



### 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.




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| <p><b>JUNXY AC/DC load banks applications</b></p> <ul style="list-style-type: none"> <li>➤ Battery bank system</li> <li>➤ Energy storage system</li> <li>➤ Energy meter loop load test</li> <li>➤ Datacenter rack heat simulating</li> <li>➤ PV system Inverter anti-islanding test</li> <li>➤ Voltage regulator, rectifier aging load test</li> <li>➤ Genset, UPS load bank commission testing</li> <li>➤ AC/DC power supply, power source commission acceptance test</li> </ul> | <p><b>JUNXY series load banks loading elements (load bank types)</b></p> <p>Alloy resistors, inductors &amp; capacitors loading elements are combined used in JUNXY series AC/DC load bank as per clients' need in different applications:</p> <ul style="list-style-type: none"> <li>➤ Pure resistive AC load bank</li> <li>➤ Pure resistive DC load bank</li> <li>➤ RCD non-linear AC load bank</li> <li>➤ Resistive &amp; inductive combined AC load bank</li> <li>➤ Resistive, inductive &amp; capacitive combined AC load bank</li> </ul> |
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| <p><b>JUNXY series load banks protections</b></p> <p><b>Standard protections:</b></p> <ul style="list-style-type: none"> <li>➤ Emergency pause operation: one-key stop loading</li> <li>➤ Over temperature alarm/protection: alarm &amp; remove load</li> <li>➤ Fan interlock protection: loading available after fan activated</li> <li>➤ Over voltage protection: alarm &amp; remove load</li> </ul> | <p><b>Optional protections</b></p> <ul style="list-style-type: none"> <li>➤ Blower thermal overload protection: alarm &amp; remove load</li> <li>➤ Short circuit protection by fuse(over current protection)</li> <li>➤ Phase sequence protection(for fans with 3phase voltage)</li> <li>➤ Or other functions as requested</li> </ul> |
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| <p><b>JUNXY series load bank control modes</b></p> <p>Two control modes available for JUNXY series AC/DC load banks: The local panel control mode and the PC software remote control mode.</p> <p><b>Local panel control mode available as below listed:</b></p> <ul style="list-style-type: none"> <li>➤ By contactor</li> <li>➤ <del>By circuit breaker</del></li> <li>➤ <del>Or other switches as requested</del></li> </ul> | <p><b>PC software remote control(optional)</b></p> <p>JUNXY series AC/DC load bank remote control communication protocol would be provided for clients' integrating the load bank into the ATE system</p> |
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| Technical Specifications         |   |
|----------------------------------|---|
| Model                            | JUNXY-AC400V-1000KW-R Resistive AC Load Bank  |
| Load Element                     | Stainless steel resistors   |
| Load Voltage                     | AC400V 3P4W, 50Hz   |
| Load Power                       | 1000KW for AC400V 3P4W, 50Hz  |
| Rated Load Steps<br>@AC400V 3P4W | 5KW*2, 10KW*2, 20KW, 50KW, 100KW*7, 200KW<br>(5KW-1000KW adjustable @AC400V 3P4W, 50Hz) |
| Power Factor                     | PF=1  |
| Load Accuracy                    | ±5%   |
| Digital Meter                    | Voltage, Current, Power, Frequency and etc.   |
| Power Supply                     | AC400V 3P4W, 50Hz<br><b>(Load bank fans &amp; control power supply)</b>                 |
| 2 Control Mode                   | 1. Manual control by push button<br>2. PC software remote control                       |
| Wire Connections                 | Copper bus bar for wire connections   |
| Insulation Class                 | F   |
| Fan Noise                        | 90dB  |
| Cooling Mode                     | Force-air <b>VERTICAL</b> cooling   |

|                     |  |
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| Work Mode           | Continuous work  |
| Protections         | Over voltage/current/temperature with load removed protection and alarming, emergency stop button, fan lack of air volume protection |
| Ambient Temperature | -10℃~+50℃  |
| Dimension           | 1600*1850*1822mm(W*D*H)  |
| Weight              | Around 1.2T  |
| Mobility            | Stationary & moved by forklift pocket  |
| Humidity            | ≤95%   |
| Altitude            | ≤2500 meters   |

| Load Bank Control Panel Explanation   |              |   |
|---|--------------|---|
| Component Picture   | Name         | Function  |
|  | EPO          | Emergency pause operation<br>(Press to stop, rotate to release)<br><u>clockwise rotate before load bank operation</u> |
|  | Control Mode | Local: by local panel control<br>Remote: PC software<br>OFF: no mode selected<br><u>2 modes interlock</u>             |
|  | Power        | Fan power with built in light indicator   |

|   |                                     |   |
|---|-------------------------------------|---|
|    | <p>Load</p>                         | <p>Load Steps control switch with built in light indicator</p>  |
|    | <p>Fan meter</p>                    | <p>Digital meter for fan air volume protection: test fan voltage &amp; current</p>                                      |
|    | <p>Load Meter</p>                   | <p>Digital meter displaying the load test data: U/I/P/Q/S/PF<br/><b>(see below operation guide)</b></p>                 |
|  | <p>Alarm</p>                        | <p>Over voltage/current/temperature (85°C) buzzer alarm</p>   |
|  | <p>Load Steps:<br/>Push Buttons</p> | <p>Push on/off to adjust the load power (by <b>contactor</b> on/off)</p>  |
|  | <p>Load input bus bar</p>           | <p>Load input bus bar: 4 load cables connection between copper bus bar L1, L2, L3 &amp; N, and equipment under test</p> |
|  | <p>U/V/W/N</p>                      | <p>AC400V 3P4W, 50Hz power supply for fan and control diagram</p>   |



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|    | <p>MCB</p>  | <p>QF1: Fan breaker<br/>QF2: Control diagram breaker</p>   |
|    | <p>RS485 port</p>   | <p>For load bank remote control &amp; data recording by PC software</p>  |
|   | <p>Grounding connection</p>   | <p>Grounding before load bank testing</p>  |
|  | <p>RS485-USB Cable Driver<br/><b>(Install driver before software running)</b></p> | <p>PC software remote control cable<br/>(One end to RS485 cable, the other end to PC. <u>Or connect directly between load bank and PC</u>)</p> |
|  | <p>RS485 Cable</p>  | <p>Extend cable for remote control<br/>(One end to load bank, the other end to RS485-USB)</p>  |

**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 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 L1/L2/L3/N and equipment under test
- 4) AC400V 3P4W, 50Hz power supply wiring to the load bank terminal U/V/W/N.
- 5) Check again to make sure all cables connection reliable.

**② Local panel loading operation(Switch to "Local")**

- 1) Clockwise rotate before load bank operation

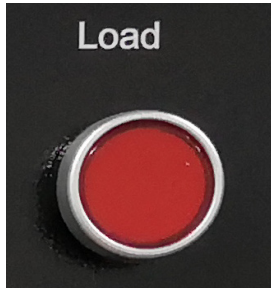


- 2) Switch the control mode to "Local"



3) Push on "Power" button in local panel--fans working

4) Power on the equipment under test.









5) Push on the "Load"--Start loading



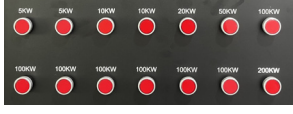

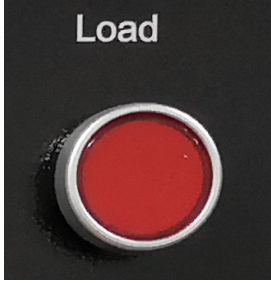


6) Push on/off load steps to adjust the loading power.

7) Press LEFT  or RIGHT  keys to view data.

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|  |  |  |
| <p>001: Voltage</p>   | <p>002: Current</p>   | <p>003: Active power</p>   |
|  |  |  |
| <p>004: Power factor</p>  | <p>005: Reactive power</p>  | <p>006: Apparent power</p>   |

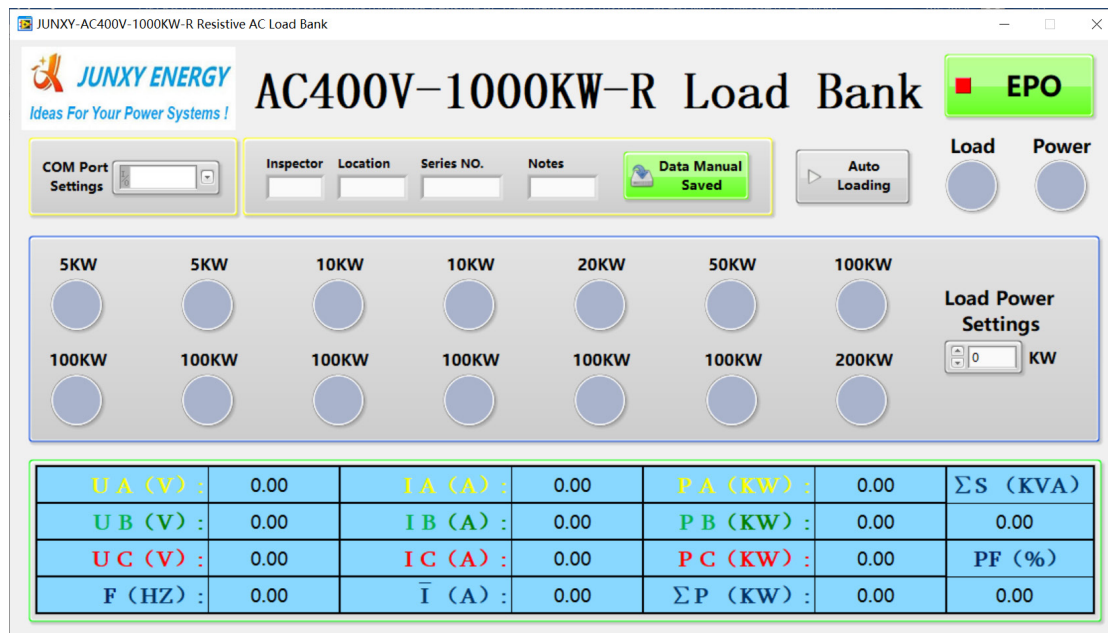


**③ Unloading operation**

- 
- 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

## Note:

- **Load power vary according to ohm law if applied to lower voltage than 400/230V.**
- Other load bank input voltages as below are available upon requested:
  - 3φ4W+G, Y connection: 190/110,200/115,208/120,220/128,230/132,240/139V
  - 3φ4W+G, Y connection: 380/220, 400/230, 415/240, 440/254, 460/265, 480/277V
  - 3φ3W+G; Delta connection: 220, 230, 240, 380, 400, 415, 440V



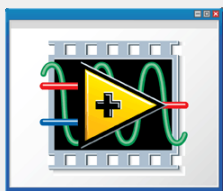

|           |      |           |      |            |      |           |
|-----------|------|-----------|------|------------|------|-----------|
| U A (V) : | 0.00 | I A (A) : | 0.00 | P A (KW) : | 0.00 | Σ S (KVA) |
| U B (V) : | 0.00 | I B (A) : | 0.00 | P B (KW) : | 0.00 | 0.00      |
| U C (V) : | 0.00 | I C (A) : | 0.00 | P C (KW) : | 0.00 | PF (%)    |
| F (HZ) :  | 0.00 | Ī (A) :  | 0.00 | Σ P (KW) : | 0.00 | 0.00      |

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. JUNXY 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

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|  | <p>Double click  <b>setup.exe</b> to install the software which should be applied for system 1)Windows XP Service Pack 3 or above, 2)Office2010 or above, 3)Screen resolution 1300*900 or above. You will see the desktop icon after installation. Double click icon to run the software.</p> |
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### 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) AC400V 3P4W, 50Hz power supply wiring to the load bank terminal U/V/W/N.
- 7) Check again to make sure all cables connection reliable.

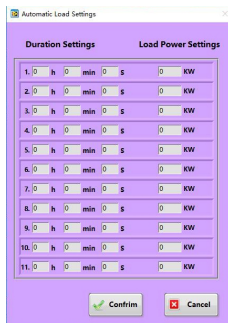
**② PC software remote control loading operation**

|           |   |           |      |            |      |            |      |           |           |      |           |      |            |      |      |           |      |           |      |            |      |        |          |      |          |      |            |      |      |
|-----------|---|-----------|------|------------|------|------------|------|-----------|-----------|------|-----------|------|------------|------|------|-----------|------|-----------|------|------------|------|--------|----------|------|----------|------|------------|------|------|
| Step 1    |  <p>Select the com port of RS485-USB so as to operate the software.</p>  |           |      |            |      |            |      |           |           |      |           |      |            |      |      |           |      |           |      |            |      |        |          |      |          |      |            |      |      |
| Step 2    |  <p>Click "Power" to activate fan working.<br/>Click "Load" to activate loading.</p>   |           |      |            |      |            |      |           |           |      |           |      |            |      |      |           |      |           |      |            |      |        |          |      |          |      |            |      |      |
| Step 3    |  <p>Click on/off the buttons slowly to activate the required load power.</p> <p><b>Test Data will be recorded 10 seconds after switching load steps.</b></p> <p><b>Test Data will be recorded every 2 minutes if not switching any load steps.</b></p> <p>See below for the real time testing data:</p> <table border="1" data-bbox="255 1780 1340 1937"> <tr> <td>U A (V) :</td> <td>0.00</td> <td>I A (A) :</td> <td>0.00</td> <td>P A (KW) :</td> <td>0.00</td> <td>Σ S (KVA)</td> </tr> <tr> <td>U B (V) :</td> <td>0.00</td> <td>I B (A) :</td> <td>0.00</td> <td>P B (KW) :</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>U C (V) :</td> <td>0.00</td> <td>I C (A) :</td> <td>0.00</td> <td>P C (KW) :</td> <td>0.00</td> <td>PF (%)</td> </tr> <tr> <td>F (HZ) :</td> <td>0.00</td> <td>Ī (A) :</td> <td>0.00</td> <td>Σ P (KW) :</td> <td>0.00</td> <td>0.00</td> </tr> </table> | U A (V) : | 0.00 | I A (A) :  | 0.00 | P A (KW) : | 0.00 | Σ S (KVA) | U B (V) : | 0.00 | I B (A) : | 0.00 | P B (KW) : | 0.00 | 0.00 | U C (V) : | 0.00 | I C (A) : | 0.00 | P C (KW) : | 0.00 | PF (%) | F (HZ) : | 0.00 | Ī (A) : | 0.00 | Σ P (KW) : | 0.00 | 0.00 |
| U A (V) : | 0.00  | I A (A) : | 0.00 | P A (KW) : | 0.00 | Σ S (KVA)  |      |           |           |      |           |      |            |      |      |           |      |           |      |            |      |        |          |      |          |      |            |      |      |
| U B (V) : | 0.00  | I B (A) : | 0.00 | P B (KW) : | 0.00 | 0.00       |      |           |           |      |           |      |            |      |      |           |      |           |      |            |      |        |          |      |          |      |            |      |      |
| U C (V) : | 0.00  | I C (A) : | 0.00 | P C (KW) : | 0.00 | PF (%)     |      |           |           |      |           |      |            |      |      |           |      |           |      |            |      |        |          |      |          |      |            |      |      |
| F (HZ) :  | 0.00  | Ī (A) :  | 0.00 | Σ P (KW) : | 0.00 | 0.00       |      |           |           |      |           |      |            |      |      |           |      |           |      |            |      |        |          |      |          |      |            |      |      |

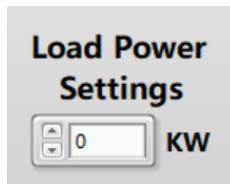
Step 4



4.1 **After step 2**, Click “Auto Loading” to set duaration & power as below:



Loading will be auto conducted to the next, once previous load profile completed.  
Load will auto stop once all load profiles completed.



4.2 **After step 2**, input load power directly, loading automatically.

Step 5



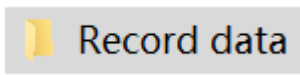
## ATTENTION:

Click “Data Manual Saved” to view & save all test data by excel file.

It is better to save the test data during the test several times, and one last time right before loading test completed

The excel file of test data saved in the file where you install the software. (check test data

files in “Record data” )



Step 6

Unloading: Clcic off all lod steps power, then click off “Load”

Step 7



## ATTENTION:

Click “EPO” to **emergently** remove all command, fans still working

Close the software also remove all command