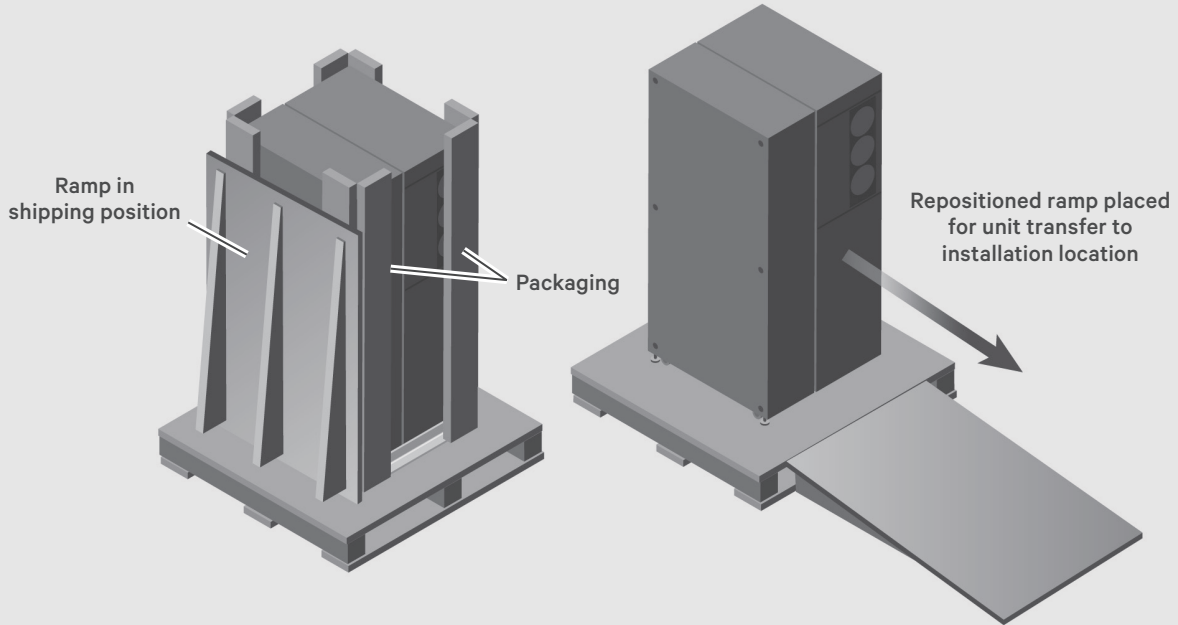


LIEBERT® EXS™ UPS 208/220-V 15 – 20 KVA

Quick Installation Guide



Removing Packaging and Moving the UPS



IMPORTANT: Before installing, connecting to supply or operating your Liebert EXS UPS, please review the Safety and Regulatory Statements sheet. For detailed installation, operating, maintenance and troubleshooting information visit the EXS product page for the EXS User Guide available at www.VertivCo.com.

INSTALLATION

Inspecting the UPS

Inspect the UPS for any signs of obvious damage. If damage is visible, do not proceed. File a damage claim with the carrier immediately and send a copy to:

Vertiv Corporation
1050 Dearborn Drive
P.O. Box 29186
Columbus OH 43085
Attn. Traffic Department

Choosing a location

Install the UPS in a clean, well-ventilated environment with the ambient temperature range of 32°F to 104°F (0°C to 40°C). For installation and maintenance, 3 ft (914 mm) clearance is required in the front and rear of the unit. For proper ventilation during normal operation, leave 8 in. (203 mm) clearance on the rear. No side clearance is required for installation or operation of the UPS.

Handling and unpacking the unit

The UPS ships on a pallet and is equipped with casters that permit two or more people to roll it off the pallet for installation. Use a forklift or pallet jack to move the palletted UPS as close as possible to the installation location before removing packing material or loosening shipping brackets.

1. Remove the protective packaging, shown in the illustration at the top-right.
2. Locate the accessories package on top of the UPS and set aside.
3. Use a 16-mm (5/8-in.) wrench or socket to un-bolt the shipping brackets from the pallet.
4. Un-bolt the shipping brackets from the front and rear of the UPS. Remove the front lower panel from the UPS to remove the front bracket.
5. Make sure the leveling feet are raised so they do not interfere when rolling the unit on the casters.
6. Roll the unit down the ramp to the installation location, see the illustration above, and lower the leveling feet to fix the UPS in the install location.

Table 1 Currents and Wire Size — UPS rectifier input

Unit Rating	Maximum Input Current (A)	Recommended OPD, Amp Trip	75°C THW Copper Wire (phase) Number of Cables per phase:1	75°C THW Copper Wire (neutral) Number of Cables:1	75°C THW Copper Wire (ground) Number of Cables: 1
15 kVA/kW	53	70	3 AWG	4 AWG	6 AWG
20 kVA/kW	71	90	2 AWG	6 AWG	6 AWG

Table 2 AC Currents and Wire Size — UPS bypass input* and output

Unit Rating	Maximum Input Current (A)	Recommended OPD, Amp Trip	75°C THW Copper Wire (phase) Number of Cables per phase:1	75°C THW Copper Wire (neutral) Number of Cables:1	75°C THW Copper Wire (ground) Number of Cables: 1
15 kVA/kW	42	60	4AWG	4 AWG	6 AWG
20 kVA/kW	56	70	3 AWG	3 AWG	6 AWG

*Bypass input for dual-input configurations only.

Table 3 Recommended lug sizes

	6 AWG (13.3 mm ²)	4 AWG (21.2 mm ²)	3 AWG (26.7 mm ²)	2 AWG (33.6 mm ²)
Part Number	McMaster-Carr: 7113K366	McMaster-Carr: 7113K441	McMaster-Carr: 6926K54	McMaster-Carr: 6926K54
	Thomas & Betts: RE6-14	Thomas & Betts: 54138NT02	Thomas & Betts: 54107NT	Thomas & Betts: 54107NT
	—	Thomas & Betts: 54106NT	—	Tyco Electronics: 132331-1

POWER WIRING AND CONDUIT

When connecting wiring, follow the local wiring regulations, and take the environment situation into account.

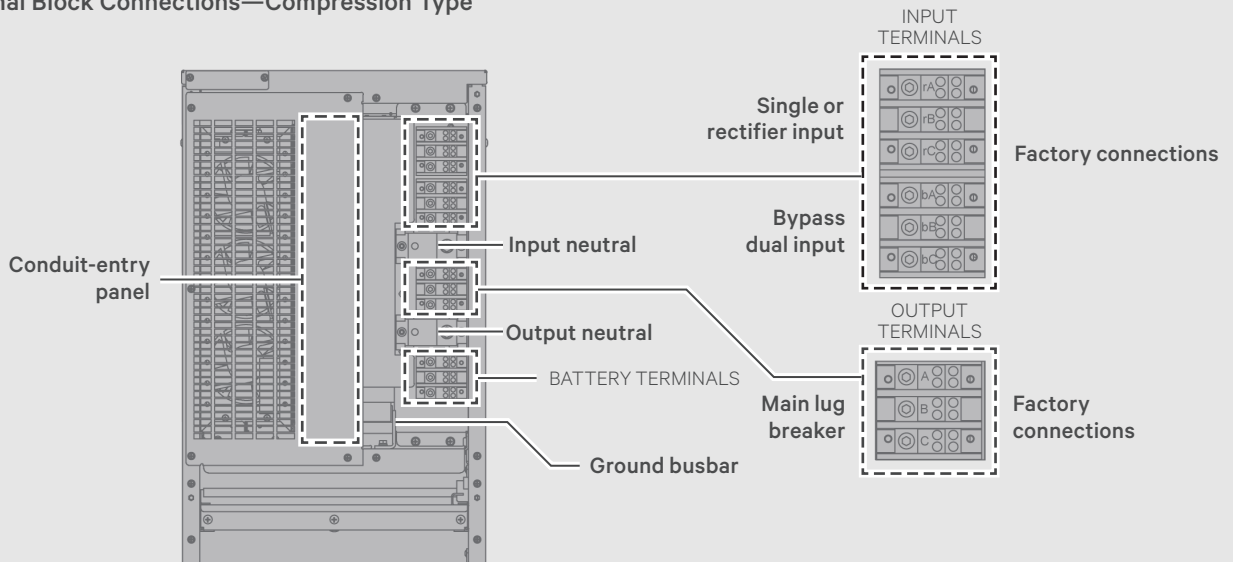
NOTE: *The conduit size and wiring method must be in accordance with all local, regional and national codes and regulations, including NEC ANSI/NFPA 70.*

The maximum current for operating modes, the recommended wire sizes, and the recommended power cables and plugs are listed in Tables 1 to 3, above, and are based upon an 86°F (30°C) ambient temperature.

Lock-out and tag before you begin

Ensure that the feeder breakers are open and locked, and tagged to prevent inadvertent operation by unauthorized personnel.

Terminal Block Connections—Compression Type



HARDWIRE INPUT/OUTPUT CONNECTIONS

Connecting a single-input configuration with compression-type terminal blocks

1. On the rear panel of the UPS, remove the cover plate to access the terminal blocks, shown in the “Compression-type” illustration above.
2. Remove the conduit-entry panel, punch holes for the conduit, connect the conduit to the panel, and re-install the conduit-entry panel.
3. Referring to the “compression-type” illustration, make the following input connections from the upstream feeder panel to the input terminal:
 - Phase A to rA
 - Phase B to rB
 - Phase C to rC
 - Neutral to N
 - Ground cable to ground bus
4. Make the following output connections from the UPS output terminal to the downstream distribution-panel main lug breaker:
 - Terminal A to Phase A
 - Terminal B to Phase B

- Terminal A to Phase A
- Terminal B to Phase B
- Terminal C to Phase C
- Terminal N to neutral bus
- Ground (PE) to ground bus

5. Torque phase conductor connections to 110 lb-in, and neutral and ground conductor connections to 126 lb-in.
6. Reinstall the terminal-block cover plate.

Connecting a dual-input configuration with compression-type terminal blocks

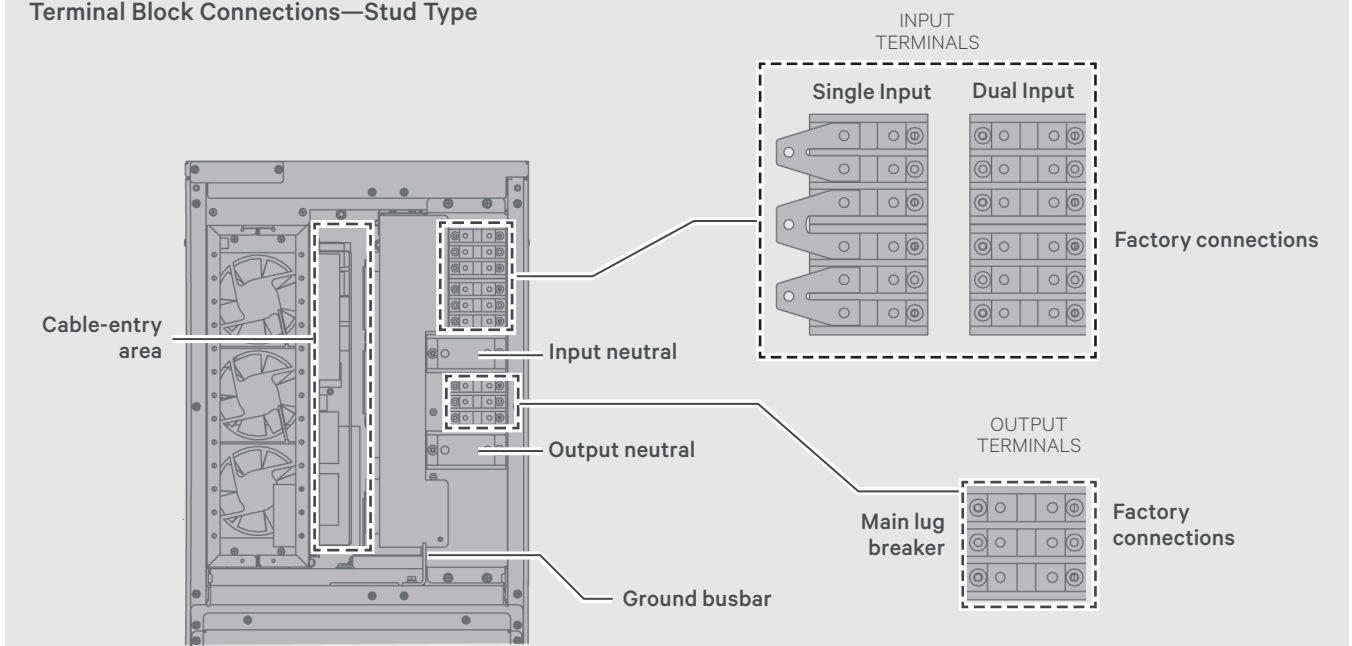
1. On the rear panel of the UPS, remove the cover plate to access the terminal blocks, shown in the “Compression-type” illustration above.
2. Remove the conduit-entry panel, punch holes for the conduit, connect the conduit to the panel, and re-install the conduit-entry panel.
3. Referring to the “Compression-type” illustration, relocate and re-torque the wires from the factory-connections side of the input terminal block to the factory-side bypass terminal
 - Terminal A to Phase A
 - Terminal B to Phase B

block, and re-torque to 50 lb-in. as follows:

- wire BP-R to bA
- wire BP-S to bB
- wire BP-T to bC

4. Make the following rectifier-input connections from the upstream feeder panel to the input terminal:
 - Phase A to rA
 - Phase B to rB
 - Phase C to rC
 - Neutral to N
 - Ground cable to ground bus
5. Make the following bypass-input connections from the upstream feeder panel to the input terminal:
 - Phase A to bA
 - Phase B to bB
 - Phase C to bC
 - Neutral to N
 - Ground cable to ground bus
6. Make the following output connections from the UPS output terminal to the downstream distribution-panel main lug breaker:
 - Terminal A to Phase A
 - Terminal B to Phase B

Terminal Block Connections—Stud Type



- Terminal C to Phase C
 - Terminal N to neutral bus
 - Ground (PE) to ground bus
7. Torque phase conductor connections to 110 lb-in, and neutral and ground conductor connections to 126 lb-in.
 8. Reinstall the terminal-block cover plate.

Connecting a single-input configuration with stud type terminal blocks

1. On the rear panel of the UPS, remove the cover plate to access the terminal blocks, shown in the “Stud type” illustration above.
2. Remove the conduit-entry panel, punch holes for the conduit, connect the conduit to the panel, and re-install the conduit-entry panel.

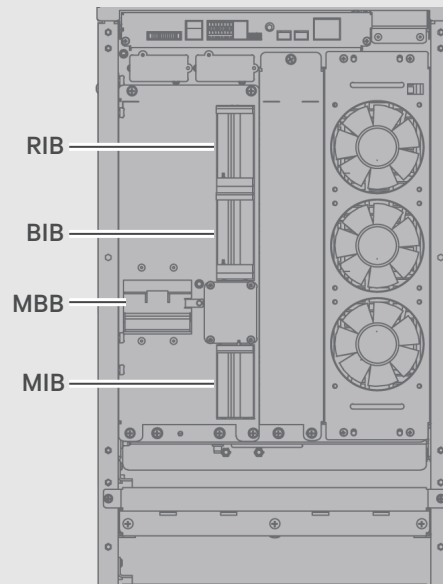
3. Referring to the “Stud type” illustration, make the following input connections from the upstream feeder panel to the input terminal:
 - Phase A to A
 - Phase B to B
 - Phase C to C
 - Neutral to N
 - Ground cable to ground bus
4. Make the following output connections from the UPS output terminal to the downstream distribution-panel main lug breaker:
 - Terminal A to Phase A
 - Terminal B to Phase B
 - Terminal C to Phase C
 - Terminal N to neutral bus
 - Ground (PE) to ground bus

5. Torque phase conductor connections to 50 lb-in, and neutral and ground conductor connections to 126 lb-in.
6. Reinstall the terminal-block cover plate.

Connecting a dual-input configuration with stud type terminal blocks

1. On the rear panel of the UPS, remove the cover plate to access the terminal blocks, shown in the “stud type” illustration above.
2. Remove the conduit-entry panel, punch holes for the conduit, connect the conduit to the panel, and re-install the conduit-entry panel.
3. Remove the factory-installed single-input jumpers from the input terminal blocks.

Front-panel Components



4. Make the following connections from the upstream feeder panel to the main/rectifier input terminal block:
 - Phase A to rA
 - Phase B to rB
 - Phase C to rC
 - Neutral to N
 - Ground cable to ground bus
5. Make the following connections from the upstream feeder panel to the bypass-input terminal block:
 - Phase A to bA
 - Phase B to bB
 - Phase C to bC
 - Neutral to N
 - Ground cable to ground bus
6. Make the following output connections from the UPS output terminal to the

downstream distribution-panel main lug breaker:

- Terminal A to Phase A
 - Terminal B to Phase B
 - Terminal C to Phase C
 - Terminal N to neutral bus
 - Ground (PE) to ground bus
7. Torque phase conductor connections to 50 lb-in, and neutral and ground conductor connections to 126 lb-in.
 8. Reinstall the terminal-block cover plate.

POWERING THE UPS

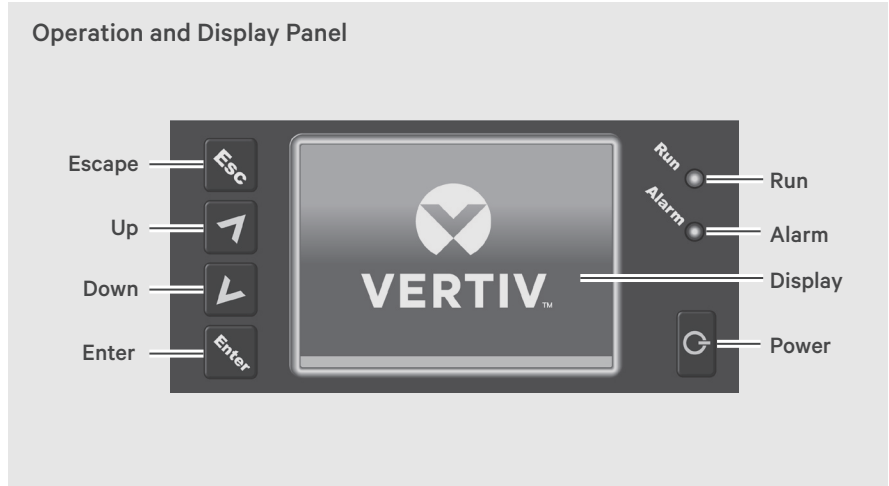
NOTE: Do not start the UPS until after the installation is finished, all UPS wiring is complete, and all access panels removed for installation are replaced and secured on the UPS.

1. Close the upstream feeder breaker for the UPS rectifier and, for dual-input configuration, close the upstream feeder breaker for the UPS bypass.
2. Close all downstream breakers including distribution-panel main breaker and/or branch circuit breakers.
3. Referring to the above illustration, Front-panel Components:
 - Open the maintenance-bypass breaker (MBB) and secure the mechanical interlock near the breaker hand in the lower position.
 - Close the rectifier-input breaker (RIB), bypass-input breaker (BIB), and maintenance-isolation breaker (MIB).

The UPS starts and performs boot-up system checks for 20 to 30 seconds.

4. Power-on the UPS using the Operation and Display Panel by pressing the power button until the confirmation dialog appears. Use the Up/Down arrows to select “YES”, then press Enter.

NOTE: During operation, the UPS may sound an alarm. You may press-and-hold the Esc button for 3 seconds to silence the audible alarm.





To contact Vertiv Technical Support: visit www.VertivCo.com

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