

Vertiv™ Liebert® ITA2 UPS

20 kVA 208 V and 40 kVA 400 V UL



Quick Installation Guide



IMPORTANT: Read the Safety and Regulatory Statement guidelines before installing, connecting to supply, or operating the Vertiv™ Liebert® ITA2 maintenance bypass cabinet (MBC). For detailed information of installation, operation, maintenance, and troubleshooting, visit the ITA2 product page and refer the Vertiv™ Liebert® ITA2 UPS Installer/User Guide for the model by scanning the QR code above, or visiting www.Vertiv.com.

Unpacking and Inspection

Inspect the UPS for damage. If you find any damage, document and photograph the damages and notify local Vertiv representative.

Selecting the Power Cables

Ensure that when connecting wiring, follow the local wiring regulations, and consider the environmental conditions.

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, power cables, and plugs are listed in tables 1 to 3, below.

Prepare for Connections

For all configurations:

- Remove the conduit box cover to gain access to the input and output terminal blocks.

- Remove the knockout plates and attach the conduits to the rear of the conduit box.

NOTE: The wiring connection difference between ITA2 20 kVA 208 V UL and ITA2 40 kVA 400 V UL UPS is battery connection which means the main input, bypass input, and output connection are all the same.

Single input Configuration Connections

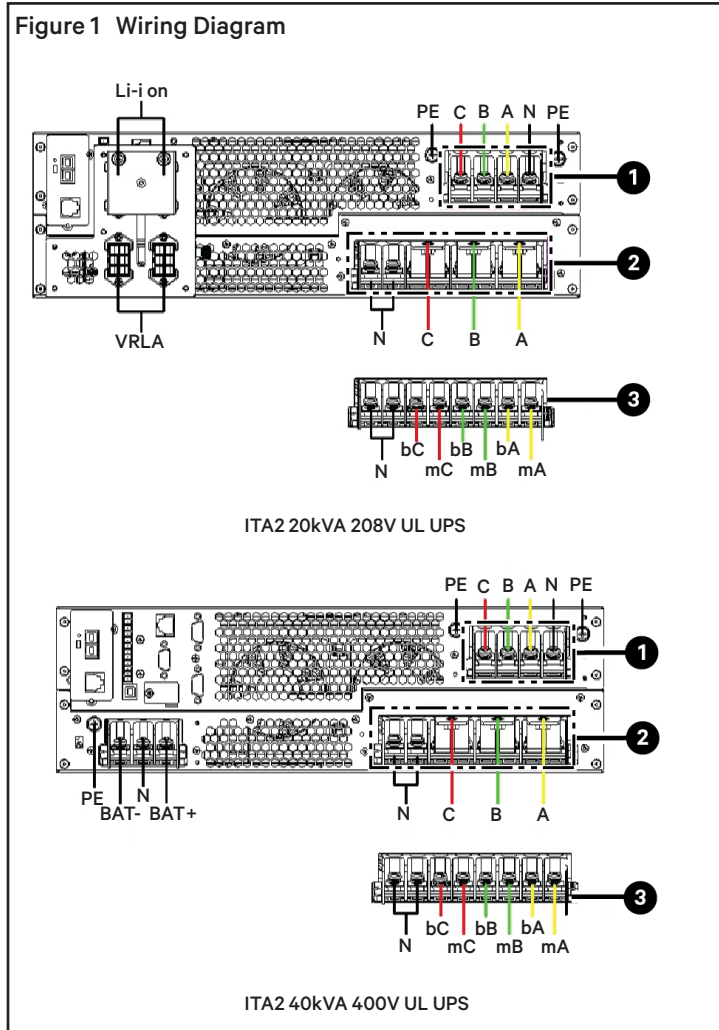
- Keep the shorting busbars in place on the UPS input terminal block.
- Refer to the Single Input terminal block in the Wiring diagram on the next page and connect the cables from the upstream feeder panel:
 - Phase A to A
 - Phase B to B
 - Phase C to C
 - Neutral to N
 - Ground to PE bus bar (next to output terminal)

Unit Rating	Maximum Input Current (A)	Recommended OPD (A)	75 °C THW Copper Wire (Phase) <small>*Number of Cable per phase:1</small>	75 °C THW Copper Wire (Neutral) <small>*Number of Cable:1</small>	75 °C THW Copper Wire (Ground) <small>*Number of Cable: 1</small>	Recommended Torque (lb-in)
20 kVA 208 V	73	100	2 AWG	2 AWG	6	50
40 kVA 400 V	75	100	2 AWG	2 AWG	6	50

Unit Rating	Maximum Input Current (A)	Recommended OPD (A)	75 °C THW Copper Wire (Phase)	75 °C THW Copper Wire (Neutral)	75 °C THW Copper Wire (Ground)	Recommended Torque (lb-in)
20 kVA 208 V	55.6	80	2 AWG	2 AWG	6	50
40 kVA 400 V	60.6	80	2 AWG	2 AWG	6	50

	1/0 AWG (53.5 mm ²)	2AWG (33.6 mm ²)	6AWG (13.3 mm ²)
Part Number	MISUMI: CB60-6	WIZEON:GT35-6	McMaster-Carr: 7113K366
	KST: SQNBS60-6	KST: SQNBS38-6	Thomas and Betts: RE6-14

Unit Rating	Rectifier Input in. (mm)	Bypass Input	Output
20 kVA 208 V	2 (50)	1.25 (31.75)	1.25 (31.75)
40 kVA 400 V			



Item	Description
1	Output terminal block
2	Single input terminal block
3	Dual input terminal block

Dual input Configuration Connections

- Remove the shorting busbars from the terminals labeled A, B, and C in the Wiring diagram above.
- For main input, refer to the Dual Input terminal block in the Wiring diagram, and connect the cables from the upstream feeder panel:
 - Phase A to mA
 - Phase B to mB
 - Phase C to mC
 - Neutral to N
 - Ground to PE bus bar (next to N of output terminal).
- For bypass input, refer to the Dual Input terminal block in the Wiring diagram, and connect the cables from the upstream feeder panel:
 - Phase A to bA
 - Phase B to bB
 - Phase C to bC
 - Neutral to N

Output Connections

Refer to the Wiring diagram above and connect the cables from the output terminal of UPS to the downstream feeder panel on the panel board main breaker:

- A to Phase A on panel.
- B to Phase B on panel.
- C to Phase C on panel.
- N to the neutral bus on panel.
- PE bus bar (next to N of output terminal) to the ground bus on panel.

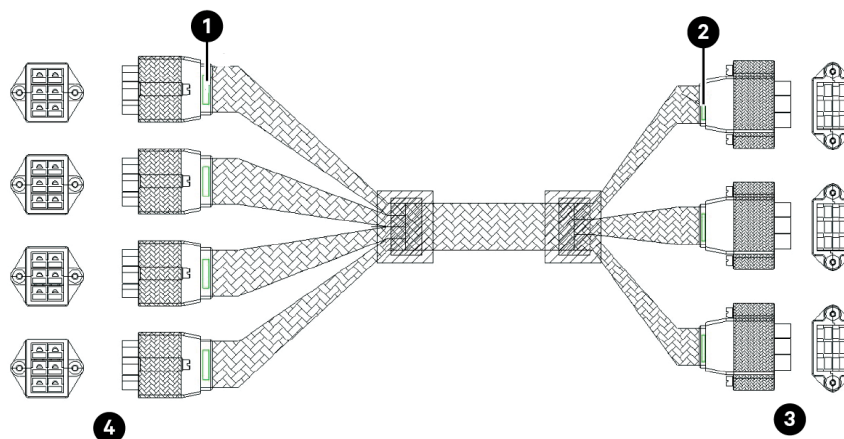
Reassemble the conduit box cover and secure it.

Battery share mode connecting for 2+1 configuration

The factory provided UPS to battery share mode power cable. See Figure 2 which provides a convenient way of building power cable connection between UPS and VRLA EBC for 2+1 configuration system in battery share mode.

There are three Port B connectors on one side which connects to the plug and play battery junction box of ITA2 UPS and four Port A connectors on the other side which connects to the EBC.

Figure 2 Battery share cable for 2+1 configuration



Item	Description
1	Port A
2	Port B
3	UPS side
4	EBC side

Connections between UPSs and EBCs

1. Ensure that the battery breaker on the rear of the cabinet is open (Off).
2. Using the battery share cables, which should be purchased individually. See Figure 2 above.
 - Connect three connectors, which end labeled Port B, to same side of the connectors on the rear of the three paralleled UPS individually and tighten the securing screws.
 - Connect four connectors, which end labeled Port A, to connector A on four VRLA battery cabinets individually.
3. Repeat step 2 to connect the other connectors on the rear of three paralleled UPSs with other four VRLA battery cabinets.
4. The communication cable (ethernet cable) is not needed in battery share mode and have to set the parameters about EBC manually on HMI and the DIP of 2U VRLA EBC is not needed to change. See Figure 3.
5. Close the battery output breakers.

NOTE: Refer to the **SL-26275** Vertiv™ Liebert® ITA2 20 K/40 K UPS user manual for more detailed information about the setting of shared battery mode.

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.

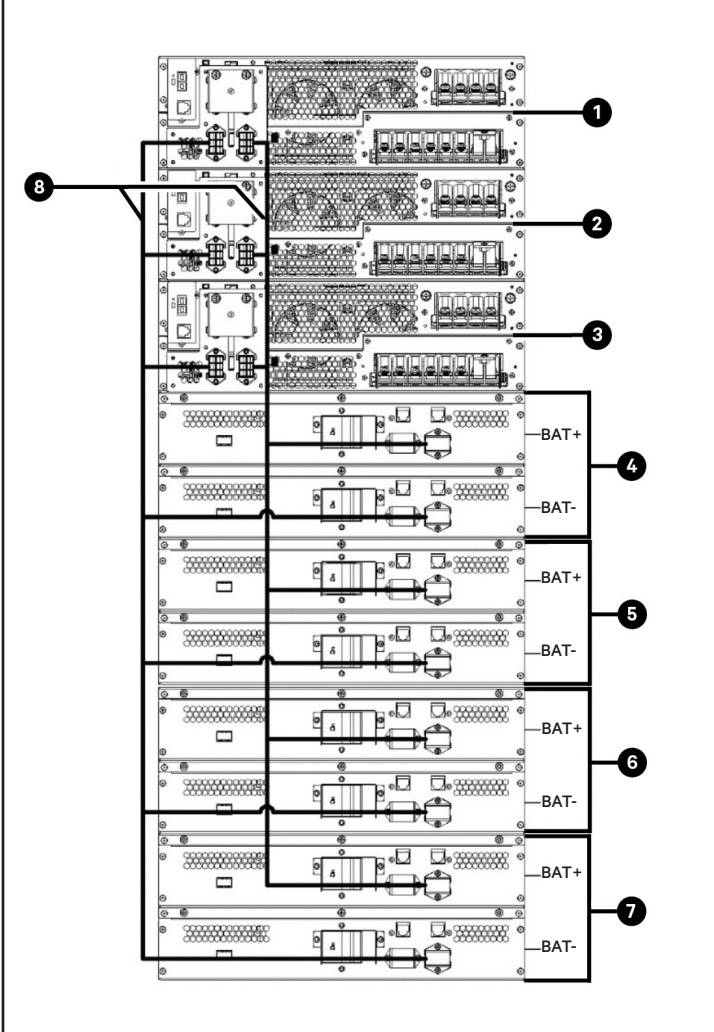
1. Close the upstream feeder breaker for the UPS rectifier and, for dual input configuration, close the upstream feeder breaker for the UPS bypass.
2. Close all downstream breakers including distribution panel main breaker and/or branch circuit breakers and distribution breakers on a MBC, if its included. With all the breakers closed, the UPS starts and performs boot-up system checks for 20 to 30 seconds.

NOTE: If custom parameter settings are needed for this installation/application, refer to appropriate information in the Installer/User Guide, and make the changes.

3. 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. Press and hold the *Esc* button for 3 seconds to silence the audible alarm.

Figure 3 Battery Share Mode Wiring for 2+1 Configuration



Item	Description
1	UPS 1
2	UPS 2
3	UPS 3
4	Battery string 1
5	Battery string 2
6	Battery string 3
7	Battery string 4
8	Battery share cable

Figure 4 Operation and Display Panel



Item	Description
1	Run
2	Alarm
3	Display
4	Power
5	Enter
6	Down
7	Up
8	Escape

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