



# Vertiv™ PowerBoard UL1558 Switchgear



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## Standards and Certifications

*Manufactured in a certified management system environment where Quality ISO 9001, Safety ISO 45001 and Environmental ISO 14001 standards are applied to all aspects of the manufacturing and installation processes. We meet the requirements of NEMA, CSA, IEEE, ANSI, IEC & CE.*

## ETL Listed

Completed extensive testing at accredited laboratories to ensure the product we supply meets UL standards.

## Standards Compliance

- UL 1558 - Metal-enclosed Low-voltage Power Circuit Breaker Switchgear
- CSA C22.2 - Switchgear Assemblies
- IEEE C37.20.1 - IEEE Standard for Metal-Enclosed Low- Voltage (1000 Vac and Below, 3200 Vdc And Below) Power Circuit Breaker Switchgear
- Test Certificate - ETL File: 104406595DAL-001. Switchgear is designed, tested, and constructed based on the standard above

## Vertiv™ PowerBoard UL1558 Switchgear



### Customizable

One of the most compact switchgear designs in the North American Market.

Vertiv™ PowerBoard UL1558 Switchgear packs more power into a smaller footprint, this power dense design optimizes switch room space. Helping our customer to accommodate the demand for higher power capacity.

### Speed to Market

Vertiv's modular switchgear design facilitates a component agnostic solution, giving the customer more freedom to choose their preferred components from an extensive range of well-known manufacturers. Designs can be customized to fit the most challenging specifications both in terms of space and performance.

### Safe & Reliable

Capital performance reliability and operator safety. Internal segregation as outlined by IEC 61439-2 reduces operator risk by limiting the propagation of internal arc fault and preserves uptime during maintenance and upgrade operations.

## Product Overview

### Engineered and Built for Mission Critical Facilities

Vertiv™ PowerBoard UL1558 brings together the standard components and circuit breakers from the leading manufacturers to deliver a solution that meets individual client requirements. The standard design of UL1558 switchgear facilitates expedited manufacturing and delivery time allowing end users to meet tight deadlines.

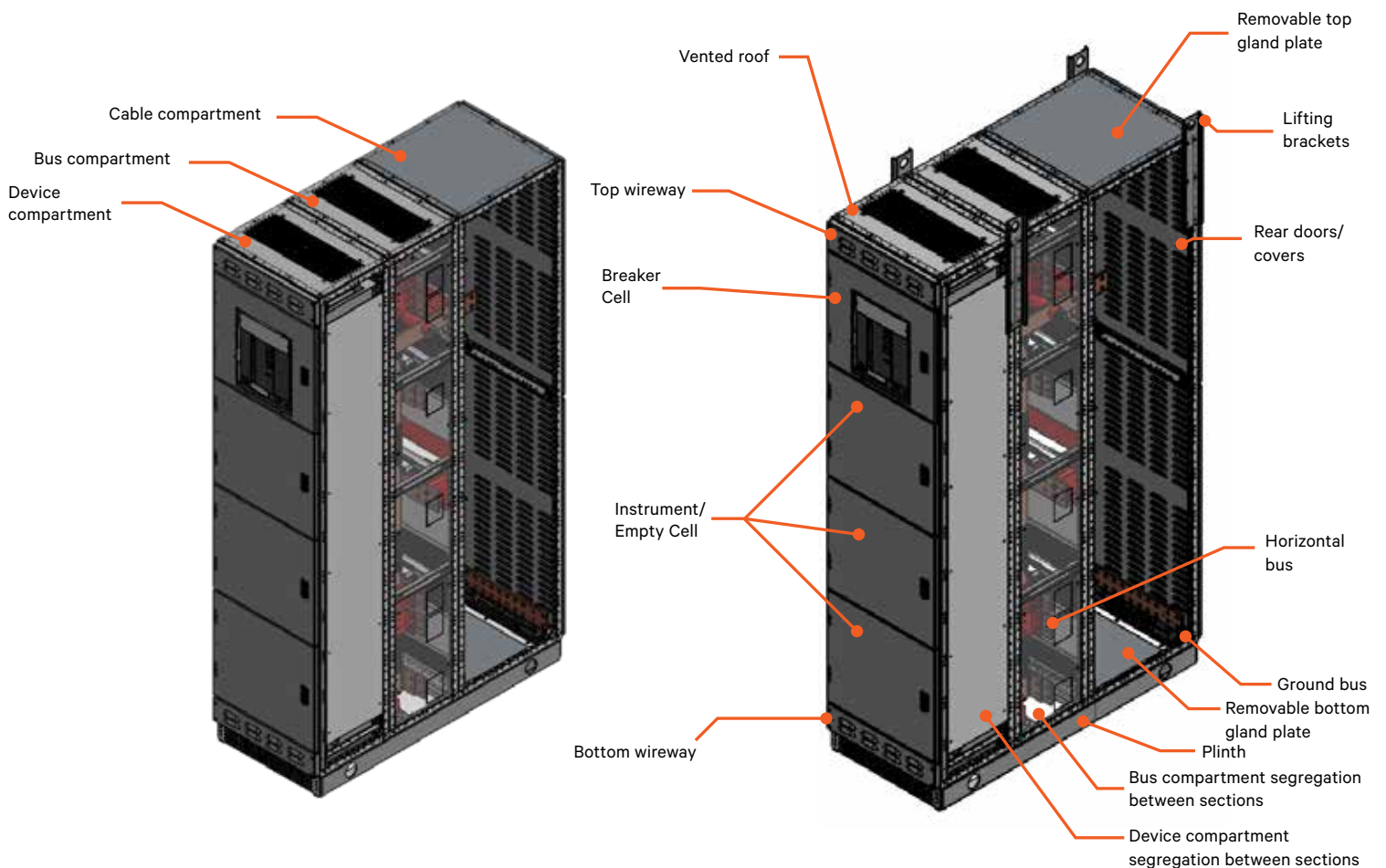
- Type tested arc prevention busbar systems
- Interrupting capacities up to and including 100KAIC at 600V
- Emax 2, Magnum, and Masterpact low voltage air circuit breakers, power circuits up to 600 volts AC
- NEMA 1 enclosure
- Switchgear Ampacity to 4000A
- Three vertical isolated compartments: Device, Bus, and Cable

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## Standard Layout

The switchgear assembly comes standard with one or more vertical sections. Each vertical section is divided into 3 compartments. Those three compartments are the device, bus, and cable. The device compartment is in the front of the section, the bus compartment is in the middle and the cable compartment, for terminating, is in the rear.

- Vertiv low voltage switchgear assemblies are constructed with a 4-cell high maximum arrangement, and allows for numerous combinations of Emax 2, Magnum, and Masterpact cells or instrument cells within the device compartment.
- The device compartment within all sections has a top and bottom horizontal cableway for control wiring as well as hinged front doors that are held closed by a minimum of 1 latch.
- The bus and cable compartments are accessible from the rear.
- The bus compartment consists of a continuous main horizontal bus rated up to 4000 amps, that provides incoming power to all sections. The horizontal bus may be located at the top or the bottom of each bus compartment and attached to a system of vertical bus rated up to 4000 amps.
- The cable compartment provides space for terminations and maintenance and comes standard with rear covers, with the option of hinged doors upon request. All vertical sections are modular, which allows extendibility for future sections.

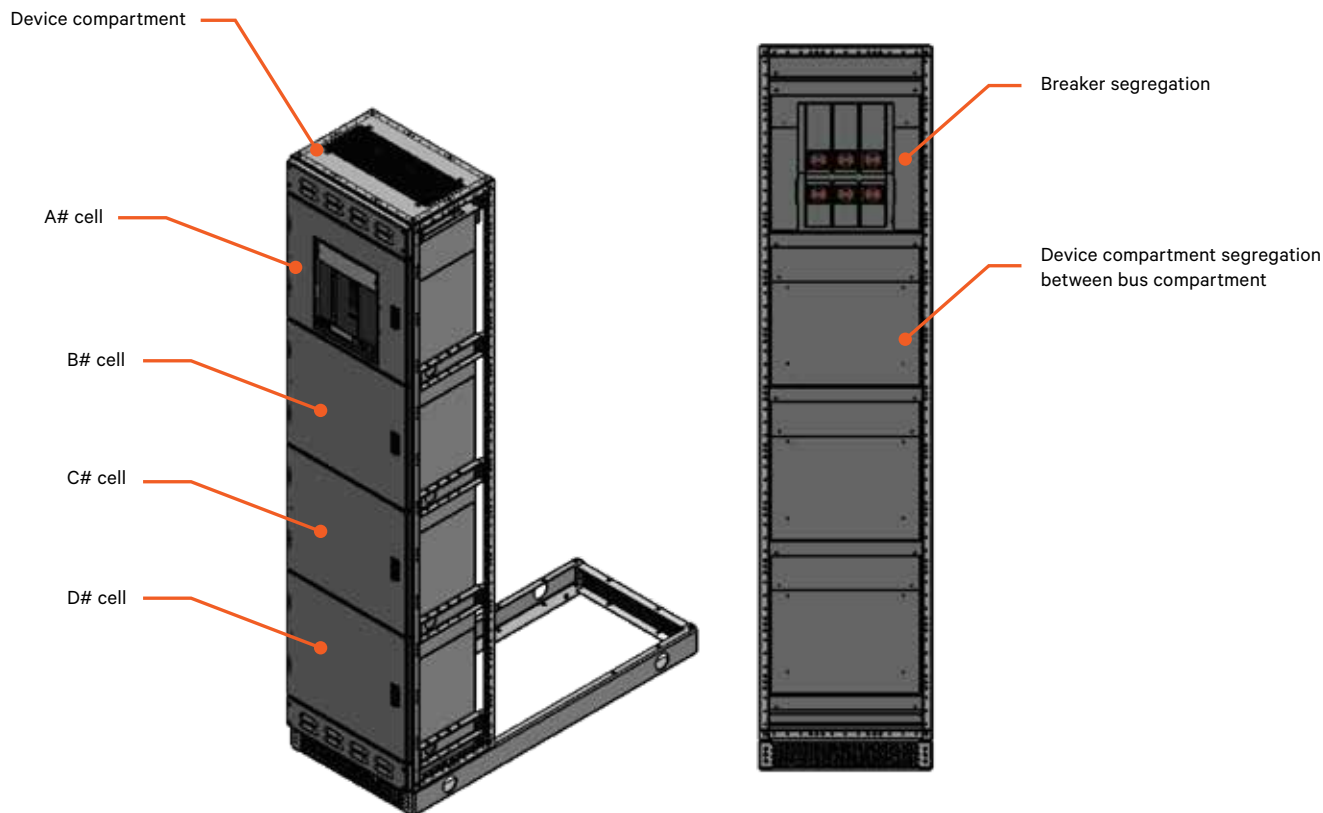


## Device Compartment

The purpose for the device compartment is to provide a 4-cell stack that can accommodate any requested low-voltage power circuit breakers or requested devices. Each cell is isolated from each other and from the bus compartment using metal barriers. Cells A, B, C, and D can accommodate any feeders, blank or control units. Cells B and C can also accommodate main and tie units. Any breaker door can include installed instruments, such as pilot lights, push buttons, control switches, and maintenance switches. Control units can house, either within the cell or on the cell door, different instruments as well. Some examples of these instruments are high-resistance ground relays, potential transformers, and protection relays.

When looking at the front of the gear, each cell number is determined based on its location within the lineup and vertical section. The far-left vertical section is always 1 and ascends until the last section is accounted for. This also helps with installation, because it allows for a quick reference when putting the vertical sections together. Once the vertical sections are established, each cell then correlates with the section such as A1, which is the top cell within vertical section 1. Also, within the device compartment are the top and bottom wireways used for control wiring. This allows for designated routes for the control wiring to go through on each job. The top wireway is about 4 in (102 mm) high and 14 in (356 mm) deep.

The bottom wireway is about 5 in (102 mm) high and 14 in (356 mm) deep as well. Both come standard with a cover to protect anything within them. A vertical wireway is also present within each cell, no matter what unit is in that cell. This allows for wiring between each function unit as well as a passage from one horizontal wireway to another.



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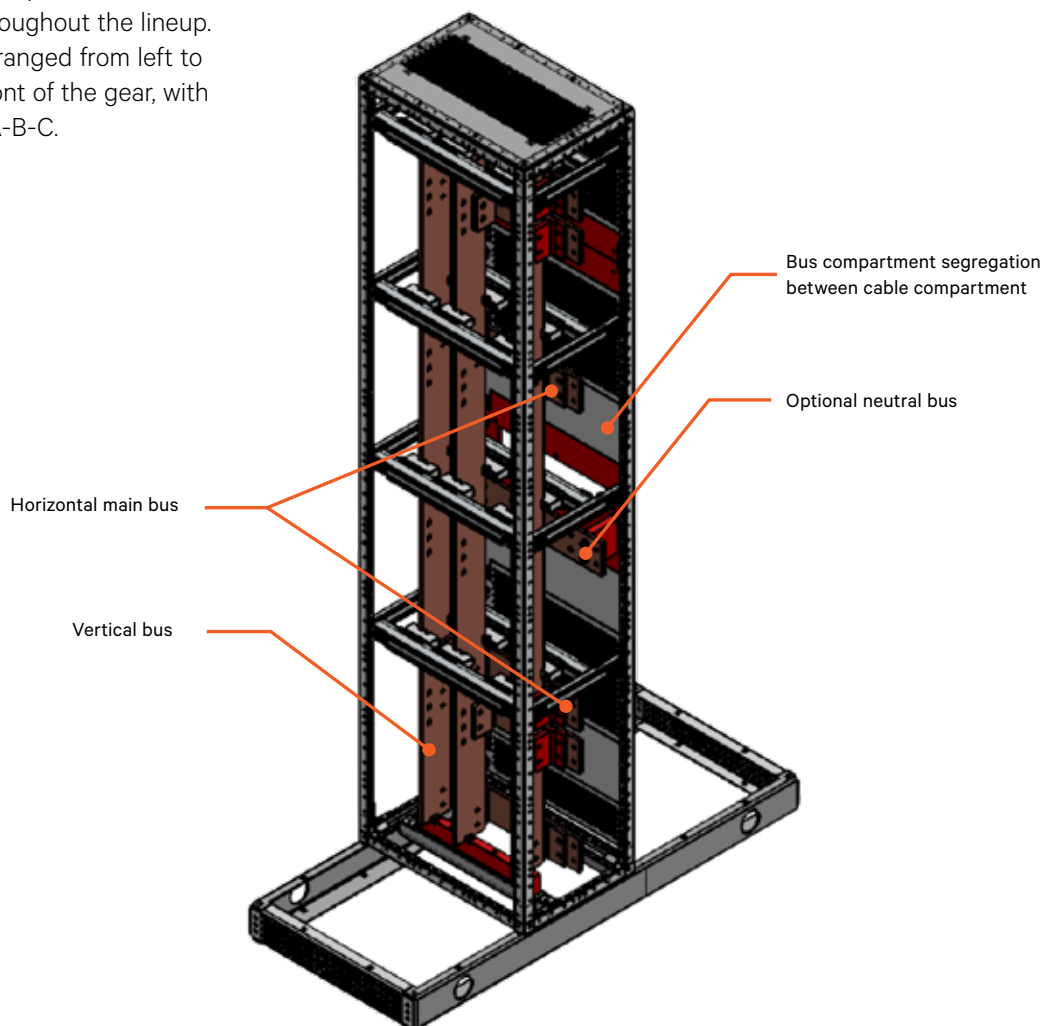
## Bus Compartment

The bus compartment consists of a continuous main horizontal bus rated up to 4000 amps, that provides incoming power to all sections. The horizontal bus may be located at the top or the bottom of each bus compartment and attached to a system of vertical bus rated up to 4000 amps.

The bus compartment houses the complete bus system and is the middle compartment within a section. The bus system is compiled of vertical distribution bar and the main horizontal bus. The vertical bar provides power to each cell within a section, where the main horizontal bus provides power from section to section throughout the lineup. The vertical bus is arranged from left to right based on the front of the gear, with phase arrangement A-B-C.

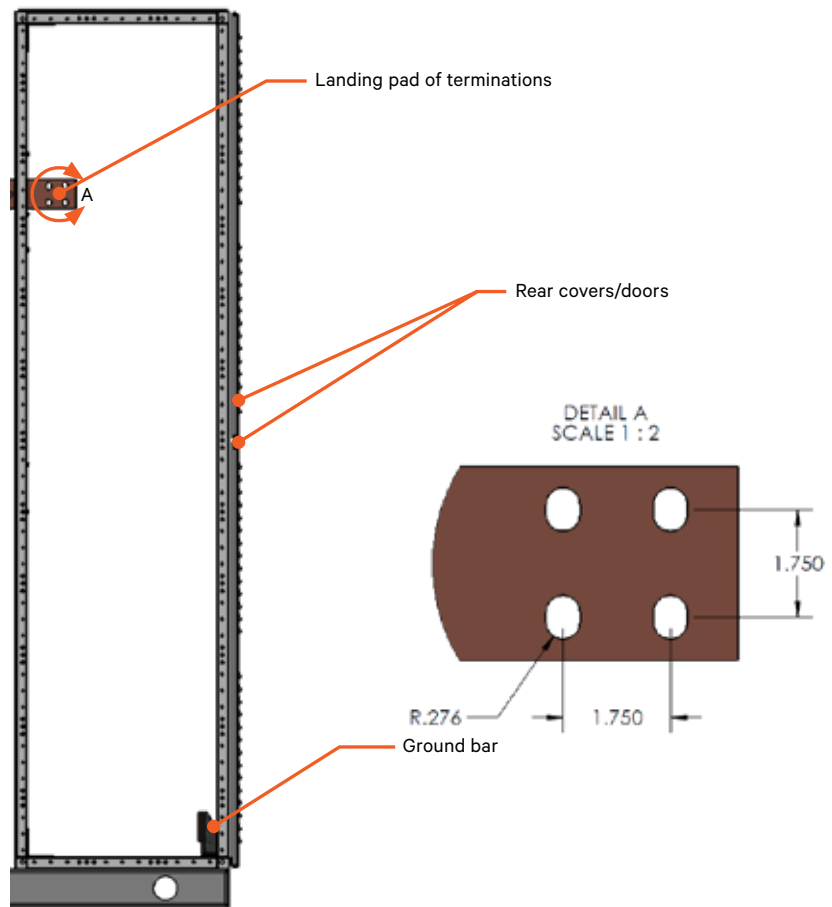
The horizontal bus bar can be located at the top or bottom of the bus compartment. No matter the location of the horizontal bus, it is arranged from top to bottom based on the front of the gear, which correlates to a phase arrangement of A-B-C. The vertical and horizontal bus consist of one to four laminations per phase depending on the amperage being requested. All sections are available in 3-phase 3-wire or 3-phase 4-wire systems.

The neutral phase is optional and is available per request. If a neutral is requested, it follows the same number of laminations as the horizontal bus. Sections that are within the same shipping split will be connected at the factory, but lineups consisting of multiple shipping splits will need to be connected and installed on site with the provided splice kits. All bus is available in tin-plated or silver flashed.



## Cable Compartment

The cable compartment is where all terminations for main and feeder breakers are performed and is the rear compartment in all sections. The depth of the compartment changes depending on the requested amperages and number of cables entering the gear. The standard depths of the compartment are 22.7 in (576 mm), 30.2 in (768 mm), and 37.8 in (960 mm). It allows for top or bottom entry and exit. The cable compartment will accept two steel covers or doors as an option. The continuous ground bar is also located in the cable compartment at the bottom or top of the gear. It is connected to the frame and is splice together when it runs from one vertical section to the next within the lineup.



## Technical Specifications

### Electrical Specification

Rated Voltages	Rated insulation voltage, Vi	2.2kV
	Rated operating voltage, Ve	Up to 600 VAC
	System types	3 phase-3 wire, 3 phase-4 wire
	Rated frequency	60 Hz
Rated Ampacities	Rated Current	Up to 4000A
	Rated short circuit current	Up to 100KAIC @ 600V

### Mechanical Specification

Dimensions	Height: in (mm)	94.8 (2407) [without OHLD rails]
	Width: in (mm)	22.7(576); 30.2(768); 37.8(960)
	Depth: in (mm)	53(1344); 60.5(1536); 68(1728)
Surface Protection	Frame	Paint Finish
	Enclosure	Paint Finish
Enclosure Type	NEMA 1	
Plastic Components	Self-extinguishing, flame retardant	
Busbars	Standard - tin plated (silver plated available)	
	Bus Bracing	Up to 100KAIC @ 600V
Paint finish	Enclosure	Standard - RAL 7035 (Special Colors are available)



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