

Atlas-Megawatt

Digital 1000KW Load Bank with Data Acquisition

Overview

- High capacity, 1000kw
- Dual voltage: 208-240/416-480vAC
- Digital load control, 5kw resolution
- Touchscreen operator interface
- Data acquisition and recording
- Network units to form large systems

Description

The Simplex Atlas-Megawatt is an ultra large capacity, high performance Portable Load Bank designed to provide the manufacturers, distributors and users of large AC generators and UPS systems with sophisticated testing capability.

The Atlas-Megawatt provides 1000kw of resistive load at both 240V and 480V, 3- phase. It can be applied at any AC voltage to 480VAC, 50-60-400 Hertz, single or 3-phase. Load step resolution is 5kw.

The Atlas-Megawatt is a totally self contained testing system. It includes all resistive load elements, load control devices, load element circuit protective devices, connection cable set, cooling system, malfunction detection system, control power supply and test instrumentation.

Features

UL Listed

Digital Control: PLC based control with 8-inch color TFT touchscreen interface. MODBUS over RS-485 network communication. See page 3.

Instrumentation: Digital power transducer with Ethernet communication to digital controller. Data display on touchscreen. Data acquisition and recording. See page 3.

Load Elements: Simplex "Powr-Web" chromium alloy, open wire, continuously supported, power resistor. See page 2 for details.

Load Control: 3-Pole contactors.

Load Element Circuit Protection: Branch circuit fuses. One set of fuses each 50kw branch. Fuses are current limiting type, 200KAIC, 600V.

Cooling System: 3-phase, direct-drive fan, 26,000 CFM.

Malfunction Detection System: Protection against fan failure, high exhaust air temperature, high intake air temperature, over voltage and fan reversal. Exhaust air temperature displays on screen.

Control Power Supply: Dual voltage control power transformer with supply power switchable to internal (generator) or external.

Touch Screen: Easily removable from panel.

Connection: 12' connection cable set including 3-phase power cables, ground cable, stored in rear compartment.



Atlas-Megawatt with optional weather resistant configuration and optional toggle switch control.





Powr-Web Resistive Load Element

Description

Simplex Load Banks utilize “Powr-Web” load elements. 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 element by high temperature, ceramic clad stainless steel rods. The “Power 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

- Ceramic clad, stainless steel through-rods.
- UL Recognized

Capacity Detail

Model	KW (1.0pf)	FLA			KW DETAIL		
		240V	480V	240V/480V	208/416V	380V	240V, 1-ph
Atlas-Megawatt	1,000	2404	1202	1,000	750	630	667

Cooling System

Model	HP	CFM	ΔT, Nom.	ΔT, Max.
Atlas-Megawatt	10	27,700	120°F	480°F

Voltage: Dual Voltage: 240/480V AC, 3-phase Operational at any voltage to 480V AC maximum, single or 3-phase

Frequency: 50, 60, 400 Hertz

Connection: 3-wire plus ground

Time Rating: Continuous

Ambient Air Temp.: 120°F max

Fault Rating: 200KAIC

Insulation Rating: 600V, 302°F

Control/Fan Power:

- 230/460V, 3-phase, 60 Hertz
- 190/380V, 3-phase, 50 Hertz
- Switchable internal (generator)-external
- 230/460-115V control power transformer internal to Load Bank.
- 15' external power cord

Net Weight: 2500 lbs.

Digital Load Step Control

Nominal 5.0 kw resolution: direct enter any load value and controller will apply load within nominal 5kw resolution

Digital Load Calibration Versus Voltage

Controller automatically calibrates loads for reduced voltage operation.

Digital Control and Data Acquisition System

PLC based digital control with 8-inch color TFT touchscreen operator interface.

Functions

- Load bank voltage programming: connects control contactors for selected voltage. Calibrates load values for reduced voltage operation
- Control power source and voltage level detection
- Cooling fan motor phase rotation detection and motor connection
- Malfunction detection and protection
- Direct access (keypad) load control
- Alternate mimic panel load control
- Basic automation of load control
- User settable exhaust temperature limits with temperature display

Instrumentation

Digital power transducer with Ethernet output to digital controller and meter displays on touchscreen:

- 3-phase voltage (each, L-L)
- 3-phase current (each line)
- Frequency
- KW
- KVAR (when used with optional inductive load banks)
- Power factor (when used with optional inductive load banks)

Data Acquisition

- Captures and records all electrical values
- Start recording/stop recording screen buttons
- User settable sample rate
- Records to detachable flash drive which plugs into panel USB port
- Data can be charted or formatted and archived using Simplex supplied software disc for Windows PC

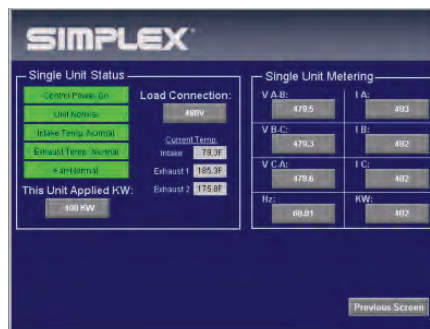
Outputs

MODBUS (standard) or BacNet (optional):

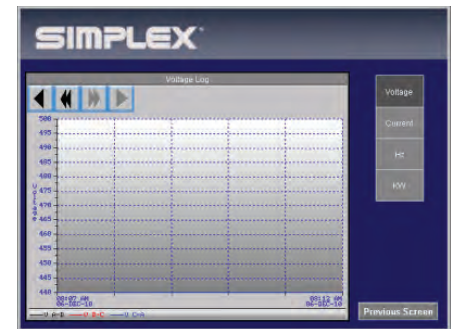
- Load applied
- Each electrical value as above
- Alarms
- Alarm history log



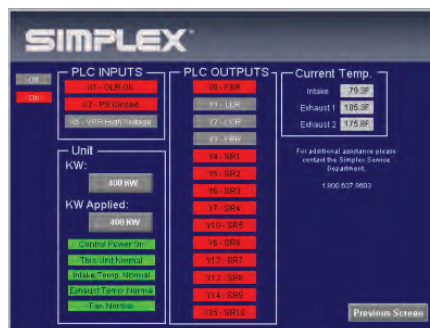
Main Screen



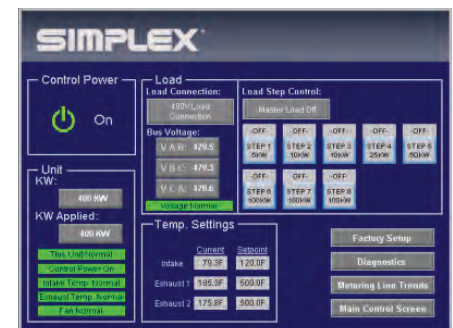
Monitoring Screen



Metering Trends Screen



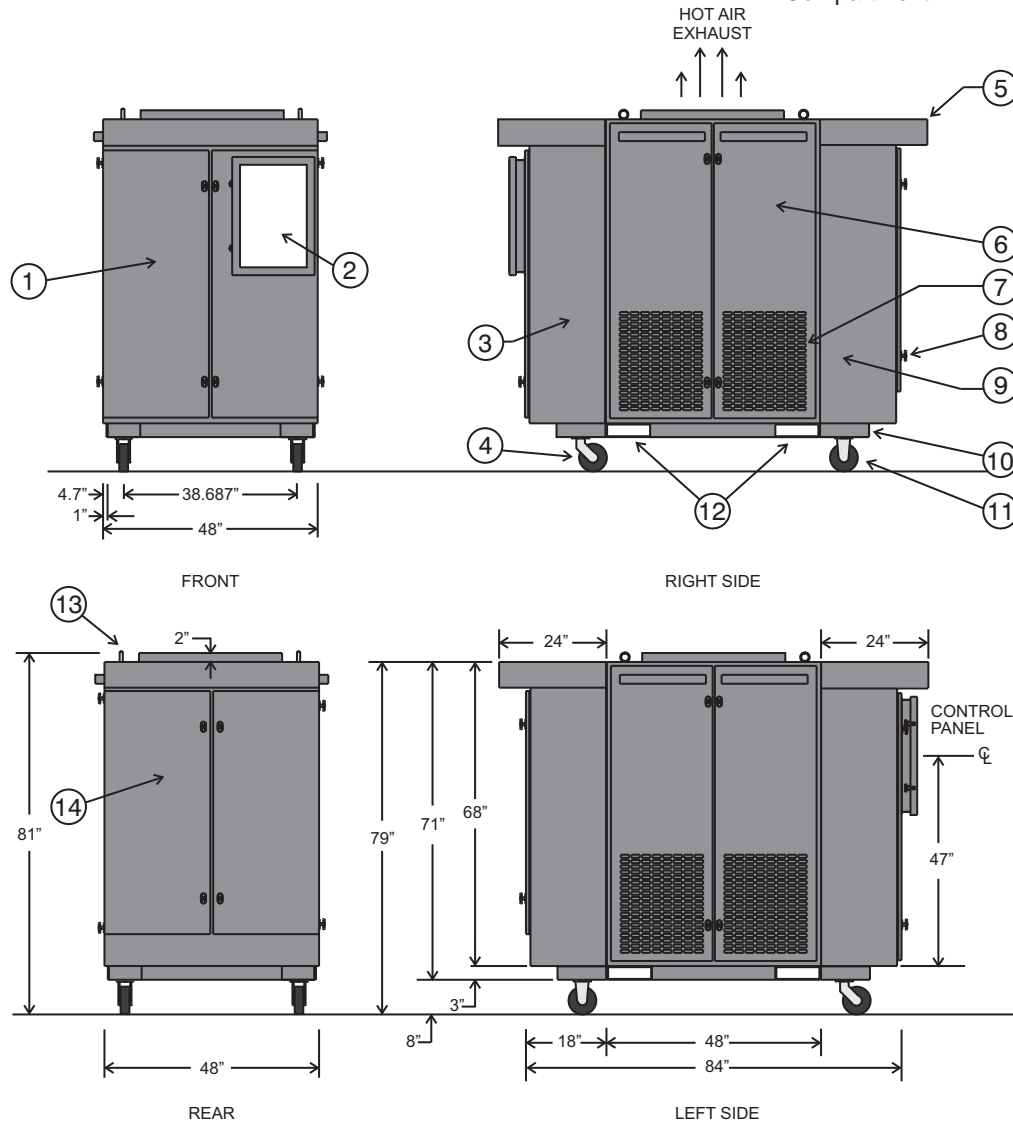
Diagnostics Screen



Maintenance Screen

Dimensions and Key Features

- | | | |
|--|---|---|
| 1. Control Compartment Hinged Door | 6. Hinged Doors Both Sides, Access to "Powr-Web" Load Tray Elements | 10. Conduit Entry Location |
| 2. Local Control Panel Hinged Door | 7. Screened Cool Air Intake, Both Sides | 11. Rubber Tire Caster, 6" Fixed Caster |
| 3. Control Section | 8. Lockable Latch | 12. Forklift Channels |
| 4. Rubber Tired Caster, 6" Swivel Caster | 9. Cable Section | 13. Lifting Eyes |
| 5. Vent Screen | | 14. Hinged Doors, Access to Cable Compartment |



Options

- Network control cables, 25-foot basic length
- Remote control cable extensions
- Simplex AUTO-TEST software for full automation of testing with data acquisition and report generation
- "Cam-Lok" power connections
- Toggle switch control
- Weather resistant enclosure
- Auxiliary inductive load banks with network control and data capability