

HIGHBUS

DATASHEET



Designed to meet the unique challenges of electrical distribution in high rises, the revolutionary HighBus is the latest iteration of the SuperiorBus™. HighBus is a custom-engineered, modular cable bus power distribution system designed for use in high rise apartment and office buildings. This innovative system is durable, intrinsically safe and reliable. It is also more cost-efficient than electrical distribution systems currently on the market.



HIGHBUS

COST EFFICIENT

- ✓ Can be used as temporary power as building is constructed
- ✓ Includes watertight seals, water dams, and fire stops; reducing installation time
- ✓ Wet-dry rated HighBus system eliminates replacement costs of water damaged electrical systems during installation and service life
- ✓ Ease of installation reduces labour costs
- ✓ Reduces maintenance requirements

INTRINSICALLY SAFE & RELIABLE

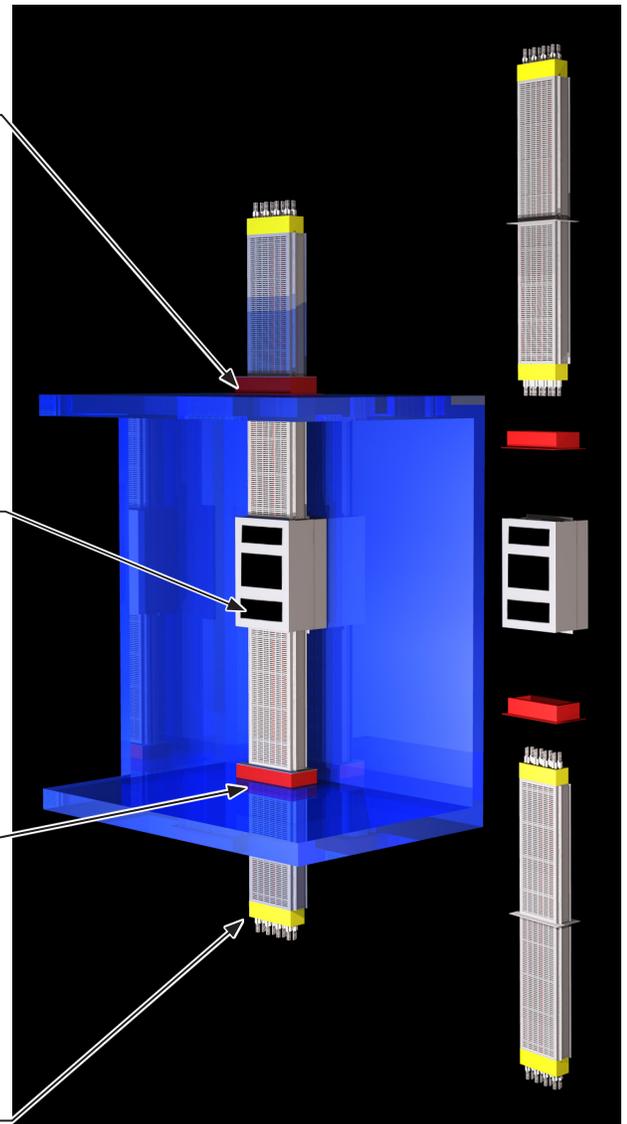
- ✓ Balanced system with verified phase arrangement
- ✓ Protects against injury and property damage with fire stops and watertight seals
- ✓ Flexibility tolerates building sway

DURABLE

- ✓ Water dam and watertight seals endure up to 12" of water flooding
- ✓ Water dam acts as structural support for HighBus sections

CUSTOMIZED DESIGN

- ✓ Configured to suit building requirements, with customized lengths for specific floor heights
- ✓ Reduced footprint by up to 50% compared to standard bus duct



BUS DUCT vs. HIGHBUS A COMPARISON



Bus duct has been used in high rises for many years. However, bus duct can have high maintenance requirements, which can lead to serious consequences if maintenance is not performed. This data sheet classifies the differences between bus duct and HighBus.

Bus Duct	HIGHBUS
Financial / Time Cost	
Bus ducts cannot be used for temporary power, only permanent power	Only riser system that can be used as temporary power during high rise construction
Construction completed first, then power feeder is installed	Can be installed simultaneously during building construction; early completion results in faster return on investment
Higher cost system during installation and operation	Cost-effective system compared to traditional bus duct
Different bus duct system types required for specific application needs, increasing design complexity and costs	Wet-dry, free-air rated system can be vertically or horizontally installed in all applications
Entire bus duct must be replaced if the system gets wet from sprinklers, rain during installation, flooding or condensation	System unaffected by water due to wet-dry rating, water dams and water seals
Parts needed to install bus duct need to be individually sourced and made to fit resulting in high installation costs – more time, components, labour and equipment needed	All-in-one package includes everything needed for easy installation; low installation costs due to simple assembly process
Annual and semi-annual intensive maintenance increases operational costs	Non-labor-intensive maintenance requirements decreases operational costs
Custom bus duct pieces have long lead times which increases construction cost	Custom designed HighBus is automated and produced in-house to suit clients' needs
System-specific panels needed to tap off from bus bars	Generic panels can be purchased as needed to tap off from bus bars
Multiple costly bus plugs are needed to tap off main system	HighBus tapbox needs no plugs to tap off bus bars; up to 6 taps included
Reliability	
Rigid nature of system does not account for building movement, which leads to mechanical stress which can cause eventual failure	Flexible conductors take up natural building oscillation, sway, and diurnal power load draws without developing mechanical stress points
Bus ducts are dry rated; short circuit situations can result from condensation within the bus duct enclosure	HighBus is wet-dry rated and not affected by moisture
Bus bars have numerous jointing methods for mechanical connection that can cause loosening, hot spots, and can lead to eventual failure due to mechanical vibrations and expansion/contraction due to heat	Fully continuous conductors connected only at the tapbox via NEMA 2 long barrel lugs, reducing the number of joints, simplifying installation and drastically reducing the number of failure points
Bus plugs can be a point of failure	No bus plugs necessary: system has fewer points of failure
Ease of Installation	
Larger system results in a more challenging installation	Smaller system (compared to systems with equivalent ampacity) results in an easy installation
System must be aligned precisely	No need for precise alignment due to system's flexible elements

PIPE AND WIRE vs. HIGHBUS A COMPARISON



Pipe and wire is another popular choice for power distribution systems in high rises. This data sheet classifies the differences between pipe and wire and HighBus.

Pipe and Wire	HIGHBUS
Financial / Time Cost	
Pipe and wire systems are not used for temporary power, only permanent power once building is complete	Only riser system that can be used as temporary power during high rise construction
Construction completed first, then power feeder is installed	Can be installed simultaneously during building construction; early completion results in faster return on investment
Parts, fittings, and conductors need to be individually sourced and modified to fit	All-in-one package includes everything needed for installation, saving money and time
Increased number of conductors and lugs required, which increases cost of system and installation time	HighBus uses fewer conductors and connection points due to system design, which decreases installation time
Short circuit events can damage the conductors' insulation, requiring extensive conductor replacement	Conductors are fully supported and braced, preventing damage to them in the event of a short circuit
Larger system footprint requires increased space usage	Smaller footprint requires decreased space usage
Reliability	
No electrical analysis or balancing	FEA analysis, heat rise, short circuit, impact and load testing conducted on HighBus
Pipes are rigid and can't accommodate building contraction and expansion or sway	System is designed to be flexible to accommodate a building's natural movement, oscillation, and diurnal power load requirements
Lack of engineered balancing can result in large forces interacting between conductors, which can cause conductor movement and damage to conductor insulation during load fluctuation and short circuit	Balanced system ensures that electromagnetic forces in the conductors are cancelled out by adjacent conductor currents.
Multiple pipes and termination points increase the number of points for possible failure	Only three main modular components installed on each floor
Often installed without water dams – flooding on one floor can seep through to another floor	Integrated water dam allows for up to 12" of flooding on each floor
Often installed without firestops	Firestops integrated into inherently fire-rated water dam to prevent fires from spreading floor-to-floor
Ease of Installation	
Pipes need to be first individually aligned on each floor and then conductors need to be pulled through the floors, resulting in added installation labor	Modular HighBus sections are self-contained and only need to be inserted once into the water dam for structural support
Larger physical footprint require more room, which results in a more difficult installation	Smaller physical footprint and easy installation
Multiple braces need to be installed for support	Singular water dam acts as support
System must be aligned precisely	No need for precise alignment due to system's multiple flexible elements

HighBus System

Parameter	Specification
Power Configuration	3-Phase 3-Wire (Delta), 3-Phase 4-Wire (Wye)
Ampacity	Unlimited ampacities; standard systems range from 400–32,500A and higher. All systems are CEC, NEC and NOM compliant
Voltage	208V to 1kV
CSA, UL and NOM Certified	CSA certified ventilated system, UL certified as grounding conductor
Free Air Rating	Yes
Grounding	Per UL/CSA requirements
Short Circuit	Up to 200 KAIC
Material	6063-T6 Aluminum, Stainless Steel

Pre-Configured Splitter System

Parameter	Specification
Terminations	Pre-configured for direct connection to splitter system
Splitter System	Multiple taps for installation flexibility
Maintenance	Infrared windows for easy viewing to detect electrical hotspots

The HighBus, like the SuperiorBus™, is fully customized to suit individual customer requirements. It is designed, manufactured and assembled in our production facility and the complete system is shipped in modular pieces for easy installation.

Most electrical distribution system failures in high rises are the result of water damage from rain during construction, flooding, sprinklers, etc. The HighBus is designed as a "wet/dry system" that can be built to suit outdoor or indoor conditions due to its weather-resistant and water-resistant design.



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