JTP POWER

JTP-1200 Series
Data Sheet

415V 3 Phase 50Hz 100-250-500kW Indoor/ Outdoor, Remote Operated, Resistive Load Bank

Load Steps (100kW)	5, 5, 10, 20, 20, 20, 20kW
Load Steps (250kW)	5, 10, 10, 25, 50, 50, 100kW
Load Steps (500kW)	5, 10, 10, 25, 50, 100, 100, 200kW
Load Tolerance	±5% each step ±3% overall
Noise Level (Operating Position)	75 dBA at 1m
Dimensions (W×D×H)	1000 x 1000 x 1250 mm
Weight	250kgs
Rated Ambient Temp / Humidity	-20°C ~ +50°C ≤93% RH, non-condensing

Overview

The JTP-1200 Series load banks are designed to test generators and UPS's continuously, at a power factor of 1pu, without having to utilise the normal operating load. They can be operated both indoors and outdoors and the enclosure is fitted with castors to allow it to be easily moved around.

The load bank can be safely and reliably connected to the electrical supply using individual PowerLock 400A connectors for each phase and the neutral conductor. The 500kW model has 2 x 400A connectors per phase. A M10 earth terminal is provided.

The auxiliary supply for the fans and the control system can be derived from either the test load or a separate 240V 1 Phase 50Hz 10A socket inlet.

A power meter installed in the local control panel shows three-phase voltage, current, active power, reactive power, apparent power, power factor, and frequency of the load to an accuracy class of 0.5, with the same information displayed on the PC screen when in use.

Operation

The user can select the control mode as local or PC mode with a selector switch on the local control panel. Only one mode can be active at a time.

In local mode the load bank is controlled manually by selecting the required load using the load step selectors on the local control panel and then pressing the master load switch. This allows the load to be changed with a single button press without intermediate steps.

PC Software

Software is provided for installation on the customer's PC. The software allows the control of the load bank remotely via a RS485 cable and USB adaptor, along with data logging and reporting.

The software allows two control methods, manual or automatic loading. In manual mode the user selects the required load which is then set continuously. In automatic mode the user sets the power and time profile for a full test cycle which is then run automatically.

Multiple load banks can be controlled and monitored either individually or as a single load group from the PC by connecting them in a daisy chain configuration with RS485 cables. Any abnormal operating condition is highlighted on the software control screen.

Data is saved in the software and can be queried either during or after testing. Test data can be exported in a spreadsheet and graphs can be exported as .jpg files.

Resistor Elements

The resistors are a combination of:

- U shaped sheathed, finned elements that utilise a nickel-chromium alloy (NiCr6023) wire in a magnesium oxide powder that provides good thermal and insulation properties, and
- Stainless steel alloy strips supported in a mica panel frame, that are light and robust.

All elements undergo a PFWV test at 2.5kV 50Hz for 1 minute.

The resistor elements are designed to reach no more than 1/3 of the maximum wire operating temperature which ensures a long operating life whilst limiting the change in resistance (±2%), and therefore maintaining a constant load value across the operating profile. The manufacturing tolerance ensures all loads are within ±3% at rated voltage.

Cooling Fans

The cooling system consists of horizontally mounted fans with horizontal air inlets and outlets. Covers over the inlet and outlet vents allow the load bank to be operated outdoors.

Switchgear & Control System

The load steps are switched with Schneider Electric contactors protected by fuses on each step for short circuit protection. Each contactor is fitted with auxiliary contacts to provide status feedback.

The control circuit is protected by an MCB.

The control system utilises a highly reliable Siemens PLC to reduce the number of intermediate relays and timers required and simplify manufacture and maintenance.

Protection

Protection consists of:

- fan / master load interlock to prevent loading without the fans running,
- differential air pressure sensors,
- fan motor overload,
- air temperature sensors,
- over-voltage protection,
- load step fuses for short circuit protection, and
- an emergency stop on the local control panel to dump all load and stop the fans.

Included Accessories

The following accessories are included with the load bank:

- 10m RS485 Cable
- RS485 / USB Adaptor
- PC Software (PC not included)
- Operating Manual