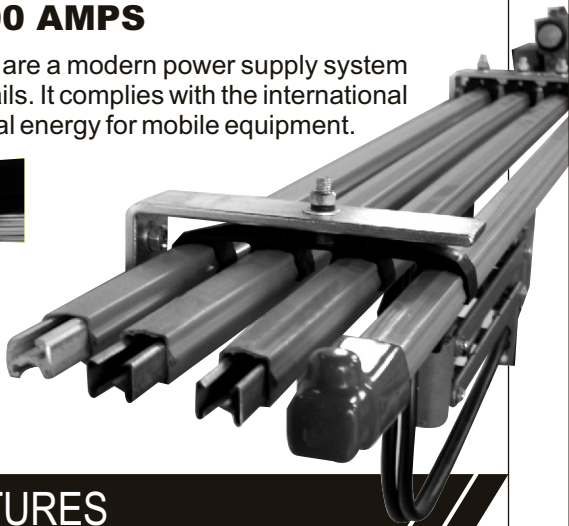
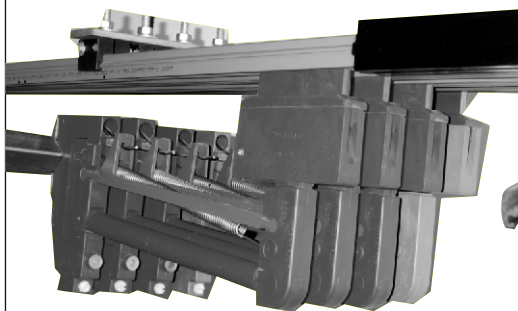


INSULATED CONDUCTOR BAR SYSTEM

Available in Galvanised Steel, Aluminium/Stainless Steel or Copper and a specific set for Mining Applications

60-2000 AMPS

Grippa Safeline conductor rail systems are a modern power supply system using single pole insulated conductor rails. It complies with the international safety regulations and supplies electrical energy for mobile equipment.



FEATURES

Touch-proof, no exposed live parts

Easy installation

Bolted Joint

1 Pole / 4 Pole Hanger

Insulating Cover shaped to shed water and dust

60 to 2000 Amps. Conductor in same standard

Collector 25A / 100A / 250A

No Expansion Joints up to 150m long system

Track Configuration: Straight or Curved

Suitable for Indoor / Outdoor Installation

HELP! Which system must I use?

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.)

Please contact us to for expert advice!

LIGHT-MEDIUM DUTY: 60-400 AMPS

SAFE-LINE W: TECHNICAL DATA

FACTOR "K"						
	Duty Ta	100%	80%	60%	40%	20%
Standard cover	35°C	1.000	1.118	1.291	1.581	2.236
	40°C	0.905	1.011	1.168	1.430	2.023
	45°C	0.798	1.892	1.030	1.261	1.784
	55°C	0.674	0.754	0.870	1.066	1.508
High Temperature 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

$I = \text{nominal current} \times K$

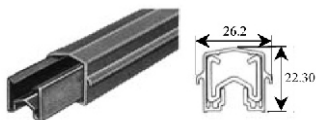
The maximum permissible continuous current rating of the conductor bar depends on the duty factor of the cranes and the maximum ambient temperature T_a . It can be established using the formula.

CONDUCTOR BAR COVER	STANDARD
Material	PVC
Dielectric strength	A80KV/cm
Surface resistivity	1011Ω
Volume resistivity	>1015Ω/cm
Maximum operating temperature	80°C
Minimum operating temperature	-30°C
Flame-test	Self extinguishing
Oxygen index	54%
Specific density	1.5 g/cm ²

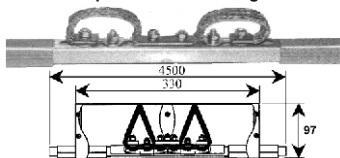
CONDUCTOR BAR	GALVANISED STEEL				COPPER			ALUMINIUM/ STAINLESS STEEL		
Normal current	60A	100A	125A	150A	160A	250A	400A	200A	315A	400A
Cross sectional area	50mm ²	63mm ²	93mm ²	93mm ²	50mm ²	63mm ²	93mm ²	104mm ²	120mm ²	156mm ²
Maximum system voltage (AC) (contact safe-line for other voltages) (DC) (contact safe-line for other voltages)	600V				600V			600V		
Resistance R (for DC) at 35°C (Ω/m) Impedance Z (for AC) at 35°C (Ω/m)	0.003584 0.003604	0.002867 0.002891	0.001933 0.001968	0.001780 0.001718	0.000342 0.000364	0.000274 0.000300	0.000184 0.000221	0.000301 0.000325	0.000261 0.000288	0.000199 0.000234
Maximum allowable ambient temperature for 100% duty cycle	35°C	35°C	35°C	35°C	35°C	35°C	35°C	35°C	35°C	35°C
Bar length (mm)	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
Support pitch Standard	1500mm	11500mm	1500mm	1500mm	1500mm	1500mm	1500mm	1500mm	1500mm	1500mm
Minium pitch centers Standard Lateral	43mm 60mm	43mm 60mm	43mm 60mm	43mm 60mm	43mm 60mm	43mm 60mm	43mm 60mm	43mm 60mm	43mm 60mm	43mm 60mm
Expansion sections: not required runs less than	150m	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	1.5m

SAFE-LINE W: GALVANISED STEEL

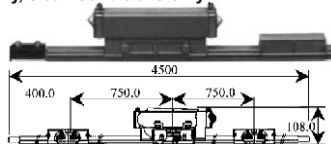
Insulated Conductor Bar-length 4.5m



Insulated Expansion Section-length 4.5m



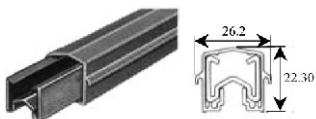
Isolation Section-length 4.5m. For use in dry, clean conditions only.



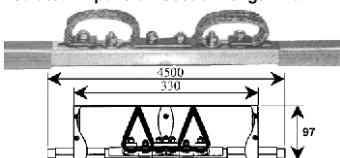
GALVANISED STEEL	60 Amp Part #	100 Amp Part #	125 Amp Part #
Phase Rail, Standard Heat Cover	INWG-60O	INWG-100O	INWG-125O
Earth Rail, Standard Heat Cover	INWG-60G	INWG-100G	INWG-125G
Phase Rail, Medium Heat Cover	INWGHT-60O	INWGHT-100O	INWGHT-125O
Earth Rail, Medium Heat Cover	INWGHT-60G	INWGHT-100G	INWGHT-125G
Weight (kg)	2.41	2.86	3.89
Phase Expansion, Standard Heat Cover	INWG-EJ60O	INWG-EJ100O	INWG-EJ125O
Earth Expansion, Standard Heat Cover	INWG-EJ60G	INWG-EJ100G	INWG-EJ125G
Phase Expansion, Medium Heat Cover	INWGHT-EJ60O	INWGHT-EJ100O	INWGHT-EJ125O
Earth Expansion, Medium Heat Cover	INWGHT-EJ60G	INWGHT-EJ100G	INWGHT-EJ125G
Weight (kg)	3.54	3.97	5.03
Phase Isolation, Standard Heat Cover	INWG-IS60O	INWG-IS100O	INWG-IS125O
Earth Isolation, Standard Heat Cover	INWG-IS60G	INWG-IS100G	INWG-IS125G
Phase Isolation, Medium Heat Cover	INWGHT-IS60O	INWGHT-IS100O	INWGHT-IS125O
Earth Isolation,, Medium Heat Cover	INWGHT-IS60G	INWGHT-IS100G	INWGHT-IS125G
Weight (kg)	2.71	3.16	4.19

SAFE-LINE W: COPPER

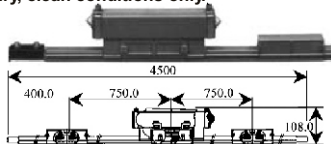
Insulated Conductor Bar-length 4.5m



Insulated Expansion Section-length 4.5m



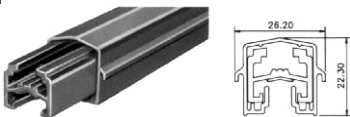
Isolation Section-length 4.5m. For use in dry, clean conditions only.



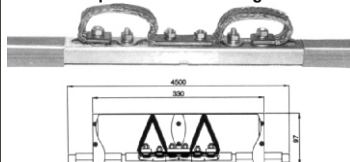
COPPER	160 Amp Part #	250 Amp Part #	400 Amp
Phase Rail, Standard Heat Cover	INWC-160O	INWC-250O	INWC-400O
Earth Rail, Standard Heat Cover	INWC-160G	INWC-250G	INWC-400G
Phase Rail, Medium Heat Cover	INWCHT-160O	INWCHT-250O	INWCHT-400O
Earth Rail, Medium Heat Cover	INWCHT-160G	INWCHT-250G	INWCHT-400G
Weight (kg)	2.67	3.12	4.38
Phase Expansion, Standard Heat Cover	INWC-EJ160O	INWC-EJ250O	INWC-EJ400O
Earth Expansion, Standard Heat Cover	INWC-EJ160G	INWC-EJ250G	INWC-EJ400G
Phase Expansion, Medium Heat Cover	INWCHT-EJ160O	INWCHT-EJ250O	INWCHT-EJ400O
Earth Expansion, Medium Heat Cover	INWCHT-EJ160G	INWCHT-EJ250G	INWCHT-EJ400G
Weight (kg)	3.81	4.27	5.53
Phase Isolation, Standard Heat Cover	INWC-IS160O	INWC-IS250O	INWC-IS400O
Earth Isolation, Standard Heat Cover	INWC-IS160G	INWC-IS250G	INWC-IS400G
Phase Isolation, Medium Heat Cover	INWCHT-IS160O	INWCHT-IS250O	INWCHT-IS400O
Earth Isolation,, Medium Heat Cover	INWCHT-IS160G	INWCHT-IS250G	INWCHT-IS400G
Weight (kg)	2.97	3.42	4.68

SAFE-LINE W: ALUMINIUM / S/S STEEL

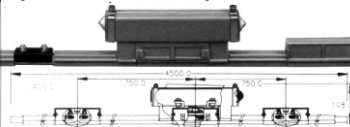
Insulated Conductor Bar-length 4.5m



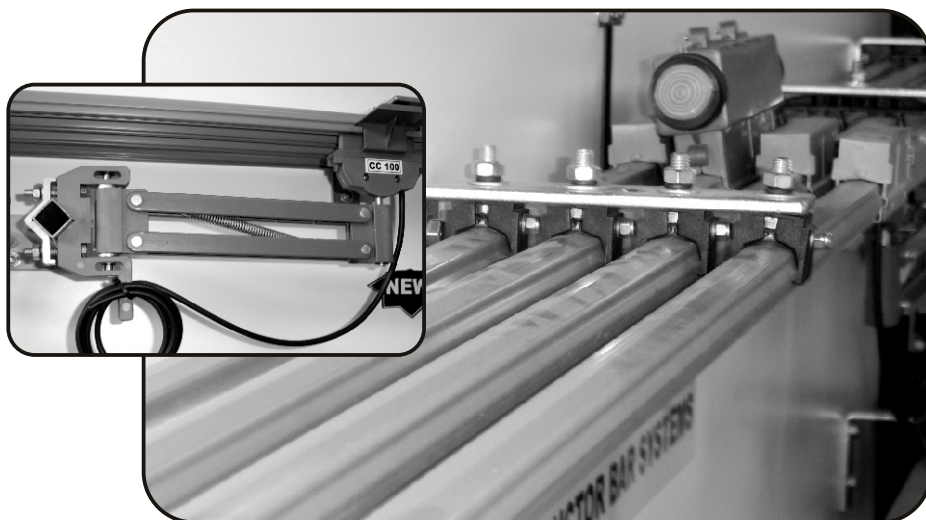
Insulated Expansion Section-length 4.5m



Isolation Section-length 4.5m. For use in dry, clean conditions only.



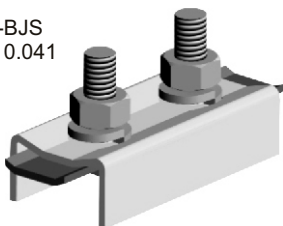
ALUMINIUM / STAINLESS STEEL	200 Amp Part #	315 Amp Part #	400 Amp Part #
Phase Rail, Standard Heat Cover	INWA-200O	INWA-315O	INWA-400O
Earth Rail, Standard Heat Cover	INWA-200G	INWA-315G	INWA-400G
Phase Rail, Medium Heat Cover	INWAHT-200O	INWAHT-315O	INWAHT-400O
Earth Rail, Medium Heat Cover	INWAHT-200G	INWAHT-315G	INWAHT-400G
Weight (kg)	2.1	2.3	X.X
Phase Expansion, Standard Heat Cover	INWA-EJ200O	INWA-EJ315O	INWA-EJ400O
Earth Expansion, Standard Heat Cover	INWA-EJ200G	INWA-EJ315G	INWA-EJ400G
Phase Expansion, Medium Heat Cover	INWAHT-EJ200O	INWAHT-EJ315O	INWAHT-EJ400O
Earth Expansion, Medium Heat Cover	INWAHT-EJ200G	INWAHT-EJ315G	INWAHT-EJ400G
Weight (kg)	2.23	2.43	X.XX
Phase Isolation, Standard Heat Cover	INWA-IS200O	INWA-IS315O	INWA-IS400O
Earth Isolation, Standard Heat Cover	INWA-IS200G	INWA-IS315G	INWA-IS400G
Phase Isolation, Medium Heat Cover	INWAHT-IS200O	INWAHT-IS315O	INWAHT-IS400O
Earth Isolation,, Medium Heat Cover	INWAHT-IS200G	INWAHT-IS315G	INWAHT-IS400G
Weight (kg)	2.4	2.6	X.X



SAFE-LINE W: COMPONENTS COMMON TO ALL SYSTEMS

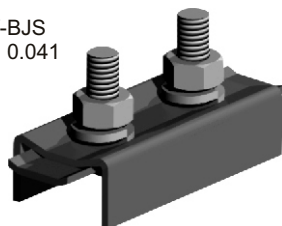
Steel Joint

Part #: INW-BJS
Weight (kg): 0.041



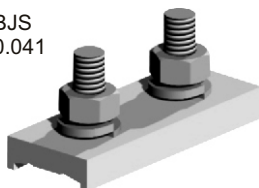
Copper Joint

Part #: INW-BJS
Weight (kg): 0.041



Aluminium Joint

Part #: INW-BJS
Weight (kg): 0.041



Jointing Compound

Part #: XXXXXX
Weight (kg): 0.0225



Contents sufficient for over 300 connections.
Please consult us for advice on use.

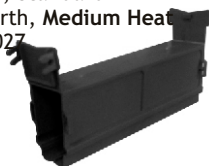
Joint Cover

Part #'s:
INW-JCO - Phase, Standard
INWHT-JCO - Phase, Medium Heat
Weight (kg): 0.027



Joint Cover

Part #'s:
INW-JCG - Earth, Standard
INWHT-JCG - Earth, Medium Heat
Weight (kg): 0.027



Hanger - 4 Pole

Part #: INW-4PH
Weight (kg): 0.057



Hanger - 3 Pole

Part #: INW-3PH
Weight (kg): 0.044



STANDARD SUPPORT SPACING: 1500mm

Hanger - 1 Pole

Part #: INW-SPH
Weight (kg): 0.030



Hanger - 1 Pole

Part #: INW-SPH-I
Weight (kg): 0.12
with
Insulator



Hanger - 1 Pole

Part #: INW-SSI
Weight (kg): 0.13
Stainless Steel
with
Insulator



SAFE-LINE W: COMPONENTS COMMON TO ALL SYSTEMS

Anchor Clamp

Part #: INW-AC2
Weight (kg): 0.046



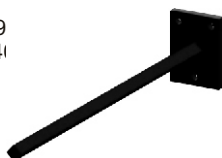
Anchor Clamp - Insulated

Part #: INW-AC2-I
Weight (kg): 0.14



Bracket - 13mm, Single

Part #: IN31099
Weight (kg): 0.41



Bracket - 13mm, Double

Part #: IN310898
Weight (kg): 0.80



13mm square, 400mm long for use with 25A collector.

Bracket - 25mm, Single

Part #'s: IN31095
Weight (kg): 0.75



Bracket - 25mm, Double

Part #'s: IN310992
Weight (kg): 1.50



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

End Cover

Part #: INW-EC
Weight (kg): 0.020
(Supplied unassembled)



End Power Feed

Part #: INW-EF
Weight (kg): 0.037
(Supplied unassembled)



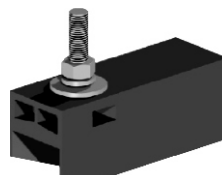
Joint Power Feed

Part #:
INW-LF1 - Up to 250A
INW-LF2 - Up to 400A
INW-LF1 - Medium Heat, Up to 250A
INW-LF2 - Medium Heat, Up to 400A
Weight (kg): 0.179



Transfer Cap

Part #: INW-TC
Weight (kg): 0.110



SAFE-LINE W: COMPONENTS COMMON TO ALL SYSTEMS

Collector - 100A

SD Phase

Part #: INW1-CC100R

Weight (kg): 0.392



Collector - 100A

SD Earth

Part #: INW1-CC100G

Weight (kg): 0.392



Collector - 100A

SP Phase

Part #: INW2-CC100R

Weight (kg): 0.392



Collector - 100A

SP Earth

Part #: INW2-CC100G

Weight (kg): 0.392



Collector - 250A

Phase

Part #'s: INW-CC250

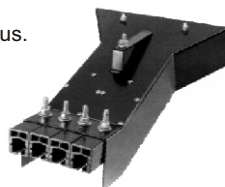
Weight (kg): 0.392



Pickup Guide

Typical

Please consult us.



Shoe & Holder - 25A

SD Earth

Part #: INW-CCS25

Weight (kg): 0.000

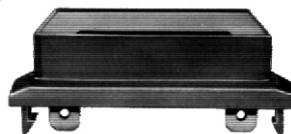


Shoe & Holder - 50/100A

SD Earth

Part #: INW1-CCS100

Weight (kg): 0.240

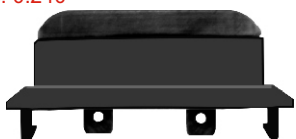


Shoe & Holder - 25A

SP Earth

Part #: INW2-CCS100

Weight (kg): 0.240



Shoe & Holder - 25A

SD Earth

Part #: INW-CCS250

Weight (kg): 0.240



for MINING APPLICATIONS

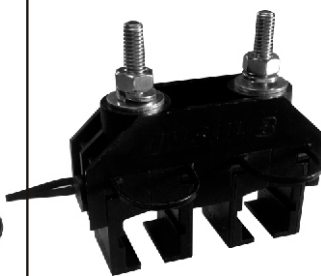
Hanger - 1 Pole

Part #: INWM-SPH
Weight (kg): 0.030



Hanger - 2 Pole

Part #: INWM-2PH
Weight (kg): 0.030



Bolt Joint

Part #: INWM-BJC
Weight (kg): 0.030



Expansion Joint

Part #: INWM-EJO
Weight (kg): 0.030



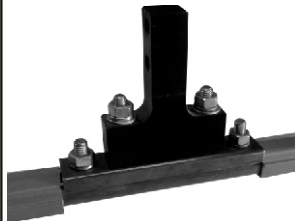
Anchor Transfer Cap

Part #: INWM-ATC
Weight (kg): 0.030



Anchor Device

Part #: INWM-AC
Weight (kg): 0.030



Mechanical Fuse

Part #: INWM-MF
Weight (kg): 0.030



Collector - 250A

Part #: INWM-CC250MF
Weight (kg): 0.030



Mechanically Fused

Joint Cover

Part #: INWM-JC
Weight (kg): 0.030



Power Feed

Part #: INWM-LF
Weight (kg): 0.030

