TRYSTAR

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Stationary Load Banks

Duty Cycle: Forced Air-Cooled, rated for continuous operation. **Power Factor:** 1.0

Cooling System: Integrally mounted blower motor with high-performance, direct-driven fan blade delivers the required airflow volume (CFM) for cooling resistor load elements. Blower motor can be powered from an external 3-phase supply source, or internally from the main input load bus (source under test).

Remote Operator Control Panel Including: Emergency Stop (E-STOP) push button, Main Power On/Off switch, Blower Start/Stop push buttons, Master Load On/Off switch, and Individual Load Step switches (KW On/Off) provided for each load step. *Illuminated indicators provided for Power On, Blower On, Motor Overload, Air-Flow Failure, Over-Temperature, and Load Dump.*

Automatic Load Dump circuit provides user interface provisions to the generator controls, automatic transfer switch, or building management system, to disconnect and disable all load steps from a normally closed (NC) set of auxiliary contacts. In the event of an actual power failure, all load bank load is removed from the source under test.

Remote Indication and Alarm contact closure [form-c-type normally open and normally closed] provides user interface to building management system for indication, detection, and alarm of "Air-Flow Failure", "Over-Temperature", and "Load Dump".

Operator Protection and Safety Features:

- A Control Power Emergency-Stop (E-STOP) push button is provided to disable control power voltage to all operator control power circuits, including blower circuit and load application circuits.
- Operator control panel provides detection and display of Main Power On, Blower Motor On, Motor Overload, Air-Flow Failure, Over-Temperature, and Load Dump.
- Branch circuit fuse protection provides short-circuit fault protection of all load steps. Fuses are fast-acting, current-limiting type with an interrupting rating of 200K A.I.C.
- Blower Motor is short-circuit protected by current-limiting fuses and thermally protected by overload relay.
- A differential air pressure switch provides protection from loss of cooling air or insufficient airflow. The switch automatically removes all load if an airflow problem is detected. Load cannot be reapplied until sufficient airflow is present.
- An over-temperature switch is provided to monitor load bank exhaust temperature. The switch automatically removes all load if an over-temperature condition is detected. Load cannot be reapplied until the over-temperature condition is corrected.
- Operator warning and caution statements are located on appropriate access panels.

LBD-PowerDyne™ Resistor load elements provide the necessary KW load rating for each load step. *PowerDyne™* Resistors are fully supported across their entire length within the air stream by stainless steel support rods which are insulated with heavy-duty, high-temperature ceramic insulators. Change in resistance is minimized by maintaining conservative resistor designs, thermally derated resistor designs and by utilizing a high-quality nickel chrome alloy. Tolerance is 5%.

Load Bank Construction and Power Connections:

- The load bank enclosure is constructed of galvanized steel with powder coat paint finish with exterior stainless-steel fasteners. Bolt on access panels provide a dead-front enclosure, safely enclosing all electrical and mechanical connections.
- The load bank is designed for installation and operation in an outdoor environment with sufficient fresh intake air available, while secured to a flat surface such as a roof, finished floor, or concrete pad. Cooling airflow is drawn in from the screened air-intake sides, with hot air vertically exhausted from the top of the unit away from personnel. An integrated gravity exhaust louver top provides a superior all-weather protected enclosure.

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- Fork-lift channels are provided in the base for ease of lifting and handling during installation.
- All power connections including main-input load bus, external blower power, external control power, operator remote control, instrumentation, and customer interface connections are made within the enclosed relay/connection compartment. Bottom access with a removable gland plate provides “safe and sealed” ease of installation of all conduit entry cable.
- Load connections are made directly to the main input load bus bars or power distribution block. A standard NEMA 4-hole pattern is provided for customer load cable connections. All copper bus bar load connections are plated for superior oxidation resistance.
- Relay/connection compartment is heated and thermostatically controlled to limit any harmful effects of condensation.





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