Vertiv™ Powerbar HPB

Overview

Vertiv™ Powerbar HPB's sandwich construction range has been engineered for applications which require moving large amounts of power. Most commonly Vertiv Powerbar HPB is used to distribute power from transformers to low voltage switchboards and then down to further power distribution boards.

Ideally suited for:

- Replacing cable / conduit for overhead applications.
- Manufacturing, Data Centers, Labs, Warehouses or any application with changing load requirements.
- Long runs where voltage drop is a concern.
- Connecting switchboards.

Vertiv™ High Powerbar (HPB) is 600 Volt totally encased, non-ventilated, low impedance busduct. Vertiv HPB is available from 1000-4000A in Aluminum and 1000-5000A in Copper with multiple bar configurations to suit project requirements.

Features:

- Class B insulated epoxy coated conductor with tin plating
- Sandwich style busduct with spliced joint pack
- Maximum 6 busplug outlets with a busbar length of 12ft
- All busplugs have mechanical/ electrical interlocks with a 'ground first, break last' safety feature
- Stamped conductor tabs for busplug connections. All aluminum housing for reduced heat loss and better ground continuity

Standards

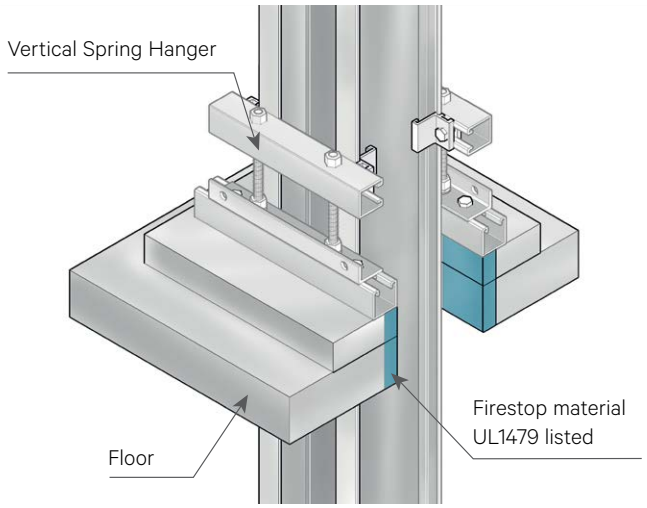
Vertiv HPB is UL857 listed and manufactured in a certified management system environment where Quality ISO 9001 standards are applied to all aspects of the manufacturing and installation processes. We meet the requirements of NEMA, CSA, IEEE & ANSI.

Seismic Compliance

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

Technical Features

- Constructed from high density 99.99% conductivity copper or 57% aluminum.
- The conductors are insulated with a Class B epoxy insulation applied uniformly using an electrostatic coating process. The epoxy coating is non-hygroscopic and chemical resistant with outstanding heat transfer characteristics.
- The low impedance sandwich design:
  - Improves heat dissipation
  - Improves short circuit rating
  - Reduces voltage drop/ impedance
  - Removes potential pathways for flame, smoke and gas
- Constructed with an all-aluminum housing. Aluminum is much lighter than steel, making it more economical and easer to install. Aluminum is also less reactive than steel so it is more durable and easier to maintain.
- Offers 100% fully isolated ground for systems where ground isolation is required.
- Can be used in 'Through-Penetration Fire Stop Systems' as listed in the UL Fire Resistance Directory.



UL Fire Stop System

Copper

Configuration	Phases	Neutral	Ground
3W	100%	0%	Case
4W	100%	100%	Case
3W+G	100%	0%	100%
4W+G	100%	100%	100%

Aluminium

Configuration	Phases	Neutral	Ground
TP	100%	0%	Case
TP/N	100%	100%	Case
TP/E	100%	0%	100% or 50%
TP/NE	100%	100%	100% or 50%

Note: Case refers to the aluminum casing being used as an integral ground. 100% ground bar can either be supplied as an isolated ground (ISO) or uninsulated internal ground (INT).

Technical Data - Aluminium

Ampere Rating at 600Vac (max)	800	1000	1200	1350	1600	2000	2500	3000	4000
Busway Width x Ht. inches (mm)	4.72 x 5.83 (120 x 148)	5.51 x 5.83 (140 x 148)	6.30 x 5.83 (160 x 148)	6.89 x 5.83 (175 x 148)	8.07 x 5.83 (205 x 148)	10.24 x 5.83 (260 x 148)	14.76 x 5.83 (375 x 148)	17.13 x 5.83 (435 x 148)	23.82 x 5.83 (605 x 148)
Bar Width x 6mm Thick (#/phase)	60	80	100	115	145	200	115 (2)	145 (2)	125 (3)
Ohms x 103 per 100 feet (includes joint packs)									
Line to neutral									
R Resistance at 68°F (20°C)	2.092	2.009	1.397	1.245	1.165	0.844	0.741	0.582	0.397
R Resistance at 176°F (80°C)	2.628	2.527	1.754	1.562	1.466	1.061	0.93	0.732	0.497
X Reactance at 60Hz	0.436	0.43	0.308	0.278	0.265	0.201	0.16	0.134	0.094
Z Impedance at 176°F (80°C)	2.139	2.058	1.427	1.285	1.195	0.866	0.758	0.598	0.406
Voltage Drop Full Load 60 Hz per 100 ft									
(V/100ft) at 176°F (80°C)									
Power Factor = 0.7	2.98	3.60	3.01	3.02	3.37	3.07	3.32	3.16	2.88
Power Factor = 0.8	3.28	3.95	4.09	3.31	3.69	3.36	3.64	3.46	3.15
Power Factor = 0.9	3.54	4.26	3.56	3.57	3.98	3.61	3.93	3.73	3.39
Power Factor = 1.0	3.64	4.38	3.65	3.65	4.06	3.68	4.03	3.80	3.45
Approximate Weight									
3ø, 3-Wire									
lbs/ft	8	9	10	10	12	15	21	24	33
kg/m	11	13	14	15	18	22	31	35	49
3ø, 3-Wire with internal ground									
lbs/ft	8	9	11	12	14	17	24	27	37
kg/m	12	14	16	17	20	25	35	41	55
3ø, 4-Wire									
lbs/ft	8	9	11	12	14	17	24	27	37
kg/m	12	14	16	17	20	25	35	41	55
3ø, 4-Wire with internal ground									
lbs/ft	9	10	12	13	15	19	26	31	42
kg/m	13	16	18	20	23	29	39	46	62

Technical Data - Copper

Ampere Rating at 600Vac (max)	800	1000	1200	1350	1600	2000	2500	3000	3200	4000	5000
Busway Width x Ht. inches (mm)		4.33 x 5.83 (110 x 148)	4.72 x 5.83 (120 x 148)	5.32 x 5.83 (135 x 148)	6.30 x 5.83 (160 x 148)	7.87 x 5.83 (200 x 148)	9.84 x 5.83 (250 x 148)	13.58 x 5.83 (345 x 148)	14.65 x 5.83 (372 x 148)	19.69 x 5.83 (500 x 148)	23.82 x 5.83 (605 x 148)
Bar Width x 6mm Thick (#/phase)	45	50	60	75	100	140	190	100 (2)	110 (2)	90 (3)	125 (3)
Ohms x 103 per 100 feet (includes joint packs)											
Line to neutral											
R Resistance at 68°F (20°C)	1.45	1.45	1.098	0.838	0.564	0.48	0.327	0.293	0.29	0.232	0.149
R Resistance at 176°F (80°C)	1.785	1.785	1.385	1.042	0.732	0.587	0.403	0.341	0.335	0.283	0.199
X Reactance at 60Hz	0.558	0.558	0.497	0.406	0.293	0.267	0.176	0.146	0.144	0.129	0.075
Z Impedance at 176°F (80°C)	1.84	1.84	1.437	1.092	0.756	0.64	0.428	0.366	0.359	0.309	0.199
Voltage Drop Full Load 60 Hz per 100 ft											
(V/100ft) at 176°F (80°C)											
Power Factor = 0.7	2.85	2.85	2.75	2.38	2.00	2.08	1.77	1.79	1.87	2.01	1.67
Power Factor = 0.8	3.05	3.05	2.92	2.52	2.11	2.18	1.85	1.88	1.97	2.10	1.77
Power Factor = 0.9	3.20	3.20	3.04	2.61	2.18	2.23	1.90	1.93	2.02	2.15	1.83
Power Factor = 1.0	3.09	3.09	2.88	2.44	2.02	2.03	1.75	1.77	1.86	1.96	1.72
Approximate Weight											
3ø, 3-Wire											
lbs/ft	14	16	18	21	26	34	43	N/A	53	72	74
kg/m	9	11	12	14	17	23	29	N/A	35	48	50
3ø, 3-Wire with internal ground											
lbs/ft	16	19	22	25	32	42	54	N/A	64	87	89
kg/m	10	13	15	17	21	28	36	N/A	43	58	60
3ø, 4-Wire											
lbs/ft	16	19	22	25	32	42	54	N/A	64	87	89
kg/m	10	13	15	17	21	28	36	N/A	43	58	60
3ø, 4-Wire with internal ground											
lbs/ft	18	22	25	30	37	50	65	N/A	76	102	104
kg/m	12	15	17	20	25	33	44	N/A	51	68	70

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