

DynaMITE*300

Portable Load Bank

Description

The Simplex **dynaMITE*300** Portable Load Bank provides highly versatile load-test capability for the manufacturers, distributors and users of small-to-medium size AC power systems to 300KW nominal.

The **dynaMITE*300** is suitable for production line, service shop or field testing of engine generators, UPS systems, ground power units, auxiliary power units, static inverters or virtually any other AC power source. This load bank can be applied to all common AC voltages to 480V maximum, 50-60-400Hz, single or 3-phase.

The **dynaMITE*300** is a fully self-contained test instrument which includes test instrumentation, connection cables, high capacity cooling system, rugged load elements, complete load application control devices, and automatic system protection devices.

The **dynaMITE*300** is compact and fully portable and includes lifting eyes, forklift channels, and moving handles. Connection cables are conveniently stowed in a cable compartment behind a hinged door. All instruments and controls are protected by hinged panel covers.



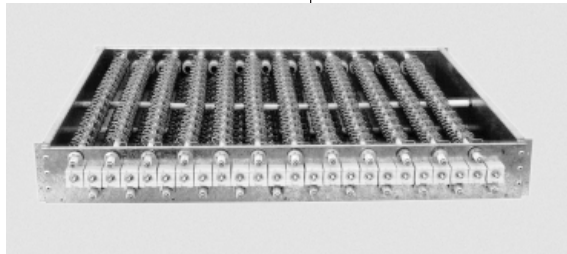
Features

- Portable, compact, self-contained
- Broad voltage capability
- Fine load step resolution
- "Powr-Web" load elements
- Comprehensive branch circuit fuse protection of load elements
- Toggle switch control of load steps
- Operator's control panel
- Complete test instrumentation
- Complete system fault protection
- Fused control power circuits
- Fan motor circuit breaker
- Includes connection cables
- Fast set-up, quick turnaround
- Field use capable



SIMPLX®

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. The "Powr-Webs" are assembled into discrete trays which are assembled in a vertical "stack." Each tray in the "stack" is independently serviceable without disturbing adjacent trays.

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.

Construction

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

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.

Each branch circuit is then individually fused. In a load bank, a developing short circuit can be current limited, initially, by the unaffected portion of the shorted load element. Closely scheduled branch circuit fuse protection as applied by Simplex can sense a low level developing fault, clear the fault and isolate the failed elements before propagation occurs. Since the load of a load bank is fixed in value and is either full-on or full-off, any excursion from rated current represents a fault. For this reason, Simplex Load Banks utilize closely scheduled, very fast acting, single-element fuses. In order to permit the application of a load bank to high capacity systems having a high available short circuit current, Simplex utilizes current limiting fuses which have the maximum U.L. interrupting rating of 200,000 amperes. This rating affords compliance with NEC sections 110-9 and 230-98 in today's large capacity systems and meets the requirements of future system expansion.

Control Panel

AC Meters, 3½", ±2%:

- Voltmeter, 0-600V, 50-60Hz
- Ammeter, 0-250/1000A
- Combination Volt-ammeter Switch
- Frequency Meter, Direct Reading (Dial) Type 45-65 Hz

Voltage Selector Switch: (12-240V/250-480V)

Fan/Control Power Switch

Load Control Switches:

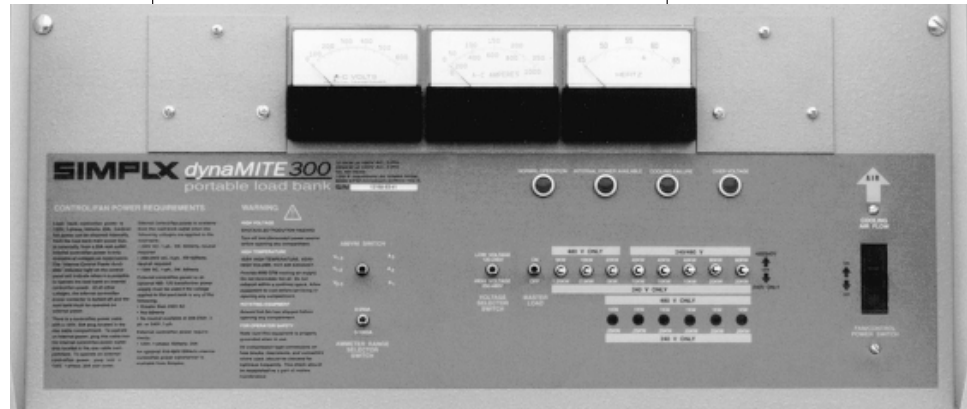
- Master Load Application Switch
- Load Step Switches

"Normal Operation" Neon Indicator Light

"Internal Fan/Control Power Available" Neon Indicator Light

Failure Detection System, Neon Alarm Lights and Lockout:

- Fan Failure
- High Intake Temperature
- High Exhaust Temperature
- Overvoltage



Capacity Detail

Volt. (AC)	480V,3Ø	416V,3Ø	380V,3Ø	240V,3Ø	208V,3Ø	240V,1Ø
KW(1.0pf)	315	238	197	289	217	208

Load Step Detail

Qty.	KW Each Step (1.0 p.f.)					
	480V,3Ø	416V,3Ø	380V,3Ø	240V,3Ø	208V,3Ø	240V,1Ø
1	-	-	-	1.25	.94	.84
1	-	-	-	2.5	1.9	1.7
1	5	3.75	3.1	5	3.75	3.4
1	10	7.5	6.3	10	7.5	6.7
1	20	15	12.6	20	15	13
3	40	30	25	40	30	26
2	80	60	50	80	60	52

Voltage:

- High/low mode, operator selectable
- High: 250-480V AC, 3-phase
- Low: 12-240V AC, single or 3-phase

Frequency:

- 50, 60, 400 Hertz

Time Rating: Continuous

Temperature Rating:

- 125°F maximum intake air temp.
- 275°F maximum exhaust air temp.

Fan Control Power:

- User selectable: internal/external

External power:

- 120V AC, 60 Hz, 1Ø, 20A

Internal power:

- 240V AC, 1Ø, 3W, 60Hz
- 240V AC, 3Ø, 4W, 60 Hz
- 120V AC, 1Ø, 2W, 60 Hz

Optional internal power:

- above, plus,
- 480 V AC, 3Ø, 60 Hz

Dimensions:

32"W x 48"H x 60"D
82W(cm) x 121H(cm) x 153D(cm)

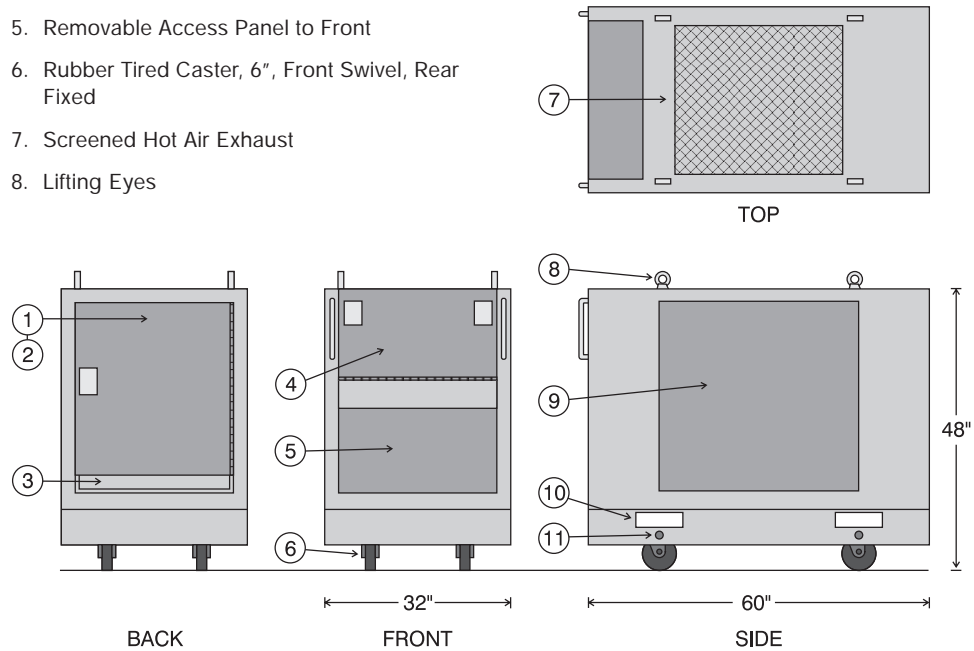
Net Weight: 800 lbs./435 kgs.

Enclosure: NEMA 1 Dripproof

General Specifications

Dimensions and Key Features

1. Cable Compartment behind Hinged Door
2. Behind Cable Compartment: Removable Access Panel to Rear Distribution Bus, Fuses, Contactors
3. Cable Exit-Allows Rear Door to Close
4. Instrumentation & Controls behind Doors
5. Removable Access Panel to Front
6. Rubber Tired Caster, 6", Front Swivel, Rear Fixed
7. Screened Hot Air Exhaust
8. Lifting Eyes
9. Removable Access Panel, Both Sides, to "Powr-Web" Load Element Trays
10. Fork Lift Channels
11. Alternate Location of Lifting Eyes Used for Tie-Down Rings



Options

- KW meter
- Running time meter
- 1% accuracy digital panel meters
- Digital power meter
- Extended internal power capability (to 480V, 3 ϕ , 60Hz)
- 400Hz internal power capability
- 400Hz instruments
- Remote control provision
- Companion reactive load bank
- Vinyl cover
- Weatherproof enclosure
- Highway trailer