Technical Data

Safe-Lec protected conductor bars meet the demands of the following international safety standards: NFC 20-010, NFC 63-010, NFC 32-070, VDE 0470, BS EN 60529, DIN 53438.

An accurate choice of conductors can only 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...)

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	$> 10^{11}\Omega$/cm	$> 10^{16}\Omega$/cm
Vicat Softening Temperature *(Never expose PVC cover to temperatures in excess of 80°C)*	84°C	120°C
Flame-Test	Self extinguishing	Self extinguishing
Oxygen Index	54%	24%
Specific Density	1.5 g/cm^3	1,15 g/cm^3

Conductor Bar	**Aluminium/Stainless Steel**		
Nominal Current	200A	315A	400A
Cross sectional area	104 mm^2	120 mm^2	156 mm^2
Maximum System Voltage (AC) (contact Conductix-Wampfler for other voltages) (DC) (contact Conductix-Wampfler for other voltages)	 1000V 1000V	 1000V 1000V	 1000V 1000V
Resistance R (for DC) at 20°C (Ω/m)	0.000301	0.000261	0.000199
Impedance Z (for AC) at 20°C (Ω/m)	0.000325	0.000288	0.000234
Maximum allowable ambient temperature for 100% duty cycle	25°C	25°C	25°C
Bar Length	4.5 m	4.5 m	4.5 m
Support pitch Standard Lateral	1500 mm 1125 mm	1500 mm 1125 mm	1500 mm 1125 mm
Minimum pitch centres Standard Insulated	43 mm 60 mm	43 mm 60 mm	43 mm 60 mm
Expansion sections: not required for runs less than	150 m	150 m	150 m
Minimum bending radius: (horizontal only)	1.5 m	1.5 m	1.5 m

Volt Drop Calculation - $\triangle U$

According to the following formula:

3-phase AC $\triangle U = \sqrt{3} \times I \times D \times Z$

Single-phase AC $\triangle U = 2 \times I \times D \times Z$

Continuous current (DC) $\triangle U = 2 \times I \times D \times R$

NB. The value of D will vary dependent on whether the line is fed at one or several points, see diagram below:

Where:

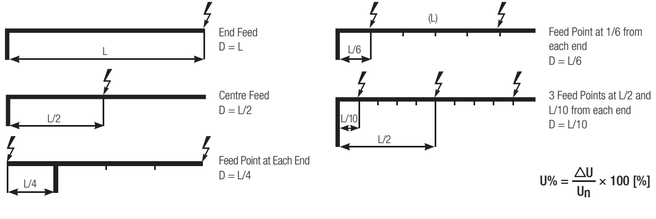
$\triangle U$ = Volt drop in volts

I = Maximum current in Amps

D = Distance between the feed and pick-up points in metres

R = Resistance of conductor in ohms per metre

Z = Impedance of conductor in ohms per metre



$$U\% = \frac{\triangle U}{U_n} \times 100\ [\%]$$

NB. When calculating $\triangle U$ do not forget to take into account the effects of temperature casued by

- heating of the conductor in relation to duty cycle
- a rise in ambient temperature above 45°C

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Safe-Lec 2

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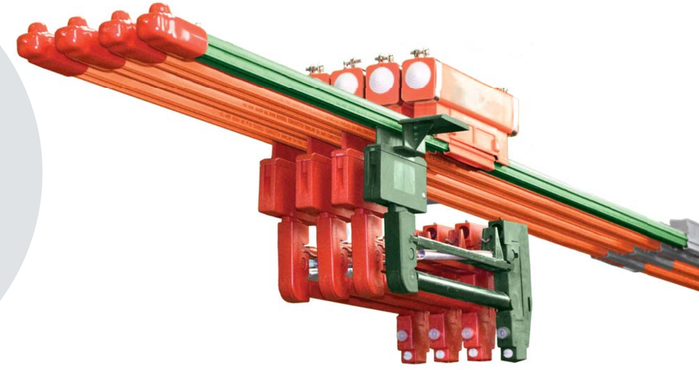

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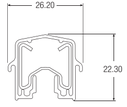
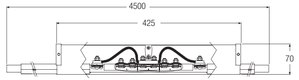
Aluminium/Stainless Steel

Insulated Conductor Bar - Length 4.5 metres



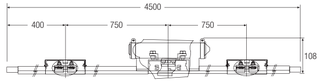
	200 Amp Order No.	315 Amp Order No.	400 Amp Order No.
Standard Phase Cover	310601	310701	399101
Standard Earth Cover	310602	310702	399102

Insulated Expansion Section - Length 4.5 metres



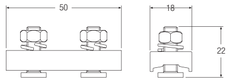
	200 Amp Order No.	315 Amp Order No.	400 Amp Order No.
Standard Phase Cover	310607	310707	399107
Standard Earth Cover	310608	310708	399108

Isolated Section - Length 4.5 metres (for use in dry, clean conditions only. Consult Conductix-Wampfler for other environments)



	200 Amp Order No.	315 Amp Order No.	400 Amp Order No.
Standard Phase Cover	310625	310725	399125
Standard Earth Cover	310626	310726	399126

Aluminium Joint



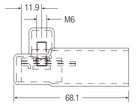
Order No.
310874

Components

Joint Cover

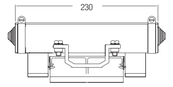
	Order No.
Standard Phase	310850
Standard Earth	310851

End Cover (supplied unassembled)



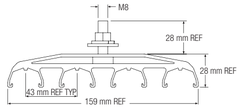
	Order No.
Standard Phase	310893

Powerfeed and Cover



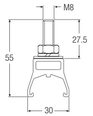
	Order No.
Standard	310912 (up to 400 Amp)

4-Pole Hanger



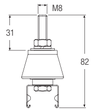
	Order No.
Standard Mount, Black	310821
Standard Mount, Red	310857
Lateral Mount, Black	310835
Lateral Mount, Red	310859

1-Pole Hanger



	Order No.
Black	310824
Red	310829

1-Pole Stainless Steel Hanger with Insulator



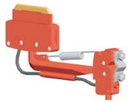
Order no.
310827

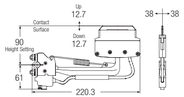
Anchor Clamp (2 required per anchor point)

Order No.
310831

Components

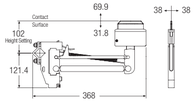
50 Amp SI Collector *





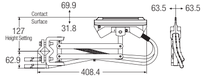
	Order No.
Live	399360
Earth (green)	399380

100 Amp DI Collector *



	Order No.
Live	310990
Earth (green)	310990G

250 Amp Collector *

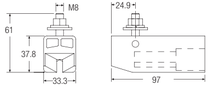


Order No.
34956

50 Amp and 100 Amp Shoe and Holder *

	Order No.
Live	310993
Earth (green)	310993G

Transfer Cap



Order No.
310951

250 Amp Shoe and Holder *

Order No.
35289

* Collectors should be derated by 50% for use on Alu/SS conductor bar.