**Bus Bars**

The positive and negative bus bars are marked with “+” and “-” symbols respectively. The ground terminal is marked with the “+” symbol and is located beneath the negative bar. Connect a ground cable to the battery rack. Follow all applicable electrical codes when grounding the rack.

The bus bars have multiple attachment points. The battery cables inside the rack are already attached. For battery loads, attach external positive (+) and negative (−) cables using ¼” bolts. The load cables must be routed inside the enclosure using one of the side openings and must exit using one of the conduit openings on the sides or top.

**Protective Shields**

Install the protective shields on the left and right sides of the battery rack. Each shield has an edge which is designed to slide into a metal tab on the rack. Once the edge of the shield is secured, attach the other side using M6 screws.

Install the protective shields on the front of each shelf that is occupied by batteries. Make certain to orient the shield correctly. The shield has an opening to allow access to the circuit breaker for each set of batteries. If the shield is oriented incorrectly, it will block access to the circuit breaker.

**Specifications**

- **Type 1 enclosure only for indoor use only**
- **Maximum Continuous Power:** 9 kW per shelf
- **Maximum Installed kWh:** 10.6 kWh per shelf
- **Maximum Short-Circuit Current:** 10 kAdc
- **Ambient Temperature range:** –20°C to 40°C
- **Dimensions (2-shelf models):** 33.0 × 27.0 × 24.5 in
- **Dimensions (3-shelf models):** 48.6 × 27.0 × 24.5 in
- **Weight (without batteries):** 60 lb / 27 kg
- **Maximum capacity for battery weight (per shelf):** 560 lb
- **Maximum installed weight: 60 lb / 27 kg per shelf**
- **Typical weight (per shelf) of approved lithium-ion batteries:** 160 lb
- **Weight (without batteries):** 60 lb / 27 kg
- **Dimensions (3-shelf models):** 48.6 × 27.0 × 24.5 in
- **Weight (without batteries):** 89 lb / 40.4 kg
- **Maximum capacity for battery weight (per shelf):** 560 lb
- **Typical weight (per shelf) of approved lithium-ion batteries:** 160 lb
- **Dimensions (3-shelf models):** 48.6 × 27.0 × 24.5 in
- **Weight (without batteries):** 89 lb / 40.4 kg
- **Maximum capacity for battery weight (per shelf):** 560 lb
- **Typical weight (per shelf) of approved lithium-ion batteries:** 160 lb

**Important Notes**

- **Use copper conductors rated 75°C minimum.**
- **When installing batteries, leave adequate clearance between batteries.**
- **If installed in the United States, all wiring methods shall be in accordance with the National Electrical Code (NFPA 70), Current Edition.**
- **If installed in Canada, all wiring methods shall be in accordance with the Canadian Electrical Code, C22.1, Current Edition.**
- **Follow the battery manufacturer’s recommendations for installation and maintenance.**
- **When replacing batteries, use the same number and type of batteries.**
- **Proper disposal of batteries is required. (See battery literature.) Refer to local codes for any battery disposal or IBR disposal requirements.**
- **Always store and handle batteries in a grounded environment.**
- **Fire suppression equipment must be available in the area where batteries are installed.**
- **Proper disposal of batteries is required. (See battery literature.) Refer to local codes for any battery disposal or IBR disposal requirements.**
- **For any attached inverters, chargers, or other devices:**
  - **Device ratings cannot exceed the specifications of this battery rack or of the installed batteries.**
  - **If a device is adjustable, the settings must be adjusted before activation to place the device operation within the battery and rack specifications.**
Mounting

To assemble the integrated battery rack:

1. Install four ½” studs into the mounting surface (concrete or a similarly reinforced material).
   From the front to the back, the stud centers should be spaced 19” (48.3 cm) apart.
   Spacing from left to right should be 25” (63.5 cm) apart.
2. Lower the battery rack over the four studs and settle the rack in place.
   Alternatively, ½” bolts can be inserted through the mounting holes into prepared openings.

**IMPORTANT**

The battery rack must be mounted on a level surface.

3. Secure the studs or bolts with nuts or appropriate hardware. Anchor the rack according to local building codes.
4. Load all batteries into the rack. Load the bottom shelf first to prevent balancing issues. Proceed to the next shelf.

**NOTE**

Slots are available under the front edge of each shelf for strapping the batteries down if necessary.

Wiring

Ensure all circuit breakers or switches are turned off before proceeding. These should turn on only when wiring is complete. Batteries should be connected in series as appropriate to meet the system voltage requirements. (Lithium-ion batteries are not usually connected in series.) Batteries installed in series are usually equipped with interconnect bars. In the images to the right, these bars are represented by orange jumpers.

All IBR models are equipped with cables for each shelf (positive on the right, negative on the left). (Lithium-ion IBR models are equipped with cables for individual batteries.) Each positive (red) cable is connected to a 175-amp circuit breaker that protects the cables on that shelf. The cables (and circuit breakers) lead to separate positive and negative bus plates. These are attached to each side of the rack. For clarity, the illustrations to the right depict these plates apart from the rack. Shunts may be installed if required. Before proceeding, follow the shunt instructions on the back page. Follow all wiring instructions in the battery manual. Make certain to use the recommended torque values. Do not install terminal hardware in a different order than shown by the battery instructions.