

POWER HOUSE MANUFACTURING INC.



LOAD BANK OPERATION MANUAL

Model #: 8k-.2-44VDC
Load Bank

8 kW, 182 Amps @ 44 VDC

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Specifications:

Rating: 8 kW @ 44 Volts DC 182 Amps

Nominal Voltages: 44 Volts DC, lower voltages are acceptable (50 VDC MAX with no MIN)
Current draw de-rates at reduced voltage levels.

Overall Load Tolerance: 5%

Duty Cycle: Rated for continuous operation.



Load Connections: 400 amp rated single pole cam locks “+” & “-“

Easy to use operator control panel with:

Digital DC Power Meter with 3 line LED display of; Amps, Volts, and Watts / kW
Status indicating lights:

- Air-flow indicating red and green lights
- Over-temperature red light

Main Power on/off switch

Fan on/off switch (separate fan switch for units with DC power meter option)

Master Load switch

Individual load switches

Test jacks for meter probes “+” & “-“

Load Steps: .2, .4, .8, 1.6, 1.6, & 3.4 kW each at 44 Volts DC (8 kW total)

Safety Features:

Branch circuit fuse protection for all load steps.

Fused 120VAC / 12VDC control circuit

Air pressure switch to prevent load from being applied if loss of cooling air is detected

Over-temperature sensor automatically removes load if an over-temperature condition is detected

Blower Motor circuit is protected by current overload protection.

Operator warning and caution statements are located on appropriate access panels and doors.

Control Power:

110-120 VAC, 1 Phase, 50/60 Hertz, required for control circuit operation.

Receptacle mounted on back of unit for provided detachable line cord.

Cooling System: Integrally mounted, high velocity, 110-120VAC single phase 50/60 Hz. fan(s) provide the necessary cooling air for the resistor load elements.

Construction:

Rugged all-metal construction

Durable powder coat finish

Stainless steel exterior fasteners

Horizontal Airflow

Sealed DC rated power relays with independent control coils
Front control guards / handles

Dimensions: 12-14" wide x 18" long x 23" tall

Weight: Approx. 20-30 lbs.

Optional Features Included:

None

Receiving:

All Power House Manufacturing Load Banks are pre-tested, fully functional units.

- Upon delivery of your load bank be sure to inspect the unit for damage that may have occurred during shipment.
 - * ***Failure to perform a full inspection may lead to an electrical shock hazard condition!***
- Document and report any damage to your load bank with the carrier driver before signing for the delivery, or refuse acceptance of damaged product.
- Check that all features: switches, lights, displays, latches, doors, etc. operate properly.

Handling:

- This load bank is a sensitive electrical device.
- Do not drop or mishandle the load bank.
- Always use proper lifting methods when handling the unit.
- Improper handling can result in damage to the unit and or personal injury.
- Make sure that your lifting and handling device has been inspected, operating properly, and is rated to handle the size and weight of the load bank.
- Be sure to follow all directions and safety instructions provided by the handling device manufacturer.

Safety Considerations:

- Never attempt to service or dismantle a load bank.
- The unit should only be serviced and operated by highly trained competent electrical engineers who are completely familiar with the operation and specification of the load bank.
- Do not operate load bank without proper ventilation or in an area where a fire prevention system can be activated by the use of the load bank.
- Do not block or restrict the intake and exhaust air flow. Reducing or blocking air flow will result in overheating of the load bank and potential damage to the unit.
- Always position load bank so that the discharge end of the unit does not face prevailing wind.
- Do not operate load bank in high wind conditions.
- Load bank should not be operated in driving rain, heavy snow, or sea spray unless specifically designed for these conditions by Power House Manufacturing.
- If operations conditions exceed ambient temperatures of 115 degrees Fahrenheit, contact Power House Manufacturing Inc.
- Do not attempt to apply voltages other than what the load bank is rated for.
- Do not attempt to change test voltage or phase configuration while under load.
- Do not attempt to operate load bank if it is suspected to have a defect of any kind.

WARNING: Electrical Shock Hazard!

- Ensure the power source is de-energized before connecting or disconnecting.
- All power connections must be made properly!
- Failure to do so will result in the following:
 - Possibility of electrical shock and or death!
 - Damage to unit, power source, and other equipment!
- All power connections that are not required to be used for a specific test must be covered so that contact with the unused connection can not occur.
- All units come equipped with a grounding terminal.
- Be sure that unit is properly grounded to a properly sized earth ground to eliminate the risk of electrical shock!

WARNING: Fire and Burn Hazard!

- Extremely high temperatures are present at the discharge end of the load bank.
- Restrict access within 50 ft. of the exhaust.
- Keep flammable and combustible materials a minimum of 50 ft. away from the load bank.
- Keep work area clear of any material that could be drawn into the intake of the load bank.

WARNING: Shock, Burn, and Blindness Hazard!

- Attempting to connect or disconnect leads, plugs, and receptacles while load bank is in operation or source power is present can result in shock, burns, and or blindness!

Connecting and Disconnecting:

- Be sure that the power source to be tested is compatible with the load bank operating voltages.
- Ensure the power source is de-energized.
- Check all panel mounted control switches are in the OFF position.
- Properly connect the power cables from the test source to the load bank as follow:
 - Red = “+”
 - Black = “-“
 - Chassis Ground Stud = Ground

- Properly connect the fan, and control power cable to the load bank as required.
- Be sure that unit is properly grounded from grounding terminal to a properly sized non-GFI earth ground to eliminate the risk of electrical shock!
- Any unused connections must be covered!
- All power connections must be made properly!
- Failure to do so will result in the following:
 - Possibility of electrical shock and or death!
 - Damage to unit, power source, and other equipment!

Operating Instructions:

Operators must read the **Safety Considerations** and **Connecting and Disconnecting** procedures before carrying out the following operating instructions.

After proper connecting procedures for all applicable systems have been performed:

- Ensure all panel mounted switches are in the OFF position.
 - Confirm that the voltage of the test power source is not greater than what the load bank is rated for.
 - If the voltage applied is greater than what is selected, an overload will result!
 - Apply power to the control power connection on load bank as required.
 - Switch the main power switch to ON position.
 - The digital power meter will light and go through a start-up cycle.
 - The power meters are pre-scaled to match the shunt in the unit.
 - Apply the voltage from the test power source.
 - Verify that the proper voltage is present from the test source.
 - Turn the fan switch to the ON position.
 - The Red air-flow indicator will go out and the green air-flow indicator will light.
 - Check load bank exhaust for proper air-flow.
 - Check for any abnormal noise or vibration to verify that fan(s) is operating properly. (In the event that unexpected noise or vibration is present turn off fan power immediately, and have your load bank inspected by a highly trained, competent engineer. Or call Power House Manufacturing for technical support.)
 - After verifying that proper air-flow is present;
 - Apply load by either:
 - Switch the master load switch to the ON position to apply the desired load as individual steps.
 - Select the appropriate load using the panel mounted control switches.
- Or
- With the master load switch in the OFF position, select the appropriate load using the panel mounted control switches.
 - Switch the master load switch to the ON position to apply the load as one complete step.
- At the completion of the test, turn OFF all load controls.
 - Allow fan to run to dissipate heat for safe handling.
(no cool down period is required).
 - Turn off fan switch and main power switch.
 - Disconnect all cables as required.
 - Properly store load bank as required.

Troubleshooting and Maintenance:

- Load bank will not operate.
 - Check control power supply, cable, and connections.
 - Open appropriate access panel and check 120V main control fuse “A”
 - Check main power switch
- Meter lights will not light.
 - Check main power switch
 - Check control power supply, cable, and connections.
 - Open appropriate access panel and check 120V meter fuse “E”
- Fan will not turn on.
 - Check external fan power supply, cable, and connection.
 - Open appropriate access panel and check fan fuse. “F”
 - Check fan power switch
- Fan is on but red air-flow indicator is lit.
 - Check for any blockage of air-flow.
 - Check to see if sufficient (more than 900 FPM) air-flow is present.
 - Check air-flow sensor for loose or broken connections.
 - Check air-flow sensor sail for proper operation.
 - If sail switch air-flow sensor is stuck, manipulate the switch sail for correct operation
- Over-temperature indicator is lit but unit is not over-temperature.
 - Check for any blockage of air-flow.
 - Check to see if sufficient air-flow is present.
 - Check over-temperature sensor for loose or broken connections.
- Load steps will not engage.
 - Check power fuse of step(s) that are not operating.
 - Check power relays of step(s) that are not operating.
 - Check for the proper ohm value of step(s) that are not operating.

- If further trouble shooting is required, please contact Power House Manufacturing for specific schematic and component layout information and instructions.

- In the event that your load bank is not functioning properly, call Power House manufacturing to request an RMA for easy no-hassle warranty repair.

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