

electrium



 **Crabtree**

Panel Boards
& Devices



electrium

LAKESIDE
POINT

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1000

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Certificate Number 18828
ISO 9001, ISO 14001, ISO 45001



2013-RTL-L4-75
2013-RTL-L4-36



Testing Laboratory No. 1460
Testing Laboratory No. 2003

As a leading manufacturer of electrical installation equipment, Crabtree is committed to the continual improvement of all quality assurance procedures and performance.

Crabtree

POWERSTAR VM160 PANELBOARDS & DEVICES



Panelboards

- Fully compliant with BS EN 61439-3
- Choice of ratings from 250A to 630A
- Switch Disconnecter or MCCB Incomer
- Three pole or four pole incomer options
- Form 3b Type 2 (TP&N version)
- Up to 18 TP outgoing ways
- Range of enclosure accessories e.g. add on TPN Distribution Board
- Easy wire metering solutions
- Optional overvoltage protection units & earth leakage protection
- Meter cable ways
- Earth leakage cable ways



Protective Devices

- Fully compliant with BS EN 60947-2
- MCCBs from 16A to 160A
- 200A & 250A MCCBs available as an add on section in 400A & 630A Panelboards
- Fixed & adjustable settings
- Single & triple pole devices
- Complete range of accessories e.g. shunt trip, UVR, aux switch, trip alarm switch, dolly locking device
- ICU ratings from 25kA to 65kA





17VM32512

250A PANELBOARD

Outgoing Ways	H	W	D	List No
6 way	902mm	700mm	198mm	17VM32506
12 way	1132mm	700mm	198mm	17VM32512
18 way	1361mm	700mm	198mm	17VM32518

- 250A rated
- Type tested & ASTA certified to IEC 61439-2; Ed 2 2011-08
- 25kA for 1s Short Circuit Withstand Strength
- Form 3b Type 2 Form of Separation
- IP3X (door closed)
- Maximum outgoing MCCB rating 160A SP or TP



17VA3250SW

250A PANELBOARD INCOMERS

Description	List No
250A TP Switch Disconnecter	17VA3250SW
250A 4P Switch Disconnecter	17VA4250SW
250A Direct Connection Coppers	17VA4250DC
INTERCONNECTIONS	
Incoming Device Interconnections TP	17VA3250CK
Incoming Device Interconnections 4P	17VA4250CK

- Inter connections are necessary when selecting a switch disconnecter
 - Max cable lug connection/busbar 24mm wide
- Switch Disconnectors:**
- Fixed Short Circuit Release

250A INCOMER TERMINAL EXTENSIONS

TP Incomer Kits

50 - 185mm Box Terminal	17VA9253-0JA12
50 - 240mm Cable Terminal inc Extended Shield	17VA9213-0JJ13
Extended Front Terminal inc Phase Barriers	17VA9253-0QB00
Ext Spreaded Front Terminal inc Phase Barriers	17VA9253-0QC00
Extended Terminal Shield (1pc)	17VA9211-0WF30
Extended Spreaded Terminal Shield (1pc)	17VA9211-0WG30

4P Incomer Kits

50 - 185mm Box Terminal	17VA9254-0JA12
50 - 240mm Cable Terminal inc Extended Shield	17VA9214-0JJ13
Extended Front Terminal inc Phase Barriers	17VA9254-0QB00
Ext Spreaded Front Terminal inc Phase Barriers	17VA9254-0QC00
Extended Terminal Shield (1pc)	17VA9211-0WF40
Extended Spreaded Terminal Shield (1pc)	17VA9211-0WG40

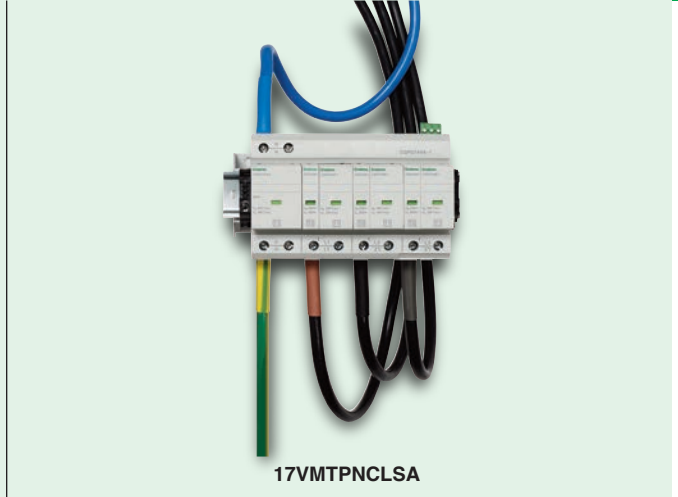


17VA250IMKMID

INTEGRAL INCOMING METERING

Standard	List No
250A Meter Kit	17VA250IMKSTD
MID	
250A Meter Kit	17VA250IMKMID

- Contains Digital Meter offering amps, volts, kWh readout, block current transformer for standard solutions or 3 x single current transformers for MID solutions, mounting plates & cable looms. The latter supplied loose for connection by installer
- Only one of the above options is possible per panelboard
- Voltage supply loom kit required for any metering option **17VMVSLK**



17VMTPNCLSA

INTEGRAL INCOMING SURGE PROTECTION

250A & 400A Panelboards	List No
Lightning Arrester Kit (Type 1)	17VMTPNLA
Surge Arrester Kit (Type 2)	17VMTPNSA
Combo Lightning & Surge Arrester Kit (Type1/2)	17VMTPNCLSA

- Each kit contains: Arrester, MCCB, mounting base & cables
- Kits will utilise the bottom right hand outgoing way for MCCB connection
- Only one of the above options is possible per panelboard



400A PANELBOARD

Outgoing Ways	H	W	D	List No
6 way	1132mm	700mm	198mm	17VM34006
12 way	1361mm	700mm	198mm	17VM34012
18 way	1591mm	700mm	198mm	17VM34018

- 400A rated
- Type tested & ASTA certified to IEC 61439-2; Ed 2 2011-08
- 35kA for 1s Short Circuit Withstand Strength
- Form 3b Type 2 Form of Separation
- IP3X (door closed)
- Maximum MCCB outgoing rating 160A SP or TP
- See Add on Options below

ADD ON OPTIONS

Description	List No
Add-on 2 way 250A TP Outgoing MCCB Housing	17VM3P2502

- For use with 400A & 630A Panelboards
- Includes all interconnections
- Accepts 200A & 250A TP MCCBs only
- Busbar 25kA for 1s Short Circuit Withstand Strength
- Dims: 230mm high x 1198mm wide x 198mm deep

For use in above Add on unit

Rated Current	3P
200A	7PBVS3200
250A	7PBVS3250



400A PANELBOARD INCOMERS

Description	List No
400A TP Switch Disconnecter	17VA3400SW
400A 4P Switch Disconnecter	17VA4400SW
400A TP MCCB	17VA3400MCCB
400A 4P MCCB	17VA4400MCCB
400A Direct Connection Coppers	17VA4400DC
INTERCONNECTIONS	
Incoming Device Interconnections TP	17VA3400CK
Incoming Device Interconnections 4P	17VA4400CK

- Inter connections are necessary when selecting a switch disconnecter or MCCB incoming device
 - Max cable lug connection/busbar 32mm wide
- MCCBs:**
- Electronic Trip Unit L1 for System Protection
 - MCCB incoming devices adjustable overload from 40% to 100% In and short circuit from 1.25 to 11 times rated In

Switch Disconnectors:

- Fixed Short Circuit Release

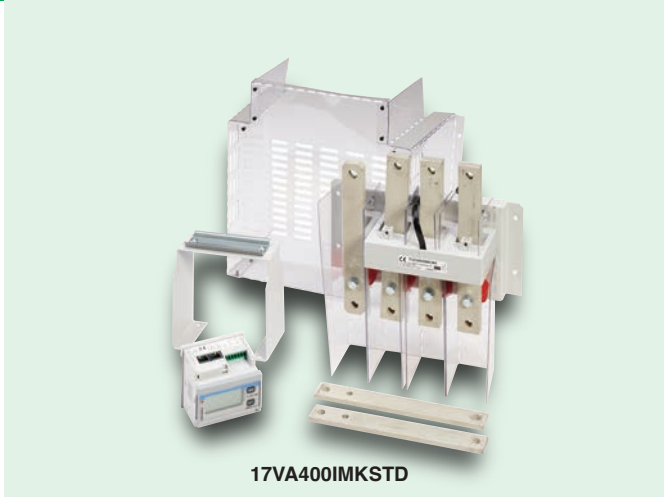
400A INCOMER TERMINAL EXTENSIONS

TP Incomer Kits

35 - 300mm Box Terminal	17VA9483-0JA13
Extended front terminal inc phase barriers	17VA9483-0QB00
Ext Spreaded front terminal inc phase barriers	17VA9483-0QC00
Extended terminal shield (1pc)	17VA9481-0WF30
Extended spreaded terminal shield (1pc)	17VA9401-0WG30

4P Incomer Kits

35 - 300mm Box Terminal	17VA9484-0JA13
Extended Front Terminal inc Phase Barriers	17VA9484-0QB00
Ext Spreaded Front Terminal inc Phase Barriers	17VA9484-0QC00
Extended Terminal Shield (1pc)	17VA9481-0WF40
Extended Spreaded Terminal Shield (1pc)	17VA9401-0WG40



17VA400IMKSTD

INTEGRAL INCOMING METERING

Standard	List No
400A Meter Kit	17VA400IMKSTD
MID	
400A Meter Kit	17VA400IMKMID

- Contains Digital Meter offering amps, volts, kWh readout, block current transformer for standard solutions or 3 x single current transformers for MID solutions, mounting plates & cable looms. The latter supplied loose for connection by installer
- Only one of the above options is possible per panelboard
- Voltage supply loom kit required for any metering option **17VMVSLK**



17VMTPNLA

INTEGRAL INCOMING SURGE PROTECTION

250A & 400A Panelboards	List No
Lightning Arrester Kit (Type 1)	17VMTPNLA
Surge Arrester Kit (Type 2)	17VMTPNSA
Combo Lightning & Surge Arrester Kit (Type1/2)	17VMTPNCLSA

- Each kit contains: Arrester, MCCB, mounting base & cables
- Kits will utilise the bottom right hand outgoing way for MCCB connection
- Only one of the above options is possible per panelboard



17VM36312

630A PANELBOARD

Outgoing Ways	H	W	D	List No
6 way	1132mm	700mm	198mm	17VM36306
12 way	1361mm	700mm	198mm	17VM36312
18 way	1591mm	700mm	198mm	17VM36318

- 630A rated
- Type tested & ASTA certified to IEC 61439-2; Ed 2 2011-08
- 35kA for 1s Short Circuit Withstand Strength
- Form 3b Type 2 Form of Separation
- IP3X (door closed)
- Maximum MCCB outgoing rating 160A SP or TP
- See Add on Options below

ADD ON OPTIONS

Description	List No
Add-on 2 way 250A TP Outgoing MCCB Housing	17VM3P2502

- For use with 400A & 630A Panelboards
- Includes all interconnections
- Accepts 200A & 250A TP MCCBs only
- Busbar 25kA for 1s Short Circuit Withstand Strength
- Dims: 230mm high x 1198mm wide x 198mm deep

For use in above Add on unit

Rated Current	3P
200A	7PBVS3200
250A	7PBVS3250



17VA3630MCCB

630A PANELBOARD INCOMERS

Description	List No
630A TP Switch Disconnecter	17VA3630SW
500A 4P Switch Disconnecter	17VA4630SW
630A TP MCCB	17VA3630MCCB
630A 4P MCCB	17VA4630MCCB
630A Direct Connection Coppers	17VA4630DC
INTERCONNECTIONS	
Incoming Device Interconnections TP	17VA3630CK
Incoming Device Interconnections 4P	17VA4630CK

- Inter connections are necessary when selecting a switch disconnecter or MCCB incoming device
 - Max cable lug connection/busbar 32mm wide
- MCCBs:**
- Electronic Trip Unit L1 for System Protection
 - MCCB incoming devices adjustable overload from 40% to 100% In and short circuit from 1.25 to 11 times rated In

Switch Disconnectors:

- Fixed Short Circuit Release

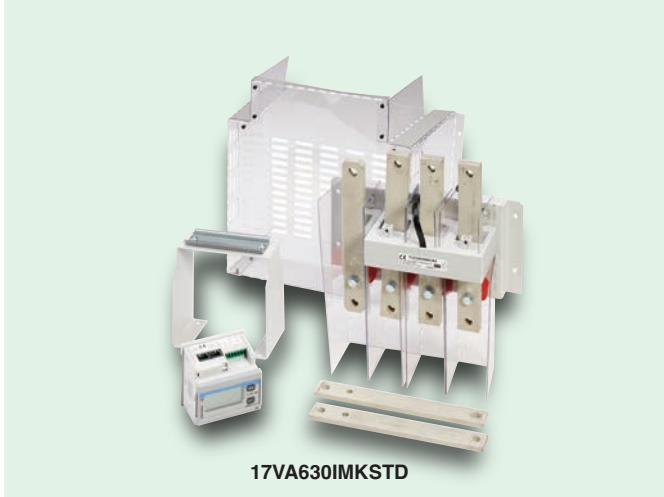
630A INCOMER TERMINAL EXTENSIONS

TP Incomer Kits

35 - 300mm Box Terminal	17VA9483-0JA13
Extended Front Terminal inc Phase Barriers	17VA9483-0QB00
Ext Spreaded Front Terminal inc Phase Barriers	17VA9483-0QC00
Extended Terminal Shield (1pc)	17VA9481-0WF30
Extended Spreaded Terminal Shield (1pc)	17VA9401-0WG30

4P Incomer Kits

35 - 300mm Box Terminal	17VA9484-0JA13
Extended Front Terminal inc Phase Barriers	17VA9484-0QB00
Ext Spreaded Front Terminal inc Phase Barriers	17VA9484-0QC00
Extended Terminal Shield (1pc)	17VA9481-0WF40
Extended Spreaded Terminal Shield (1pc)	17VA9401-0WG40



17VA630IMKSTD

INTEGRAL INCOMING METERING

Standard	List No
630A Meter Kit	17VA630IMKSTD
MID	
630A Meter Kit	17VA630IMKMID

- Contains Digital Meter offering amps, volts, kWh readout, block current transformer for standard solutions or 3 x single current transformers for MID solutions, mounting plates & cable looms. The latter supplied loose for connection by installer
- Only one of the above options is possible per panelboard
- Voltage supply loom kit required for any metering option **17VMVSLK**

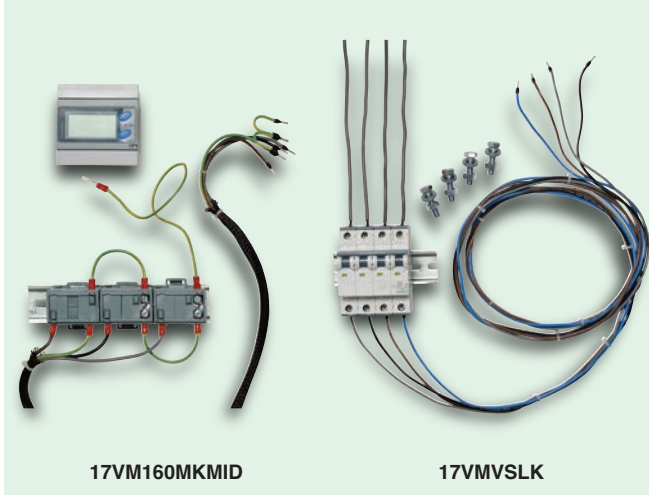


17VMTPNLA

INTEGRAL INCOMING SURGE PROTECTION

250A, 400A & 630A Panelboards	List No
Lightning Arrester Kit (Type 1)	17VMTPNLA
Surge Arrester Kit (Type 2)	17VMTPNSA
Combo Lightning & Surge Arrester Kit (Type1/2)	17VMTPNCLSA

- Each kit contains: Arrester, MCCB, mounting base & cables
- Kits will utilise the bottom right hand outgoing way for MCCB connection
- Only one of the above options is possible per panelboard



OUTGOING METERING

Standard Metering

	List No
160A 3ph Meter Kit	17VM160MKSTD
250A 3ph Meter Kit	17VM250MKSTD

Additional current transformer blocks to enable an existing meter to monitor a second 3ph supply.

	List No
160A 3ph current transformer	17VM160MKCT
250A 3ph current transformer	17VM250MKCT

Each current transformer is supplied with a RJ11 plug-in cable for connection to the meter.

MID Metering

	List No
160A 3ph 4w Meter Kit	17VM160MKMID
250A 3ph 4w Meter Kit	17VM250MKMID

- Contains Digital meter offering amps, volts, kWh readout, block current transformer (or 3 x ct's for MID), mounting plates & cable looms. The latter supplied loose for connection by others
- Single phase MID meter available upon request

Meter Pack Voltage Supply Cable Loom	List No
250A, 400A & 630A Panelboards	17VMVSLK

- Voltage supply loom kit required for any metering option

OUTGOING EARTH LEAKAGE PROTECTION

Outgoing Earth Leakage kit

Consisting:

Modular Residual Current Device (MRCRD) with adjustable earth leakage sensitivity from 30mA to 3A (0.03A, 0.1A, 0.3A, 0.5A, 1A, 2A, 3A)
Adjustable time delay from 0 to 10s (INS, SEL, 0.06s, 0.1s, 0.3s, 0.4s, 0.5s, 1s, 3s, 5s, 10s) and Summation Current Transformer

	List No
35mm Internal Diameter	17VMEL35
70mm Internal Diameter	17VMEL70

- Only available for 3P & 3P&N MCCBs

Earth Leakage Voltage Supply Loom	List No
250A, 400A & 630A Panelboards	17VMVSLK

- Voltage supply loom required for all earth leakage options



METER CABLEWAYS

Description	Meter			List No	
	Knockouts	250	400		630
Size 1	4	6w	-	-	17VM1MCW
Size 2	6	12w	6w	6w	17VM2MCW
Size 3	7	18w	12w	12w	17VM3MCW
Size 4	9	-	18w	18w	17VM4MCW

EARTH LEAKAGE CABLEWAYS

Description	Earth Leakage				List No
	Cut Outs	250	400	630	
Size 1	3	6w	-	-	17VM1ECW
Size 2	4	12w	6w	6w	17VM2ECW
Size 3	5	18w	12w	12w	17VM3ECW
Size 4	6	-	18w	18w	17VM4ECW



17VMTPNDB



17VMSPHG

17VMSPLK

17VMSPCC2

17VMSPCC

ADD ON OPTIONS

Description	List No
Add-on Control Module Enclosure 24 module (each 18mm wide), DIN rail Dims: 230mm high x 700mm wide x 198mm deep	17VM24CME
Add-on 100A SPN Distribution Board - 20 way SPN Supplied with 100A DP Switch Disconnecter and comb busbar Accepts up to 63A Polestar Compact & Loadstar mcbs Dims: 230mm high x 700mm wide x 198mm deep	17VMSPNDB
Add-on 80A TPN Distribution Board - 6 way TPN Supplied with 80A TPN Switch Disconnecter and comb busbar Accepts up to 63A Polestar Compact & Loadstar mcbs Dims: 230mm high x 700mm wide x 198mm deep	17VMTPNDB
Add-on Cable Spreader Box Empty Enclosure Dims: 230mm high x 700mm wide x 198mm deep	17VM1CSB
Corner Unit	17VMCU

- Two corner units needed per add on option with exception of 17VM3P2502

ACCESSORIES

Panelboard Accessories	List No
Aluminium Gland Plate, 3mm - Panelboard	17VMSPGPAP
Aluminium Gland Plate, 3mm - Cableway	17VMSPGPAC
Brass Gland Plate, 3mm - Panelboard	17VMSPGPBP
Brass Gland Plate, 3mm - Cableway	17VMSPGPBC
Spares or Replacement parts:	
Replacement Gland Plates - Panelboard	17VMSPGPP
Replacement Gland Plates - Cableway	17VMSPGPC
Door Hinge (set of 2)	17VMSPHG
Door Lock Latch	17VMSPDL
Lock & Key	17VMSPLK
Oversized Cable Clamps for Terminal Bar (35mm ²) pk of 3	17VMSPCC
Oversized Cable Clamps for Terminal Bar (70mm ²) pk of 3	17VMSPCC2
Incoming Earth Connection	17VMSPIEK
Replacement Fixings Kit	17VMSPF1
Terminal Bar (11 Connections)	17VMSPTB1
Terminal Bar (21 Connections)	17VMSPTB2
Terminal Bar (31 Connections)	17VMSPTB3
Replacement Way Label (For Cover Plate)	
6-Way	17VMSPWL1
12-Way	17VMSPWL2
18-Way	17VMSPWL3
4-Way (4P)	17VMSPWL4
8-Way (4P)	17VMSPWL5
12-Way (4P)	17VMSPWL6



7PBVF1100

ICU = 25KA @230 V AC FIXED THERMAL & FIXED SHORT CIRCUIT PROTECTION

Rated Current	SP
16A	7PBVF116
20A	7PBVF120
25A	7PBVF125
32A	7PBVF132
40A	7PBVF140
50A	7PBVF150
63A	7PBVF163
80A	7PBVF180
100A	7PBVF1100
125A	7PBVF1125
160A	7PBVF1160

Rated Current	TP
16A	7PBVF316
20A	7PBVF320
25A	7PBVF325
32A	7PBVF332
40A	7PBVF340
50A	7PBVF350
63A	7PBVF363
80A	7PBVF380
100A	7PBVF3100
125A	7PBVF3125
160A	7PBVF3160



7PBVN350

ICU = 25KA @415 V AC ADJUSTABLE THERMAL & FIXED SHORT CIRCUIT PROTECTION

Rated Current	TP
16A	7PBVN316
20A	7PBVN320
25A	7PBVN325
32A	7PBVN332
40A	7PBVN340
50A	7PBVN350
63A	7PBVN363
80A	7PBVN380
100A	7PBVN3100
125A	7PBVN3125
160A	7PBVN3160



7PBVS350

36kA I_{CU} @ 415V AC ADJUSTABLE THERMAL & FIXED SHORT CIRCUIT PROTECTION

Rated Current	TP
16A	7PBVS316
20A	7PBVS320
25A	7PBVS325
32A	7PBVS332
40A	7PBVS340
50A	7PBVS350
63A	7PBVS363
80A	7PBVS380
100A	7PBVS3100
125A	7PBVS3125
160A	7PBVS3160



7PBVM350

55kA I_{CU} @ 415V AC ADJUSTABLE THERMAL & FIXED SHORT CIRCUIT PROTECTION

Rated Current	TP
16A	7PBVM316
20A	7PBVM320
25A	7PBVM325
32A	7PBVM332
40A	7PBVM340
50A	7PBVM350
63A	7PBVM363
80A	7PBVM380
100A	7PBVM3100
125A	7PBVM3125
160A	7PBVM3160



NEUTRAL LINKS

NEUTRAL LINKS

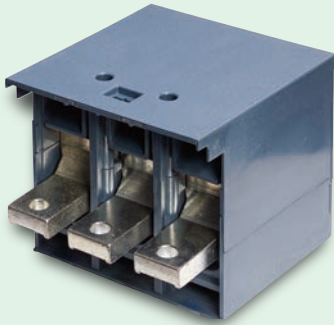
Description	List No
160A Neutral Link Outgoing	17VMNL11
250A Neutral Link Outgoing	17VMNL12



MCCB ACCESSORIES

MCCB ACCESSORIES

Door Blanks	List No
SP	17VMSPDBK
TP	17VMTADBK
MCCB Dolly Locking Device	17VMDLD
Aux Switch - SP C/O	17VMAUXCC
Trip Alarm Switch - SP C/O	17VMTAS
Undervoltage Release	
110V 50/60Hz	17VMAUV/110
208..230V 50/60Hz	17VMAUV/230
125..127VDC	17VMAUV/125
Shunt Trip	
24VAC / 24..30VDC	17VMAST/24
208..277VAC 50/60Hz 220..250VDC	17VMAST/230



17VM3TES150



17VM9111-0WF30

MCCB ACCESSORIES

	List No
25...150mm Cu/Al cable extensions consisting: 3 x single terminals and 1 extended terminal cover	17VM3TES150
25...150mm Cu/Al cable extensions consisting: 4 x single terminals and 1 extended terminal cover	17VM4TES150

MCCB Extension Bars	
for 160A TP MCCBs	17VM3160FCB

Auxiliary Cable Clamp Terminals	
160A MCCB box terminals	17VM160CACT
160A MCCB busbar terminals	17VM160BACT

Use cableway when using extended shroud or cable extensions

SHROUDS

	List No
SP 3VM Short Terminal Shroud	17VM9111-0WD10
TP 3VM Short Terminal Shroud	17VM9111-0WD30
TP 3VM Long Terminal Shroud	17VM9111-0WF30

When using terminal shrouds please also select cable ways



1 POLE GG FRAME MCCBs

Rating (A)	LIST No
15	7PBGGN115
20	7PBGGN120
25	7PBGGN125
30	7PBGGN130
40	7PBGGN140
50	7PBGGN150
60	7PBGGN160
80	7PBGGN180
100	7PBGGN1100
125	7PBGGN1125

- Standards: IEC/EN 60947-2
- 25kA Icu at 240VAC
- Fixed thermal and magnetic trips
- Terminal Capacity up to 30A - 16mm² above 30A - 50mm²



3 POLE GG FRAME MCCBs

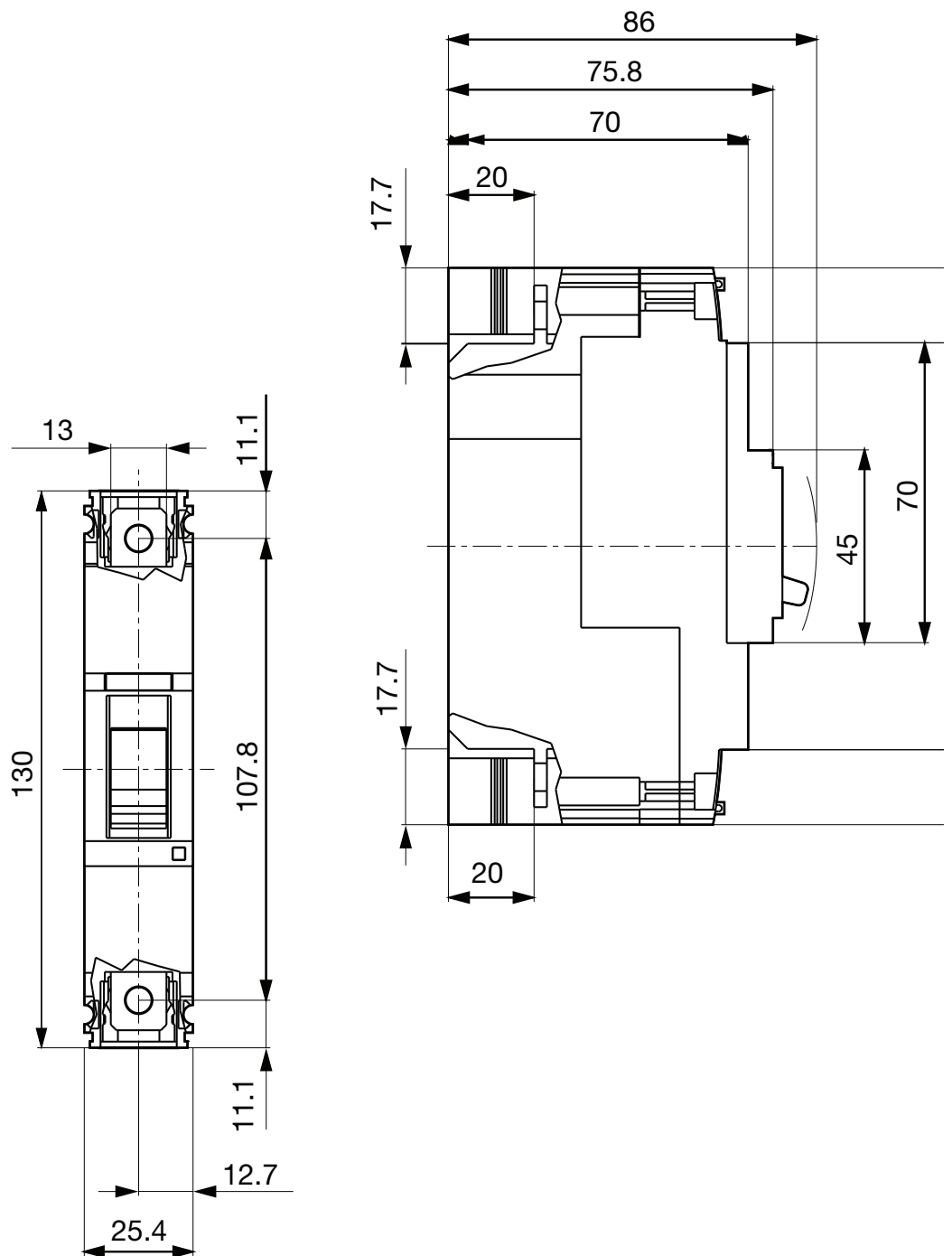
Rating (A)	LIST No
15	7PBGGN315
20	7PBGGN320
25	7PBGGN325
30	7PBGGN330
40	7PBGGN340
50	7PBGGN350
60	7PBGGN360
80	7PBGGN380
100	7PBGGN3100
125	7PBGGN3125

- Standards: IEC/EN 60947-2
- 25kA Icu at 415VAC
- Fixed thermal and magnetic trips
- Terminal Capacity up to 30A - 16mm² above 30A - 50mm²

GG EXTENSION PANELBOARD



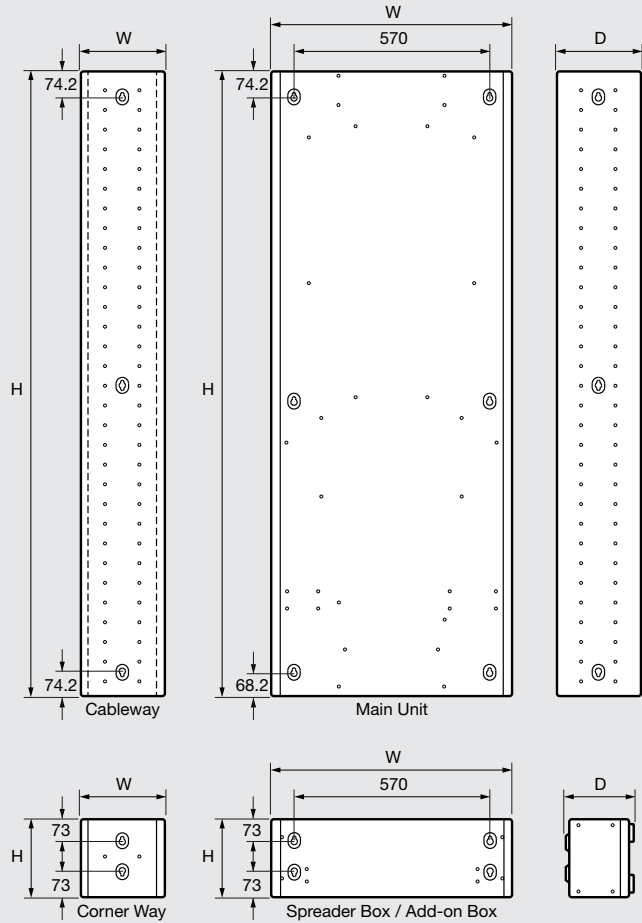
TECHNICAL DATA & DIMENSIONS



TECHNICAL DATA POWERSTAR VM160 PANELBOARDS

PANELBOARD AND CABLEWAY DIMENSIONS

Part No.	Description	Dimensions (mm)		
		H	W	D
Panelboards				
250A:	6 way	902	700	198
	12 way	1132	700	198
	18 way	1361	700	198
400A:	6 way	1132	700	198
	12 way	1361	700	198
	18 way	1591	700	198
630A:	6 way	1132	700	198
	12 way	1361	700	198
	18 way	1591	700	198
Cableways				
	Corner Unit	230	249	184
	Size 1	902	249	198
	Size 2	1132	249	198
	Size 3	1361	249	198
	Size 4	1591	249	198
Add-on Units				
	2x250A TP Outgoer	230	1198	198
	Control Module	230	700	198
	SPN Dist Board	230	700	198
	TPN Dist Board	230	700	198
	Spreader Box	230	700	184



TECHNICAL DATA

	250A	400A	630A
Standards Compliance	IEC 61439-2; Ed 2 2011-08		
Short Circuit Withstand Strength	25kA for 1s	35kA for 1s	
Rated Voltage	230/400V 3ph 50Hz		
Mounting	Wall /Floor		
Entry	Bottom		
Access	All Sides		
Form of Separation	F3bT2		
Degree of Protection	IP3X (door closed)		
Paint Finish	Light Grey RAL7035		

Meter Cableways

Description	Knockouts	Meter			List No
		250	400	630	
Size 1	4	6w	-	-	17VM1MCW
Size 2	6	12w	6w	6w	17VM2MCW
Size 3	7	18w	12w	12w	17VM3MCW
Size 4	9	-	18w	18w	17VM4MCW

Earth Leakage Cableways

Description	Earth Leakage Cut Outs	Earth Leakage			List No
		250	400	630	
Size 1	3	6w	-	-	17VM1ECW
Size 2	4	12w	6w	6w	17VM2ECW
Size 3	5	18w	12w	12w	17VM3ECW
Size 4	6	-	18w	18w	17VM4ECW

Cable Capacity

Maximum Stranded Cu Cable

	Incoming				Outgoing		
	Sw Disc or MCCB	Direct Connect	Neutral	Earth	160A MCCB	Neutral	Earth
250A Panelboard	25..185mm ²	M8	M10	M10	70mm ²	35mm ²	35mm ²
400A Panelboard	50..300mm ²	M10	M10	M10	70mm ²	35mm ²	35mm ²
630A Panelboard	50..300mm ²	M10	M10	M10	70mm ²	35mm ²	35mm ²

Available Terminals:

	Neutral Bars			Earth Bars		
	6 way	12 way	18 way	6 way	12 way	18 way
250A Panelboard	22	42	62	22	42	62
400A Panelboard	22	42	62	22	42	62
630A Panelboard	22	42	62	22	42	62

Rated uninterrupted current (Iu)		(A)	160A			
Poles			1	3,4		
Rated current (In)		(A)	16...160A			
Service Voltage (Ue)	AC (50/60Hz)	(V)	415	500		
	DC	(V)	125	500		
Impulse withstand voltage (Uim)		(kV)	8	8		
Insulation Voltage(Ui)		(V)	500	690		
Circuit breaker in accordance with IEC 60947-2			√	√		
Ultimate Breaking capacity (Icu)			F	F/N	S	M
AC 50/60Hz 220/230V		(kA)	25	37	55	85
AC 50/60Hz 380/415V		(kA)	5	25	36	55
AC 50/60Hz 440V		(kA)	-	16	25	36
AC 50/60Hz 500V		(kA)	-	7	7	10
Service Breaking capacity (Ics)						
AC 50/60Hz 220/230V		(kA)	18	27	27	63
AC 50/60Hz 380/415V		(kA)	3	18	18	41
AC 50/60Hz 440V		(kA)	-	12	12	27
AC 50/60Hz 500V		(kA)	-	5	5	5
Utilisation Cat			A			
Trip unit						
TM210	FTFM		√	√		
TM220	ATFM			√		
MCCB Rated operational current In @ 50°C		(A)	16...160A			
Mechanical life	No. Of Ops		12000	12000		
Electrical life	No. Of Ops		6000	6000		
Dimensions	W	mm	25.4	76.2 (3P)/ 101.6 (4P)		
	D	mm	70	70		
	H	mm	130	130		
Electromagnetic capability			CISPR11 Class A and B			
			IEC 60947-1 Appendix S			
			IEC 60947-2 Appendix B, F, J and N			
Ambient conditions	Pollution Degree		IEC 60947-1 IEC 60664-1 Pollution degree 3			
	Temperature Range	Operation	-25°C to +70°C			
		Storage	-25°C to +80°C			

Individual product sheets are available

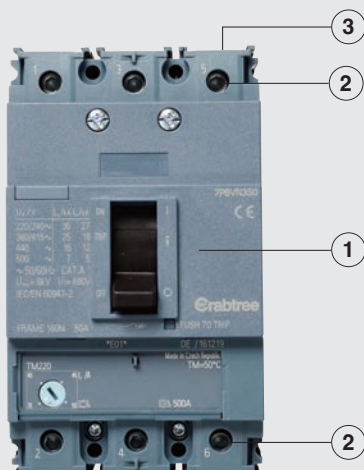
DERATING FACTORS FOR INSTALLATIONS ABOVE 2000M

	Height			
	2000m	3000m	4000m	5000m
Breaking capacity I_{cu} / I_{cs}	1.00	0.90	0.80	0.70
Operating voltage U_{max}	1.00	0.90	0.80	0.70
Operating current $I_{max}^{1)}$	1.00	0.96	0.92	0.88
Current setting $I_r^{2)}$	1.00	1.02	1.04	1.06

¹⁾ At maximum ambient temperature 50°C

²⁾ Thermal-magnetic trip units only

DEGREES OF PROTECTION



- ① Front panel without termination area
- ② Front panel termination area
- ③ Infeed/load ends

Level	Accessories cover		Terminal cover	
	Without	With	Without	With
①	--	IP4X	--	--
②	--	--	IP2X	--
③	--	--	--	IP3X

PROTECTION RELEASE FUNCTIONS

	TM210	TM220
Ir Adjustable	--	√
Ii Adjustable	--	--
Ir Fixed	√	--
Ii Fixed	√	√

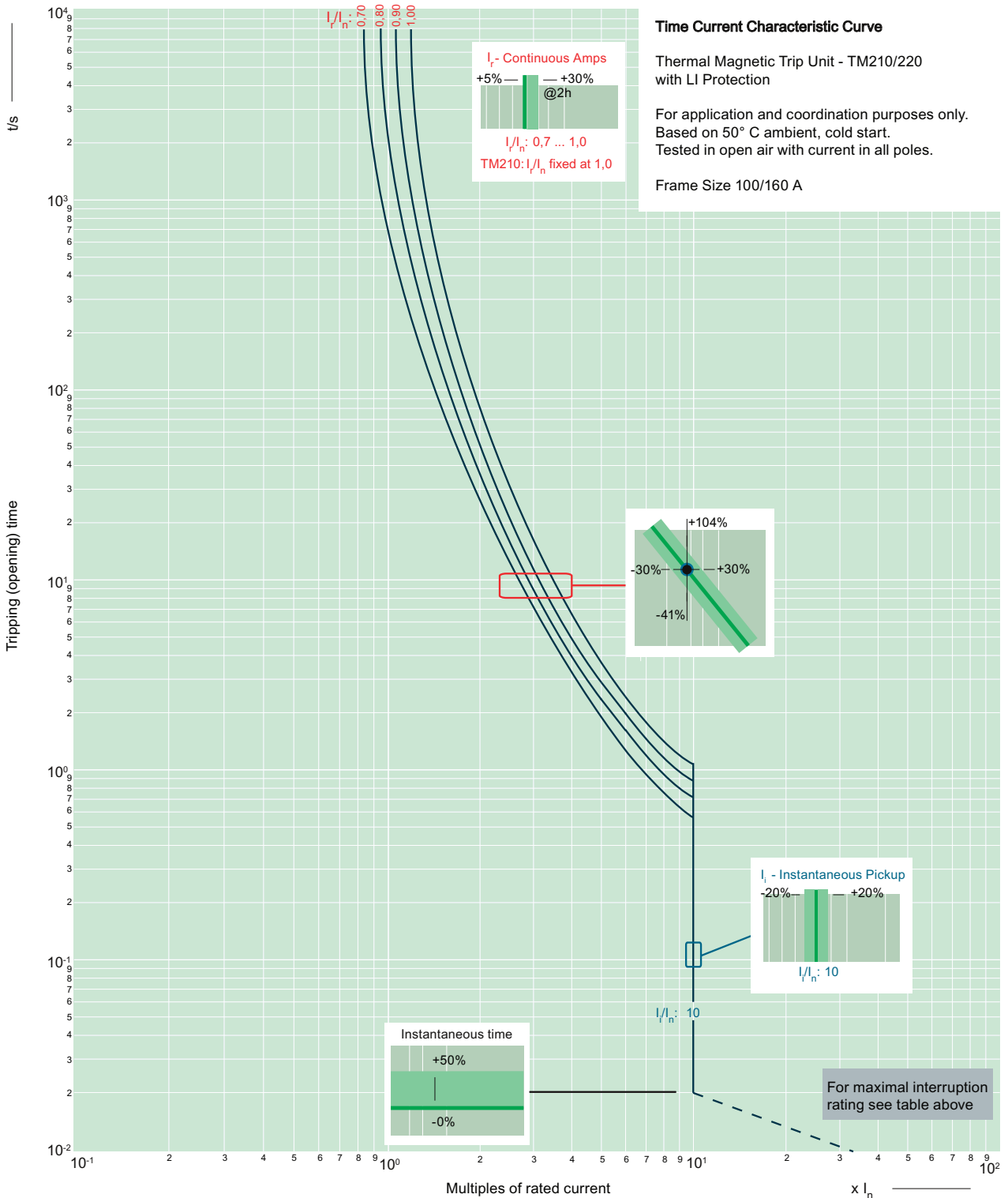
Typ/Model:

TM210/220

Tripping Curve VM160 with TM210/220

English

The content of this document was correct at the time of production but for up to date information please contact Technical Support



TECHNICAL DATA POWERSTAR VM160 - Zs VALUES

MAX Zs VALUES BASED ON 230V PHASE TO EARTH VOLTAGE FOR MCCBs WITH FIXED THERMAL AND FIXED SHORT CIRCUIT PROTECTION

In A	5s Disconnection	0.4s Disconnection
	Ohms	Ohms
16A	1.62	0.57
20A	1.60	0.57
25A	1.69	0.57
32A	1.40	0.57
40A	1.13	0.46
50A	0.77	0.36
63A	0.82	0.29
80A	0.48	0.23
100A	0.37	0.18
125A	0.15	0.14
160A	0.11	0.11

MAX Zs VALUES BASED ON 230V PHASE TO EARTH VOLTAGE FOR MCCBs WITH ADJUSTABLE THERMAL AND FIXED SHORT CIRCUIT PROTECTION

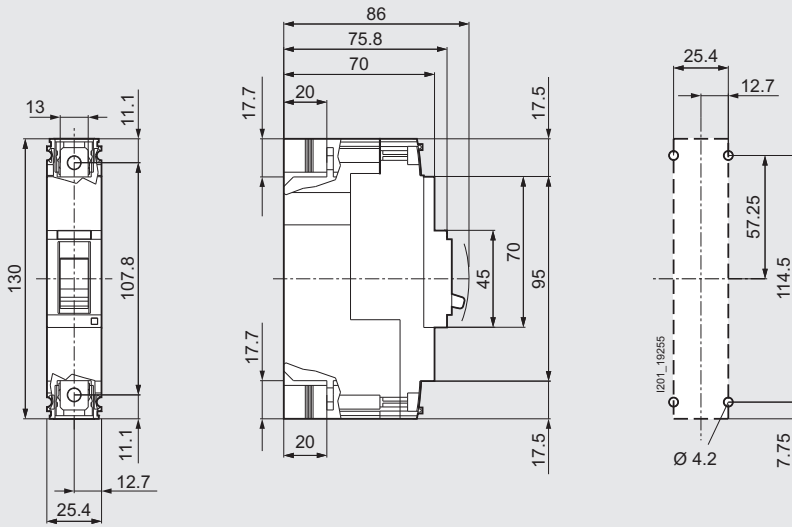
In A	5s Disconnection		0.4s Disconnection	
	Adj. set at MIN	Adj. set at MAX	Adj. set at MIN	Adj. set at MAX
	Ohms		Ohms	
16A	2.31	1.62	0.64	0.57
20A	2.28	1.59	0.69	0.57
25A	2.42	1.69	0.73	0.57
32A	2.00	1.39	0.61	0.57
40A	1.61	1.12	0.49	0.46
50A	1.11	0.77	0.36	0.36
63A	1.17	0.82	0.37	0.29
80A	0.68	0.47	0.23	0.23
100A	0.52	0.36	0.18	0.18
125A	0.14	0.14	0.14	0.14
160A	0.16	0.11	0.11	0.11

TECHNICAL DATA INTERNAL ACCESSORIES & SPARE PARTS

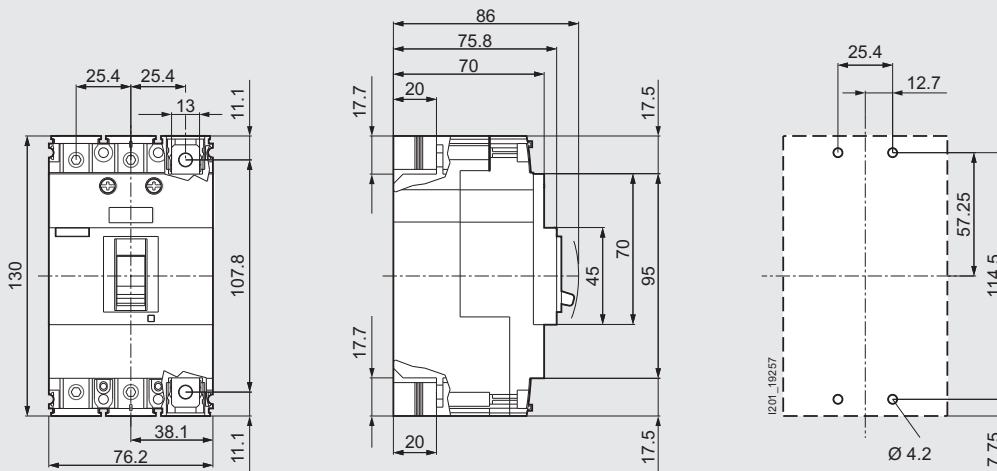
TERMINALS

Connection technology	Cable medium	Cables and busbars	Dimensions	100A/160A	250A
Box terminal	Solid cable	Cu cable	mm ²	1.5...16	6...16
	Stranded cable	Cu cable	mm ²	1.5...70	6...120 50...185
	Finely stranded cable	Cu cable	mm ²	1.5...50	10...95 95...150
	Finely stranded cable with insulated end sleeve	Cu cable	mm ²	1.5...50	6...95 50...150
	Flexible copper busbar	Flexible busbar	mm x mm	2x..6x (13 x 0.5)... 2x..9x (9 x 0.8)	2x..6x (13 x 0.5)... 2x..6x (15.5 x 0.8)... 2x 6x (20 x 1)
Circular conductor, Large	Solid cable	Cu cable	mm ²	--	--
	Stranded cable	Cu/Al cable	mm ²	25...150	50...150
	Finely stranded cable	Cu cable	mm ²	25...120	50...185
	Finely stranded cable with insulated end sleeve	Cu cable	mm ²	25...95	50...185

100/160 FRAME SINGLE POLE



100/160A FRAME TRIPLE POLE



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Although every effort has been made to ensure accuracy in the compilation of the technical detail within this publication, specifications and performance data are constantly changing. Latest details can be obtained from Crabtree.

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