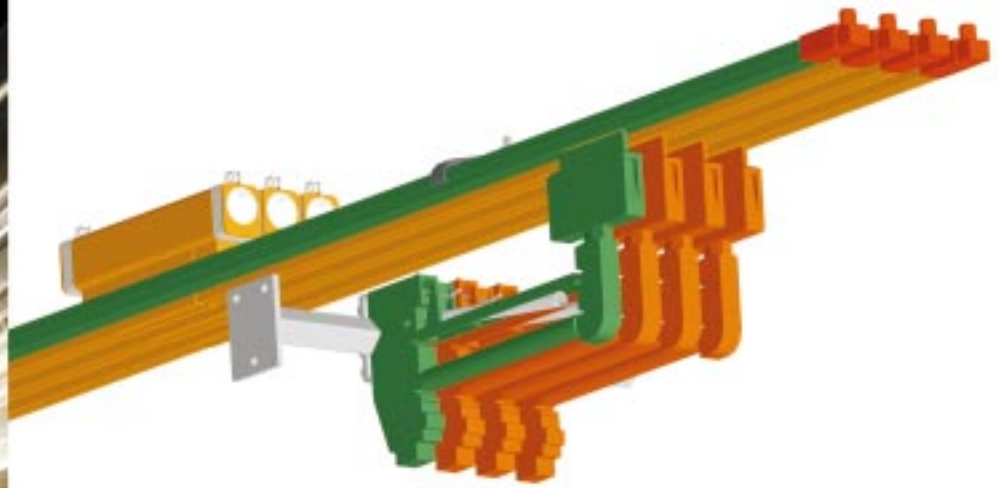


SAFELEC

INSULATED CONDUCTOR BARS
60 up to 800 Amp



- Finger safe up to IP2
- 60 to 800 Amp conductors in Standard or Medium Heat cover
- Cover shaped to shed water and dust
- Horizontal conductors with contact from underside
- Bar length: 4.5 metres
- Systems up to 150 metres without expansion sections
- Reduced and simple maintenance

CONDUCTIX
INSUL 8

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Certificate No. RM 21334

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SAFELEC INSULATED CONDUCTOR BARS

CONDUCTIX supplies electrical power feed systems for moving machinery. Easy to install and maintain, the **SAFELEC range** ensures a high level of reliability. It has been designed to meet the safety standards demanded in industry.

Advantages of conductor bars:

- Ability to feed several moving machines from the same conductor system
 - Suitable for high amperage
- Feed points can be placed at any location
 - Compactness
 - Long system length possible
- Suitable for both indoor and outdoor use

SAFELEC features:

- Easy installation, reduced and simple maintenance
 - Protection degree IP2, finger safe
 - Insulating covers shaped to shed water and dust
 - Standard PVC cover for normal temperatures
 - Medium Heat cover available for high ambient temperatures
- Expansion sections not required for runs less than 150 m
 - Max travel speed: 200 m/min

Range of application:

Workshop cranes, iron and steel industry, railways, leisure industry, mines etc.

SAFELEC complies with the following international standards:

NFC 20-010, NFC 63-010, NFC 32-070, VDE 0470, BSEN 60529, DIN 53438

TYPICAL APPLICATIONS



Conveyor System



Roller Coaster



Multipole Feed System



Water Treatment Works



Bridge Construction Crane

SELECTION OF CONDUCTORS

Volt drop calculation ΔU :

3-Phase AC $\Delta U = \sqrt{3} \times I \times D \times Z$

Single Phase AC $\Delta U = 2 \times I \times D \times Z$

Continuous current DC $\Delta U = 2 \times I \times D \times R$

$$\Delta U\% = (\Delta U \times 100) / U_n$$

Where:

ΔU : volt drop in Volts

$\Delta U\%$: volt drop in % of nominal voltage

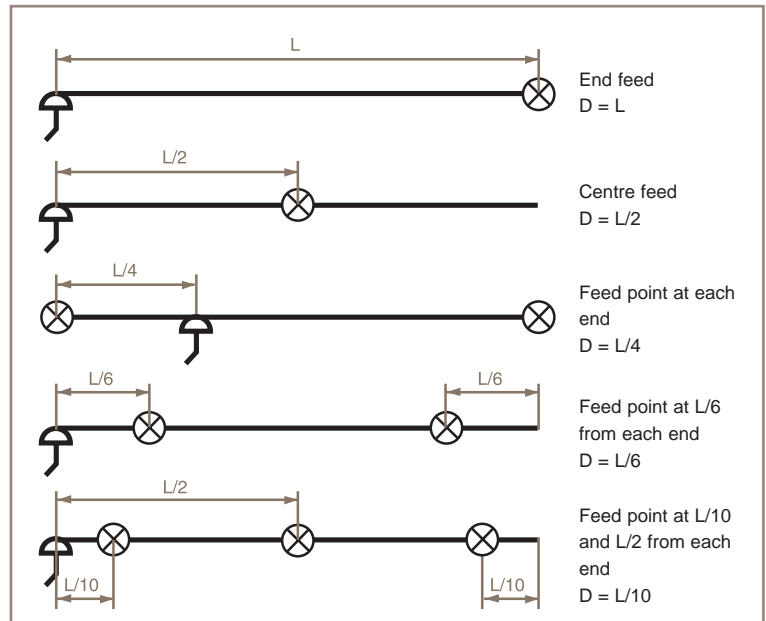
U_n : nominal supply voltage in Volts

I : maximum current in Amps

D : see opposite diagram

R : resistance in Ohms per metre

Z : impedance in Ohms per metre



TECHNICAL DATA

		FACTOR "K"					
		Duty	100%	80%	60%	40%	20%
Ta							
Standard cover	25°C		1.000	1.118	1.291	1.581	2.236
	35°C		0.905	1.011	1.168	1.430	2.023
	45°C		0.798	0.892	1.030	1.261	1.784
	55°C		0.674	0.754	0.870	1.066	1.508
Medium Heat cover	65°C		0.775	0.866	1.000	1.225	1.732
	75°C		0.707	0.791	0.913	1.118	1.581
	85°C		0.632	0.707	0.816	1.000	1.414

The maximum permissible continuous current rating of the conductor bar depends on the duty factor of the cranes and the maximum ambient temperature T_a . It can be established using the following formula:

$$I_{\text{allowable}} = \text{nominal current} \times K$$

SAFELEC 2 TECHNICAL DATA

CONDUCTOR BAR COVER	STANDARD	MEDIUM HEAT
Material	PVC	BAYBLEND
Dielectric strength	180 KV/cm	240 KV/cm
Surface resistivity	$10^{11}\Omega$	$>10^{14}\Omega$
Volume resistivity	$>10^{15}\Omega/\text{cm}$	$>10^{16}\Omega/\text{cm}$
Maximum operating temperature *	80°C	120°C
Minimum operating temperature	-20°C	-20°C
Flame-test	Self extinguishing	Self extinguishing
Oxygen index	54%	24%
Specific density	1.5 g/cm ³	1.15 g/cm ³

* See Table on Page 4

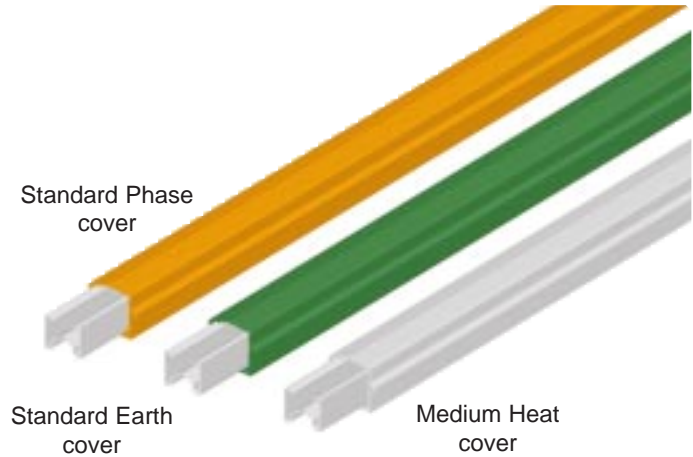
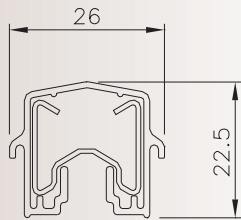
CONDUCTOR BAR	GALVANISED STEEL			COPPER			ALUMINIUM / STAINLESS STEEL		
	60A	100A	125A	160A	250A	400A	200A	315A	400A
Nominal current	60A	100A	125A	160A	250A	400A	200A	315A	400A
Cross sectional area	50mm ²	63mm ²	93mm ²	50mm ²	63mm ²	93mm ²	104mm ²	120mm ²	156mm ²
Maximum system voltage (AC) (contact Insul-8 for other voltages) (DC) (contact Insul-8 for other voltages)	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V
Resistance R (for DC) at 20°C (Ω/m)	0.003584	0.002867	0.001933	0.000342	0.000274	0.000184	0.000301	0.000261	0.000199
Impedance Z (for AC) at 20°C (Ω/m)	0.003604	0.002891	0.001968	0.000364	0.000300	0.000221	0.000325	0.000288	0.000234
Maximum allowable ambient temperature for 100% duty cycle	25°C	25°C	25°C	25°C	25°C	25°C	25°C	25°C	25°C
Bar length	4.5m	4.5m	4.5m	4.5m	4.5m	4.5m	4.5m	4.5m	4.5m
Support pitch	Standard	1500mm	1500mm	1500mm	1500mm	1500mm	1500mm	1500mm	1500mm
	Lateral	1125mm	1125mm	1125mm	1125mm	1125mm	1125mm	1125mm	1125mm
Minimum pitch centres	Standard	43mm	43mm	43mm	43mm	43mm	43mm	43mm	43mm
	Lateral	60mm	60mm	60mm	60mm	60mm	60mm	60mm	60mm
Expansion sections: not required for runs less than	150m	150m	150m	150m	150m	150m	150m	150m	150m
Minimum bending radius: (horizontal only)	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m

An accurate choice of conductors can be made when all the following information is known:

- The type of current: single or three phase AC ; continuous (DC)
- The maximum current power and duty cycle
- The allowable volt drop for the machines being supplied
- The ambient temperature
- Environment (dusty, coastal, humid, acidic etc.)

GALVANISED STEEL CONDUCTOR BARS

CURRENT RATING	60A	100A	125A
Standard Phase cover (orange)	310001	310101	310201
Standard Earth cover (green)	310002	310102	310202
Medium Heat cover Phase Earth (grey)	310003 310056	310103 310156	310203 310256
Weight (Kg)	2.34	2.76	3.76



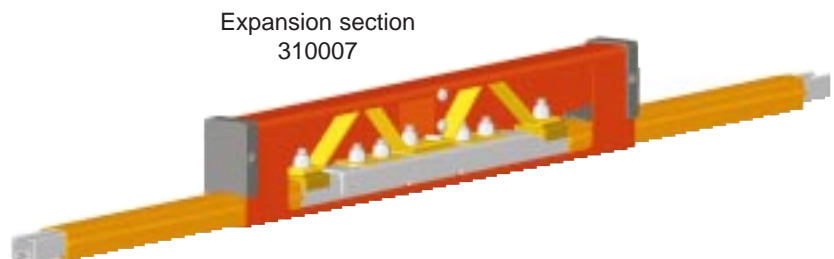
EXPANSION SECTIONS

CURRENT RATING	60A	100A	125A
Standard Phase cover (orange)	310007	310107	310207
Standard Earth cover (green)	310008	310108	310208
Medium Heat cover Phase Earth (grey)	310009 310058	310109 310158	310209 310258
Weight (Kg)	3.06	3.32	4.20

Expansion sections are required on all systems over 150m long.

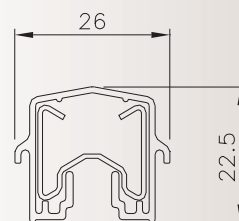
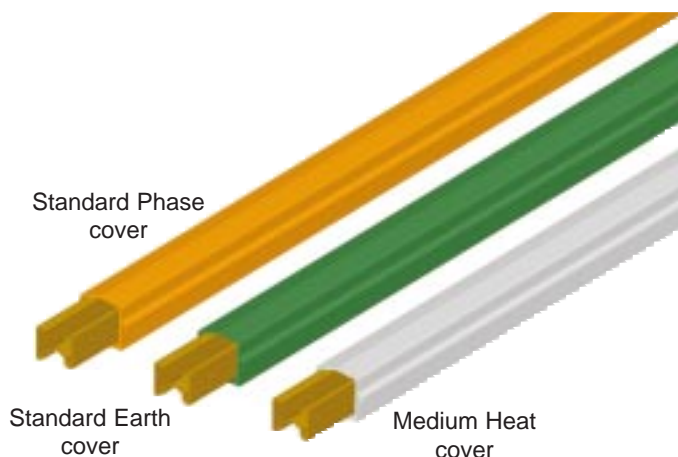
The maximum gap of the expansion section is 50mm.

The expansion section is 4.5m long and is installed in place of one length of conductor bar.



COPPER CONDUCTOR BARS

CURRENT RATING	160A	250A	400A
Standard Phase cover (orange)	310301	310401	310501
Standard Earth cover (green)	310302	310402	310502
Medium Heat cover Phase (grey) Earth	310303 310356	310403 310456	310503 310556
Weight (Kg)	2.76	3.04	4.40



EXPANSION SECTIONS

CURRENT RATING	160A	250A	400A
Standard Phase cover (orange)	310307	310407	310507
Standard Earth cover (green)	310308	310408	310508
Medium Heat cover Phase (grey) Earth	310309 310358	310409 310458	310509 310558
Weight (Kg)	3.28	3.86	4.74

Expansion section 310307



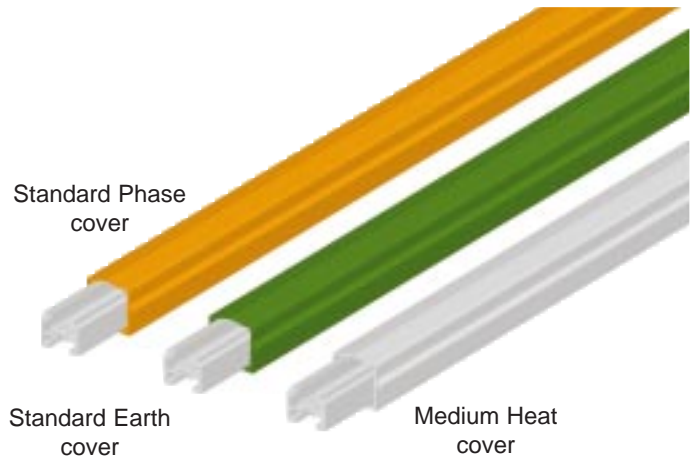
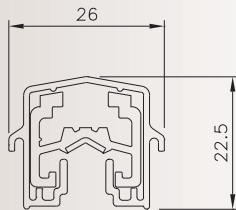
Expansion sections are required on all systems over 150m long.

The maximum gap of the expansion section is 50mm.

The expansion section is 4.5m long and is installed in place of one length of conductor bar.

ALUMINIUM / STAINLESS STEEL CONDUCTOR BARS

CURRENT RATING	200A	315A	400A
Standard Phase cover (orange)	310601	310701	399101
Standard Earth cover (green)	310602	310702	399102
Medium Heat cover Phase Earth (grey)	310603 310656	310703 310756	399103 399156
Weight (Kg)	2.12	2.18	2.50



EXPANSION SECTIONS

CURRENT RATING	200A	315A	400A
Standard Phase cover (orange)	310607	310707	399107
Standard Earth cover (green)	310608	310708	399108
Medium Heat cover Phase Earth (grey)	310609 310658	310709 310758	399109 399158
Weight (Kg)	3.23	3.43	3.80

Expansion sections are required on all systems over 150m long.

The maximum gap of the expansion section is 50mm.

The expansion section is 4.5m long and is installed in place of one length of conductor bar.

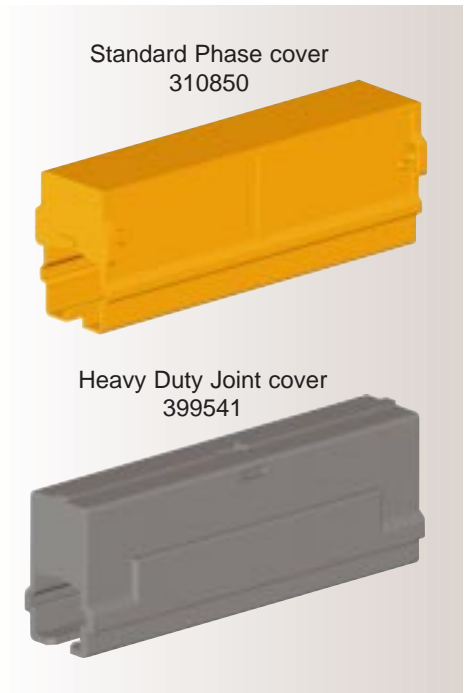
Expansion section 310607



JOINTS

JOINT		Weight (Kg)
Steel	310872	0.049
Copper	310873	0.044
Aluminium	310874	0.032
Heavy Duty Copper	399549	0.2

JOINT COVER		
Standard Phase cover (orange)		310850
Standard Earth cover (green)		310851
Heavy Duty cover		399541
Medium Heat cover	black green	310855
		310856
Weight (Kg)		0.027

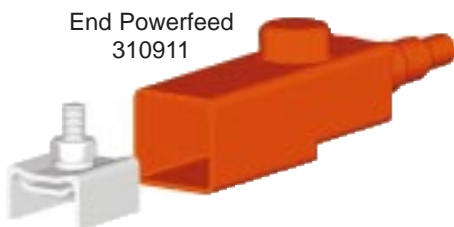


JOINTING COMPOUND	Weight (Kg)
310932	0.225

JOINTING COMPOUND

Jointing compound should be applied to the contact surfaces of the joint and bar at every joint on copper and aluminium systems. One tube is sufficient for over 300 connections.

POWERFEEDS: END POWERFEED



UP TO 100A	Weight (Kg)
310911	0.037

Powerfeed installed in place of an end cover.

Maximum cable connection size: 16mm²

POWERFEEDS: JOINT POWERFEED

CURRENT RATING	UP TO 60A	UP TO 250A	UP TO 400A
Standard cover (orange)	310034	310910	310912
Medium Heat cover (red)	310066	310913	310915
Weight (Kg)	0.028	0.25	0.30

Powerfeed for connection of one or two flexible cables.

310910 has single cable connection.

310912 has double cable connection.

Powerfeed is usually installed in place of a joint.

Maximum cable connection size:

60A – 10mm²

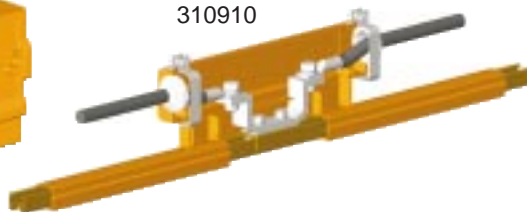
250A – 95mm²

400A – 150mm²

60A Joint Powerfeed 310034



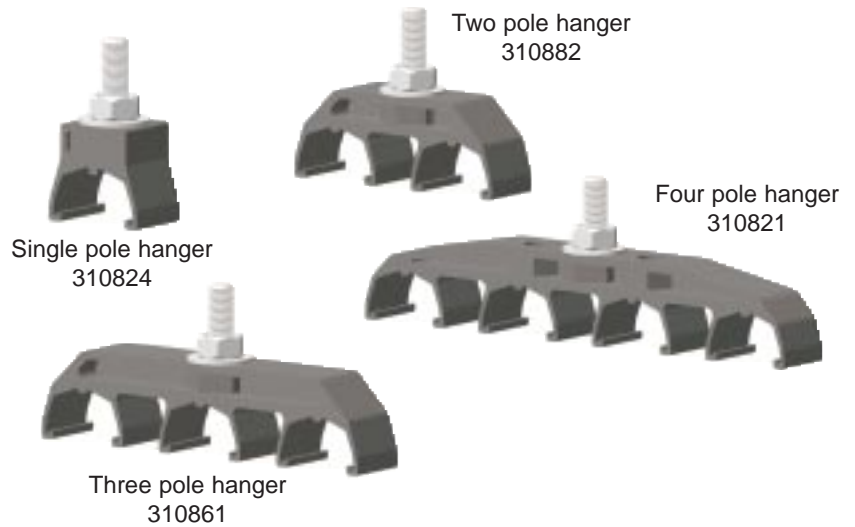
250A Joint Powerfeed 310910



HANGER CLAMPS: STANDARD MOUNT

	STANDARD (BLACK)	POLYCARBONATE (RED)	WEIGHT (Kg)
Single pole	310824	310829	0.03
Single pole with stainless steel fasteners	310919		0.03
Two pole	310882	310899	0.04
Three pole	310861	310871	0.05
Four pole	310821	310857	0.057

Standard hangers are acetyl.
Maximum support spacing is 1.5m.

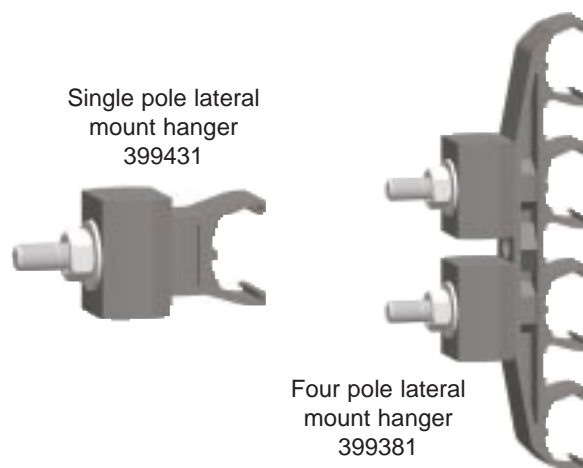


HANGER CLAMPS: LATERAL MOUNT

	STANDARD (BLACK)	POLYCARBONATE (RED)	WEIGHT (Kg)
Single pole	399431	399434	0.05
Two pole	399432	399435	0.06
Three pole	399433	399436	0.07
Four pole	399381	399382	0.12
Four pole (without spacer)	310835	310859	0.08

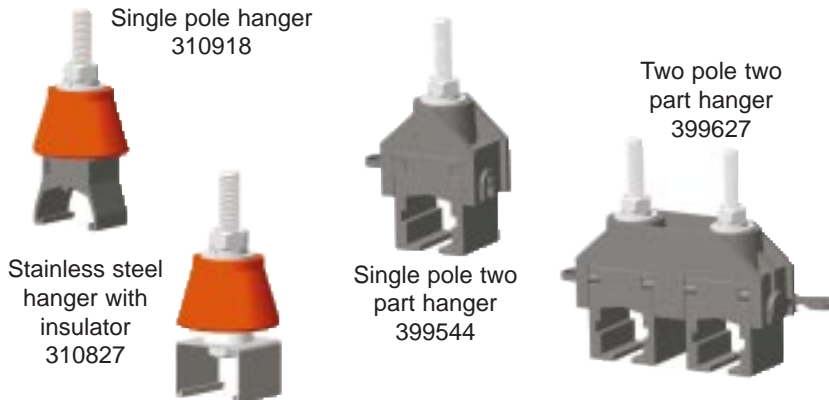
Lateral mount hangers are supplied with 20mm spacers to provide clearance for joint covers.

Maximum support spacing is 1.125m.



HANGER CLAMPS: WITH INSULATOR

			WEIGHT (Kg)
Single pole	(Black)	310918	0.10
Single pole	(Red)	310834	0.10
Single pole	Stainless steel	310827	0.106
Single pole	Two part	399544	0.08
Two pole	Two part	399627	0.174



In particularly dusty or humid environments, hangers with insulator should be used.

ANCHOR CLAMPS

		WEIGHT (Kg)
Standard	310832	0.06
With stainless steel fasteners	399667	0.06
With insulator	310969	0.12
Lateral mount	399383	0.10
Without top bolt (two required per anchor point)	310831	0.05

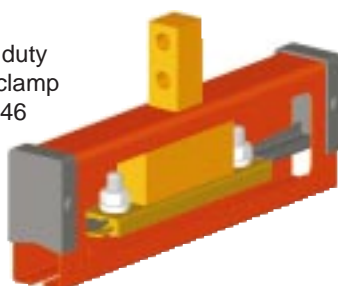


Anchor points are usually situated in the middle of a conductor system.

Additional anchor points are required for systems with expansion sections.

		WEIGHT (Kg)
Heavy duty anchor	399546	0.48

Heavy duty anchor clamp 399546



END CAPS

		WEIGHT (Kg)
Steel / copper bar	310892	0.04
Aluminium bar	310893	0.02
Transfer cap	310951	0.10

Transfer caps are suitable for air gaps up to 10mm.

Vertical tolerance ± 5 mm

Horizontal tolerance ± 2 mm

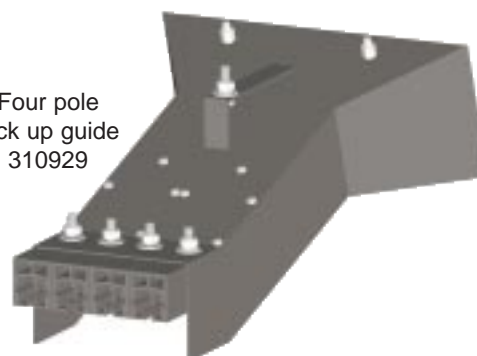


PICK UP GUIDES

		WEIGHT (Kg)
Single pole	310920	1.27
Two pole	399532	1.72
Three pole	399502	2.16
Four pole	310929	2.54

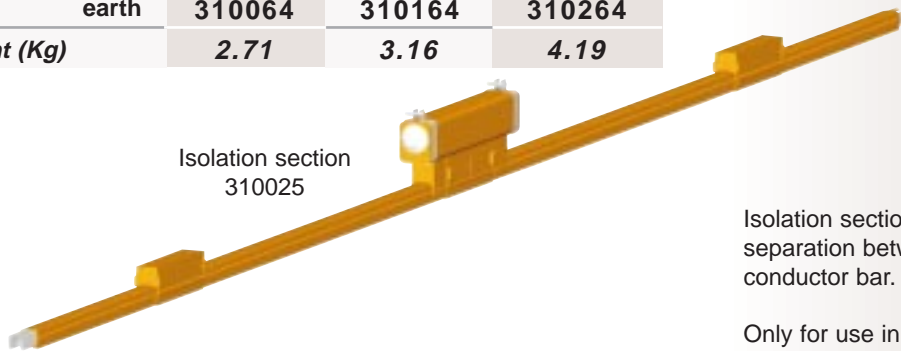
Special collectors are required for systems where pick up guides are fitted.

Four pole pick up guide 310929



GALVANISED STEEL BAR

CURRENT RATING	60A	100A	125A
Standard Phase cover (orange)	310025	310125	310225
Standard Earth cover (green)	310026	310126	310226
Medium Heat cover phase (grey) earth	310027 310064	310127 310164	310227 310264
Weight (Kg)	2.71	3.16	4.19



Isolation section
310025

Isolation sections provide electrical separation between adjacent sections of conductor bar.

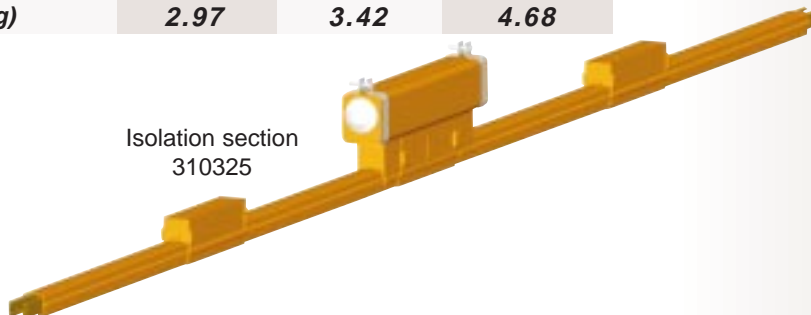
Only for use in dry, clean conditions.

The Isolation section is 4.5m long and is installed in place of one length of conductor bar.

It is recommended that Isolation sections are not fitted in earth conductors.

COPPER BAR

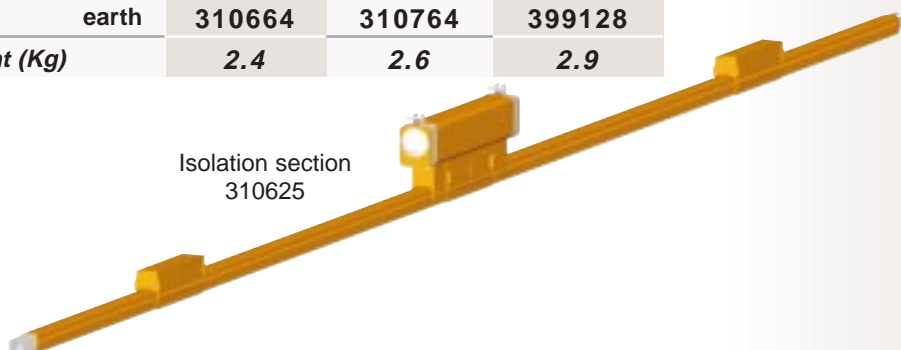
CURRENT RATING	160A	250A	400A
Standard Phase cover (orange)	310325	310425	310525
Standard Earth cover (green)	310326	310426	310526
Medium Heat cover phase (grey) earth	310327 310364	310427 310464	310527 310564
Weight (Kg)	2.97	3.42	4.68



Isolation section
310325

ALUMINIUM / STAINLESS STEEL BAR

CURRENT RATING	200A	315A	400A
Standard Phase cover (orange)	310625	310725	399125
Standard Earth cover (green)	310626	310726	399126
Medium Heat cover phase (grey) earth	310627 310664	310727 310764	399127 399128
Weight (Kg)	2.4	2.6	2.9



Isolation section
310625

COLLECTORS

CURRENT RATING	50A	100A	250A
Phase	399360	310990	34956
Phase with stainless steel fastener		399675	
Earth - without deflector	399380	399355	
Earth - right hand	399373	399340	
Earth - left hand	399372	399352	
Weight (Kg)	0.38	0.8	2.00

50A and 100A collectors are supplied without cable.

Stranded cable terminal clamps are included.

250A collectors are supplied with 2 x 1m 35mm² cable.

250A collectors only suitable for use on 400A bar



COLLECTOR SHOE + HOLDER

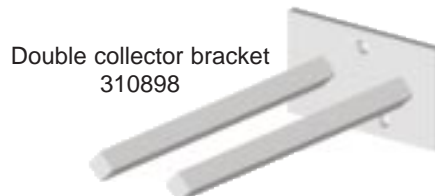
CURRENT RATING	50A + 100A Phase - red	50A + 100A Earth - green	250A
Code	310993	399357	35289
Weight (Kg)	0.06	0.06	0.28

The copper graphite shoe ensures electrical continuity, a smooth contact with the conductor bar and a good resistance to wear.



COLLECTOR BRACKET

	13mm SQUARE	Weight (Kg)	25mm SQUARE	Weight (Kg)
Single	310994	0.36	310991	0.88
Double	310898	0.74	310992	1.84



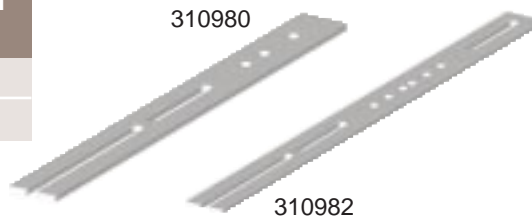
13mm square, 200mm long for use with 50A collector.



25mm square, 400mm long for use with 100A and 250A collectors.

BRACKETS: SINGLE SIDED BRACKET

	WEIGHT (Kg)
310980	0.66
310982	0.86



310980 - to suit beam flange 80-155mm.

310982 - to suit beam flange 155-305mm.

BRACKETS: DOUBLE SIDED BRACKET

	WEIGHT (Kg)
310981	0.84
310983	1.08



310981 - to suit beam flange 80-185mm.

310983 - to suit beam flange 185-305mm.

BRACKETS: WEB BRACKET

	WEIGHT (Kg)
310984	0.62



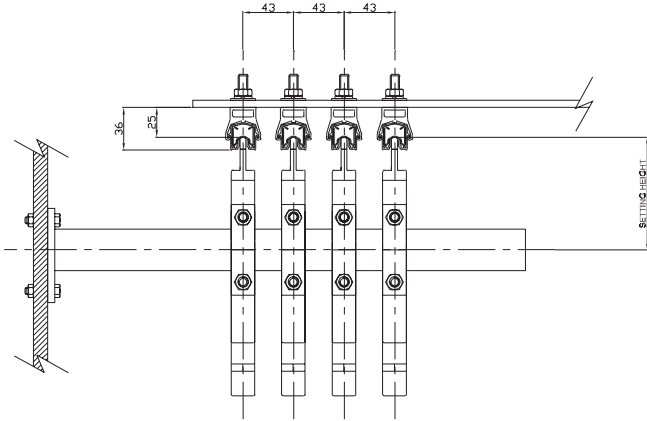
BRACKETS: GIRDER CLAMP

	WEIGHT (Kg)
310985	0.08



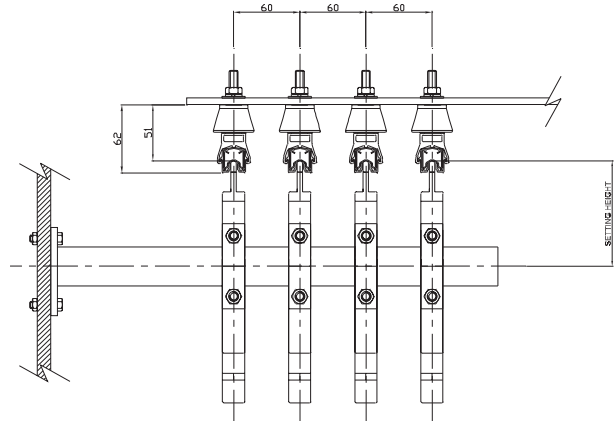
SYSTEM DIMENSIONS

STANDARD HANGER CLAMPS



SETTING HEIGHT - SEE RELEVANT COLLECTOR DRAWING FOR DIMENSION

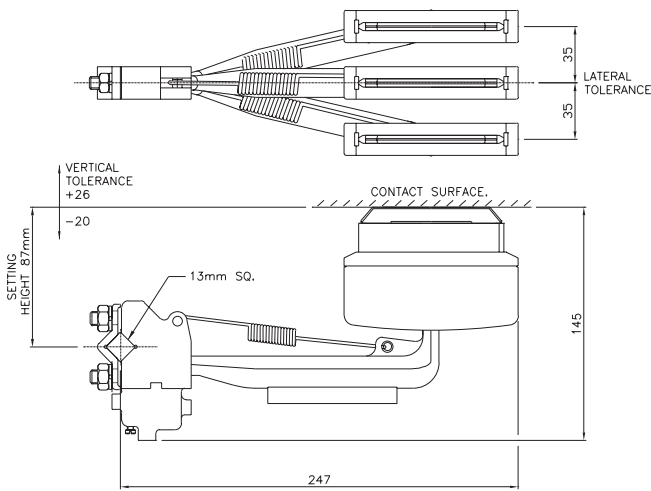
HANGER CLAMPS WITH INSULATOR



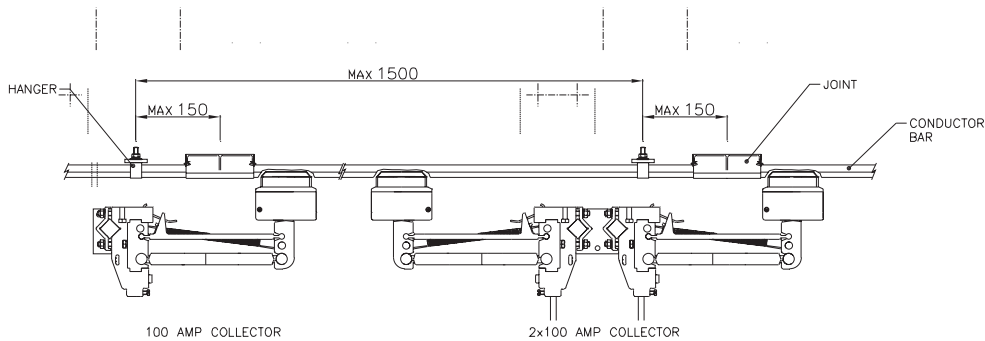
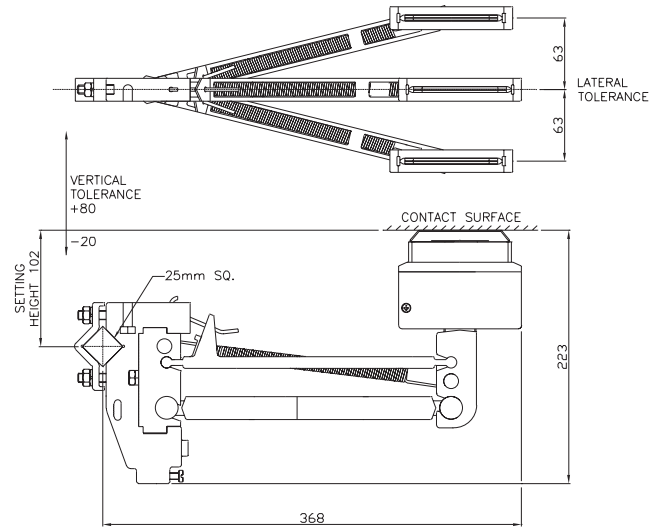
SETTING HEIGHT - SEE RELEVANT COLLECTOR DRAWING FOR DIMENSION

COLLECTOR SETTING DETAILS

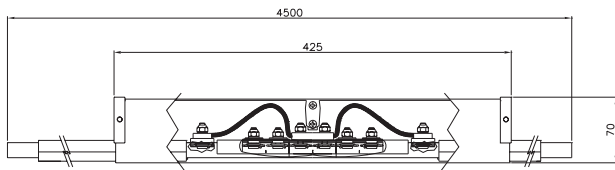
50A COLLECTOR (399360)



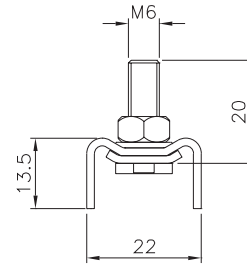
100A COLLECTOR (310990)



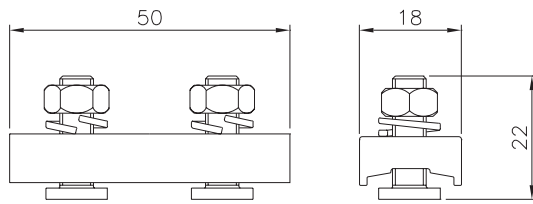
COMPONENT DIMENSIONS



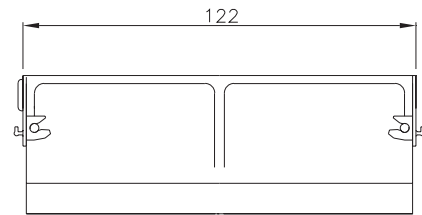
60A EXPANSION SECTION - Standard Phase Cover (310007)



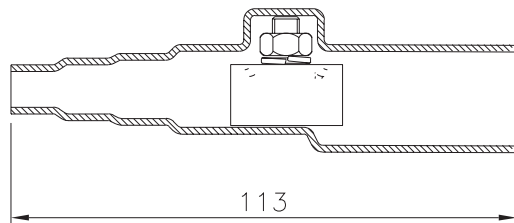
STEEL JOINT (310872)



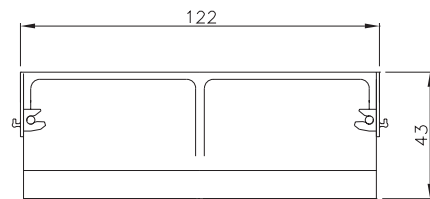
ALUMINIUM JOINT (310874)



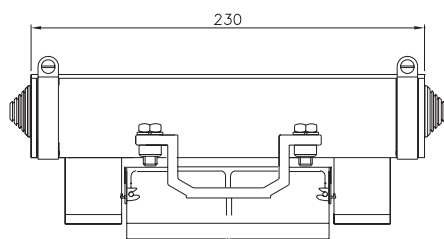
STANDARD PHASE COVER (310850)



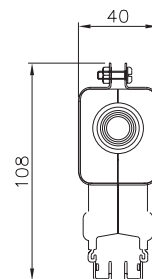
END POWERFEED (310911)



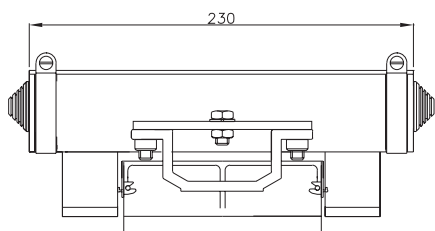
60A JOINT POWERFEED (310034)



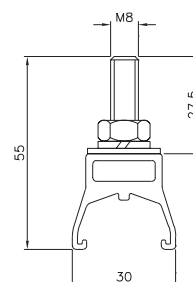
250A JOINT POWERFEED (310910)



250A JOINT POWERFEED Standard Mount (310910)

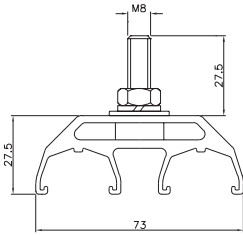


400A JOINT POWERFEED (310912)

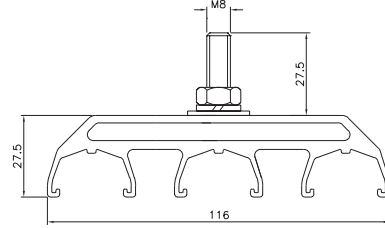


SINGLE POLE HANGER CLAMP Standard Mount (310824)

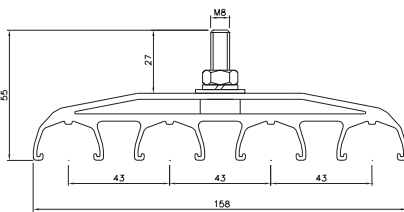
COMPONENT DIMENSIONS (Continued)



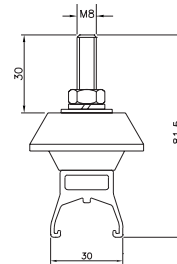
**TWO POLE
HANGER CLAMP
Standard Mount
(310882)**



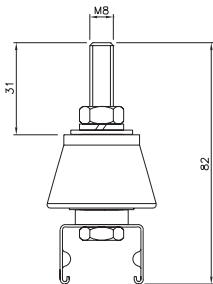
**THREE POLE
HANGER CLAMP
Standard Mount
(310861)**



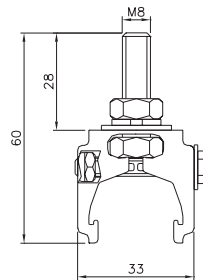
**FOUR POLE
HANGER CLAMP
Standard Mount
(310821)**



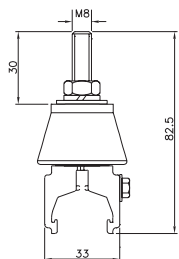
**SINGLE POLE
HANGER CLAMP
with Insulator
(310918)**



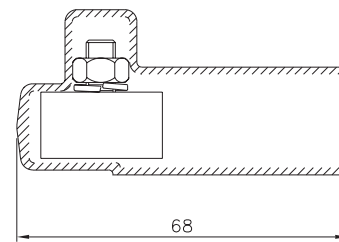
**STAINLESS STEEL
HANGER CLAMP
with Insulator
(310827)**



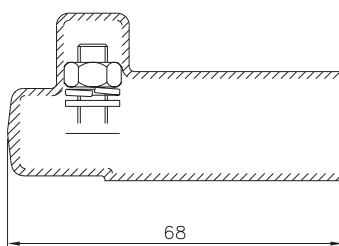
**ANCHOR CLAMP
(310832)**



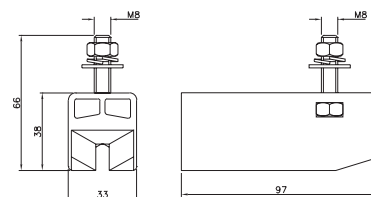
**ANCHOR CLAMP
With Insulator
(310969)**



**END CAP
for Steel / Copper Bar
(310892)**

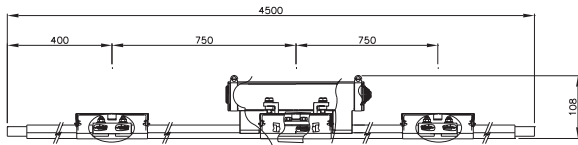


**END CAP
for Aluminium Bar
(310893)**

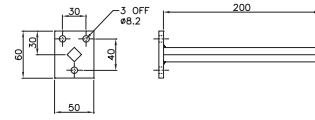


**TRANSFER END CAP
(310951)**

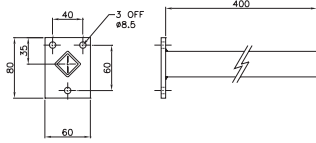
COMPONENT DIMENSIONS (Continued)



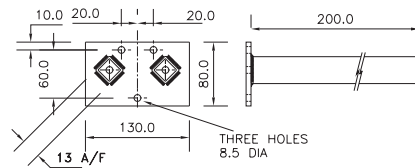
**ISOLATION SECTION
Standard Phase Cover
(310025)**



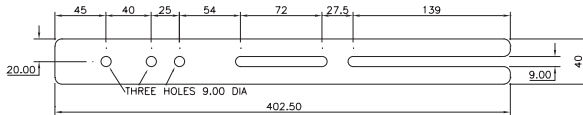
**SINGLE COLLECTOR BRACKET
13mm square
(310994)**



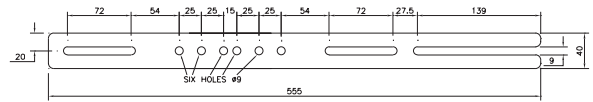
**SINGLE COLLECTOR BRACKET
25mm square
(310991)**



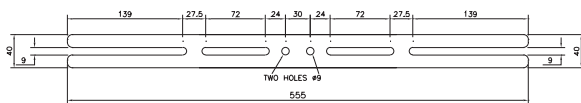
**DOUBLE COLLECTOR BRACKET
13mm square
(310898)**



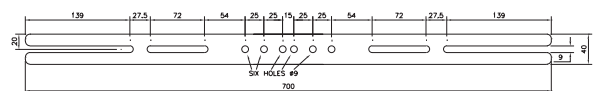
**SINGLE SIDED BRACKET
(310980)**



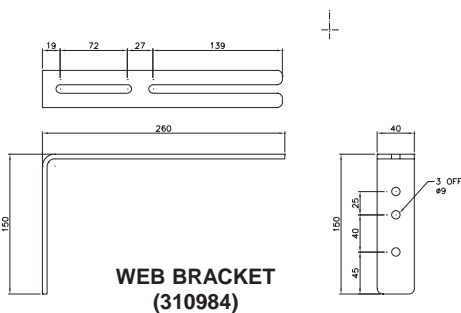
**SINGLE SIDED BRACKET
(310982)**



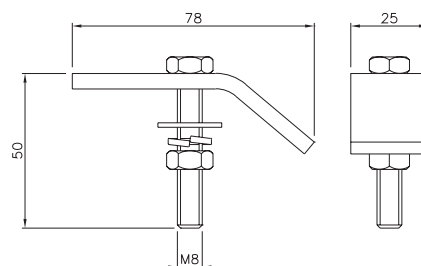
**DOUBLE SIDED BRACKET
(310981)**



**DOUBLE SIDED BRACKET
(310983)**



**WEB BRACKET
(310984)**



**GIRDER CLAMP
(310985)**

SAFELEC 3 TECHNICAL DATA

CONDUCTOR BAR COVER	STANDARD	MEDIUM HEAT
Material	PVC	BAYBLEND
Dielectric strength	180 KV/cm	240 KV/cm
Surface resistivity	$10^{11}\Omega$	$>10^{14}\Omega$
Volume resistivity	$>10^{15}\Omega/cm$	$>10^{16}\Omega/cm$
Maximum operating temperature *	80°C	120°C
Minimum operating temperature	-20°C	-20°C
Flame-test	Self extinguishing	Self extinguishing
Oxygen index	54%	24%
Specific density	1.5 g/cm ³	1.15 g/cm ³

* See Table on Page 4

CONDUCTOR BAR	COPPER		ALUMINIUM / STAINLESS STEEL
Nominal current	500A	800A	630A
Cross sectional area	115mm ²	171mm ²	277mm ²
Maximum system voltage (AC) (contact Insul-8 for other voltages) (DC) (contact Insul-8 for other voltages)	1000V 1000V	1000V 1000V	1000V 1000V
Resistance R (for DC) at 20°C (Ω/m)	0.000149	0.000100	0.000113
Impedance Z (for AC) at 20°C (Ω/m)	0.000189	0.000154	0.000162
Maximum allowable ambient temperature for 100% duty cycle	25°C	25°C	25°C
Bar length	4.5m	4.5m	4.5m
Support pitch Standard	1500mm	1500mm	1500mm
Minimum pitch centres Standard	60mm	60mm	60mm
Expansion sections: not required for runs less than	150m	150m	150m
Minimum bending radius: (horizontal only)	1.5m	1.5m	1.5m

Railway
Shore
Supply

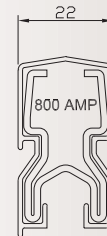
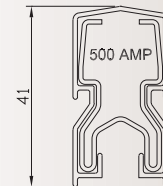
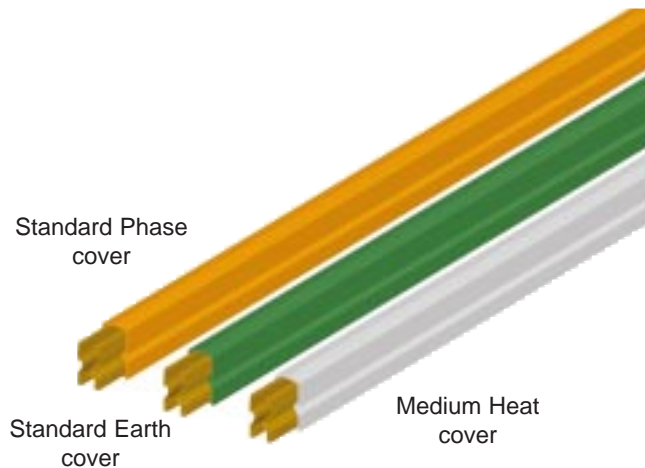


Electric Mining Vehicles



COPPER CONDUCTOR BARS

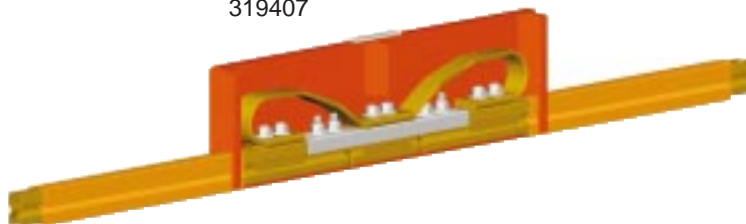
CURRENT RATING	500A	800A
Standard Phase cover (orange)	319201	319401
Standard Earth cover (green)	319202	319402
Medium Heat cover Phase (grey) Earth	319203	319403
	319204	319404
Weight (Kg)	5.40	7.65



EXPANSION SECTIONS

CURRENT RATING	500A	800A
Standard Phase cover (orange)	319207	319407
Standard Earth cover (green)	319208	319408
Medium Heat cover Phase (grey) Earth	319209	319409
	319210	319410
Weight (Kg)	7.40	10.15

Expansion section
319407



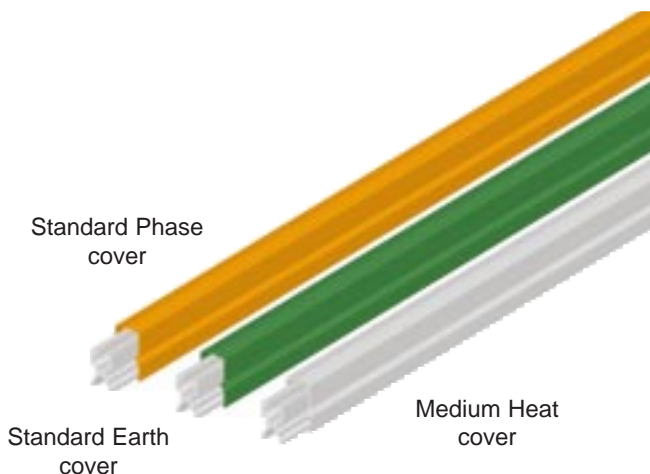
Expansion sections are required on all systems over 150m long.

The maximum gap of the expansion section is 50mm.

The expansion section is 4.5m long and is installed in place of one length of conductor bar.

ALUMINIUM / STAINLESS STEEL CONDUCTOR BARS

CURRENT RATING	630A
Standard Phase cover (orange)	319301
Standard Earth cover (green)	319302
Medium Heat cover Phase (grey)	319303
Earth	319304
Weight (Kg)	4.23



EXPANSION SECTIONS

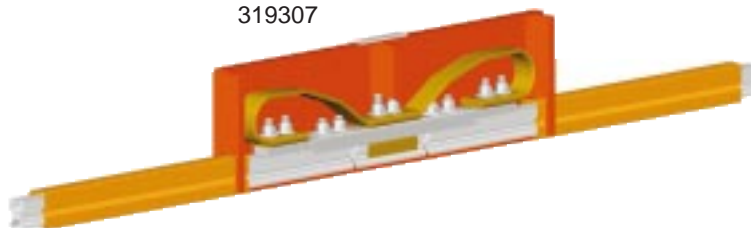
CURRENT RATING	630A
Standard Phase cover (orange)	319307
Standard Earth cover (green)	319308
Medium Heat cover Phase (grey)	319309
Earth	319310
Weight (Kg)	6.50

Expansion sections are required on all systems over 150m long.

The maximum gap of the expansion section is 50mm.

The expansion section is 4.5m long and is installed in place of one length of conductor bar.

Expansion section 319307



JOINTS

JOINT		Weight (Kg)
Copper (up to 800A)	319874	0.25
Aluminium	319873	0.08

JOINT COVER		
Standard Phase cover (orange)		319850
Standard Earth cover (green)		319851
Medium Heat cover	grey	319472 319473
Weight (Kg)		0.04

800A Copper Joint
319874



Aluminium Joint
319873



Standard Phase cover
319850



JOINTING COMPOUND	Weight (Kg)
310932	0.225

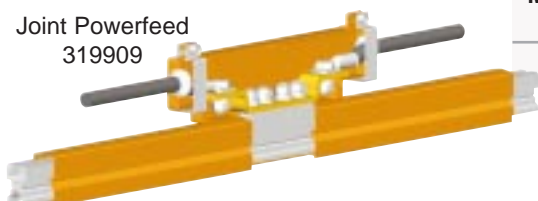
JOINTING COMPOUND

Jointing compound should be applied to the contact surfaces of the joint and bar at every joint on copper and aluminium systems. One tube is sufficient for over 300 connections.

POWERFEEDS: JOINT POWERFEED

POWERFEED	
Standard cover (orange)	319909
Medium Heat cover (red)	319870
Weight (Kg)	0.30

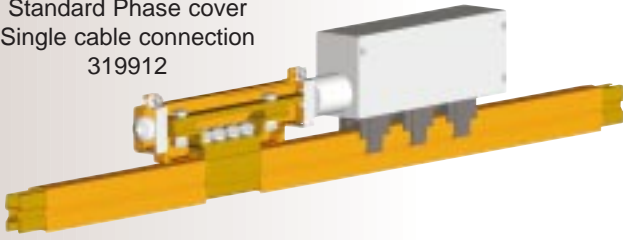
Joint Powerfeed
319909



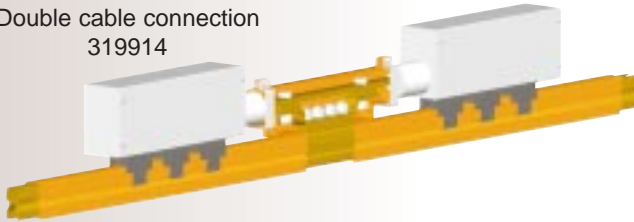
Powerfeed has cable connection for maximum 2 x 50mm² cables.

POWERFEED SECTIONS

Standard Phase cover
Single cable connection
319912



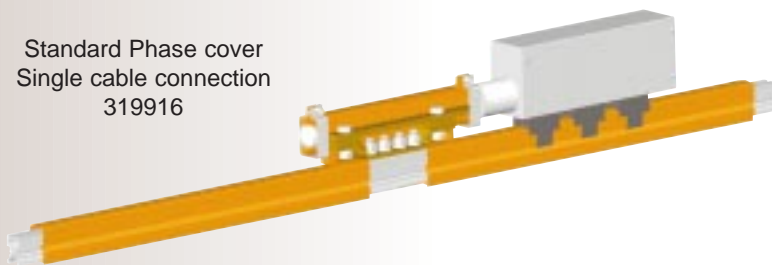
Standard Phase cover
Double cable connection
319914



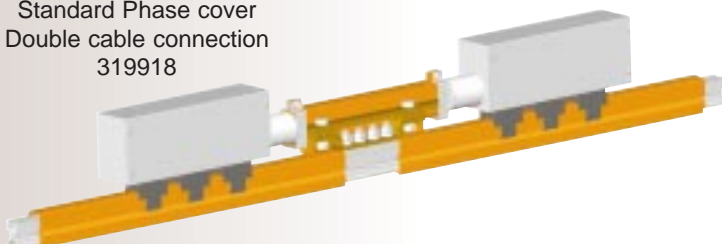
Powerfeed sections are 4.5m long and should be fitted in place of a length of conductor bar.

Suitable for connection of 1 or 2 cables up to 50mm²

Standard Phase cover
Single cable connection
319916



Standard Phase cover
Double cable connection
319918



COPPER BAR

SINGLE CABLE CONNECTION	500A
Standard Phase cover (orange)	319912
Standard Earth cover (green)	319913
Medium Heat Phase cover (grey)	319926
Medium Heat Earth cover (grey)	319927
Weight (Kg)	6.56

DOUBLE CABLE CONNECTION	500A	800A
Standard Phase cover (orange)	319914	319910
Standard Earth cover (green)	319915	319911
Medium Heat Phase cover (grey)	319928	319468
Medium Heat Earth cover (grey)	319929	319469
Weight (Kg)	8.0	10.25

ALUMINIUM / STAINLESS STEEL BAR

SINGLE CABLE CONNECTION	630A
Standard Phase cover (orange)	319916
Standard Earth cover (green)	319917
Medium Heat Phase cover (grey)	319930
Medium Heat Earth cover (grey)	319931
Weight (Kg)	5.39

DOUBLE CABLE CONNECTION	630A
Standard Phase cover (orange)	319918
Standard Earth cover (green)	319919
Medium Heat Phase cover (grey)	319932
Medium Heat Earth cover (grey)	319934
Weight (Kg)	6.83

HANGER CLAMPS: STANDARD MOUNT

	STANDARD (BLACK)	POLYCARBONATE (RED)	STAINLESS STEEL WITH ZINC PLATED HARDWARE
Single pole	319821	319829	319826
Weight	0.027	0.030	0.070



Single pole hanger
319821



Stainless steel hanger
319826

Standard hangers are acetyl.

Maximum support spacing is 1.5m.

HANGER CLAMPS: WITH INSULATOR

			WEIGHT (Kg)
Single pole	(Black)	319834	0.10
Single pole	(Red)	319839	0.10
Single pole	Stainless steel	319827	0.106
Single pole	Two part	319833	0.08
Two pole	Two part	319838	0.174



Stainless steel hanger with insulator
319827



Single pole two part hanger
319833



Two pole two part hanger
319838

In particularly dusty or humid environments, hangers with insulator should be used.

ANCHOR CLAMPS

		WEIGHT (Kg)
Standard	319832	0.06
With insulator	319964	0.12
Without top bolt (two required per anchor point)	319963	0.05



Anchor clamp
319832



Anchor clamp with insulator
319964



Anchor clamp without top bolt
319963

Anchor points are usually situated in the middle of a conductor system.

Additional anchor points are required for systems with expansion sections.

END CAPS

		WEIGHT (Kg)
End cap	319892	0.04

End cap
319892

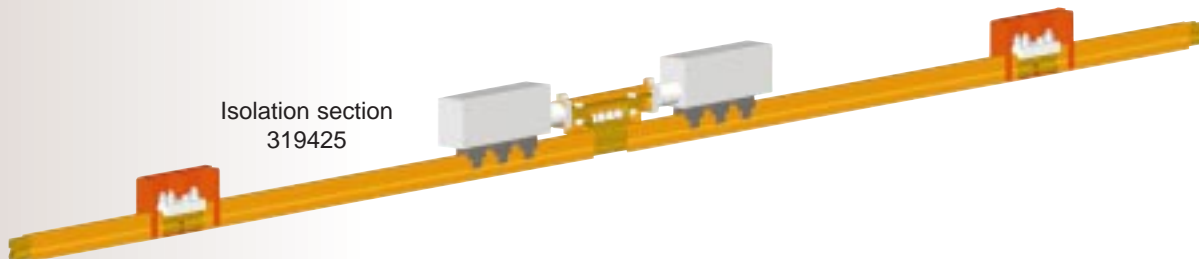


ISOLATION SECTIONS

COPPER BAR

CURRENT RATING	500A	800A
Standard Phase cover (orange)	319012	319425
Standard Earth cover (green)	319013	319426
Medium Heat cover phase earth	319015	319431
	319016	319432
Weight (Kg)	2.97	3.42

Isolation section
319425



Isolation sections provide electrical separation between adjacent sections of conductor bar.

Only for use in dry, clean conditions.

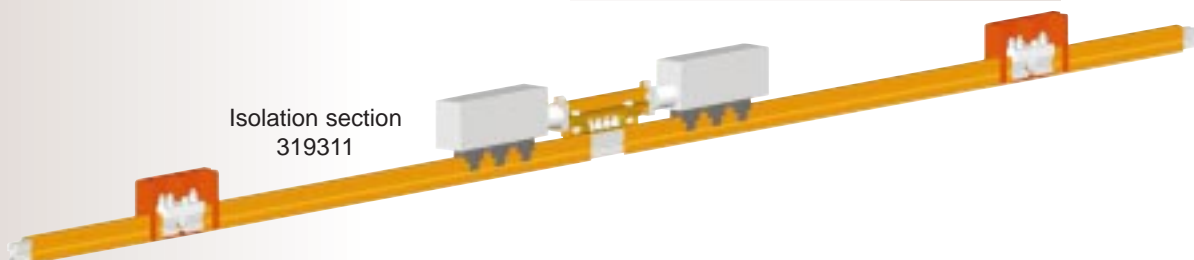
The Isolation section is 4.5m long and is installed in place of one length of conductor bar.

It is recommended that Isolation sections are not fitted in earth conductors.

ALUMINIUM / STAINLESS STEEL BAR

CURRENT RATING	630A
Standard Phase cover (orange)	319311
Standard Earth cover (green)	319312
Medium Heat cover phase earth	319313
	319314
Weight (Kg)	2.4

Isolation section
319311



COLLECTORS

CURRENT RATING	100A	250A
Phase	310990	34956
Earth - without deflector	399355	
Earth - right hand	399340	
Earth - left hand	399352	
Weight (Kg)	0.8	2.00



100A collectors are supplied without cable.

Stranded cable terminal clamps are included.

250A collectors are supplied with 2 x 1m 35mm² cable.

COLLECTOR SHOE + HOLDER

CURRENT RATING	50A + 100A Phase - red	50A + 100A Earth - green	250A
Code	310993	399357	35289
Weight (Kg)	0.06	0.06	0.28



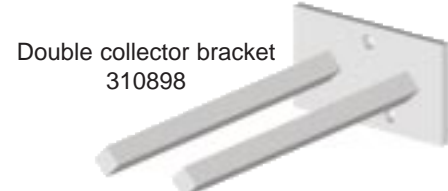
The copper graphite shoe ensures electrical continuity, a smooth contact with the conductor bar and a good resistance to wear.

COLLECTOR BRACKET

13mm square, 200mm long for use with 50A collector.

25mm square, 400mm long for use with 100A and 250A collectors.

	13mm SQUARE	Weight (Kg)	25mm SQUARE	Weight (Kg)
Single	310994	0.36	310991	0.88
Double	310898	0.74	310992	1.84

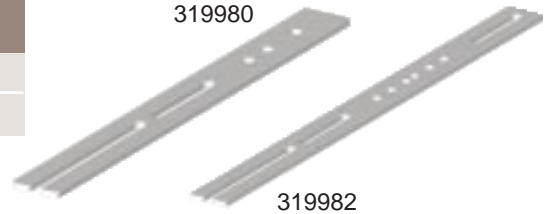


BRACKETS: SINGLE SIDED BRACKET

319980 - to suit beam flange 80-155mm.

319982 - to suit beam flange 155-305mm.

	WEIGHT (Kg)
319980	0.66
319982	0.86



BRACKETS: DOUBLE SIDED BRACKET

319981 - to suit beam flange 80-185mm.

319983 - to suit beam flange 185-305mm.

	WEIGHT (Kg)
319981	0.84
319983	1.08



BRACKETS: WEB BRACKET

	WEIGHT (Kg)
319984	0.62



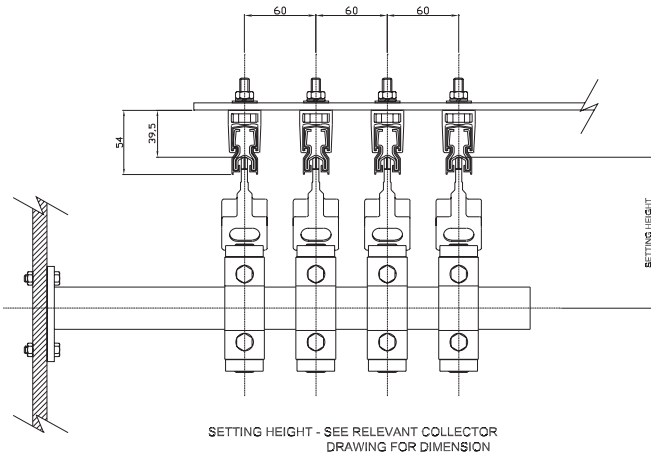
BRACKETS: GIRDER CLAMP

	WEIGHT (Kg)
310985	0.08



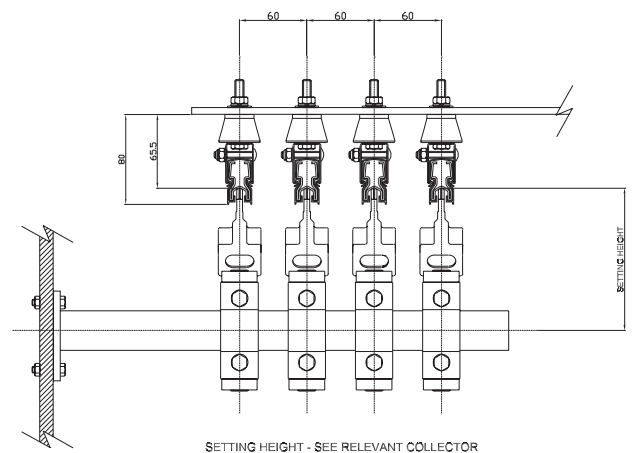
SYSTEM DIMENSIONS

STANDARD HANGER CLAMPS



SETTING HEIGHT - SEE RELEVANT COLLECTOR DRAWING FOR DIMENSION

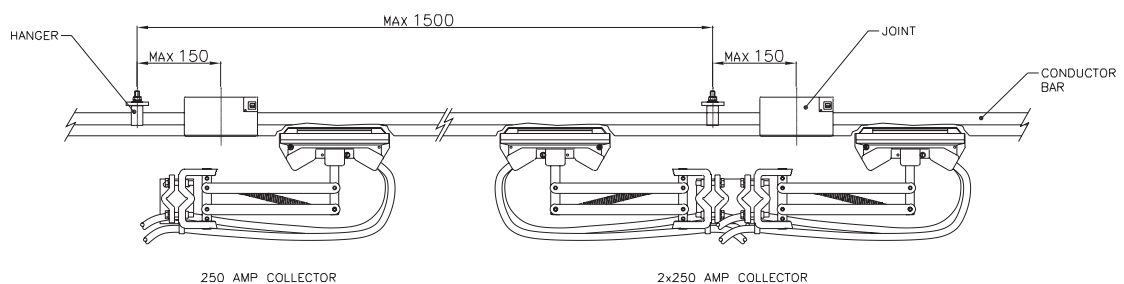
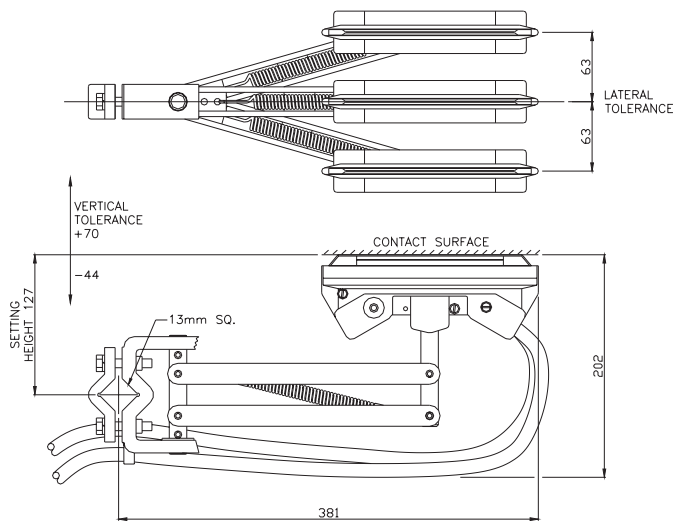
HANGER CLAMPS WITH INSULATOR



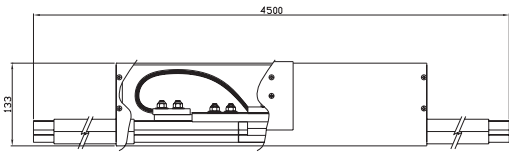
SETTING HEIGHT - SEE RELEVANT COLLECTOR DRAWING FOR DIMENSION

COLLECTOR SETTING DETAILS

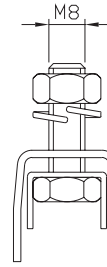
250A COLLECTOR (34956)



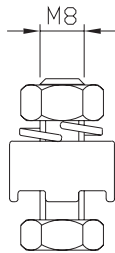
COMPONENT DIMENSIONS



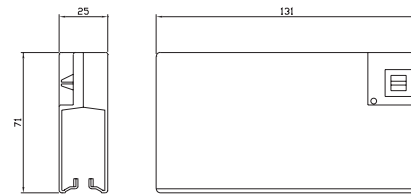
500A EXPANSION SECTION - Standard Phase Cover
(319207)



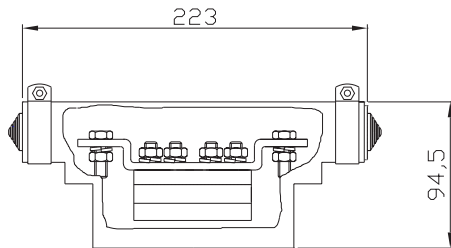
COPPER JOINT
(up to 800A)
(319874)



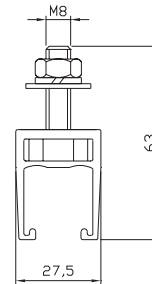
ALUMINIUM JOINT
(319873)



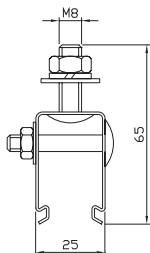
STANDARD PHASE COVER
(319850)



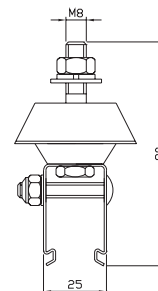
JOINT POWERFEED
(319909)



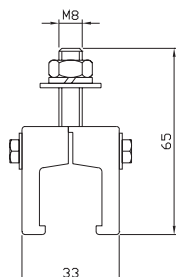
SINGLE POLE HANGER
(319821)



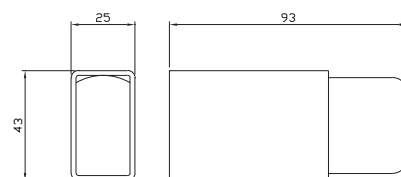
STAINLESS STEEL HANGER
(319826)



STAINLESS STEEL HANGER CLAMP with Insulator
(319827)



STANDARD ANCHOR CLAMP
(319832)



END CAP
(319892)

V BAR TECHNICAL DATA

For use in applications where regular disconnection and reconnection of current collectors is required: for example in mining and quarrying.

The specially designed profile of the insulating cover guides the collector shoe onto the sliding surface of the conductor bar, providing greater tolerance and allowing the collectors to be correctly located without direct access to the bar.

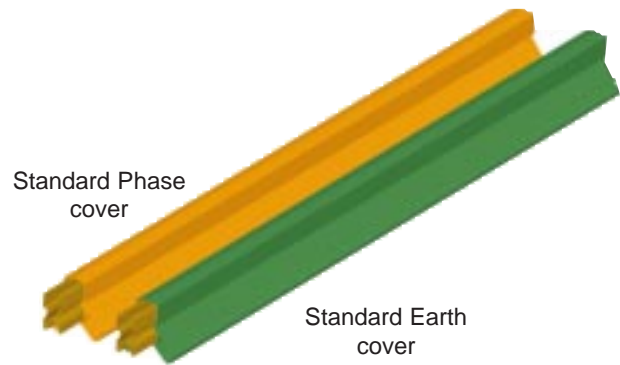
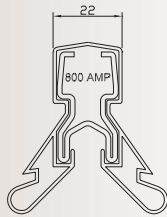
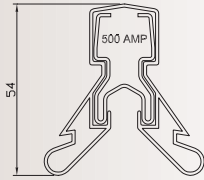
CONDUCTOR BAR COVER	STANDARD	MEDIUM HEAT
Material	PVC	BAYBLEND
Dielectric strength	180 KV/cm	240 KV/cm
Surface resistivity	$10^{11}\Omega$	$>10^{14}\Omega$
Volume resistivity	$>10^{15}\Omega/\text{cm}$	$>10^{16}\Omega/\text{cm}$
Maximum operating temperature *	80°C	120°C
Minimum operating temperature	-20°C	-20°C
Flame-test	Self extinguishing	Self extinguishing
Oxygen index	54%	24%
Specific density	1.5 g/cm ³	1.15 g/cm ³

* See Table on Page 4

CONDUCTOR BAR	COPPER		ALUMINIUM / STAINLESS STEEL
Nominal current	500A	800A	630A
Cross sectional area	115mm ²	171mm ²	277mm ²
Maximum system voltage (AC) (contact Insul-8 for other voltages) (DC) (contact Insul-8 for other voltages)	1000V 1000V	1000V 1000V	1000V 1000V
Resistance R (for DC) at 20°C (Ω/m)	0.000149	0.000100	0.000113
Impedance Z (for AC) at 20°C (Ω/m)	0.000189	0.000154	0.000162
Maximum allowable ambient temperature for 100% duty cycle	25°C	25°C	25°C
Bar length	6m	6m	6m
Support pitch Standard	1500mm	1500mm	1500mm
Lateral	1125mm	1125mm	1125mm
Minimum pitch centres Standard	70mm	70mm	70mm
Lateral	70mm	70mm	70mm
Expansion sections: not required for runs less than	150m	150m	150m
Minimum bending radius: (horizontal only)	1.5m	1.5m	1.5m

COPPER CONDUCTOR BARS

CURRENT RATING	500A	800A
Standard Phase cover (orange)	319250	319451
Standard Earth cover (green)	319869	319452
Weight (Kg)	6.33	8.55



EXPANSION SECTIONS

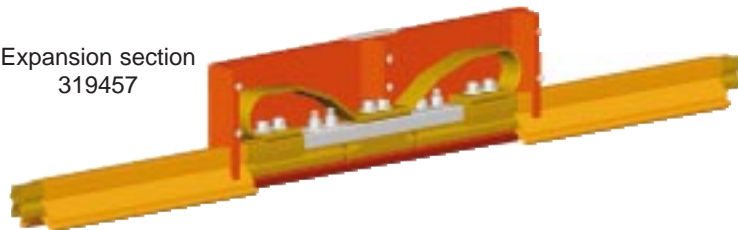
CURRENT RATING	500A	800A
Standard Phase cover (orange)	319257	319457
Standard Earth cover (green)	319258	319458
Weight (Kg)	8.93	11.15

Expansion sections are required on all systems over 150m long.

The maximum gap of the expansion section is 50mm.

The expansion section is 1.5m long.

Expansion section 319457



ISOLATION SECTIONS

Isolation sections provide electrical separation between adjacent sections of conductor bar.

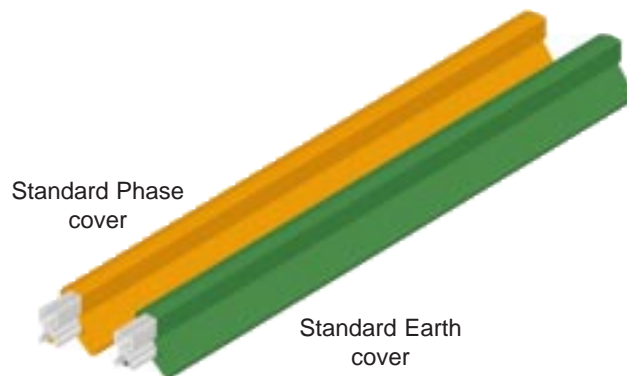
Only for use in dry, clean conditions.

It is recommended that Isolation sections are not fitted in earth conductors.

CURRENT RATING	500A	800A
Standard Phase cover (orange)	319253	319453
Weight (Kg)	7.3	9.55

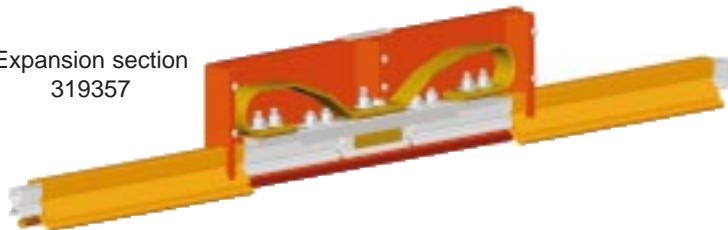
ALUMINIUM / STAINLESS STEEL CONDUCTOR BARS

CURRENT RATING	630A
Standard Phase cover (orange)	319351
Standard Earth cover (green)	319352
Weight (Kg)	5.13



CURRENT RATING	630A
Standard Phase cover (orange)	319357
Standard Earth cover (green)	319358
Weight (Kg)	7.73

Expansion section
319357



CURRENT RATING	630A
Standard Phase cover (orange)	319353
Weight (Kg)	6.1

EXPANSION SECTIONS

Expansion sections are required on all systems over 150m long.

The maximum gap of the expansion section is 50mm.

The expansion section is 1.5m long.

ISOLATION SECTIONS

Isolation sections provide electrical separation between adjacent sections of conductor bar.

Only for use in dry, clean conditions.

It is recommended that Isolation sections are not fitted in earth conductors.

JOINTS



JOINT		Weight (Kg)
Copper 500/800A	319885	0.25
Aluminium	319873	6.08



Aluminium Joint
319873

JOINT COVER	
Standard cover	319840
Weight (Kg)	0.168

Standard cover
319840

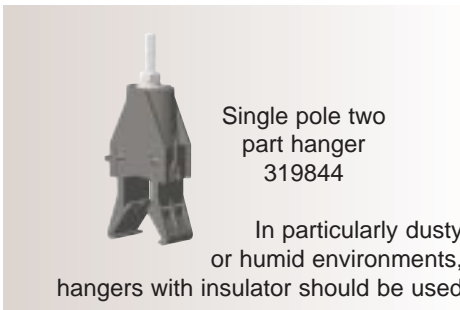


POWERFEEDS: JOINT POWERFEED



POWERFEED	
Standard cover (black)	319845
Weight (Kg)	0.16

HANGER CLAMPS: WITH INSULATOR



			WEIGHT (Kg)
Single pole	Two part	319844	0.114

ANCHOR CLAMPS



		WEIGHT (Kg)
Heavy duty anchor	319843	0.7

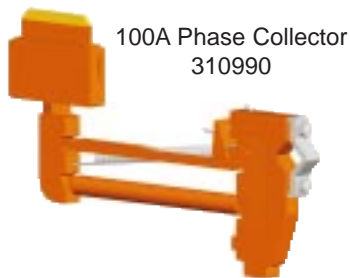
END CAPS



		WEIGHT (Kg)
Transfer end cap	319846	0.08

COLLECTORS

CURRENT RATING	100A	250A
Phase	310990	34956
Earth - without deflector	399355	
Earth - right hand	399340	
Earth - left hand	399352	
Weight (Kg)	0.8	2.00



100A Phase Collector
310990



100A Collector
(Earth left)
399352



250A Collector
34956

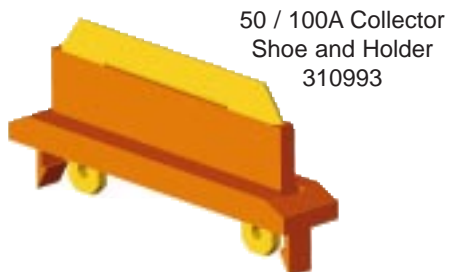
100A collectors are supplied without cable.

Stranded cable terminal clamps are included.

250A collectors are supplied with 2 x 1m 35mm² cable.

COLLECTOR SHOE + HOLDER

CURRENT RATING	50A + 100A Phase - red	50A + 100A Earth - green	250A
Code	310993	399357	35289
Weight (Kg)	0.06	0.06	0.28



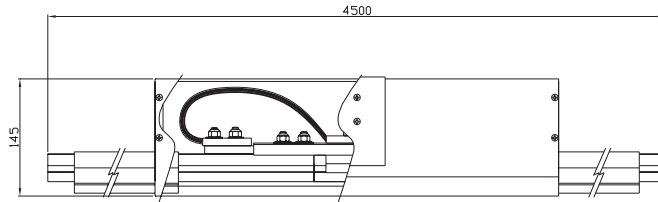
50 / 100A Collector
Shoe and Holder
310993



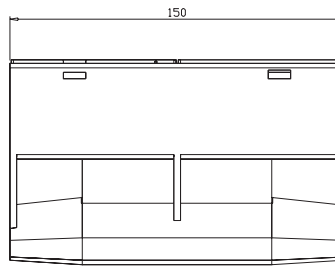
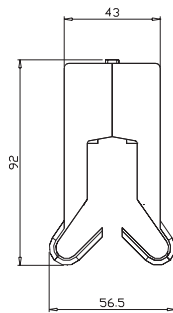
250A Collector
Shoe and Holder
35289

The copper graphite shoe ensures electrical continuity, a smooth contact with the conductor bar and a good resistance to wear.

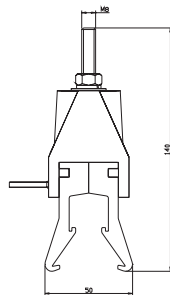
COMPONENT DIMENSIONS



**800A EXPANSION SECTION
Standard Phase Cover
(319457)**



**JOINT COVER
Standard
(319840)**



**SINGLE POLE TWO PART HANGER
(319844)**

ALL OTHER COMPONENT DIMENSIONS AS SAFELEC 3

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