Modular Power Series 2
Quick Start Guide

The Power of Reliability

WARNING

Risk of serious personal injury or damage to equipment and property. Always observe the following:

- Installation must be done by qualified technicians.
- Input voltages can range up to 240 volts AC. All upstream AC, load and battery breakers must be shut OFF prior to installation. The system must be completely de-energized.
- Operate the supply from a grounded 3-wire 120-volt AC or 230/240-volt AC source (50 or 60 Hz) with a branch circuit breaker rated 50 amps or less.
- Install chassis ground to the unit before connecting AC input.
- Do not tie either of the unit main outputs to the BAT terminal on the Battery Management Module (BMM) or Dual BMM (BMMD), as this may short-circuit the battery or bypass the internal LVD circuitry in the BMM or BMMD.
- If a lithium-ion battery is used, it must have an integrated battery management system to protect the battery cells from inappropriate voltage or current levels.
- Always consult with and observe all battery manufacturer recommendations.

CAUTION

Risk of personal injury or damage to equipment and property. Always observe the following:

- Ensure the unit has the correct polarity for the application.
- Do not combine 12-volt, 24-volt, and 48-volt Power Modules within the same unit.
- Ensure that there are enough matching Power Modules available to support the load requirement.
- DC-AC inverters should not be connected to any of the load connection points without a battery connected to the system. Do not connect DC-AC inverters to the outputs of the Load Distribution Module.

NOTICE

Risk of damage to equipment, environmental hazards, loss of data and other undesirable consequences. Always observe the following:

- Third-party surge suppression devices must be utilized to protect AC input power feeds, every exposed DC power conductor and exposed data cables. These protection devices must be installed at both ends of the exposed conductor, in close proximity to installed equipment. Periodically inspect these surge protection devices for proper function.

1 UNPACK AND INSPECT

- Power chassis (hot-swappable Power Modules must be ordered separately)
- Two rack-mounting ears (installed)
- One nut on the ground stud (installed)
- Bag containing the following:
  - Instruction Manual (USB drive)
  - One 3-pin AC input wire clamp connector
  - One 7-pin alarm and temp sensor connector
  - One 3-pin form-C alarm relay connector
  - Two 6-32 x 1/4-inch screws for installing the safety cover
  - Two 1/4-inch bolt/washer/nut sets for the DC output bus bar connection
  - Two 1/4-inch bolt/washer/nut sets for the Battery Management Module (BMM) or Dual BMM (BMMD) bus bar connection (if a BMM or BMMD is installed in the system)
  - Remote battery temperature sensor (ICT-TMP) - included when a BMM or BMMD is installed
  - Clamp adhesive for mounting the ICT-TMP
  - Output bus bar safety cover

NOTE: In case of shipping damage, your freight carrier should be notified immediately.

2 PREPARE THE TOOLS AND PARTS NEEDED

- Two 7/16-inch wrenches for the bus bar connection
- Wire stripper and crimper
- Four screws to install the unit into the equipment rack
- #1 Phillips screwdriver for the connections of rack ears, bus bar cover, and AC input connector
- 3/32-inch flathead screwdriver for the connection of AC input wires, alarm and sensor wires, and for the LDM connections
- Pliers to remove circuit breakers

3 CHECK AND VERIFY THE CONFIGURATION

See Section 2.4 of the Instruction Manual.

SCAN ME

Scan the QR code to download the Instruction Manual.

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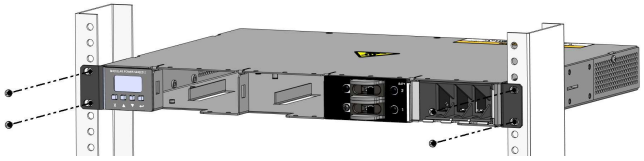
4 MOUNT THE UNIT INTO A 19-INCH RACK (Support the rear of the unit if necessary)



NOTE: For parallel shelf installation, refer to Section 2.18 of the Instruction Manual.

5 CONNECT THE CHASSIS GROUND

Connect the chassis ground according to the site design, and in accordance with the local electrical code standards. Use a ground bonding wire that is rated to handle the maximum current rating of the power system.

6 CONNECT USER SUPPLIED SURGE PROTECTION DEVICE(S)

Third-party surge protection device(s) must be utilized to protect AC input power feeds, every exposed DC power conductor and exposed data cables. These protection devices must be installed at both ends of the exposed conductor, in close proximity to installed equipment.

7 CONNECT THE SENSORS AND ALARMS IF NEEDED

a. Connect an external monitoring device to the 3-pin form-C alarm relay connector, if needed, using 22–26 AWG wire. Install the 3-pin connector to "ALARM" terminal.
b. Connect up to four dry contact type sensors, and an optional external Battery Temperature Sensor (ICT-TMP) to the 7-pin alarm and temp sensor connector using 22–26 AWG wire. Install the 7-pin connector to the "AUX" terminal.

8 CONNECT THE BATTERY (IF APPLICABLE)

a. Verify the polarity of the Battery Management Module (BMM) or Dual BMM (BMMD) installed in the unit by noting the label under the rear BMM or BMMD BAT bus bar input. The "BAT +" indicates a positive battery voltage system while a "BAT −" indicates a negative battery voltage system.
b. Make connections to the battery using wire and connectors appropriately rated for the highest possible system current. Connect the battery hot lead to the BMM or BMMD BAT bus bar, and the battery return lead to the main shelf output bus bar of the corresponding polarity. Install an appropriate in-line DC overcurrent protection device on the battery hot lead. Leave the battery breakers open until the software has been configured.
c. For supported lithium-ion battery models only, connect the battery monitoring cable to the lower RJ-45 port, to interface a Li-ion BMS to the ICT system using Modbus. (See user manual section 4.4.2)

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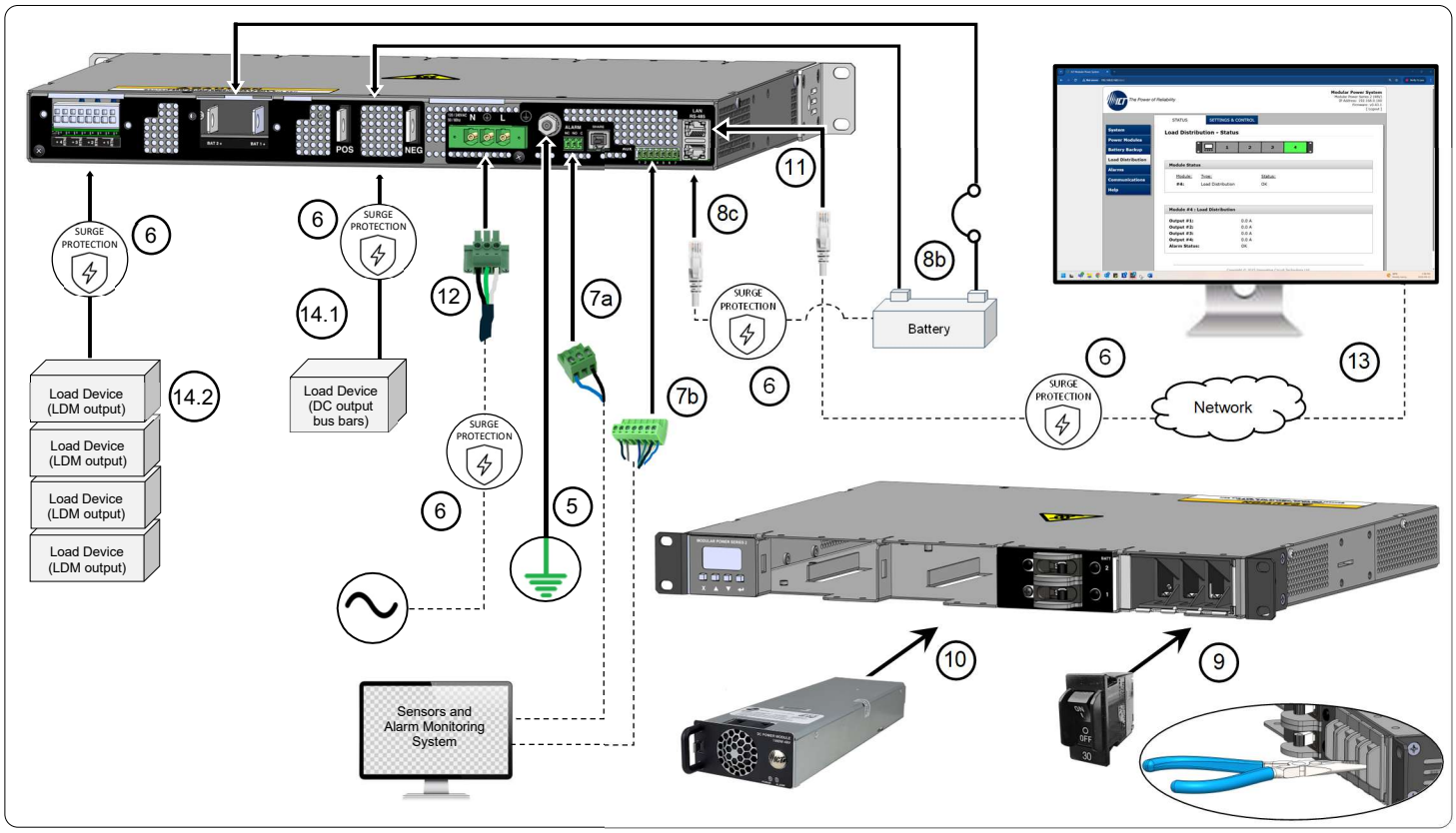

9 INSTALL THE BREAKERS (IF APPLICABLE)

Insert the breakers into the four breaker openings of the optional Load Distribution Module (LDM). Leave the breakers turned off until the software has been configured. To remove the breakers, use pliers to grasp the guard on one side of the breaker (as shown) and pull straight out.

10 INSTALL THE POWER MODULES

a. Install one to four matching hot-swappable Power Modules in any remaining open shelf positions.
b. Install an optional blanking plate (ICT-BPM) into any unused Power Module positions to prevent accidental access to the internal circuitry of the system.

11 CONNECT THE NETWORK CABLE

Connect an Ethernet cable to the upper RJ-45 “LAN” port.

12 CONNECT AND ENERGIZE THE AC POWER SOURCE

a. Create an AC power cable using a 3-conductor cord rated for the maximum input current of the unit by stripping and terminating the three wires in the Line, Neutral, and Ground terminals of the removable AC input connector.
b. De-energize the AC source by switching off its circuit breaker.
c. Plug the AC connector into the AC input on the unit rear panel and tighten the captive retaining screws.
d. Connect the source end of the cord to the de-energized AC source equipped with a branch rated circuit breaker of 50 amps or less.
e. Energize the AC feed.

13 CONFIGURE THE ICT SOFTWARE SETTINGS

Connect to the unit via Ethernet using any standard web browser on a network connected computer or phone. The default IP address is **192.168.0.180** and the default log in username is **admin** and no password required initially.

The front display panel screen and four interface buttons on the front panel can also be used to configure the settings.

14 DE-ENERGIZE THE UNIT AND CONNECT THE LOADS

a. De-energize the unit before making or changing any connections.
b. Make connections to the load using wire and connectors appropriately rated for the maximum load current. The load may be connected in different ways.
    1. If using the DC output bus bars, connect the load’s return lead to either the "POS" bus bar for negative voltage system, or "NEG" bus bar for positive voltage system. Connect the load’s output to the other bus bar.
    2. If using the Load Distribution Module output, connect the load’s return lead to the "RTN" connector terminal and the load’s output to the other connector terminal (labelled + or − depending on polarity). The terminal will accept 10–24 AWG wires. Connect the wire by inserting a flathead screwdriver into the upper opening, then insert the wire into the output terminal (lower opening) and release the screwdriver.

15 VERIFY THE SYSTEM WIRING

a. Check that all connections to the unit are correct and properly tightened.
b. Remove the protective film from the bus bar cover. Align and insert the mounting tabs, then fasten the cover using the supplied screws.

16 ENERGIZE THE LOADS AND THE BATTERY CONNECTIONS

a. Re-energize the AC source to energize the loads.
b. Switch on the optional Battery Management Module (BMM) or Dual BMM (BMMD) battery breaker 1, and battery breaker 2 (if using) to connect the backup battery string(s) to the system.
c. Switch on the Load Distribution Module output breakers 1 up to 8 (if installed) to energize any loads connected to the Load Distribution Module outputs.