



# POWERBAR BUSPLUGS



# INTRODUCTION

Powerbar is a patented range of busduct trunking that is utilized within buildings and industrial applications to deliver power to electrical loads. It is an alternative to traditional cabling and provides numerous advantages to the installer and client including savings on space, time and cost. There are also electrical savings due to reduced losses, reduced voltage drop and flexibility to reposition load centers using tap-off points.

## Powerbar Overview

The Powerbar range of products is built with patented processes that make it the most reliable product of its type, providing peace of mind for your installation. This, together with unrivalled product support, means that the Powerbar range of products will provide the optimum solution to your distribution requirements.

Powerbar services the UK and European markets from our manufacturing plant in Donegal, Ireland, for the USA market from our facility in Anderson, South Carolina and the Middle East from our factory in Ras Al Khaimah, U.A.E. We pride ourselves on meeting our client's deadlines and ensuring a quick turnaround on final make-up pieces.

From concept to commissioning we provide complete in-house engineering.

- Site surveys
- 3D - CAD Drawings
- Project Management
- Thermal Imaging

Our highly skilled team are experts at providing the client with exactly what they require and are experienced in producing bespoke parts to meet the client's unique demands.

## High Powerbar

Powerbar's High Power (HPB) Copper UL857 range is a 600 Volt, totally encased, non-ventilated, low impedance sandwich construction with epoxy resin coated copper conductors. The range is available from 800A to 5000A available with multiple bar configurations to suit project requirements, including neutral, double neutral, ground and half ground.

The bar is housed in an aluminum casing which also acts as an ground and is available with a choice of ingress protection ratings from IP55 to IP67. HPB UL857 is available as indoor feeder, indoor plug in and indoor sprinkler proof configurations. The busduct is painted in grey (RAL 7035). Other colours can be accommodated on request.

## High Powerbar Features

- Copper conductors tin or silver coated-finish.
- Joint Pack construction with double headed shear nuts, for quick installation.
- Up to five busplug points per side on a 12-ft length.
- All busplugs have mechanical/electrical interlocks with an ground first, break last safety feature.
- Pressed out tags for busplug connections – this is a patented process.

# STANDARDS

## Standards

The HPB UL range is UL857 listed and manufactured in a certified management system environment where Quality ISO 9001, Safety OHSAS 18001 and Environmental ISO 14001 standards are applied to all aspects of the manufacturing and installation processes. We meet the requirements of NEMA, CSA, IEEE, ANSI, IEC & CE.

## UL Listed

Powerbar completed extensive testing at UL accredited laboratories to ensure the product we supply meets UL requirements.

## UL 857 Sub-clauses Description

8.2.1	Verification of Temperature Rise Limits
8.2.2	Verification of Dielectric Voltage Withstand Test
8.2.3	Verification of Short Circuit Withstand
8.2.3.1.1.2	Dielectric Test Withstand Tests
8.2.6	Verification of Insulation Resistance and Dielectric Withstand After Exposure to Rain
8.2.8	Verification of Overload and Endurance of Non-Switching Plug-in Devices
8.2.9	Verification of Resistance to Aging
8.2.10	Verification of Metallic Coating Thickness
8.2.12	Gasket Tests
Ref to ANSI/UL 50	Type Rating Tests (Ingress Protection Tests) for the 2 series

## Seismic Compliance

The product range is certified for Seismic withstand capability and has a qualification level - high (Zone-5) in accordance to IEEE standard 693-2005.

# BUSPLUGS

## Busplug Units

Powerbar offers a range of busplug (tap-off) units to fit our High Powerbar (HPB) range for multiple applications. There is an extensive standard range but Powerbar can also manufacture special busplug units to suit any power distribution, metering or control requirements.

## Safety

All Powerbar busplug units are designed with the safety of the installer and user as the key criteria. The busplug has an extended earth contact bracket which ensures the earth ground is always the first point to connect with the busbar system during installation. The busplug units have an interlock which prevents the tap off door from being opened while the busplug is in the ON position. The busplug unit is secured to the busbar housing using high tensile strength, lockable hardware, with a mechanical clamping mechanism. This ensures the units are properly sealed during installation and cannot be fitted incorrectly.

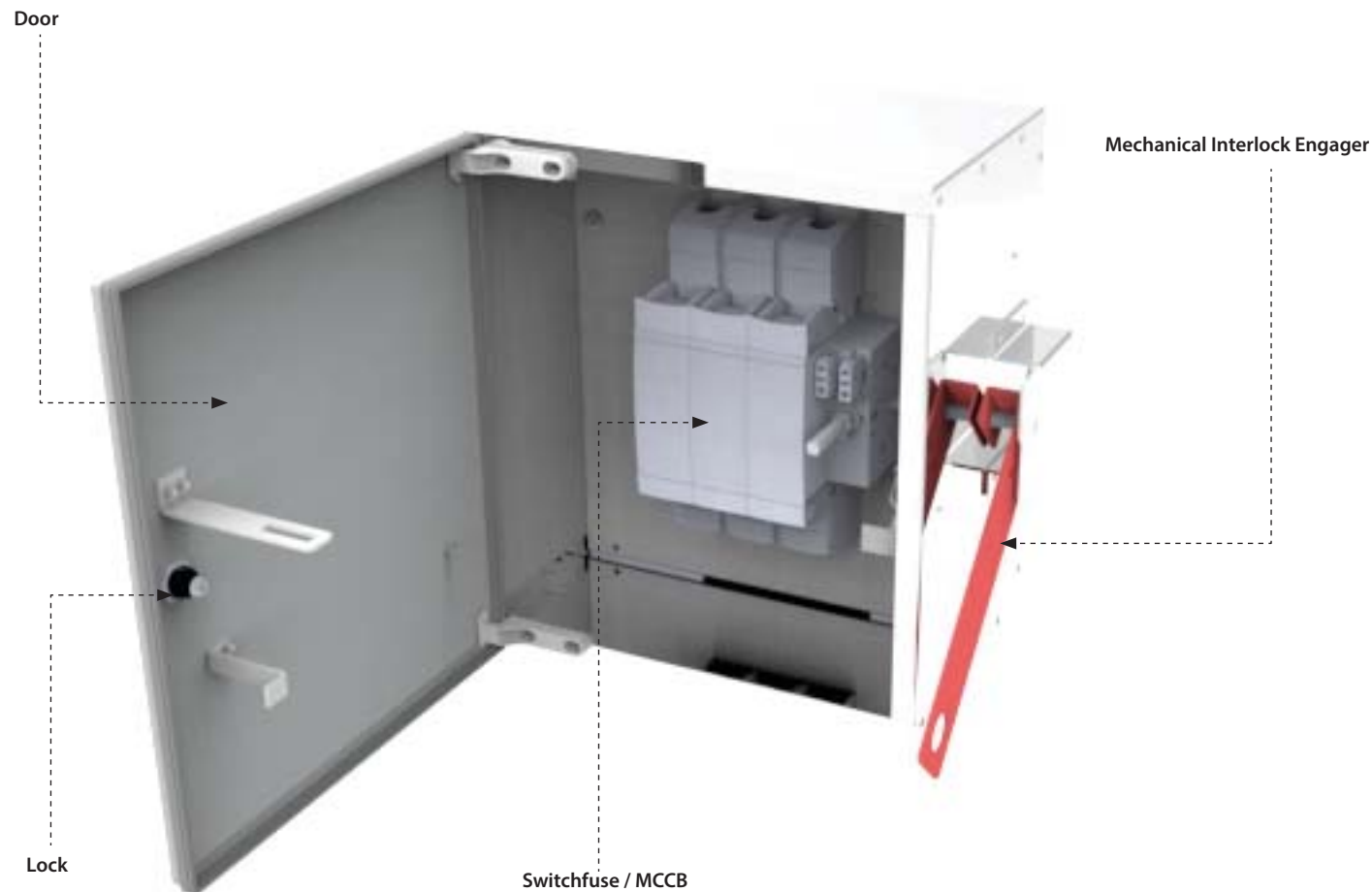
## Cable Entry

The standard busplug unit usually has bottom and side removable gland plates for cable access, but other variations are available as necessary, including cable spreader boxes. For any special requirements please contact the Powerbar engineering department.

## Special Tap Off Units

Powerbar can also manufacture special tap off units based on your specific needs and requirements. These features include:

- Metering options for landlord electrical tariff purposes
- BMS monitoring of breaker status
- BMS monitoring of metering systems
- Automatic remote open/close features
- Load shedding features
- Integral sockets
- Integral distribution boards



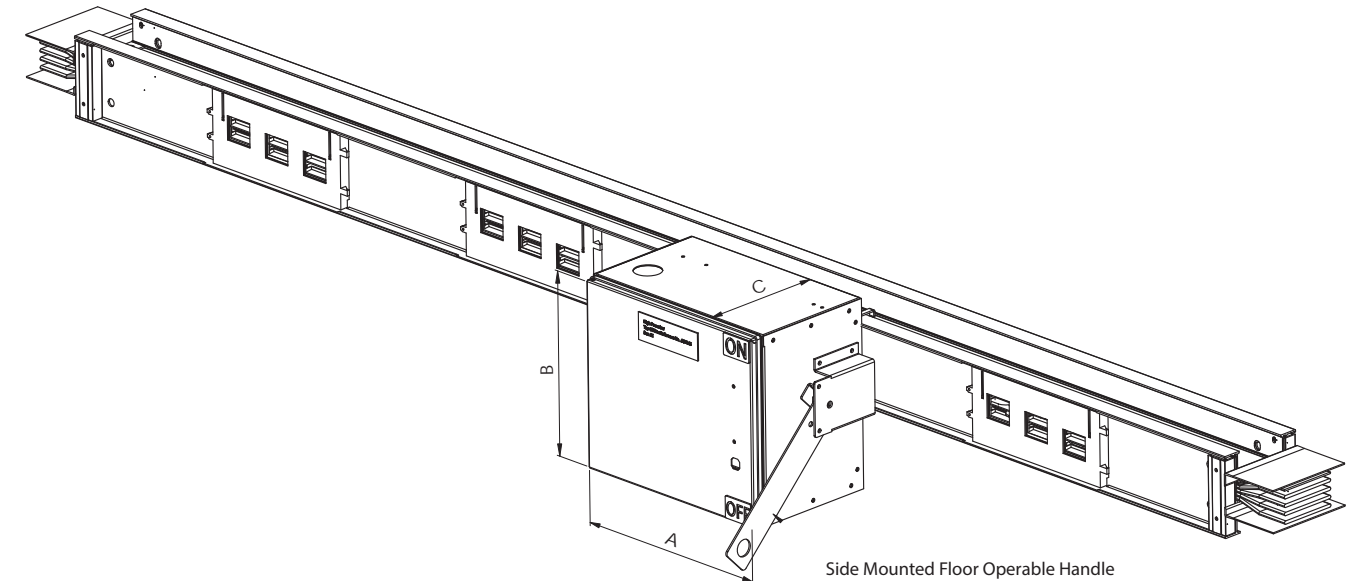
The HPB Powerbar busplug range is a 'plug-in' type up to 800A. The plug-in tap off unit is interchangeable between busbar's provided the configuration is the same. Distribution lengths are supplied with a maximum of 10 tap offs slots per length (5 on each side of the busbar).

For requests above 800A the busplug units range changes to 'in line', these units are fixed in position.

## HPB Busplugs

The HPB Powerbar Busplugs can be orientated for horizontal or vertical install.

30A to 200A offer the option of a side or face mounted floor operable handle. The sizes stated below show the minimum producible sizes when the internal device is mounted in optimum orientation. 400A, 600A and 800A utilize a face mounted floor operable handle.



## Horizontal Busway with Switchfuse

Current Rating	Dimension A (mm/inches)	Dimension B (mm/inches)	Dimension C (mm/inches)
30A / 60A / 100A	455 / 17.91	260 / 10.24	201 / 7.91
200A	455 / 17.91	513 / 20.20	252 / 9.92
400A	455 / 17.91	549 / 21.61	296 / 11.65
600A	838 / 32.99	610 / 24.02	352 / 13.86
800A	906 / 35.67	610 / 24.02	352 / 13.86

## Vertical Busway with Switchfuse

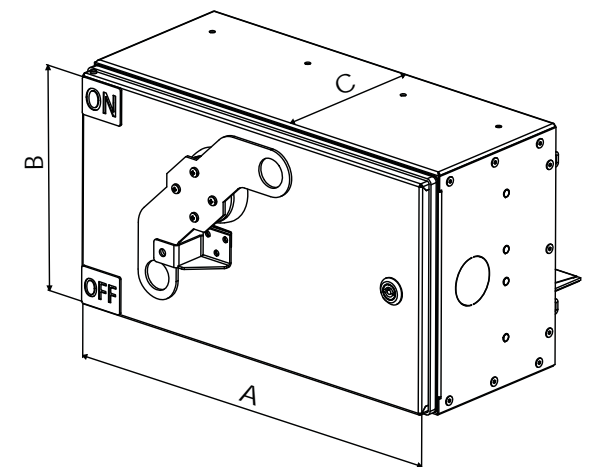
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400A	549 / 21.61	455 / 17.91	296 / 11.65
600A	610 / 24.02	838 / 32.99	352 / 13.86
800A	610 / 24.02	906 / 35.67	352 / 13.86

## Horizontal Busway with MCCB

Current Rating	Dimension A (mm/inches)	Dimension B (mm/inches)	Dimension C (mm/inches)
30A / 60A / 100A	500 / 19.69	272 / 10.71	300 / 11.81
200A	540 / 21.26	330 / 12.99	300 / 11.81
400A	690 / 27.17	418 / 16.46	300 / 11.81
600A / 800A	911 / 35.87	470 / 18.50	300 / 11.81

## Vertical Busway with MCCB

Current Rating	Dimension A (mm/inches)	Dimension B (mm/inches)	Dimension C (mm/inches)
30A / 60A / 100A	272 / 10.71	500 / 19.69	300 / 11.81
200A	330 / 12.99	540 / 21.26	300 / 11.81
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Face Mounted Floor Operable Handle  
Note: Operating handle adds 40.5mm / 1.59in to the front of the busplug.

# INSTALLATION

**Step 1.**

In accordance with isolation procedures and risk assessments to be carried out by the installer, ensure complete isolation of the electrical busbar by proving dead.

**Step 2.**

Following removal of the tap off unit from its packaging, check the device is not damaged and tap off contacts are visually in line.

**Step 3.**

Open door using key provided and release both clamping mechanisms by using a 6mm t-bar in an anticlockwise direction.

**Step 4.**

Offer the tap off box up to the shutter housing and visually line up the earth contact bracket and actuator to ensure correct location of the tap off contacts. The box cannot be inserted upside down as the design of the actuator mechanism prevents this. Insert the tap off box until base of tap off box finishes flush with busbar assembly. Use the 6mm t-bar to clamp the tap off box to the busbar assembly by rotating the clamping mechanism in a clockwise direction.

**Step 5.**

Install the rear fixing brackets.

**Step 7.**

Megger test installation prior to re-energisation of busbar.

**Step 8.**

Before turning the Switchfuse "ON", ensure the neutral link is connected and tightened.

**Tap Off Clearances:**

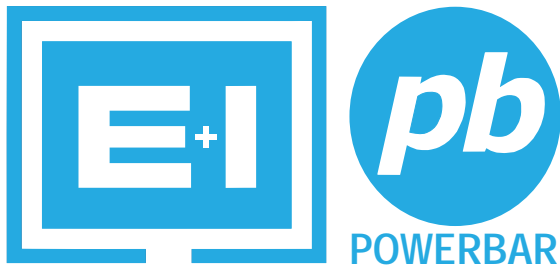
- Ensure adequate space is given between the unit and walls, ceilings or floors to allow the tap off unit to be operated both easily and safely.

**Operating Conditions:**

- Ambient Temp: -5°C to +50°C
- Relative Humidity: 95% or below.
- Product designed for indoor use.

## OTHER BROCHURES

[Product Overview](#)[HPB Copper](#)[HPB Aluminium](#)[HPB IEC Copper](#)[IMPB](#)[Cast Resin Bar](#)[Switchgear](#)



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