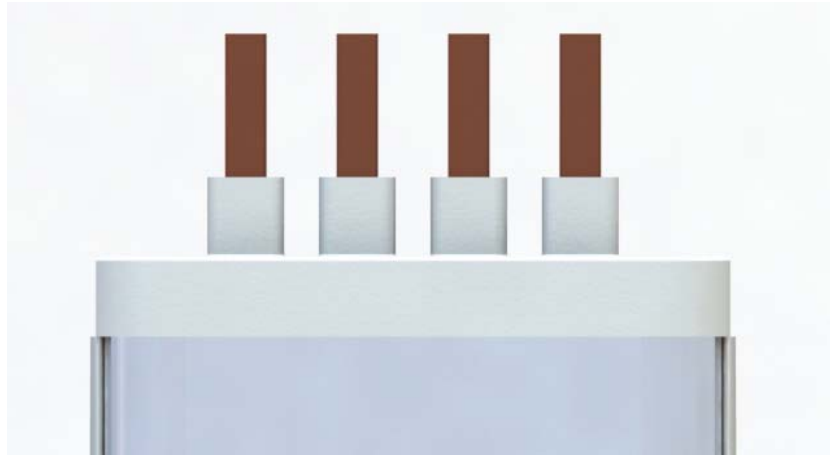


INTELLIGENT MEDIUM POWERBAR

TECHNICAL FEATURES

Conductor/Insulation System

Intelligent Medium Powerbar is constructed from high density 99.99% conductivity copper. The conductors are insulated with a custom thermoset polymer material which has outstanding heat transfer characteristics making it ideal for data centre applications. The polymer has excellent dielectric strength, is flame retardant and is impact resistant.



Housing Details

The iMPB range is constructed with an all-aluminium housing.

- Aluminium is a very light metal with a specific weight of 2.72g/cm³. This reduces transportation costs and makes the product much easier to install.
- Aluminium is non-magnetic and has a significant reduction in reactance when compared to steel.
- Aluminium naturally produces a protective oxide coating which makes it highly corrosion resistant. This means the product is more durable and requires less maintenance.

Isolated Earth Bar (Optional)

Powerbar offers a 100% fully isolated earth for systems where earth isolation is required such as systems with heavy microprocessors, based loads or large computer based installations. The continuity is maintained through the joint pack.

Double Neutral (200% Option)

Powerbar offer a fully rated 200% neutral option for busbar systems with non-linear loads. The additional neutral capacity prevents overloading caused by zero sequence harmonic currents.

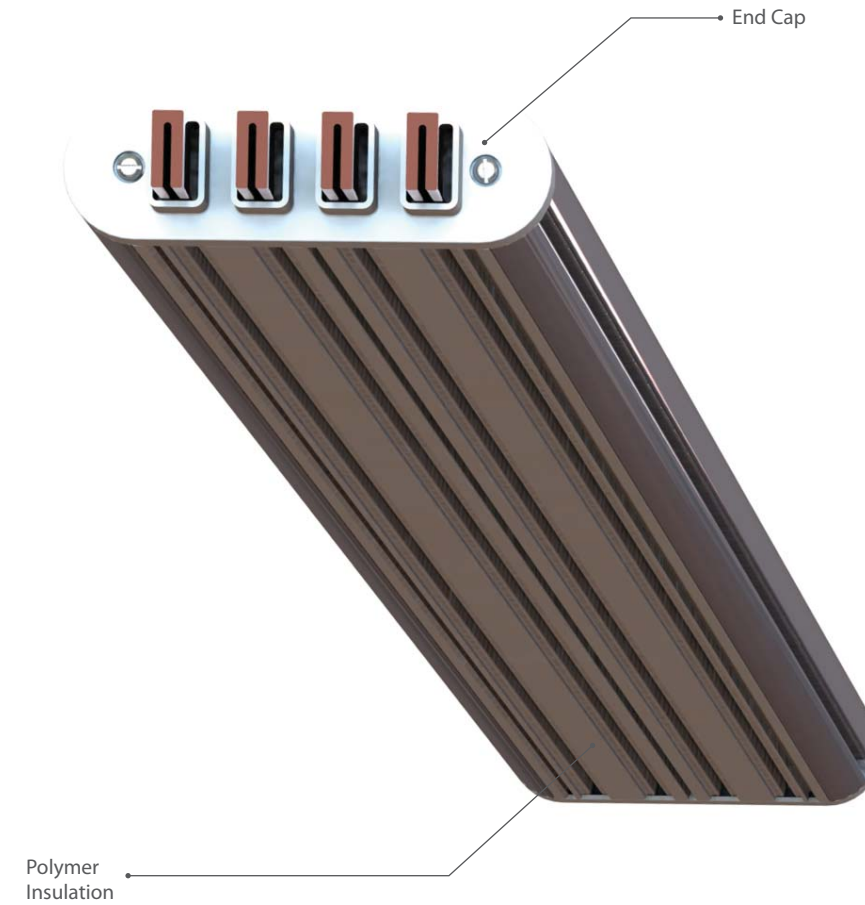
FEEDER LENGTHS

Feeder Lengths

Feeder lengths are designed as an open track system where tap off units can be plugged in anywhere. The opening is minimal to prevent access to the conductors and to prevent the entry of dirt, dust or moisture. It is also finger safe meeting an Ingress Protection (IP) rating of IP2x.

Straight lengths can be supplied at any length between a minimum of 600mm and a maximum of 6000mm.

The table below illustrates the different types of build arrangement used depending on the rating of busbar required for the application.



Busbar Rating (Amps)	Housing Size (mm)	
	4 Pole	5 Pole
160A	175 x 44mm	210 x 44mm
250A	175 x 44mm	210 x 44mm
400A	175 x 44mm	210 x 44mm
630A	200 x 60mm	240 x 60mm
800A	200 x 60mm	240 x 60mm

Phase Configurations

Configuration	Phases	Neutral	Earth
TP/N	100%	100%	Case
TP/DN	100%	200%	Case
TP/NE	100%	100%	100%
TP/DNE	100%	200%	100%

Note: Case refers to the aluminium casing been used as an earth.

JOINT PACK / DIRECTIONAL ELEMENTS

Joint Packs

The IMPB joint pack securely locks two feeder lengths together with our innovative design.

During installation; the joint pack offers a fast and secure joint, which is thermally, mechanically and electrically secure. PowerBar's tried and tested Joint Pack will ensure reliability and network resilience in your Power Critical Environment.

The joint pack footprint is specially designed to keep it compact; to ensure that more tap offs can be installed in each length of Busway.

Joints may be disassembled and reassembled easily.

No special tooling is required.

Joint pack thermal monitoring feature available on request



Directional Elements

Within our IMPB system we provide 90 degree elbows, T section's and crosses.

INSTALLATION

Installation

IMPB is usually installed on its 'flat' but can also be on its 'edge' depending on the specific project requirements and space constraints.

Hanger brackets are supplied per length which are factory fitted ready to attach to drop rods for a seamless installation process. They are field adjustable to suit project requirements.

The modular design of the Powerbar Busbar System allows it to easily be installed in either position.

Flat Installation



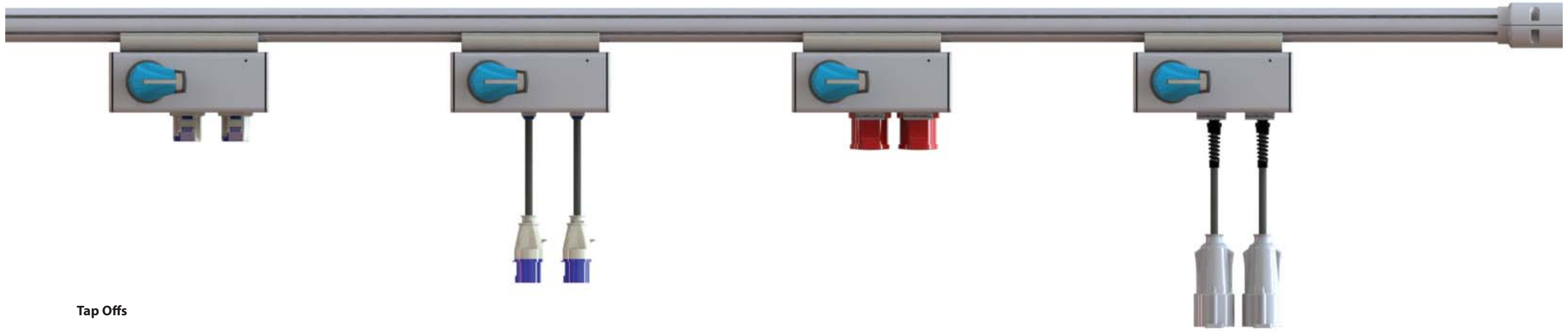
Edge Installation



Double Edge Installation



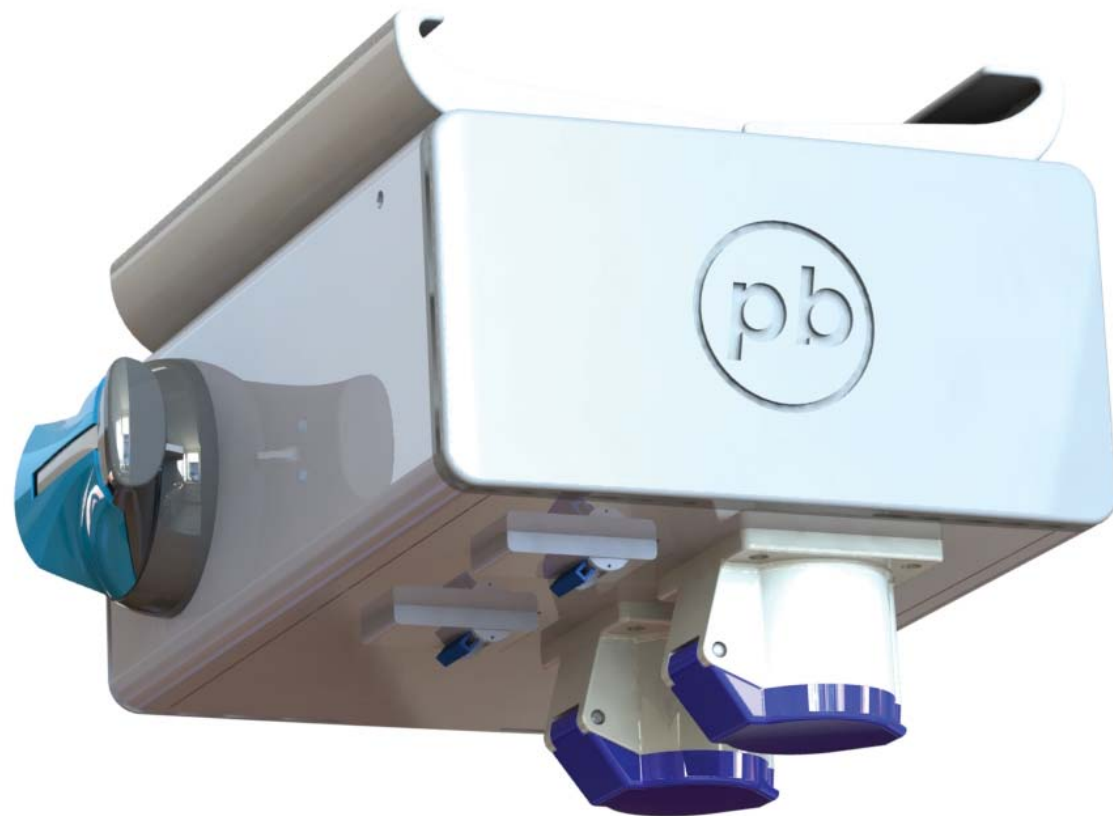
TAP OFF UNITS



Tap Offs

We offer various tap off options with built in metering. The tap off is designed in a way that it can clip on to the busway and be slid into place before engaging the contacts.

Contact our Engineering Team for more information on the available options.

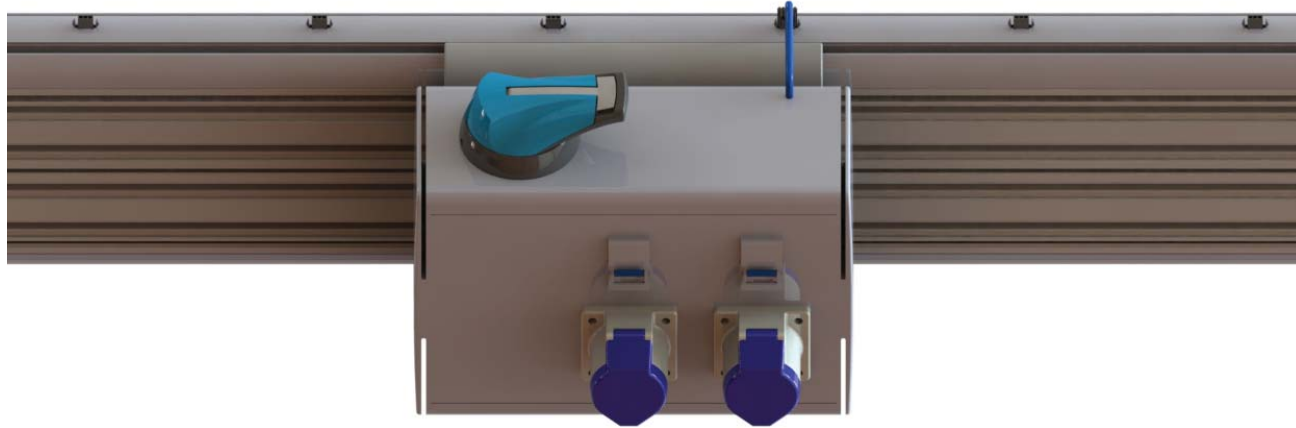


Key Features:

- Worksafe technology.
- Each tap off can be rated up to 160 Amps.
- Smart metering built in.
- Interlock feature ensuring polarities don't mismatch.
- Optional L.E.D. lighting available.

Tap Off Options
2 Single Phase sockets
2 Single Phase Drop Cord Sockets
2 Triple Phase Sockets
2 Triple Phase Drop Cord Sockets

METERING / CABLE END FEED



Metering

We offer a traditional metering setup through the use of Modbus RS485 plug-in connections.

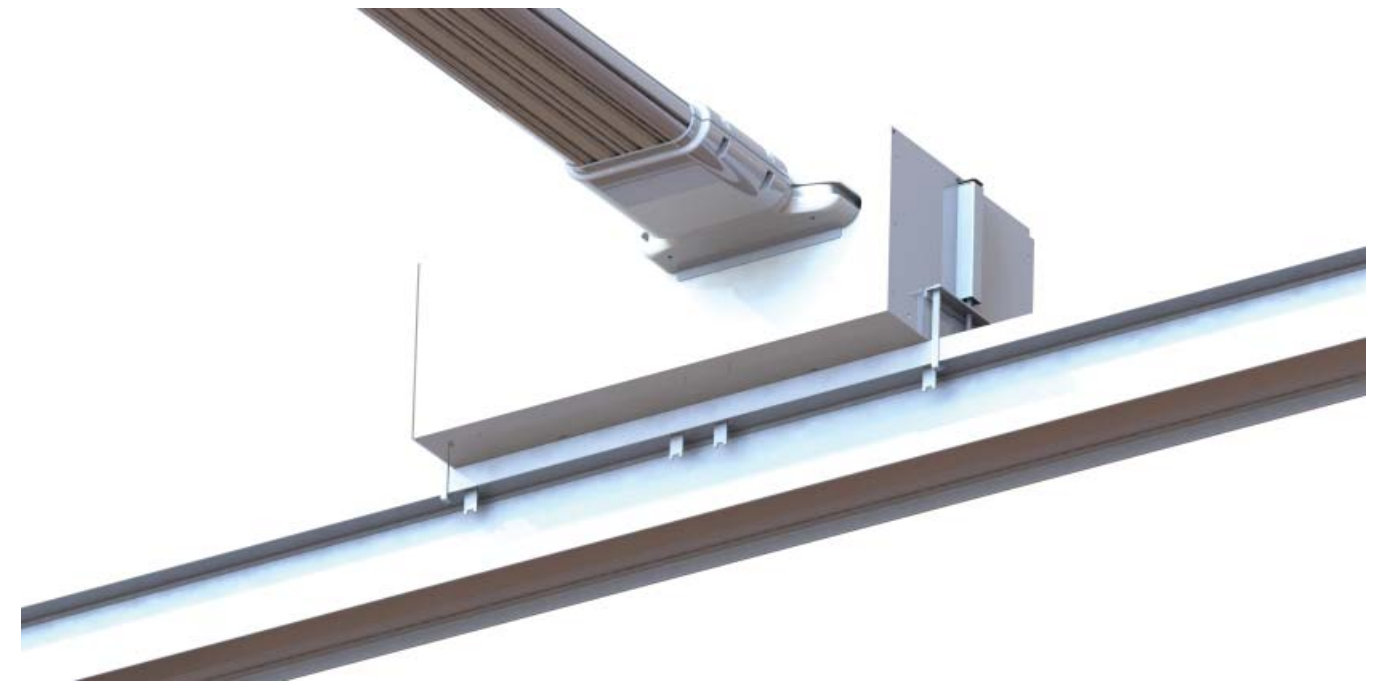
Contact our Engineering Team for more information on the available options.

Cable End Feed

Powerbar can provide standard cable end boxes with options for cable entry from various points. We also have the ability to provide centre feeds, load bank end feeds and have the capability to design custom end feeds to meet specific project requirements.

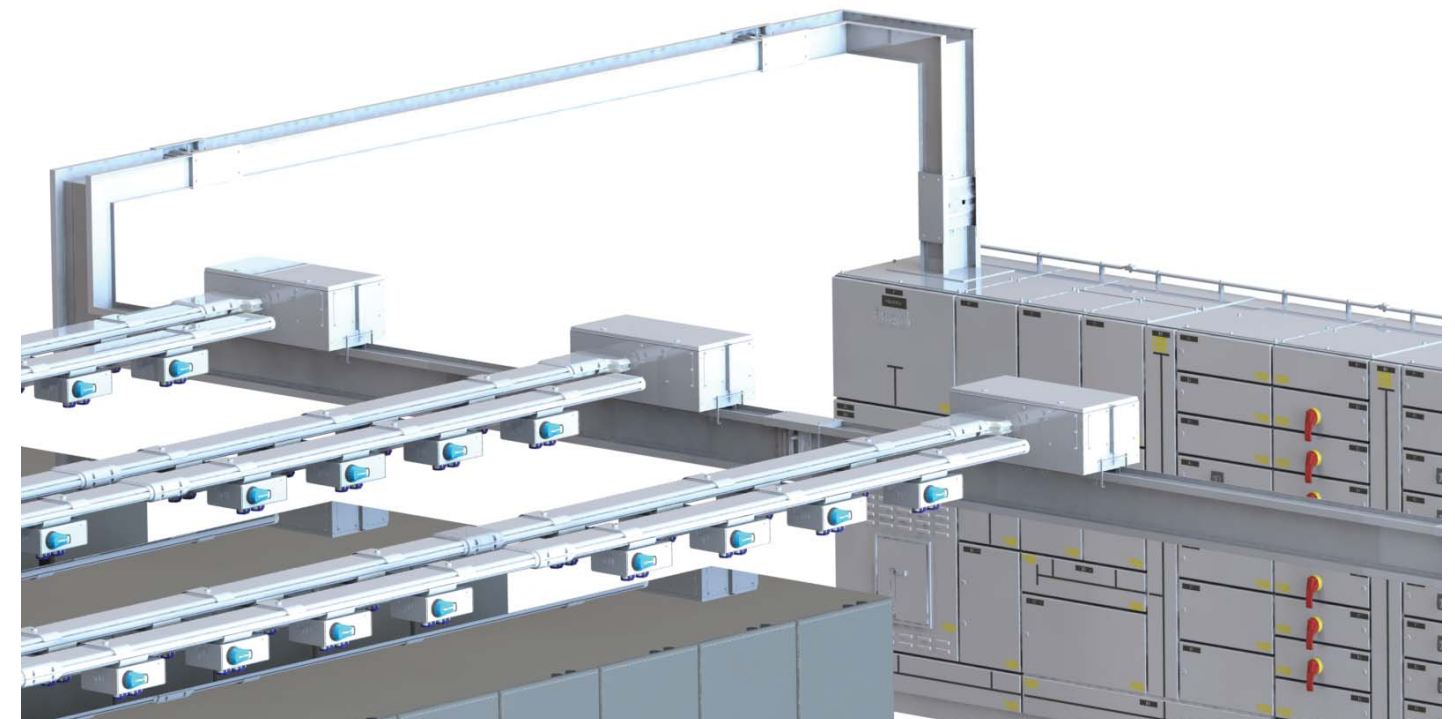


HPB CONNECTION

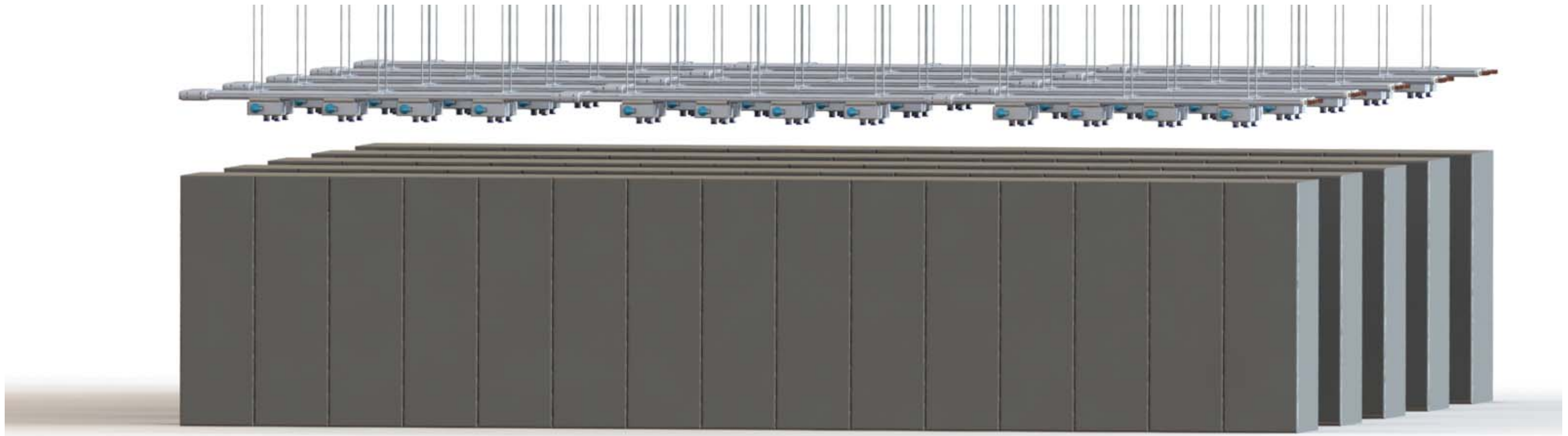


HPB to IMPB Connection

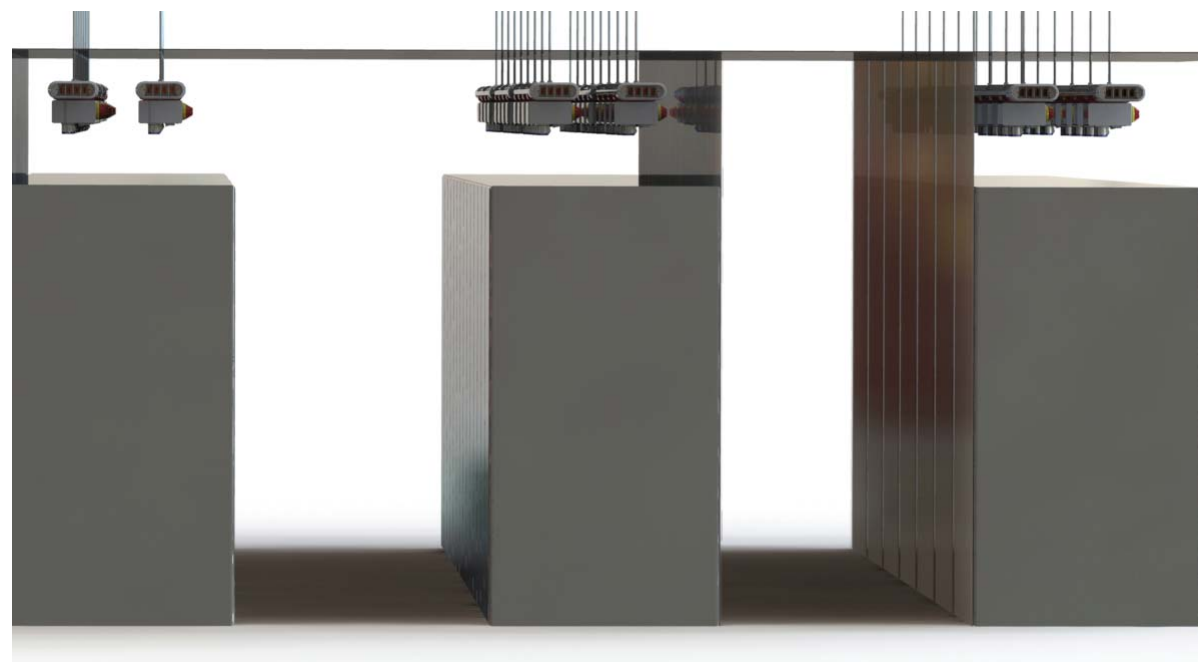
IMPB can be connected directly to a HPB busbar run to provide a full power solution . This results in a more reliable system due to less joints.



TYPICAL INSTALLATION



Due to its shape and small footprint our IMPB is well suited for any data centre application such as 'hot aisle cold aisle' setups.



E&I Engineering provide high voltage and low voltage switchgear and Powerbar provides a range of busbar trunking for power distribution. Together we can provide complete power solutions for your project.

We have four ranges of Powerbar:

IMPB - Intelligent Medium Powerbar. Our polymer insulated range available with copper conductors. This range covers 160-800 Amps

MPB - Medium Powerbar. Our air insulated range available with both copper and aluminium conductors. This range covers 160-800 Amps

HPB - High Powerbar. Our sandwich construction range available with both copper and aluminium conductors. This range covers 800-6600 Amps.

CRB - Cast Resin Bar. Our IP68 rated polymer concrete product for use in extreme conditions. This range is available with both copper and aluminium conductors. This range covers 800-6300 Amps.

Typical Underfloor Arrangement



High Density IMPB Tap Off Arrangement



QUICKREFERENCEGUIDE

Critical Dimensions

Tap Off Clearances:

- Ensure adequate space is given to allow the tap off unit to be operated both easily and safely.

Feeder Busbar Length:

- Minimum length - 600mm
- Maximum length - 4000mm

Critical Details

- Busbar drawing must have all relevant dimensions.
- Centre-line dimensions are expected, please highlight any dimensions that are not centre-line dimensions.
- Walls and floors must be located, shown and dimensioned.
- The front of all switchboards must be given and the phasing for any existing boards provided.
- Transformer connections require full details.
- Horizontal distribution busbar positioned on its 'flat' must always be oriented with the Neutral phase to the top.

Operating Conditions:

- Ambient Temp : -5°C to +40°C
- Relative Humidity: 95% or below.
- Product designed for indoor use.

TECHNICAL DATA

Rated Current (A)	160	250	400	630	800
Rated Operational Voltage (V)	400	400	400	400	400
Rated Insulation Voltage (V)	1000	1000	1000	1000	1000
Short Circuit					
1 Second (kA rms)	25	25	50	50	50
Peak Value (kA)	65	65	105	105	105
Phase Conductor					
Cross Sectional Area (mm ²)	122	122	210	255	320
Neutral Conductor					
Cross Sectional Area (mm ²)	122	122	210	255	320
Isolated Earth Conductor					
100% Earth Cross Sectional Area (mm ²)	122	122	210	255	320
Housing Earth Path					
Cross Sectional Area (mm ²)	1412	1412	1412	2030	2030
Overall Dimensions					
Height x Width of 4 Bar System (mm)	44 x 175	44 x 175	44 x 175	60 x 200	60 x 200
Weight					
Weight of 4 Bar System (kg/m)	9.45	9.45	14.2	19.4	23.2
Resistance					
Resistance (mΩ/m) at 20°C	0.172	0.172	0.102	0.065	0.048
Reactance					
Reactance (mΩ/m) at 50Hz	0.126	0.126	0.093	0.075	0.056
Impedance					
Impedance (mΩ/m) at 80°C	0.218	0.218	0.138	0.1	0.073
Voltage Drop at Full Load 50Hz					
Power Factor = 0.7 (V/m) at 80°C	0.094	0.094	0.095	0.106	0.099
Power Factor = 0.8 (V/m) at 80°C	0.093	0.093	0.092	0.1	0.093
Power Factor = 0.9 (V/m) at 80°C	0.09	0.09	0.087	0.093	0.087
Power Factor = 1.0 (V/m) at 80°C	0.084	0.084	0.081	0.087	0.081

NOTES

OTHER BROCHURES

Please use the QR codes on this page to gain access to our other brochures. To read the QR codes you will need a device with a QR code reader. These brochures can also be accessed through our website.



Product Overview



HPB Copper



HPB Aluminium



HPB IEC Copper



HPB ADDC Copper



MPB Busbar System



Cast Resin Bar



Tap Off Units

From our partners at **E&I Engineering**



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