Vertiv™ Powerbar iMPB

Flexible Modular Busway 160 A - 1000 A, 3PH, 600VAC

Overview

The Vertiv™ Powerbar iMPB is a medium power encased track busway system offering a variety of capacity and connection configurations to match your IT rack equipment requirements. With a range of 160A - 1000A, this aluminium chassis IP2X-rated busway provides optimal flexibility.

Ideally Suited For:

- Data centers of any size
- Data centers with frequent or planned configuration changes
- Single or dual-bus configurations
- Raised and non-raised floors

Benefits

- Finger / touch safe IP2X certified
- Live plug-n-play with the add-on capability of tap-off boxes
- Solid Joint Pack construction
- Open-face track allows for tap-off boxes to be placed anywhere along the busway
- Tap-off boxes have mechanical and electrical interlocks utilizing an earth-first, break-last safety feature
- Industry's most reliable and user friendly plug-in tap-off box design

Vertiv™ Powerbar iMPB

Data centre space can be a dynamic environment. Growth plans and pressures, equipment changes, technology refreshes, and more, drive the need for scalable infrastructure. Building on fixed, inflexible support systems results in additional costs and a real potential for downtime.

As power requirements and IT equipment change, busway power distribution allows data centre providers to respond quickly and cost effectively. This user-friendly busway helps ensure uptime by maintaining power delivery during branch additions and by enhancing cooling airflow with reduced power cabling.

Standard Features

- Modular design
- 100% continuous rated busway track
- Copper busway up to 800 A
- Aluminium busway up to 1000 A
- Up to 4 meter lengths as standard. Longer lengths available as specials
- Monitoring cable trough
- IEC 61439-6 compliant

Optional Features

- Multiple output receptacles
- Over-sized neutral
- Revenue-grade monitoring
- Customized lengths available

Typical Data Centre with Power Cables and Conduit

Data Centre with Vertiv™ Powerbar iMPB

Flexible, Modular Design for Easy Installation and Growth

Vertiv™ Powerbar iMPB provides high density power distribution while providing full flexibility to position individual rack power connections. The modular system ensures correct power configuration at set-up that can be easily reconfigured as the data centre develops.

Busway Benefits

- **Scalable design** for quick change and future growth
- **Continuous power delivery** to active IT equipment loads
- **Minimized outside support** for branch adds and upgrades
- **Maximized cooling airflow** to IT equipment racks
- **Financial savings** in upfront capex and site lifecycle costs

Busway Component Range

Vertiv™ Powerbar iMPB is available in a variety of straight lengths. Tap-off boxes come in multiple configurations of outlet quantity and type to meet changing requirements.

Flexibility

- Available in 160, 250, 400, 630, 800 and 1000A ratings
- Increases space efficiency and improves airflow
- Easy to change tap-off boxes
- Integrates easily into new or existing data center layouts
- Available in single or dual bus configurations

Higher Availability

- Hot-swappable tap-off boxes keep systems up and running even during changes
- Fully rated design

Lowest Total Cost of Ownership

- Requires fewer and less expensive power cables
- 15-30% less installation time and cost compared to cables and conduit
- Plug-n-play tap-off boxes connected to rack PDUs can be installed by anyone — no electrician needed

Superior Design and Materials

- Busway track is solid copper (99.99% conductivity) or aluminum (55% conductivity) for superior electrical performance and corrosion resistance
- Requires no cutting or special tools
- Enclosed aluminum housing guards against incidental contact and contamination to live parts
- Enclosed chassis will not twist or distort during tap-off box installation

The Right Power Configuration, Right Where You Need It

With IT equipment demands constantly changing, data centres need a power distribution system that can adapt at the same pace without interruption to existing critical loads and without the need for intrusive breaker and power cable changeouts.

Vertiv™ Powerbar iMPB gives data center managers flexibility, control, and peace of mind when changing and adapting to keep pace with hardware requirement demands.

Tap-off Box Benefits

- Change power requirements easily
- Plug and play to rack/rack PDU
- No interruption to existing critical loads
- No electrician required for installation
- Amps and receptacles sized to meet server needs
- Relocate and reuse tap-off boxes anywhere along the busway to maximize investment

Tap-off Box Features

- Up to 125A per tap off Box
- Up to 600VAC
- 15 to 25kA short circuit breaking capacity with higher kA circuit breakers available upon request
- Accomodates up to 5 receptacles per box
- Flush-mounted receptacles or drop cords with connectors
- Can be placed anywhere along the busway
- Tap-off boxes are easily installed on energized busway and are fully interchangeable

Tap-off box receptacles IEC 309 options:

	IP Rating	Rated Voltage	Rated Current	No. of poles	Shock resistance	Flange Dimensions	Compliances
	IP44/IP54	200 - 250 V	16 A	2P + E	IK09	95 x 80 mm	IEC 60309-1 IEC 60309-2
	IP44/IP54	200 - 250 V	32 A	2P + E		85 x 75 mm	
	IP44/IP54	380 - 415 V	16 A	3P + N + E		95 x 80 mm	
	IP44/IP54	380 - 415 V	32 A	3P + N + E		85 x 75 mm	
	IP66/IP67	200 - 250V	63 A	2P + E		110 x 110 mm	
	IP66/IP67	346 - 415 V	63 A	3P + N + E		114 x144 mm	

Technical Specifications

	Copper					Aluminium					
Rated Current (A)	**160**	**250**	**400**	**630**	**800**	**160**	**250**	**400**	**630**	**800**	**1000**
Rated Operational Voltage (V)	600	600	600	600	600	600	600	600	600	600	600
Rated Insulation Voltage (V)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Short Circuit											
Short Circuit Current Rating (rms symmetrical 1 second) kA	25	25	36	36	35	30	30	30	35	35	35
Peak Value (kA)	52,5	52,5	77	77	77	63,8	63,8	63,8	73,5	73,5	73,5
Short Circuit Conditional Rating (KAIC)	100	100	100	100	100	100	100	100	100	100	100
Environmental											
Operating Ambient Temperature	0o to 40oC	0o to 40oC	0o to 40oC	0o to 40oC	0o to 40oC	0o to 40oC	0o to 40oC	0o to 40oC	0o to 40oC	0o to 40oC	0o to 40oC
Protection Rating	IP2X, CE	IP2X, CE	IP2X, CE	IP2X, CE	IP2X, CE	IP2X, CE	IP2X, CE	IP2X, CE	IP2X, CE	IP2X, CE	IP2X, CE
Environmental Standards	RoHS, REACH	RoHS, REACH	RoHS, REACH	RoHS, REACH	RoHS, REACH	RoHS, REACH	RoHS, REACH	RoHS, REACH	RoHS, REACH	RoHS, REACH	RoHS, REACH
Phase Conductor											
Cross Sectional Area (mm2)	122	122	210	255	320	222	222	222	352	806	806
Neutral Conductor											
Cross Sectional Area (mm2)	122	122	210	255	320	222	222	222	352	806	806
Isolated Ground Conductor											
100% Earth Cross Sectional Area (mm2)	122	122	210	255	320	222	222	222	352	806	806
Housing Ground Path											
Cross Sectional Area of 4 Bar System (mm2)	1761	1761	1761	2222	2222	1761	1761	1761	2222	2796	2796
Cross Sectional Area of 5 Bar System (mm2)	2025	2025	2025	2543	2543	2025	2025	2025	2543	3158	3158
Overall Dimensions											
Height x Width of 4 Bar System (mm)	44 x 175	44 x 175	44 x 175	52 x 180	52 x 180	44 x 175	44 x 175	44 x 175	52 x 180	74 x 202	74 x 202
Height x Width of 5 Bar System (mm)	44 x 210	44 x 210	44 x 210	52 x 215	52 x 215	44 x 210	44 x 210	44 x 210	52 x 180	74 x 235	74 x 235
Weight											
Weight of 4 Bar System (kg/m)	9,45	9,45	14,2	19,4	23,2	6,9	6,9	6,9	8,2	17,7	17,7
Weight of 5 Bar System (kg/m)	11,81	11,81	17,75	24,25	29,0	9,2	9,2	9,2	10,4	22,1	22,1
Resistance (R)											
Resistance (mΩ/m) @20oC	0,161	0,167	0,096	0,89	0,065	0,200	0,183	0,184	0,098	0,045	0,043
Reactance (X)											
Reactance (mΩ/m) at 50Hz	0,131	0,114	0,088	0,094	0,089	0,066	0,115	0,118	0,065	0,057	0,056
Impedance (Z)											
Impedance (mΩ/m) @ 20°C at 50 Hz	0,208	0,202	0,130	0,129	0,110	0,211	0,216	0,219	0,118	0,073	0,071
Voltage Drop at Full Load 50Hz											
Power Factor = 0.7 (V/m)	0,061	0,094	0,103	0,168	0,177	0,058	0,102	0,171	0,154	0,112	0,141
Power Factor = 0.8 (V/m)	0,062	0,097	0,105	0,170	0,175	0,063	0,106	0,178	0,161	0,111	0,140
Power Factor = 0.9 (V/m)	0,062	0,097	0,103	0,167	0,168	0,066	0,107	0,181	0,164	0,106	0,135
Power Factor = 1.0 (V/m)	0,051	0,084	0,085	0,136	0,127	0,064	0,095	0,162	0,148	0,080	0,102

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