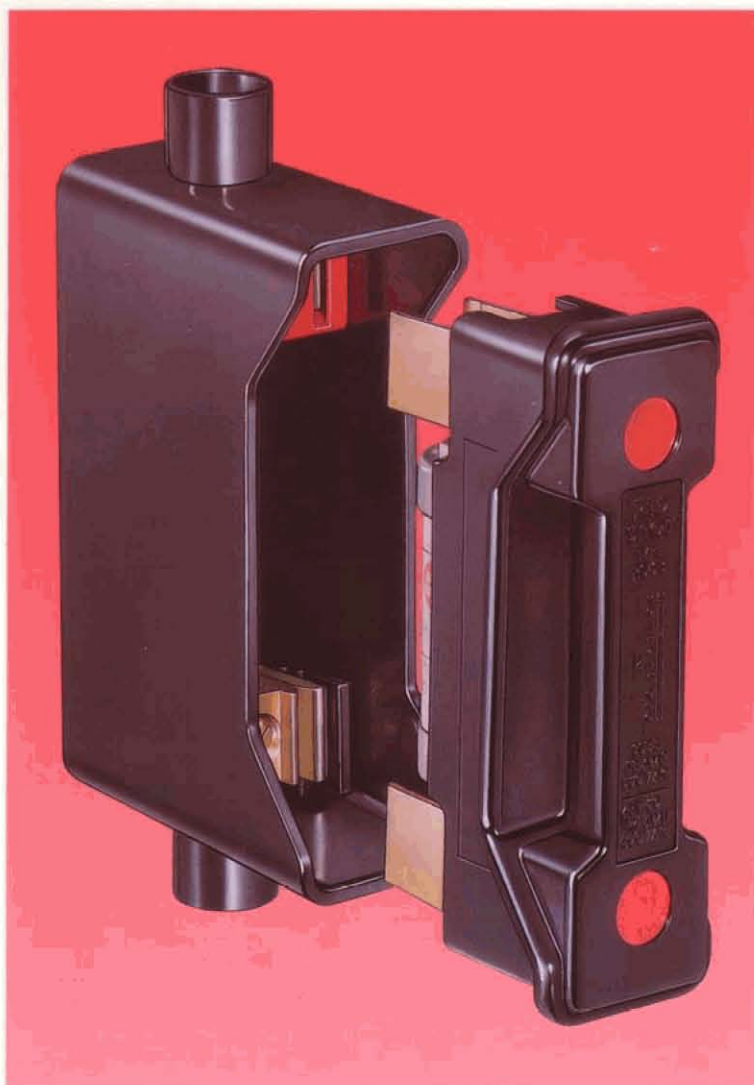


'RED SPOT'

HRC Fuse holders and Fusebanks



**GEC ALSTHOM**
LOW VOLTAGE EQUIPMENT

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Fax: 0202/702032

E-Mail: lwd@weutscheck.com

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'RED SPOT'

HRC fully shrouded Fuse holders & Fusebanks

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IMPORTANT:

These products should be installed commissioned and maintained by, or under the supervision of a competent person, in accordance with current Electricity at Work Regulations, IEE Regulations for the Electrical Equipment of buildings, Statutory requirements and any other specific instructions issued by GEC ALSTHOM Low Voltage Equipment. These notes assume throughout that the product is isolated from the supply during installation or maintenance. It is essential that this is done before commencement of any work. Any covers, or other safety measures which are removed during installation or maintenance must be replaced on completion.

'RED SPOT' HRC Fuse holders

20, 32, 63, 100, 200 & 400 Amp,
660 Volt a.c.

Complying fully with
BS 88: Parts 1 & 2: 1988 and the
16th Edition of the IEE Wiring
Regulations (BS 7671).

List numbers for ordering purposes

Rating Amp	Alternative type of connection		
	Front	Back	Front/Back
20	*RSSL20H	-	-
20	**RS20H	†RS20P	RS20PH
32	RS32H	RS32P	RS32PH
63	RS63H	RS63P	RS63PH
100	RS100H	RS100P	RS100PH
200	RS200H	RS200P	RS200PH
400	RS400H	RS400P	RS400PH

Illustrations & dimensions shown on pages 8 & 9.

- * Double pole
- ** Also available with CEEB Cat. 1 terminations (List No. RST20H)
- † Also available for flush mounting with sealing facility (List No. RS20F)
- △ DIN rail adaptor available (List No. DIN20/32)

HRC fuse links accommodated

Fuse holder rating Amp	'RED SPOT' HRC fuse links to BS88: Part 2: 1988 660 volts a.c. List No.	Extended range of 'RED SPOT' HRC fuse links to BS 88: Part 2: 1988 for motor circuit protection. List No.	Current rating	Rating for motor starting
			Amp	Amp
20	NIT2-20A ₁	NIT20M25 ₂	20	25
		NIT20M32 ₂	20	32
32	TIA2-32A	TIA32M35	32	35
		TIA32M40	32	40
		TIA32M50	32	50
		TIA32M63	32	63
63	TIA2-32A TIS35-63A	TIS63M80	63	80
		TIS63M100	63	100
100	†TIA2-32A †TIS35-63A TCP63-100A	TCP100M125	100	125
		TCP100M160	100	160
		TCP100M200	100	200
200	TBC2-63A TC80 & 100A TF125-200A	TF200M250	200	250
		TF200M315 ₁	200	315
400	TKM250 & 315A TM355 & 400A	TM400M450	400	450

† Adaptor plate required List No. P5372/10.

₁ 550 Volt a.c. ₂ 415 Volt a.c.

Note: For full details on 'RED SPOT' HRC fuse links, including d.c. performance, please refer to Publication IEF/483.

Coloured Fuse holders

The standard finish is Black, but fuse holders in White, Grey or Green colours can be supplied as follows:-

White: RS20H, RS20P, RS20F, RS32H, RS32P, RS63H, RS63P, RS100H, RS100P, RS200H, RS200P.

Grey: RS20H, RS20P.

Green: RS20H, RS20P, RS20F, RS32H, RS32P.

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4 Approvals

Approved by leading Authorities including National Power, Nuclear Electric and Powergen and used in equipment approved by Lloyds. Also approved by Canadian Standards Association.

- Back connected types approved for Categories of duty I & II. Front connected types approved for Category of duty II. RST20H (see list numbers) front connected type approved for Category of duty I.

Safety features



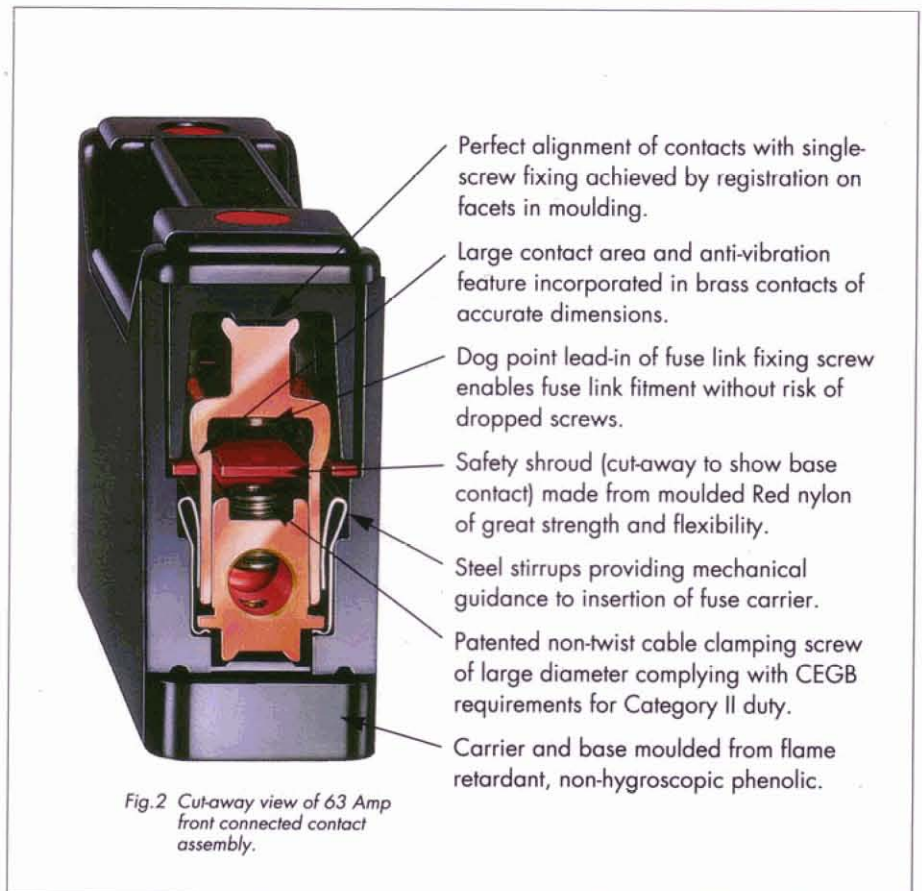
- Full shrouding for personnel safety and complete compliance with the direct contact electric shock requirements of the 16th Edition of the IEE Wiring Regulations.
- Insulating sleeves are fitted to front connected fuse bases to provide increased protection at the cable entry point.
- Separate base contact insulating shrouds of great strength and flexibility ensure that no 'live' metal is dangerously exposed when the fuse carrier is removed – this enables an out-going circuit to be cabled with complete safety to personnel and with continuity of supply to other circuits.
- Anti-vibration features protect against release of a fuse carrier due to vibration in service. In the 400 Amp size this includes a safety catch which automatically locks on the insertion of the fuse carrier.

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'RED SPOT' 20, 32, 63 & 100 Amp fuse holders



Double Pole Type RSSL20H fuse holder

Designed for use in street lighting columns

Ideally suited to its intended application, the unit complies with both 'Electricity at Work' regulations and the 16th Edition of the IEE Wiring Regulations. Its main features are as follows:

- Neat compact dimensions.
- Standard version has single-pole fusing with neutral link. Double-pole fusing is available if required.
- Fully shrouded base contacts and cable entries prevent accidental contact with 'live' parts.
- Tough phenolic, fire retardant, base and carrier mouldings.

- Fuse links accommodated are GEC ALSTHOM 'RED SPOT' type NIT, 2 Amp to 20 Amp, which comply fully with BS 88: Part 2: 1988.
- Withdrawal of a single carrier simultaneously isolates both line and neutral. Carriers are supplied with neutral link fitted as standard.
- Base/carrier contact assembly is designed to prevent inadvertent reversal of the carrier poles during insertion.



6

'RED SPOT' 200 & 400 Amp fuse holders

High quality mouldings, safety shrouds and precision made copper contacts ensure reliable operation.

Additional special features

- Through grip handle for maximum control.
- Silver plated contacts with generous cross section.
- Guides to ensure parallel action on insertion or withdrawal of fuse carrier.
- Patented non-twist cable clamping screws of large diameter on the 200 Amp and cable clamping plate on the 400 Amp fuse holders prevent damage to cables.
- Terminal screw locking device, incorporating the principle used in the twelve sided spanner, can be fitted to the hexagon head of the terminal screw, when fully tightened.

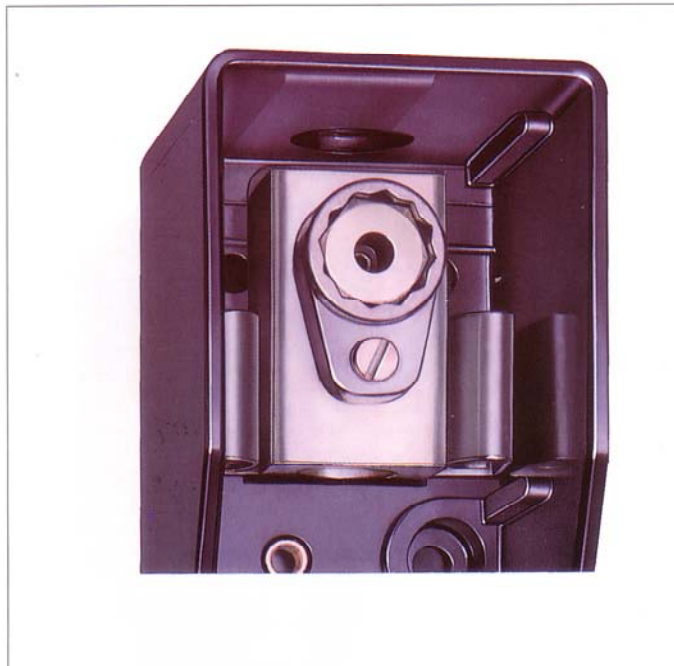


Fig.3 Front connected 200 Amp 'RED SPOT' fuse base with shroud removed to show silver plated base contact and terminal screw locking device.

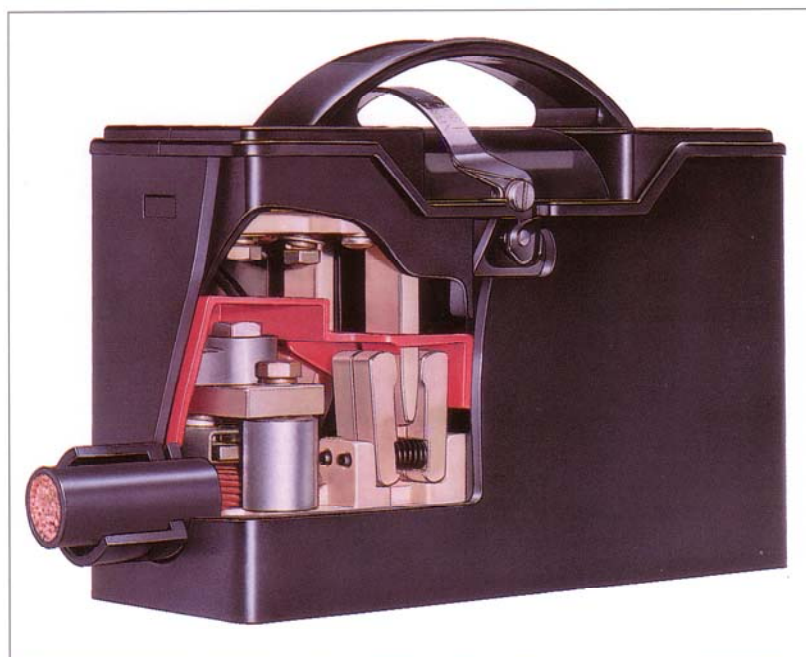


Fig.4 Front connected 400 Amp 'RED SPOT' fuse holder with moulding partly cut-away to show silver plated contacts, Red nylon shroud and cable clamping device.

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Method of cabling

Front connected fuse holders

- 1) Remove Red nylon insulating shroud to release cable sleeve.
- 2) Remove cable sleeve.
- 3) Fit cable sleeve over cable.
- 4) Fit conductor† into fuse base terminal and tighten cable clamping screw to secure.
- 5) Replace Red nylon shroud taking care it holds the cable sleeve in position by locating the shroud in the groove provided in the sleeves.

† IMPORTANT NOTE

- 1) If flexible cables are used, their relatively fine strands must be given increased protection by the use of thin wall copper ferrules over the conductor

ends. The following should be taken into account:

- a) The inside diameter of the thin wall copper ferrule should match that of the bared conductor ends as closely as possible.
- b) The length of the thin wall copper ferrule should match that of the tunnel in the fuse base terminal.
- c) The wall thickness of the ferrule should be thin enough for the ferrule to be compressed by the tightening of the cable clamping screw. The flexible conductors will then be consolidated within the deformed ferrule.

- 2) Ensure cable sizes are correctly chosen in line with the IEE Wiring Regulations (BS 7671) making due allowances for:
 - a) Grouping of cables (correction factor Cg).
 - b) Ambient temperature/Internal enclosure temperature (correction factor Ca).
 - c) Ensure that cable core temperatures are restricted to a maximum of 70°C. This also applies to Tri-rated cables.
 - d) Ensure adequate cable length is provided for interconnections between Fuse Holders and other components to prevent heat input into the Fuse Holder.

'RED SPOT'

Padlockable Insert



The 'RED SPOT' product range is complemented by a padlocking device which ensures safety of electricians during maintenance.

Designed to fit all existing 'RED SPOT' fuse holders (up to 100Amp), this range of padlocking devices provides a means of padlocking OFF individual 'RED SPOT' fuse holders to ensure that inadvertent reconnection of isolated circuits cannot be made during maintenance work.

Current rating	List number
----------------	-------------

Amp	
20	RS20 Lock
32	RS32 Lock
63	RS63 Lock
100	RS100 Lock

* Because of the variety of suitable locks available, and customers' individual preferences, these devices are supplied without padlocks.

Two manufacturers of suitable padlocks (and their part references) are listed below.

YALE P72
 SQUIRE LTD (UK) Ltd No. 20
 Tel. 0922 476711

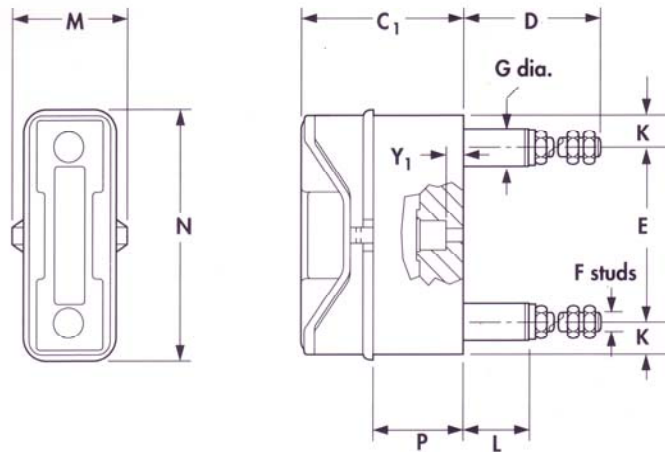
Padlockable insert shown fitted to a 'RED SPOT' 63 Amp fuse holder.*

Dimensions

in millimetres

**20 Amp
'RED SPOT'
fuse holders**

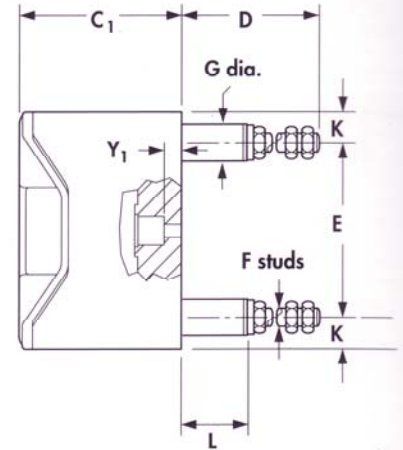
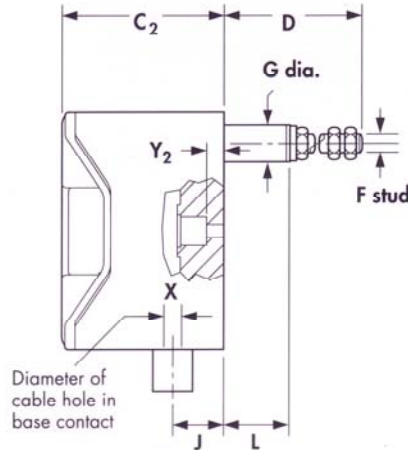
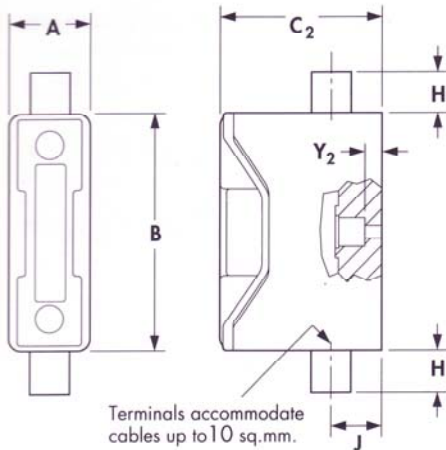
**Back connected - flush
RS20F**



**Front connected
RS20H**

**Front/back connected
RS20PH**

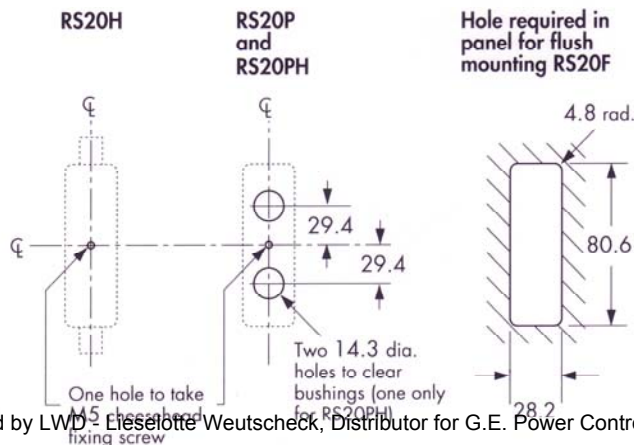
**Back connected - surface
RS20P**



Dimensions in millimetres

A	B	C	C ₂	D	E	F	G	H	J	K	L	M	N	P	X	Y	Y ₂
27.0	79.4	54.0	55.0	58.7	58.8	M6	13.5	15.1	15.9	10.3	28.6	38.1	83.3	30.2	5.8	5.56	6.6

Panel Drilling Dimensions
viewed from front of panel



One mounting clip
(List No. P670/10)
is supplied with
each flush mounting
carrier and base
Type RS20F

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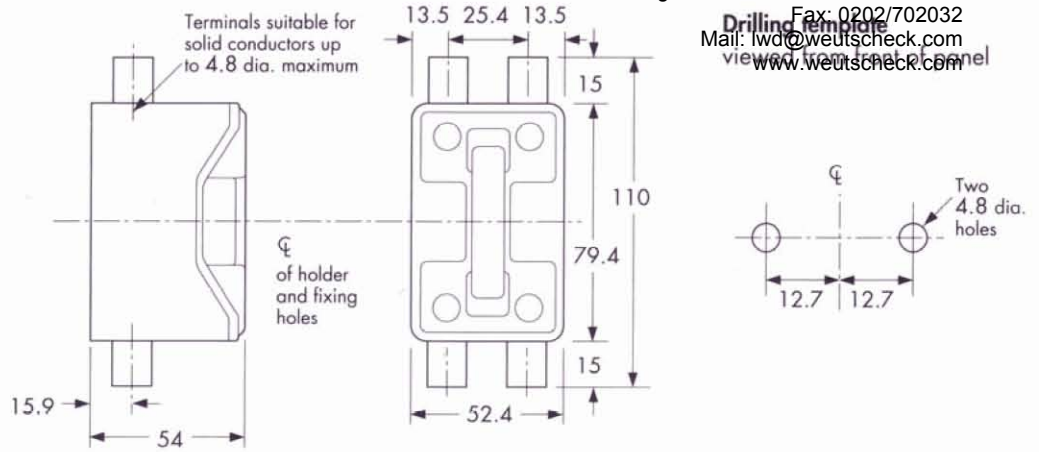
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E-Mail: lwd@weutscheck.com

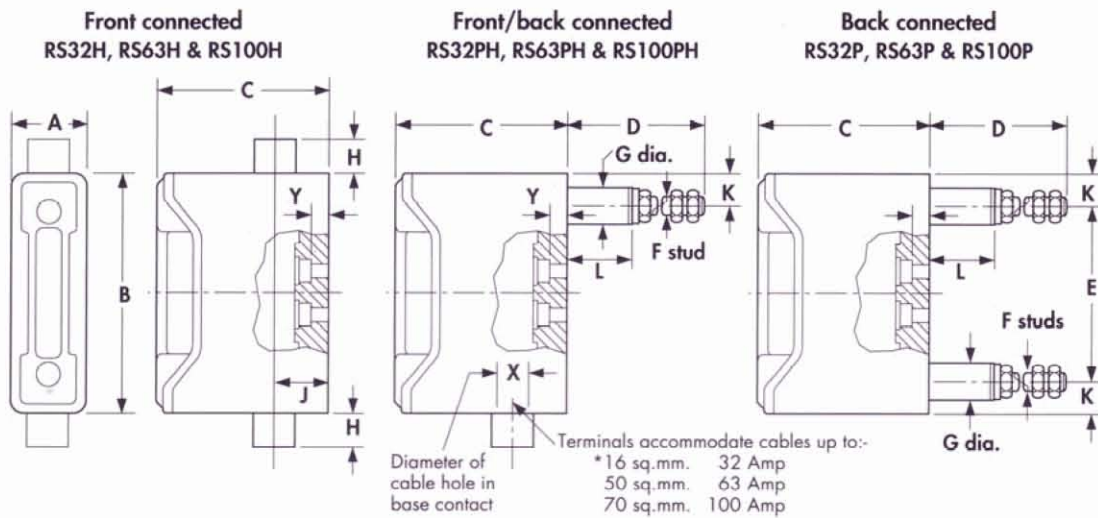
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Double pole Type RSSL20H fuse holder

Dimensions in millimetres



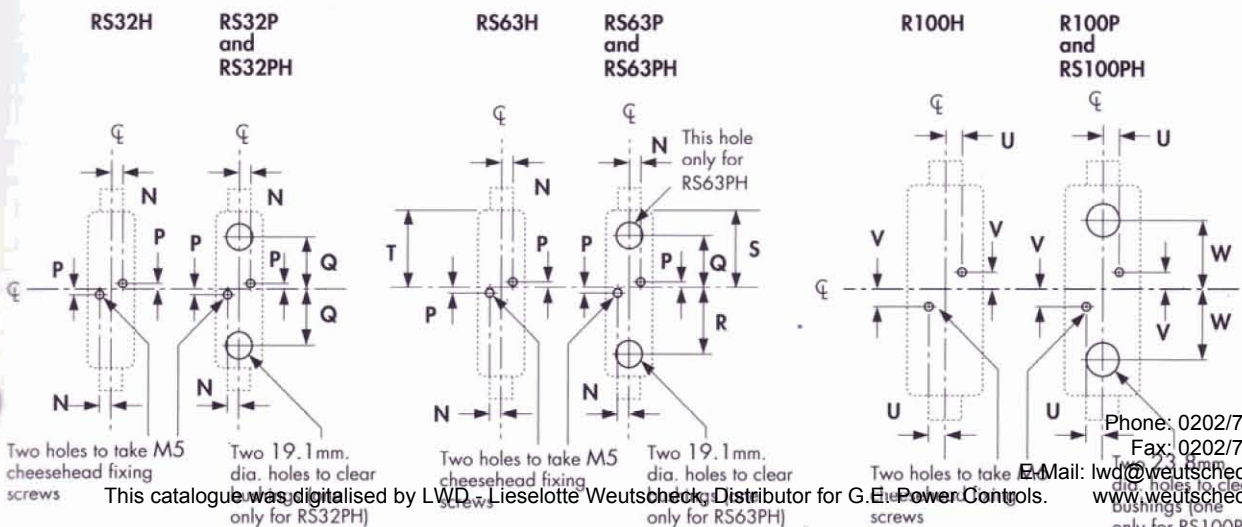
32, 63 & 100 Amp 'RED SPOT' fuse holders



Dimensions in millimetres

Rating	A	B	C	D	E	F	G	H	J	K	L	X	Y
32	31.8	103.2	69.9	81.0	73.0	M6	17.5	15.1	22.2	15.1	28.6	6.2	5.56
63	34.9	109.5	75.4	84.1	77.8	M8	17.5	15.1	23.8	15.9	28.6	9.5	5.56
100	50.8	139.7	100.0	87.3	93.7	M10	22.2	15.1	27.8	23.0	31.8	12.7	7.15

Panel Drilling Dimensions viewed from front of panel



Dimensions in millimetres

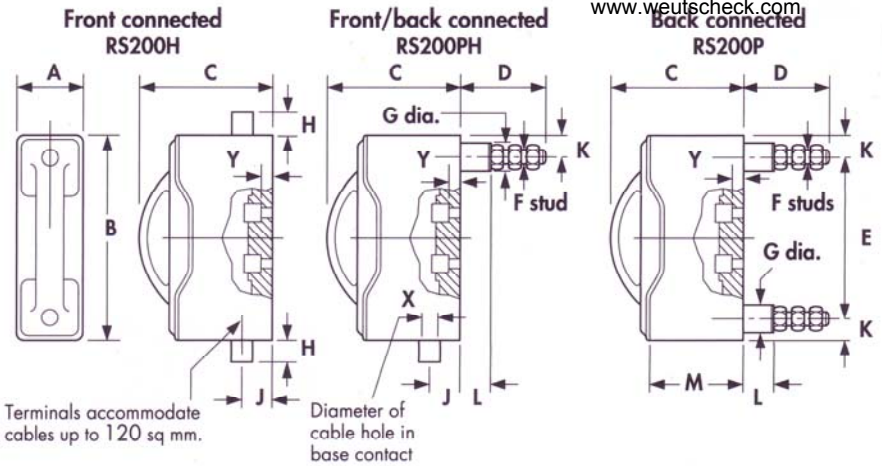
N	6.4
P	3.2
Q	36.5
R	41.3
S	52.4
T	51.6
U	9.5
V	11.1
W	46.8

Dimensions

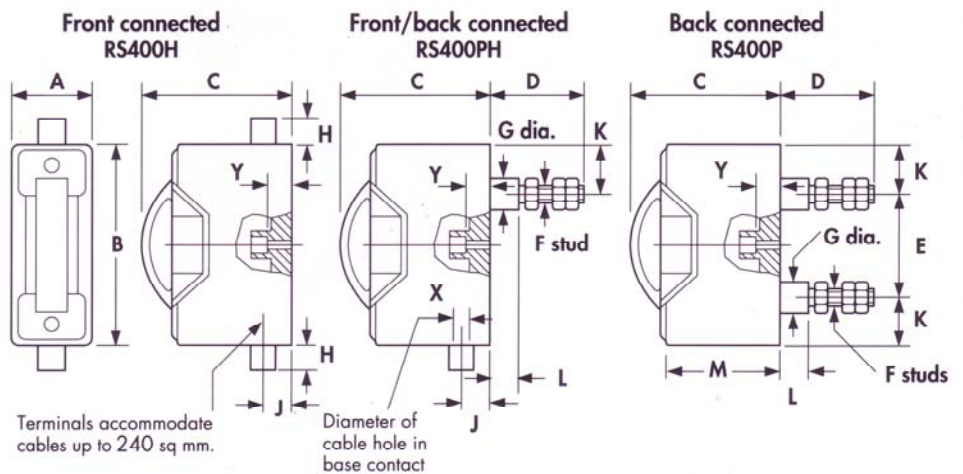
in millimetres

**200 & 400 Amp
'RED SPOT'
fuse holders**

200 Amp



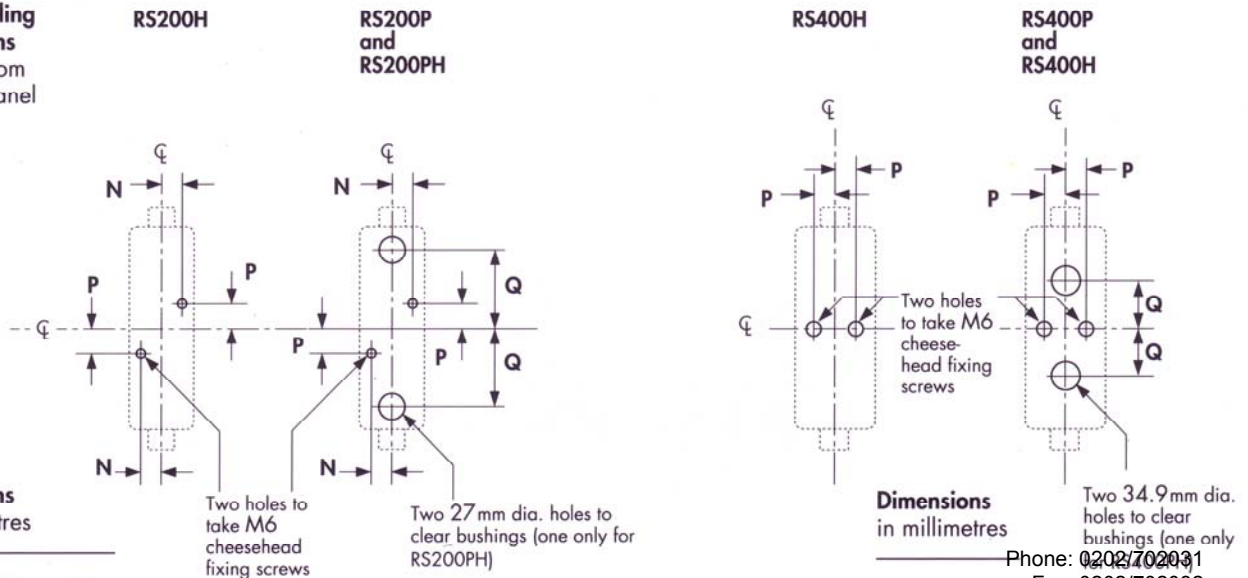
400 Amp



Dimensions in millimetres

Rating	A	B	C	D	E	F	G	H	J	K	L	M	X	Y
Amp														
200	69.9	215.9	136.5	95.3	171.5	M12	25.4	22.2	31.8	22.2	31.8	100.0	16.3	9.53
400	98.4	254.0	192.1	114.3	139.7	M16	31.8	31.8	36.5	57.2	38.1	150.8	20.6	31.8

**Panel Drilling
Dimensions
viewed from
front of panel**



Dimensions in millimetres

N	P	Q
19.1	28.0	69.9

Dimensions in millimetres

P	Q
27.0	69.9

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'RED SPOT' HRC fully shrouded Fusebanks & Interior Accessories

20, 32, 63 & 100 Amp
660 Volt a.c.



The 'RED SPOT' fusebanks, which are incorporated into the Standard and Heavy Duty distribution fuseboards, are also available in component form for fitting into switchboards and enclosures.

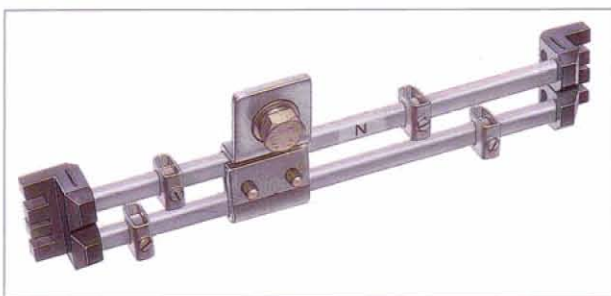
- Full shrouding provides complete compliance with the Direct Contact Electric Shock Requirements of the 16th Edition of the IEE Wiring Regulations.
- Supplied with phase identification labels, clearly numbered outgoing circuits and outgoing circuit detail labels.

11

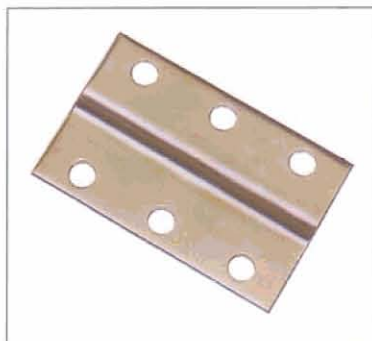
Optional Accessories

Neutral bars

A standard 63 Amp neutral bar is shown. Neutral bars having cable terminals for every outgoing circuit are supplied for 20 and 32 Amp ratings (extra cable terminals are available for the 63 Amp rating Ref: 3K49538-1).



Neutral adaptors are required for mounting neutral bars as shown on page 12.



Earth bar



Side support angles

for the combined support of fusebanks, neutral and earth bars, which enables a complete interior to be assembled (see photograph on page 12).



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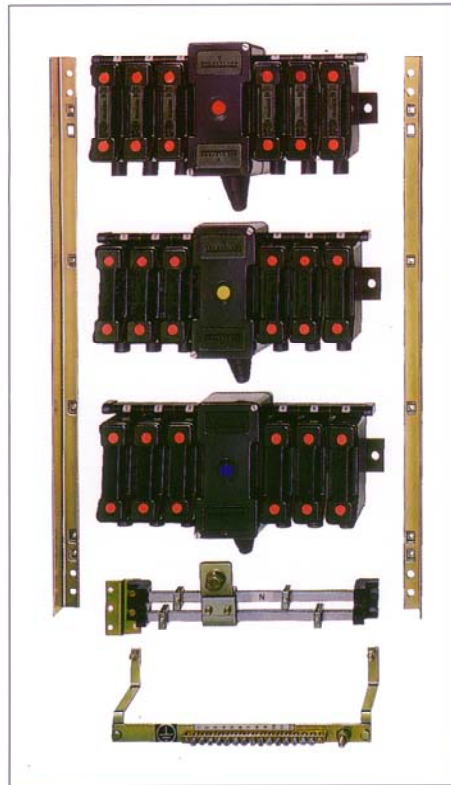
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12

6-way 63 Amp TP & N interior assembly.

Note: fusebanks, neutral bars, neutral adaptors, earth bar and side angles are supplied loose and must be ordered separately.



Selection and list numbers for ordering purposes

Rating	No. of Poles	No. of Ways	Fusebank Rating	Single Pole Fusebank	Neutral bar Assembly	Neutral Adaptors†	Earth Bar Assembly	Side Angles
Amps			Amps					SPN/DP TPN
20	SPN DP TPN	4	72	RSFB 204	RSNB 324	-	RSEB 204/6	
		6	96	RSFB 206	SCNB 326	-	RSEB 204/6	
		8	128	RSFB 208	SCNB 328	-	RSEB 208	RSSA 20SND
		10	132	RSFB2010	SCNB 3212	-	RSEB2010/12	RSSA 20TN
		12	158	RSFB2012	SCNB3212	-	RSEB 2010/12	
32	SPN DP	4	115	RSFB 324	RSNB 324	RSNA 32SN4/6	RSEB 324/6	
		6	154	RSFB 326	SCNB 326	RSNA 32SN4/6	RSEB 324/6	
		8	205	RSFB 328	SCNB 328	RSNA 32SN8	RSEB 328	RSSA 32/63SND
		12	253	RSFB3212	SCNB 3212	RSNA 32SN12	RSEB 3212	
32	TPN	4	115	RSFB 324	RSNB 324	RSNA 32TN4/6	RSEB 324/6	
		6	154	RSFB 326	SCNB 326	RSNA 32TN4/6	RSEB 324/6	
		8	205	RSFB 328	SCNB 328	RSNA 32TN8	RSEB 328	RSSA 32/63TN
		12	253	RSFB3212	SCNB 3212	RSNA 32/63TN12	RSEB 3212	
63	TPN	4	227	RSFB 634	RSNB 634	RSNA 63TN4/6	RSEB 634/6	
		6	302	RSFB 636	SCNB 636	RSNA 63TN4/6	RSEB 634/6	
		8	403	RSFB 638	SCNB 638	RSNA 63TN8	RSEB 638	RSSA 32/63TN
		12	499	RSFB 6312	RSNB 6312	RSNA 32/63TN12	RSEB 6312	
100	TPN	4	360	RSFB 1004	RSNB 1004/6	-	RSEB 100	
		6	480	RSFB 1006	RSNB 1004/6	-	RSEB 100	RSSA 100TN
		8	528	RSFB 1008	RSNB 1008	-	RSEB 100	

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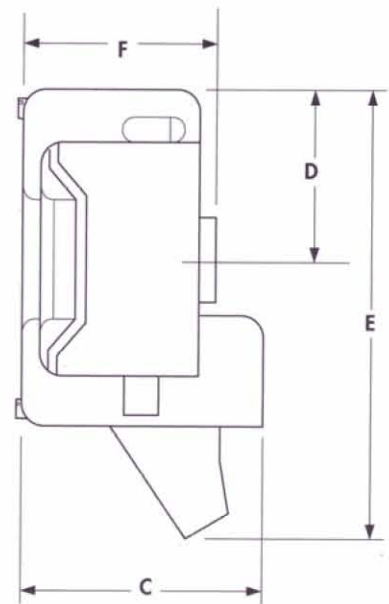
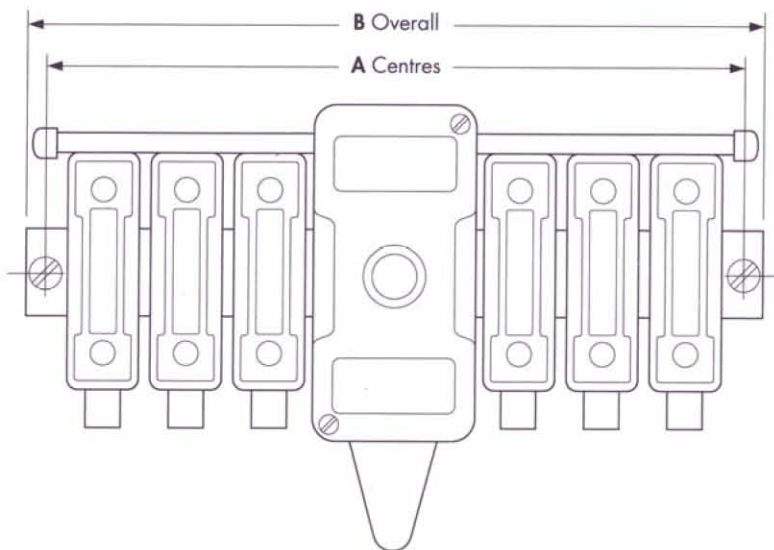
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Dimensions

in millimetres

Fusebanks 20, 32 63 & 100 Amp, 660 Volt

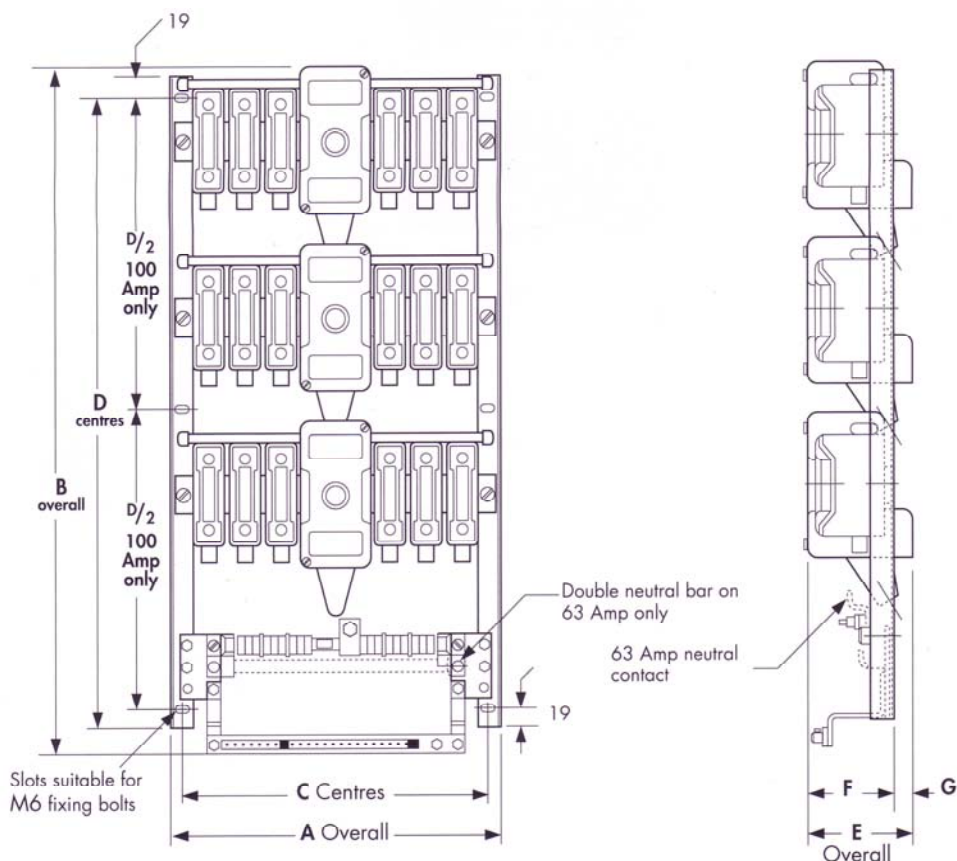


Rating	No. of Ways	A	B	C	D	E	F
Amps							
20	4/6	248.0	265.0	80.0	58.0	136.0	62.0
	8	305.0	323.0	80.0	58.0	136.0	62.0
	10/12	419.0	436.0	80.0	58.0	136.0	63.0
32 & 63	4/6	311.0	332.0	111.0	73.0	187.0	84.0
	8	384.0	405.0	111.0	73.0	187.0	85.5
	12	530.0	551.0	111.0	73.0	187.0	85.5
100	4/6	470.0	490.5	148.0	91.0	257.0	114.5
	8	584.0	605.0	148.0	91.0	257.0	114.5

Dimensions

in millimetres

Combined Assemblies



32 Amp triple pole and neutral

Rating Amps	No. of Ways	SPN/DP					TPN	
		A	C	E	F	G	B	D
20	4/6	272	248					
	8	329	305	80	64	16	340	292
	10/12	443	419	80	66	14		
32	4/6	340	311		89	22		
	8	413	384	111	92	19	420	365
	12	559	530					
63	4/6	340	311		89	22		
	8	413	384	111	92	19	420	365
	12	559	530					
100	4/6	499	470					
	8	613	584	148	136	25	911	864
	12							

Safety Features

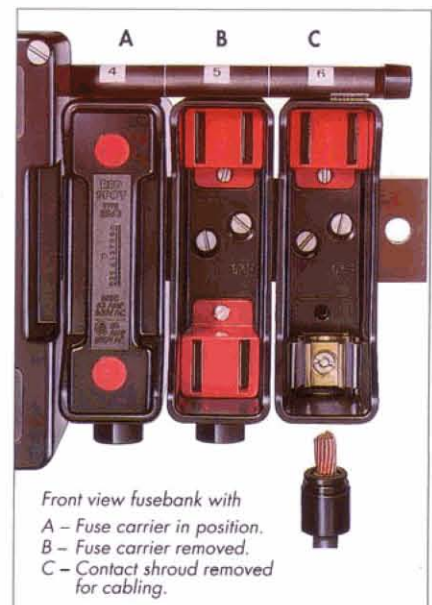
The phase busbars are fully insulated and incoming cable connectors are enclosed in moulded insulating housings, the covers of which are easily removed for connection (see illustration below). A tough rubber guide sleeve fits snugly over the

cable insulation. Insulating sleeves are also provided on each fuse holder to give increased protection at the cable termination. Incoming terminals are suitable for solid or stranded aluminium and copper conductors when used in conjunction

with an appropriate compression or soldered cable socket. Outgoing terminals are designed to cater for single or multi-strand copper conductors*.



Part view of 'RED SPOT' fusebank with cover of insulating housing removed to show incoming cable connector.



Front view fusebank with
 A - Fuse carrier in position.
 B - Fuse carrier removed.
 C - Contact shroud removed for cabling.

Cabling details

Incoming Cabling details Phase and Neutral

Rating Amp	No. of Ways	Cables for maximum size incoming cable socket mm ²	Incoming cable connector size	
			Phase	Neutral
20	4, 6, 8, 10 & 12	95	M8	M8
32	4, 6, 8 & 12	300	M10	M8
63	4, 6, 8 & 12	300	M10	M12
100	4, 6 & 8	400	M12	M12
200	2 & 3	400	M16	M16
	4	500	M20	M20
	6	2 x 300		

Outgoing Cabling details Phase and Neutral

Rating Amp	Maximum cable size accommodated	
	Fusebanks mm ²	Neutral bar mm ²
20	10	10
32	16	16
63	50	25
100	70	70

*IMPORTANT NOTE

If flexible conductors are used, a thin wall copper ferrule must be crimped on to the conductor strands for the outgoing terminals. Stranded or solid aluminium conductors can also be applied by swaging the conductors and applying a split brass sleeve. Cabling data is given above.



GEC ALSTHOM LOW VOLTAGE EQUIPMENT LIMITED
East Lancashire Road, Liverpool, England, L10 5HB
Tel: 0151 524 1122 - Fax: 0151 523 7007 - Telex: 627324 FGEAR G

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