

MERLIN 500

500KW Resistive Load Bank

Overview

- Rental Duty Portable Load Bank
- 500kw Resistive
- Re-connectable 416v, 480v 100% rated both voltages
- Analog Load Control

Description

The Simplex MERLIN-500R, is a RENTAL-DUTY Portable Load Bank designed specifically for data center application in the commissioning and testing of chiller plants, generator systems and UPS systems. The Merlin is a medium capacity, fully portable, resistive load bank system. Loads are arranged and stepped, manual application. Unique to the Merlin-500R is the 100%, 500kw rating at both 416v and 480v via user toggle switch.

The Merlin control panel includes test instrumentation, load application switches, operation indicator lights and fan/control power switch. The Load Bank includes rugged "Powr-Web" load elements, load control contactors, branch circuit fuse protection of the load elements, high temperature power wiring, cooling fan with circuit breaker, control power fuses. The Load Bank is protected against fan failure, high intake air temperature, high exhaust air temperature, and overvoltage.

Merlin Load Banks are built on a formed and welded steel chassis that is both rugged and lightweight. For flexible portability, the Merlin includes casters, lifting eyes and forklift channels. Airflow through the unit is horizontal with cooling provided by a cast aluminum airfoil type shrouded propeller fan.



Features

- Exceptionally rugged, all welded, formed steel chassis
- Hinge-open control section door
- Lifting eyes, forklift channels and casters
- Moving handle
- "PowrWeb" Load Elements
- Branch circuit fuse protection
- Horizontal airflow
- Cam-Type Connections

Powr-Web Resistive Load Element



Description

Simplex Load Banks utilize the “Powr-Web” Load Element (a UL Recognized Component). The “Powr-Web” is an advanced design, air-cooled power resistor specifically designed for application to load bank systems. The “Powr-Web” is conservatively operated at half the maximum temperature rating of the alloy and features a short-circuit-safe design based on continuous mechanical support of the resistor by high temperature, ceramic clad stainless steel rods.

Construction

- Precision calibrated to specific ohmic value
- All load elements are continuously supported by vibration resistant, ceramic clad, stainless steel through-rods.

Specifications

- Alloy: FeCrAl
- Maximum continuous temperature rating: 1920°F
- Maximum operating temperature as applied in Load Bank: 1080° F
- Cool down time from operating to ambient temperature is 10 seconds.

Branch Circuit Fuse Protection

The load of a resistive load bank consists of a dense array of open, uninsulated power resistors mounted within a cooling air stream. Since the elements are electrically live, it is possible for a foreign object to penetrate the element array and create a short circuit of adjacent elements or a short to ground. Since the elements are densely packed, it is possible for a short circuit, once started, to rapidly propagate through the entire element array. As a load bank represents a relatively large amount of power concentrated within a relatively small volume, a self-propagating, cascading short circuit would have catastrophic results.

Simplex virtually eliminates the dangers of short circuit through the use of branch circuit fuse protection of the load elements. Per NEC 110-10, protective devices shall clear a fault without “extensive damage” to the circuit components. A Simplex Load Bank is divided into branch circuits of not more than 50 KW each.

Model	KW, 1.0 P.F.	COOLING FAN			LOAD STEPS
	416/480V, 3-phase	HP	Voltage	CFM	KW @ 416/480V, 3-phase
Merlin 500R	500	3.0	416/480V, 3-ph.	8000	5, 10, 10, 25, 50, 100, 100, 100, 100



Fan/Control Power

User selectable, internal/external

Internal Power

416-480V, 3-ph, 3-wire, 60Hz

External Power

230/460V, 3-ph, 50/60Hz, 20A

Voltage

High/Low Mode, operator selectable
416/480v, 3-ph

Frequency

60Hz

Duty Cycle

Continuous

Temperature Rating

125° F max intake air temp
Nominal 110° F rise

Power Connection

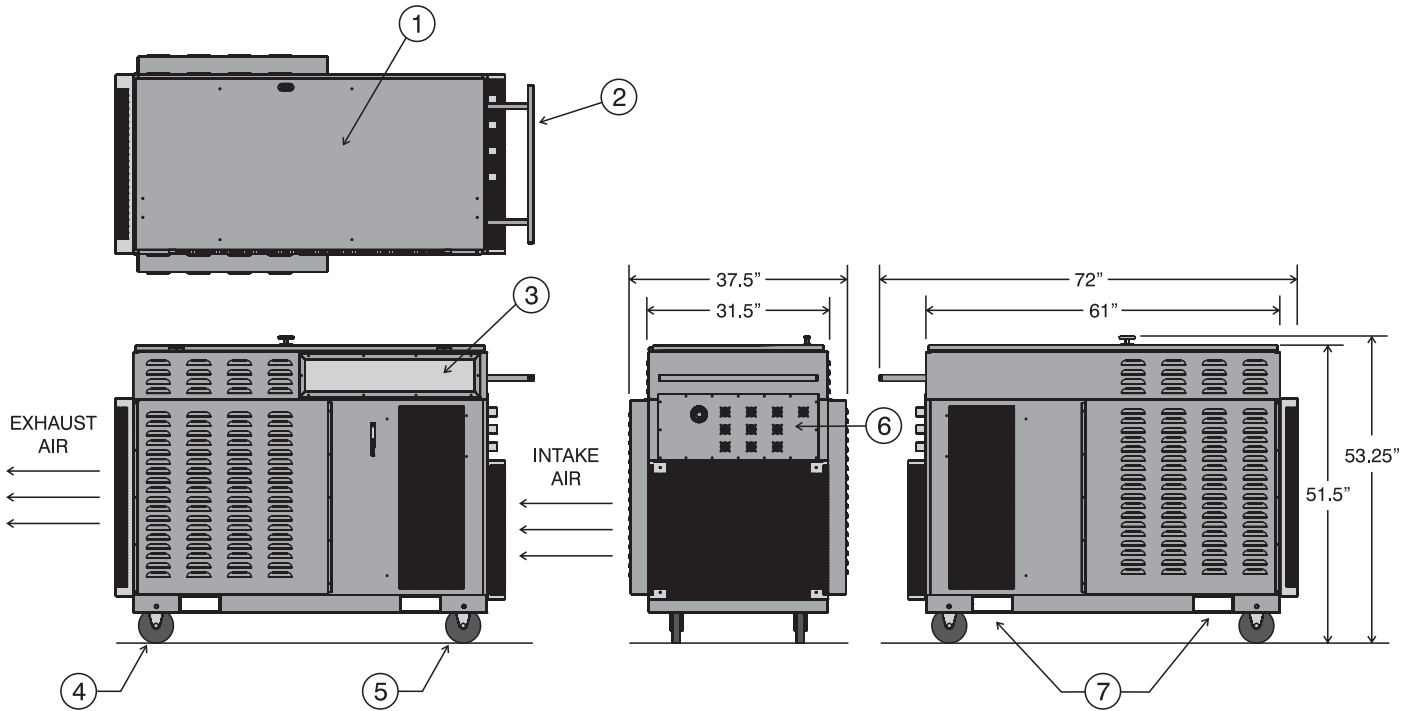
Cam-Type Connector
Qty 3 400A rated 4/0 per phase
Qty 1 4/0 ground

MERLIN 500

500KW Resistive Load Bank • Page 4

SIMPLEX[®]

Dimensions and Key Features



1. Hinged Top Panel for Access to Subpanel
2. Pull Handle also used for Cable Storage
3. Control Panel
4. Fixed Caster
5. Swivel Caster with Brake
6. Internal Control Power Receptacle and Cam-Type Connectors
7. Fork Lift Channels

Shipping Weight: 1050 lbs.