

Vertiv™ PowerBar Track

Open track busbar 160A - 2500A, 3PH, 600VAC



Benefits

- Innovative high amp open track busbar
- High power capacity for demanding workloads
- Scalable and flexible power distribution for future growth
- Compact, space-saving design without compromising performance
- Energy efficiency that reduces operational costs
- Reliable performance that supports business continuity
- Modular design
- Open-face track allows for tap-off boxes to be placed anywhere along the busbar
- Tap-off boxes have mechanical and electrical interlocks utilizing an earth-first, break-last safety feature
- Hot-swappable tap-off boxes keep systems up and running even during changes

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
- Pending Patents:
 - High Amperage Open track busway
 - Multi stack joint pack
 - Double joint block



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.

With capacities ranging from 160 to 2500A and rated for 100% continuous current, this modular busway system offers a variety of output capacity and connection configurations to match IT rack equipment requirements for data centres. The rigid aluminum busway track chassis is IP2X certified and IEC 61439-6 certified. The extendable segments of the open-face busbar track are available in increments ranging from 0.6 to 4 meters. Hot-swappable tap-off boxes provide flush-mounting of NEMA or flush-mounting of IEC standard receptacles for plug-and-play functionality. Having interrupt capacity ratings of 10 to 50 kiloamperes (kA), the tap-off boxes include mechanical and electrical interlocks with a ground-first, break-last feature that supports safe power requirement changes made on the fly without an electrician.

Standard features

- Modular design
- 100% continuous rated busway track
- Copper busway up to 1250A
- Aluminium busway up to 2500A
- 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



Vertiv™ PowerBar Track offers advanced metering which allows the user to monitor, integrate and display data centre power information via RJ45 Ethernet plug-in connections.

Final circuit monitoring is integrated into the busway to measure the total load of the busbar and tap off units. Power calculations of total input power for each busway run can also be provided.

- **Options**

- Voltage for all three phases
- Current - phase, ground and neutral
- kW, KVa, kVAR, power factor, kWh

- **Advanced options:**

- Voltage total harmonic distortion
- Overvoltage/ undervoltage alarm threshold
- Minimum and maximum current
- Demand and percentage load current
- Crest factor
- Warning and alarm threshold



Phase Configurations

Configuration	Phases	Neutral	Earth
TP/N	100%	100%	Case
TP/NE	100%	100%	100%

*Overrated Neutral options available for 250A- 160% and 400A- 200%

Flexibility

- Available in 160, 250, 400, 630, 800, 1000 and 1250
- Additional information for 1600 and 2500A to be added
- 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
- Available in a variety of straight lengths

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 high density, high conductivity copper 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.



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
- Can be placed anywhere along the busway
- Tap-off boxes are easily installed on energized busway and are fully interchangeable

Tap-off Box Features

- High density tap off options up to 250Amp
- 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

Tap-off box receptacles IEC 309 options:

	IP Rating	Rated Voltage	Rated Current	No. of poles	Shock resistance	Flange Dimensions	Compliances
	IP44/IP54	200–250V	16A	2P + E	IK09	85 x 75 mm	IEC 60309-1 IEC 60309-2
	IP44/IP54	200–250V	32A	2P + E		95 x 80 mm	
	IP44/IP54	380–415V	16A	3P + N + E		85 x 75 mm	
	IP44/IP54	380–415V	32A	3P + N + E		95 x 80 mm	
	IP66/IP67	200–250V	63A	2P + E		110 x 110 mm	
	IP66/IP67	346–415V	63A	3P + N + E		114 x 144 mm	



Technical specifications

	Copper					Aluminium						
Rated Current (A)	160	250	400	630	800	160	250	400	630	800	1000	1250
Rated Operational Voltage (V)	600	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	1000
Short Circuit												
Short Circuit Current Rating (rms symmetrical 1 second) kA	25	25	36	36	35	30	30	30	36	50	50	50
Peak Value (kA)	52.5	52.5	77	77	77	63	63	63	75.6	105	105	105
Short Circuit Conditional Rating (KAIC)	100	100	100	100	100	100	100	100	100	100	100	--
Environmental												
Operating Ambient Temperature	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C	0° to 40°C
Protection Rating	IP2X, CE	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	RoHS, REACH
Phase Conductor												
Cross Sectional Area (mm2)	122	122	210	255	320	222	222	222	352.01	806	806	1125.6
Neutral Conductor												
Cross Sectional Area (mm2)	122	122	210	255	320	222	222	222	352.01	806	806	1125.6
Isolated Ground Conductor												
100% Earth Cross Sectional Area (mm2)	122	122	210	255	320	222	222	222	352.01	806	806	1125.6
Housing Ground Path												
Cross Sectional Area of 4 Bar System (mm2)	1761	1761	1761	2222	2222	1014	1014	1014	1073	2939	2939	3493
Cross Sectional Area of 5 Bar System (mm2)	2025	2025	2025	2543	2543	1151	1151	1151	1210	3341	3341	3971
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	50x173	50x173	50x173	59x177	81x200	81x200	104x200
Height x Width of 5 Bar System (mm)	44 x 210	44 x 210	44 x 210	52 x 215	52 x 215	50x205	50x205	50x205	59x209	81x232	81x232	104x232
Weight												
Weight of 4 Bar System (kg/m)	9.45	9.45	14.2	19.4	23.2	8	8	8	10	17	17	22.7
Weight of 5 Bar System (kg/m)	11.81	11.81	17.75	24.25	29.0	10	10	10	13	21	21	27.72
Resistance (R)												
Resistance (mΩ/m) @20oC	0.161	0.167	0.096	0.89	0.065	0.165	0.165	0.165	0.101	0.05	0.05	0.037
Reactance (X)												
Reactance (mΩ/m) at 50Hz	0.131	0.114	0.088	0.094	0.089	0.087	0.098	0.105	0.081	0.062	0.063	0.049
Impedance (Z)												
Impedance (mΩ/m) at 50 Hz at 20°C	0.208	0.202	0.130	0.129	0.110	0.187	0.192	0.196	0.129	0.08	0.062	0.062
Voltage Drop at Full Load 50Hz												
Power Factor = 0.7 (V/m)	0.061	0.094	0.103	0.168	0.177	0.052	0.087	0.152	0.166	0.122	0.156	0.148
Power Factor = 0.8 (V/m)	0.062	0.097	0.105	0.170	0.175	0.055	0.091	0.158	0.171	0.121	0.155	0.147
Power Factor = 0.9 (V/m)	0.062	0.097	0.103	0.167	0.168	0.056	0.092	0.16	0.171	0.116	0.148	0.14
Power Factor = 1.0 (V/m)	0.051	0.084	0.085	0.136	0.127	0.05	0.081	0.143	0.147	0.087	0.112	0.104

Additional information to be added for:
1000A and 1250A- Copper
1600A and 2500A- Aluminium