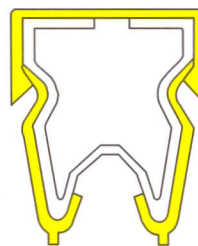


POW-R-SAFE

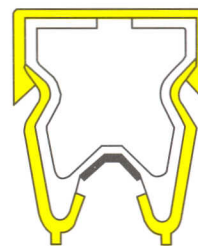
FEATURES

POW-R-SAFE is a safe conductor rail system especially developed to supply electrical power to overhead travelling cranes, hoists and monorails. It is designed for years of trouble free operation and ease of installation without the need of any special tools.

- Formed in either galvanised steel, aluminium/stainless steel and copper.
- V-form groove positively guides the current pick up collector.
- Contact shoe is self lubricating of a sintered copper and graphite construction.
- Compact mounting of the conductor in a vertical or horizontal position
- Designed to comply with current safety standards, BS EN 60529, DIN 53438 and VDE 0470.

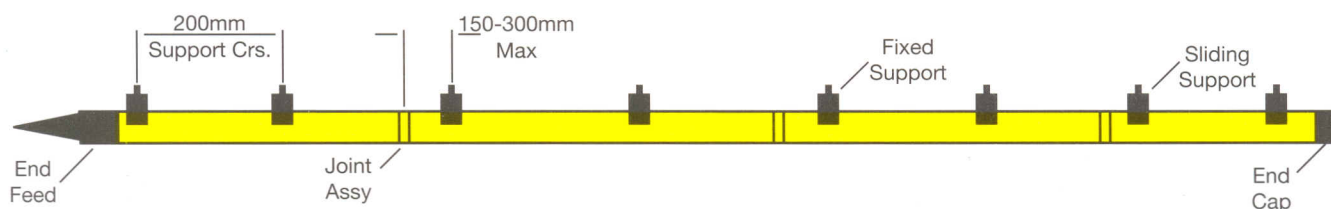


**GALVANISED STEEL
OR COPPER**



ALUMINIUM

POW-R-SAFE CONDUCTOR SYSTEMS INSTALLATION INSTRUCTIONS



GENERAL INFORMATION

The POW-R-SAFE range of conductors are ideally suited for indoor operations. For outdoor and wet applications we recommend the use of either Aluminium/stainless steel or copper and for acidic environments we recommend only copper systems.

MOUNTING BRACKETS

The systems can be mounted either vertically or horizontally. However we recommend only horizontal mounting for outdoor, dusty or hazardous environments.

Support brackets to be mounted parallel to the monorail or crane rail at 2000mm centres (or 1333mm for vertical mounting). Support bracket hole centres to be a minimum of 50mm apart (recommend 65mm).

ASSEMBLY

Simply bolt support clips to mounting brackets and "snap-in" conductor rails, slide joint assembly in end of rail; "snap-in" the next rail and slide the two rails together and tighten the three M6 bolts. Snap over the joint cover ensuring the joint is positioned within a maximum distance of 300mm (150mm) from a mounting bracket. Repeat the above operation on each phase and continue to end of runway. Position fixed support clips in centre of runway to anchor the whole system.

EXPANSION SECTIONS

For lengths of conductor systems exceeding 90 metres it is necessary to have an expansion gap. The expansions come pre-assembled from our factory in a 4 metre length. The expansion assembly is to be fitted centrally and to be fitted directly under a support bracket.

FEEDS

For "End Feeds" slide the end feed assembly on to end of rail. Feed the power cable through insulated tapered shroud and connect to cable lug and push shroud firmly over the end of the exposed rail. "Line or centre feeds" are supplied factory fitted on a 4 metre length of rail and should be installed as per a standard rail. Connection of power cables as per end feed instructions. On the exposed ends of the conductor system simply push on the protected end covers.

COLLECTORS

Single arm or tandem collectors to be mounted on 25.4mm (1") square bar.

MAINTENANCE

Inspection of the current collector carbons for sign of wear is recommended 6 months following installation/commissioning and thereafter at 6 monthly intervals.

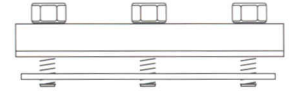
CONDUCTOR RAIL P100Y

FORMED OF EITHER GALV. STEEL ALUMINIUM STAINLESS STEEL OR COPPER COVERED IN A RIGID PROTECTED PVC SHROUD IN YELLOW, GREEN AND G/Y SUPPLIED IN 4 MTR LENGTHS



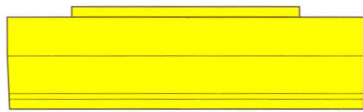
JOINT ASSEMBLIES P100J

JOINT SIMPLY SLID ON END OF RAIL & LOCKED INTO PLACE WITH THREE HEXAGON SCREWS & WASHERS



JOINT COVERS P100JC

PVC EXTRUSION SIMPLY SNAPPED OVER JOINT ASSEMBLY & SELF LOCATING. IN BOTH YELLOW & GREEN COLOUR



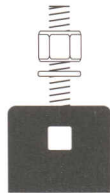
END COVERS P100EC

A PVC PROTECTED CAP TO INSULATE THE EXPOSED ENDS OF THE RAIL



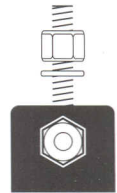
SLIDING SUPPORT CLIPS P100S

SPRING STEEL CONSTRUCTION FOR A QUICK "SNAP-IN" OPERATION SUPPLIED WITH 8mm STUD NUT & WASHER, REQUIRED AT 2 MTR INTERVALS.



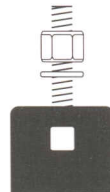
FIXED SUPPORT CLIP P100SF

AS SLIDING SUPPORT CLIP BUT WITH CROSS - BOLT FOR ANCHORING CONDUCTOR SYSTEM



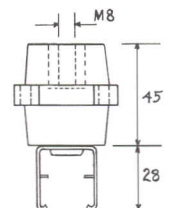
SLIDING SUPPORT CLIPS P100SPC

SPRING STEEL CONSTRUCTION FOR A QUICK "SNAP-IN" OPERATION SUPPLIED WITH 8mm STUD NUT & WASHER, REQUIRED AT 2 MTR INTERVALS. PVC COATED



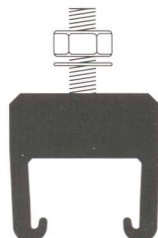
BARREL INSULATOR P100BI

FOR USE WITH P100SPC FOR AGGRESSIVE ENVIRONMENTS



SLIDING SUPPORT CLIPS P100P

PVC CONSTRUCTION FOR A QUICK "SNAP-IN" OPERATION SUPPLIED WITH 8mm STUD NUT & WASHER, REQUIRED AT 2 MTR INTERVALS.



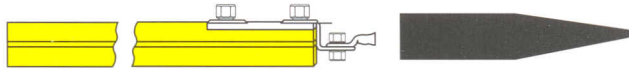
FIXED SUPPORT CLIP P100PF

PVC CONSTRUCTION AS SLIDING SUPPORT CLIP BUT WITH TOP-BOLT FOR ANCHORING CONDUCTOR SYSTEM

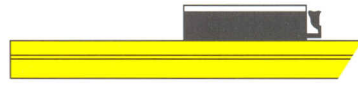


END FEED KIT**P100EF**

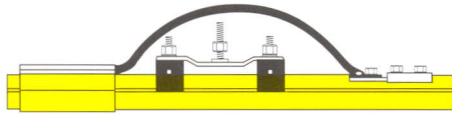
THE END FEED IS SIMPLY SLID ONTO END OF RAIL & BOLTED AND THEN INSULATED WITH PROTECTIVE SHEATH

**LINE FEED ASSEMBLIES****P100LF**

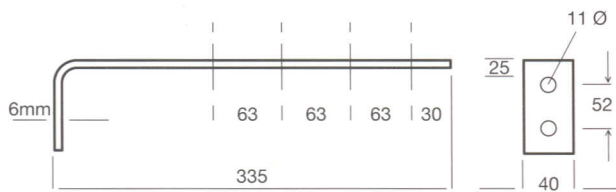
LINE FEED IS PRE-ASSEMBLED ONTO A 4 MTR RAIL AND CAN BE FITTED ANYWHERE ALONG THE CONDUCTOR SYSTEM LENGTH.

**EXPANSION SECTION****P100EX**

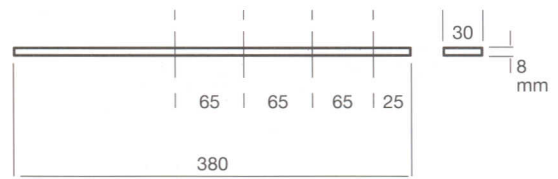
EXPANSION GAP ASSEMBLIES ARE PRE-ASSEMBLED ONTO A 4MTR RAIL READY FOR INSTALLATION. ONLY REQUIRED FOR LENGTHS EXCEEDING 90 METERS.

**ISOLATING JOINT****P100IJ**

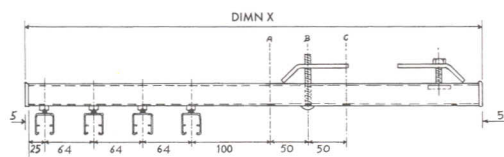
THE ISOLATING JOINT IS MADE OF AN INSULATED MATERIAL AND IS USED FOR SEGMENTATING THE POWER FOR HOSPITAL BAYS ETC. SIMPLY REPLACES STANDARD JOINTS.

**L-SHAPED WEB BRACKETS****P100L4**

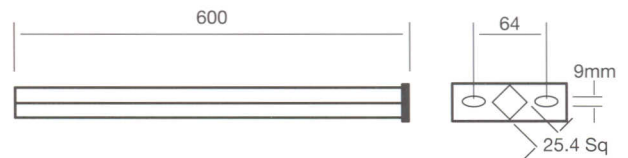
STEEL BLACK POWDER COATED

WELD ON BRACKETS**P100S4**

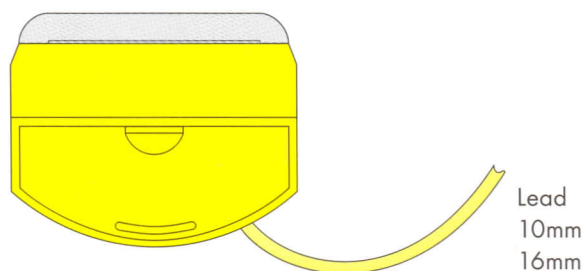
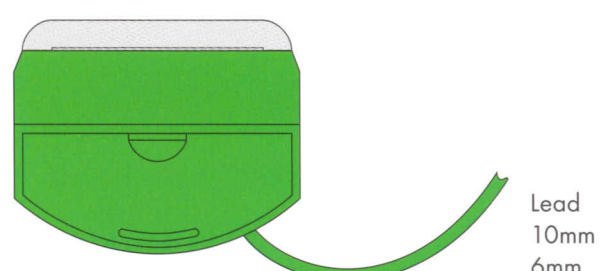
MILD STEEL

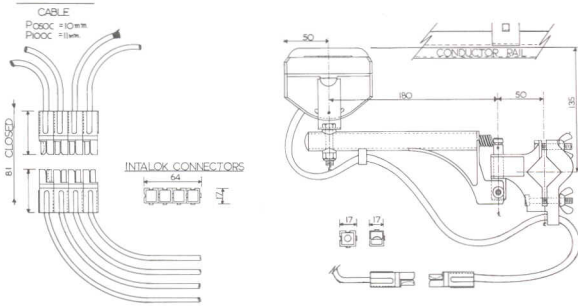
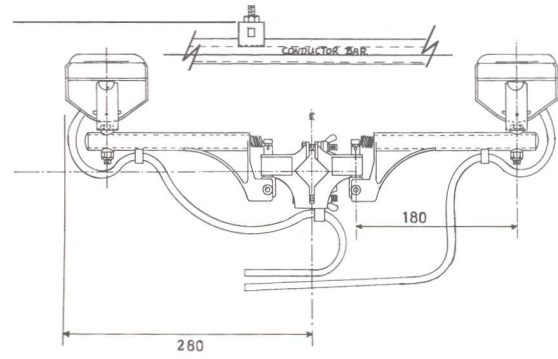
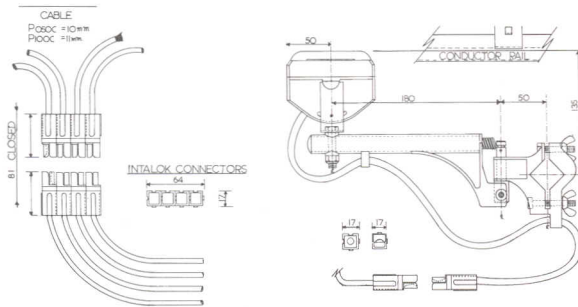
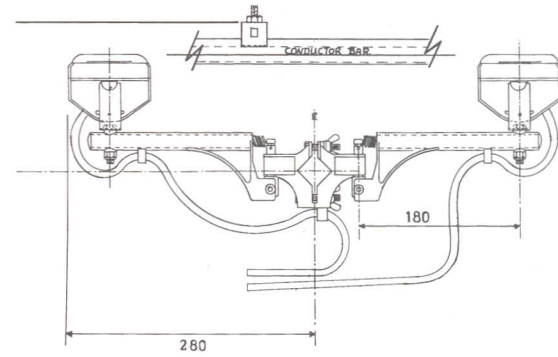
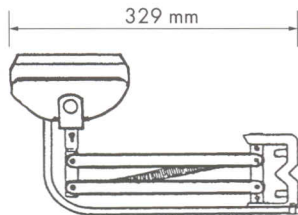
DSL TYPE BRACKETS

| DIMN X | PART No. | SUFFIX |
|--------|----------|--------|
| 597 | DSL 597 | A.B.C. |
| 667 | DSL 667 | |
| 737 | DSL 737 | |
| 807 | DSL 807 | |

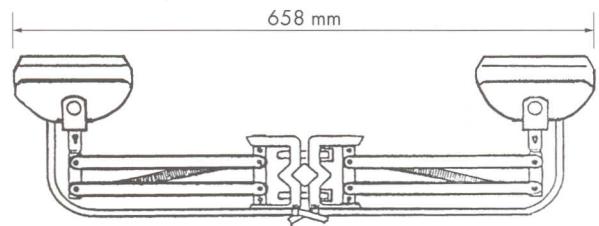
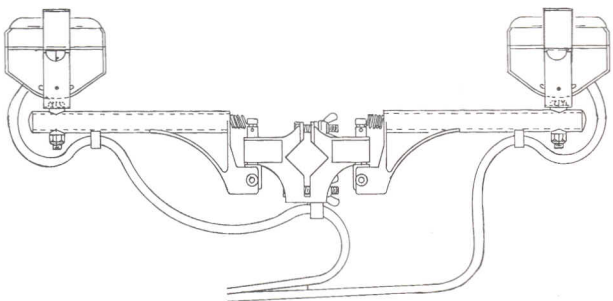
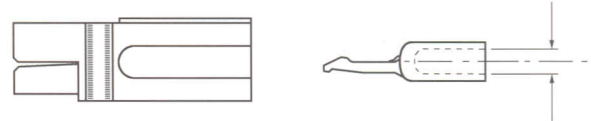
COLLECTOR MOUNTING BRACKET**P100MB**

GALVANISED STEEL

50 & 100AMP HEAD YELLOW**50AMP HEAD GREEN**

P050C**50AMP COLLECTOR****P100CT****100AMP TANDEM COLLECTOR****P0100C****100AMP COLLECTOR****P200CT****200AMP TANDEM COLLECTOR****P100AL****ALUMINIUM LONG ARM**

ALUMINIUM PANTOGRAPH COLLECTOR

P200ALT TANDEM ALUMINIUM LONG ARM**P100ETG****EARTH COLLECTOR****CONNECTORS**

CONNECTORS NOT SUPPLIED AS STANDARD ON COLLECTORS. THEY MUST BE ORDERED SEPARATELY IF REQUIRED.

POW-R-SAFE

TECHNICAL DATA

| CONDUCTOR RAIL | Glavanised Steel | | Aluminium Stainless Steel | Copper | |
|--------------------------------|-------------------|--------------------|---------------------------|-------------------|--------------------|
| | | | | | |
| Nominal Current (Amps) | 100 | 200 | 220 | 320 | 500 |
| Cross-sectional area | 85mm ² | 102mm ² | 113mm ² | 85mm ² | 102mm ² |
| Max Ambient Temp. 100% Duty | 25 °C | 25 °C | 25 °C | 25 °C | 25 °C |
| Resistance R (DC) @20 °C | .00158 | .00132 | .00027 | .00020 | .000166 |
| Impedance Z (AC) @20 °C | .00160 | .00135 | .00029 | .00023 | .000202 |
| Rail Length | 4000mm | 4000mm | 4000mm | 4000mm | 4000mm |
| Support Centres (Horizontal) | 2000mm | 2000mm | 2000mm | 2000mm | 2000mm |
| (Vertical) | 1333mm | 1333mm | 1333mm | 1333mm | 1333mm |

| RAIL COVER | STANDARD | HIGH TEMPERATURE |
|---------------------|-----------------|------------------|
| Material | High Impact PVC | RE 295. PVCu |
| Dielectric Strength | 15 KV/mm | 20 KV/mm |
| Max. Working Temp. | 70 °C | 105 °C |
| Colour | Yellow/Green | Black |

| | | | | | |
|-----------------|-------|-------|-------|-------|-------|
| DUTY CYCLE | 100% | 80% | 60% | 40% | 20% |
| MAX TEMPERATURE | 25 °C | 30 °C | 40 °C | 45 °C | 55 °C |

SYSTEMS ARE SELECTED ON THE BASIS OF MAXIMUM CURRENT AND VOLTAGE DROP

VOLTAGE DROP CALCULATION

Three phase AC $\Delta U = \sqrt{3} \times I \times L \times Z$

ΔU = Volt drop in volts

$\sqrt{\quad}$ = Maximum current in amps

Single phase AC $\Delta U = 2 \times I \times L \times Z$

L = Distance from feed point in metre

R = Resistance in ohms per metre

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

Z = Impedance in ohms per metre

For outside applications use either Aluminium/Stainless steel or Copper Systems.

HAMILTON
POW-R-SAFE
SYSTEMS LIMITED

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 Holmewood, nr. Chesterfield, Derbyshire S42 5UW
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