

# Vertiv™ Liebert® MBX Busway

Flexible Modular Busway 250-1000 A, 3PH, 600VAC



## Overview

The Liebert® MBX 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 250 - 1000 A, 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
- Aluminum chassis is lightweight (compared to steel)
- Open-face track allows for tap-off boxes to be placed anywhere along the busway
- Tap-off boxes have mechanical and electrical interlocks utilizing a ground-first, break-last safety feature

## Vertiv™ Liebert® MBX Busway



Data center 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 you to respond quickly and cost effectively. This user-friendly busway helps ensure uptime by maintaining power delivery during branch additions and by enhancing coolinf airflow with reduced power cabling.

### Standard Features

- Modular design
- 100% continuous rated Busway Track
- Copper bus up to 800 A
- Up to 4 meters standard
- Aluminium bus per 1000 A
- Monitoring cable trough
- IEC 61439-6 compliant

### Optional Features

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



**Typical Data Center with Power Cables and Conduit**



**Data Center with Liebert® MBX**

## Flexible, Modular Design for Easy Installation and Growth

Vertiv™ Liebert® MBX Busway track provides high density 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 your needs change.

### 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

Liebert® MBX busway tracks are available in a variety of straight lengths. Tap-off boxes come in multiple configurations of receptacle quantity and type to meet changing requirements.

### Flexibility

- Available in 250, 400, 630, 800 and 1000 A 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 (98% conductivity) and tin plated 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, you 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™ Liebert® MBX 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-n-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 box anywhere along the busway to maximize investment

### Tap-off Box Features

- Up to 63A per tap off Box
- Up to 600VAC
- 15 to 25 kA short circuit breaking capacity
- Accomodates up to 5 receptacles per box
- Flush-mounted receptacles
- Fits anywhere along the busway
- Tap-off boxes are readily 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

Rated Current (A)	250	400	630	800	1000
Rated Operational Voltage (V)	600	600	600	600	600
Rated Insulation Voltage (V)	1000	1000	1000	1000	1000
Nominal Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
<b>Short Circuit</b>					
Short Circuit Current Rating (rms symmetrical 1 second) kA	25	30	36	35	35
Peak Value (kA)	52.5	65	77	77	73.5
Short Circuit Conditional Rating (kAIC)	50	50	50	50	65
Bus Material	Copper	Copper	Copper	Copper	Aluminum
<b>Environmental</b>					
Operating Ambient Temperature	0° to 40°C				
Protection Rating	IP2X, CE				
Environmental Standards	RoHS, REACH				
<b>Phase Conductor</b>					
Cross Sectional Area (mm <sup>2</sup> )	122	210	255	320	806
<b>Neutral Conductor</b>					
Cross Sectional Area (mm <sup>2</sup> )	122	210	255	320	806
<b>Isolated Ground Conductor</b>					
100% Earth Cross Sectional Area (mm <sup>2</sup> )	122	210	255	320	806
<b>Housing Ground Conductor</b>					
Cross Sectional Area (mm <sup>2</sup> )	1412	1412	2030	2030	2797
<b>Overall Dimensions</b>					
Height x Width of 4 Bar System (mm)	44 x 175	44 x 175	52 x 180	52 x 180	74x202
Height x Width of 5 Bar System (mm)	44 x 210	44 x 210	52 x 215	52 x 215	74x235
<b>Weight</b>					
Weight of 4 Bar System (kg/m)	9.45	14.2	19.4	23.2	17.7
Weight of 5 Bar System (kg/m)	11.81	17.75	24.25	29	22.1
<b>Resistance (R)</b>					
Resistance (mΩ/m)	0.173	0.108	0.098	0.078	0.060
<b>Reactance (X)</b>					
Reactance (mΩ/m)	0.116	0.094	0.078	0.069	0.070
<b>Impedance (Z)</b>					
Impedance (mΩ/m)	0.208	0.143	0.125	0.104	0.092
<b>Voltage Drop at Full Load</b>					
Power Factor = 0.7 (V/m)	0.088	0.097	0.135	0.142	0.126
Power Factor = 0.8 (V/m)	0.088	0.096	0.134	0.141	0.125
Power Factor = 0.9 (V/m)	0.084	0.093	0.131	0.138	0.122
Power Factor = 1.0 (V/m)	0.090	0.099	0.137	0.144	0.128