Why load bank testing is important?

JUNXY series AC/DC load banks are for many power supplies load bank testing, to ensure that the standby power supply system say UPS(uninterrupted power supply), battery bank, generator, transformers, inverter etc which especially located in harsh, dusty or corrosive environment working in good condition, when you need them most, if switched to be loaded when the main power supply in maintenance procedure or stop

abnormally.

The AC/DC load bank loading test preventative maintenance of such power supply systems could free you from power supply failure, to ensure constant uptime for your power systems and make you prepared for anything. Downtime could also be reduced by regular maintenance and thorough inspections which are the key to power supply systems maintenance.

Load bank testing could help highlight a large range of faults on the power supply systems it test. The first goal achieved when testing with JUNXY AC/DC load bank is to ensure your power supply system is reliable or not by validating the power systems' outputs to its technical specifications. The underlying question that JUNXY series AC/DC load bank could answer you is--"how is my power supply systems constant uptime(technical performance) ?" The load bank also tests that the power supply system is not faulty, no faults in construction and components reliable, that the aging of the power supply system is in line with expectations and that there are no pending breakdowns or early signs of wear and tear.

JUNXY offers you whole AC/DC load bank testing solutions of predictive failure analysis for UPS(uninterrupted power supply), generator, transformers, PV system, inverter etc, to validate the condition and output of such power systems comprehensively. Integrated AC/DC load bank could be made in one unit or separately with different load voltages as per your need for different applications.

JUNXY AC/DC load banks applications	**JUNXY series load banks loading elements (load bank types)**
➢ Battery bank system ➢ Energy storage system ➢ Energy meter loop load test ➢ Datacenter rack heat simulating ➢ PV system Inverter anti-islanding test ➢ Voltage regulator, rectifier aging load test ➢ Genset, UPS load bank commission testing ➢ AC/DC power supply, power source commission acceptance test	Alloy resistors, inductors & capacitors loading elements are combined used in JUNXY series AC/DC load bank as per clients' need in different applications: ➢ Pure resistive AC load bank ➢ Pure resistive DC load bank ➢ RCD non-linear AC load bank ➢ Resistive & inductive combined AC load bank ➢ Resistive, inductive & capacitive combined AC load bank

JUNXY series load banks protections	**Optional protections**
Standard protections: ➢ Emergency pause operation: one-key	➢ Blower thermal overload protection: alarm & remove load

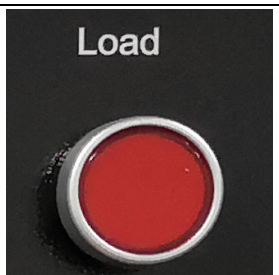
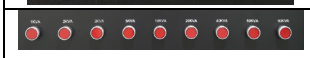
stop loading ➢ Over temperature alarm/protection: alarm & remove load ➢ Fan interlock protection: loading available after fan activated ➢ Over voltage protection: alarm & remove load	➢ Short circuit protection by fuse(over current protection) ➢ Phase sequence protection(for fans with 3phase voltage) ➢ Or other functions as requested

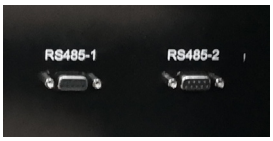
JUNXY series load bank control modes Two control modes available for JUNXY series AC/DC load banks: The local panel control mode and the PC software remote control mode. **Local panel control mode available as below listed:** ➢ By contactor ➢ ~~By circuit breaker~~ ➢ ~~Or other switches as requested~~	**PC software remote control(optional)** JUNXY series AC/DC load bank remote control communication protocol would be provided for clients' integrating the load bank into the ATE system

Technical Specifications	
Model	JUNXY-AC600V-180KVA-RL Resistive & Inductive AC Load Bank
Load Element	Alloy resistors & Inductors
Load Voltage	AC600V 3phase 4wire, 400Hz(STAR connection)
Load Power	Apparent power 180KVA(Active power is 144KW)
Load Steps	1KVA, 2KVA, 2KVA, 5KVA, 10KVA, 20KVA, 40KVA, 50KVA, 50KVA (1KVA-180KVA adjustable @AC600V 3P4W, 400Hz)
Power Factor	PF=0.8 fixed
Load Accuracy	±5%
Digital Meter	Voltage, Current, Power, Frequency, Power Factor and etc.
Power Supply	230V 50Hz, single phase
Control Mode	1. Manual control by push button 2. Remote control by PC software

Wire Connections	Copper bus bar for wire connections
Insulation Class	F
Protection Level	IP20(indoor use）
Fan Noise	75dB
Cooling Mode	Force-air cooling
Work Mode	Continuous work
Protections	Overheating/buzzer alarm, overheating/over voltage protection, emergency stop button
Ambient Temperature	-10℃～+50℃
Dimension	1100*1370*1400mm
Weight	550KG
Mobility	Four wheels & lifting eyes
Humidity	≤95%
Altitude	≤2500 meters

Load Bank Control Panel Explanation		
Component Picture	**Name**	**Function**
	**EPO**	Emergency pause operation (Press to stop, rotate to release) clockwise rotate before load bank operation EPO to remove load & control ONLY, fans still working
	Control Mode	Local: by local panel control Remote: PC software OFF: no mode selected 2 modes interlock

	Meter	Digital meter displaying the voltage, current, frequency, active power, energy, power factor and etc.
	Power	Fan/control power with built in light indicator
	Alarm	Over temperature (85℃) buzzer alarm
	Load	Load Steps control switch with built in light indicator
	Load Steps: Push Buttons	Push on/off to adjust the load power (by **contactor** on/off)
	Load Cables Bus Bar: A, B, C, N & GND	4 load cables connection between copper bus bar A, B, C & N, and equipment under test

	1. QF1 2. L/GND/N	1. QF1: Fan and control power breaker 2. L/GND/N: Fan and control power
	RS485	RS485: for remote control & parallel load bank
	RS485-USB Cable Driver (Install driver before software running)	PC software remote control cable (One end to RS485 cable, the other end to PC. Or connect directly between load bank and PC)
	RS485 Cable	Extend cable for remote control (One end to load bank, the other end to RS485-USB)

Each load bank includes the standard items:

① Load bank main unit--1 set
② RS485 cable--1 pcs
③ RS485-USB cable with driver--1pcs
④ Primary and secondary diagram--1 pcs(digital copy)
⑤ User manual--1 pcs(digital copy)

Load Bank Maintenance Guide

- Only authorized and professional is allowed to have load bank check & maintenance
- Please clean the dust inside load bank 1-2 times per year, check if any wires loose
- It is prohibited to change the load bank internal components wiring

Safety Information

- Load bank must be placed in place with excellent heat dissipation environment
- Please use an extra current clamp to test the phase current and compare with the load bank digital meter current, to predict any load bank fault.

- Do not use load bank, if load bank fan not working
- It is prohibited to do any remove/connect wiring, if power supply on
- Do not touch the load bank heat outlet due to high temperature in load bank top
- Cool the load bank for 10-20 minutes after stop loading

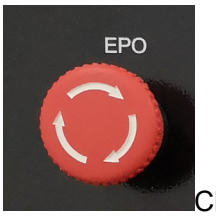
Load Bank Local Mode Operation Guide

Note: please read the designed diagram and manual before any operation.

① Wires connection before loading

1) Make sure **all switches are off** before any connections.
2) Grounding connection the load bank before all operation
3) Cables connection between load bank bus bar A/B/C/N and equipment under test
4) AC230V 1phase 2wire power supply wiring to the load bank terminal L/GND/N.
5) Check again to make sure all cables connection reliable.

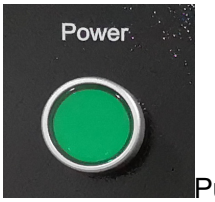
② Local mode loading operation

1) 

Clockwise rotate before load bank operation

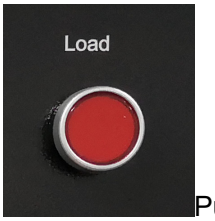
2) 

All load bank control mode switch to “LOCAL”

3) 

Push on “Power” button in local panel--fans working

4) Power on the equipment under test.

5) 

Push on the “Load”--Start loading(**Sudden on/off loading**)

6) 

Push on/off load steps to adjust the loading power.

7) **Press LEFT** 

or RIGHT 

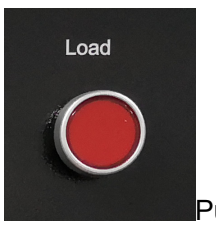
keys to view data.

		
001: Voltage per phase	002: Current per phase	003: Active power per phase & total
		
004: Power factor per phase & total	005: Reactive power per phase & total	006: Apparent power per phase & total

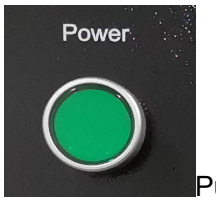
③ Unloading operation

1) 

Push off all load steps

2) 

Push off “Load”

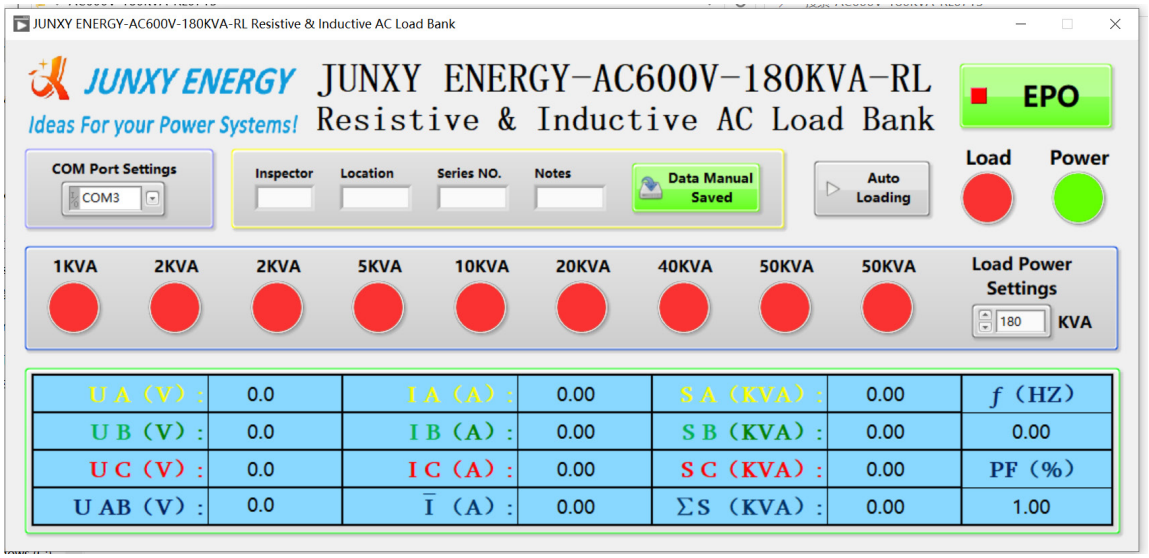
3) 

Push off “Power” after 10-20 minutes cooling

4) 

Press the “EPO” emergency stop button

5) REMOVE ALL the power supply of load bank & equipment under test
6) Remove all cables



Local panel control mode and PC software remote control mode are available for controlling the AC load bank, which are interlocking. ONLY the local panel “EPO” is effective if load bank switched to “REMOTE” mode. GEMA RLC AC load bank PC software allows users to remote control the loading process, monitoring and recording load parameters: voltage, current, frequency, leading & lagging power factor, active power, reactive power, apparent power, energy, time.

Users could conduct the loading either manually by clicking load steps push buttons to adjust the load power or automatically by setting the load profile. Test report available by EXCEL format, easy for printing.

Note: please practice the software while load banks disconnected with the ETU (equipment under test), before actual loading.

Software Installation

setup Double click to install the load bank remote control software

RS485-USB cable driver installation

CDM21216_Setup Double click to install the RS485-USB cable driver

Load bank remote control operation guide

① Wires connection before remote loading

1) Make sure all switches are off before any connections.
2) Grounding connection the load bank before all operation
3) Cables connection between load bank and equipment under test.

4) 

Switch the control modes “LOCAL/OFF/REMOTE” into **“REMOTE”**

5) Connect the 485-USB cable between load bank & computer

6) Load bank control power supply AC230V connect to L/N terminals.

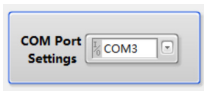
7) Check again to make sure all cables connection reliable.

② PC software remote control loading operation

1)

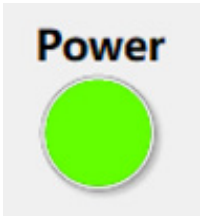
Input test remarks

2)



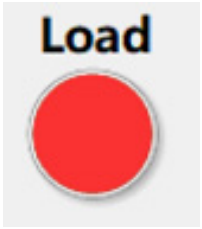
Select the right in use port of RS485-USB so as to operate the software, or the software could not be operated. Communication abnormal if port selected wrong.

3)



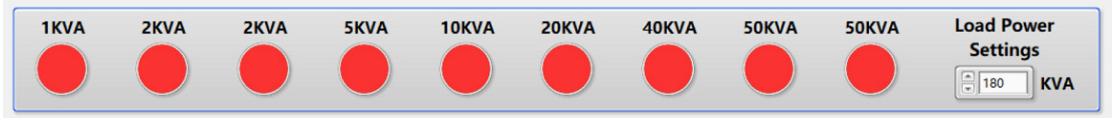
Click “Power” to activate fan working.

4)



Click “Load” to activate loading.

5)



Click the buttons to increase/decrease the load power

Test Data will be recorded in file 5 seconds after switching load steps.

Test Data will be recorded in file every 2 minutes if not switching load steps.

6)

Loading will be **AUTOMATIC** conducted to the next, once reach each load profile interval.

7)

UA (V) :	0.0	IA (A) :	0.00	SA (KVA) :	0.00	f (HZ)
UB (V) :	0.0	IB (A) :	0.00	SB (KVA) :	0.00	0.00
UC (V) :	0.0	IC (A) :	0.00	SC (KVA) :	0.00	PF (%)
UAB (V) :	0.0	$\bar{I}$ (A) :	0.00	ΣS (KVA) :	0.00	1.00

View test data real time directly

8)

Click to view & save the data by excel file