

Technical Specification

LB-480-400kW-34W Automatic Load Bank

1 Foreword

This solution introduces LB-480-400kW-34W Automatic Load Bank and its accessories, including their function, performance, usage, structure, providing users with a high efficient and reliable choice to test generator. All the pictures quoted in this agreement are for reference only.

2 Testing System

We do not supply testing cable, PC and printer if not specified.



3 Supply List

The following form presents the accessories provided when we make shipment.

Items	Quantity	Remark
LB-480-400kW-34W Automatic Load Bank	1	
Power Cord	1	3 meters
RS232	1	5 meters
Parallel Communication Cable	1	10 meters
RS485	1	10 meters
RS485/RS232/USB Converter	1	
Documents accompanied with shipment	Quantity	Remark
Manual	1	
Packing List	1	
Data Management Software	1	

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4 Technical Parameter

Technical Parameter	
Rated Voltage & Frequency	480VAC; 3 phase 3 wire (L1, L2, L3, Ground), 60Hz
Max Load Power	410kW at 480V
Load Steps @480V	Resistive Load: 1, 2, 2, 5, 10, 20, 20, 50, 100, 200kW To avoid breaker tripping after one Camlock lose power, we make it internal two channels: Channel A: 1, 2, 2, 5, 10, 20, 20, 50, 100kW Channel B: 200kW, when one set of Camlok lose power, the other set Camlok will not increase power.
Power Factor	1
Load Tolerance (each step)	±5%
Load Tolerance (overall)	±3%
Display Meter	Multiple function meter
Fan Power	Internal /External power 480VAC 3 phase 3 wire 60Hz (L1, L2, L3, , Ground)
Control Power	Both Internal and External 120V single phase 60Hz
Wiring	Loading power -----Camlok (provided by Eagle Eye) we reserve space for 2 sets Camlok (1 set includes L1, L2, L3, Grounding) Control power——3 pin socket
Communication	RS485 / RS232
Insulation	F
Way of Working	Continuous Working
Cooling	Horizontal air intake and vertical cooling, there will be louver on air outlet, it can be adjusted manually.
Transportation	With lifting eyes and wheel castors
Color	Pantone Cool Gray 11 C
Dimensions	864*1800*1680mm W*D*H All the heights don't include the height of wheel and lifting eye
Weight	Around 650kgs
Operating Environment Parameter	
Ambient Temperature	-20°C~+50°C
Using Place	Indoor
Altitude	≤ 2500 meters
Relative Humidity	≤ 95%
Atmospheric Pressure	86~106kPa

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Brands of Main Components	
Contactora	Schneider
Fuse	MIRO
PLC	Siemens

5 Functions

- 1) 3- line LED multi-function meter can display real-time voltage and current of three phase and each phase, resistive power, power factor, apparent power, frequency and running time of generator set.
- 2) User can pre-set the power then press the master load button.
- 3) Control mode: user can choose local control or intelligent control (through PC with our data management software).
- 4) Control mode interlock: there is switch in control panel to choose control mode, other control mode is invalid if user choose one control mode.

6 Protection

- 1) Have emergency stop button.
- 2) In case of **over-load, over-heat, short circuit**, load bank will automatically remove load and give alarm.
- 3) Fan protection: Load bank could not load before power of fan is on.
- 4) Give alarm when any fan is abnormal or with insufficient air volume, etc.
- 5) Protection button: there are some protection buttons can be switched off when false alarm or for special requirements.

7 Data Processing Software

- 1) Automatic load: User can set several periods of power and duration and in turn of 0%→25%→50%→75%→100% or 110% then →75%→50%→25%→0%.etc to make automatic load testing.
- 2) Can make parallel testing for several units.
- 3) Data can be saved, could display real-time data and history data.
- 4) Charts and graphs can be exported in format of JPG while testing data exported in Excel and Word format, and all can be printed.



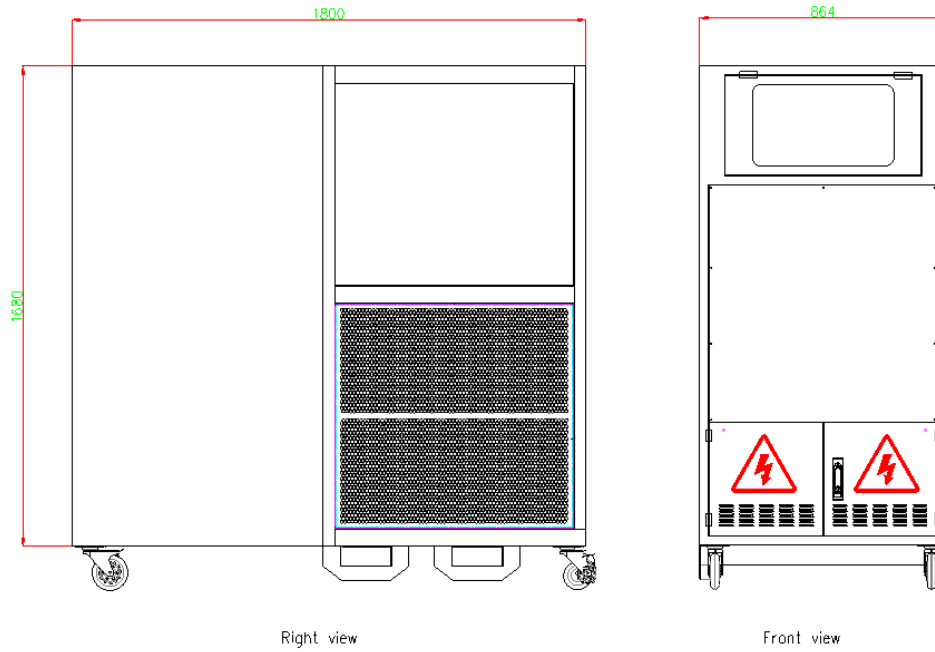
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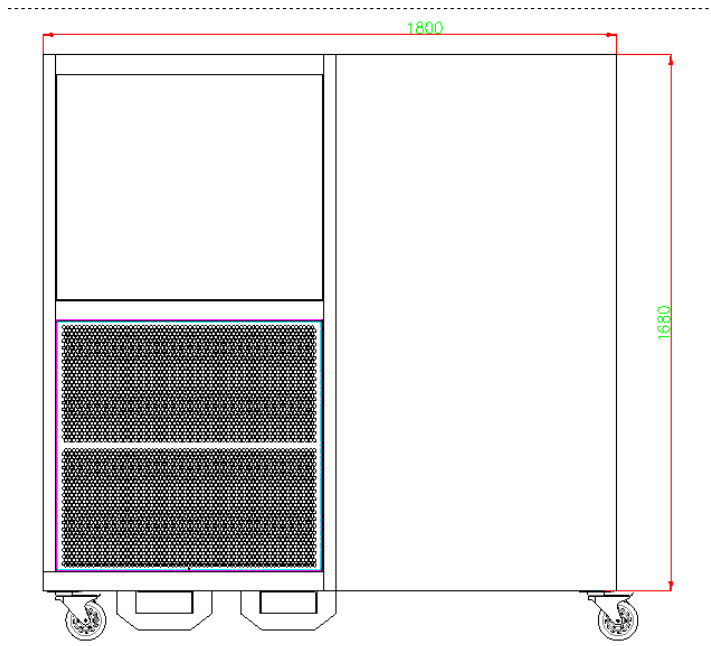
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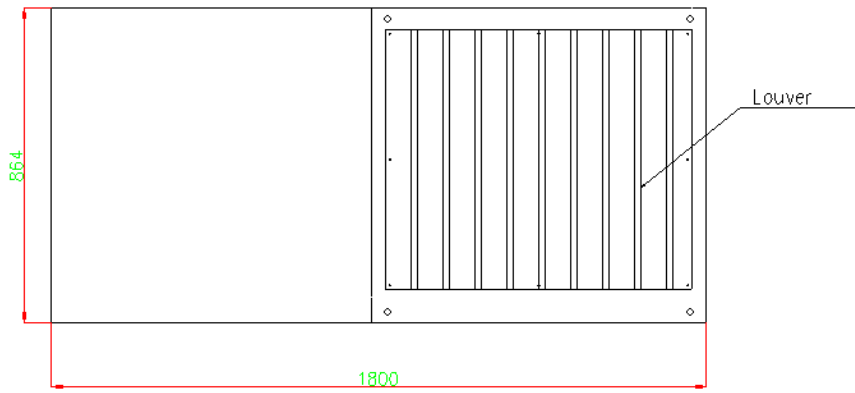
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8 Drawing



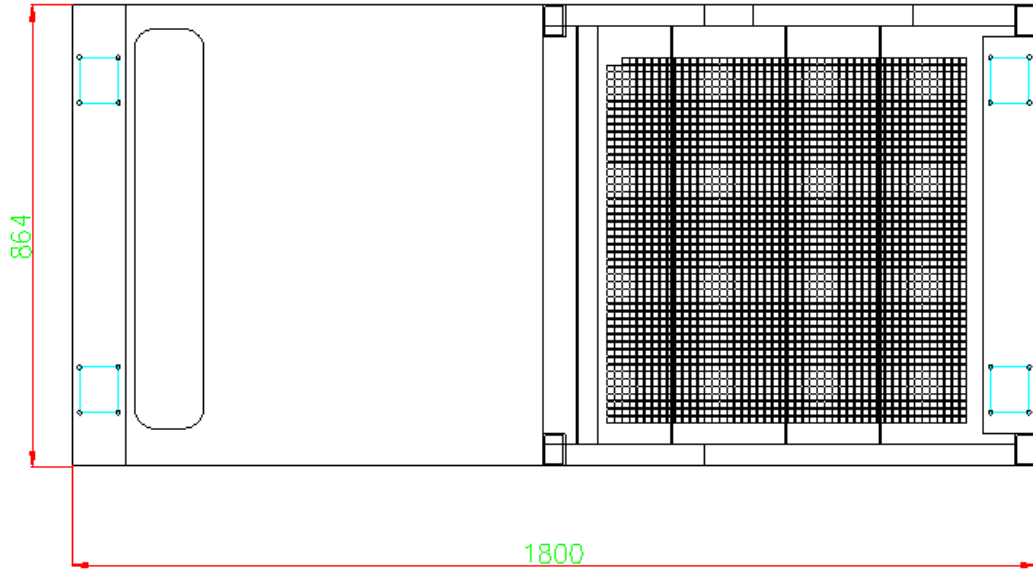


Left view



Top view

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Bottom view



Control panel for reference

9 Resistor

The core part of the load---the dry load module, can convert electrical energy into thermal energy, and perform continuous discharge tests on the equipment such as the generator set and power supply to be tested. Our company uses self-made alloy resistors to form load modules. In view of the characteristics of dry load safety which is easily affected by temperature, our company adopts strict quality control on temperature coefficient and heat dissipation performance. The alloy resistors produced have small temperature drift, slow temperature rise and fast heat dissipation, the heat resistance is stronger when working at full load, and it can work stably for a long time. The specific technical solutions and goals are as follows:

1) Alloy resistor is Nickel chromium alloy (NiCr6023), anti-temperature (max working temperature reach up to 1300°C), steady electrical performance, low temperature drift ($5 \times 10^{-5}/^{\circ}\text{C}$), this technology is the most advanced in alloy resistor manufacturing.

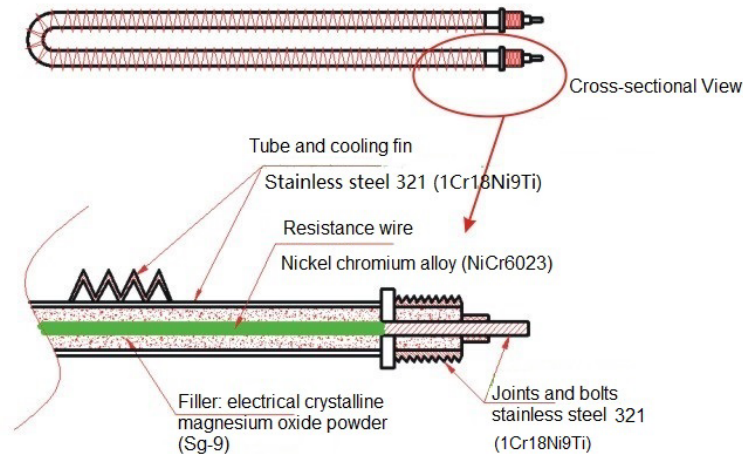
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- 2) The materials of resistor strictly use low extensibility and resistance oxidation Stainless Steel 321 (1Cr18Ni9Ti), filling material is exporting grade electrical crystallization magnesium oxide powder (Sg-9), performance standards JBY-TE4088-199, magnesite density $3.0\text{g/cm}^3 \pm 0.2$, screws is anti-corrosion, anti-temperature Stainless Steel 321 (1Cr18Ni9Ti). With strict and clear material control, the mass-produced alloy resistor is with highly congruent performance.
- 3) Cooling fin Stainless Steel 321, height $7\text{mm} \pm 2$, thickness $0.4\text{mm} \pm 0.2$, winding interval no more than $3\text{mm} \pm 0.2$.



- 4) Each resistor withstand voltage is DC3000V or 1500V, 50Hz, 1 minute without puncture. Real voltage is 1/3 of withstand voltage, make sure the resistor in good working condition without puncture.
- 5) Cooling fin uniform temperature no more than 300°C , max 320°C , there is enough margin to make sure alloy resistor can be working continuously, resistor max temperature 1300°C .
- 6) When resistor temperature reaches 300°C to 400°C , temperature drift is also less than $\pm 2\%$, it assures the resistance value no much changes in high temperature working condition, thus loading steady power could be available in any temperature.
- 7) Whether in max and min temperature, load accuracy is no more than 3%
- 8) Air outlet temperature no more than 80°C (within 1 meter)

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