation to comply with section 607 (wiring regulations) Add suffix /TE to List No.

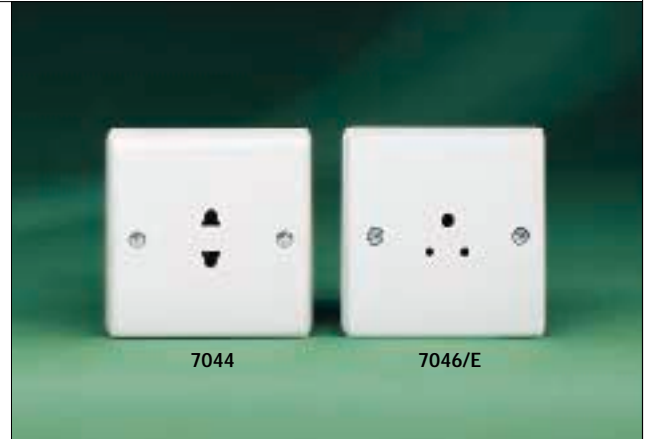
5A, 15A SWITCHED SOCKET OUTLETS

BS 546		PACK QTY
2330	5A Shuttered SP	10
2382	15A Shuttered SP	10
Dimensions	86mm x 86mm	
Mounting boxes	2330 – 9047 surface, SB655 flush galv. or SB619 dry lining 2382 – 9041 surface, SB615 flush galv. or SB619 dry lining	



2A, 5A, 15A, 16A SOCKET OUTLETS

BS 546 WHERE APPLICABLE		PACK QTY
7044*	2.5-16A 2 pin Unswitched unshuttered	10
7046	2A Unswitched shuttered	10
7046/E*	2A Unswitched unshuttered	10
7047	5A Unswitched shuttered	10
7048	15A Unswitched shuttered	10
Dimensions	86mm x 86mm	
Mounting boxes	7044, 7046, 7047-9047 surface, SB655 flush galv. or SB619 dry lining 7048-9041 surface, SB615 flush galv. or SB619 dry lining	



* Export only

16A 250V SCHUKO SOCKET

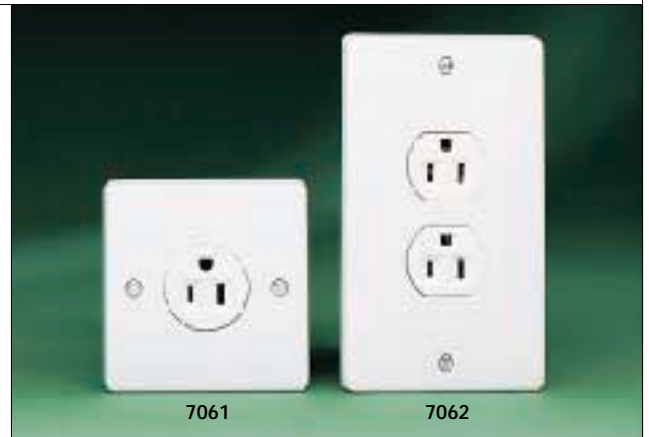
BS 5733 WHERE APPLICABLE		PACK QTY
7051	1 gang	10
Dimensions	86mm x 86mm	
Mounting boxes	9041 surface, SB618 flush galv. or SB632 dry lining	



15A 125V AMERICAN STANDARD SOCKET OUTLETS

NEMA CONFIGURATION 5-15		PACK QTY
7061	1 gang	10
7062	2 gang	5
Dimensions	1 gang 86mm x 86mm 2 gang 86mm x 146mm	
Mounting boxes	1 gang 9047 surface, SB655 flush galv. or SB619 dry lining 2 gang 9048 surface, SB665 flush galv. or SB629 dry lining	

Push-in termination accepts 2.5mm² cable.
Screw-in termination accepts 4mm² cable.



BLANKING PLATES

BS 5733 WHERE APPLICABLE		PACK QTY
4001	1 gang	20
4002	2 gang	20
4003	1 gang architrave	20
4004	2 gang architrave	20
Dimensions	1 gang 86mm x 86mm, 2 gang 146mm x 86mm 1 gang architrave 33mm x 86mm 2 gang architrave 33mm x 146mm	





3A, 13A FUSED SAFETY PLUGS

BS 1363 ASTA MARKED		PACK QTY
7221	Fused at 13A	10
7221/3	Fused at 3A	10

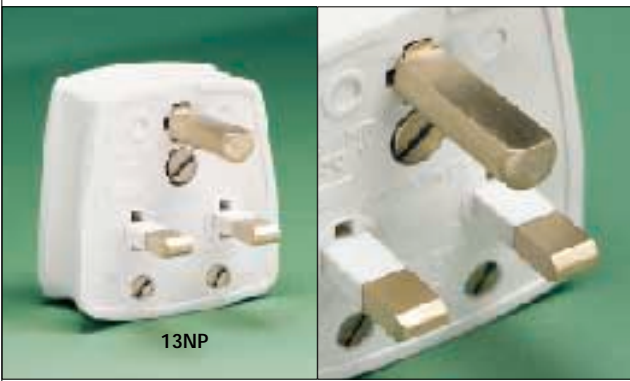
Live and neutral pins have moulded nylon sleeves for safety.
 ASTA certified for complete compliance with BS 1363.
 ASTA approved by reference number 4.
 Fitted with ASTA certified fuse link marked BS 1362, List Nos. **6920/3** and **6920/13**, see below.



13A FUSED RESILIENT PLUGS

BS 1363/A		PACK QTY
7222/WH	Fused at 13A – White	10
7222/BK	Fused at 13A – Black	10

Live and neutral pins have moulded nylon sleeves for safety.
 Cover in rubber material. Base in nylon.
 ASTA approved by reference number 20.
 Fitted with ASTA certified fuse-link marked to BS 1362, List No. **6920/13**, see below.



13A NON-INTERCHANGEABLE PLUGS

		PACK QTY
13NP	Fused at 13A – White	10
13NPRD	Fused at 13A – Red	10

Only for use with **Britmac non-standard sockets**



2A, 5A, 15A PLUGS

BS 546		PACK QTY
7011	2A	10
7111	5A	10
7211	15A	10

Moulded from white thermoset plastic.
 Live and neutral pins have moulded nylon sleeves for safety.
 Round pin plugs are not fused.



FUSE LINKS

		PACK QTY
6920/3	3A Red	100
6920/5*	5A Black	100
6920/13	13A Brown	100
6925	Spare dimmer fuse	10

Type tested to BS 1362 and ASTA certified, except List No. **6925** which is type tested to BS 4265:1977 rated at 3.15 A 250V.

* Price and delivery on application.

5A CARD SWITCH

	PACK QTY
4018	5
Dimensions	86mm x 94mm
Mounting boxes	9047 surface, SB655 flush galv. or SB619 dry lining

Controls energy consumption in installations such as hotels by ensuring that appliances are not left on when rooms are unoccupied.

The switch is operated by a door entry card and controls the supply to a room via a suitably rated contactor.

Will accept door entry cards up to 86mm x 54mm x 1mm.



4018

6AX TP CONTROL SWITCHES

BS 3676 BS EN 60947-3	PACK QTY	
4017	6AX Three pole isolating switch marked with isolator symbol	5
4017/1	6AX Three pole isolating switch marked with isolator and fan symbol	5

Dimensions 86mm x 86mm

Mounting boxes 9043 surface, SB623 flush galv. or SB619 dry lining

Provides local isolation of fans with or without timers whilst the rest of the circuit remains live. Enables repair or routine maintenance of fans.

240V only.

For full details of compliance with BS EN 60947-3 see Technical Data page 91.



4017

4017/1

20A DP CONTROL SWITCHES

BS 3676	PACK QTY	
4015	10	
4015/3	Fitted with neon indicator	10
4015/31	Fitted with neon indicator and marked 'water heater'	10

Dimensions 86mm x 86mm

Mounting boxes 9047 surface, SB655 flush galv. or SB619 dry lining

Fitted with knock-out position in bottom edge of plate for use with or without cord outlet.

Cord outlet suitable for flexible cord up to 10mm outside diameter.

Two earthing terminals are fitted to the switches.



4015

4015/31

32A DP CONTROL SWITCH

BS 3676	PACK QTY	
4013/3	Fitted with neon indicator	10
Dimensions	86mm x 86mm	
Mounting boxes	9041 surface, SB615 flush galv. or SB619 dry lining	

Fitted with knock-out position in bottom edge of plate for use with or without cord outlet.

Cord outlet suitable for flexible cord up to 10mm outside diameter.

Two earthing terminals are fitted to the switches.



4013/3

45A DP CONTROL SWITCHES

BS 3676	PACK QTY	
4016	5	
4016/3	With neon indicator	5
Dimensions	86mm x 86mm	
Mounting boxes	9041 surface, SB615 flush galv. or SB619 dry lining	



4016

4016/3



4521/31

45A DP 'SLIM LINE' COOKER CONTROL UNITS

BS 4177 & BS 1363 PACK QTY

4521/1	45A DP main switch and 13A switch socket outlet. Faceplate marked 'cooker'	1
4521/31	45A DP main switch and 13A switch socket with neon indicators. Faceplate marked 'cooker'	1

Dimensions 146mm x 86mm

Mounting boxes 9054 surface, SB625 flush galv. or SB629 dry lining

- Same plate size as standard twin socket.
- Large capacity tunnel terminals on live and neutral take up to 10mm² cable.
- Two earth terminals are fitted.
- Separate double pole switching for both cooker and socket outlet.



4520/1

45A DP COOKER CONTROL UNITS

BS 4177 & BS 1363 PACK QTY

4520/1	45A DP main switch and 13A switch socket outlet. Faceplate marked 'cooker'	1
4520/31	45A DP main switch and 13A switch socket with neon indicators. Faceplate marked 'cooker'	1

Dimensions 168mm x 114mm

Mounting boxes 9052 surface or 9338/GV flush



4523/3

50A DP COOKER CONTROL UNITS

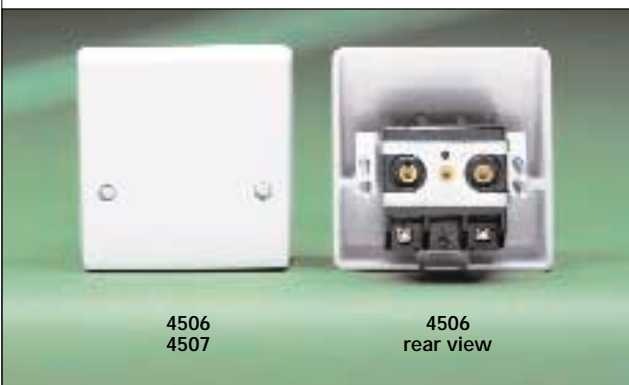
PACK QTY

4523	Faceplate marked 'cooker'	1
4523/3	Faceplate marked 'cooker' and fitted with neon indicator	1

Dimensions 165mm x 178mm

Mounting boxes For 'retro fit' applications – allows use of original flush box

- Durable white powder coated metal faceplate.
- Blank plate available to order.



4506
4507

4506
rear view

45A CABLE OUTLETS

BS 5733 PACK QTY

4506	With terminals and cable clamp Terminals will accept 2 x 10mm ² cable	10
4507	With cable clamp Cable clamp will accept 1 x 16mm ² through cable	10

Dimensions 86mm x 86mm

Mounting boxes 9041 surface, SB615 flush galv. or SB632 dry lining

Cable knock-out in cover prevents access to terminals before outgoing cable is fitted.

20A CORD OUTLET

BS 5733 WHERE APPLICABLE		PACK QTY
4075	With cable clamp	10
Dimensions	86mm x 86mm	
Mounting boxes	9047 surface, SB655 flush galv. or SB619 dry lining	

Outgoing cable 2.5mm² max with 11mm diameter max outer sheath.



32A TP & N CONTROL SWITCHES

BS 3676 TYPE TESTED TO BS EN 60947-3		PACK QTY
4513/WH	Surface metalclad switch with neon indicator Unit accommodates up to 6mm ² cable	1
4514/WH	Surface metalclad switch with neon indicator Unit accommodates up to 16mm ² cable	1
4515/WH	Flush metalclad switch with neon indicator Unit accommodates up to 16mm ² cable	1
Terminal capacity	16mm ² on all switches	
Dimensions	4513/WH 142mm x 82mm x 51mm 4514/WH 173mm x 122mm x 74mm 4515/WH 207mm x 146mm	
Mounting box	9224/BG for flush mounting unit	

*Utilisation category to BS EN 60947-3
AC 22, 32A 415V. AC 23, 25A (12kW/16HP max), 415V.*



- On and off markings give positive indication of contact position.
- Padlocking in 'off' or 'on' position in all surface mounting switches.
- Internal shrouding of live terminals.
- Neon indicator with all versions which can be fitted in upper/lower terminals.
- Switches available in two sizes and flush or surface styles. See pages 28 and 53 for further details.



50A DP CONTROL SWITCHES

BS 3676		PACK QTY
4500		5
4500/1	Faceplate marked 'cooker'	5
4500/3	Fitted with neon indicator	5
4500/31	Faceplate marked 'cooker' and fitted with neon indicator	5
Dimensions	86mm x 146mm	
Mounting boxes	9040 surface, SB625 flush galv. or SB629 dry lining	

BS EN 60947-3 rating 240V 50A category of duty AC22.





4827/3FF

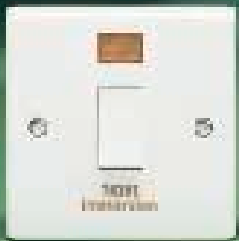
4827/3DW



4827/BE



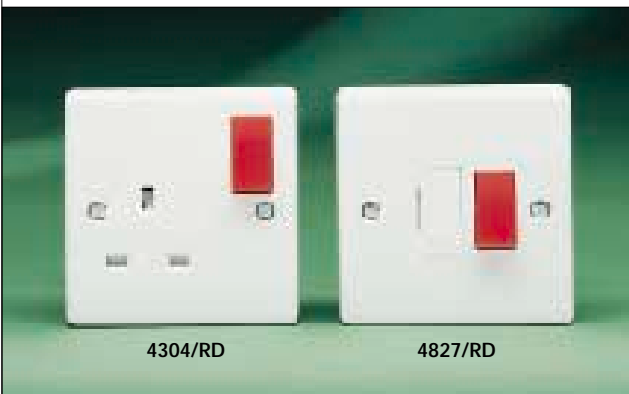
4827/3SA



4013/3NI



4013/3ST



4304/RD

4827/RD



4306/WH/RD

PRODUCT MARKING SERVICE

A wide range of markings can be added to 13A fused connection units and double pole control switches. The majority of these markings are consistent in style, colour and position with the standard Tamper-printed 'water heater' marking on List No.4015/31. All of the markings offer the same high level of durability.

To order any of the markings listed below, add suffix to List No. ie 4827 marked 'fridge freezer' = 4827/FF.

MARKING	SUFFIX	MARKING	SUFFIX
air conditioner	AC	night immersion	NI
bell transformer	BE	NORMAL	NO
cooker hood	HD	oven	OV
daytime boost	DB	panel heater	PH
dishwasher	DW	security alarm	SA
emergency circuit	EC	security light	SL
extractor fan	EF	shower	SH
freezer	FZ	shower pump	SP
fridge	FR	storage heater	ST
fridge freezer	FF	towel rail	TR
heater	HT	tumble dryer	TD
hob	HB	UPS	UPS
humidity vent	HV	washing machine	WM
intruder alarm	IA	waste disposal	WD
microwave	MW	water cooler	WC
		water heater	WA

These popular markings are offered on a fast track service in the standard wiring accessories colour. For price and delivery information on other markings not listed above, or markings in blue, red, or black, contact our Technical Services Department.

RED ROCKERS

For applications where essential supply systems are in use, sockets and fused connection units with red rockers are available to order. These are ideal for use in hospitals, computer installations, etc.

To order add suffix to List No.
ie 4306 with red rockers = 4306/WH/RD.
4827 with red rockers = 4827/RD.

For Rockergid switches with red rockers see Rockergid section page 47.

SHAVER SUPPLY UNIT

BS 3535 PART 1		PACK QTY
2400	input 240V 50Hz output { 115V 50Hz 240V 50Hz	1
2400/E	input 115V 50Hz output { 115V 50Hz 240V 50Hz	1
Dimensions	86mm x 146mm	
Mounting boxes	9053 surface, SB628 flush galv. or SB631 dry lining	

Complies with the requirements of the IEE Wiring Regulations (BS 7671) for use in rooms containing a fixed bath or shower.



LIGHT & SHAVER UNIT

BS 3535 PART 1, BS 4533 SECTION 102.1		PACK QTY
2402	input 240V 50Hz output { 115V 50Hz 240V 50Hz 60W 284mm tungsten lamp	1
Dimensions	458mm x 68mm x 74mm	

Complies with the requirements of the IEE Wiring Regulations (BS 7671) for use in rooms containing a fixed bath or shower.

- Tough, impact resistant, all-moulded construction – no need to bond extraneous metal work.
- Diffuser is removed complete with lamp fitting to facilitate safer lamp changes.
- 60W lamp can be switched independently by a separate pull switch.
- Moulded back-plate may be used as a template.

SHAVER SUPPLY UNIT AND LIGHT & SHAVER UNIT

- 20VA minimum output at rated voltage.
- Suitable for use for 'Mains shavers only'.
- Insertion of plug switches unit on.
- Incorporates an automatic thermistor protection device.
- Accepts most standard British, Continental, American and Australian 2 pin plugs.



16A CEILING SWITCHES

BS 3676		PACK QTY
2161	2 way SP	10
2163	1 way DP with neon indicator	10
Dimensions	68.5mm diameter x 42.5mm	
Mounting boxes	Integral pattress for surface mounting. Can be mounted to a small circular conduit box.	

Two way switch may be wired as one way.
Standard pull cord/acorn is 1.5m long, in white.
Fully rated for fluorescent or inductive loads.
Suitable for use with 16mm x 16mm mini-trunking.



50A CEILING SWITCHES

BS 3676		PACK QTY
2167	1 way DP with neon and mechanical indicator	1
Mounting boxes	Integral pattress for surface mounting. Can be mounted to a large circular conduit box.	

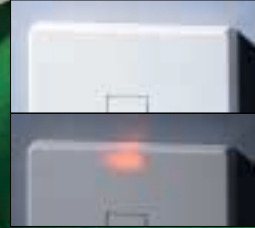
Complies with the requirements of the IEE Wiring Regulations (BS 7671) for use as an isolating device.
Terminals will accept up to 10mm² cable.
Standard pull cord/acorn is 1.5m long, in white.
Suitable for use with 25mm x 16mm trunking.
Rated for non-inductive loads only.



For 6A ceiling switches see Capital Lighting section, page 15.

CAPITAL

LIGHTING CONTROL



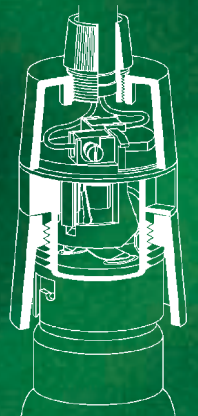
Each plate switch will accept a seek light which is housed unobtrusively in the body of the switch to help locate it in the dark – a useful aid in sheltered housing.



Wide concave rockers are easy to operate.



Design of the Safety lampholder body is common to both pendant and batten lampholders. Ensures that the lamp must be fully inserted before the lampholder contacts become 'live'.



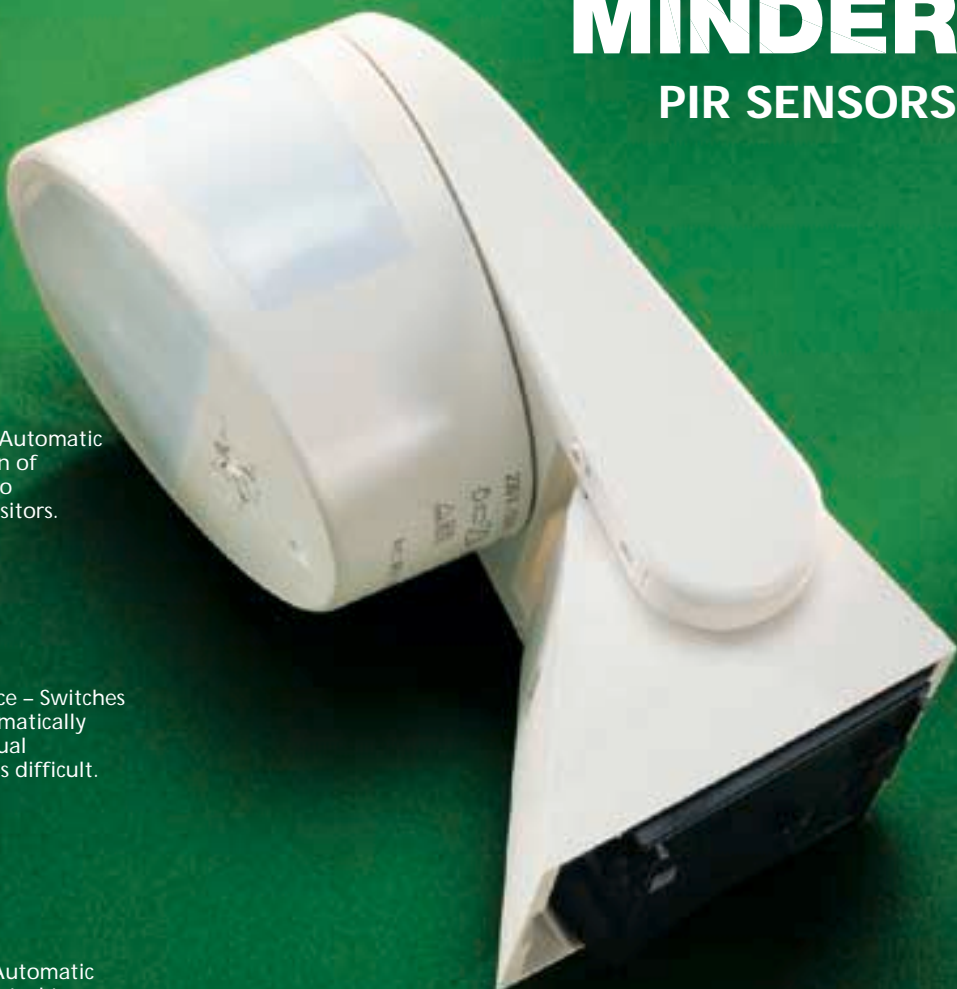
The extensive Capital lighting range of plate switches and ceiling accessories combines modern styling with advanced safety design features.

The new standard range of ceiling accessories offers a competitive alternative to the safety range.



MINDER

PIR SENSORS



Courtesy – Automatic illumination of doorways to welcome visitors.

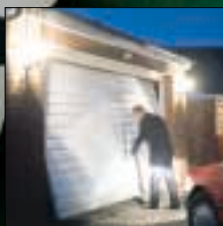


Convenience – Switches lights automatically when manual operation is difficult.

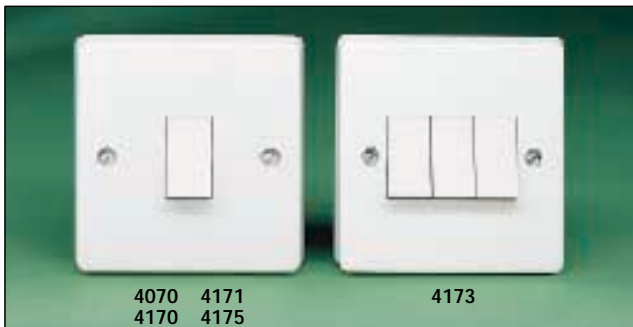


Security – Automatic lighting control to deter intruders.

Minder passive infra red sensors (PIR) allow the automatic control of lighting and other equipment.



Energy saving – Provides power only when movement is detected.



4070 4171
4170 4175

4173



4176



4096/B

4096/P



4077
4177
4179
4180

4097/B

4097/P

4178



2190

10AX PLATE SWITCHES

BS 3676		PACK QTY
4009	Seeklight	1
4070	1 gang 1 way SP	10
4170	1 gang 2 way SP	10
4171	1 gang 1 way DP	10
4172	2 gang 2 way SP	10
4173	3 gang 2 way SP	10
4174	4 gang 2 way SP	5
4175	1 gang intermediate	10
4176	6 gang 2 way SP	5
Dimensions	1-3 gang 86mm x 86mm 4-6 gang 146mm x 86mm	
Mounting boxes	1-3 gang 9043 surface, SB623 flush galv. or SB619 dry lining 4-6 gang 9048/1 surface, SB665 flush galv. or SB629 dry lining	

Two way switches can be wired as one way.

Fully rated for fluorescent or inductive loads.

- All 86mm x 86mm and 146mm x 86mm switches have the facility to fit one seeklight assembly, List No. **4009**, as above, to assist location in the dark.

10A RETRACTIVE SWITCHES

BS 3676		PACK QTY
4096/B	1 gang SP marked with bell symbol	10
4096/P	1 gang SP marked 'press'	10
Dimensions	86mm x 86mm	
Mounting boxes	9043 surface, SB623 flush galv. or SB619 dry lining	

- All 86mm x 86mm and 146mm x 86mm switches have the facility to fit one seeklight assembly, List No. **4009**, as above, to assist location in the dark.
- Can be wired for normally open (N/O) or normally closed (N/C) circuits.

10A ARCHITRAVE SWITCHES

BS 3676		PACK QTY
4077	1 gang 1 way SP	10
4097/B	1 gang retractive SP marked with bell symbol	10
4097/P	1 gang retractive SP marked 'press'	10
4177	1 gang 2 way SP	10
4178	2 gang 2 way SP	10
4179	1 gang 1 way DP	10
4180	1 gang intermediate	10
Dimensions	1 gang 32mm x 86mm 2 gang 32mm x 146mm	
Mounting boxes	1 gang 4005 surface or 9257/BG flush 2 gang 4006 surface or 9258/BG flush	

Two way switches can be wired as one way.

Retractive switches can be wired for normally open (N/O) or normally closed (N/C) circuits. Fully rated for fluorescent or inductive loads.

400W DIMMER SWITCH

BS 5518. BS EN 55014		PACK QTY
2190	2 way Dimmer 400W maximum 60W minimum 240V AC only	1
Dimensions	86mm x 86mm	
Mounting box	9043 surface, SB623 flush galv. or SB619 dry lining	

Fitted with a fast acting fuse type tested to BS 4265: 1977 rated at 3.15A 250V, List No. **6925**, to protect the electronic components against short circuits which may occur when the lamp fails.

Spare fuse provided.

6A 'CORINTHIAN' PLATE SWITCHES

BS 3676		PACK QTY
5170	1 gang 2 way SP	10
5172	2 gang 2 way SP	10
5173	3 gang 2 way SP	10
5175	1 gang intermediate	10
5177	1 gang retractive	10
Dimensions	86mm x 86mm	
Mounting boxes	9043 surface, SB623 flush galv. or SB619 dry lining	

Fully rated for fluorescent or inductive loads.
The screwless terminals are for use with 1.0–1.5mm² or 3/029" PVC insulated cable.
Two way switches can be wired as one way.

- Clip-on trim conceals fixing screws.
- Extra wide rocker makes Corinthian ideal for use in sheltered housing installations.



6A CEILING SWITCHES

BS 3676		PACK QTY
2041	1 way SP	10
2141	2 way SP	10
2147	Retractive SP	10
Dimensions	68.5mm dia x 42.5mm	
Mounting boxes	Complete with pattress for surface mounting. Can be mounted to small circular conduit box.	

Two way switch can be wired as one way.
Retractive switch can be wired for normally open (N/O) or normally closed (N/C) circuits.
Standard pull cord/acorn is 1.5m long in white.
Retractive pull cord/acorn is 2m long in red.
Fully rated for fluorescent or inductive loads.
Variations to retractive switch are available to order.
For 16A & 50A ceiling switches see Capital Power & Control section, page 11.



SHAVER SUPPLY UNIT AND LIGHT & SHAVER UNIT

SHAVER SUPPLY UNIT

BS 3535 PART 1		PACK QTY
2400	input 240V 50Hz output { 115V 50Hz 240V 50Hz	1
2400/E	input 115V 50Hz output { 115V 50Hz 240V 50Hz	1
Dimensions	86mm x 146mm	
Mounting boxes	9053 surface, SB628 flush galv. or SB631 dry lining	

LIGHT & SHAVER UNIT

BS 3535 PART 1, BS 4533 SECTION 102.1		PACK QTY
2402	input 240V 50Hz output { 115V 50Hz 240V 50Hz 60W 284mm tungsten lamp	1
Dimensions	458mm x 68mm x 74mm	

Complies with the requirements of the IEE Wiring Regulations (BS 7671) for use in rooms containing a fixed bath or shower.

- Tough, impact resistant, all-moulded construction – no need to bond extraneous metal work.
- Diffuser is removed complete with lamp fitting to facilitate safer lamp changes.
- 60W lamp can be switched independently by a separate pull switch.
- Moulded back-plate may be used as a template.

SHAVER SUPPLY UNIT AND LIGHT & SHAVER UNIT

- 20VA minimum output at rated voltage.
- Suitable for use for 'Mains shavers only'.
- Insertion of plug switches unit on.
- Incorporates an automatic thermistor protection device.
- Accepts most standard British, Continental, American and Australian 2 pin plugs.





SAFETY LAMPHOLDERS

BS EN 61184, T2 RATING		PACK QTY
5850	Safety pendant lampholder	20
5851	Safety batten lampholder	1
5801	Home office shield	10

*Fixed terminals on pendant lampholder accept 1.0mm cable.
Batten lampholder has terminals for live, neutral, loop in and protective earth.
Fixing centres 50.8mm.
Fixed terminal strip on batten lampholder accepts 1.5mm cable.
Home office shield supplied with the safety batten lampholder.
Base diameter 92mm.
With surface trunking use Marshall-Tufflex adaptor TCR2.*

- 'Wipe clean' contacts avoid lamp seizure to pins making for safe and easy lamp replacement.
- Cord grip on pendant lampholder prevents strain on the terminal wiring.

SAFETY PENDANT SETS

		PACK QTY
5855	With 6" cord	10
5855/9	With 9" cord	10
5855/12	With 12" cord	10

*Comprises safety ceiling rose (List No. 5860) and pendant lampholder (List No. 5850), supplied with appropriate length of heat resistant 0.75mm² twin core circular cord to BS 6141 for service loads up to 2.5kg.
With surface trunking use Marshall-Tufflex adaptor TCR2.*

5856	With 6" cord, ceiling rose 5861 and safety lampholder 5850.	10
3443/5850S	With 6" cord, standard ceiling rose 3443 and safety lampholder 5850.	10
3443/5850S9	With 9" cord, standard ceiling rose 3443 and safety lampholder 5850.	10
3443/5850S12	With 12" cord, standard ceiling rose 3443 and safety lampholder 5850.	10

Cord supplied is heat resistant 0.75mm² twin core circular cord to BS 6141 for service loads up to 2.5kg.

SAFETY CEILING ROSE

BS 67		PACK QTY
5860	Safety ceiling rose	10

*Terminals for live, neutral, loop in and protective earth.
Fixed terminal strip accepts 1.5mm cable.
For service loads up to 2.5kg.
Fixing centres 50.8mm.
Base diameter 92mm.
With surface trunking use Marshall-Tufflex adaptor TCR2.*

- Cord grip prevents strain on the terminal wiring.

5861	Heavy duty ceiling rose	10
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*Terminals for live, neutral, loop in and protective earth.
Base diameter 81mm.*

- Two screw cover fixing giving strong secure fixing and automatic earthing of decorative luminaires.
- 15kg load capacity.
- Integral pattress for surface mounting.
- Can be mounted on circular conduit box.

STANDARD STRAIGHT BATTEN LAMPHOLDERS

BS EN 61184, T2 RATING		PACK QTY
3410	Batten lampholder, 3 terminal direct wiring with short skirt	10
3412	Batten lampholder, separate 4 way terminal block with Home Office skirt	10
3420	Batten lampholder, integral terminal block with short skirt	10
3422	Batten lampholder, integral terminal block with Home Office skirt	10
Dimensions	84mm x 162mm x 140mm	

- 50.8mm fixing centres.
- Non-rising terminals.
- Non-stick skirt.
- 3 sets of knockouts are supplied on units with integral terminal block.
- 3420, 3422 fitted with heat resistant tails.



STANDARD ANGLE BATTEN LAMPHOLDERS

BS EN 61184, T2 RATING		PACK QTY
3432	Angle batten lampholder, separate 4 way terminal block with Home Office skirt	10

- Lampholder is fitted with heat-resistant tails.
- Supplied with integral backplate.
- 50.8mm fixing centres.
- Non-rising terminals.
- Non-rising skirt.



STANDARD PENDANT SETS & LAMPHOLDERS

BS 67 & BS EN 61184, T2 RATING		PACK QTY
3442	Pendant lampholder, T2 rating with spring plungers	10
3450	Pendant set with 6" cord	10
3450/9	Pendant set with 9" cord	10

Pendant sets comprise ceiling rose (List No 3443) and pendant lampholder (List No. 3442), supplied with appropriate length of heat resistant 0.75mm² twin core circular cord.

- Lampholder is constructed from one-piece thermoplastic interior.





3443

STANDARD CEILING ROSE

BS 67		PACK QTY
3443	Ceiling rose with integral terminal block	10

- Terminals accept up to 1.5mm² cable.
- Separate earth terminals with 6mm² capacity.
- 50.8mm fixing centres.
- 3 sets of knockouts.



3462/WH

3463/BK

STANDARD JUNCTION BOXES

BS 6220		PACK QTY
3462/WH	20A 4 terminal junction box, white	10
3462/BK	20A 4 terminal junction box, black	10
3463/WH	30A 3 terminal junction box, white	10
3463/BK	30A 3 terminal junction box, black	10

- Slotted pillar-type terminals accept a maximum 4 x 4.0mm² (30A) or 4 x 1.5mm² (20A) twin and earth cables.
- Shutters on cover close any entry holes not in use.
- Clear symbols indicate which entries are open and closed.



3401

3402

6900

7410RD

7697

ANCILLIARY ITEMS

		PACK QTY
3401	Replacement standard short skirt	50
3402	Replacement standard Home Office skirt	50
6900	1.5m long white pull cord & white acorn	1
6900/1RD	2m long red pull cord & red acorn	1
6900/1	2m long white pull cord with red acorn	1
6900/2	100m ball of white pull cord	1
6900/2RD	100m ball of red pull cord	1
7410RD	Ceiling Switch acorn, red	1
7410WH	Ceiling Switch acorn, white	1
7697	Neon indicator for 50A ceiling switch	1
4674	Neon lens 50A ceiling switch	1



TNS/1/BK

APPLEBY PHOTO CELL

		PACK QTY
TNS/1/BK	10A dusk till dawn sensor (70 lux) mounted in box 75 x 75 x 50mm	1
TNS/2/BK	10A dusk till dawn sensor (70 lux) mounted in box 100 x 100 x 50mm	1
TNS/3/BK	10A dusk till dawn sensor (70 lux) mounted in box 150 x 150 x 50mm	1

- Provides a facility to remotely switch lighting at a pre-set level of light (70 lux).
- Enclosure is rated at IP55.

MINDER 90° SENSOR

IP55		PACK QTY
6851	90° Sensor	1

Dimensions 85mm x 145mm x 72mm

- Minder 90° can be swivelled vertically +90°, -40°
- Sensor head can be swivelled horizontally +/-65°
- Can be wall or ceiling mounted.
- Minder 90° offers rear-field "anti-creep" protection.



MINDER 220° SENSOR

IP55		PACK QTY
6876	220° Sensor	1

Dimensions 85mm x 145mm x 72mm

- Minder 220° can be swivelled vertically +90°, -40°
- Sensor head can be swivelled horizontally +/-65°
- Can be wall or ceiling mounted.
- Minder 220° offers rear-field "anti-creep" protection.



MINDER 280° SENSOR

IP55		PACK QTY
6875	280° Sensor	1

Dimensions 83mm x 165mm x 110mm

- Minder 280° can be swivelled vertically +90° -40°
- Sensor head can be swivelled horizontally +/- 65°
- Can be wall or ceiling mounted.
- Minder 280° offers rear-field "anti-creep" protection.



	90°	220°	280°
Range (height 2.5m)	Front 12m Side 6m Anti-creep: 1m	Radial: 16m Anti-creep: 1m	Radial: 16m Anti-creep: 1m
Switching Capacity	1350W	3680W	3680W

- All Minder units are supplied with blank inserts for selective surveillance.
- Units can be used in conjunction with Crabtree Motorpak heating and lighting contactor.
- Multi option dusk and time settings.
- Test mode.
- Temperature range -25 to 55°C.
- BS EN 55014.



Modules snap securely into place.



Complete flexibility to mount different types of communication and data outlets on one faceplate.

A complete modular system comprising a range of fully interchangeable communications modules, from RJ45 outlets to E Tap connectors. The modules can be snapped into a choice of moulded or metal surrounds which co-ordinate with all Capital range products.



Styling of faceplate fully co-ordinated with the Capital range profile.





7071 7080



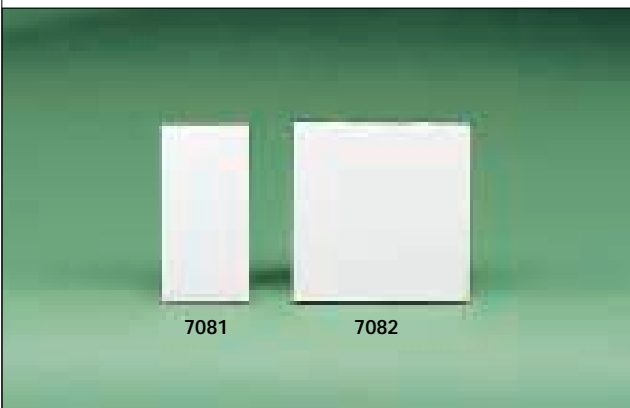
7072 7172



7074 7076 7077



7078 7079



7081 7082

COMMUNICATION MODULES

		PACK QTY
7080	BT Master unit	10
7071	BT secondary module, 6 wire	10
7072	RJ45 (single) module, 8 wire – Category 4	10
7172	RJ45 (single) module, 8 wire – Category 5e	10
7173	RJ45 (twin) module, 8 wire – Category 5e	10
Dimensions	25mm x 50mm	

All RJ45 modules are configured to wiring standard 258 A.

- BT and RJ45 units incorporate KATT IDC connector to allow direct termination of twisted pair cable onto the module.
- Contacts are colour coded for ease of wiring.
- KATT three wire connection to each contact allows for a wider range of applications than other similar connectors.
- Facility for termination of two wires into the top of the KATT block allows for daisy chaining.
- KATT blocks may be terminated with proprietary IDC tools such as AT&T, Krone, Mod-Tap.
- Low wire insertion force required – up to 100 re-terminations can be made.

DATA MODULES

		PACK QTY
7074	BNC single module with 75 Ohm crimp connector	10
7075	BNC twin module with 75 Ohm crimp connectors	5
7076	E-Tap connector with dust cover	2
7077	D type connector – 25 pin with female crimp body	10
7078	Twinax module with receptacle connector	5
7079	IBM housing only with dust cover for IBM universal data connector	2
Dimensions	50mm x 50mm (except 7074 and 7075 – 25mm x 50mm)	

Note

Recommended mounting boxes for all modules allow for those requiring the greatest depth. Modules 7071, 7072, 7074 and 7075 can also be mounted on shallow depth boxes (25mm).

BLANK MODULES

		PACK QTY
7081	1 module size	10
7082	2 module size	10
Dimensions	7081 25mm x 50mm 7082 50mm x 50mm	

See page 87 for further technical details.

MOUNTING PLATES

BS 5733 WHERE APPLICABLE		PACK QTY
7091	2 module moulded	10
7094	4 module moulded	10
8091*	1 module metal plate (fitted with grid)	5
8092*	2 module metal plate (fitted with grid)	5
8094*	4 module metal plate (fitted with grid)	5
Dimensions	86mm x 86mm, 1 & 2 module 86mm x 146mm, 4 module	
Mounting boxes	7091, 8091*, 8092*, 9041 surface, SB615 flush galv. or SB619 dry lining 7094, 8094*, 9040 surface, SB625 flush galv. or SB629 dry lining	

* Metal plates complete with mounting grid and available in Satin Chrome (SC), Bronze (BZ), and Oyster Gold (YR) finishes. Indicate the finish you require by adding suffix to List No. ie 8091 – 1 module metal plate Bronze = 8091/BZ.

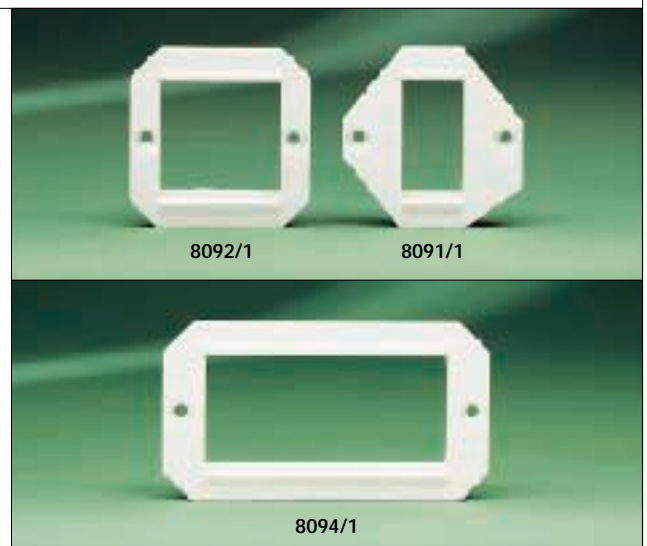


MOUNTING GRIDS - SEPARATE SALE

		PACK QTY
8091/1	1 module grid	10
8092/1	2 module grid	10
8094/1	4 module grid	10

Separate sale grids enable communications modules to be mounted in OEMs own decorative plates.

Supplied complete with earthing tag.



CO-AXIAL SOCKET OUTLETS

BS 3041 WHERE APPLICABLE		PACK QTY
7265	1 way direct connection	10
7266	2 way direct connection	10
7267	1 way isolated UHF, VHF	10
7268	2 way isolated UHF, VHF	10
7269	1 way F type Satellite	10
7270	2 way F type Satellite	10
7271	Twin TV/Satellite	10
Dimensions	86mm x 86mm	
Mounting boxes	9047 surface, SB655 flush galv. or SB619 dry lining	

Isolated UHF, VHF socket outlets for network systems (group aerials & sockets).
Isolated units only suitable on installations with earth bond.



TELEPHONE SOCKET OUTLETS

		PACK QTY
6915	IDC tool	20
7283	Single master	10
7284	Single secondary	10
7286	RJ11 Telephone socket	10
7288	Dual outlet adaptor	10
Dimensions	86mm x 86mm	
Mounting boxes	9047 surface, SB655 flush galv. or SB619 dry lining	

BT approved by the Department for Trade and Industry.
One IDC tool, List No. 6915, supplied with each carton of single master outlets.



CAPITAL

DECORATIVE BRASS



Polished brass



Rope Edge Brass

Crabtree now have two new decorative brass designs to complement its extensive 'Capital' range. Polished and lacquered solid brass faceplates give a durable high quality finish.

Also available in clam shell packaging for wholesale display.



CAPITAL

METAL PLATE

CAPITAL METAL PLATE & DECORATIVE BRASS



Satin Chrome



Bronze



Oyster Gold

The sophistication of Satin Chrome and elegance of Bronze and Oyster Gold finishes provide stylish options to specifiers of a comprehensive matching range of wiring accessories.



Unique labyrinth switch design minimises visible arc flash and prevents front access to live parts whilst wide concave rockers are easy to operate.

All the following list numbers are available in Satin Chrome (SC), Bronze (BZ), and Oyster Gold (YR) finishes. Indicate the finish you require by adding suffix to List No. ie 4214 – 1 gang switch socket in Bronze = 4214/BZ.



13A SURFACE SOCKET OUTLETS

BS 1363		PACK QTY
4214	1 gang SP switched	10
4216	2 gang SP switched	5
4214/3	1 gang SP switched fitted with neon indicator	10
4216/3	2 gang SP switched fitted with neon indicator	5
9685	1 gang unswitched	10
9687	2 gang unswitched	5
Dimensions	1 gang 82mm x 82mm x 44mm	
	2 gang 142mm x 82mm x 44mm	

For boxes without knock-outs see page 66.

Double pole switched versions available to order – Add suffix **D** to List No.
ie Double pole 4214/BZ = 4214/DBZ.



13A FLUSH SOCKET OUTLETS

BS 1363		PACK QTY
4314	1 gang SP switched	10
4316	2 gang SP switched	5
4314/3	1 gang SP switched fitted with neon indicator	10
4316/3	2 gang SP switched fitted with neon indicator	5
8255	1 gang unswitched	10
8257	2 gang unswitched	5
Dimensions	1 gang 86mm x 86mm	
	2 gang 146mm x 86mm	
Mounting boxes	1 gang 9221/BG surface, SB615 flush galv. or SB619 dry lining	
	2 gang 9223/BG surface, SB625 flush galv. or SB629 dry lining	

Double pole switched versions are available to order – Add suffix **D** to List No.
ie Double pole 4314/BZ = 4314/DBZ.



13A SURFACE FUSED CONNECTION UNITS

BS 1363		PACK QTY
4841	Unswitched	10
4842	DP switched	10
4842/3	DP switched with neon	10
4846	Unswitched with cord outlet	10
4847	DP switched with cord outlet	10
4847/3	DP switched with cord outlet and neon	10
Dimensions	82mm x 82mm x 44mm	



13A FLUSH FUSED CONNECTION UNITS

BS 1363		PACK QTY
4831	Unswitched	10
4832	DP switched	10
4832/3	DP switched with neon indicator	10
4836	Unswitched with cord outlet	10
4837	DP switched with cord outlet	10
4837/3	DP switched with cord outlet and neon indicator	10
Dimensions	86mm x 86mm	
Mounting boxes	9221/BG surface, SB615 flush galv. or SB619 dry lining	

All fused connection units:

Fused on the line side with 13A fuse link ASTA certified and marked to BS 1362.

For spare fuse links see page 6.

Cord outlet suitable for flexible cord up to 10mm outside diameter.

Two earthing terminals are fitted to the unit.

For full specification details of finishes see Technical Data page 86.

All the following list numbers are available in Satin Chrome (SC), Bronze (BZ), and Oyster Gold (YR) finishes. Indicate the finish you require by adding suffix to List No. ie 6170 – 1 gang switch in Bronze = 6170/BZ.

13A SAFETY SOCKETS – RCD PROTECTION

BS 7288 PACK QTY

SURFACE

4424/A01	1 gang switched with neon indicator 10mA tripping current	1
4424/A03	1 gang switched with neon indicator 30mA tripping current	1
4426/A01	2 gang switched with neon indicator 10mA tripping current	1
4426/A03	2 gang switched with neon indicator 30mA tripping current	1

Dimensions 142mm x 82mm x 44mm

FLUSH

4414/A01	1 gang switched with neon indicator 10mA tripping current	1
4414/A03	1 gang switched with neon indicator 30mA tripping current	1
4416/A01	2 gang switched with neon indicator 10mA tripping current	1
4416/A03	2 gang switched with neon indicator 30mA tripping current	1

Dimensions 146mm x 86mm

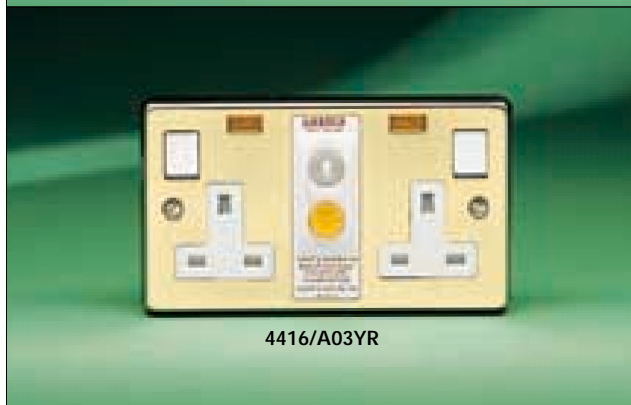
Mounting boxes 9048 surface, SB665 flush galv. or SB629 dry lining

See page 80 for further information.

All available with two earth terminals to enable installation to comply with section 607 (wiring regulations) Add suffix /TE to List No.



4424/A01BZ



4416/A03YR

2A, 5A 15A FLUSH SOCKET OUTLETS

PACK QTY

8075*	2A 3 pin unswitched	10
2340	5A 3 pin switched	10
2372	15A 3 pin switched	10

Dimensions 86mm x 86mm

Mounting boxes 9221/BG surface, SB615 flush galv. or SB619 dry lining

* Unshuttered version available for export only – Add suffix E to List No. ie 8075/BZE.



8075/SCE

2340/BZ

15A 125V AMERICAN STANDARD FLUSH SOCKET OUTLETS

NEMA CONFIGURATION 5–15 PACK QTY

7161	1 gang	10
7162	2 gang	5

Dimensions 1 gang 86mm x 86mm
2 gang 86mm x 146mm

Mounting boxes 1 gang 9047 surface, SB655 flush galv. or SB619 dry lining
2 gang 9048 surface, SB665 flush galv. or SB629 dry lining



7161/SC

10AX PLATE SWITCHES

BS 3676 PACK QTY

6170	1 gang 2 way	10
6172	2 gang 2 way	10
6173	3 gang 2 way	10
6175	1 gang Intermediate	10
6096	1 gang retractive (press)	10

Dimensions 86mm x 86mm

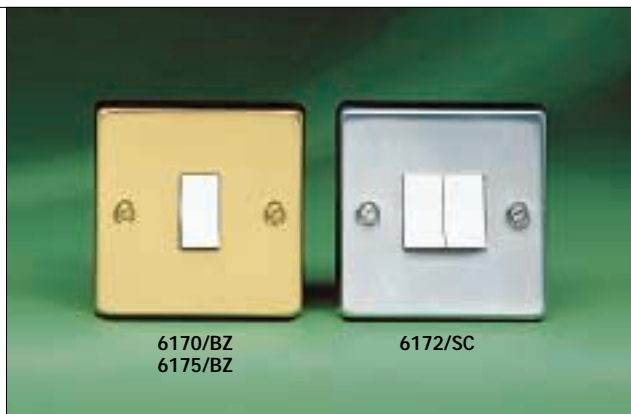
Mounting boxes 9043 surface, SB623 flush galv. or SB619 dry lining

Two way switches can be wired as one way.

Fully rated for fluorescent or inductive loads. (Except 6096, 10A only)

Retractive switch can be wired for normally open (N/O) or normally closed (N/C) circuits.

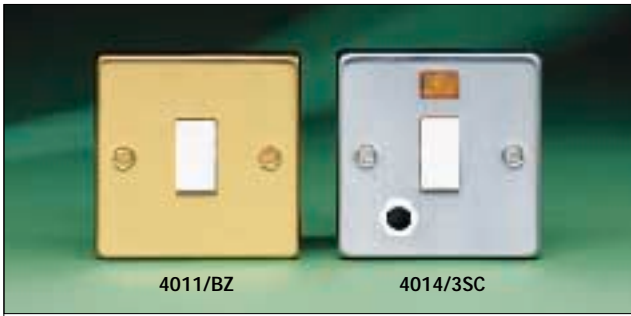
For full specification details of finishes see Technical Data page 86.



6170/BZ
6175/BZ

6172/SC

All the following list numbers are available in Satin Chrome (SC), Bronze (BZ), and Oyster Gold (YR) finishes. Indicate the finish you require by adding suffix to List No. ie 4011 Double pole switch in Bronze = 4011/BZ.



20A DP CONTROL SWITCHES

BS 3676		PACK QTY
4011	DP switch	10
4011/3	DP switch with neon indicator	10
4014/3	DP switch with neon indicator and cord outlet	10
Dimensions	86mm x 86mm	
Mounting boxes	9047 surface, SB655 flush galv. or SB619 dry lining	
<i>Two earthing terminals are fitted to the switches.</i>		
<i>Cord outlet suitable for flexible cord up to 10mm outside diameter.</i>		



32A DP CONTROL SWITCH

BS 3676		PACK QTY
4012/3	DP switch with neon indicator	10
Dimensions	86mm x 86mm	
Mounting boxes	9041 surface, SB615 flush galv. or SB619 dry lining	
<i>Two earthing terminals are fitted to the switches.</i>		



50A DP CONTROL SWITCHES

BS 3676		PACK QTY
4512	DP switch	5
4512/3	DP switch with neon indicator	5
Dimensions	86mm x 146mm	
Mounting boxes	9040 surface, SB625 flush galv. or SB629 dry lining	
<i>BS EN 60947-3 rating 240V 50A category of duty AC22.</i>		
<i>For associated cable outlets see page 8.</i>		



32A TP & N CONTROL SWITCH

BS 3676 TYPE TESTED TO BS EN 60947-3		PACK QTY
4515/SC	Satin Chrome finish with neon indicator. Unit accommodates up to 16mm ² cable.	1
Terminal capacity	16mm ²	
Dimensions	207mm x 146mm	
Mounting box	9224/BG for flush mounting	
<i>Utilisation category to BS EN 60947-3.</i>		
<i>AC 22, 32A 415V.</i>		
<i>AC 23, 25A (12kW/16 HP max), 415V.</i>		
<i>See pages 9 & 53 for further details.</i>		



SHAVER SUPPLY UNIT

BS 3535 PART 1: 1990		PACK QTY
2410	240V 50Hz input 115V 50Hz } output 240V 50Hz }	1
Dimensions	86mm x 146mm	
Mounting boxes	9053 surface, SB628 flush galv. or SB631 dry lining	
<i>For technical details see moulded version, List No. 2400, on page 11.</i>		

For full specification details of finishes see Technical Data page 86.

All the following list numbers are available in Satin Chrome (SC), Bronze (BZ), and Oyster Gold (YR) finishes. Indicate the finish you require by adding suffix to List No. ie 4011 Double pole switch in Bronze = 4011/BZ.

CO-AXIAL SOCKET OUTLETS

BS 3041 WHERE APPLICABLE		PACK QTY
8265	1 way direct connection	10
8266	2 way direct connection	10
8267	1 way isolated UHF, VHF	1
8268	2 way isolated UHF, VHF	1

Dimensions 86mm x 86mm
Mounting boxes 9047 surface, SB655 flush galv. or SB619 dry lining
Isolated units only suitable on installations with earth bond.



COMMUNICATIONS PLATES

BS 5733 WHERE APPLICABLE		PACK QTY
8091	1 module metal plate (fitted with grid)	5
8092	2 module metal plate (fitted with grid)	5
8094	4 module metal plate (fitted with grid)	5

Dimensions 86mm x 86mm, 1 & 2 module
 86mm x 146mm, 4 module
Mounting boxes 8091*, 8092-9041 surface, SB615 flush galv. or SB619 dry lining
 8094*-9040 surface, SB625 flush galv. or SB629 dry lining

The metal plates listed above accept any of the range of communications modules. See page 22 for full product selection details.



BLANKING PLATES

BS 5733 WHERE APPLICABLE		PACK QTY
6575	1 gang	20
6577	2 gang	20

Dimensions 1 gang 86mm x 86mm
 2 gang 146mm x 86mm



PRODUCT ENGRAVING SERVICE

A wide range of markings can be added to 13A fused connection units and double pole control switches. These popular markings are offered on a fast track service in red as standard.

To order any of the markings listed below, add suffix to List No. ie 4316/SC engraved 'emergency circuit' = 4316/SCEC.

MARKING	SUFFIX	MARKING	SUFFIX	MARKING	SUFFIX
air conditioner	AC	heater	HT	security light	SL
bell transformer	BE	hob	HB	shower	SH
cooker hood	HD	humidity vent	HV	shower pump	SP
daytime boost	DB	intruder alarm	IA	storage heater	ST
dishwasher	DW	microwave	MW	towel rail	TR
emergency circuit	EC	night immersion	NI	tumble dryer	TD
extractor fan	EF	NORMAL	NO	UPS	UPS
freezer	FZ	oven	OV	washing machine	WM
fridge	FR	panel heater	PH	waste disposal	WD
fridge freezer	FF	security alarm	SA	water cooler	WC

For price and delivery information on other markings not listed above, contact our Technical Services Department.

RED ROCKERS

For applications where essential supply systems are in use, sockets and fused connection units with red rockers are available to order. These are ideal for use in hospitals, computer installations, etc.

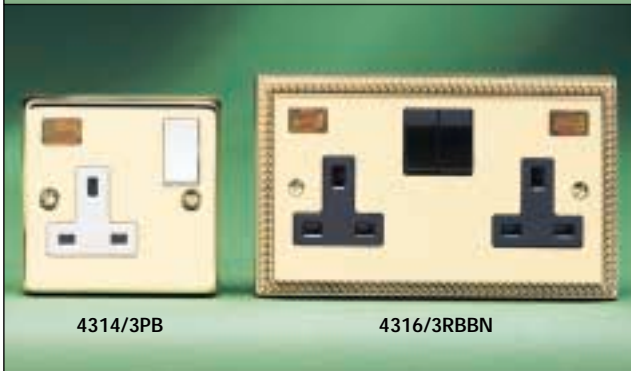
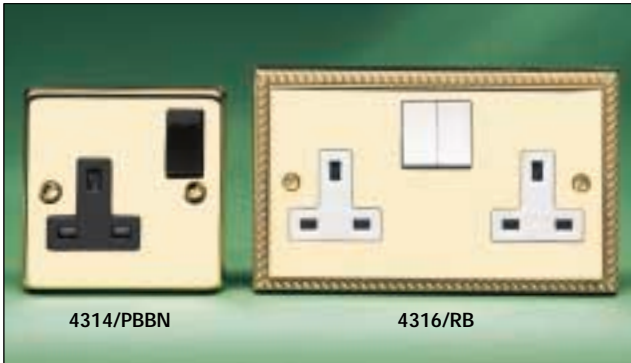
To order, add suffix to List No. ie 4316/SC with red rockers = 4316/SC/RD.

For Rockergrid switches with red rockers see Rockergrid section page 47.

For full specification details of finishes see Technical Data page 86.

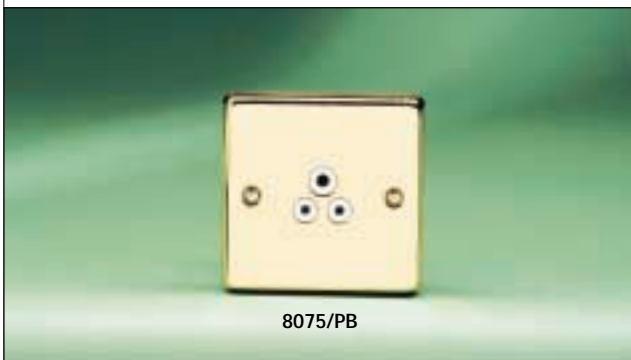


All the following list numbers are available in Polished Brass (PB) and Rope Edge (RB) finishes. Indicate the finish you require by adding suffix to List No. ie 4011/3 Double pole switch in Rope Edge = 4011/3RB.
 Products are also available with brown interiors. Add suffix **BN** to list no. ie 4011/3 Double pole switch in Rope Edge with brown interior = 4011/3RBBN.
 Clam shell packaging format available. Prefix list number with **C**. ie: C4314/RB.



13A FLUSH SOCKET OUTLETS

BS 1363		PACK QTY
4314	1 gang SP switched	1
4316	2 gang SP switched	1
4314/3	1 gang SP switched fitted with neon indicator	1
4316/3	2 gang SP switched fitted with neon indicator	1
Dimensions	PB 1 gang 86mm x 86mm 2 gang 146mm x 86mm	RB 1 gang 94mm x 94mm 2 gang 154mm x 94mm
Mounting boxes	1 gang 9221/BG surface, SB615 flush galv. or SB619 dry lining 2 gang 9223/BG surface, SB625 flush galv. or SB629 dry lining	



2A, 15A FLUSH SOCKET OUTLETS

		PACK QTY
8075*	2A 3 pin unswitched	1
2372**	15A 3 pin switched	1
Dimensions	PB 86mm x 86mm	RB 94mm x 94mm
Mounting boxes	9221/BG surface, SB615 flush galv. or SB619 dry lining	

* Unshuttered version available for export only – Add suffix **E** to List No. ie 8075/PBE.
 ** Product available in white only



13A FLUSH FUSED CONNECTION UNITS

BS 1363		PACK QTY
4832	DP switched	1
4832/3	DP switched with neon indicator	1
4837/3	DP switched with cord outlet and neon indicator	1
Dimensions	PB 86mm x 86mm	RB 94mm x 94mm
Mounting boxes	9221/BG surface, SB615 flush galv. or SB619 dry lining	

All fused connection units:
 Fused on the line side with 13A fuse link ASTA certified and marked to BS 1362.
 For spare fuse links see page 6.
 Cord outlet suitable for flexible cord up to 10mm outside diameter.
 Two earthing terminals are fitted to the unit.
 For full specification details of finishes see Technical Data page 86.



All the following list numbers are available in Polished Brass (PB) and Rope Edge (RB) finishes. Indicate the finish you require by adding suffix to List No. ie 4011/3 Double pole switch in Rope Edge = 4011/3RB. Products are also available with brown interiors. Add suffix BN to list no. ie 4011/3 Double pole switch in Rope Edge with brown interior = 4011/3RBBN. Clam shell packaging format available. Prefix list number with C. ie: C4314/RB.

10AX PLATE SWITCHES

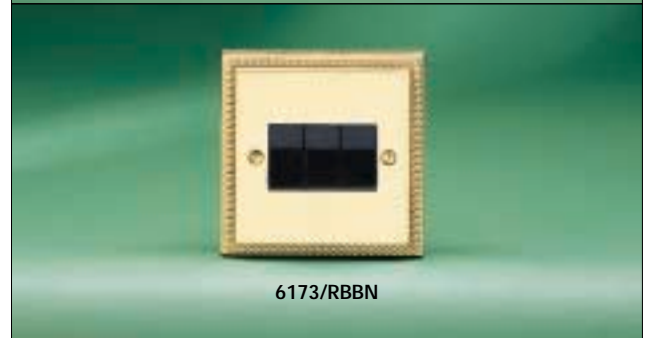
BS 3676		PACK QTY
6170	1 gang 2 way	1
6172	2 gang 2 way	1
6173	3 gang 2 way	1
6175	1 gang Intermediate	1
6096	1 gang retractive (press)	1
Dimensions	PB 86mm x 86mm RB 94mm x 94mm	
Mounting boxes	9043 surface, SB623 flush galv. or SB619 dry lining	

Two way switches can be wired as one way.

Fully rated for fluorescent or inductive loads. (Except 6096, 10A only)

Retractive switch can be wired for normally open (N/O) or normally closed (N/C) circuits.

For full specification details of finishes see Technical Data page 86.



20A DP CONTROL SWITCHES

BS 3676		PACK QTY
4011/3	DP switch with neon indicator	1
Dimensions	PB 86mm x 86mm RB 94mm x 94mm	
Mounting boxes	9047 surface, SB655 flush galv. or SB619 dry lining	

Two earthing terminals are fitted to the switches.

Cord outlet suitable for flexible cord up to 10mm outside diameter.



32A DP CONTROL SWITCH

BS 3676		PACK QTY
4012/3	DP switch with neon indicator	1
Dimensions	PB 86mm x 86mm RB 94mm x 94mm	
Mounting boxes	9041 surface, SB615 flush galv. or SB619 dry lining	

Two earthing terminals are fitted to the switches.



50A DP CONTROL SWITCHES

BS 3676		PACK QTY
4512	DP switch	1
4512/3	DP switch with neon indicator	1
Dimensions	PB 86mm x 146mm RB 94mm x 154mm	
Mounting boxes	9040 surface, SB625 flush galv. or SB629 dry lining	

BS EN 60947-3 rating 240V 50A category of duty AC22.

For associated cable outlets see page 8.



All the following list numbers are available in Polished Brass (PB) and Rope Edge (RB) finishes. Indicate the finish you require by adding suffix to List No. ie 4011/3 Double pole switch in Rope Edge = 4011/3RB.
 Products are also available with brown interiors. Add suffix **BN** to list no. ie 4011/3 Double pole switch in Rope Edge with brown interior = 4011/3RBBN.
 Clam shell packaging format available. Prefix list number with **C**. ie: C4314/RB.



SHAVER SUPPLY UNIT

BS 3535 PART 1: 1990		PACK QTY
2410**	240V 50Hz input 115V 50Hz } output 240V 50Hz }	1
Dimensions	PB 86mm x 146mm RB 94mm x 154mm	
Mounting boxes	9053 surface, SB628 flush galv. or SB631 dry lining	

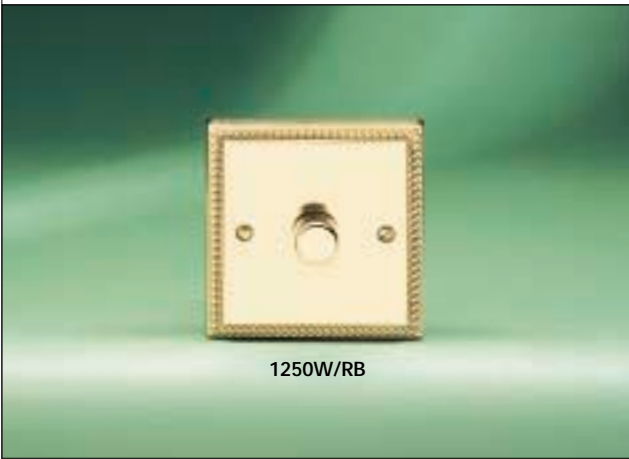
For technical details see moulded version, List No.2400, on page 11.
 Products marked ** are not available with brown interiors.



CO-AXIAL SOCKET OUTLETS

BS 3041 WHERE APPLICABLE		PACK QTY
8265**	1 way direct connection	1
8266**	2 way direct connection	1
8267**	1 way isolated UHF, VHF	1
8268**	2 way isolated UHF, VHF	1

Dimensions PB 86mm x 86mm RB 94mm x 94mm
Mounting boxes 9047 surface, SB655 flush galv. or SB619 dry lining
 Isolated units only suitable on installations with earth bond.
 Products marked ** are not available with brown interiors.

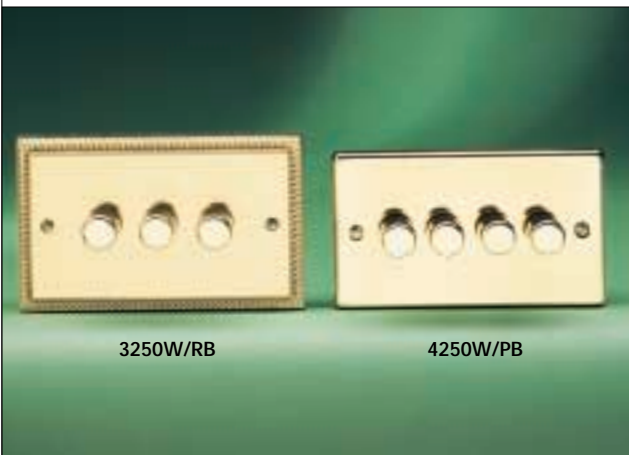


DIMMER SWITCHES

		PACK QTY
1250W	1 gang dimmer 250W	1
1400W	1 gang dimmer 400W	1
1400LV	1 gang low voltage dimmer 400W	1
1630W	1 gang dimmer 630W	1
2250W	2 gang dimmer 250W	1
2400W	2 gang dimmer 400W	1
3250W	3 gang dimmer 250W	1
4250W	4 gang dimmer 250W	1

Dimensions 1-2 gang PB 86mm x 86mm, RB 94mm x 94mm
 3-4 gang PB 146mm x 86mm, RB 154mm x 94mm
Mounting boxes 1-2 gang 9221/BG surface, SB615 flush galv. or SB619 dry lining
 3-4 gang 9223/BG surface, SB625 flush galv. or SB629 dry lining
 1 gang 630W SB618 flush galv. or SB632 dry lining

Other low voltage options available, please enquire for details.



All the following list numbers are available in Polished Brass (**PB**) and Rope Edge (**RB**) finishes. Indicate the finish you require by adding suffix to List No. ie 4011/3 Double pole switch in Rope Edge = 4011/3**RB**. Products are also available with brown interiors. Add suffix **BN** to list no. ie 4011/3 Double pole switch in Rope Edge with brown interior = 4011/3**RBBN**. Clam shell packaging format available. Prefix list number with **C**. ie: **C**4314/RB.

TELEPHONE SOCKET OUTLETS

		PACK QTY
8283	Single master	1
8284	Single secondary	1
Dimensions	PB 86mm x 86mm RB 94mm x 94mm	
Mounting boxes	9221/BG surface, SB615 flush galv. or SB619 dry lining	



8283/PB

8284/RBBN

BLANKING PLATES

BS 5733 WHERE APPLICABLE		PACK QTY
6575	1 gang	1
6577	2 gang	1
Dimensions	PB 1 gang 86mm x 86mm, 2 gang 146mm x 86mm RB 1 gang 94mm x 94mm, 2 gang 154mm x 94mm	



6575/PB

6577/RB

ROCKERGRID FLUSH PLATES

		PACK QTY
6571	1 gang Rockergrid plate	1
6572	2 gang Rockergrid plate	1
6573	3 gang Rockergrid plate	1
6574	4 gang Rockergrid plate	1
Dimensions	1-2 gang PB 86mm x 86mm, RB 94mm x 94mm 3-4 gang PB 146mm x 86mm, RB 154mm x 94mm	

When ordering Rockergrid plates, please select the appropriate grid.



6572/RB
fitted with Rockergrid switches

GRIDS

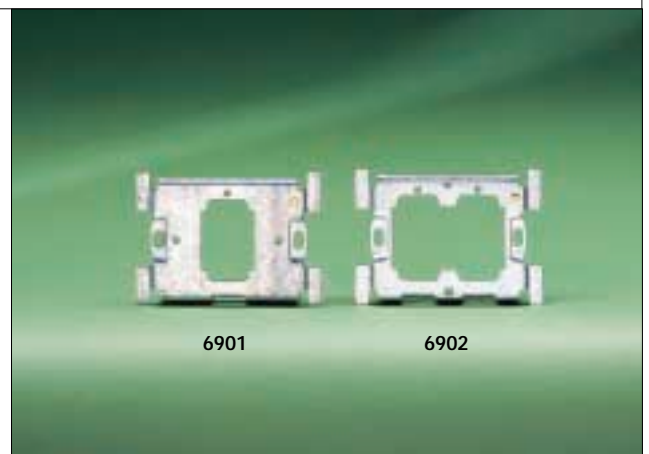
		PACK QTY
6901	1 gang grid	20
6902	2 gang grid	20
6903	3 gang grid	10
6904	4 gang grid	10
Dimensions	1-2 gang 81mm x 58mm 3-4 gang 141mm x 58mm	

When required for surface mounting assemblies, the fixing ears should be removed or bent downwards at 90°.

Complete with earth terminal.

The Rockergrid plates and grids accept any of the range of Rockergrid switches.

See page 45 for full product selection.

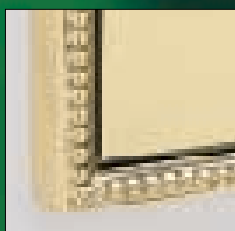


6901

6902

HALLMARK

BRITMAC DECORATIVE BRASS



Decorative Bead Edge Brass, a traditional range designed to enhance the most prestigious environments, handsomely styled from the highest quality polished brass.

DIAMOND

BRITMAC FLAT METAL PLATE



Satin Brass



Polished Brass



Antique Bronze



Stainless Steel



Platinum Silver



Satin Chrome



Polished Chrome



Birch Grey



The Diamond flat metal plate range of switches and sockets provide versatility and enable installations to be tailor-made.

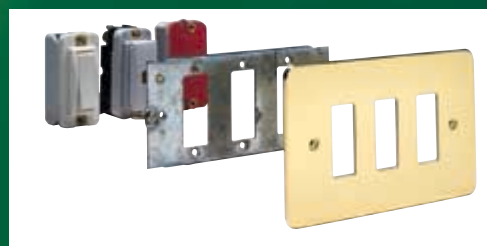
This is complemented by a wide range of finishes available from Satin Brass to Polished Chrome.

Grid socket system



The accessory is mounted to a grid which is provided with an earth facility. Once the necessary plastering or decorating work has been carried out the front plate can be fitted.

Grid switch system



The appropriate switch module can be fitted to the grid providing a flexible modular switch system.



13A SWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
HSO1	1 gang DP	10
HSOI1	1 gang DP with neon indicator	10
HSO2	2 gang DP	5
HSOI2	2 gang DP with neon indicator	5
Dimensions	1 gang 92mm x 92mm 2 gang 92mm x 152mm	
Mounting boxes	1 gang SB615 flush galv. or SB619 dry lining 2 gang SB625 flush galv. or SB629 dry lining	



13A UNSWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
HO1	1 gang unswitched	10
HO2	2 gang unswitched	5
Dimensions	1 gang 92mm x 92mm 2 gang 92mm x 152mm	
Mounting boxes	1 gang SB615 flush galv. or SB619 dry lining 2 gang SB625 flush galv. or SB629 dry lining	



13A FUSED CONNECTION UNITS

		PACK QTY
H13F	Unswitched	10
H13SF	DP switched	10
H13SFI	DP switched with neon indicator	10
Dimensions	92mm x 92mm	
Mounting boxes	SB615 flush galv. or SB619 dry lining	10
H13SFC2	DP switched with cable outlet	10
H13SFC2	DP switched with neon & cable outlet	10
Dimensions	92mm x 152mm	
Mounting boxes	SB625 flush galv. or SB629 dry lining	



5A SOCKET OUTLET

BS 546		PACK QTY
H501R	5A unswitched 1 gang	10
Dimensions	92mm x 92mm	
Mounting boxes	SB615 flush galv. or SB619 dry lining	



20A PLATE SWITCHES

		PACK QTY
H20S21	1 gang 2 way	10
H20S22	2 gang 2 way	10
H20S23	3 gang 2 way	5
H20S24	4 gang 2 way	5
Dimensions	1 & 2 gang 92mm x 92mm 3 & 4 gang 92mm x 152mm	
Mounting boxes	1 & 2 gang SB615 flush galv. or SB619 dry lining 3 & 4 gang SB625 flush galv. or SB629 dry lining	

Switches are fully rated for fluorescent or inductive loads.

For full specification details of finishes see Technical Data page 86.
Hallmark brass supplied with black interiors only except Nema & Shower sockets which are only available as white interiors.

250W, 400W DIMMER SWITCHES

		PACK QTY
HD250W1	1 gang dimmer 250W	1
HD250W2	2 gang dimmer 250W	1
HD400W1	1 gang dimmer 400W	1
Dimensions	92mm x 92mm	
Mounting boxes	SB615 flush galv. or SB619 dry lining	

All dimmers feature push-on/push-off switching at any lighting level.
 Suitable for 1 or 2 way connection.
 Suitable for tungsten loads only.
 Dimmers for other applications upon request.



HD250W1

HD250W2

TELEPHONE SOCKET OUTLETS

		PACK QTY
HTEL1MJ	Single master	10
HTEL1SJ	Single secondary	10
Dimensions	92mm x 92mm	
Mounting boxes	SB615 flush galv. or SB619 dry lining	



HTEL1MJ

CO-AXIAL SOCKET OUTLETS

		PACK QTY
HTV1	1 way isolated	10
HTV2	2 way isolated, engraved 'TV-FM'	10
Dimensions	92mm x 92mm	
Mounting boxes	SB615 flush galv. or SB619 dry lining	

Units only suitable on installations with earth bond.

BLANKING PLATES

HBP1	1 gang	10
HBP2	2 gang	5
Dimensions	1 gang 92mm x 92mm 2 gang 92mm x 152mm	



HTV1

HTV2

15A 125V AMERICAN STANDARD SOCKET OUTLETS

NEMA CONFIGURATION		PACK QTY
HOA1	1 gang unswitched	10
HOA2	2 gang unswitched	10
Dimensions	(1 gang) 92mm x 92mm (2 gang) 92mm x 152mm	
Mounting boxes	SB615 flush galv. or SB619 dry lining (1 gang) SB625 flush galv. or SB629 dry lining (2 gang)	

● Only available with white interiors.



HOA1

HOA2

SHAVER SUPPLY UNIT

BS 3535 PART 1: 1990		PACK QTY
HSHO1	input 240V 50Hz output { 110V 240V	1
Dimensions	105mm x 165mm	
Mounting boxes	SB628 flush galv. or SB631 dry lining	

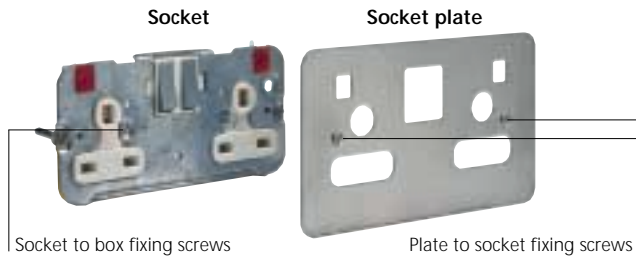
- 20VA minimum output at rated voltage.
- Accepts most standard British, Continental, American and Australian 2 pin plugs.
- Only available with white interiors.



HSHO1

For full specification details of finishes see Technical Data page 86.

All the following Plate List Numbers are available in Satin Brass (SB), Polished Brass (PB), Antique Bronze (BMA), Stainless Steel (SS), Platinum Silver (PS), Satin Chrome (SC), Polished Chrome (PC) and Birch Grey (BG). Other painted finishes are available to order.



POWER & COMMUNICATIONS

- All plates are supplied complete with appropriate grids and fixing screws.
- Switch rockers are available in Polished Brass (PB), Satin Chrome (SC) and Moulded Plastic (P)
- Black mouldings are available to special order



13A SWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
GSO1	1 gang grid & socket	10
GSOP1	1 gang plate	10
GSOI1	1 gang grid & socket with neon indicator	10
GSOIP1	1 gang plate with neon indicator	10
GSO2	2 gang grid & socket	5
GSOP2	2 gang plate	5
GSOI2	2 gang grid & socket with neon indicator	5
GSOIP2	2 gang plate with neon indicators	5
Dimensions	1 gang 86mm x 86mm, 2 gang 86mm x 147mm	
Mounting boxes	1 gang SB615 flush galvanised 2 gang SB625 flush galvanised	



13A UNSWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
GO1	1 gang grid & socket	10
GOP1	1 gang plate	10
GO2	2 gang grid & socket	5
GOP2	2 gang plate	5
Dimensions	1 gang 86mm x 86mm, 2 gang 86mm x 147mm	
Mounting boxes	1 gang SB615 flush galvanised 2 gang SB625 flush galvanised	



13A HINGED FLAP SOCKET OUTLET

BS 1363		PACK QTY
13OH	1 gang unswitched	10
Dimensions	82mm x 88mm	
Mounting boxes	SB615 flush galvanised	



13A NON-STANDARD SOCKET OUTLETS

		PACK QTY
GON1	1 gang unswitched grid & socket	10
GOP1	1 gang unswitched plate	10
GSON1	1 gang switched grid & socket	10
GSOP1	1 gang switched plate	10
GSOIN1	1 gang switched grid & socket with neon indicator	10
GSOIP1	1 gang switched plate with neon indicator	10
GON2	2 gang unswitched grid & socket	5
GOP2	2 gang unswitched plate	5
GSON2	2 gang switched grid & socket	5
GSOP2	2 gang switched plate	5
GSOIN2	2 gang switched grid & socket with neon indicators	5
GSOIP2	2 gang switched plate with neon indicators	5
Dimensions	1 gang 86mm x 86mm, 2 gang 86mm x 147mm	
Mounting boxes	1 gang SB615 flush galvanised 2 gang SB625 flush galvanised	

For full specification details of finishes see Technical Data page 86.

Clean Earth versions available – Add suffix CE to List No.

See page 86 for further information.

All the following Plate List Numbers are available in Satin Brass (SB), Polished Brass (PB), Antique Bronze (BMA), Stainless Steel (SS), Platinum Silver (PS), Satin Chrome (SC), Polished Chrome (PC) and Birch Grey (BG). Other painted finishes are available to order.

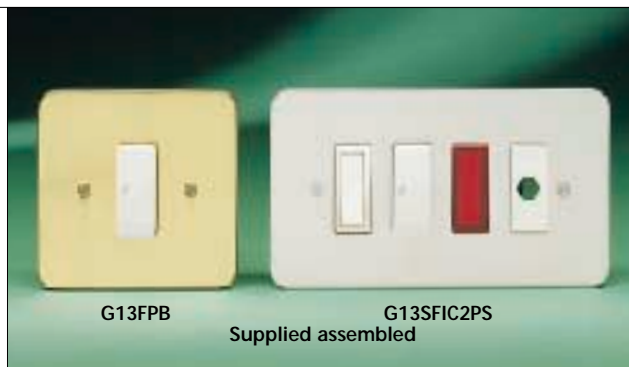
5A SOCKET OUTLET

		PACK QTY
BS 546		
5GO1R	5A unswitched 1 gang grid & socket	10
5GOP1R	5A unswitched 1 gang plate	10
Dimensions	86mm x 86mm	
Mounting boxes	SB615 flush galvanised	



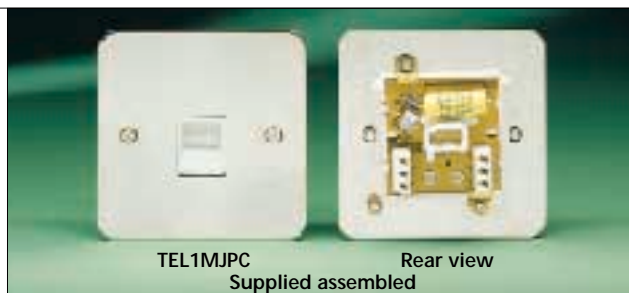
20A FUSED CONNECTION UNITS

		PACK QTY
G13F	Unswitched	10
G13SF	Switched	10
G13SFI	Switched with neon indicator	10
Dimensions	86mm x 86mm	
Mounting boxes	SB615 flush galvanised	
G13SFC2	Switched with cable outlet	10
G13SFI2	Switched with neon & cable outlet	10
Dimensions	86mm x 147mm	
Mounting boxes	SB625 flush galvanised	



TELEPHONE SOCKET OUTLETS

		PACK QTY
TEL1MJ	Single master	10
TEL1SJ	Single secondary	10
Dimensions	86mm x 86mm	
Mounting boxes	SB615 flush galvanised	



CO-AXIAL SOCKET OUTLETS

		PACK QTY
TV1	1 way isolated	10
TV2	2 way isolated engraved TV/FM	10
Dimensions	86mm x 86mm	
Mounting boxes	SB615 flush galvanised	

Units only suitable on installations with earth bond.



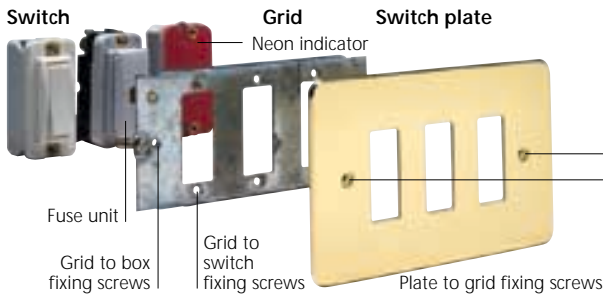
DATA PLATES

		PACK QTY
BNC1	1 gang data unit BNC type	10
BNC2	2 gang data unit BNC type	5
25D1	1 gang data unit 25 pin D type	10
25D2	2 gang data unit 25 pin D type	5
LAN1	1 gang unit to accept IBM Lan connector	2
LAN2	2 gang unit to accept IBM Lan connectors	2
Dimensions	86mm x 86mm LAN2 86mm x 147mm	
Mounting boxes	SB615 flush galvanised LAN2, SB624 flush galvanised	



For full specification details of finishes see Technical Data page 86.

All the following Plate List Numbers are available in Satin Brass (SB), Polished Brass (PB), Antique Bronze (BMA), Stainless Steel (SS), Platinum Silver (PS), Satin Chrome (SC), Polished Chrome (PC) and Birch Grey (BG). Other painted finishes are available to order.



GRID & CONTROL SWITCHES

- All plates are supplied complete with appropriate grids and fixing screws.
- Front plates can be engraved to suit requirements.
- Switch rockers are available in Polished Brass (PB), Satin Chrome (SC) and Moulded Plastic (P)



PLATES (complete with grid)

		PACK QTY
PG1	1 gang	20
PG2	2 gang	20
PG3	3 gang	10
PG4	4 gang	10
PG6	6 gang	1
PG8	8 gang	1
PG9	9 gang	1
PG12A	12 gang	1
Dimensions	1 & 2 gang 86mm x 86mm	
	3 & 4 gang 86mm x 147mm	
	6 & 8 gang 161mm x 152mm	
	9 & 12 gang 222mm x 152mm	
Mounting boxes	1 & 2 gang SB615 flush galvanised	
	3 & 4 gang SB625 flush galvanised	
	6 & 8 gang 9206/BG flush	
	9 & 12 gang 9209/BG flush	



SWITCHES & ACCESSORIES

		PACK QTY
BS 3676		
G20S2	20A 2 way	10
G20D1	20A DP 1 way	10
G20SIN	20A intermediate	10
G20S2O	20A 2 way & off	10
G20KS2	20A secret key switch, 2 way	10
GFO	Flex outlet	10
GBP	Blanking piece for unused apertures	10
GIU	Neon indicator (red)	10
GBNO/NC	Bell push (normally open/closed)	10
G13FU	Fuse unit (complete with 13A fuse to BS 1362)	10
G13OU	13A non-standard socket unit	10

Switches are fully rated for fluorescent or inductive loads.
 For versions with Black mouldings – Add suffix **BK** to List No. ie G20S2**PBK**.
 For versions with White rockers – Add suffix **P** to List No. ie G20D1**P**.

For full specification details of finishes see Technical Data page 86.

All the following Plate List Numbers are available in Satin Brass (SB), Polished Brass (PB), Antique Bronze (BMA), Stainless Steel (SS), Platinum Silver (PS), Satin Chrome (SC), Polished Chrome (PC) and Birch Grey (BG). Other painted finishes are available to order.

20A ARCHITRAVE SWITCHES

		PACK QTY
BS 3676		
20AS1	1 gang	10
20AS2	2 gang	10
Dimensions	1 gang 38mm x 82.5mm 2 gang 38mm x 143mm	
Mounting boxes	1 gang 9341/GV 2 gang 9342/GV	

Switches are fully rated for fluorescent or inductive loads.



250W, 400W DIMMER SWITCHES

		PACK QTY
D250W1	1 gang dimmer, 250W	1
D250W2	2 gang dimmer, 250W	1
D400W1	1 gang dimmer, 400W	1
D400W2	2 gang dimmer, 400W	1
Dimensions	86mm x 86mm	
Mounting boxes	1 gang SB615 flush galvanised 2 gang SB625 flush galvanised	

All dimmers feature push-on/push-off switching at any lighting level. Suitable for 1 or 2 way connection. Suitable for tungsten loads only. Dimmers for other applications available upon request.



BLANKING PLATES

		PACK QTY
PB1	1 gang	10
PB2	2 gang	5
Dimensions	1 gang 86mm x 86mm 2 gang 86mm x 147mm	



20A KEY OPERATED SWITCH

		PACK QTY
20KS2	2 way 250V ac	1
Dimensions	86mm x 86mm	
Mounting boxes	SB615 flush galvanised	



50A DP & 60A TP SWITCHES

		PACK QTY
BS 3676		
50SI	50A DP switch unengraved	5
50SIC	50A DP switch engraved 'Cooker'	5
50SIH	50A DP switch engraved 'Heater'	5
63TPSI	60A TP isolating switch	1
Dimensions	50A DP 86mm x 147mm 63A TP 140mm x 212mm	
Mounting boxes	50A DP SB628 flush galvanised 63A TP B15663 flush galvanised	



For full specification details of finishes see Technical Data page 86.

ROCKERGRID

MODULAR SYSTEM



Rockergrid plates are available in all finishes to complement the Capital range. In addition, IP66 covers and enclosures are available from the Weatherseal range to house either one or two switch modules.



Rockergrid provides the design versatility of a modular switch range whilst incorporating Capital styling and safety features which benefit the user and installer alike.





Rope Edge Brass



Polished Brass



Satin Chrome



Bronze



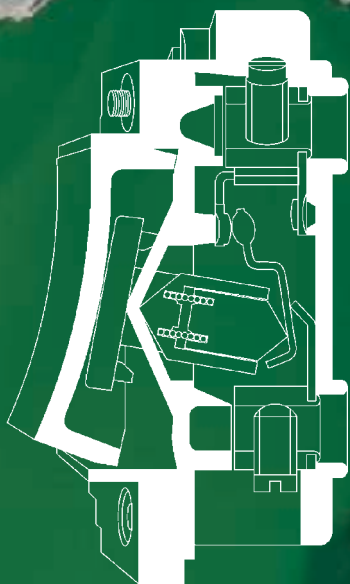
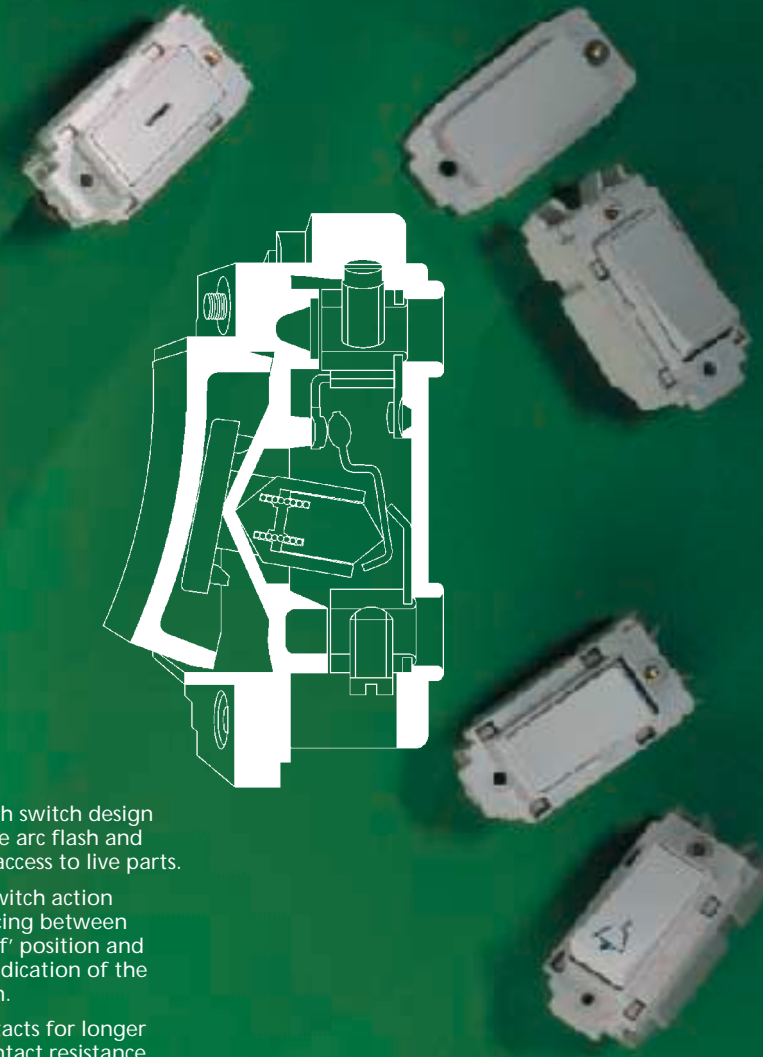
Oyster Gold



White









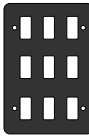
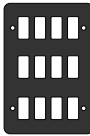
Birch Grey









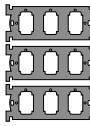
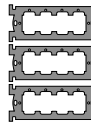
- Unique labyrinth switch design minimises visible arc flash and prevents front access to live parts.
- Positive drive switch action prevents balancing between the 'on' and 'off' position and gives reliable indication of the contact position.
- Silver alloy contacts for longer life and low contact resistance.

SELECTION TABLE









PLATES

Gang								
Surface								
BIRCH GREY Engraved 'Water Heater'	6581/BG 6581/1BG	6582/BG 6582/1BG	6583/BG	6584/BG	6586/BG	6588/BG	6589/BG	6580/BG
BRONZE Engraved 'Water Heater'	6561/BZ 6561/1BZ	6562/BZ 6562/1BZ	6563/BZ	6564/BZ	6566/BZ	6568/BZ	6569/BZ	6560/BZ
SATIN CHROME Engraved 'Water Heater'	6561/SC 6561/1SC	6562/SC 6562/1SC	6563/SC	6564/SC	6566/SC	6568/SC	6569/SC	6560/SC
OYSTER GOLD Engraved 'Water Heater'	6561/YR 6561/1YR	6562/YR 6562/1YR	6563/YR	6564/YR	6566/YR	6568/YR	6569/YR	6560/YR
Flush								
MOULDED WHITE	5571	5572	5573	5574	5576	6578/WH		6570/WH
WHITE METAL							6578/WH	6570/WH
BRONZE Engraved 'Water Heater'	6571/BZ 6571/1BZ	6572/BZ 6572/1BZ	6573/BZ	6574/BZ	6576/BZ	6578/BZ	6579/BZ	6570/BZ
SATIN CHROME Engraved 'Water Heater'	6571/SC 6571/1SC	6572/SC 6572/1SC	6573/SC	6574/SC	6576/SC	6578/SC	6579/SC	6570/SC
OYSTER GOLD Engraved 'Water Heater'	6571/YR 6571/1YR	6572/YR 6572/1YR	6573/YR	6574/YR	6576/YR	6578/YR	6579/YR	6570/YR
POLISHED BRASS	6571/PB	6572/PB	6573/PB	6574/PB				
ROPE EDGE BRASS	6571/RB	6572/RB	6573/RB	6574/RB				

GRIDS

								
Flush or surface	6901	6902	6903	6904	2 x 6903	2 x 6904	3 x 6903	3 x 6904

BOXES

								
Flush or surface								
with knock-outs	9201/BG	9201/BG	9203/BG	9203/BG	9206/BG	9206/BG	9209/BG	9209/BG
without knock-outs	9201/PBG	9201/PBG	9203/PBG	9203/PBG	9206/PBG	9206/PBG	9209/PBG	9209/PBG
Flush only	SB615	SB615	SB625	SB625				

ASSEMBLY



1 Install box and enter cables.

- Boxes, grids & switches common to flush & surface installations.

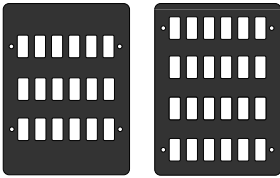

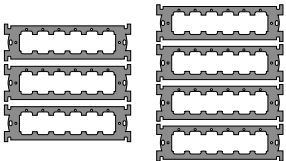
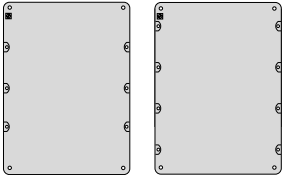


2 Remove 'ears' from grid for surface installations.



3 Fix switches into grid.

- Single screw switch fixing.
- Fingerproof shrouding around terminals.

				Architrave	
					
18	24	1	2		
6580/18BG	6580/24BG				
6560/18BZ	6560/24BZ				
6560/18SC	6560/24SC				
6560/18YR	6560/24YR				
6570/18BZ	6570/24BZ	6591/BZ	6592/BZ		
6570/18SC	6570/24SC	6591/SC	6592/SC		
6570/18YR	6570/24YR	6591/YR	6592/YR		
					
3 x 6906	4 x 6906	Supplied fitted to architrave plate			
					
9209/18BG	9209/24BG				
9209/18PBG	9209/24PBG				
		9341/GV	9342/GV		

SWITCHES

		MOULDED	METAL PLATE
6A	1 way	4430	4430/9*
6A	2 way	4530	4530/9*
6A	2 way (Brown)	4530/BN	4530/9PBBN
6A	Retractive	4489	4489/9*
6A	Retractive marked with bell symbol	4490	4490/9*
6A	Retractive 2 way and off	4553	
20A	1 way	4450	4450/9*
20A	1 way key switch complete with key	4451	
20A	2 way	4550	4550/9*
20A	2 way (Brown)		4550/9PBBN
20A	2 way key switch complete with key	4551	
20A	2 way and off	4552	
20A	Intermediate	4535	4535/9*
20A	Intermediate (Brown)	4535/BN	
20A	Double pole	4460	4460/9*
20A	Double pole (Brown)	4460/BN	4460/9PBBN
20A	Double pole marked 'ON'	4469	4469/9*
20A	Double pole key switch complete with key	4461	

ACCESSORIES

Cord outlet	4435
Cord outlet (Brown)	4435/BN
13A fused connection unit	4436
13A fused connection unit (Brown)	4436/BN
Neon indicator (Red)	4491
Neon indicator (Green)	4493
Neon indicator (Amber)	4494
Socket outlet 2.5-16A	4499†
Blanking component	4492
Spare key	6940 (Metal)

6A SWITCH ASSEMBLIES (ready assembled units)

		SURFACE MOUNTING (Birch Grey)
6A	1 gang 1 way	4951/BG
6A	1 gang 2 way	4951/2WBG
6A	2 gang 1 way	4952/BG
6A	2 gang 2 way	4952/2WBG

* Metal plate finishes: Satin Chrome, Bronze, Oyster Gold, Polished Brass

– Add **SC**, **BZ**, **YR**, **PB** respectively after List No.

† Available for export use only.

Switch modules:

- Tough impact-resistant thermoplastic moulded construction.
- Metal plate switch modules incorporate double insulation.
- Suitable for panel mounting and OEM applications.
- IP66 protected Rockergrid switch enclosures are available, see Weatherseal section page 58.



4 Connect wires to relevant switches & earth terminals.

- Large capacity, easy-to-wire terminals.
- Diagrammatic marking on rear of switch.



5 Fix wired switch/grid assembly into box.

- Automatic grid alignment with horizontal adjustment.



6 Fix face plate onto grid.

- Robust impact resistant construction – high quality moulded & metal parts.



4430
4530 4490 4530/BN

6A SWITCHES – MOULDED ROCKER

BS 3676		PACK QTY
4430	1 way SP	10
4530	2 way SP	10
4530/BN	2 way SP – Brown	10
4489	Retractive	10
4490	Retractive – bell symbol	10
4553	Retractive 2 way and off	10

Fully rated for fluorescent and inductive loads (except List No. 4553).
4490 Retractive switch can be wired for normally open (N/O) or normally closed (N/C) circuits. (except List No. 4553)



4450 4469 4552 4451 6940
4460 4551
4535 4461
4550

20A SWITCHES – MOULDED ROCKER

BS 3676		PACK QTY
4450	1 way	10
4451	1 way complete with key	10
4460	DP	10
4460/BN	As above – Brown	10
4461	DP complete with key	10
4461/ELT	DP with key marked "Emergency Lighting Test"	10
4469	DP marked 'ON'	10
4535	Intermediate	10
4535/BN	As above – Brown	10
4550	2 way	10
4551	2 way complete with key	10
4551/ELT	2 way with key marked "Emergency Lighting Test"	10
4552	2 way and off	10
6940	Spare key	10

Fully rated for fluorescent and inductive loads (except List No. 4552).



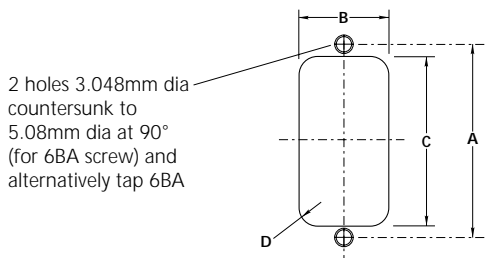
4435 4436 4491 4492 4494 4499

ACCESSORIES – MOULDED

BS 5733 WHERE APPLICABLE		PACK QTY
4435	Cord outlet – 10mm diameter aperture, complete with earthing terminal and cable clamp	10
4435/BN	As above – Brown	10
4436	Fuse unit fitted with 13A ASTA certified fuse link	10
4436/BN	As above – Brown	10
4491	Indicator – Red	10
4492	Blanking component	10
4493	Indicator – Green	10
4494	Indicator – Amber	10
4499*	Socket outlet 2.5–16A	10

* Not for use inside the UK where IEE Regulations (BS 7671) are applicable.

PANEL CUT-OUT DETAILS



For Rockergrid switches and accessories, single screw fixing to grid, second fixing hole facilitates panel mounting if required. Extra screws to order.

Dimensions	
A	= 40mm
B	= 18mm
C	= 35mm
D	= 3mm

All the following metal plate switches are available with Satin Chrome (SC), Bronze (BZ), Oyster Gold (YR) and Polished Brass (PB) rockers. Indicate the finish you require by adding the suffix to List No. eg 4430/9 with Bronze rocker = 4430/9BZ.

6A SWITCHES – METAL PLATE ROCKER

BS 3676		PACK QTY
4430/9	1 way	10
4489/9	Retractive	10
4490/9	Retractive – bell symbol	10
4530/9	2 way	10
4530/9PB	2 way polished brass rocker and brown surround	10

Fully rated for fluorescent and inductive loads.

Retractive switches can be wired for normally open (N/O) or normally closed (N/C) circuits.



20A SWITCHES – METAL PLATE ROCKER

BS 3676		PACK QTY
4450/9	1 way	10
4460/9	DP	10
4469/9	DP marked 'ON'	10
4535/9	Intermediate	10
4550/9	2 way	10
4460/9PB	DP polished brass rocker and brown surround	10
4550/9PB	2 way polished brass rocker and brown surround	10

Fully rated for fluorescent and inductive loads.



OTHER SWITCH VARIATIONS

The following variations are available to order:

Brown	4430	4491	4430/9	4535/9
	4450	4493	4450/9	
	4490	4550	4490/9	

Add /BN to list number.

Note

4530/9PB, 4460/9PB, 4550/9PB available as standard items.

Red rockers	4430	4530	4450	4535
	4460	4550	4490	

Add /RD to list number.

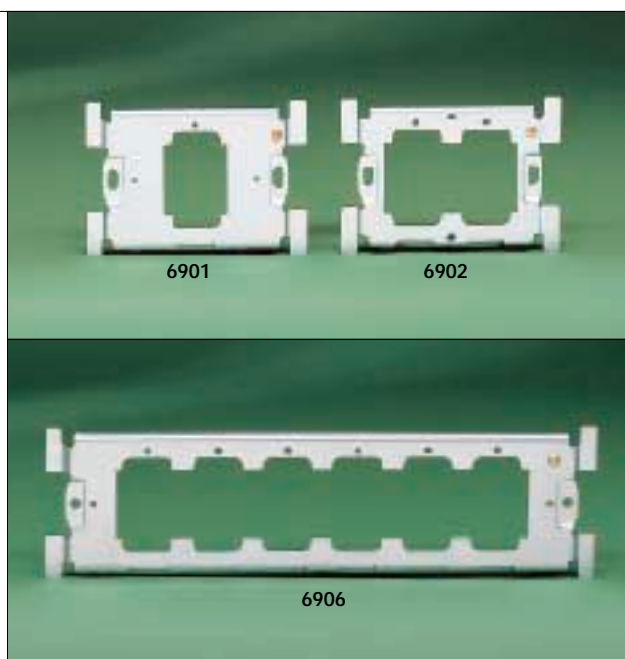


GRIDS

		PACK QTY
6901	1 gang	20
6902	2 gang	20
6903	3 gang	10
6904	4 gang	10
6906	6 gang	10
Dimensions	1–2 gang 81mm x 58mm 3–4 gang 141mm x 58mm 6 gang 202mm x 58mm	

When required for surface mounting assemblies, the fixing ears should be removed or bent downwards at 90°.

Complete with earth terminal.

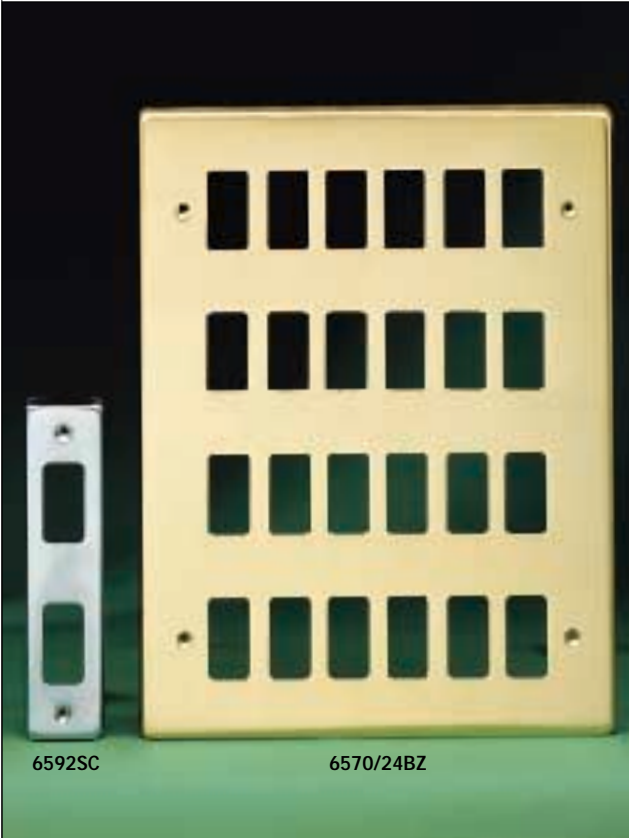


For full specification details of finishes see Technical Data page 86.



FLUSH MOULDED PLATES

		PACK QTY
5571	1 gang	20
5572	2 gang	20
5573	3 gang	10
5574	4 gang	10
5576	6 gang	1
Dimensions	1-2 gang 86mm x 86mm	
	3-4 gang 146mm x 86mm	
	6 gang 147mm x 147mm	



FLUSH METAL PLATES

		PACK QTY
6571	1 gang	20
6571/1	1 gang faceplate engraved 'water heater'	20
6572	2 gang	20
6572/1	2 gang faceplate engraved 'water heater'	20
6573	3 gang	10
6574	4 gang	10
6576	6 gang	1
6578*	8 gang	1
6579	9 gang	1
6570*	12 gang	1
6570/18	18 gang	1
6570/24	24 gang	1
6591	1 gang architrave complete with grid	10
6592	2 gang architrave complete with grid	10
Dimensions	1-2 gang 86mm x 86mm	9-12 gang 147mm x 207mm
	1-2 gang RB 94mm x 94mm	18 gang 207mm x 267mm
	3-4 gang 146mm x 86mm	24 gang 207mm x 267mm
	3-4 gang RB 154mm x 94mm	1 gang architrave 35mm x 86mm
	6-8 gang 147mm x 147mm	2 gang architrave 35mm x 146mm

Add to List No. - **BZ** for Bronze finish, **SC** for Satin Chrome finish, **YR** for Oyster Gold finish, **PB** for Polished Brass finish, **RB** for Rope Edge Brass finish.
 PB and RB not available in 6-24 gang or architrave.
 * Available in White Finish. Add **WH** to List No.



SURFACE METAL PLATES

		PACK QTY
6561	1 gang	20
6561/1	1 gang faceplate engraved 'water heater'	20
6562	2 gang	20
6562/1	2 gang faceplate engraved 'water heater'	20
6563	3 gang	10
6564	4 gang	10
6566	6 gang	1
6568	8 gang	1
6569	9 gang	1
6560	12 gang	1
6560/18	18 gang	1
6560/24	24 gang	1
Dimensions	1-2 gang 77mm x 77mm	9-12 gang 137mm x 197mm
	3-4 gang 137mm x 77mm	18 gang 197mm x 257mm
	6-8 gang 137mm x 137mm	24 gang 197mm x 257mm

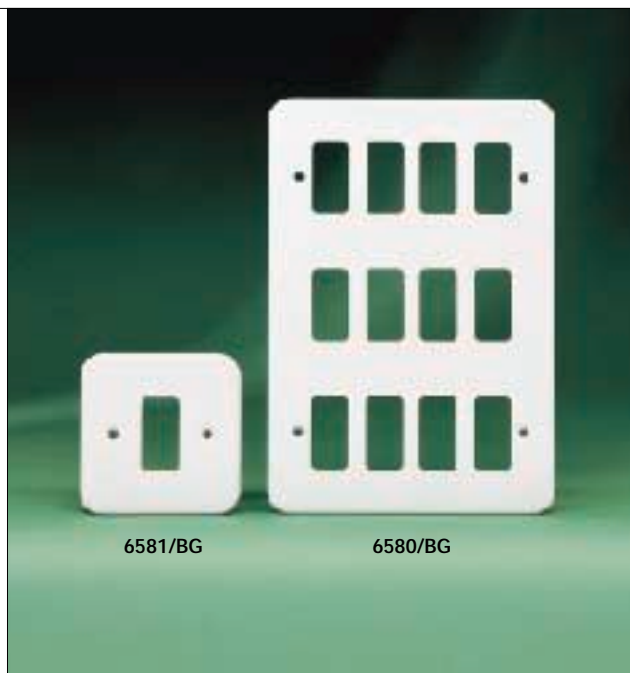
Add to List No. - **BZ** for Bronze finish, **SC** for Satin Chrome finish
YR for Oyster Gold finish.



For full specification details of finishes see Technical Data page 86.

SURFACE METALCLAD PLATES

		PACK QTY
6581/BG	1 gang	20
6581/1BG	1 gang faceplate engraved 'water heater'	20
6582/BG	2 gang	20
6582/1BG	2 gang faceplate engraved 'water heater'	20
6583/BG	3 gang	10
6584/BG	4 gang	10
6586/BG	6 gang	1
6588/BG	8 gang	1
6589/BG	9 gang	1
6580/BG	12 gang	1
6580/18BG	18 gang	1
6580/24BG	24 gang	1
Dimensions	1-2 gang 77mm x 77mm 3-4 gang 137mm x 77mm 6-8 gang 137mm x 137mm 9-12 gang 137mm x 197mm 18 gang 197mm x 257mm 24 gang 197mm x 257mm	



6581/BG

6580/BG

BOXES

		PACK QTY
9201/BG*	1 and 2 gang surface or flush	10
9203/BG*	3 and 4 gang surface or flush	5
9206/BG*	6 and 8 gang surface or flush	1
9209/BG*	9 and 12 gang surface or flush	1
9209/18BG*	18 gang surface or flush	1
9209/24BG*	24 gang surface or flush	1
9341/GV	1 gang architrave flush only	10
9342/GV	2 gang architrave flush only	10
Dimensions	9201/BG 73mm x 73mm x 40mm 9203/BG 133mm x 73mm x 40mm 9206/BG 133mm x 133mm x 40mm 9209/BG 133mm x 194mm x 40mm 9209/18BG 194mm x 254mm x 56mm 9209/24BG 194mm x 254mm x 56mm 9341/GV 29mm x 72mm x 36mm 9342/GV 29mm x 133mm x 36mm	

16mm knock-outs in 1 and 2 gang box and architrave boxes.

20mm and 25mm knock-outs in 3-24 gang boxes.

Note: BG boxes fitted with earth terminal. Spare earth terminal (List No. 6989) see page 67.

* For boxes less knockouts list no. example 9201/PBG



9201/BG

9209/BG

20A DOUBLE POLE SWITCH MARKING

		PACK QTY
4460/BO	"boiler"	10
4460/HD	"cooker hood"	10
4460/DW	"dishwasher"	10
4460/EF	"extractor fan"	10
4460/FR	"fridge"	10
4460/FZ	"freezer"	10
4460/FF	"fridge freezer"	10
4460/HB	"hob"	10
4460/HT	"heating system"	10
4460/MW	"microwave"	10
4460/TD	"tumble dryer"	10
4460/WD	"waste disposal"	10
4460/WDR	"washer dryer"	10
4460/WM	"washing machine"	10
4460/WA	"water heater"	10

• can be used with 13A fuse units to build bespoke kitchen/utility room control panel.

For full specification details of finishes see Technical Data page 86.



4460/HT 4460/WD 4460/EF 4460/WM 4460/HB

CAPITAL

METALCLAD



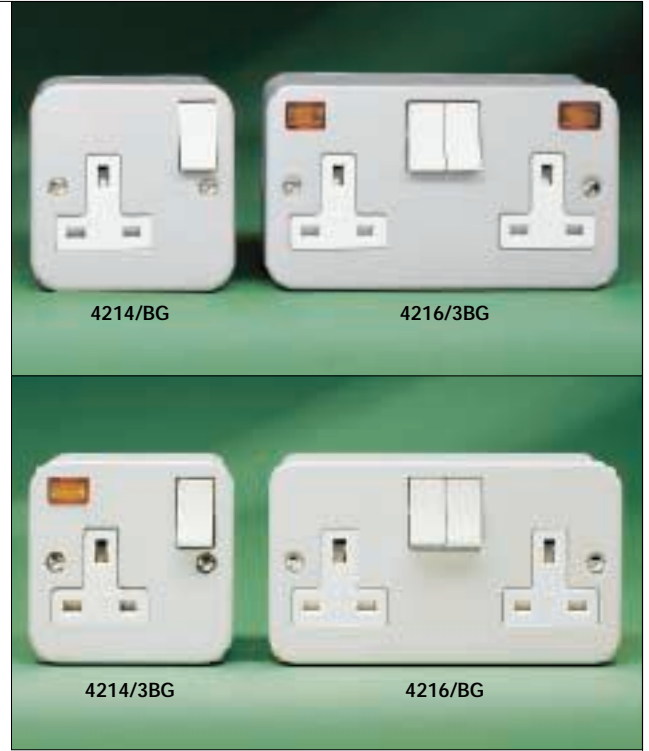
- Tough durable finish which is resistant to premature ageing, discolouration and corrosion.
- Finishing process is highly automated and controlled to ensure a consistent level of performance.
- Production line tested for quality of gloss finish and uniform coverage of coating.

In tough conditions the sturdily built Capital metalclad range is ideal for use in industry, commerce and the home.

13A SWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
4214/BG	1 gang SP	10
4216/BG	2 gang SP	5
4214/3BG	1 gang SP with neon indicator	10
4216/3BG	2 gang SP with neon indicator	5
Dimensions	1 gang 82mm x 82mm x 44mm 2 gang 142mm x 82mm x 44mm	

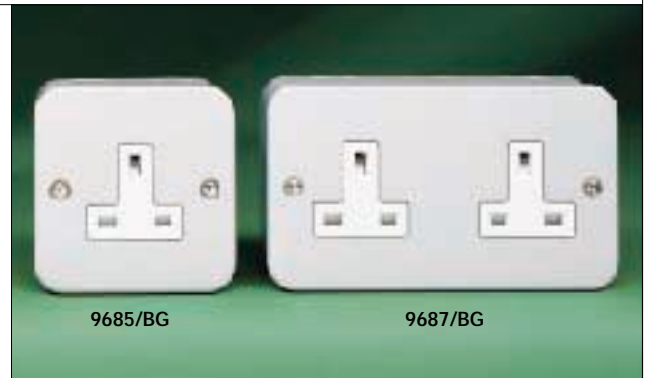
For sockets with plain boxes – Add suffix **P** to List No.
eg 4216/BG with plain box = 4216/PBG.
Double pole available to order – Add suffix **D** to List No.
eg Double pole 4216/BG = 4216/DBG.



13A UNSWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
9685/BG	1 gang unswitched	10
9687/BG	2 gang unswitched	5
Dimensions	1 gang 82mm x 82mm x 44mm 2 gang 142mm x 82mm x 44mm	

For sockets with plain boxes – Add suffix **P** to List No.
eg 4216/BG with plain box = 4216/PBG.



13A FUSED CONNECTION UNITS

BS 5733 WHERE APPLICABLE		PACK QTY
4841/BG	Unswitched	10
4842/BG	DP switched	10
4842/3BG	DP switched with neon indicator	10
4846/BG	Unswitched with cord outlet	10
4847/BG	DP switched with cord outlet	10
4847/3BG	DP switched with cord outlet and neon indicator	10
Dimensions	82mm x 82mm x 44mm	

For fused connection units with plain boxes – Add suffix **P** to List No.
eg 4842/BG with plain box = 4842/PBG.
Fused on the line side with a 13A fuse link ASTA certified and marked to BS 1362.
For spare fuse links see page 6.
Cord outlets suitable for flexible cord up to 10mm outside diameter.
Two earthing terminals are fitted to the unit.



For full specification details of finishes see Technical Data page 86.



4414/A01BG

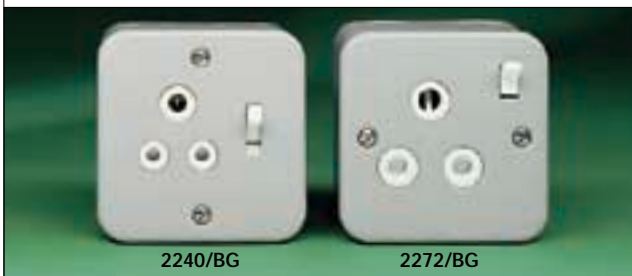


4426/A03BG

13A SAFETY SOCKET WITH RCD PROTECTION

BS 7288		PACK QTY
4414/A01BG	1 gang switched with neon indicator 10mA tripping current flush mounting	1
4414/A03BG	1 gang switched with neon indicator 30mA tripping current flush mounting	1
4416/A01BG	2 gang switched with neon indicator 10mA tripping current flush mounting	1
4416/A03BG	2 gang switched with neon indicator 30mA tripping current flush mounting	1
4424/A01BG	1 gang switched with neon indicator 10mA tripping current surface mounting	1
4424/A03BG	1 gang switched with neon indicator 30mA tripping current surface mounting	1
4426/A01BG	2 gang switched with neon indicator 10mA tripping current surface mounting	1
4426/A03BG	2 gang switched with neon indicator 30mA tripping current surface mounting	1
Dimensions	Flush -146mm x 86mm Surface -142mm x 82mm x 44mm	
Mounting boxes	4414 & 4416 series 9223/BG surface, SB665 flush galv or SB629 dry lining	

For boxes less knockouts see page 66. For further information see page 80.
All available with two earth terminals to enable installation to comply with section 607 (wiring regulations) Add suffix /TE to List No.



2240/BG

2272/BG

5A, 15A SWITCHED SOCKET OUTLETS

BS 546		PACK QTY
2240/BG	5A shuttered SP	10
2272/BG	15A shuttered SP	10
Dimensions	82mm x 82mm x 44mm	

For boxes less knockouts see page 66.



4951/BG

4952/2WBG

6A SWITCHES

BS 3676		PACK QTY
4951/BG	1 gang 1 way	10
4951/2WBG	1 gang 2 way	10
4952/BG	2 gang 1 way	10
4952/2WBG	2 gang 2 way	10
Dimensions	77mm x 77mm x 41mm	

Fully rated for fluorescent and inductive loads.



4020/3BG

4021/3BG

20A DP CONTROL SWITCHES

BS 3676		PACK QTY
4020/3BG	DP Switch with neon indicator	10
4021/3BG	DP Switch with neon indicator and cord outlet	10
Dimensions	82mm x 82mm x 44mm	

Cord outlet suitable for flexible cord up to 10mm outside diameter.
Surface box fitted with earth terminal.
For switches with plain boxes add suffix P to List No. ie 4020/3BG with plain box = 4020/3PBG.



4512/BG

4512/3BG

50A DP CONTROL SWITCHES

BS 3676		PACK QTY
4512/BG	DP Switch	10
4512/3BG	DP Switch with neon indicator	10
Dimensions	142mm x 82mm x 51mm	

BS EN 60947-3 rating 240V 50A category of duty AC22.

For full specification details of finishes see Technical Data page 86.

32A TP & N CONTROL SWITCHES

BS 3676	PACK QTY
TYPE TESTED TO BS EN 60947-3	
4513/BG	With neon indicator Unit accommodates up to 6mm ² cable 1
4514/BG	With neon indicator Unit accommodates up to 16mm ² cable 1
Dimensions	4513/BG 142mm x 82mm x 51mm 4514/BG 173mm x 122mm x 74mm

Terminal capacity 16mm² on all switches.

Utilisation category to BS EN 60947-3:

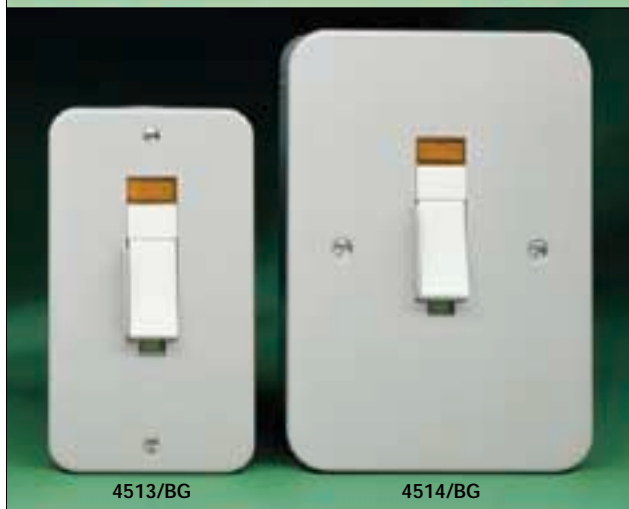
AC 22, 32A 415V.

AC 23, 25A (12kW/16 HP max), 415V.

- On and Off markings give positive indication of contact position.
- Padlocking in 'off' or 'on' position in all surface mounting switches.
- Internal shrouding of live terminals.
- Neon indicator provided with all versions which can be fitted in either upper or lower terminals.
- 16mm² terminals incorporated in all switches.
- Switches available in two sizes and flush or surface styles, see pages 9 & 28 for further details.



4513/BG



4513/BG

4514/BG

PRODUCT ENGRAVING SERVICE

A wide range of markings can be added to 13A fused connection units and double pole control switches. These popular markings are offered on a fast track service in red as standard.

To order any of the markings listed below, add suffix to List No. ie 4216/BG engraved 'emergency circuit' = 4216/BGEC.

MARKING	SUFFIX	MARKING	SUFFIX	MARKING	SUFFIX
air conditioner	AC	heater	HT	security light	SL
bell transformer	BE	hob	HB	shower	SH
cooker hood	HD	humidity vent	HV	shower pump	SP
daytime boost	DB	intruder alarm	IA	storage heater	ST
dishwasher	DW	microwave	MW	towel rail	TR
emergency circuit	EC	night immersion	NI	tumble dryer	TD
extractor fan	EF	NORMAL	NO	UPS	UPS
freezer	FZ	oven	OV	washing machine	WM
fridge	FR	panel heater	PH	waste disposal	WD
fridge freezer	FF	security alarm	SA	water cooler	WC
				water heater	WA

For price and delivery information on other markings not listed above, contact our Technical Services Department.

RED ROCKERS

For applications where essential supply systems are in use, sockets and fused connection units with red rockers are available to order. These are ideal for use in hospitals, computer installations, etc.

To order, add suffix to List No. ie 4216/BG with red rockers = 4216/BGRD.

For Rockergrid switches with red rockers see Rockergrid section page 47.



4842/BGEF

4842/BGWA



4216/BGRD

BLANKING PLATES FOR SURFACE REPLACEMENT BOXES

PART NO	PACK QTY
3809/BG	For List No 9214/BG 5
3899/BG	For List No 9211/BG 10



3899/BG

3809/BG

For full specification details of finishes see Technical Data page 86.

WEATHERSEAL

WATER & DUST PROTECTED





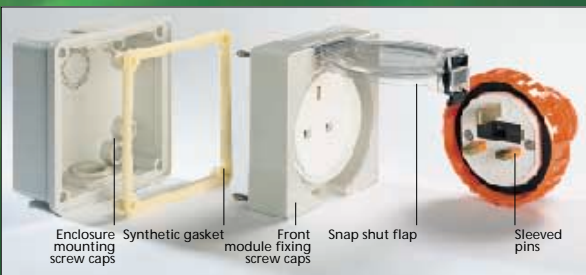
Rockergrid cover modules offer flexibility to create any switch version with IP66 protection.



110V 16A BS4343 socket module provides power point for portable equipment.

Water and dust protected to IP66, Weatherseal is ideal for all environments.

Most items can be purchased complete with shallow enclosure, or in modular form for fitting separately in one to six gang enclosures in any combination.



- Synthetic gaskets provide IP66 protection from conduit entry to final plug cable.
- Sockets incorporate flaps which automatically snap shut when a plug is withdrawn.
- Semi-rotation switches give clear indication of switch state.
- Padlock facility in ON and OFF positions.
- Stylishly moulded in high impact resistant materials to complement other birch grey accessories.



The individual switches and sockets listed on this page are supplied as ready assembled units on shallow enclosures. The switched socket combination unit and RCD protected socket outlets are pre-wired and supplied as ready assembled units on appropriate enclosures.



10A SURFACE SWITCHES

		PACK QTY
BS 3676 BS 5490 IP66		
9561	1 gang 1 way	4
9562	2 gang 1 way	2
Dimensions	1 gang 101mm x 101mm x 76mm 2 gang 197mm x 101mm x 76mm	

Padlock off facility provided. See page 73 for suitable padlock.
Terminals accepted 2.5mm² cable.



13A PLUGS, SURFACE SOCKETS & COMBINATION UNITS

		PACK QTY
9565	Single socket outlet	4
9567	Switched socket combination	2
9599	Sleeved plug	9
Dimensions	1 gang size 101mm x 101mm x 76mm 2 gang size 197mm x 101mm x 76mm	

Sockets incorporate transparent flap which automatically snaps shut when the plug is withdrawn.
Terminals accept maximum 10mm² cable.
Will give BS 5490 IP66 protection when **9599** is used in combination with either **9565**, **9565/L**, **9567** or **9567/L**.
Plug ASTA approved by reference number 176.



RCD PROTECTED 13A SOCKETS

		PACK QTY
SOCKET BS 1363 RCD BS EN 61008		
9571	40A 30mA RCD protecting one 13A socket	1
9572	40A 30mA RCD protecting two 13A sockets	1
Dimensions	3 gang size 296mm x 102mm x 104mm 4 gang size 199mm x 199mm x 104mm	

Sockets incorporate transparent flap which automatically snaps shut when the plug is withdrawn.
RCD terminals accept 25mm² cable.
RCD is Type AC operation. Type A available, see page 81.
Will give BS 5490 IP66 protection when **9599** plug is used.



RCD PROTECTED 16A 240V SOCKET

		PACK QTY
SOCKET BS 4343 RCD BS EN 61008		
9579	40A 30mA RCD protecting 16A 2P + E 240V splashproof socket	1

RCD terminals accept 25mm² cable.
RCD is Type AC operation. Type A available, see page 81.
Common to 110V and 240V BS 4343 splashproof sockets IP44 protection is maintained when plug is inserted. IP66 is maintained when cover flap is closed.

Polycarbonate is a highly durable material which is ideal for use in most environments, however seek advice before installing in environments where chemicals or harsh cleaners are likely to be used.

MODULAR SELECTION

The popular items listed on the page opposite in ready-assembled form can also be built up from separate modules to allow greater stock flexibility, whilst additional separate sale switch, socket and cover modules with enclosures up to 6 gang size enable the installer to provide high IP-rated combinations to suit individual applications.



The table below lists the modular equivalents to the popular items supplied as ready assembled units.

READY-ASSEMBLED UNITS		MODULAR EQUIVALENT SELECTION		
DESCRIPTION	LIST No	COVER MODULE(S)	ENCLOSURE	RCD
10A switch – 1 gang 1 way	9561	9561/1L	9561/ES	–
10A switch – 2 gang 1 way	9562	9561/1L x 2	9562/ES	–
13A single socket outlet	9565	9565/L	9561/ES	–
13A switched socket	9567	9567/L	9562/ES	–
13A single socket with 40A 30mA RCD	9571	9570/2 + 9565	9563/E	224/030
13A twin socket with 40A 30mA RCD	9572	9570/2 x 1 + 9565 x 2	9564/E	224/030
16A 2P + E 240V socket – BS 4343	9579	9570/2 + 9569/L	9563/E	224/030

The table below lists module selection details for some additional popular combinations.

DESCRIPTION	COVER MODULE(S)	ENCLOSURE	RCD
13A twin socket outlet with single switch	9565/L x 2 + 9561/DL	9563/E	–
13A twin-switched socket outlet	9567/L x 2	9564/E	–
13A single-switched socket with 40A 30mA RCD	9570/2 x 1 + 9567/L	9564/E	224/030

SWITCH MODULES

		PACK QTY
9561/1L	10A 1 way switch	4
9561/2L	10A 2 way switch	4
9561/DL	20A DP switch	4
9573/L	32A TP switch	4
9573/RL	32A TP switch – yellow/red	4

Can be assembled in shallow enclosures.



13A SOCKET MODULES

		PACK QTY
9565/L	13A single unswitched socket	8
9567/L	13A switch/socket combination	2

Can be assembled in shallow enclosures.





9569/L

9591/L

9593/L

SOCKET MODULES

BS 4343		PACK QTY
9569/L	16A 2P + E 240V splashproof socket	4
9591/L	16A 2P + E 110V splashproof socket	4
9592/L	16A 3P + E 415V splashproof socket	4
9593/L	16A 3PN + E 415V splashproof socket	4

Should be assembled in deep enclosures.

IP44 protection is maintained when plug is inserted, on 110V and 240V sockets.

IP66 is maintained when plug is inserted, on 415V sockets.



9581/RG

9582/RG

ROCKERGRID COVER MODULES

		PACK QTY
9581/RG	1 gang	4
9582/RG	2 gang	4

- Suitable for any Rockergrid module.
- Rockergrid modules fix directly into moulded-in grid with single screw fixing.
- Enables a wide range of switch variations in IP66 rated enclosures.
- Can be used to provide 2 gang switching option where space is insufficient for standard Weatherseal module.



Rear view

The selection table below lists some of the popular IP66 combinations which can be assembled from the Weatherseal and Rockergrid ranges.

MODULE SELECTION

DESCRIPTION	ROCKERGRID module(s)	WEATHERSEAL cover module	WEATHERSEAL enclosure
6A 2 gang 1 way switch – single module size	4430 x 2	9582/RG	9561/ES
6A retractive switch	4489	9581/RG	9561/ES
13A switched FCU	4460 + 4436	9582/RG	9561/ES
13A unswitched FCU + neon	4436 + 4494	9582/RG	9561/ES
20A intermediate switch	4535	9581/RG	9561/ES
20A DP switch + neon	4460 + 4494	9582/RG	9561/ES
20A DP key switch	4461	9581/RG	9561/ES
20A 2 gang 1 way switch – single module size	4450 x 2	9582/RG	9561/ES

See page 46 for full range of Rockergrid switches.



9570/2

RCD mounting cradle shown in deep enclosure

RCD COVER MODULE

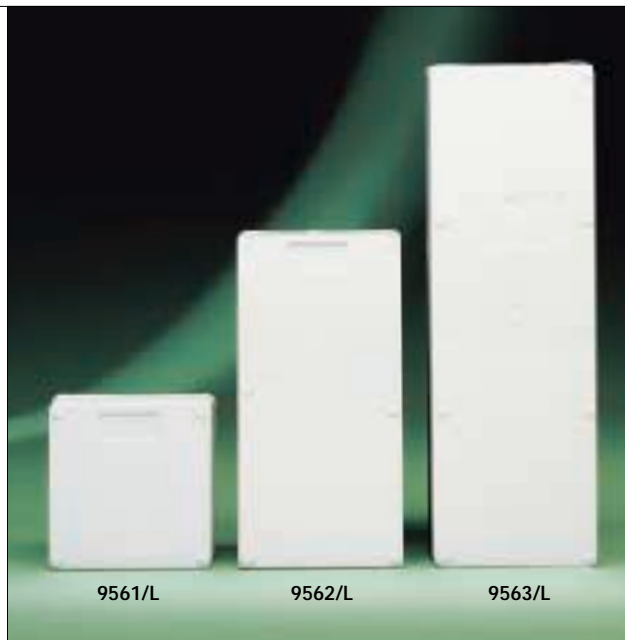
		PACK QTY
9570/2	2 gang RCD cover with neon assembly and RCD mounting cradle	2

Should be assembled in deep enclosures.

- Suitable for any 2 module RCD from the Lifestar range – see page 81.

BLANK COVER MODULES

		PACK QTY
9561/L	1 gang blank cover	8
9562/L	2 gang blank cover	4
9563/L	3 gang blank cover	3



ENCLOSURES

		PACK QTY
9561/E	1 gang	4
9561/ES	1 gang shallow	8
9562/E	2 gang	2
9562/ES	2 gang shallow	4
9563/E	3 gang	3
9564/E	4 gang	1
9566/E	6 gang	1

Dimensions (mm)	H	W	D	H	W	D
1 gang enclosure	103	102	63	3 gang enclosure	296	102 x 63
1 gang shallow enclosure	101	101	40	4 gang enclosure	199	199 x 63
2 gang enclosure	198	102	63	6 gang enclosure	296	199 x 63
2 gang shallow enclosure	197	101	40			

SOCKET	REAR KNOCK-OUTS	SIDE CONDUIT ENTRIES	32/25 REDUCER	25/20 REDUCER	DIVIDER	BRIDGE
9561/E	1x32/25	1x25, 1x32	1	1	-	-
9561, 9565 9561/ES	1x25/20	2x25	-	1	-	-
9562/E†	1x25, 1x32	1x25, 1x32	1	1	-	1
9562, 9567 9562/ES	2x25/20	2x25	-	1	-	1
9563/E*	2x25, 1x32	1x25, 1x32	1	1	-	2
9564/E*	2x25 1x32, 1x40	2x25, 4x32	1	1	2	2
9566/E*	2x25 2x32, 2x40	2x25, 4x32	1	1	4	3

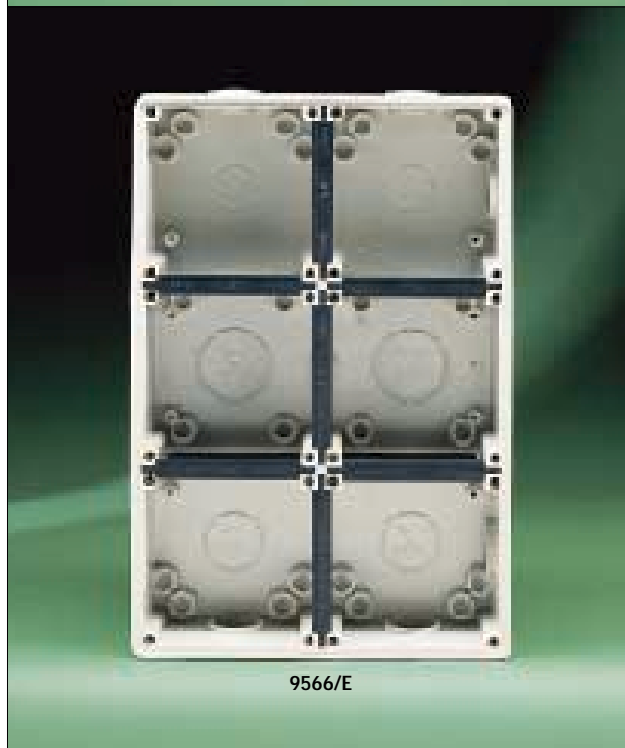
* Also supplied with 1 neutral & 1 earth connector. † Also supplied with 1 earth connector.

To maintain IP66 rating, cover all fixing screws with caps provided.

Seal bridge/divider slots with suitable silicon sealant – Dow Corning RTV-732.

Check all conduit entry points are tight before use.

Threaded conduit entries can be fitted to all popular metal and moulded metric conduit using a variety of proprietary adaptors (less locking ring), reducers, and adhesive where appropriate: eg for fitting 20mm moulded conduit to 9567 use Marshall-Tufflex MA8 adaptor (less locking ring), MR2 reducer and MSC2 sealing cement.



WEATHERSEAL WATER & DUST PROTECTED

Polycarbonate is a highly durable material which is ideal for use in most environments, however seek advice before installing in environments where chemicals or harsh cleaners are likely to be used.

CAPITAL AND **DIAMOND**

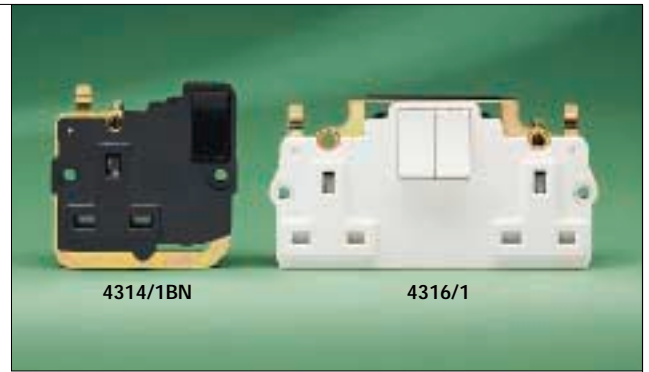
INTERIORS & PANEL MOUNTING

Interiors and panel mounting products, which complement the extensive Capital, Diamond and Rockergrid ranges, are available to suit many applications. Most Capital Products can also be supplied in brown as standard – ideal for brassware manufacturers.

13A SWITCHED SOCKET OUTLETS

		PACK QTY
4314/1	1 gang SP	10
4316/1	2 gang SP	5
4314/13	1 gang SP with provision for neon indicator	10
4316/13	2 gang SP with provision for neon indicator	5

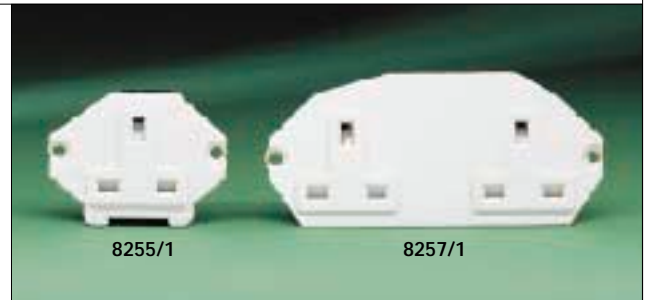
Brown mouldings also available – Add suffix **BN** to List No.
 Double pole switching also available to order – Add suffix **D** to List No.
 eg 4314/1 switched in Brown = 4314/1**DBN**
 Two earth terminals also available where compliance with section 607 (wiring regs) is required - add suffix **/TE** to list No. eg 4316/1**/TE**
 When specifying items with provision for neon indicators a lens, Part No. **3711** and neon bulb, Part No. **3714**, are also required.



13A UNSWITCHED SOCKET OUTLETS

		PACK QTY
8255/1	1 gang unswitched	10
8257/1	2 gang unswitched	5
7259	1 gang round socket with side entry terminals and north/south fixings	10

The 7259 panel mounting socket is suitable for use in any panel or trunking material up to 2.5mm thickness and can be incorporated into a minimum overall internal depth of only 22.5mm.
 Two earth terminals also available where compliance with section 607 (wiring regs) is required - add suffix **/TE** to list No. eg 8257/1**/TE**



FUSED CONNECTION UNITS

		PACK QTY
4831/1	13A unswitched	10
4832/1	13A DP switched	10
4832/13	13A DP switched with provision for neon indicator	10
4836/1	13A unswitched with cord outlet	10
4837/1	13A DP switched with cord outlet	10
4837/13	13A DP switched with cord outlet and provision for neon indicator	10

Brown interiors also available – Add suffix **BN** to List No.
 When specifying items with provision for neon indicators a lens, Part No. **3711** and neon bulb, Part No. **3714**, are also required.



13A SAFETY SOCKET WITH RCD PROTECTION

BS 7288	PACK QTY	
4414/A101	1 gang switched with neon indicator 10mA tripping current	1
4414/A103	1 gang switched with neon indicator 30mA tripping current	1
4416/A101	2 gang switched with neon indicator 10mA tripping current	1
4416/A103	2 gang switched with neon indicator 30mA tripping current	1

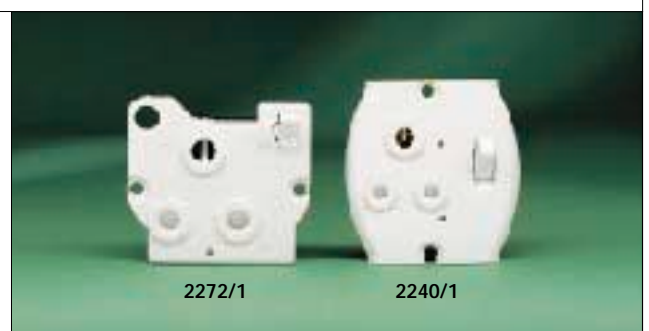
See page 80 for further information.
 Two earth terminals also available where compliance with section 607 (wiring regs) is required - add suffix **/TE** to list No. eg 4416/A103**/TE**



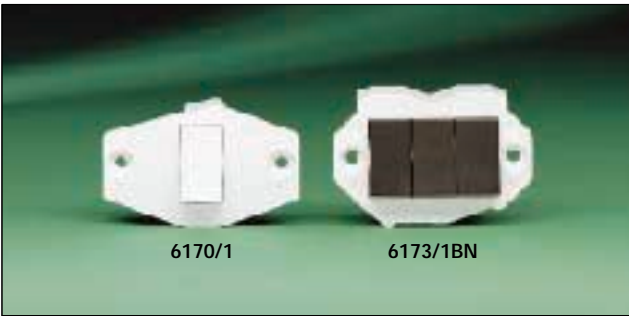
2A, 5A, 15A ROUND PIN SOCKET OUTLETS

		PACK QTY
2240/1	5A shuttered SP	10
2272/1	15A shuttered SP	10
8075/1*	2A 3 pin unswitched shuttered	10

* Brown mouldings also available – Add suffix **BN** to List No.



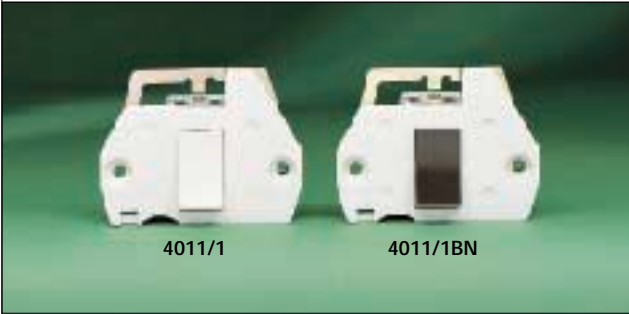
For panel cut-out details see page 98, 99 & 102.



10AX SWITCHES

		PACK QTY
6096/1	1 gang retractive marked 'press'	10
6170/1	1 gang 2 way	10
6172/1	2 gang 2 way	10
6173/1	3 gang 2 way	10
6175/1	1 gang intermediate	10

Interiors with Brown rockers available – Add suffix **BN** to List No.



20A/32A DP SWITCHES

		PACK QTY
4011/1	20A DP	10
4011/13	20A DP with provision for neon indicator	10
4012/1	32A DP	10
4012/13	32A DP with provision for neon indicator	10

Interiors with Brown rockers available – Add suffix **BN** to List No.

When specifying items with provision for neon indicators a lens, Part No. **3711** and neon bulb, Part No. **3714**, are also required.



50A DP SWITCHES

		PACK QTY
4512/1	50A DP	10
4512/13	50A DP with neon indicator	10

Brown interiors also available – Add suffix **BN** to List No.

When specifying the above items a mounting grid, Part No. **2471**, is also required. Grid fitted with earth terminal.



45A DP 'SLIMLINE' COOKER CONTROL UNITS

		PACK QTY
4522/1	45A DP main switch and 13A switch socket outlet	5
4522/13	45A DP main switch and 13A switch socket outlet with neon indicators	5

Brown interiors also available – Add suffix **BN** to List No.

When specifying units with neon indicators lenses, Part Nos. **3467** & **3711** and a neon bulb, Part No. **3714**, are also required.



CO-AXIAL SOCKET OUTLETS

		PACK QTY
8265/1	1 way direct connection	1
8266/1	2 way direct connection	1
8267/1	1 way isolated VHF, UHF	1
8268/1	2 way isolated VHF, UHF	1

Isolated units only suitable on installations with earth bond.



TELEPHONE OUTLETS

		PACK QTY
8283/1	Master	10
8284/1	Secondary	10

Brown interiors also available – Add suffix **BN** to List No.

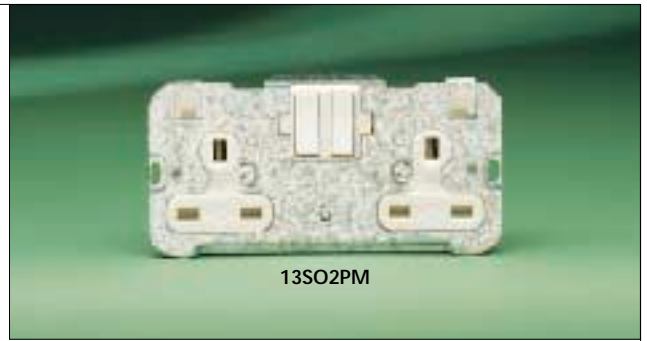
Supplied with loose earth terminal.

For panel cut-out details see pages 98 & 99.

13A SWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
13SO1PM	1 gang SP rear terminal entry	10
13SO2PM	2 gang SP rear terminal entry	5
13SO2PMSE	2 gang SP side terminal entry	5

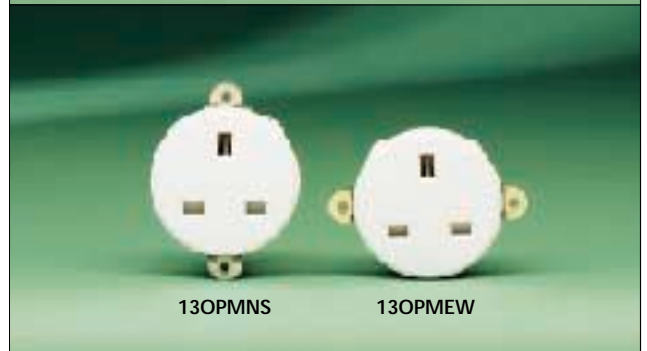
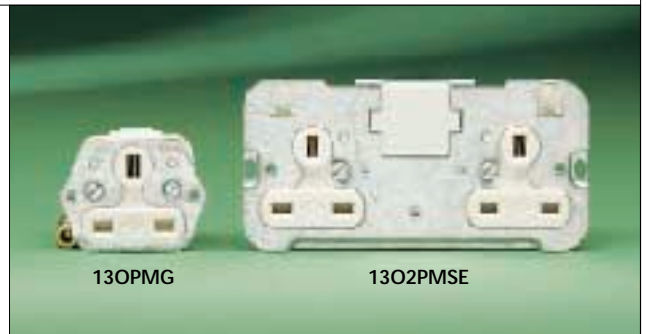
Clean Earth versions available – Add suffix **CE** to List No.
 Black mouldings also available – Add suffix **BK** to List No.



13A UNSWITCHED SOCKET OUTLETS

BS 1363		PACK QTY
13OPMG	1 gang rear terminal entry	10
13OPMGSE	1 gang side terminal entry	10
13O2PM	2 gang rear terminal entry	10
13O2PMSE	2 gang side terminal entry	5
13OPMNS	1 gang round socket with rear entry terminals and north/south fixings	10
13OPMEW	1 gang round socket with rear entry terminals and east/west fixings	10
13OPMNSSE	1 gang round socket with side entry terminals and north/south fixings	10

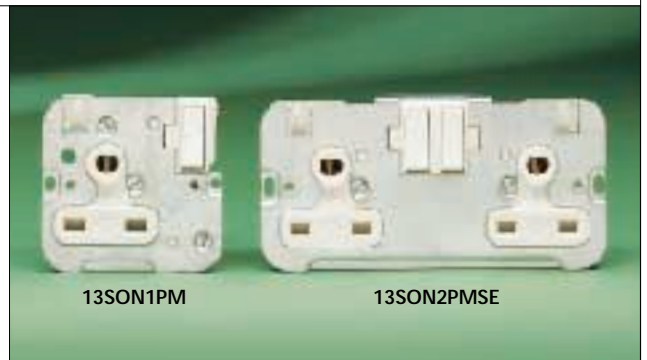
Clean Earth versions available – Add suffix **CE** to List No.
 Clean Earth not available on round panel sockets.
 Black mouldings also available – Add suffix **BK** to List No.



13A NON-STANDARD SWITCHED SOCKET OUTLETS

BS 5733 (BS1363 WHERE APPLICABLE)		PACK QTY
13SON1PM	1 gang SP rear terminal entry	10
13SON2PM	2 gang SP rear terminal entry	5
13SON2PMSE	2 gang SP side terminal entry	5

Clean Earth versions available – add suffix **CE** to List No.
 See page 6 for non-standard plug.
 Black and red mouldings also available – Add suffix **BK** or **RD** to List No.



13A NON-STANDARD UNSWITCHED SOCKET OUTLETS

BS 5733 (BS1363 WHERE APPLICABLE)		PACK QTY
13ONPMG	1 gang rear terminal entry	10
13ONPMGSE	1 gang side terminal entry	10
13ON2PM	2 gang rear terminal entry	10
13ON2PMSE	2 gang side terminal entry	5
13ONPMNS	1 gang round socket with rear entry terminals and north/south fixings	10
13ONPMEW	1 gang round socket with rear entry terminals and east/west fixings	10
13ONPMNSSE	1 gang round socket with side entry terminals and north/south fixings	10

Clean Earth versions available – Add suffix **CE** to List No.
 Clean Earth not available on round panel sockets.
 See page 6 for non-standard plug.
 Black and red mouldings also available – Add suffix **BK** or **RD** to List No.



For panel cut-out details see page 99.
 For further information on **Clean Earth** see page 86.

INSTALLATION BOXES & SERVICE ITEMS



The comprehensive range of white moulded patresses offers a facility to surface mount Capital wiring accessories

SURFACE MOULDED BOXES FOR CAPITAL WIRING ACCESSORIES

BS 5733	PACK QTY
4005 20mm deep For Capital single gang moulded architrave switches Will accept 16mm x 16mm mini-trunking	10
Dimensions 33mm x 87mm x 20mm	
4006 20mm deep For Capital double gang moulded architrave switches Will accept 16mm x 16mm mini-trunking	10
Dimensions 33mm x 147mm x 20mm	
9040* 34mm deep For 50A Capital switches and Rockergrid 3 and 4 gang moulded assemblies Fitted with cable clamp	5
Dimensions 87mm x 147mm x 34mm	
9041 44mm deep For 15A socket outlets, 32A DP switches and Rockergrid 1 and 2 gang moulded assemblies	10
Dimensions 87mm x 87mm x 44mm	
9043 20mm deep With earth terminal For 10AX Capital moulded and metalplate, Corinthian and Dimmer single gang size switches	10
Dimensions 87mm x 87mm x 20mm	
9044* 29mm deep Dual box for two single gang size accessories Fixed dividing barrier with knockouts	5
Dimensions 174mm x 87mm x 29mm	
9047 29mm deep For single gang size moulded accessories	10
Dimensions 87mm x 87mm x 29mm	
9048* 29mm deep For double gang size moulded accessories	5
Dimensions 147mm x 87mm x 29mm	
9048/1* 29mm deep With earth terminal For Capital 4 to 6 gang switches	5
Dimensions 147mm x 87mm x 29mm	
9049* 32mm deep Multipurpose box for single gang size accessories	5
Dimensions 88mm x 165mm x 32mm	
9050* 32mm deep Multipurpose box for double gang size accessories	2
Dimensions 148mm x 165mm x 32mm	
9052* 45mm deep For 45A cooker control units Fitted with cable clamp	1
Dimensions 169mm x 115mm x 45mm	
9053* 49mm deep For shaver supply unit Will accept 25mm x 16mm mini-trunking	5
Dimensions 87mm x 147mm x 49mm	
9054* 45mm deep For slimline cooker control units Will accept 25mm x 16mm mini-trunking Fitted with cable clamp	5
Dimensions 89mm x 147mm x 45mm	

* Can be secured to flush mounting steel boxes having 60.3mm accessory fitting centres





REPLACEMENT STEEL BOXES FOR CAPITAL SURFACE WIRING ACCESSORIES

BS 5733		PACK QTY
9211/BG	43mm deep 20mm knockouts Replacement box for 5, 13 and 15A single gang size surface accessories	10
9211/PBG	As above less knockouts	10
Dimensions	78mm x 78mm x 43mm	
9214/BG	43mm deep 20mm knockouts Replacement box for 13A gang size surface accessories	5
9214/PBG	As above less knockouts	5
Dimensions	138mm x 78mm x 43mm	
9215/BG*	43mm deep 20mm knockouts Replacement box for 4513 series of 32A TP & N switches Fitted with earth terminals and grid mounting pillars	1
Dimensions	78mm x 138mm x 43mm	
9224/BG*	65mm deep 20mm knockouts Replacement box for 4514 series of 32A TP & N switches Fitted with 2 earth terminals and grid mounting pillars	1
Dimensions	118mm x 168mm x 65mm	

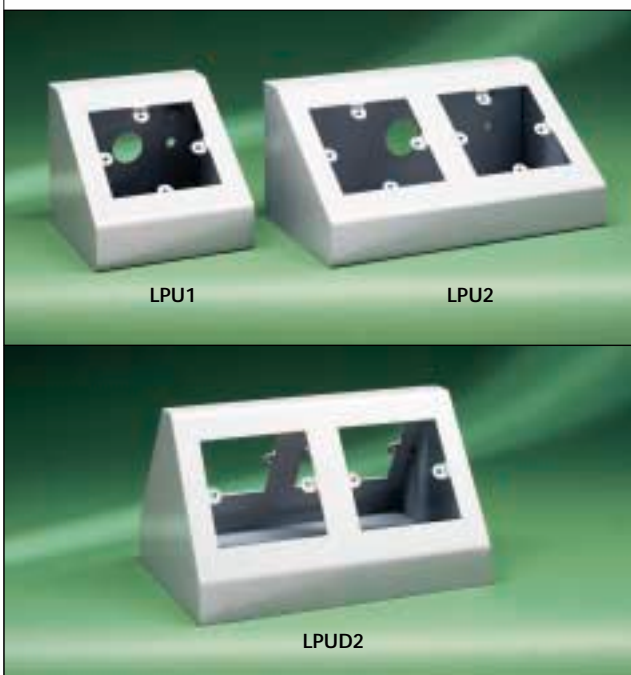
* Boxes less knockouts available to order



SURFACE STEEL BOXES FOR CAPITAL FLUSH WIRING ACCESSORIES

BS 3676		PACK QTY
9221/BG	36mm deep With 20mm knockouts For surface mounting single gang size flush accessories	10
9221/PBG	As above less knockouts	10
Dimensions	86mm x 86mm x 36mm	
9223/BG	36mm deep With 20mm knockouts For surface mounting double gang size flush accessories	5
9223/PBG	As above less knockouts	5
Dimensions	146mm x 86mm x 36mm	

When using these boxes to mount Rockergrid assemblies spacers should be used to ensure correct depth alignment of grid. See List No. 1250 on page 67.



SURFACE STEEL PEDESTAL UNITS

		PACK QTY
LPU1	Single sided 1 gang	1
LPUD1	Double sided 1 gang	1
LPU2	Single sided dual 1 gang	1
LPUD2	Double sided dual 1 gang	1
LPU2TA	Single sided 2 gang	1
LPUD2TA	Double sided 2 gang	1
Dimensions	Single sided 1 gang 115mm x 100mm x 90mm	
	Single sided dual 1 gang 115mm x 192mm x 90mm	
	Single sided 2 gang 115mm x 160mm x 90mm	
	Double sided 1 gang 115mm x 100mm x 148mm	
	Double sided dual 1 gang 115mm x 192mm x 148mm	
	Double sided 2 gang 115mm x 160mm x 148mm	

- Bases recessed 12.7mm.
- Fixing centres 60.3mm.
- Bases fitted with 1 x 20mm conduit clearance hole (25mm on double-sided).
- Finished in grey epoxy polyester.
- Dividing fillets and alternative conduit entries available to order.

ACCESSORY FIXING SCREWS M3.5mm

				PACK QTY
735009/*/VR	20mm long (vandal resistant)			100
735010/*/VR	25mm long (vandal resistant)			100
735011/*/VR	30mm long (vandal resistant)			100
735010*	25mm long	735032	20mm long	100
735011*	30mm long	735038	23mm long	100
735012*	50mm long	735033	25mm long	100
735013*	40mm long	735023	30mm long	100

* Add finish required i.e. 735010SC.



SUNDRY SCREWS & SPACERS

		PACK QTY
706097	Rockergrid switch to grid	100
735006/ZP	Capital 50A switch to grid & grid to box 4950/BG series	100
735007/ZP	Rockergrid grid to box	100
735008/*	Capital plate to box on 4214 & 4216 ranges	100
705094/*	Rockergrid plate to grid	100
705094/*/YR	Rockergrid plate to grid (vandal-resistant)	100
15485-2/L/4	Diamond grid to box	100
15244*	Diamond plate to grid	100
1250	Spacer for surface mounting Rockergrid switches on moulded pattress List No. 9040 & surface steel boxes List Nos. 9221/BG and 9223/BG	100
6913	Screwdriver for Rockergrid VR screws	1
6914	Screwdriver for vandal-resistant screws	1

* All screws are available to match the appropriate Capital and Diamond metal plate finishes – see product section.



CAPITAL CEILING SWITCH ACCESSORY ITEMS

6900	1.5m long white pull cord and acorn
6900/1RD	2m long red pull cord and acorn
6900/1WH	2m long white pull cord with red acorn
6900/2	100m ball of white pull cord
6900/2RD	100m ball of red pull cord
7410/RD	Ceiling switch acorn red
7410/WH	Ceiling switch acorn white



CAPITAL NEON INDICATORS

6509	For 32A TP & N switches (4514, 4513 & 4515 series)
3714	For 13A moulded & metal plate sockets, 13A fuse connection units, 20A, 32A, 45A capital switches & slimline cooker control units
100215	For 13A safetysockets
7695	For all 50A DP switches & large plate cooker control unit
7697	For 50A ceiling switch



CAPITAL NEON LENSES

3467	For all 50A DP switches & large plate cooker control unit (larger lens) & 32A TP & N switches
3711	For 13A moulded & metal plate sockets, fuse connection units, 20A capital switches & slimline cooker control unit (smaller lens)
3767	For slimline cooker control unit (large lens) & capital 45A switches
4674	For 50A ceiling switch & large plate cooker control unit (smaller lens)



SPARE EARTH TERMINALS

6988	Brass (for use with 4 lug metal box)	100
6989	Brass	100





STARBREAKER

DOMESTIC CIRCUIT PROTECTION

The Starbreaker domestic circuit protection range introduces an innovative modular concept to the market.

By employing a unique busbar system a balance is achieved between the conventional 'factory built' approach and the time consuming on-site assembly of many individual components.

Starbreaker consumer units can be quickly and easily made up on site by selection of an enclosure, busbar, main incoming device and, if required, split-load RCCB.

ENCLOSURES

The range of enclosures from 4 to 40 module size have strong, durable moulded covers in a stylish semi-matt finish.

- Type tested to BS 5486 Part 13: 1989 and BS EN 60439-3 when fully assembled.
- All enclosures are supplied ready prepared for the unique busbar to be easily fitted into place.
- Each enclosure is supplied complete with:
 - 35mm metal DIN rail.
 - Factory-fitted 16mm² flexible neutral connection.
 - Installation instructions, unique circuit identification labels and user guide.
 - 16mm² earth and neutral bar terminal assembly.
- The neutral lead fitted to all enclosures facilitates siting the main incoming device on the left hand side. If siting is required on the right this lead should be replaced by one of suitable length (16mm²). In split-load applications the RCCB neutral connections must also be reversed.
- Suitable for use with control modules.



415/OA

ALL INSULATED ENCLOSURES

		H	W	D
404/OA*	4 Modular ways	160	117	102
406/OA	6 Modular ways	230	190	120
409/OA	9 Modular ways	230	243	120
412/OA	12 Modular ways	230	294	120
415/OA	15 Modular ways	230	344	120
420/OA	20 Modular ways	230	439	120

- Large selection of knock-outs suiting any cable routing – also readily accommodates mini-trunking.

* Includes Busbar



420/OA

SURFACE METAL CASED

		H	W	D
808/OA	8 Modular ways	221	294	121
810/OA	10 Modular ways	221	294	121
814/OA	14 Modular ways	221	366	121
817/OA	17 Modular ways	211	434	120
820/OA	20 Modular ways	211	488	117
820/2A	20 Modular ways 2 Bank	450	294	121
828/2A	28 Modular ways 2 Bank	450	365	121
834/2A	34 Modular ways 2 Bank	422	430	120
840/2A	40 Modular ways 2 Bank	420	488	117

- Raised keyhole slots for easy mounting on uneven surfaces.
- Ample wiring space.
- Adequate knock-outs in robust metal box for side or rear entry of wiring.



828/2A

FLUSH METAL CASED

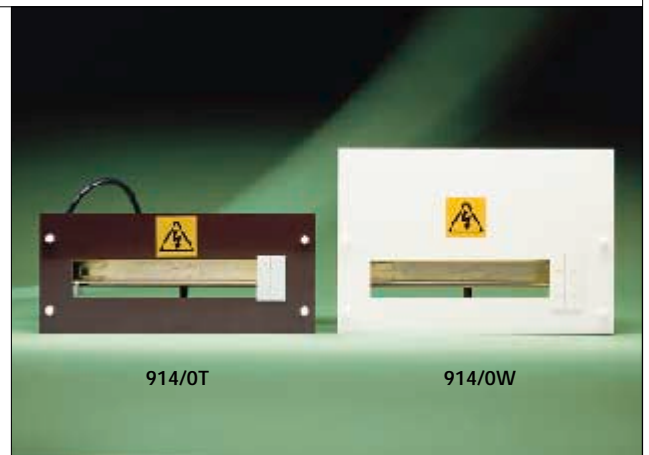
808/OAF	8 Modular ways
810/OAF	10 Modular ways
814/OAF	14 Modular ways

- Two point withdrawal of complete interior to facilitate installation.
- Full front to back and horizontal/vertical adjustment.
- Adequate knock-outs in robust metal box for side or rear entry of wiring.

SPINE BACKPLATE CHASSIS

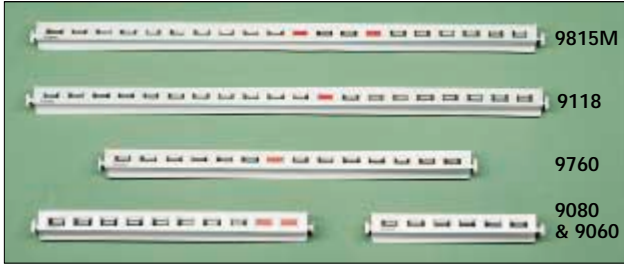
914/OT	14 Modular ways with Tufnol front cover
914/OW	14 Modular ways with extended PVC front cover & shield

- Designed for installation into meter cabinets (eg Clifton).
- Provide a method of updating such installations with MCB and RCCB protection.
- Available in standard Tufnol format or with extended PVC front plate and shield.



914/OT

914/OW



STARBREAKER BUSBAR SELECTION

Busbars are supplied ready assembled in a variety of configurations to cater for the majority of arrangements from main incomer to split-load, twin and multi tariff. Once in position the busbar is suspended at a height which allows 25mm² cable to be routed underneath. Other arrangements of split busbar are available to order.

MAIN INCOMING

Modular ways	List No	100A double pole main switch incomer		RCCB main incomer	
		MCB ways	Layout	MCB ways	Layout
6	9060	4		4	
8	9080	6		6	
9	9090	7		7	
10	9100	8		8	
12	9120	10		10	
14	9140	12		12	
15	9150	13		13	
17	9117	15		15	
20	9200	18		18	

SPLIT-LOAD & DUAL TARIFF

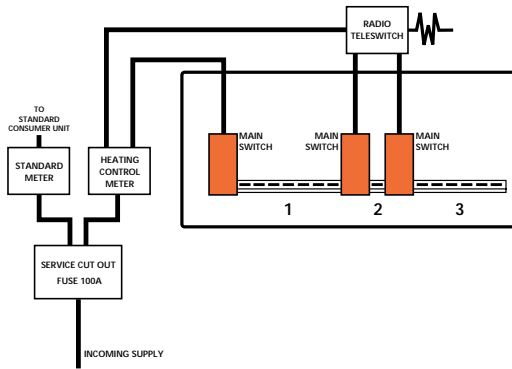
Modular ways	List No	100A double pole main switch + 63A or 80A split-load RCCB		100A double pole main switch + 100A double pole main switch	
		MCB ways	Layout	MCB ways	Layout
9	9530	2 + 2		3 + 2	
10	9540	2 + 3		3 + 3	
10	9630	3 + 2		4 + 2	
12	9560	2 + 5		3 + 5	
12	9650	3 + 4		4 + 4	
12	9740	4 + 3		5 + 3	
12	9830	5 + 2		6 + 2	
14	9670	3 + 6		4 + 6	
14	9760	4 + 5		5 + 5	
14	9850	5 + 4		6 + 4	
14	9940	6 + 3		6 + 3	
15	9680	3 + 7		4 + 7	
15	9770	4 + 6		5 + 6	
15	9860	5 + 5		6 + 5	
15	9950	6 + 4		7 + 4	
15	9104	7 + 3		8 + 3	
17	9880	5 + 7		6 + 7	
17	9907	6 + 6		7 + 6	
17	9106	7 + 5		8 + 5	
17	9610	3 + 9		4 + 9	
17	9124	9 + 3		10 + 3	
20	9811	5 + 10		6 + 10	
20	9910	6 + 9		7 + 9	
20	9109	7 + 8		8 + 8	
20	9118	8 + 7		9 + 7	
20	9127	9 + 6		10 + 6	
20	9136	10 + 5		11 + 5	

KEY Main switch RCCB

The 100A Double Pole main switch can be replaced by a main incoming RCCB without impacting on the number of MCB ways available

MULTI TARIFF HEATING CONTROL

		100A double pole main switch + 100A double pole main switch + 100A double pole main switch	
Modular ways	List No	MCB ways	Layout
14	9413/M	4 + 1 + 3	
15	9414/M	4 + 1 + 4	
17	9515/M	5 + 1 + 5	
20	9815/M	8 + 1 + 5	
20	9716/M	7 + 1 + 6	



Multi-tariff heating provides 3 tariffs catering for total heating applications

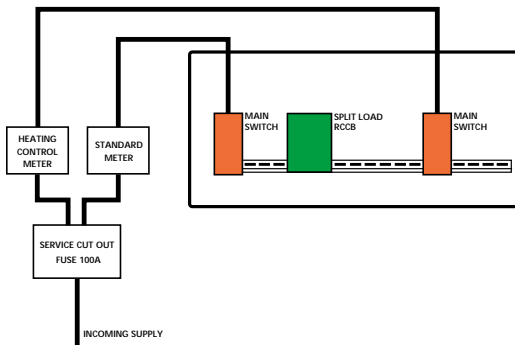
- 1 Direct heating appliances
- 2 Bottom Immersion Heater
- 3 Storage heating

NOTE

14 module enclosures will accommodate this facility, however the enclosure is not fitted with three neutral bars. In this instance the bottom immersion heater neutral should be connected directly to the bottom neutral terminal on the appropriate main switch.

SPLIT-LOAD DUAL TARIFF

		100A double pole main switch + 63A or 80A split-load RCCB + 100A double pole main switch	
Modular ways	List No	MCB ways	Layout
15	9233/ST	2 + 3 + 3	
17	9654/ST	3 + 4 + 3	
20	9837/ST	5 + 2 + 6	
20	9675/ST	3 + 6 + 4	



Combining the added safety of a split-load RCCB and the economy heating tariff into one combined unit offers an all-round saving of space and installation time.

SPLIT-LOAD DUAL RCCB

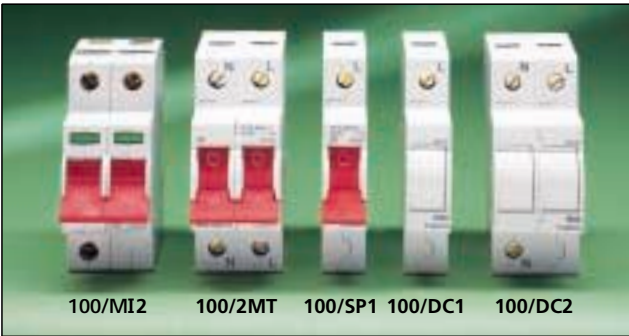
		100A double pole main switch + 63A or 80A split-load RCCB + 80A double pole RCCB incomer	
Modular ways	List No	MCB ways	Layout
15	9355/ST	4 + 4	
17	9366/ST	5 + 5	
20	9387/ST	7 + 6	

2 BANK SPLIT-LOAD DUAL RCCB

		100A double pole main switch + 63A or 80A split-load RCCB	
Modular ways	List No	MCB ways	Layout
10	9360/D	5	
14	9310/D	9	
17	9313/D	12	

KEY Main switch RCCB

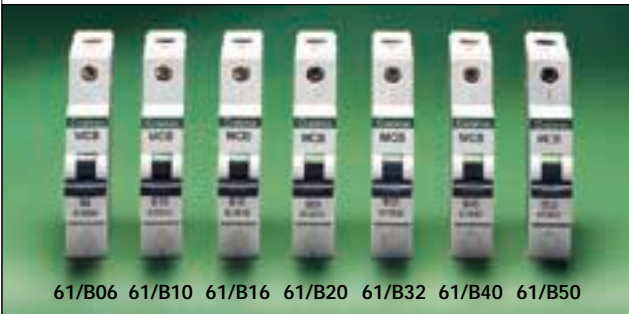
The 100A Double Pole main switch can be replaced by a main incoming RCCB without impacting on the number of MCB ways available



100/MI2 100/2MT 100/SP1 100/DC1 100/DC2



380/030 363/S030



61/B06 61/B10 61/B16 61/B20 61/B32 61/B40 61/B50



61/C06 61/C10 61/C16 61/C20 61/C32 61/C40 61/C50



61/C13230

MAIN INCOMING & SPLIT-LOAD DEVICES

DESCRIPTION	RATING	MODULES	LIST No
Main switch disconnecter	40A DP	2	40/MI2
Main switch disconnecter	63A DP	2	63/MI2
Main switch disconnecter	100A DP	2	100/MI2
Main switch disconnecter	100A SP	1	100/SP1
Main switch disconnecter c/w tap off terminal	100A DP	2	100/2MT
Direct connection unit	100A DP	2	100/DC2
Direct connection unit	100A SP	1	100/DC1

- 100A main switches to BS EN 60947-3
- 50mm² terminal capacity.

DESCRIPTION	RATING	RCD TYPE	
		TYPE AC	TYPE A
DESCRIPTION	RATING	LIST No	LIST No
Main incoming RCCB	25A DP, 30mA	325/030	325/A030
Main incoming RCCB	40A DP, 30mA	340/030	340/A030
Main incoming RCCB	40A DP, 100mA	340/100	340/A100
Main incoming RCCB	80A DP, 30mA	380/030	380/A030
Main incoming RCCB	80A DP, 100mA	380/100	380/A100
Main incoming RCCB	100A DP, 30mA	310/030	310/A030
Main incoming RCCB	100A DP, 100mA	310/100	-
Main incoming TD RCCB	100A DP, 100mA	310/100TD	-
Split-load RCCB	63A DP, 30mA	363/S030	363/AS030
Split-load RCCB	63A DP, 100mA	363/S100	363/AS100
Split-load RCCB	80A DP, 30mA	380/S030	380/AS030
Split-load RCCB	80A DP, 100mA	380/S100	380/AS100

- BS EN 61008; IEC 1008.
- Electro-mechanical.
- 50mm² terminal capacity.

OUTGOING DEVICES

MINIATURE CIRCUIT BREAKERS

CURRENT RATING (A)	MODULES	LIST No	
		Type B	Type C
6	1	61/B06	61/C06
10	1	61/B10	61/C10
16	1	61/B16	61/C16
20	1	61/B20	61/C20
32	1	61/B32	61/C32
40	1	61/B40	61/C40
50	1	61/B50	61/C50

- BS EN 60898; 6kA – 240V 50Hz.
- Type B classification (3–5In). Type C classification (5–10In).
- 16mm² terminal capacity.

Replacement MCBs for Starbreaker consumer units pre July 1992

- SB6000 range to BS 3871.
- Suffix List No. **610/** __ with the required rating between 6A and 40A.
eg **610/32** = 32A single pole Type 1 MCB.
- Type 2 classification available in 6A and 16A ratings
eg **610/062** = 6A single pole Type 2 MCB.

RESIDUAL CURRENT CIRCUIT BREAKERS WITH OVERCURRENT PROTECTION (RCBO)

CURRENT RATING (A)	TWO MODULE	SINGLE MODULE
	LIST No	LIST No
30mA		
6	61/B0630	61/C10630
10	61/B1030	61/C11030
16	61/B1630	61/C11630
20	61/B2030	61/C12030
32	61/B3230	61/C13230
40	61/B4030	61/C14030

- BS EN 61009; IEC 1009.
- 2 module device. 10mm², 1 module device 35mm² terminal capacity.
- RCBOs with MCB element Type C (5–10In) protection available to order.
- 10mA available to order eg. 61/B0610.
- Type A RCBOs are available, add **A** to list No. eg. 61/AB0630.

CAUTION

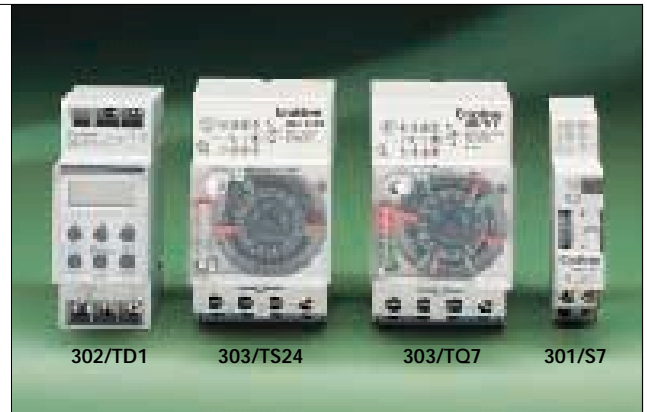
These devices are electronic units and should be disconnected from the supply during insulation and earth fault loop impedance testing.

CONTROL MODULES

TIMESWITCHES

DESCRIPTION	MODULES	LIST No
1 channel 7 day/24hr digital	2	302/TD1
2 channel 7 day/24hr digital	2	302/TD2
24hr analogue synchronous	3	303/TS24
24hr analogue quartz	3	303/TQ24
7 day analogue quartz	3	303/TQ7
1-7 min staircase	1	301/S7

- All timers have 16A resistive contact rating.
- Power reserve: 150hr – quartz timers.
250hr – digital timers.



CONTACTORS

DESCRIPTION	MAIN POLE CONFIGURATION	MODULES	LIST No
25A double pole	(2NO)	1	301/C25DP
40A double pole	(2NO)	3	303/C40DP
25A triple pole*	(3NO)	2	302/C25TP
40A triple pole	(3NO)	3	303/C40TP
63A triple pole	(3NO + 1CO)	3	303/C63TP
25A four pole	(4NO)	2	302/C25FP
63A four pole	(4NO)	3	303/C63FP
9mm ventilation module		0.5	301/CS

* With manual override facility

- Ventilation module **301/CS** must be fitted every 2 contactors when mounting contactors side by side.



IMPULSE RELAYS

DESCRIPTION	MAIN POLE CONFIGURATION	MODULES	LIST No
16A single pole*	(1NO)	1	301/I161
16A double pole*	(2NO)	1	301/I162
16A single pole*	(1NO + 1NC)	1	301/I16CO

* With manual override facility



BELL TRANSFORMER

DESCRIPTION	MODULES	LIST No
6, 8, 12V bell transformer	2	303/B12

- With overload protection.

TWILIGHT SWITCH

DESCRIPTION	MODULES	LIST No
2-2000 lux c/w sensor	3	303/P2

- Sensor to IP54.
- Control modules can be installed in Starbreaker enclosures either as part of the consumer unit or separately mounted.



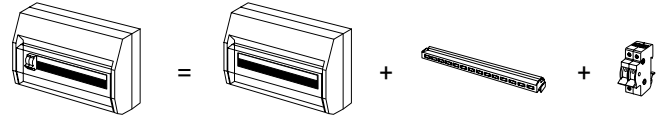
ACCESSORIES

443 Way blanking plate-all insulated	943W Way blanking plate for 914/0W
743 Way blanking plate-metal cased	748 Brass padlock and keys
943T Way blanking plate for 914/0T	741 Insulating Grommet
MCBLD MCB Locking Device	



ALL-INSULATED

The following selection tables enable easy identification of the components required to build a variety of consumer units.



SURFACE

Available MCB ways	Rating	Consumer unit List No	Surface moulded enclosure	Busbar	Main incoming device	Split-load RCCB
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407/2

Main switch consumer units

(100A double pole main switch control for all MCB ways)

2	40A	402/2	404/OA	-	40/MI2	-
4	100A	404/2	406/OA	9060	100/MI2	-
7	100A	407/2	409/OA	9090	100/MI2	-
10	100A	410/2	412/OA	9120	100/MI2	-
13	100A	413/2	415/OA	9150	100/MI2	-
18	100A	418/2	420/OA	9200	100/MI2	-



407/383

RCCB consumer units

(Double pole RCCB control for all MCB ways)

2	40A 30mA	402/343	404/OA	-	340/030	-
2	63A 30mA	402/363	404/OA	-	363/030	-
4	40A 30mA	404/343	406/OA	9060	340/030	-
4	80A 30mA	404/383	406/OA	9060	380/030	-
7	40A 30mA	407/343	409/OA	9090	340/030	-
7	80A 30mA	407/383	409/OA	9090	380/030	-
10	80A 30mA	410/383	412/OA	9120	380/030	-
10	100A 30mA	410/313	412/OA	9120	310/030	-
13	80A 30mA	413/383	415/OA	9150	380/030	-
13	100A 30mA	413/313	415/OA	9150	310/030	-
18	80A 30mA	418/383	420/OA	9200	380/030	-
18	100A 30mA	418/313	420/OA	9200	310/030	-



410/2563

Split-load consumer units

(100A double pole main switch control for all MCB ways, 63A double pole RCCB control for selected MCB ways)

2 + 2	63A 30mA	404/2263	409/OA	9530	100/MI2	363/S030
2 + 5	63A 30mA	407/2263	412/OA	9560	100/MI2	363/S030
3 + 4	63A 30mA	407/2363	412/OA	9650	100/MI2	363/S030
4 + 3	63A 30mA	407/2463	412/OA	9740	100/MI2	363/S030
5 + 2	63A 30mA	407/2563	412/OA	9830	100/MI2	363/S030
3 + 7	63A 30mA	410/2363	415/OA	9680	100/MI2	363/S030
4 + 6	63A 30mA	410/2463	415/OA	9770	100/MI2	363/S030
5 + 5	63A 30mA	410/2563	415/OA	9860	100/MI2	363/S030
6 + 4	63A 30mA	410/2663	415/OA	9950	100/MI2	363/S030
7 + 3	63A 30mA	410/2763	415/OA	9104	100/MI2	363/S030
5 + 10	63A 30mA	415/2563	420/OA	9811	100/MI2	363/S030
6 + 9	63A 30mA	415/2663	420/OA	9910	100/MI2	363/S030
7 + 8	63A 30mA	415/2763	420/OA	9109	100/MI2	363/S030
8 + 7	63A 30mA	415/2863	420/OA	9118	100/MI2	363/S030
9 + 6	63A 30mA	415/2963	420/OA	9127	100/MI2	363/S030
10 + 5	63A 30mA	415/2163	420/OA	9136	100/MI2	363/S030

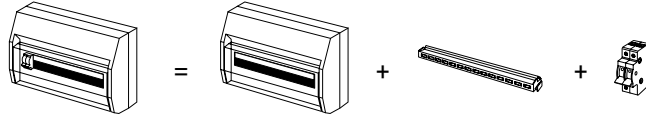
Factory-built consumer units are available to order – Add **B** to the consumer unit List No. eg 404/2**B**.

For 80A split-load consumer units, use **380/S030** or **380/S100** split-load RCCBs.

The above RCCBs are Type AC. Type A RCCBs are available – Add **A** to the consumer unit List No. eg 410/A2663.

ALL-INSULATED

The following selection tables enable easy identification of the components required to build a variety of consumer units.



SURFACE

Available MCB ways	Rating	Consumer unit List No	Surface moulded enclosure	Busbar	Main incoming device	RCCB
Dual tariff consumer units (100A double pole main switch control for each tariff)						
3 + 2	100A	405/232	409/0A	9530	100/MI2 x 2	-
3 + 5	100A	408/232	412/0A	9560	100/MI2 x 2	-
4 + 4	100A	408/242	412/0A	9650	100/MI2 x 2	-
5 + 3	100A	408/252	412/0A	9740	100/MI2 x 2	-
6 + 2	100A	408/262	412/0A	9830	100/MI2 x 2	-
4 + 7	100A	411/242	415/0A	9680	100/MI2 x 2	-
5 + 6	100A	411/252	415/0A	9770	100/MI2 x 2	-
6 + 5	100A	411/262	415/0A	9860	100/MI2 x 2	-
7 + 4	100A	411/272	415/0A	9950	100/MI2 x 2	-
8 + 3	100A	411/282	415/0A	9104	100/MI2 x 2	-
6 + 10	100A	416/262	420/0A	9811	100/MI2 x 2	-
7 + 9	100A	416/272	420/0A	9910	100/MI2 x 2	-
8 + 8	100A	416/282	420/0A	9109	100/MI2 x 2	-
9 + 7	100A	416/292	420/0A	9118	100/MI2 x 2	-
10 + 6	100A	416/212	420/0A	9127	100/MI2 x 2	-
11 + 5	100A	416/2112	420/0A	9136	100/MI2 x 2	-



411/262

Multi tariff consumer units

(100A double pole main switch control for each tariff)

4 + 1 + 4	100A	409/242124	415/0A	9414/M	100/MI2 x 3	-
8 + 1 + 5	100A	414/282125	420/0A	9815/M	100/MI2 x 3	-
7 + 1 + 6	100A	414/272126	420/0A	9716/M	100/MI2 x 3	-



409/242124

Split-load dual tariff consumer units

(100A double pole main switch control for all MCB ways, 63A/80A double pole RCCB control for selected MCB ways, 100A double pole main switch control for storage heating MCBs)

2 + 3 + 3	63A 30mA	408/22623	415/0A	9233/ST	100/MI2 x 2	363/S030
5 + 2 + 6	63A 30mA	413/25626	420/0A	9837/ST	100/MI2 x 2	363/S030
3 + 6 + 4	63A 30mA	413/23624	420/0A	9675/ST	100/MI2 x 2	363/S030



408/22623

Split-load dual RCCB consumer units

(100A double pole main switch control for all MCB ways, 63A/80A split-load RCCB control for selected MCB ways, 80A main switch RCCB control for selected MCB ways)

4 + 4	63A 100mA 80A 30mA	408/26484	415/0A	9355/ST	100/2MT	363/S100 380/030
7 + 6	63A 100mA 80A 30mA	413/26786	420/0A	9387/ST	100/2MT	363/S100 380/030

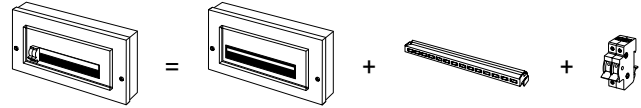


408/26484

The above RCCBs are Type AC. Type A RCCBs are available – Add **A** to the consumer unit List No. eg 413/**A**26786.

METAL CASED

The following selection tables enable easy identification of the components required to build a variety of consumer units.



SURFACE

Available MCB ways	Rating	Consumer unit List No	Surface metal enclosure	Busbar	Main incoming device	Split-load RCCB
--------------------	--------	-----------------------	-------------------------	--------	----------------------	-----------------



806/2

Main switch consumer units

(100A double pole main switch control for all MCB ways)

6	100A	806/2	808/OA	9080	100/MI2	-
8	100A	808/2	810/OA	9100	100/MI2	-
12	100A	812/2	814/OA	9140	100/MI2	-
15	100A	815/2	817/OA	9117	100/MI2	-
18	100A	818/2	820/OA	9200	100/MI2	-



808/383

RCCB consumer units

(Double pole RCCB control for all MCB ways)

6	40A 30mA	806/343	808/OA	9080	340/O30	-
6	80A 30mA	806/383	808/OA	9080	380/O30	-
8	40A 30mA	808/343	810/OA	9100	340/O30	-
8	80A 30mA	808/383	810/OA	9100	380/O30	-
12	80A 30mA	812/383	814/OA	9140	380/O30	-
15	80A 30mA	815/383	817/OA	9117	380/O30	-
18	80A 30mA	818/383	820/OA	9200	380/O30	-



809/2463

Split-load consumer units

(100A double pole main switch control for all MCB ways, 63A double pole RCCB control for selected MCB ways)

2 + 3	63A 30mA	805/2263	810/OA	9540	100/MI2	363/S030
3 + 2	63A 30mA	805/2363	810/OA	9630	100/MI2	363/S030
3 + 6	63A 30mA	809/2363	814/OA	9670	100/MI2	363/S030
4 + 5	63A 30mA	809/2463	814/OA	9760	100/MI2	363/S030
5 + 4	63A 30mA	809/2563	814/OA	9850	100/MI2	363/S030
6 + 3	63A 30mA	809/2663	814/OA	9940	100/MI2	363/S030
5 + 7	63A 30mA	812/2563	817/OA	9880	100/MI2	363/S030
7 + 5	63A 30mA	812/2763	817/OA	9106	100/MI2	363/S030
6 + 6	63A 30mA	812/2663	817/OA	9907	100/MI2	363/S030
3 + 9	63A 30mA	812/2363	817/OA	9610	100/MI2	363/S030
9 + 3	63A 30mA	812/2963	817/OA	9124	100/MI2	363/S030
5 + 10	63A 30mA	815/2563	820/OA	9811	100/MI2	363/S030
6 + 9	63A 30mA	815/2663	820/OA	9910	100/MI2	363/S030
8 + 7	63A 30mA	815/2863	820/OA	9118	100/MI2	363/S030

For flush mounting units up to 14 module – Add **F** to consumer unit and enclosure List No. eg 806/2**F**, 808/OA**F**.

Factory-built consumer units are available to order – Add **B** to the consumer unit List No. eg 806/2**B**.

For 80A split-load consumer units use **380/S030** or **380/S100** split-load RCCBs.

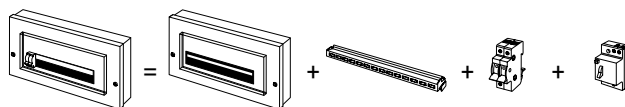
The above RCCBs are Type AC. Type A RCCBs are available – Add **A** to the consumer unit List No. eg 809/A2663.

Note The split arrangements in split-load configurations represent circuits unprotected and protected respectively eg 3 + 6 = 3 MCB ways unprotected and 6 MCB ways protected by the RCCB.

100mA version RCCB's available replace final digit 3 with 1 i.e. 809/2363 would become 809/2361

METAL CASED

The following selection tables enable easy identification of the components required to build a variety of consumer units.



SURFACE

Available MCB ways	Rating	Consumer unit List No	Surface metal enclosure	Busbar	Main incoming device	Split-load RCCB
Dual tariff consumer units						
(100A double pole main switch control for each tariff)						
3 + 3	100A	806/232	810/OA	9540	100/MI2 x 2	-
4 + 2	100A	806/242	810/OA	9630	100/MI2 x 2	-
4 + 6	100A	810/242	814/OA	9670	100/MI2 x 2	-
5 + 5	100A	810/252	814/OA	9760	100/MI2 x 2	-
6 + 4	100A	810/262	814/OA	9850	100/MI2 x 2	-
7 + 3	100A	810/272	814/OA	9940	100/MI2 x 2	-
6 + 7	100A	813/262	817/OA	9880	100/MI2 x 2	-
7 + 6	100A	813/272	817/OA	9907	100/MI2 x 2	-
8 + 5	100A	813/282	817/OA	9106	100/MI2 x 2	-
4 + 9	100A	813/242	817/OA	9610	100/MI2 x 2	-
10 + 3	100A	813/212	817/OA	9124	100/MI2 x 2	-
6 + 10	100A	816/262	820/OA	9811	100/MI2 x 2	-
7 + 9	100A	816/272	820/OA	9910	100/MI2 x 2	-
9 + 7	100A	816/292	820/OA	9118	100/MI2 x 2	-



810/252

Multi tariff consumer units

(100A double pole main switch control for each tariff)

4 + 1 + 3	100A	808/242123	814/OA	9413/M	100/MI2 x 3	-
5 + 1 + 5	100A	811/252125	817/OA	9515/M	100/MI2 x 3	-
8 + 1 + 5	100A	814/282125	820/OA	9815/M	100/MI2 x 3	-
7 + 1 + 6	100A	814/272126	820/OA	9716/M	100/MI2 x 3	-



808/242123

Split-load dual tariff consumer units

(100A double pole main switch + 63A/80A double pole RCCB control for selected MCB ways, 100A double pole main switch control for storage heating MCBs)

3 + 4 + 3	63A 30mA	810/23623	817/OA	9654/ST	100/MI2 x 2	363/S030
3 + 4 + 3	80A 30mA	810/23823	817/OA	9654/ST	100/MI2 x 2	380/S030
5 + 2 + 6	63A 30mA	813/25626	820/OA	9837/ST	100/MI2 x 2	363/S030
5 + 2 + 6	80A 30mA	813/25826	820/OA	9837/ST	100/MI2 x 2	380/S030
3 + 6 + 4	63A 30mA	813/23624	820/OA	9675/ST	100/MI2 x 2	363/S030
3 + 6 + 4	80A 30mA	813/23824	820/OA	9675/ST	100/MI2 x 2	380/S030



810/23623

Split-load dual RCCB consumer units

(100A double pole main switch control for all MCB ways, 63A/80A split-load RCCB control for selected MCB ways, 80A main switch RCCB control for selected MCB ways)

5 + 5	63A 100mA 80A 30mA	810/26585	817/OA	9366/ST	100/2MT	363/S100 380/O30
5 + 5	80A 100mA 80A 30mA	810/28585	817/OA	9366/ST	100/2MT	380/S100 380/O30
7 + 6	63A 100mA 80A 30mA	813/26786	820/OA	9387/ST	100/2MT	363/S100 380/O30
7 + 6	80A 100mA 80A 30mA	813/28786	820/OA	9387/ST	100/2MT	380/S100 380/O30



810/26585

For flush mounting units up to 14 module – Add **F** to consumer unit and enclosure List No. eg 806/2**F**, 808/0**AF**.

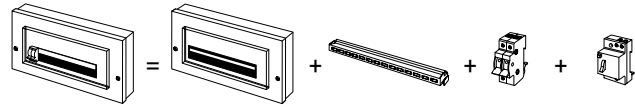
Factory-built consumer units are available to order – Add **B** to the consumer unit List No. eg 806/232**B**.

The above RCCBs are Type AC. Type A RCCBs are available – Add **A** to the consumer unit List No. eg 812/**A**26383.

METAL CASED

The following selection tables enable easy identification of the components required to build a variety of consumer units.

2 BANK CONSUMER UNITS



821/26383

Available MCB ways	Rating	Consumer unit List No	Surface metal enclosure	Busbar	Main incoming device	Split-load RCCB
(100A double pole main switch control for all MCB ways, 63A/80A double pole RCCB control for selected MCB ways, 80A double pole RCCB control for selected MCB ways)						
8 + 8	80A 30mA	816/283	820/2A	9100 x 2	100/2MT	380/030
5 + 8	63A 30mA 80A 30mA	813/26383	820/2A	9360/D 9100	100/2MT	363/S030 380/030
5 + 8	63A 100mA 80A 30mA	813/26183	820/2A	9360/D 9100	100/2MT	363/S100 380/030
12 + 12	80A 30mA	824/283	828/2A	9140 x 2	100/2MT	380/030
9 + 12	63A 30mA 80A 30mA	821/26383	828/2A	9310/D 9140	100/2MT	363/S030 380/030
9 + 12	63A 100mA 80A 30mA	821/26183	828/2A	9310/D 9140	100/2MT	363/S100 380/030
15 + 15	80A 30mA	830/283	834/2A	9117 x 2	100/2MT	380/030
12 + 15	63A 30mA 80A 30mA	827/26383	834/2A	9313/D 9117	100/2MT	363/S030 380/030
12 + 15	63A 100mA 80A 30mA	827/26183	834/2A	9313/D 9117	100/2MT	363/S100 380/030

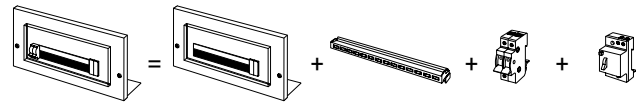
For flush mounting units up to 14 module – Add **F** to consumer unit and enclosure List No. eg 806/2**F**, 808/0**AF**.

Factory-built consumer units are available to order – Add **B** to the consumer unit List No. eg 806/232**B**.

The above RCCBs are Type AC. Type A RCCBs are available – Add **A** to the consumer unit List No. eg 812/**A**26383.

For 2 bank and dual RCCB consumer units, the Type A RCCB makes reference to the 30mA downstream device.

SPINE BACKPLATE CONSUMER UNITS



909/2483

Available MCB ways	Rating	Consumer unit List No	Chassis	Busbar	Main incoming device	Split-load RCCB
Main switch spine unit						
(100A double pole main switch control for all MCB ways)						
12	100A	912/2*	914/0*	9140	100/MI2	
RCCB spine unit						
(Double pole RCCB control for all MCB ways)						
12	80A 30mA	912/383T*	914/0*	9140	380/030	
Split-load spine units						
(100A double pole main switch control for all MCB ways, 80A double pole RCCB control for selected MCB ways)						
3 + 6	80A 30mA	909/2383*	914/0*	9670	100/MI2	380/S030
4 + 5	80A 30mA	909/2483*	914/0*	9760	100/MI2	380/S030
5 + 4	80A 30mA	909/2583*	914/0*	9850	100/MI2	380/S030
6 + 3	80A 30mA	909/2683*	914/0*	9940	100/MI2	380/S030

* Add **T** for Tufnol front plate or **W** for white PVC front plate

LIFESTAR

RESIDUAL CURRENT DEVICES



Crabtree RCDs comply fully with BS EN 61008 to Type A and Type AC classification.

TYPE A



Pulsating dc (half wave rectified) waveform

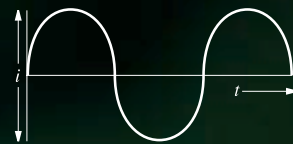


Pulsating dc (chopped) waveform



Pulsating dc (chopped) waveform with a constant dc component

TYPE AC



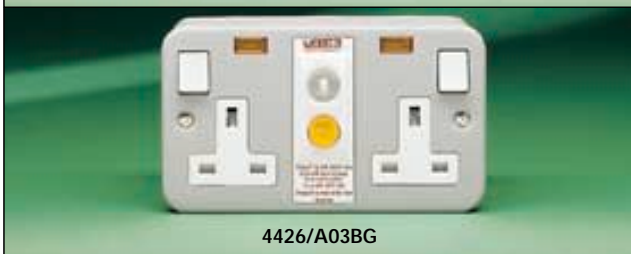
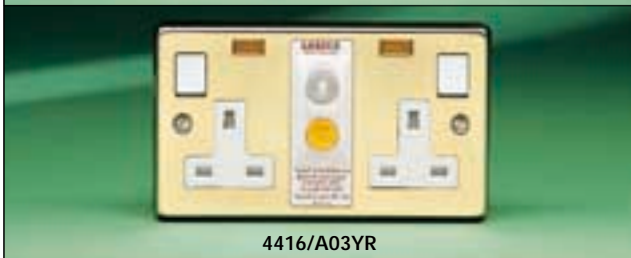
Normal ac waveform

Lifestar offers you the protection of Residual Current Devices (RCDs) for any industrial, commercial or domestic application. RCDs rated from 13A to 100A are available in sensitivities from 10mA to 300mA providing safe, secure protection against fire or shock risks caused by earth fault currents.

Suitable for screw fixing or DIN rail mounting.

Wide range of enclosures available for separately mounting RCCBs, MCBs and RCBOs.





13A SAFETY SOCKETS WITH RCD PROTECTION

The Lifestar safety socket is available in 1 and 2 gang versions with either 10mA or 30mA sensitivity, enabling products to be precisely matched to specific applications. All safety sockets incorporate pulsating dc fault current protection (Type A operation).

- Double pole operation, 3mm contact gap.
- Non mains dependent.
- Trip free mechanism for automatic disconnection of supply.
- Enables mounting in standard 25mm deep box (moulded variant).
- Mechanical indication of contact position.
- Unique labyrinth switch design minimises visible arc flash and prevents front access to live parts.
- Surface mounted units supplied with Birch Grey mounting box.
- Interior units available for mounting into OEM equipment.
- Comply with BS 7288.

MOULDED	PACK QTY
4404/A01 1 gang switched with neon indicator, 10mA tripping current	1
4404/A03 1 gang switched with neon indicator, 30mA tripping current	1
4406/A01 2 gang switched with neon indicator, 10mA tripping current	1
4406/A03 2 gang switched with neon indicator, 30mA tripping current	1
Dimensions	146mm x 86mm
Mounting boxes	9048 surface, SB665 flush galv. or SB629 dry lining

SURFACE METAL PLATE*	PACK QTY
4424/A01 1 gang switched with neon indicator, 10mA tripping current	1
4424/A03 1 gang switched with neon indicator, 30mA tripping current	1
4426/A01 2 gang switched with neon indicator, 10mA tripping current	1
4426/A03 2 gang switched with neon indicator, 30mA tripping current	1
Dimensions	142mm x 82mm x 44mm

FLUSH METAL PLATE*	PACK QTY
4414/A01 1 gang switched with neon indicator, 10mA tripping current	1
4414/A03 1 gang switched with neon indicator, 30mA tripping current	1
4416/A01 2 gang switched with neon indicator, 10mA tripping current	1
4416/A03 2 gang switched with neon indicator, 30mA tripping current	1
Dimensions	146mm x 86mm
Mounting boxes	9223/BG surface, SB625 flush galv. or SB629 dry lining

INTERIOR	PACK QTY
4414/A101 1 gang switched with neon indicator, 10mA tripping current	1
4414/A103 1 gang switched with neon indicator, 30mA tripping current	1
4416/A101 2 gang switched with neon indicator, 10mA tripping current	1
4416/A103 2 gang switched with neon indicator, 30mA tripping current	1

SURFACE METALCLAD	PACK QTY
4424/A01BG 1 gang switched with neon indicator, 10mA tripping current	1
4424/A03BG 1 gang switched with neon indicator, 30mA tripping current	1
4426/A01BG 2 gang switched with neon indicator, 10mA tripping current	1
4426/A03BG 2 gang switched with neon indicator, 30mA tripping current	1
Dimensions	142mm x 82mm x 44mm


For boxes less knockouts see page 66.


FLUSH METALCLAD	PACK QTY
4414/A01BG 1 gang switched with neon indicator, 10mA tripping current	1
4414/A03BG 1 gang switched with neon indicator, 30mA tripping current	1
4416/A01BG 2 gang switched with neon indicator, 10mA tripping current	1
4416/A03BG 2 gang switched with neon indicator, 30mA tripping current	1
Dimensions	146mm x 86mm
Mounting boxes	9223/BG surface, SB625 flush galv. or SB629 dry lining

* Metal plate variants available in Satin Chrome (SC), Bronze (BZ) and Oyster Gold (YR) – Add suffix to List No. eg 4416/A03SC.
For further specification details of finishes see Technical Data.

All available with two earth terminals to enable installation to comply with section 607 (wiring regulations) Add suffix /TE to List No.

RESIDUAL CURRENT CIRCUIT BREAKERS

TYPE AC 		SENSITIVITY			
No OF POLES	CURRENT RATING (A)	MODULES	30mA	100mA	300mA
DP	40	2	224/030	224/100	224/300
	63	2	226/030	226/100	226/300
	80	2	228/030	228/100	-
	100	2	221/030	221/100	221/300
TP & N	40	4	244/030	-	-
	63	4	246/030	246/100	246/300
	100	4	241/030	241/100	241/300

TYPE A 		SENSITIVITY		
No OF POLES	CURRENT RATING (A)	MODULES	10mA	30mA
DP	16	2	216/A010	-
	32	2	223/A010	-
	40	2	-	224/A030
	63	2	-	226/A030
	80	2	-	228/A030
	100	2	-	221/A030
TP & N	40	4	-	244/A030
	63	4	-	246/A030
	100	4	-	241/A030

These units are not interchangeable with the RCCBs now available in the Starbreaker range illustrated on page 72.

- BS EN 61008; IEC 1008.
- Terminal capacities: – 50mm².
- Type A rccb's with 100mA sensitivity available on request.



224/030 228/030



224/100 226/100



228/100 246/030

RESIDUAL CURRENT CIRCUIT BREAKERS WITH OVERCURRENT PROTECTION (RCBO)

CURRENT RATING (A)	MODULES	SENSITIVITY	
		10mA	30mA
6	2	6106/010	6106/030
10	2	6110/010	6110/030
16	2	6116/010	6116/030
20	2	6120/010	6120/030
32	2	6132/010	6132/030
40	2	6140/010	6140/030

CAUTION

These devices are electronic units and should be disconnected from the supply during insulation and earth fault loop impedance testing.

- BS 3871 and BS 4293.
- Type 1 classification (2.7–4In).
- 10mm² terminal capacity.

Further technical information – see Technical Data.



6132/030 side view



744/3



CBE/3

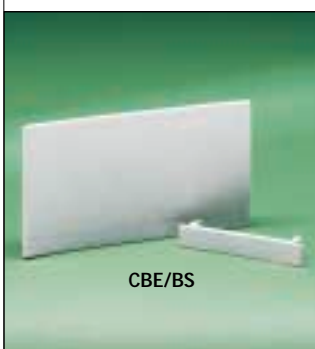


744/4



CBE/4

844/4



CBE/BS



CBE/EK

MODULAR ENCLOSURES

3 MODULE

DESCRIPTION	LIST No
General purpose enclosure (IP20)	744/3

- Complete with DIN rail.
- Features sealable cover.
- Supplied with cut-out of 2 module size.
- Converts to 3 module by removing half blanks.

All purpose enclosure (IP65)	CBE/3
------------------------------	--------------

- Complete with DIN rail.
- Features sealable cover and hinged protective cover.
- Polycarbonate construction.
- Accessories available.
- Self-adhesive way label provided.

Note

Max cable capacity 10mm². For increased cable sizes use 4 module enclosure List No. **CBE/4** (up to 25mm²).

4 MODULE

DESCRIPTION	LIST No
General purpose enclosure (IP20)	744/4

- Suitable for ratings up to 80A.
- Complete with DIN rail and earth bar.
- Features sealable cover.

General purpose enclosure (IP20)	744/41
----------------------------------	---------------

- Suitable for ratings up to 100A.
- Complete with DIN rail and earth bar.
- Features sealable cover.

All purpose enclosure (IP65)	CBE/4
------------------------------	--------------

- Suitable for all ratings.
- Complete with DIN rail.
- Features sealable cover and hinged protective cover.
- Polycarbonate construction.
- Accessories available.
- Self-adhesive way label provided.

Fabricated steel enclosure (IP20)	844/4
-----------------------------------	--------------

- Suitable for all ratings.
- Complete with DIN rail and earth terminal.
- Supplied with blank plate for converting to 3 module opening.

5 MODULE

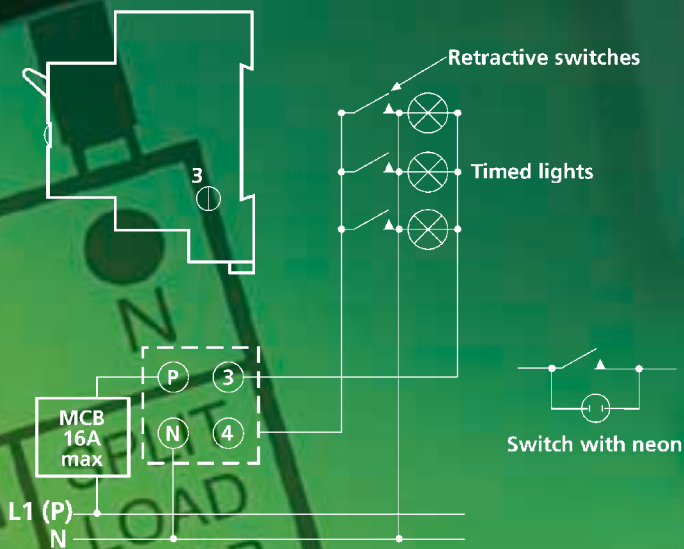
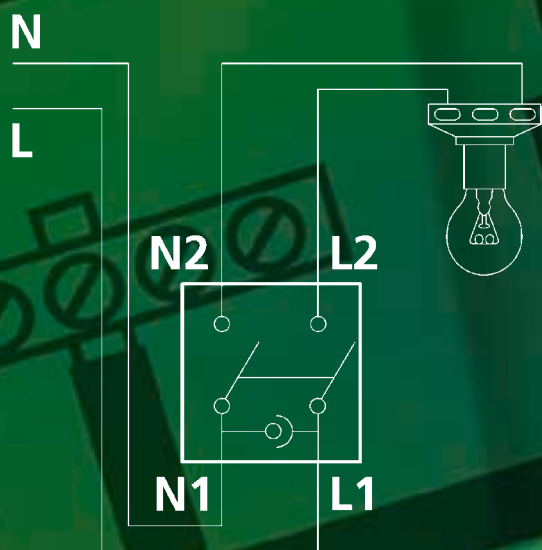
DESCRIPTION	LIST No
General purpose enclosure (IP20)	EN100

ACCESSORIES FOR ALL PURPOSE ENCLOSURES

EARTH TERMINAL	LIST No
5 way, 3 module	CBE3/EK
7 way, 4 module	CBE4/EK
NEUTRAL TERMINAL	
5 way, 3 module	CBE3/NK
7 way, 4 module	CBE4/NK
Blanking strip	CBE/BS
External fixing bracket	ME/FB

TECHNICAL DATA

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IP RATINGS

The IP (International Protection) rating given to an enclosure states the degree of protection it offers by means of two digits. A summary of these is shown below; for a more detailed definition, see IEC 529: 1989, BS EN 60529: 1992.

FIRST DIGIT





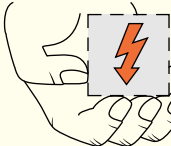



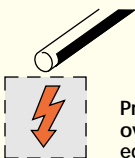


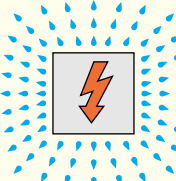
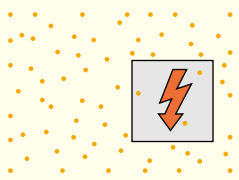
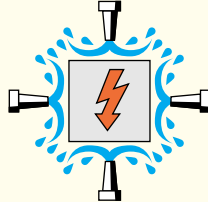
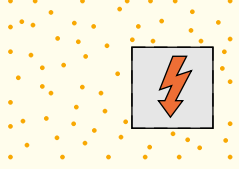
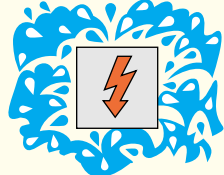
Protection against solid foreign objects and access to hazardous parts

The first digit covers protection against penetration by solid objects, which includes hands and tools such as screwdrivers. At the lowest of seven levels, 0, no protection is offered, either of the equipment itself from damage by intrusion or of a person contacting live or moving parts. At the highest, 6, there shall be no entry of dust.

SECOND DIGIT

Protection against ingress of water

The second digit covers the degree of protection against the entry of water, on a progressive scale. For example, number 1 indicates that dripping water shall have no harmful effect, and number 6, that water projected in powerful jets against the enclosure from any direction shall have no harmful effects.

IP			IP		
0		No protection	0		No protection
1		Protected against solid objects up to 50mm eg accidental touch by hands	1		Protected against vertically falling drops of water eg condensation
2		Protected against solid objects up to 12mm eg fingers	2		Protected against direct sprays of water up to 15° from the vertical
3		Protected against solid objects over 2.5mm eg tools and wires	3		Protected against sprays of water up to 60° from the vertical
4		Protected against solid objects over 1mm eg tools, wires and small wires	4		Protected against water splashed from all directions - limited ingress permitted
5		Protected against dust - limited ingress, no harmful deposits	5		Protected against low pressure jets of water from all directions - limited ingress permitted
6		Totally protected against dust	6		Protected against strong jets of water eg for use on ship decks - limited ingress permitted

The letter X can be used in place of the first or second digit to indicate that tests have either not been made or are not applicable.

NOTE

In the event of additional holes being drilled/pierced or knockouts removed, suitable measures should be taken to restore the products to the original ratings.

IEC 529, BS EN 60529 does not apply to protection against the risk of explosion or conditions such as humidity, corrosive gases, fungi or vermin.

In certain cases equipment designed to be mounted in an enclosure will contribute towards the stated IP rating (eg pushbuttons mounted in an enclosure).

Different parts of enclosures can have different degrees of protection and still conform to the standard (eg enclosures with pre-drilled conduit entry).

WIRING ACCESSORIES – GENERAL

BRITISH STANDARDS

An unqualified reference to the British Standards in this product catalogue indicates that the products referred to are marked with the British Standard and therefore comply in all respects with the standard stated. Where a qualification is given against the British Standard, eg BS 3676 where applicable, this means that there is no specific standard for the product in question and it has been tested as far as possible for compliance with the standard indicated.

TERMINAL CAPACITIES (mm²)

Product	Quantity and gauge of cable accepted by terminals
13A Capital socket outlets 13A Capital safety sockets 13A Capital fused connection units	3 x 2.5mm ² , 2 x 4mm ² , 2 x 6mm ²
13A Panel mounting socket	3 x 2.5mm ² , 2 x 4mm ² , 1 x 6mm ²
6A Capital plate switches 6A Capital architrave switches	4 x 1mm ² , 3 x 1.5mm ² , 1 x 2.5mm ²
20A Capital DP switches 32A Capital DP switches	3 x 2.5mm ² , 2 x 4mm ² , 1 x 6mm ² , 1 x 10mm ²
32A Capital TP & N switches 45A Capital DP switches	2 x 6mm ² , 1 x 10mm ² , 1 x 16mm ²
50A Capital DP switches 45A Capital cooker control units	2 x 6mm ² , 1 x 10mm ² , 1 x 16mm ²
Capital shaver supply unit Capital light/shaver unit 6A Capital ceiling switches	4 x 1mm ² , 3 x 1.5mm ²
16A Capital ceiling switches	2 x 2.5mm ² max
50A Capital ceiling switch	3 x 2.5mm ² , 2 x 4mm ² , 1 x 6mm ² , 1 x 10mm ² ,
Capital ceiling roses Capital safety batten lampholder	1.5mm ² multiway
Capital safety pendant lampholder	1 x 1mm ² flexible cable
16A Minder PIR sensor	6 x 1mm ² , 4 x 1.5mm ² , 2 x 2.5mm ²

6A TP ISOLATING SWITCH

LIST No.4017 & 4017/1

Complies fully with requirements of BS EN 60947-3 for switch disconnectors.

Rated SC making capacity	300A
Rated conditional short circuit current	6kA
	(when protected by Starbreaker 6A mcb)
Rated insulation voltage	300V
Rated impulse withstand voltage	2.5kV
Rated duty	Uninterrupted
Maximum switching rate	120 switch cycles per hour
Rated short time withstand current	100A for 1 second
Utilisation category	AC 23B, 6A 250V 50Hz

A POINT ON TESTING

When installations incorporating electronic devices of the semi-conductor type are being tested, care must normally be taken to ensure that they are not subjected to the output voltage of an insulation tester. However, dimmer switches complying with BS 5518 (eg Crabtree 2190) will not be damaged by the application of a normal 500V insulation resistance test. In all other cases where electronic items are fitted, they should be disconnected whilst the insulation of the installation is tested. A notice, drawing attention to the fact that electronic devices are incorporated in the installation, should always be affixed at the intake position. This also applies to any neon indicators fitted.

CAPITAL RANGE 'SEEKLIGHT' ASSEMBLY

LIST No.4009

For use on 200–250V 50Hz supply only.

Not suitable for use with Capital architrave switches.

One 'Seeklight' position is provided on each full size plate switch.

- 1 Isolate mains before commencing work.
- 2 Connect neon wires to terminals, as shown in the following wiring diagrams, to suit circuit conditions.
- 3 Locate neon indicator into position on back of switch plate (figure A).
- 4 Remove backing from self-adhesive pad and locate over neon to hold it in place (figure B).

General note

The neon 'Seeklight' must be disconnected when carrying out insulation testing to avoid a false reading.

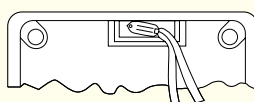


Figure A

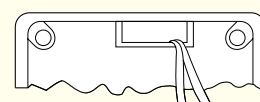
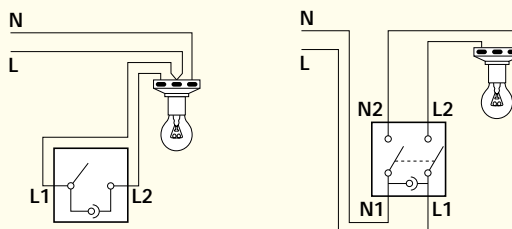


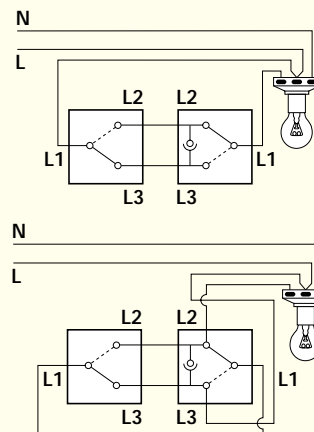
Figure B

CONNECTION TO VARIOUS CIRCUITS

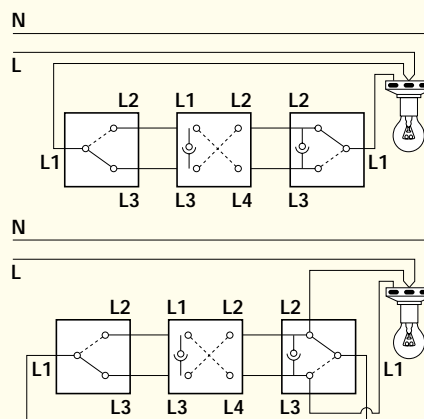
One-way circuits



Two-way circuits



Multiple control circuits



WIRING ACCESSORIES – METAL PLATE SPECIFICATION



Capital Bronze (BZ)
Base metal Brass
Process 1 Linished and brushed
2 Electrophoretically lacquered
3 Stoved



Diamond Platinum Silver (PS)
Base metal 2.0mm Aluminium
Process 1 Satin anodised with bevelled edges



Capital Oyster Gold (YR)
Base metal Brass
Process 1 Linished and brushed
2 Nickel plated
3 Electrophoretically lacquered
4 Stoved



Diamond Satin Brass (SB)
Base metal Mirror-finished Brass
Process 1 Linished and brushed with bevelled edges
2 Electrophoretically lacquered
3 Stoved



Capital Satin Chrome (SC)
Base metal Brass
Process 1 Linished and brushed
2 Nickel-chrome plated
and lanolin wiped



Diamond Polished Brass (PB)
Base metal Mirror-finished Brass
Process 1 Hand polished with bevelled edges
2 Electrophoretically lacquered
3 Stoved



Capital Polished Brass (PB)
Base metal Brass
Process 1 Polished plate
2 Electrophoretically lacquered
3 Stoved



Diamond Antique Bronze (BMA)
Base metal Mirror-finished Brass
Process 1 Hand polished with bevelled edges
2 Chemically stained
3 Electrophoretically lacquered
4 Stoved



Capital Rope Edge Brass
Base metal Brass
Process 1 Polish Plate
2 Electrophoretically lacquered
3 Stoved



Diamond Stainless Steel (SS)
Base metal Stainless Steel
Process 1 Linished and brushed



Diamond Satin Chrome (SC)
Base metal Mirror-finished Brass
Process 1 Linished and brushed with bevelled edges
2 Nickel-chrome plated
and lanolin wiped



Capital and Diamond Industrial Grey (BG)
Base metal Steel
Process 1 Iron phosphated
2 Epoxy polyester powder coated



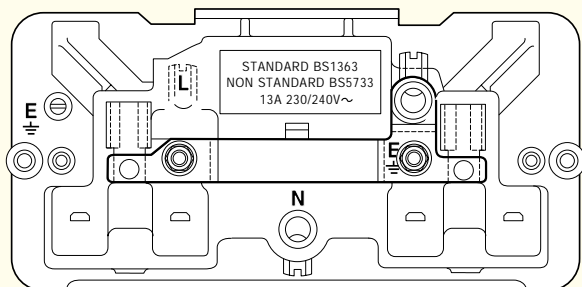
Diamond Polished Chrome (PC)
Base metal Mirror-finished Brass
Process 1 Hand polished with bevelled edges
2 Electro plated



Hallmark Decorative Brass
Base metal Mirror-finished Brass
Process 1 Hand polished decorative cast edge
2 Hand polished plate
3 Electrophoretically lacquered
4 Stoved

DIAMOND CLEAN EARTH SOCKETS

13A socket outlets listed in the Britmac Diamond electrical accessory section and the Diamond interior versions for panel mounting can be supplied to special order in Clean Earth versions. The introduction of these items meets a growing need in data process and computer installations. Each socket is provided with two separate earth terminals, one connected direct to the socket and hence, via the plug earth pin, provides a machine earth; this terminal is isolated from the second earth terminal. The second earth terminal provides an earth facility for the socket front plate, box, conduit system, etc. Correctly wired, the sockets meet the current requirements of BS 7671, formerly the 16th Edition of the IEE regulations. **Both terminals must be connected to their respective earth conductors.**



ORDERING INSTRUCTIONS

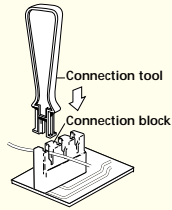
If a Clean Earth version of any of the listed sockets (page 57) is required simply add **ICE** to the appropriate catalogue number eg 1 gang Diamond switched socket with Clean Earth facility for panel mounting **GS01ICE**;
2 gang unswitched socket with Clean Earth facility for panel mounting **1302PMICE**.

CAPITAL TELEPHONE SOCKET OUTLETS

The Crabtree Capital range of Telephone Socket Outlets has been developed primarily for use in telephone systems using British Telecom standards. The products are similar in specification to units available from British Telecom. Approval is to BT Specification No.50. Suitable for use in accordance with BS7671, formerly the 16th Edition of the IEE Wiring Regulations.

TERMINATIONS

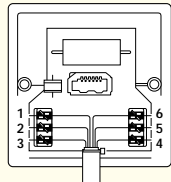
All telephone outlets should be wired in accordance with the wiring diagrams shown below. Connection of these telephone outlets is by the IDC (Insulation Displacement Connection) method allowing one or two equal size cables (0.40–0.68mm) to be terminated per connection block, using Crabtree connection tool List No.6915 as shown below.



- Connection tool Allow 50mm cable 'tails' at each connection block
- Connection block Push home in direction of arrow with connection tool
- Excess cable may be trimmed using wire cutters

WIRING COLOUR CODE

Pin number	Base colour/stripe
1	Green/White
2	Blue/White
3	Orange/White
4	White/Orange
5	White/Blue
6	White/Green



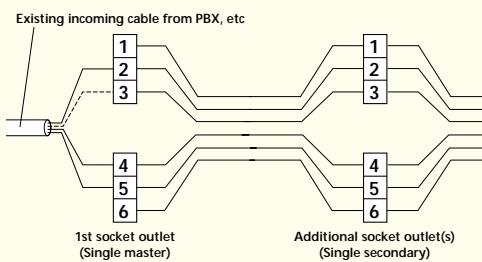
As seen from rear

WIRING DIAGRAMS

Example of typical connections:

- 1 Connections to 2 & 5
- 2 Earth recall (when used) connect to terminal 4
- 3 Connection to terminal 3 is not usually required

- NB** (a) Standard 4 wire cable is shown below as incoming cable. If terminals 1 and 6 (normally unused) are required, 6 wire cable may be used.
 (b) All socket outlet connections are in parallel – any number of socket outlets can be connected, but it is recommended that only a maximum of 5 telephones be used at any one time on one line.



WARNING NOTES

In order to comply with current Wiring Regulations, metal faceplate telephone socket outlets must be within the 'equipotential zone' of the building they are located in. Therefore an earth terminal is fitted to metal plate units which should be connected to the electrical installation's earthing system.

Testing

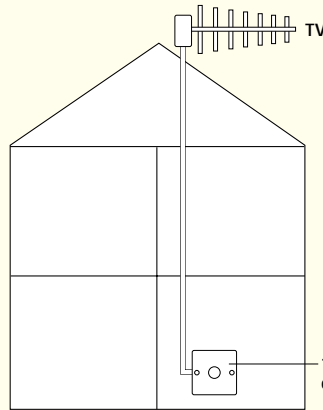
- (a) Connect cables as shown in wiring diagram
- (b) Plug in telephones
- (c) Lift receivers and check for dial tone
- (d) Make an incoming call to check bells work
- (e) If circuit does not work, disconnect and check thoroughly before reconnecting

Note

Unauthorised connection of telephone socket outlets to wiring owned by British Telecom is an offence. Further information concerning the requirements of a telephone system installation can be obtained from the Department of Industry or the telephone equipment supplier.

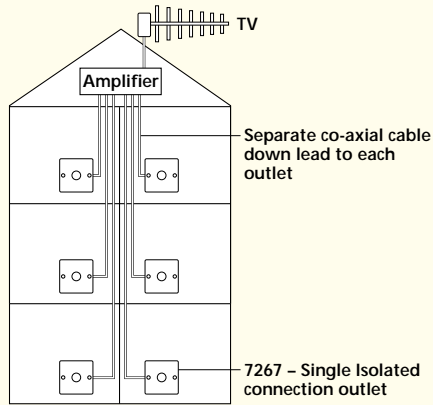
CO-AXIAL SOCKET OUTLETS

In order to comply with the latest EMC directives, all installations containing amplification systems or comprising multiple co-axial socket outlets must be fitted with appropriate earth bonding.

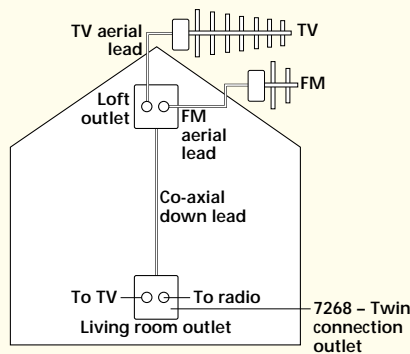


Note
If additional outlets are required, an amplifier should be used. Each outlet is then wired separately to the amplifier.

Single connection outlet
Domestic installation



Co-axial outlet installation
Communal aerial system eg flats, hotels etc



TV and FM aerial connections use a twin connection outlet (7268) and one co-axial down lead.
 1 Fit a co-axial connector to the TV and FM aerial cables.
 2 Plug connectors into 7268 in loft.
 3 Connect a co-axial cable run between back of 7268 in loft and back of 7268 in the living room, then plug TV and FM radio into front of plate.

TV/FM outlet installation

MODULAR COMMUNICATIONS

TECHNICAL SPECIFICATIONS

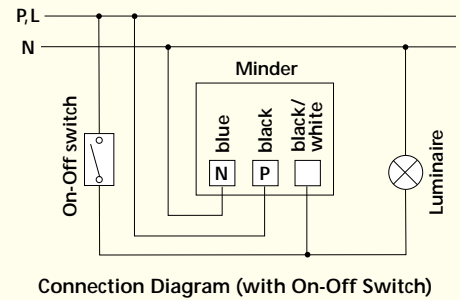
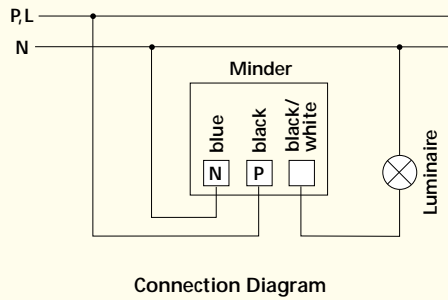
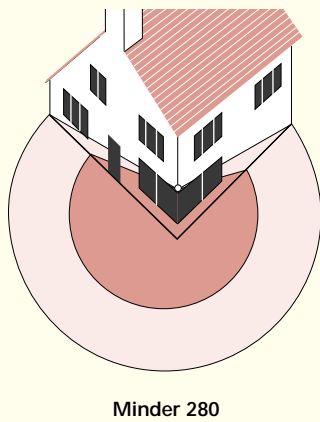
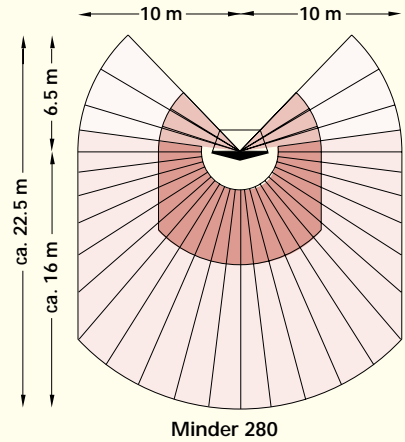
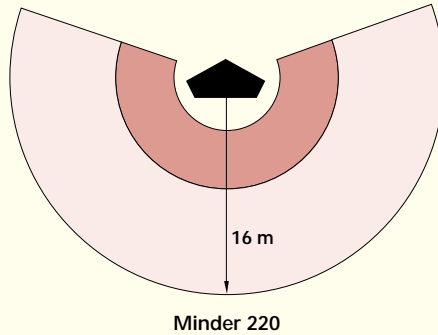
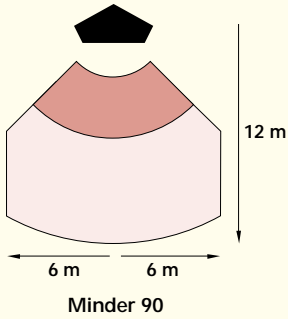
Mechanical

- Jack connector
 - Minimum 500 operations
 - Phosphor Bronze contacts plated with 1.25µm Gold over Nickel
 - UL listed where appropriate
 - Oftel approved where appropriate
- IDC connector
 - Minimum 100 reterminations
 - Phosphor Bronze contact plated with tin/lead or tin only as appropriate
- Wire accommodation
 - KATT top 2 x 26 – 22 AWG solid or stranded
 - bottom 1 x 26 – 22 AWG solid

MINDER PASSIVE INFRA RED SENSORS

The Minder is a multi-adjustable, passive infrared movement detector. People and animals radiate heat, which is invisible to the human eye (infrared range). Consequently, the recorded infrared energy pattern changes when they enter the detection zone

DETECTION RANGE DIAGRAMS



TECHNICAL DATA

	90°	220°	280°
Horizontal range of detection			
surveillance levels	4	4	4
Max. frontal range	12m	16m	16m
Max. bilateral range	6m	16m	10m
Switching segments	88	280	372
Water protection	IP55	IP55	IP55
Switch off delay	2s-16min	2s-16min	2s-16min
Dusk sensor, in Lux	5-1000	5-1000	5-1000

INSTALLATION

The Minder functions optimally when installed lateral to walking direction. When selecting the installation site, ensure that:

- The minder is not covered by rigid or moveable objects (e.g. roofing elements, branches of tree, etc.).
- When unit is installed above, or lateral to luminaires, a minimum distance is always allowed between the unit and the luminaire, in order to prevent maloperation.
- when the unit is installed below luminaires, it is not heated up as a result of radiant heat from the luminaire.

When mounted at a height of 2.5m, the detection range is as above mentioned, though deviations in the mounting height cause changes in the detection range. In the case of special conditions at the site (e.g. rows of trees, small plot of land, proximity to road, etc.) the enclosed masking strip can be used to restrict the detection range by sticking it on the Minder lens.

MINDER FAULT FINDING ANALYSIS

NATURE OF FAULT	REASON FOR FAULT	REMEDY
Minder does not operate	Lens covered or dirty	Check power supply, uncover and/or clean lens
Inadvertent operation of Minder	Hot air or smoke e.g. out of kitchens activate Minder	Install Minder at a different location
Lamp is permanently on	Permanent movement in the monitored area	Make sure that no heat source is in the detection zone and wait until adjusted time lapse has run down.. For control purposes, please cover the lens completely.
	Minder is bridged to manual operation by additional switch	Switch to automatic operation

MCBs – GENERAL

Crabtree Starbreaker MCBs comply fully with BS EN 60898 and therefore enable the requirements of BS 7671 to be met.

TYPE CLASSIFICATION

BS EN 60898 specifies different tripping characteristics for different types of MCB, depending on the level of overload current required to make the MCB trip out in less than 100 milliseconds. Crabtree MCBs are available as types B, C or D, enabling installation designers to choose an MCB with a characteristic closely matched to the circuit requirement.



FAULT LEVELS

Regulation 432-02-01 of BS 7671 requires that a device providing protection against overload currents and fault currents shall be capable of breaking any overcurrent up to and including the prospective fault current at the point where the device is installed.

In domestic situations this could be as high as 16kA, in industrial situations it could be even higher.

According to regulation 434-03-01, the prospective fault current can be higher than the breaking capacity of the protective device if another protective device having the necessary breaking capacity is installed on the supply side.

This means that MCBs can be backed up by devices of greater capacity such as HRC fuses.

When providing back-up protection, consideration must be given to discrimination. Discrimination is said to occur when the device nearest the fault operates first.

AMBIENT TEMPERATURE CONSIDERATIONS

Starbreaker MCBs are calibrated to meet the requirements of BS EN 60898, 30°C Ref Calibration Temperature. At other temperatures the following rating factors should be used:

At 60°C 0.9 At 20°C 1.0 At 0°C 1.1

Adjacent thermal-magnetic MCBs should not be continuously loaded at or approaching their nominal rated currents when mounted in enclosures. It is good engineering practice to apply generous de-rating factors or make provision for adequate free air between devices. In these situations, and in common with other manufacturers, we recommend a 66% diversity factor is applied to the MCB nominal rated current where it is intended to load the MCBs continuously (in excess of 1 hour).

OPERATING CHARACTERISTICS FOR MCBs

MCB type	BS EN 60898 type	Instantaneous trip current range	Typical application
B	B	3–5I _n	Domestic
C	C	5–10I _n	Commercial Light Industrial
D	D	10–20I _n	General Industrial
1*	–	2.7–4I _n	Domestic
2*	–	4–7I _n	Commercial
3*	–	7–10I _n	General Industrial

* MCBs, type 1, 2 & 3 to BS 3871

INDIRECT SHOCK RISK PROTECTION

BS 7671, formerly the IEE Wiring Regulations requires that measures are taken to protect against the risk of electric shock, which can be the result of contact with live parts.

MCBs can be used in conjunction with earthed equipotential bonding to achieve the required disconnection times of 0.4 seconds for 230V socket outlets and 5 seconds for circuits supplying fixed equipment (Regulation 413-02-08). This regulation, together with tables 41B1, 41B2 and 41D, specifies the maximum permissible earth fault loop impedance which is allowed using various protective devices.

EARTH FAULT LOOP IMPEDANCES (Z_s) TO GIVE COMPLIANCE WITH BS 7671 REGULATION 413-02-08 AT 230V

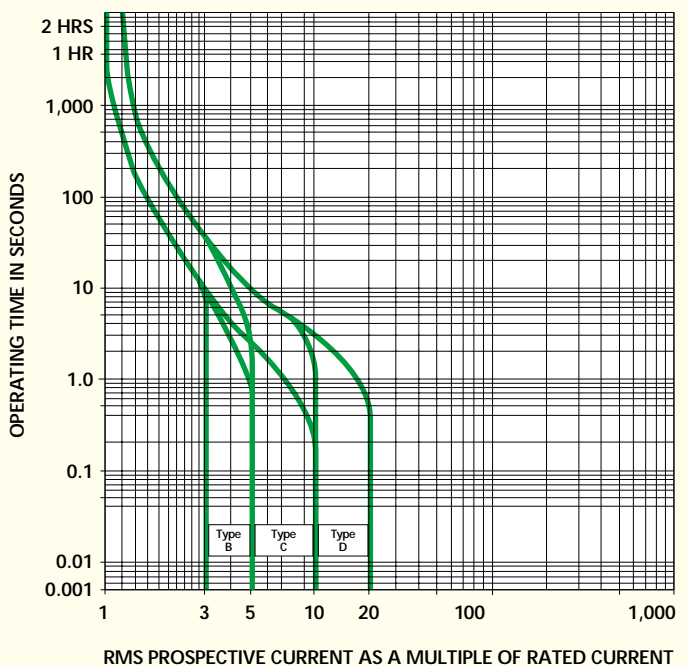
Maximum earth fault loop impedance in ohms for circuits supplying socket outlets (also fixed equipment in bathrooms)

DEVICE	BS	RATINGS				
		5A	15A	20A	30A	45A
Rewireable fuses	BS 3036	10	2.67	1.85	1.14	0.62
House service fuse	BS 1361	10.9	3.43	1.78	1.2	0.6
Type B MCB	BS EN 60898	9.6	3.2	2.4	1.6	1.07
Type C MCB	BS EN 60898	4.8	1.6	1.2	0.8	0.53

DEVICE	BS	RENARD SERIES OF RATINGS							
		6A	10A	16A	20A	32A	40A	50A	63A
HRC fuse	BS 88	8.89	5.33	2.82	1.85	1.09	0.86	0.63	–
Type B MCB	BS EN 60898	8	4.8	3	2.4	1.5	1.2	0.96	0.76
Type C MCB	BS EN 60898	4	2.4	1.5	1.2	0.75	0.60	0.48	0.38

At these values of loop impedance fuses will operate within 0.4 seconds and MCBs will operate in 0.1 second.

Type D MCBs are not quoted in BS 7671 since it is considered unlikely that the low earth loop impedances necessary can be achieved in practice.



MCBs – STARBREAKER

SPECIFICATION

- British Standard BS EN 60898
- Short circuit breaking capacity 6000A (M6)
- Type classification B (3–5In)
- Rated voltage 230V
- Rated frequency 50Hz



APPLICATIONS

The Starbreaker single pole MCB with its Type B characteristics is suited for use on loads with little or no switching surges, such as occur on domestic applications.

In addition, a Type B MCB will give indirect shock risk protection at higher levels of earth loop impedance (see tables on page 89).

Other ratings are available in Type C classification (5–10In).

GENERAL CONSTRUCTION

Starbreaker MCBs are of the thermal-magnetic current limiting type, having a compact construction which has been achieved by not only minimising the number of parts but also the number of welded joints and connections. Critical material selection ensures reliability and durability. Typical of this is the choice of silver graphite for the fixed contact. The MCB has an easy to operate handle with a trip-free toggle mechanism – so even when the handle is held in the ‘on’ position the MCB is free to trip.

AMBIENT TEMPERATURE CONSIDERATIONS

Starbreaker MCBs are calibrated to meet the requirements of BS EN 60898, 30°C Ref Calibration Temperature.

At other temperatures the following rating factors should be used:

At 60°C 0.9 At 20°C 1.0 At 0°C 1.1

Adjacent thermal-magnetic MCBs should not be continuously loaded at or approaching their nominal rated currents when mounted in enclosures. It is good engineering practice to apply generous derating factors or make provision for adequate free air between devices. In these situations, and in common with other manufacturers, we recommend a 66% diversity factor is applied to the MCB nominal rated current where it is intended to load the MCBs continuously (in excess of 1 hour).

BACK-UP PROTECTION

Back-up protection is required only if the prospective short circuit current at the point of installation exceeds the breaking capacity of the MCB. When providing back-up protection consideration must be given to discrimination between the MCB and fuse.

DISCRIMINATION

It is desirable that the protective device nearest the fault should operate first. The low energy let through of Starbreaker MCBs provides better discrimination with HRC fuse back-up than is given by earlier types of MCBs.

METHOD OF OPERATION

1 Moderate overload conditions

Detection of moderate overload conditions is achieved by the use of a thermo-metal element which deflects in response to the current passing through it. The thermo-metal element moves against the trip bar releasing the trip mechanism.

2 Short circuit conditions

When the current flowing through the MCB reaches a predetermined level, the solenoid directly pulls in the plunger which forcibly separates the contacts and simultaneously releases the trip mechanism.

3 Establishment of arc between fixed and moving contacts

As the moving contact moves away from the fixed contact, an arc is established. The arc runs along the arc runner to the arc chamber where it is split up between the plates and extinguished.

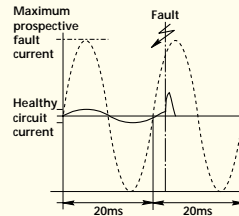
The low inertia and consequent high speed of the moving contact has a limiting effect on the flow of fault current. The rapid development of the arc, together with its accelerated extinction in the arc chamber, gives a typical operating time of 3.5–5 milliseconds.

CURRENT LIMITING ACTION

The high speed current limiting action ensures that the MCB operates before the full prospective fault current is allowed to develop.

Under fault conditions, damage can be sustained to the installation and associated equipment due to the amount of energy that passes before the current is completely interrupted. The total energy let-through depends on the value of current and the time for which it flows, and is denoted by the symbol I^2t . The high speed current limiting action of Starbreaker MCBs ensures that the energy let-through and any subsequent damage is minimised. This reduced energy let-through assists greatly with both back-up and discrimination considerations.

CURRENT LIMITING EFFECT



I^2t ENERGY LET-THROUGH

Typical values of I^2t energy let-through for Starbreaker MCBs are given in the table below:

MCB rating (A)	Total I^2t let-through ($A^2 \text{ sec}$)	MCB rating (A)	Total I^2t let-through ($A^2 \text{ sec}$)
6	7500	20	23500
10	13000	32	33000
16	21500	40	40000

Prospective short circuit test current 6000A

MOUNTING THE MCB

In Crabtree consumer units Starbreaker MCBs are mounted on standard 35mm top hat rail to BS 5584: 1978 EN 50022 giving a projection within the Standard of 70mm. Due to the method of connection onto the busbar it is not possible to use the 61/B06 range for custom built panels. Therefore the 610/06 range should be used (see page 72 for details).

TERMINALS

The MCB terminals are designed to accept copper cable up to 16mm²

Starbreaker main switch	100/M12
• Specification	BS EN 60947-3
• Rating	100A 230V 50Hz
• Utilisation category	AC-22A
• Type	Double pole switch disconnector
• Insulation voltage	250V
• Impulse withstand voltage	4kV
• Rated duty	Continuous
• Short-time withstand current	2kA for 1 second
• Short-circuit making capacity	3.5kA (peak)
• Conditional short-circuit current	16kA when protected by 100A HRC fuse to BS 1361
• Pollution degree	3

SPECIFICATION

- BS EN 61008 RCCBs
- BS EN 61009 RCBOs
- BS 7288 SRCDs
- Range of current ratings 13–100A
- Range of sensitivities 10–300mA
- Pole configurations DP and TP & N
DP SRCD – 230V
- Voltage ratings 3 & 4 Module DP – 230V Other voltage ratings available on request
- 4 Module TP & N – 400V
- 5 Module TP & N – 400V
- Frequency rating 50Hz
- Tripping principle employed Electro-mechanical

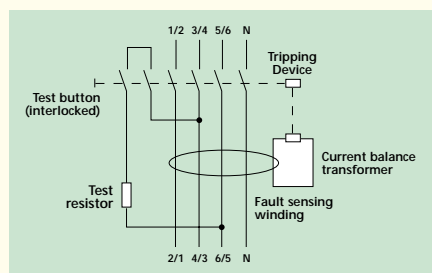


OPERATION

The RCD employs the current balance principle which involves the supply conductors to the load (phase and neutral) being wound onto a common transformer core to form the primary windings. The secondary winding of the current transformer is then connected to the trip mechanism, either an electro-magnetic relay in the case of 3, 4 and 5 module RCCBs or an electronic relay in the case of Starbreaker, Lifestar and Lifestar SRCDs. Under healthy circuit conditions, the current in the phase conductor is equal to the current in the neutral and the vector sum of the current is zero. In the event of an earth fault, an amount of current will flow to earth, creating an out of balance situation in the transformer assembly. This out of balance is detected by the secondary winding of the transformer and at a pre-determined level of out of balance will activate the trip mechanism.

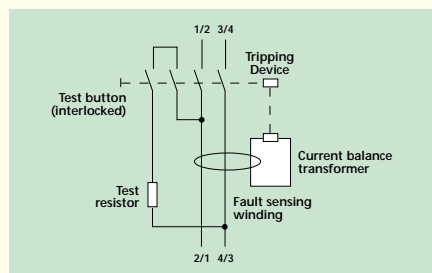
Single phase and neutral or three phase and neutral units (suitable for 3 or 4 wire systems) are available, the latter being suitable for balanced or unbalanced 3 phase loads.

The RCD trip mechanism will operate at a residual current of between 50–100% of its rating tripping current (sensitivity).



RCD circuit diagram (four pole)

Note
Exposed installation metal work must be earthed.
When used on 3 wire 230V systems a link should be connected between L and N.



RCD circuit diagram (two pole)

Note
Exposed installation metal work must be earthed.

TEST BUTTON

A test button is provided on all RCDs to enable the operation of the device to be checked. It is recommended that an RCD is tested at least quarterly. (See BS 7671 Regulation 514-12-02).

TERMINAL CAPACITIES

Lifestar RCCBs	50mm ²	Lifestar SRCDs	3 x 2.5mm ² 3 x 4mm ² 2 x 6mm ²
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Starbreaker RCBOs 10mm²

APPLICATIONS

Residual Current Devices (RCDs) may be required for one of two main reasons:

(a) to ensure the compliance of an installation with BS 7671, formerly the IEE Wiring Regulations.

An RCD may be installed to meet the requirements of Regulation 413-02-15 where a high earth fault loop impedance disqualifies the use of overcurrent protection devices as a means of providing protection against indirect contact. To comply with Regulation 413-02-16 the earth fault loop impedance in ohms multiplied by the rated tripping current of the RCD in amperes must not exceed 50. With the RCD having a sensitivity of 30mA, the maximum permissible earth fault loop impedance is calculated as follows:

$$Z_s (\text{max}) = 50 / 0.03 = 1666 \text{ Ohms}$$

Rated tripping current of RCD	Max permissible earth fault loop impedance
30mA	1666 Ohms
100mA	500 Ohms
300mA	166 Ohms

(b) to provide a higher level of protection than that given by direct earthing, against fire or shock risks caused by earth leakage currents.

Overcurrent protection devices cannot detect earth fault currents below their operating current. If they are the only means of earth fault protection, it is possible for sufficient earth fault current to flow undetected to constitute a fire risk.

By using an RCD, the flow of the sustained earth fault current, above the tripping current of the RCD, is prevented. The shock risk associated with these earth fault currents is also greatly reduced.

To provide complete personnel protection, a high sensitivity RCD to a Type A classification with a maximum tripping current of 30mA should be used. This is particularly important with portable appliances where there is a danger of losing earth continuity due to damage or fatigue.

Residual current devices are completely selective in their operation. They are unaffected by parallel earth paths and are thus ideally suitable for the protection of installations in modern high density dwellings or office blocks. They are virtually tamperproof and provide a predetermined level of protection. Even if earthing conditions deteriorate substantially, they will continue to provide a higher level of protection than would have been given by direct earthing. Starbreaker 100A plug in rcd's are recommended for use in larger capacity enclosures, for further advice consult our Technical Department.

SENSITIVITIES

The choice of RCD depends upon the application of the level of protection required.

300mA provide the means to achieve compliance with BS 7671 in conditions of poor earth loop impedance and also give a good level of fire risk protection.

100mA provide the means to achieve compliance with BS 7671, a high level of fire risk protection and a degree of indirect shock risk protection.

30mA for use where a higher level of protection is required, with portable equipment or equipment used in hazardous conditions. Regulation 471-16-01 of BS 7671 indicates that where a socket outlet may reasonably be expected to supply equipment to be used outside the zone, protection shall be afforded by a residual current device having a rated residual operating current not exceeding 30mA.

Regulation 471-16-02 also contains a requirement for circuits supplying portable equipment outdoors supplied other than through a socket outlet.

10mA provide a higher level of personal protection, for use in sensitive areas such as laboratories, schools and workshops where potential hazards exist from electrical faults caused through misuse, accidental damage or failure of electrical appliances.

TRANSIENT EARTH LEAKAGE CURRENTS

All Crabtree residual current devices incorporate a high level of immunity to tripping when subjected to transient earth leakage currents.

Such transients can occur when there is a significant level of capacitance to earth as can result from cable capacitance (particularly MICC) or RF filter networks. Crabtree RCDs are therefore less susceptible to nuisance tripping due to transient earth leakage currents.

SPECIFICATION

STARBREAKER RCBOs (MCB/RCD)

● Standard	BS EN 61009
● Short circuit breaking capacity	6000A (M6)
● Current rating	6–40A
● Type classification	B
● Sensitivities	10mA & 30mA
● Rated voltage	230V
● Rated frequency	50Hz
● Tripping principle employed	Electronic
● Pole configurations	Single pole with solid neutral

LIFESTAR RCBOs comply with BS 3871/4293.

APPLICATIONS

RCBOs provide both earth fault and overcurrent protection. The MCB element of the Starbreaker unit has a Type B (3–5In) classification making the device more suitable for domestic or light commercial applications. RCBOs with other MCB classifications are available to order.

All RCBOs give a high level of protection to individual circuits whilst exhibiting improved immunity to response caused by transients.

Lifestar RCBOs are for use on Starbreaker consumer units pre July 1992 and are also suitable for separate sale enclosure mounting.

INSTALLATION TESTING – CAUTION

As Starbreaker RCBOs employ electronic components they should be disconnected when carrying out the following tests on the electrical installation:

(a) Earth fault loop impedance test

The load terminals should be disconnected if it is intended to parallel-out the unit for test purposes.

It may incur damage if mains potential is maintained on the load terminals of this unit after the trip mechanism has operated.

(b) Insulation test

Whilst RCBOs can withstand the effects of normal insulation testers without damage, false readings may be given on the test instrument. For this reason it is recommended that the device is disconnected during this test.

FAULT CURRENT SENSITIVITY

Semi-conductor devices are now incorporated in equipment used throughout industry, commerce and in the home. Typically, the purpose of these semi-conductor devices is for monitoring and controlling industrial equipment eg speed controls for small motors and temperature controls, along with extensive use in computers, VDUs, printers, washing machines, etc.

As the equipment is fed from the mains electrical supply, in the event of an earth fault the presence of semi-conductors may result in the normal ac waveform being replaced by a non-sinusoidal fault current. In some cases the waveform may be rectified or chopped. These waveforms are said to contain a pulsating dc component which can either partially desensitise or totally disable a standard Type AC RCD.

New International standards IEC 1008 (RCCBs) and IEC 1009 (RCBOs) divide RCDs into two performance classes:

Type AC

RCDs for which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly arising.

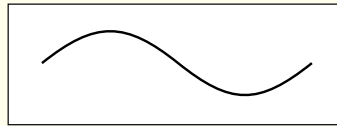
Type A

RCDs for which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly arising.

To ensure the correct level of protection, check for the following symbols:

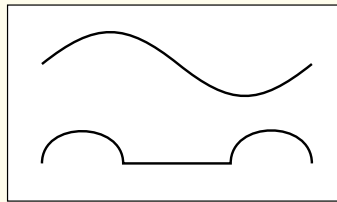
TYPE AC

normal ac sensitivity



TYPE A

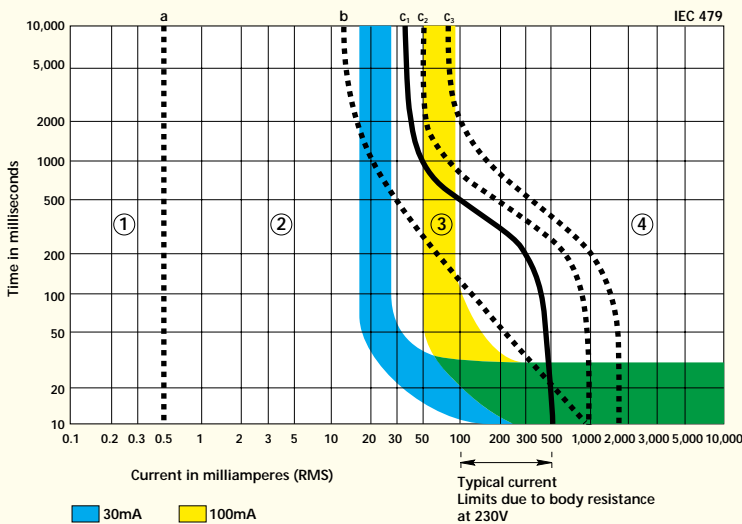
pulsating dc sensitivity



Crabtree RCDs are available as both Type AC and Type A devices.

IEC PUBLICATION (479) CURVES WITH CRABTREE RCD CHARACTERISTICS SUPERIMPOSED

TIME/CURRENT ZONES OF EFFECTS OF AC CURRENT (15–100Hz) ON PERSONS



Zone Physiological effects

- | | |
|--|---|
| <p>1 Usually no reaction effects.</p> <p>2 Usually no harmful physiological effects.</p> <p>3 Usually no organic damage to be expected. Likelihood of muscular contraction and difficulty of breathing, reversible disturbances of formation and conduction of impulses in the heart, and transient cardiac arrest without ventricular fibrillation increases with current magnitude and time.</p> | <p>4 In addition to the effects of zone 3, probability of ventricular fibrillation increased up to 5% (Curve C2) up to 50% (Curve C3) and above 50% beyond Curve C3. Increasing with magnitude and time, pathophysiological effects such as cardiac arrest, breathing arrest and heavy burns may occur.</p> |
|--|---|

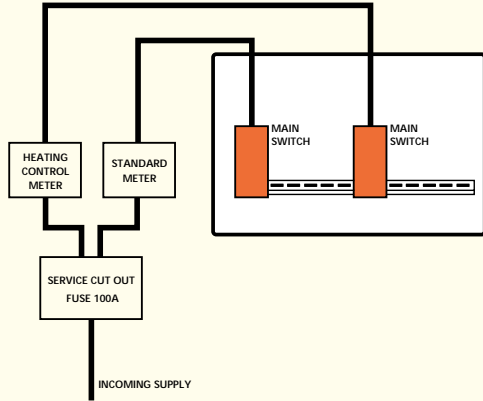
STARBREAKER CONSUMER UNIT APPLICATIONS

The following information illustrates the methods by which consumer units can be installed into more specific applications, for example multi-tariff or dual RCCB consumer units. To assist product selection we have included references of the components required in order to assemble the particular variant.

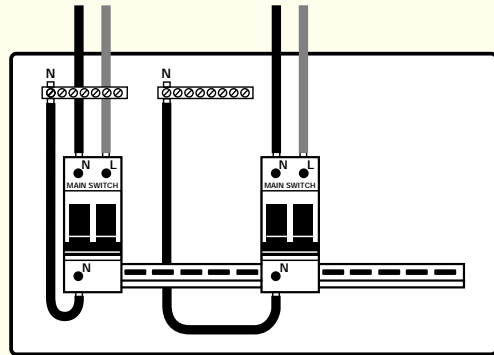
TWIN-TARIFF

Twin-tariff combines two independent supplies typically the standard domestic supply and the supply for storage heaters. This installation can be housed within one standard enclosure thus saving space and installation time.

Supply diagram



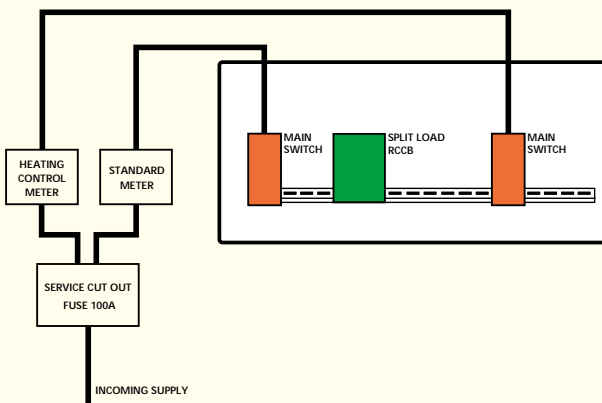
Internal wiring diagram



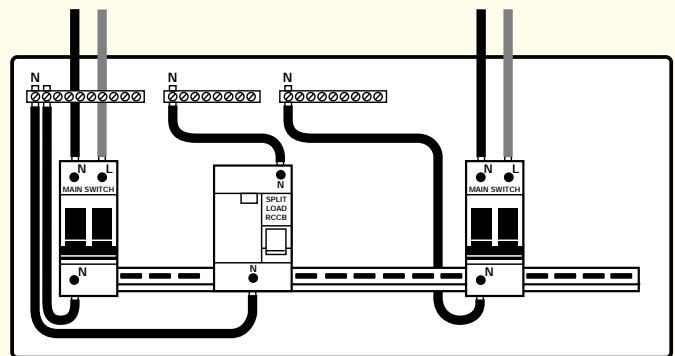
SPLIT-LOAD DUAL-TARIFF

Combining the added safety of a split-load RCCB and the economy heating tariff into one combined unit offers an all-round saving of space and installation time.

Supply diagram



Internal wiring diagram

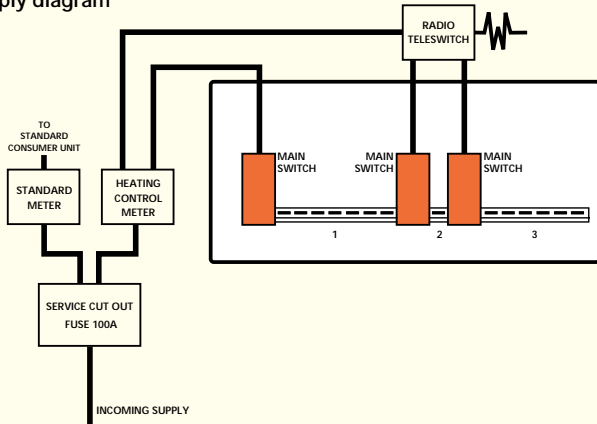


MULTI-TARIFF

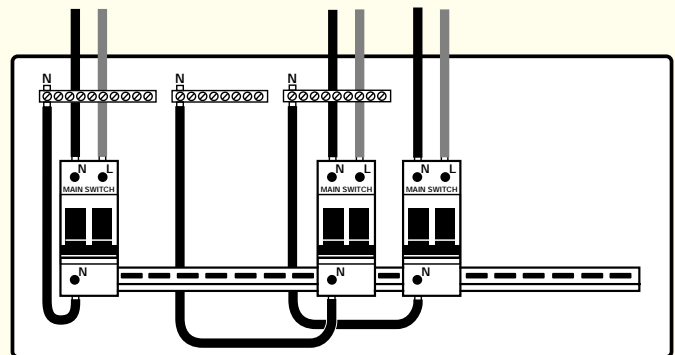
Multi-tariff heating provides 3 tariffs catering for total heating applications:

- 1 Direct heating appliances
- 2 Bottom immersion heater
- 3 Storage heating

Supply diagram



Internal wiring diagram

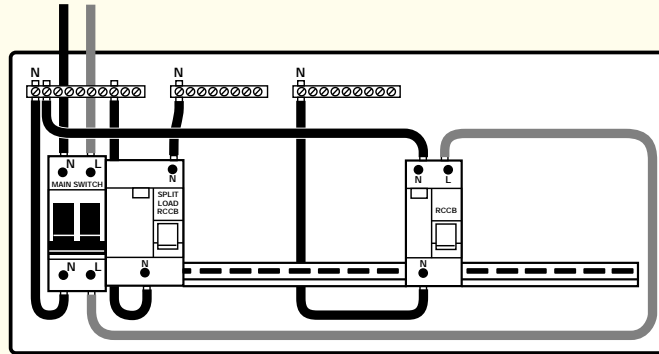


NOTE
14 module enclosures will accommodate this facility, however the enclosure is not fitted with three neutral bars. In this instance the bottom immersion heater neutral should be connected directly to the bottom neutral terminal on the appropriate main switch.

DUAL RCCB

This type of configuration combines the benefit of both 100mA RCCB protection for lighting and 30mA RCCB protection for personal safety. Furthermore each RCCB will operate totally independent from each other. The main switch provides total isolation of the entire consumer unit. It is necessary to use the main incoming device fitted with the additional terminal to provide the independent supply to the second RCCB.

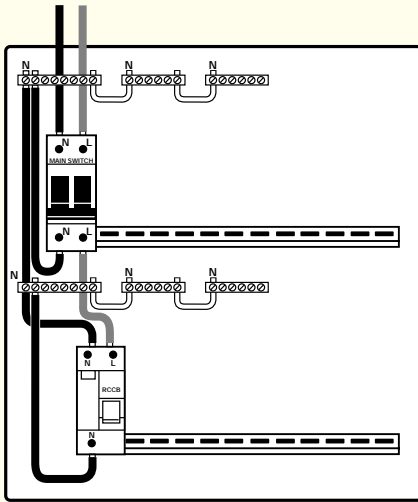
Internal wiring diagram



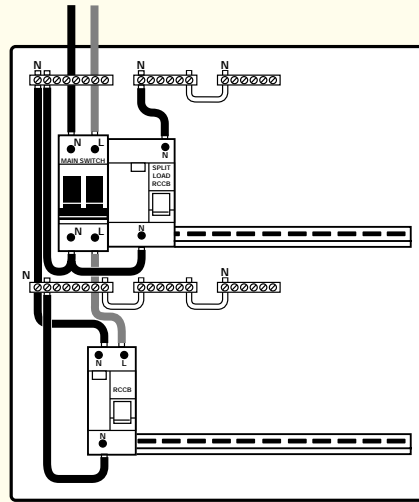
TWO BANK

Two bank consumer units provide the facility to offer a wide range of configurations for applications which demand increased numbers of circuits. Continuity of supply between the top and bottom banks (where required) can be achieved by utilising the main switch with the additional terminal.

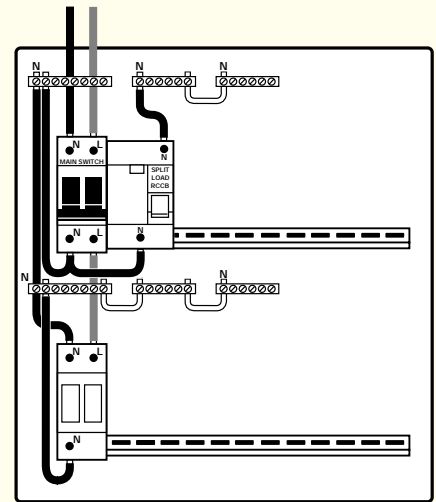
Supply and internal wiring diagrams



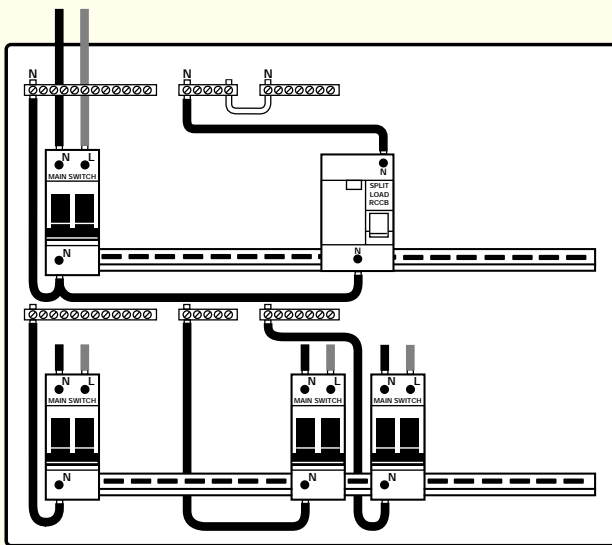
16, 24, 30 or 36 way
Split-load



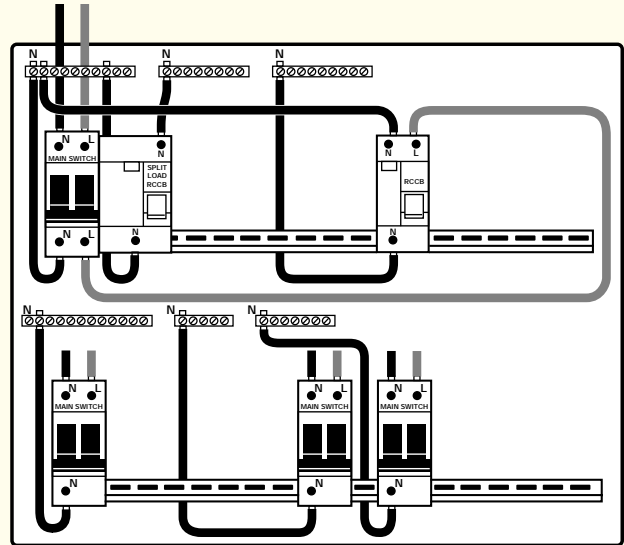
13, 21, 27 or 33 way
Dual RCCB



13, 21, 27 or 33 way
Split-load
Bottom bank is fed via the direct connection unit 100/DC2



Top bank 9, 12 or 15 way
Split-load
Bottom bank 8, 11 or 14 way
Multi-tariff



Top bank 10 or 13 way
Dual RCCB
Bottom bank 11 or 14 way
Multi-tariff

CONTROL MODULES – GENERAL

ANALOGUE TIME SWITCHES

	LIST Nos 303/TS24	303/TQ24	303/TQ7
Time period	24hr	24hr	7 day
Power reserve	–	150hr	150hr
Setting interval	15 min	15 min	1hr
Minimum switching	30 min	45 min	4hr
Contact rating at 240V ac	16A	16A	16A
<ul style="list-style-type: none"> ● Changeover contacts. ● Manual override. 		<ul style="list-style-type: none"> ● Clear switch position indicator. 	

DIGITAL TIME SWITCHES

	LIST Nos 302/TD1	302/TD2
Channel	1	2
Switching programme	24hr/7 day	24hr/7 day
Power reserve	250hr	250hr
Minimum setting	1 min	1 min
Contact rating resistive at 240V ac	16A	2 x 16A
Accuracy at 20°C	±1 sec/day	±1 sec/day
Power consumption	8.5VA	8.5VA
Holiday programme	1– 45 days	1– 47 days
Standard	VDE0875	VDE0875
Memory locations	42	24
Every day programme switchings per week	294	168
Permissible ambient temperature	-10–+50°C	-10–+45°C
<ul style="list-style-type: none"> ● Permanent 'on/off'. ● Summer/Winter time changes. ● Manual override. 	<ul style="list-style-type: none"> ● Daily and weekly programmes. ● Changeover contacts. 	

*If the timers are used in combination with other devices within a system it is important to check that the entire system does not cause adverse interference.
In the event that the ambient temperature exceeds those stated above, temporary fading of the display may occur. This does not affect the time-keeping or switching functions of the device.*

STAIRCASE TIME SWITCH

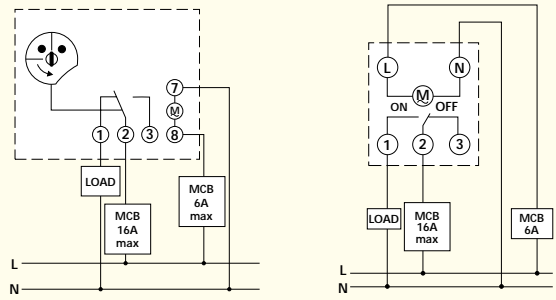
Operating voltage	190–240V	
Mains frequency	50–60Hz	
Switching capacity	16A resistive, 2000W tungsten, 2000W fluorescent	
Connection:	3-lead rising mains Timed, reswitchable lighting.	4-lead rising mains Timed, reswitchable lighting. Untimed, standard lighting switches.
<ul style="list-style-type: none"> ● Synchronous motor. ● Override switch for permanent 'on'. 	<ul style="list-style-type: none"> ● Time range 1–7 minutes. ● Pre-selector switch for 3-4 wire connection. 	<ul style="list-style-type: none"> ● Glow lamp max 50mA.

BELL TRANSFORMER

<ul style="list-style-type: none"> ● Operating voltage: Primary 240V 50/60Hz; Secondary 4/8/12V. ● Power: 5VA. 	<ul style="list-style-type: none"> ● Short circuit resistance is in accordance with IEC 742.
<i>It is important to note that when this unit is installed with other 240 or 415V equipment, ensure secondary connections use cable with insulation rated for 240/415V duty, or use additional insulation (sleeving etc) to provide appropriate insulation.</i>	

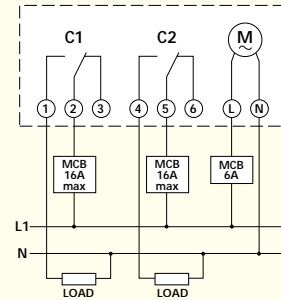
TWILIGHT SWITCH

Operating voltage	190–240V	
Mains frequency	45–60Hz	
Power consumption	2.2VA	
Contact rating resistive @ 240V	10A	
Incandescent lamp load	1000W	
Brightness range	2–2000 lux	
Switching delay (on/off)	80 seconds approx	
Switching status indication	LED (no delay)	
Connection cable for light sensor	2 core cable max length 100m	
Permissible ambient temp	-10 to +50°C control unit	-40 to +70°C light sensor
Protection category	IP20 control unit	IP54 light sensor
<ul style="list-style-type: none"> ● Can be wired normally open or closed. ● Selector switch for adjustment of ranges: range 1 2–35 lux; range 2 35–2000 lux. ● Connection of additional timing device will provide facility to override 'switch on' status. 	<ul style="list-style-type: none"> ● Delay 'on/off' eliminates nuisance switching. 	

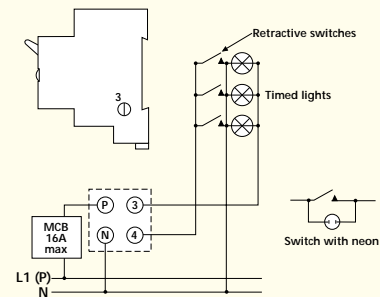


Analogue Typical wiring diagram

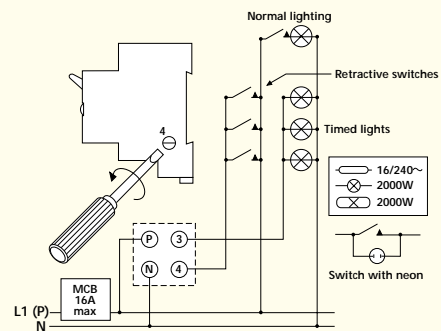
Digital 1 channel Typical wiring diagram



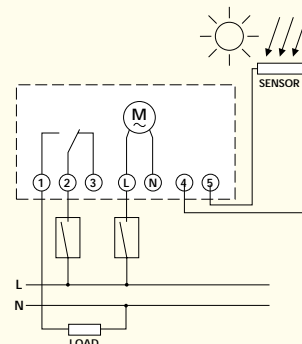
Digital 2 channel Typical wiring diagram



Staircase 3 wire Typical wiring diagram



Staircase 4 wire Typical wiring diagram



Twilight switch Typical wiring diagram

IMPULSE RELAYS

Impulse relays are primarily used for lighting installations to streamline wiring, especially when more than two switch points are necessary. They are used as interface relays as the coils are not permanently energised. This reduces the power demand on the electronic outputs and reduces the radiation of heat. Each impulse relay is supplied with manual push button.

CONTACTORS

Modular contactors are designed for switching single and three phase loads up to 63A. Manual override facility enables the temporary setting of the contactor in either its 'on' or 'off' position, in addition to its normal automatic operation.

		16A	25A	25A	40A	63A	IMPULSE RELAY
		1 mod	1 mod	2 mod	3 mod	3 mod	1 mod
Rated operating voltage	V	250	250	400	400	400	250
Rated operating current AC-1	A	16	20	20	40	63	16
Short circuit protection max	A	16	20	40	40	60	16
Electrical life AC-1 (000s)	ops	150	150	100	50	50	100
Mechanical life (000s)	ops	1000	1000	1000	1000	1000	500
Ambient air temperature*	°C	-40 to +60	-40 to +60	-40 to +60	-40 to +60	-40 to +60	-5 to +40
Max cable capacity	mm ²	1 to 4	1 to 4	1 to 4	4 to 25	4 to 25	1 to 4
Standard compliance IEC		158-3	158-3	158-3	158-3	158-3	669-1

*See table on de-rating factors

CONTACTOR DE-RATING FACTORS

De-rating of contactors mounted in modular enclosures is required if the enclosure temperature exceeds 40°C.

40°C	50°C	60°C	70°C	CONTACTOR LIST No		
				2 pole	3 pole	4 pole
20A	18A	16A	14A	301/C16DP	302/C25TP	302/C25FP
40A	36A	32A	29A	303/C40DP	303/C40TP	-
63A	57A	50A	46A	-	303/C63TP	303/C63FP

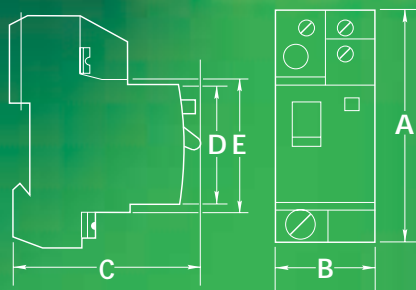
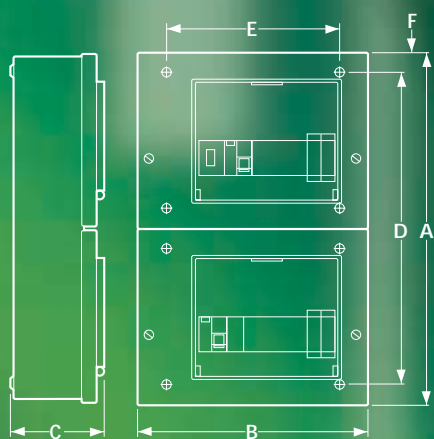
DETERMINATION OF THE CONTACTOR RATING

HEATING V	MAX POWER IN KW DEPENDING ON THE NUMBER OF OPERATING CYCLES/DAY						SINGLE PHASE	3 PHASE	3 PHASE & N					
	25	50	75	100	250	500								
230	4.4 8.5	4.4 8.5	4.4 6.9	3.8 6.0	2.4 3.8	1.7 2.7	301/C16DP 303/C40DP							
400	13.0 25.0 37.0	10.9 17.7 28.3	8.9 14.4 23.0	7.7 12.5 20.0	4.9 7.9 12.6	3.4 5.6 8.9	- - -	302/C25TP 303/C40TP -	- - 303/C63FP					
LIGHTING	MAX NUMBER OF LAMPS PER POLE													
	Single fitting non-corrected					Single fitting with parallel correction								
Fluorescent lamps with starter	20W	40W	65W	80W	110W	20W	40W	65W	80W	110W	SINGLE PHASE	3 PHASE	3 PHASE & N	
	35	31	22	17	11	82	53	33	26	-				301/C16DP
	41	35	22	20	13	94	61	38	30	22	302/C25TP	302/C25TP	302/C25FP	
	82	71	45	40	26	188	123	76	61	44	303/C40DP	303/C40TP	-	
	128	111	71	62	41	294	192	119	96	69	-	303/C63TP	303/C63FP	
Fluorescent lamps without starter	Twin fitting non-corrected					Twin fitting with series correction					SINGLE PHASE	3 PHASE	3 PHASE & N	
	20W	40W	65W	80W	110W	20W	40W	65W	80W	110W				
	31	17	10	8	6	53	29	17	14	10	301/C16DP	-	-	
	36	19	11	9	7	61	33	20	16	12	302/C25TP	302/C25TP	302/C25FP	
	72	39	23	19	14	92	66	41	33	24	303/C40DP	303/C40TP	-	
	113	61	37	30	22	123	104	64	52	38	-	303/C63TP	303/C63FP	
Fluorescent lamps without starter	Twin fitting non-corrected					Twin fitting with series correction					SINGLE PHASE	3 PHASE	3 PHASE & N	
	20W	40W	65W	80W	110W	20W	40W	65W	80W	110W				
	28	14	9	7	5	50	26	16	13	9	301/C16DP	-	-	
	32	17	10	8	6	57	30	18	15	11	302/C25TP	302/C25TP	302/C25FP	
	64	34	21	17	12	114	61	37	30	22	303/C40DP	303/C40TP	-	
	100	53	32	26	19	178	96	58	47	34	-	303/C63TP	303/C63FP	
Low pressure sodium vapour lamps	non-corrected							corrected						
	30W	35W	90W	135W	150W	180W	200W	30W	35W	90W	135W	150W	180W	200W
	8	6	4	3	3	2	2	-	-	-	-	-	-	-
	20	15	10	7	7	7	7	80	60	40	-	-	-	-
	10	7	5	3	3	3	3	-	-	-	-	-	-	-
	11	8	5	4	4	3	3	43	32	21	-	-	-	-
	21	16	10	8	8	7	7	86	65	43	-	-	-	-
	34	25	17	13	12	12	12	136	102	68	-	-	-	-

DIMENSIONS

W W

	page
WIRING ACCESSORIES	98-99
CIRCUIT PROTECTION	100-104



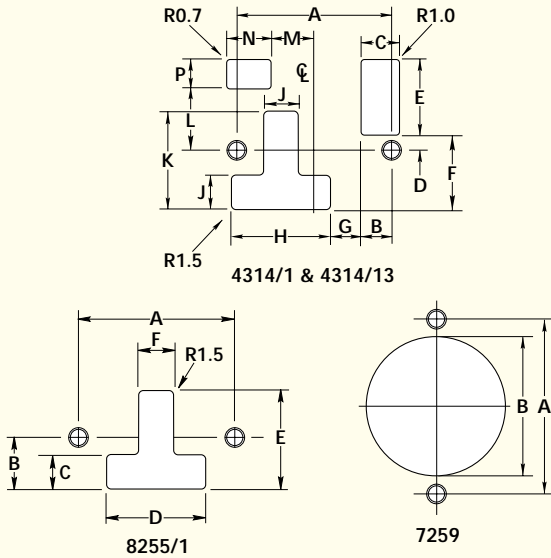
PANEL CUT-OUT DETAILS

CAPITAL 13A SINGLE SOCKET OUTLET INTERIORS

List No	*A	B	C	D	E	F	G	H	J	K	L	M	N	P
4314/1	60.3	12.0	15.4	5.7	28.6	30.4	10.8	38.8	14.2	38.4	-	-	-	-
4314/13	60.3	12.0	15.4	5.7	28.6	30.4	10.8	38.8	14.2	38.4	23.4	16.8	16.6	10.5
7259	60.3	50.0	-	-	-	-	-	-	-	-	-	-	-	-
8255/1	60.3	19.8	14.3	38.9	38.4	14.3	-	-	-	-	-	-	-	-

* Fixing holes drill to accept 4mm countersunk screws.

Max panel thickness 1.6mm (except 7259 – 2.5mm).

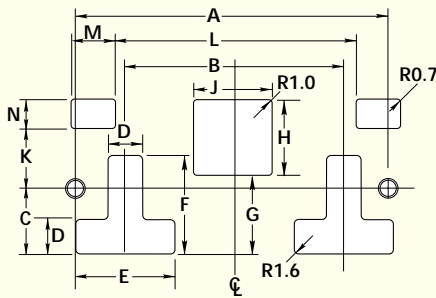


CAPITAL 13A TWIN SOCKET OUTLET INTERIORS

List No	*A	B	C	D	E	F	G	H	J	K	L	M	N
4316/1	120.6	84.4	24.7	14.2	38.8	38.4	30.4	28.6	29.9	-	-	-	-
4316/13	120.6	84.4	24.7	14.2	38.8	38.4	30.4	28.6	29.9	23.4	94.1	16.6	10.5
8257/1	120.6	66.7	19.8	14.3	38.9	38.4	-	-	-	-	-	-	-

* Fixing holes drill to accept 4mm countersunk screws.

Max panel thickness 1.6mm.



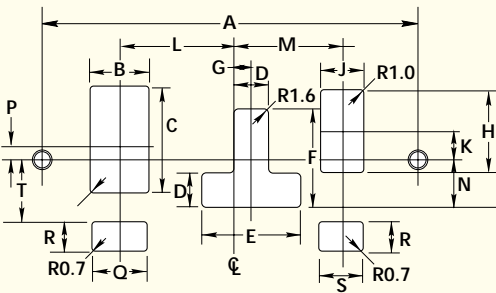
CAPITAL 45A DP 'SLIMLINE' COOKER CONTROL UNIT INTERIORS

List No	*A	B	C	D	E	F	G	H	J	K	L	M	N	P
4522/1	120.6	21.7	40.2	14.2	38.8	38.4	7.6	30.2	17.0	10.0	40.5	41.6	19.2	5.0
4522/13	120.6	21.7	40.2	14.2	38.8	38.4	7.6	30.2	17.0	10.0	40.5	41.6	19.2	5.0

List No	Q	R	S	T
4522/13	21.5	10.5	16.6	25.75

* Fixing holes drill to accept 3.5mm countersunk screws.

Max panel thickness 1.6mm.

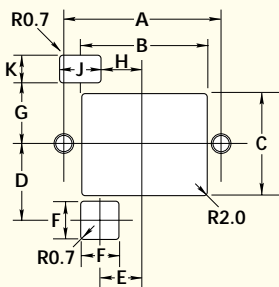


CAPITAL 13A FUSED CONNECTION UNIT INTERIORS

List No	*A	B	C	D	E	F	G	H	J	K
4831/1	60.3	22.0	38.0	-	-	-	-	-	-	-
4832/1	60.3	48.0	38.0	-	-	-	-	-	-	-
4832/13	60.3	48.0	38.0	-	-	-	23.4	16.8	16.6	10.5
4836/1	60.3	22.0	38.0	29.0	17.0	14.0	-	-	-	-
4837/1	60.3	48.0	38.0	29.0	17.0	14.0	-	-	-	-
4837/13	60.3	48.0	38.0	29.0	17.0	14.0	23.4	16.8	16.6	10.5

* Fixing holes drill to accept 4mm countersunk screws.

Max panel thickness 1.6mm.



All dimensions in mm. General tolerance ±0.13mm.
Details for round pin socket outlet interiors available on request

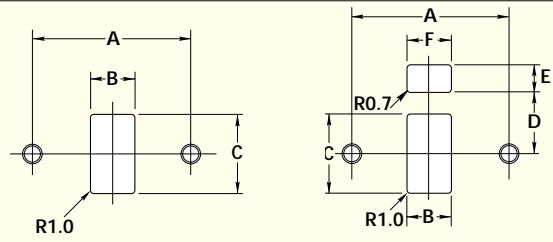
PANEL CUT-OUT DETAILS

CAPITAL 20A/32A SWITCH INTERIORS

List No	*A	B	C	D	E	F
All 1 gang	60.3	17.1	30.6			
6172/1	60.3	33.4	30.6			
6173/1	60.3	49.7	30.6			
4011/1 & 4012/1	60.3	17.1	30.6	-	-	-
4011/13 & 4012/13	60.3	17.1	30.6	23.7	10.5	16.6

* Fixing holes drill to accept 4mm countersunk screws.

Max panel thickness 2.5mm.



6172/1 & 6173/1

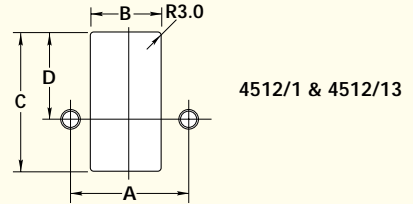
4011/1 & 4012/1
4011/13 & 4012/13

CAPITAL 50A DP SWITCHES

List No	*A	B	C	D
4512/1	52	31	61.3	38.5
4512/13	52	31	61.3	38.5

* Fixing holes drill to accept 3.5mm countersunk screws.

Max panel thickness 2.5mm.



4512/1 & 4512/13

CAPITAL TELEPHONE & CO-AXIAL OUTLETS

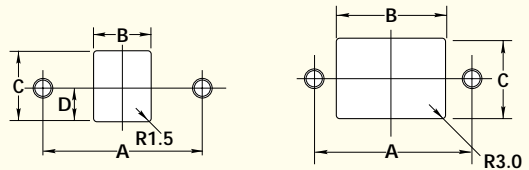
List No	*A	B	C	D	List No	*A	B	C	D
8283/1	60.3	20.3	23.3	16.2	8265/1	60.3	21	30	3.0
8284/1	60.3	20.3	23.3	16.2	8266/1	60.3	41	30	3.0

* Fixing holes drill to accept 3.5mm countersunk screws.

Max panel thickness 1.7mm.

* Fixing holes drill to accept 4mm countersunk screws.

Max panel thickness 1.6mm.



8283/1 & 8284/1

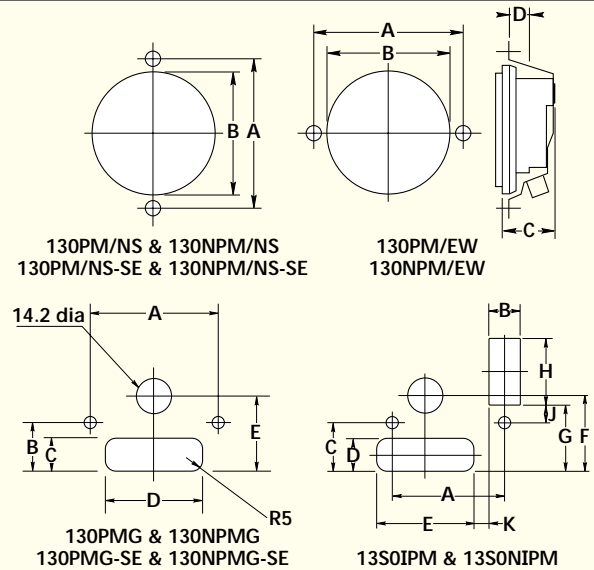
8265/1 & 8266/1

DIAMOND 13A SINGLE SOCKET OUTLET INTERIORS

List No	*A	B	C	D	E	F	G	H	J	K
130PM/NS	60.3	50.0	23	15.0	-	-	-	-	-	-
130PM/EW	60.3	50.0	23	15.0	-	-	-	-	-	-
130NPM/NS	60.3	50.0	23	15.0	-	-	-	-	-	-
130NPM/EW	60.3	50.0	23	15.0	-	-	-	-	-	-
130PM/NS-SE	60.3	50.0	23	8.0	-	-	-	-	-	-
130NPM/NS-SE	60.3	50.0	23	8.0	-	-	-	-	-	-
130PMG	44.5	17.8	13.4	37.4	29	-	-	-	-	-
130PMG-SE	44.5	17.8	13.4	37.4	29	-	-	-	-	-
130NPMG	44.5	17.8	13.4	37.4	29	-	-	-	-	-
13S0IPM	44.5	11.2	21.2	13.4	37.4	29	25.3	25.8	4.1	7.6
13SONIPM	44.5	11.2	21.2	13.4	37.4	28.93	25.3	25.8	4.1	7.6

* Fixing holes drill to accept 3.5mm countersunk screws.

Max panel thickness 2.0mm (2.5mm on round socket outlets).



130PM/NS & 130NPM/NS
130PM/NS-SE & 130NPM/NS-SE

130PM/EW
130NPM/EW

130PMG & 130NPMG
130PMG-SE & 130NPMG-SE

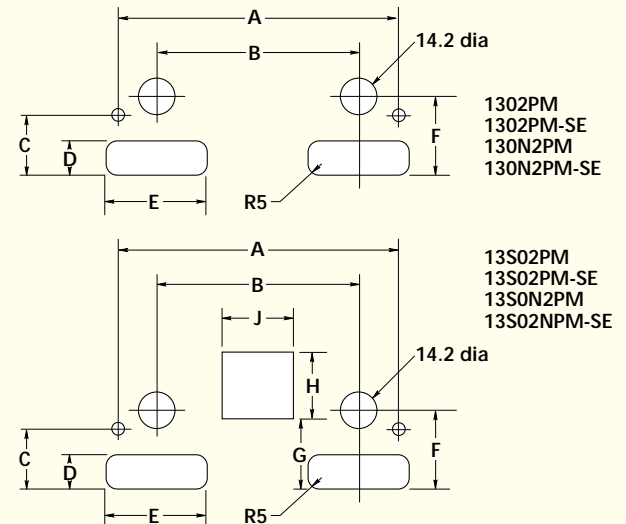
13S0IPM & 13SONIPM

DIAMOND 13A TWIN SOCKET OUTLET INTERIORS

List No	*A	B	C	D	E	F	G	H	J
1302PM	104.8	75.0	21.2	13.4	37.4	29	-	-	-
1302PM-SE	104.8	75.0	21.2	13.4	37.4	29	-	-	-
130N2PM	104.8	75.0	21.2	13.4	37.4	29	-	-	-
130N2PM-SE	104.8	75.0	21.2	13.4	37.4	29	-	-	-
13S02PM	104.8	75.0	21.2	13.4	37.4	29	26.1	24.2	24.2
13S02PM-SE	104.8	75.0	21.2	13.4	37.4	29	26.1	24.2	24.2
13SON2PM	104.8	75.0	21.2	13.4	37.4	29	26.1	24.2	24.2
13SON2PM-SE	104.8	75.0	21.2	13.4	37.4	29	26.1	24.2	24.2

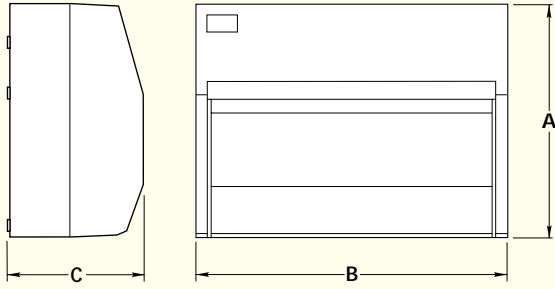
* Fixing holes drill to accept 3.5mm countersunk screws.

Max panel thickness 2.0mm.

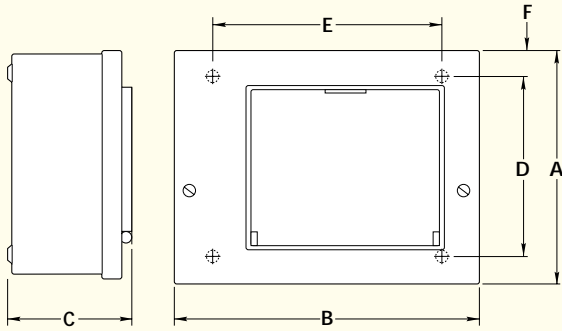


1302PM
1302PM-SE
130N2PM
130N2PM-SE

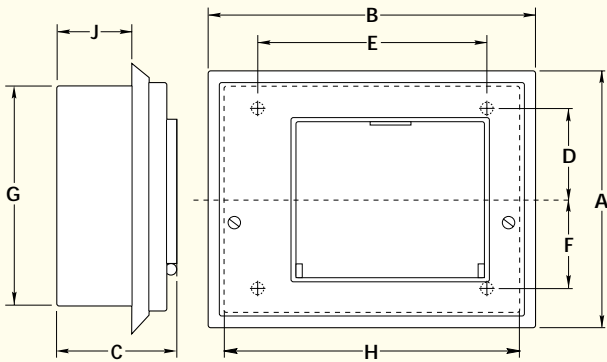
13S02PM
13S02PM-SE
13SON2PM
13SON2PM-SE


APPROXIMATE DIMENSIONS (mm)
SURFACE ALL-INSULATED ENCLOSURES

List No	A	B	C
404/0A	160	117	102
406/0A	230	190	120
409/0A	230	243	120
412/0A	230	294	120
415/0A	230	344	120
420/0A	230	439	120


SURFACE METAL-CASED ENCLOSURES

List No	A	B	C	D	E	F
808/0A	221	294	121	174	222	24
810/0A	221	294	121	174	222	24
814/0A	221	366	121	174	294	24
817/0A	205	430	118	145	362	35
820/0A	211	488	117	36	405	-

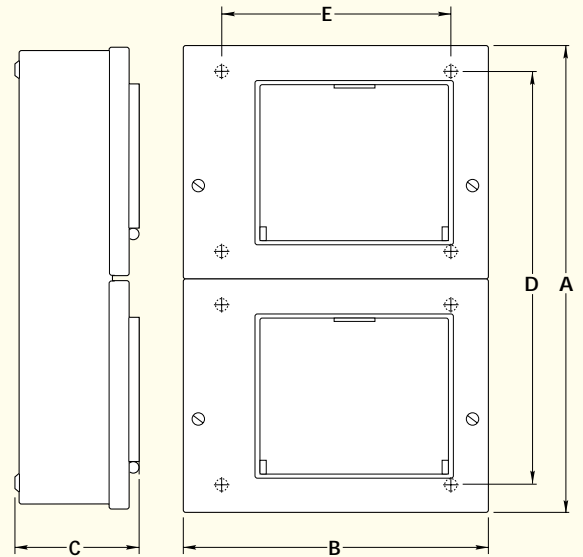

FLUSH METAL-CASED ENCLOSURES

List No	A	B	C	D	E	F	G	H	J
808/0AF	248	321	117	87	222	87	212	285	74
810/0AF	248	321	117	87	222	87	212	285	74
814/0AF	248	393	117	87	294	87	212	357	74

APPROXIMATE DIMENSIONS (mm)

2 BANK SURFACE METAL CASED ENCLOSURES

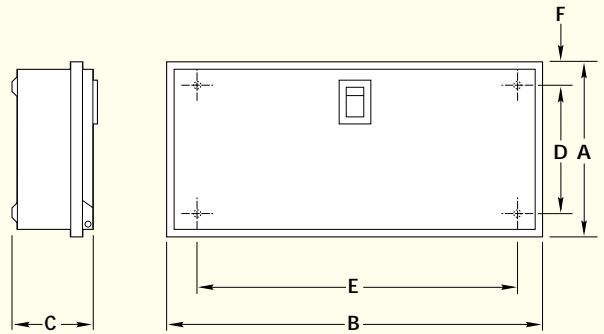
List No	A	B	C	D	E
820/2A	450	294	121	398	222
828/2A	450	365	121	398	295
834/2A	420	430	118	355	360
840/2A	420	488	117	345	416



CUSTOM BUILT CONSUMER UNITS

List No	A	B	C	D	E	F
814/13	230	505	115	175	450	25
829/2463	480	505	115	410	450	25
832/24	480	505	115	410	450	25

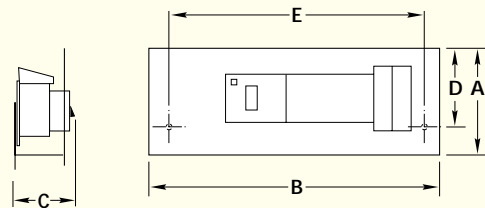
The above are Starbreaker interiors mounted in a Crabtree Polestar style enclosure – available to order.



SPINE BACKPLATE ASSEMBLIES (TUFNOL COVER)

List No	A	B	C	D	E
912/2	144	333	109	77	319
911/38*	144	333	109	77	319
909/Split-load	144	333	109	77	319

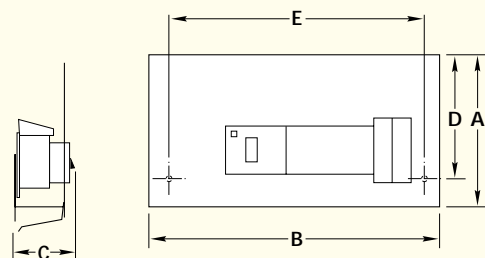
* Allow 4mm for dolly clearance.



SPINE BACKPLATE ASSEMBLIES (WHITE PVC COVER)

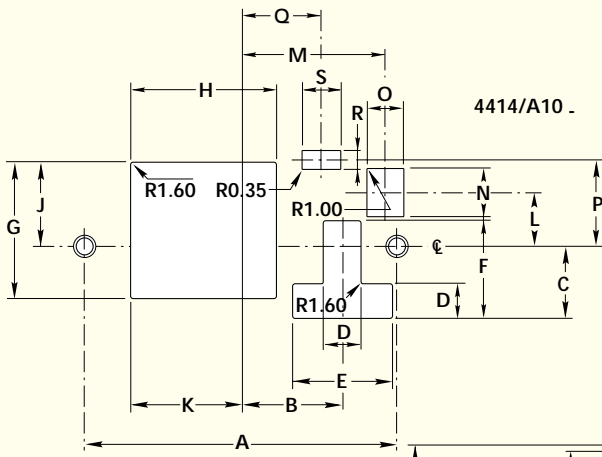
List No	A	B	C	D	E
912/2	222	333	130	155	319
911/38*	222	333	130	155	319
909/Split-load	222	333	130	155	319

* Allow 4mm for dolly clearance.

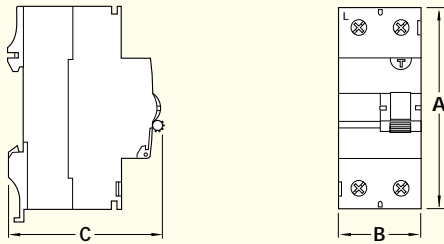


APPROXIMATE DIMENSIONS (mm)

13A 1 & 2 GANG SRCD (SAFETY SOCKET)

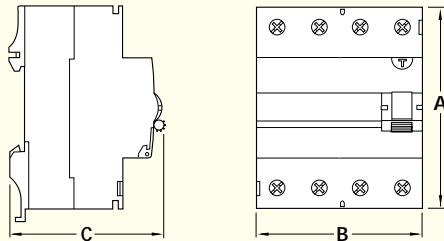


List No	A	B	C	D	E	F	G	H	J	K
4414/A10	120.6	39.75	28.45	14.2	38.8	38.4	51.8	56.6	20.85	56.6
4416/A10	120.6	79.5	28.45	14.2	38.8	38.4	72.8	27.3	20.85	113.1
	L	M	N	O	P	Q	R	S		
	18.9	13.9	32.7	31.8	7.4	14.5	31.48	43.15		
	12.9	13.9	32.7	63.5	7.4	14.5	-	-		



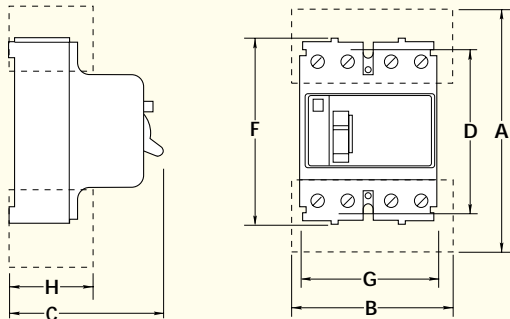
2 MODULE RESIDUAL CURRENT CIRCUIT BREAKERS

List No	A	B	C
223/A010	90	35	75
224/..., 226/..., 228/...	90	35	75
224/A..., 226/A..., 228/A...	90	35	75



4 MODULE RESIDUAL CURRENT CIRCUIT BREAKERS

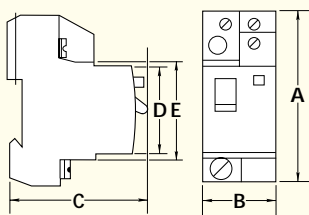
List No	A	B	C
244/..., 246/..., 241/...	90	70	75
244/A..., 246/A..., 241/A...	90	70	75



5 MODULE RESIDUAL CURRENT CIRCUIT BREAKERS

List No	A	B	*C	D	E	F	G	H
641/...	198	98	99	104	-	116	88	50
641/A...	198	98	99	104	-	116	88	50

* Allow 4mm for dolly clearance.



2 MODULE RCBOs (MCB/RCDs)

List No	A	B	*C	D	E
6132/0..0	87	36	75	45	50

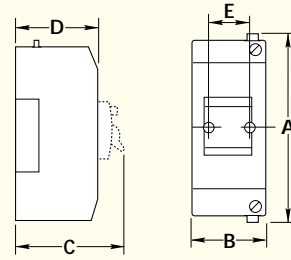
* Allow 4mm for dolly clearance.

APPROXIMATE DIMENSIONS (mm)

3 MODULE GENERAL PURPOSE ENCLOSURE IP20

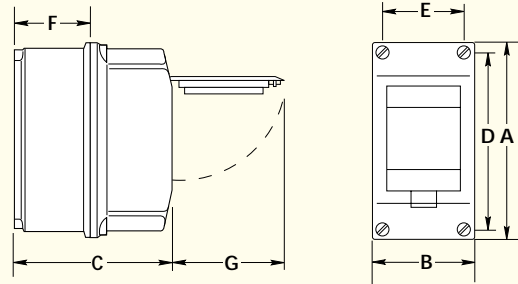
List No	A	B	*C	D	E
744/3	150	60	89	68	38

* Allow 4mm for dolly clearance.



3 MODULE ALL-PURPOSE ENCLOSURE IP65

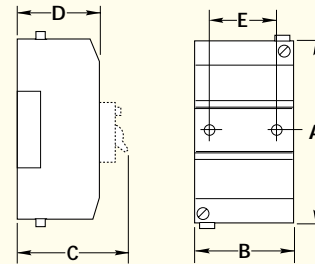
List No	A	B	C	D	E	F	G
CBE3	160	85	114	140	65	69	96



4 MODULE GENERAL PURPOSE ENCLOSURES IP20

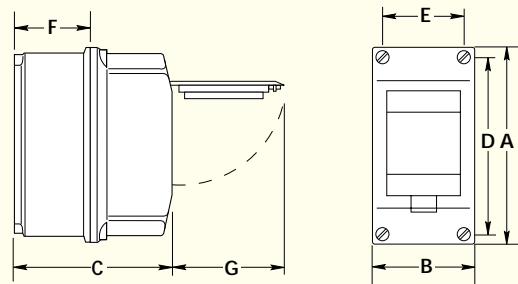
List No	A	B	*C	D	E
744/4	150	77	105	68	56
744/41	210	77	105	68	56

* Allow 4mm for dolly clearance.



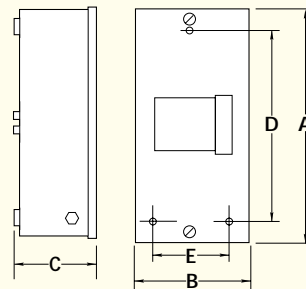
4 MODULE ALL-PURPOSE ENCLOSURE IP65

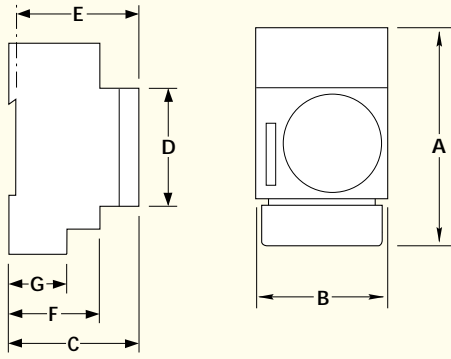
List No	A	B	C	D	E	F	G
CBE4	160	110	114	140	90	69	96



4 & 5 MODULE FABRICATED STEEL ENCLOSURE IP20

List No	A	B	C	D	E
844/4	223	112	66	184	73
EN100	412	340	115	305	229

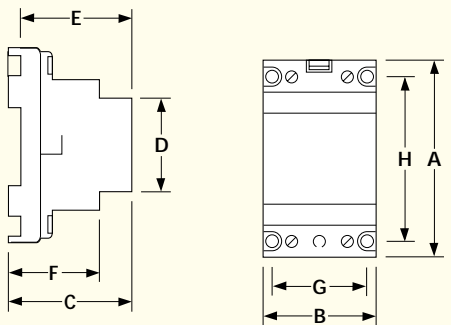




APPROXIMATE DIMENSIONS (mm)

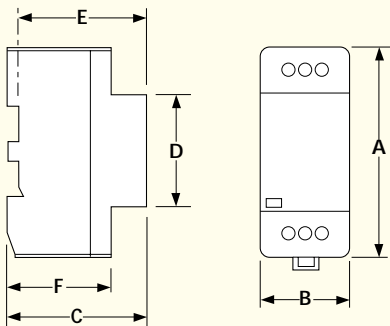
TIME SWITCHES

LIST No	A	B	C	D	E	F	G	H	J	K	L
Analogue											
303/TS24	90	54	66	45	60	46	-	-	-	-	-
303/TQ24	90	54	66	45	60	46	-	-	-	-	-
303/TQ7	90	54	66	45	60	46	-	-	-	-	-
Digital											
302/TD1	86	36	66	45	60	40	-	-	-	-	-
302/TD2	86	36	66	45	60	40	-	-	-	-	-
Staircase											
301/S7	84	18	70	45	60	43	25	-	-	-	-



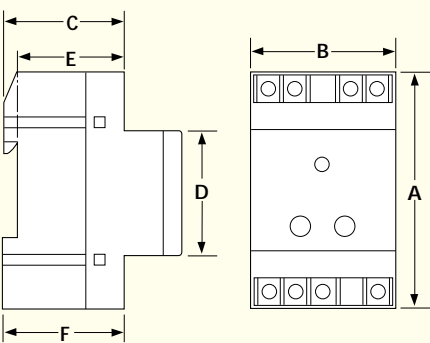
BELL TRANSFORMER

LIST No	A	B	C	D	E	F	G	H	J	K	L
303/B12	90	36	59	45	53	44	45	78	-	-	-



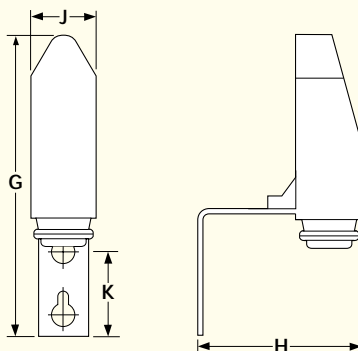
CONTACTORS & IMPULSE RELAYS

LIST No	A	B	C	D	E	F	G	H	J	K	L
301/C16DP	84	18	61	45	55	44	-	-	-	-	-
302/C25DP	80	36	61	45	55	44	-	-	-	-	-
302/C25TP	80	36	61	45	55	44	-	-	-	-	-
302/C25FP	80	36	59	45	53	44	-	-	-	-	-
303/C40DP	84	54	59	45	53	44	-	-	-	-	-
303/C40TP	84	54	59	45	53	44	-	-	-	-	-
303/C63TP	84	54	59	45	53	44	-	-	-	-	-
303/C63FP	84	54	59	45	53	44	-	-	-	-	-
301/I161	84	18	59	45	53	44	-	-	-	-	-
301/I162	84	18	59	45	53	44	-	-	-	-	-
301/I16CO	84	18	59	45	53	44	-	-	-	-	-



TWILIGHT SWITCH

LIST No	A	B	C	D	E	F	G	H	J	K	L
303/P2	86	54	66	45	60	46	116	61	27	25	-



NUMERICAL INDEX

- WIRING ACCESSORIES
- INSTALLATION BOXES & SERVICE ITEMS
- CIRCUIT PROTECTION

5855

4426/A03BG

61/B16 *708/383*

7094

9562/ES

GS02SC

4836/BZ

4306

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13OP ___	63	4075	9	4494	45, 46, 58	6096/1	62
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1250W	32	4096/B/P	14	4500	9	6170/1	62
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1400LV & 1400W	32	4170 to 4180	14	4506 & 4507	8	6172/1 & 6173/1	62
1630W	32	4214/___ & 4214/3 ___	26	4512/___ & 4512/3 ___	28, 31	6175/___	27, 31
2041	15	4214/BG & 4214/3BG	51	4512/1 & 4512/13	62	6175/1	62
2141	15	4216/___ & 4216/3 ___	26	4512/BG & 4512/3BG	52	6560 & 6560/18	48
2147	15	4216/BG & 4216/3BG	51	4513/BG	53	6560/18BZ/SC/YR	45
2161	11	4250W	32	4513/WH to 4515/WH	9	6560/24	48
2163	11	4304	4	4514/BG	53	6560/24BZ/SC/YR	45
2167	11	4304/___	4	4515/SC	28	6560/BZ/SC/YR	44
2190	14	4306	4	4520/___	8	6561 & 6561/1	48
2240/1	61	4306/___	4	4521/___	8	6561/1BZ/SC/YR	44
2240/BG	52	4314/___	26, 30	4522/___	62	6561/BZ/SC/YR	44
2250W	32	4314/1	61	4523 & 4523/3	8	6562 & 6562/1	48
2272/1	61	4314/3 ___	26, 30	4530	45, 46	6562/1BZ/SC/YR	44
2272/BG	52	4314/13	61	4530/9 & 4530/9PBBS	47	6562/BZ/SC/YR	44
2330	5	4316/___	26, 30	4530/BN	45, 46	6563 & 6564	48
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TERMS & CONDITIONS OF SALE OF GOODS

HOME

1 Contract Terms Quotations & Orders

- 1.1 Unless other terms and conditions are expressly accepted by Electrium Sales Ltd. by means of a specific written amendment hereto signed by Electrium Sales Ltd. or a Director of Electrium Sales Ltd. the contract will be on the terms and conditions set out below ("the Contract Terms") to the exclusion of any other terms and conditions (except those implied in favour of a seller which are not inconsistent with the Contract Terms) whether or not the same are endorsed upon, delivered with or referred to in any purchase order or other document delivered or sent by the Customer to Electrium Sales Ltd. or by Electrium Sales Ltd. to the Buyer reference made by Electrium Sales Ltd. to the Customer's order, specification or like document will not be deemed to imply that any terms or conditions endorsed upon, delivered with or referred to in such order, specification or like document will have effect to the exclusion or amendment of the Contract Terms. No variation, addition or modification of the Contract Terms, conditions shall be binding on Electrium Sales Ltd. unless such variation, addition or modification be agreed to in writing under the signature of a Director of Electrium Sales Ltd.
- 1.2 Any quotation is given on the basis that no contract will come into existence until the Customer places an order pursuant thereto. Any quotation is valid for a period of 30 days only from its date provided that Electrium Sales Ltd. has not previously withdrawn it.

2 Price

The price of Goods supplied hereunder ("the Goods") is exclusive of VAT or any successor tax thereto unless otherwise agreed in writing. The price for the Goods shall be (unless otherwise agreed by Electrium Sales Ltd. in writing) the list price of Electrium Sales Ltd. current at the date of despatch and in the case of an order for delivery by instalments the price payable for each instalment shall be Electrium Sales Ltd's list price current at the date of despatch for each instalment. All prices are based on standard pack sizes and quantities and Electrium Sales Ltd. reserves the right to levy an additional charge if such packs must be broken up to fulfil an order. The price of Goods is inclusive of costs of carriage to the Customer's premises in Great Britain and Northern Ireland except on individual orders having a net value calculated by reference to the Company's most recent price list of less than £200 (excluding VAT) which shall be subject to an additional charge of £15.00 (excluding VAT) to cover carriage and packing. The price of Goods is based on the costs of materials, labour, sub-contracts, transport, taxes, duties and currency exchange rates ruling at the date of the quotation. Electrium Sales Ltd. reserves the right to amend the contract price to take account of any variations in these costs or the imposition of any new taxes or duties occurring from whatever cause before delivery of the Goods.

3 Payment

The due date for payment shall be the last day of the month following the month of despatch of Goods supplied by Electrium Sales Ltd. Payment made before the due date for payment shall be subject to a settlement discount of 2.5%. VAT is calculated on the discounted value of the invoice and is not subject to settlement discount. Interest at an annual rate of 3% per month will accrue daily and be calculated on a daily basis on overdue accounts from the date of invoice until payment. Notwithstanding any Contract Term allowing the Customer credit payment shall become due and payable to Electrium Sales Ltd. immediately upon the termination of the contract. The Customer shall not be entitled to exercise any right of set-off or lien or any similar right or claim in connection with the Goods or the price payable therefor.

4 Packing Materials

Packing cases and cartons will be provided free of charge by Electrium Sales Ltd. All pallets used shall remain at all times the property of Electrium Sales Ltd. and are to be returned to Electrium Sales Ltd. on demand in good condition. Electrium Sales Ltd. reserves the right to alter the method of packing without reference to the Customer.

5 Damage or Loss in Transit

Electrium Sales Ltd. will not be liable in respect of any damage or discrepancy, shortage or loss in transit or any claim that the Goods delivered do not otherwise comply with the contract unless the Customer shall have informed the Company in writing, telex or facsimile as follows:

- Within three days of delivery in the event of any damage, discrepancy or shortage.
 - Within seven days of delivery in the event that the Goods do not comply with the contract, and
 - Within twenty-one days of receipt of the Company's invoice in the event of non-delivery.
- Where the Goods are accepted from the Company's carriers they shall be deemed to have been checked by the Purchaser and accepted unless the delivery receipt is signed and endorsed "unexamined" and the packing and its contents are retained for later inspection.

6 Delivery

The place of delivery for Goods shall be the Customer's premises or as otherwise agreed by Electrium Sales Ltd. in writing. The time of delivery will be as agreed between the parties or if no such agreement has been reached will be within a reasonable time and the Company will be entitled to make delivery by instalments. Where the customer requires delivery next day a charge of £13.50 will be made. In no circumstances will Electrium Sales Ltd. be liable for loss or damage of any kind whatsoever caused directly or indirectly by any delay in the delivery of Goods, nor unless such delay exceeds 180 days will any delay entitle the Customer to terminate or rescind the contract. Notwithstanding any other Contract Term, risk in the Goods shall pass to the Buyer when the Goods are delivered to the Customer or its agent.

7 Title of Goods

Until Electrium Sales Ltd. has been paid in full for the Goods comprised in this and/or any other contract between the Customer and Electrium Sales Ltd., the Customer shall hold the Goods in a fiduciary capacity as bailee for Electrium Sales Ltd. and:

- the title to, ownership of, and the property in, the Goods shall remain vested in Electrium Sales Ltd. (notwithstanding delivery of the same and parting of the risk therein to the Customer) until payment in full for all Goods comprised in this and every other contract between Electrium Sales Ltd. and the Customer has been received by Electrium Sales Ltd.
- The Customer shall be in possession of the Goods as Electrium Sales Ltd's bailee. If so required the Customer shall store the Goods for Electrium Sales Ltd. without charge to Electrium Sales Ltd. separate from any goods which are the property of the Customer and/or any third party and ensure that they are clearly marked and identified as belonging to Electrium Sales Ltd.
- Electrium Sales Ltd. reserves the right to require the Customer to return the Goods and may recover and sell the same at any time. For that purpose Electrium Sales Ltd's servants and agents together with all necessary and appropriate transport shall be entitled to unrestricted access to the Customer's premises and any other location where the Goods are situated to take possession of the Goods and, if necessary, dismantle the Goods from any article or articles to which they may have been attached and to remove the Goods from the Customer's premises.
- Prior to the property in the Goods passing to the Customer Electrium Sales Ltd. permits the Customer to deliver the Goods to a third party pursuant to a bona fide and arms-length agreement to re-sell the Goods and allows the Customer to convert or incorporate the Goods into or mix the Goods with other goods but such liberty will cease upon the termination of the contract.
- Where Electrium Sales Ltd. is unable to determine whether any goods are Electrium Sales Ltd's Goods the Customer shall be deemed to have sold all goods of the kind sold by Electrium Sales Ltd. to the Customer in the order in which they were invoiced to the Customer.

8 Descriptive Matter

Descriptive matter, illustrations, dimensions and weights issued by Electrium Sales Ltd. are to be regarded as being for guidance only and cannot be held as binding in any way. In pursuance of Electrium Sales Ltd's policy of product improvement Electrium Sales Ltd. reserves the right to alter patterns and designs without prior notice.

9 Guarantee

Electrium Sales Ltd. will make good by replacement (or its option by repair) defects which under proper use appear in the Goods within a period of twelve calendar months after the Goods have been despatched, and which arise solely from faulty design, materials or workmanship provided always that defective Goods have been returned to Electrium Sales Ltd. and Electrium Sales Ltd. was notified of the defect or suspected defect immediately the same became known to the Customer. The cost of carriage on such returned Goods and the cost of re-delivery of the repaired or new Goods to be borne by Electrium Sales Ltd. Save for the Electrium Sales Ltd's control equipment which has been correctly repaired or modified by the use of standard parts supplied by Electrium Sales Ltd. For such purpose, Electrium Sales Ltd. excludes all liability in respect of any Goods which have been re-finished and dismantled or altered in any way or if the Goods were improperly installed or connected or if the Customer fails to observe or perform the requirements of any maintenance procedures relating to the Goods. Any Goods replaced will belong to Electrium Sales Ltd. Any repaired or replacement Goods will be guaranteed on these terms for the unexpired portion of the twelve month period. In addition, the obligations of Electrium Sales Ltd. under this condition will not apply if the Customer is in breach of this or any other contract with Electrium Sales Ltd. Subject to this condition, all conditions, warranties and representations, whether express or implied (by statute or otherwise) relating to the Goods are hereby excluded insofar as the same can be excluded without such exclusion being void or unenforceable. Electrium Sales Ltd. will be under no liability under the contract for any personal injury, death, loss or damage of any kind whatsoever (other than death or personal injury resulting from Electrium Sales Ltd's negligence) whether consequential or otherwise including but not limited to loss of profits and Electrium Sales Ltd. hereby excludes all conditions, warranties and stipulations express or implied, statutory, customary or otherwise which but for such exclusion would or might subsist in favour of the

Customer except that such exclusion will not apply to any implied condition that Electrium Sales Ltd. has or will have the right to sell the Goods when the property is to pass; or when Electrium Sales Ltd. deals as a consumer (as defined in section 12 of the Unfair Contract Terms Act 1977), any implied term relating to the conformity of the Goods with their description or sample or as to their quality or fitness for a particular purpose. In no circumstances will Electrium Sales Ltd. or its employees, agents or sub-contractors be liable for any loss or damage of any kind whatsoever (other than death or personal injury resulting from Electrium Sales Ltd's negligence) whether consequential or otherwise caused directly or indirectly by any negligence or other tortious act or breach of statutory duty on the part of Electrium Sales Ltd. or on the part of any of its employees, agents or sub-contractors in connection with or arising out of the manufacture or supply of the Goods or in connection with any statement given or made (or advice not given or made) by or on behalf of Electrium Sales Ltd.

10 Patents

Electrium Sales Ltd. will indemnify the Customer against any claim of infringement of letters patent, registered design, trademark or copyright (existing at the date of the contract) arising from the use or sale of any article or materials supplied by Electrium Sales Ltd. to the Customer and against all costs and damages which the Customer may incur in any action for such infringement or for which the Customer may become liable in any such action provided always that this indemnity shall not apply to any infringement which arises in connection with any design or instruction issued or given by the Customer to Electrium Sales Ltd. or to the use of such article or material in a manner or for a purpose outside the UK or to any infringement which is due to the use of such article or material in association or combination with any other article or material not supplied by Electrium Sales Ltd. and provided also that this indemnity is conditional on the Customer making no admission in respect of such alleged infringement and giving Electrium Sales Ltd. the earliest possible notice in writing of any claim being made or action threatened or brought against the Customer and on the Customer permitting Electrium Sales Ltd. at Electrium Sales Ltd's expense to conduct any litigation that may ensue and all negotiations for the settlement of a claim.

The Customer warrants that any design or instruction issued or given by the Customer shall not be such as will cause Electrium Sales Ltd. to infringe any letters patent, registered design, trademark or copyright in the execution of the Customer's order and the Customer agrees to indemnify and keep Electrium Sales Ltd. indemnified against all liability in the event that such warrant is found to be untrue, misleading or breached.

11 Advice

Advice which Electrium Sales Ltd. or its agents may give to the Customer shall be given in good faith but Electrium Sales Ltd. shall not be liable for any loss or damage arising directly or indirectly therefrom or attributable thereto unless contained in any written representation or statement issued directly by Electrium Sales Ltd.

12 Safety

The Customer shall ensure that any modifications whatsoever made to the Goods supplied hereunder comply with the requirements of any applicable Safety Regulations. Plugs supplied hereunder shall be so connected as to ensure that they are safe and in full compliance with any applicable Safety Regulations. The Customer shall ensure that any kits supplied hereunder are so assembled as to ensure that the assembled product is safe and complies with the requirements of any applicable Safety Regulations. Without prejudice to the above provisions, where Electrium Sales Ltd. provides the Customer with information about the use for which Goods are designed and have been tested and about any conditions to ensure that when put to that use they would be safe and without risk to health, the Customer shall use the Goods accordingly and comply with the said conditions. To be properly used the Goods shall be selected, installed, commissioned and maintained in accordance with good engineering practice and under the supervision of suitably qualified personnel.

13 Statutory and other Regulations

If the cost to Electrium Sales Ltd. of performing its obligations under any contract shall be increased or reduced by reason of making or amendment after the date of its quotation of any law or of any other order, regulation or bye-law having the force of law that shall affect the performance of Electrium Sales Ltd's contractual obligations, the amount of such increase or reduction shall be added to or deducted from the contract price as the case may be.

14 Cancellation

If the Customer cancels, extends or delays or purports to cancel, extend or delay the contract or part thereof, or fails to take delivery of any Goods at the time agreed (if any) or if no time is agreed within a reasonable time, then the Customer will be liable (without prejudice to any other rights of Electrium Sales Ltd. to claim damages) to indemnify and keep indemnified Electrium Sales Ltd. against any resulting loss, damage or expense incurred by Electrium Sales Ltd. in connection with the supply or non-supply of the Goods including the cost of any material, used or intended to be used therefor and the cost of labour and other overheads including a percentage in respect of profit. If Electrium Sales Ltd. is unable (whether temporarily or permanently) to procure any services or goods necessary to enable it to supply the Goods or if the supply of the Goods is prevented or hindered by reason of any cause beyond Electrium Sales Ltd's reasonable control which for the avoidance of doubt and without prejudice to the generality of the foregoing shall include governmental action, war, riot, civil commotion, fire, flood, epidemic, labour disputes including labour disputes involving the work force or any part thereof of Electrium Sales Ltd. restraints or delays affecting shipping or carriers, currency restrictions and Act of God, Electrium Sales Ltd. may cancel the contract by notice in writing to the Customer so far as it relates to Goods not then supplied or work not then done and such cancellation shall not give rise to any claims by the Customer provided that the Customer shall remain liable to pay for Goods delivered prior to the date of such cancellation.

15 General

- The headings herein are inserted for convenience only and shall not affect the interpretation of the Contract Terms.
- Should any clause contained in the Contract Terms be held to be invalid such invalidity will not affect the validity of the remaining clauses.
- Any dispute arising out of this contract or the Contract Terms shall be referred in writing to an independent arbitrator who shall be appointed by agreement between Electrium Sales Ltd. and the Customer or in default of agreement by the President for the time being of the Institute of Electrical Engineers whose decision shall be binding on both parties.
- The formation, interpretation and operation of the contract will be subject to English Law and the Customer submits himself to the non-exclusive jurisdiction of the English Courts.
- Electrium Sales Ltd. will be entitled to assign sub-contract or sub-let the contract or any part thereof.
- Failure by Electrium Sales Ltd. to enforce any of the Contract Terms will not be construed as a waiver of any of its rights hereunder.

EXPORT

All Contract Terms set out above apply to overseas transactions (ie sales outside the United Kingdom), where appropriate, except the following:

- 1.2 Any quotation is given on the basis that no contract will come into existence until Electrium Sales Ltd. despatches an acknowledgement of order to the Customer. Any quotation is valid for a period of 30 days only from its date provided that Electrium Sales Ltd. has not previously withdrawn it.

2 Price

The price of Goods includes the cost of packing for shipment FOB British Port or Airport except that orders having a net value of £500 and below shall be subject to an additional charge to cover packing and carriage. No allowance will be made in lieu of transportation if the Customer accepts delivery at the factory, container depot or at any other inland destination or provides his own transportation or where packing of a lesser standard is required.

3 Payment

First orders from overseas Customers should be accompanied by bank references to enable payment terms to be agreed. Unless otherwise agreed in writing, payment is due on delivery. Goods shall be deemed to have been delivered when the invoice has been presented in the United Kingdom accompanied by the appropriate documents of title.

16 Others

The Goods will be sold FOB British Port or Airport and the Seller will be under no obligation to give the Buyer notice as specified in Section 32(3) of the Sale of Goods Act 1979. CIF or C & F arrangements can be made if requested by the Customer, at cost, and Electrium Sales Ltd. will, on receipt of Customer's indemnity, take all reasonable steps to recover from the Underwriters any loss or damage for which they may be liable. The Customer shall be solely responsible for complying with all legislation and regulations governing the importation of the Goods into the country of destination including import and export licences and the payment of duties thereon including but not limited to customs duties and VAT. The Customer shall indemnify Electrium Sales Ltd. against all costs claims and demands arising out of any breach by the Customer of this Agreement.

CONDITIONS OF USE

The products listed in this publication should be installed by suitably qualified personnel in accordance with the requirements of relevant legislation, regulations (including the IEE Wiring Regulations) and the accepted practice in the industry. Any further information which may be required about the use for which any specific product has been designed and tested, or about conditions of use, is available on request. In pursuance of our policy of continuing product improvement, equipment described in this publication is subject to change without notification.



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