MOBILE POWER DISTRIBUTION - PORTABLE LOAD BANK

Thank you for your purchase of the Larson Electronics MPD-PLB Series Portable Load Bank.

WARNING:

READ CAREFULLY BEFORE INSTALLING FIXTURE. RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE.
CRITICAL SAFETY INSTRUCTIONS:

- INSTALLATION SHOULD ONLY BE CONDUCTED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH NEC AND ANY RELEVANT LOCAL BUILDING CODES.
- RISK OF FIRE OR ELECTRIC SHOCK. FIXTURE INSTALLATION REQUIRES KNOWLEDGE OF FIXTURE'S ELECTRICAL SYSTEMS. IF NOT QUALIFIED, CONTACT A QUALIFIED ELECTRICIAN.
- BE CERTAIN ELECTRICAL POWER IS OFF BEFORE AND DURING INSTALLATION AND MAINTENANCE.
- MAKE SURE THE SUPPLY VOLTAGE IS THE SAME AS THE FIXTURE'S RATED VOLTAGE.
- TO PREVENT WIRING DAMAGE OR ABRASION, DO NOT EXPOSE WIRING TO EDGES OF SHEET METAL OR SHARP OBJECTS. SUITABLE FOR DAMP LOCATIONS.

The Larson Electronics MPD-PLB Series Portable Load Bank is essential for maintenance to ensure your generator performs to the required engine wattage. Normally a generator runs at a level less than its rated output; therefore a load bank test provides an artificial load to ensure the generator is running at the correct wattage if needed.



PACKING LIST

Items	Quantity	Remark
400V-1250kW Automatic Load Bank	1	Outdoor
RS485	1	20 meters
RS485/RS232/USB Converter	1	
Documents accompanied with shipment	**Quantity**	**Remark**
Operation Instruction	1	
Packing List	1	

Technical Parameter	
Rated Voltage / Frequency	400VAC 3 phase 4 wire, 50Hz
Max Load Power	1250kW
Load Steps	1, 2, 2, 5, 10, 10, 20, 50, 50, 100, 200, 200, 200, 200, 200kW, total 1250kW. User could load from 1kW to 1250kW.
Power Factor	1
Load Tolerance (each step)	±5%
Load Tolerance (overall)	±3%
Display Meter	Multiple function meter display 3 phase and single phase: voltage, current, power, frequency, etc.
Fan Control Power	Internal/External power supply 400V 3 phase 5 wire 50Hz, about 12kW
Wire Connection	Load bank input——busbar (star coupling “Y”) Control power input----- terminal block
Communication Interface	RS232/RS485
IP	IP54 when in storage. When working, electrical parts IP54, resistor parts IP21
Insulation	F
Way of Working	Continuous Working
Cooling	Forced air, horizontal air intake and vertical exhaust cooling
Transportation	With lifting eyes, forklift channel and wheels
Color	Yellow and Black
Dimensions	2660*1600*2100mm (L*W*H) (Excluding the height of forklift pockets, lifting eyes and casters.)
Weight	About 1500kgs

Operating Environment Parameter	
Ambient Temperature	-20°C～+50°C
Relative Humidity	≤95%
Using Place	Outdoor
Atmospheric Pressure	86～106kPa

Functions

1) The 3-line LED multi-function meter displays real-time voltage and current for each phase of the three-phase system, as well as resistive power, power factor, apparent power, frequency, and the generator set's running time.
2) The user can preset the power and then press the master load button.
3) Control Mode: The user can select either local control or intelligent control (via PC).
4) Control Mode Interlock: A switch on the control panel allows the user to choose the control mode. Selecting one control mode disables the other control modes.

Protections

1) The unit is equipped with an emergency stop button.
2) In the event of an overload, overheating, or short circuit, the load bank will automatically remove the load and trigger an alarm.
3) Fan Protection: The load bank will not operate until the fan power is on.
4) An alarm will be triggered if any fan is malfunctioning or if there is insufficient air volume.
5) Protection Buttons: Certain protection buttons can be turned off in case of false alarms or for special requirements.

Data Processing Software

1) Automatic Load: The user can set multiple power levels and durations, allowing for an automatic load test that cycles through 0% → 25% → 50% → 75% → 100% (or 110%), then back down from 75% → 50% → 25% → 0%, and so on.
2) Parallel Testing: Multiple units can be tested in parallel.
3) Data Storage: Data can be saved, and both real-time and historical data can be displayed.
4) Export and Print Options: Charts and graphs can be exported as JPG files, while test data can be exported in Excel and Word formats. All data can also be printed.

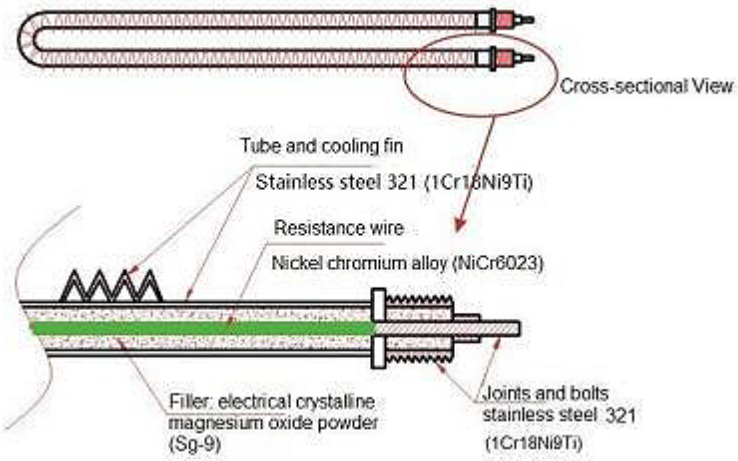




Resistor

The core component of the load— the dry load module—converts electrical energy into thermal energy and performs continuous discharge tests on equipment such as generator sets and power supplies. Our company utilizes custom-made alloy resistors to form the load modules. Given the safety characteristics of dry loads, which are sensitive to temperature changes, we implement strict quality control over the temperature coefficient and heat dissipation performance. The alloy resistors produced exhibit minimal temperature drift, slow temperature rise, and rapid heat dissipation. They also offer superior heat resistance when operating at full load, ensuring stable long-term performance. The specific technical solutions and goals are outlined as follows:

1) Alloy Resistor Material: The alloy is Nickel-Chromium (NiCr6023), with excellent temperature resistance (maximum operating temperature up to 1300℃), stable electrical performance, and low temperature drift (5×10 ^{5}/℃). This technology represents the most advanced in alloy resistor manufacturing.
2) Resistor Materials: The resistor materials are made from low extensibility, oxidation-resistant Stainless Steel 321 (1Cr18Ni9Ti). The filling material is export-grade electrical crystallization magnesium oxide powder (Sg-9), conforming to performance standard JBY-TE4088-199. The magnesite density is 3.0g/cm³±0.2, and the screws are made from anti-corrosion, high-temperature resistant Stainless Steel 321 (1Cr18Ni9Ti). With strict material control, the mass-produced alloy resistors achieve highly consistent performance.
3) Cooling Fins: The cooling fins are made of Stainless Steel 321, with a height of 7mm±2, thickness of 0.4mm±0.2, and a winding interval not exceeding 3mm±0.2.



4) Withstand Voltage: Each resistor can withstand a voltage of DC 3000V or 1500V at 50Hz for 1 minute without puncturing. The operational voltage is limited to 1/3 of the withstand voltage, ensuring the resistor remains in good working condition without puncturing.
5) Cooling Fin Temperature: The temperature of the cooling fin is uniformly maintained at no more than 300℃, with a maximum of 320℃. This provides sufficient margin to ensure the alloy resistor can operate continuously, with a maximum resistor temperature of 1300℃.
6) Temperature Drift: When the resistor temperature reaches between 300℃ and 400℃, the temperature drift remains below ±2%, ensuring minimal change in resistance value under high-temperature operating conditions, thus allowing steady power loading at any temperature.
7) Load Accuracy: Regardless of maximum or minimum temperatures, the load accuracy is maintained within ±3%.
8) Air Outlet Temperature: The air outlet temperature is no more than 80℃ (measured within 1 meter).

THESE INSTRUCTIONS MAY NOT COVER ALL DETAILS OR VARIATIONS OF THIS PRODUCT FOR YOUR EQUIPMENT OR INSTALLATION REQUIREMENTS. SHOULD FURTHER INFORMATION NOT COVERED BY THESE INSTRUCTIONS BE REQUIRED, PLEASE CONTACT LARSON ELECTRONICS BY EMAIL AT SALES@LARSONELECTRONICS.COM OR BY PHONE AT 1-877-348-9680 FOR FURTHER ASSISTANCE.

PLEASE VISIT LARSONELECTRONICS.COM FOR **WARRANTY** AND **RETURN** INFORMATION.