

# LOAD BANK KPLB-100



### KEYPOWER LOAD BANK:

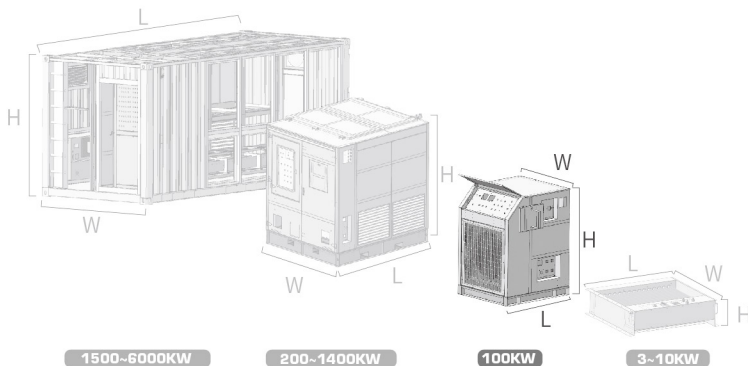
- \* Frequency: 50/60 Hz;
- \* Voltage range: AC 110-690V;
- \* Duty: Continuous;
- \* Cooling system: Industrial grade axle fans;
- \* Discharged air direction: horizontal for 100 kw, vertical for larger models;
- \* Control power phase: Single-phase, two-wire for 500 kw and below; three-phase, four-wire for larger models.

### GENERAL SPECIFICATIONS

	Model	KPLB-100
	Capacity	100kW
	Type of load	Resistive
	Power factor	1
	Duty cycle	Continuous
	Cooling system	Industrial grade axial fan
	Cooling mode	Forced air-cooled
	Airflow	Horizontal discharge
	Phase	Available at both single and three phase
	Rated testing voltage	3P3W 110 - 690V
	Rated frequency	50Hz / 60Hz
	Number of fans	1
	Control power input voltage	1P2W 110 - 240V



## Dimension and Weight



DIMENSION		KPLB-100	
	Length (L)	mm	960
	Width (W)	mm	1150
	Height (H)	mm	1510
	Weight	kg	350

KEYPOWER has the right to modify any feature without prior notice. Weights and dimensions based on standard products. Illustrations may include optional equipment. Technical data described in this catalogue correspond to the available information at the moment of printing. The illustrations and images are indicative and may not coincide in their entirety with the product. Industrial design under patent.

## Technical Specifications

PERFORMANCE PARAMETER	
Ambient Temperature	-10°C ~ +55°C
Relative Humidity	≤98% ventilated environment without explosive or corrosive dust
Altitude	≤3000m above sea level
Wire Connection	Socket / Terminal
Load Tolerance (each step)	±5%
Load Tolerance (overall)	±3%
Enclosure	Canopy type
Parameter measuring accuracy grade	0.5
Noise level	75 dBA @ 1m
Enclosure protection class	IP 23
Forklift handling	Yes

CONTROL PANEL	
Control mode (Standard)	Local control
Control mode (Optional)	Remote control
Remote control distance	≤100 m
Load step	0-10kW*1, 10kW*1, 20kW*4 (non-intelligent type) 0-10kW*1
	10kW*3, 20kW*3 (intelligent type)
Load bank protections	Overload alarm/Overvoltage alarm/ Fan failure alarm
Multi functions display	voltage, current, load power, reactive power, apparent power, power factor, frequency etc.
One-step load/unload	Yes
Emergency stop	Yes
Phase sequence indicator	Yes

### Optional Items for Load Bank:



- Capacitive/Inductive/Resistive load bank with different power factor
- Intelligent control
- Laptop for remote control
- Generator tester
- Multi-voltage
- Water-proof cover for air outlet (200-1400KW)
- Air deflecting duct for containerized load bank
- Space heater
- Cable connector
- Galvanized sheet canopy
- Wheels for < 500KW load bank
- Trailer

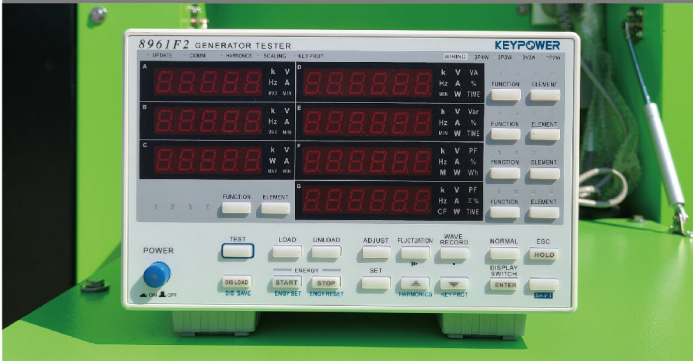
RESISTOR FEATURES	
Material	Stainless steel
Cooling mode	Forced air cooling
Temperature resistance	500 ~ 600°C
Load Tolerance	±5%
Warranty	3 years with unlimited hours

### 304 STAINLESS STEEL RESISTORS



## Generator Tester Function

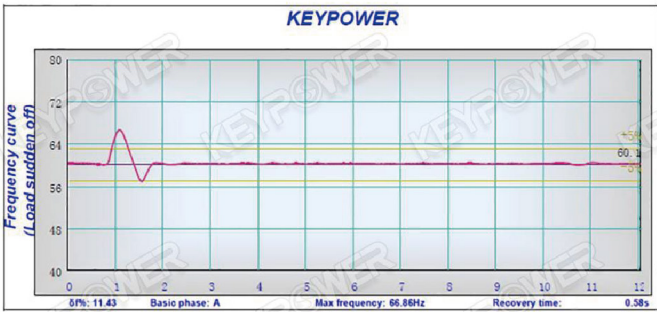
### GENERATOR TESTER



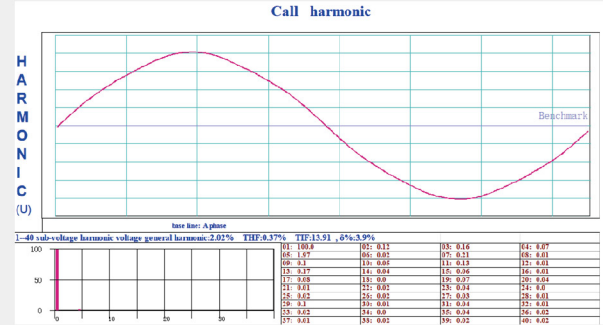
### TEST REPORT

Test report of generator set's steady performance																																																																																																																		
SOURCE GB2820-2009					Date of test: 2012-11-15					test site: 1113823																																																																																																								
<b>(A) Technical specification</b> 1. Set type: 1-1100A Set No: K1100A100 Item No: Set Pt: power factor 1 state of production Rated frequency: 50Hz Rated LP: 127200V cable PT: main cable generator 2. Output type: Single phase generator excitation AVR type 3. Generator set: 1-1100A Gen. No: K1100A100 of origin: Date: excitation																																																																																																																		
<b>(B) Check item</b> 1. Check item: 52% environmental temperature: 22 atmosphere: kPa: examine the exterior of generator set 2. Test of insulation resistance: between phase and ground measure excitation winding insulation resistance Test of insulation resistance between auxiliary wind winding and ground check start performance at normal temperature (start 3 times)																																																																																																																		
<b>(C) Check item</b> 3. Check every indication equipment's work condition of control system: - voltage protection check overvoltage stop high water temperature Test of high-temperature protection - low oil protection check emergency stop check battery charging																																																																																																																		
<b>(D) Load test</b> <table border="1"> <thead> <tr> <th>load%</th> <th>power (kW)</th> <th>Ua (V)</th> <th>Uc (V)</th> <th>Uv (V)</th> <th>Ia (A)</th> <th>Ic (A)</th> <th>Iv (A)</th> <th>frequency (Hz)</th> <th>power factor (PF)</th> <th>steady frequency (Hz)</th> <th>steady frequency (Hz)</th> <th>voltage adjustment range</th> <th>frequency adjustment range</th> <th>voltage regulation (rated %)</th> </tr> </thead> <tbody> <tr><td>50%</td><td>2275</td><td>219.5</td><td>221.4</td><td>221.4</td><td>8.90</td><td>8.90</td><td>8.90</td><td>50.01</td><td>0.81</td><td>50.00</td><td>50.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr> <tr><td>60%</td><td>2730</td><td>219.5</td><td>221.4</td><td>221.4</td><td>10.68</td><td>10.68</td><td>10.68</td><td>50.01</td><td>0.81</td><td>50.00</td><td>50.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr> <tr><td>70%</td><td>3185</td><td>219.5</td><td>221.4</td><td>221.4</td><td>12.46</td><td>12.46</td><td>12.46</td><td>50.01</td><td>0.81</td><td>50.00</td><td>50.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr> <tr><td>80%</td><td>3640</td><td>219.5</td><td>221.4</td><td>221.4</td><td>14.24</td><td>14.24</td><td>14.24</td><td>50.01</td><td>0.81</td><td>50.00</td><td>50.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr> <tr><td>90%</td><td>4095</td><td>219.5</td><td>221.4</td><td>221.4</td><td>16.02</td><td>16.02</td><td>16.02</td><td>50.01</td><td>0.81</td><td>50.00</td><td>50.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr> <tr><td>100%</td><td>4550</td><td>219.5</td><td>221.4</td><td>221.4</td><td>17.80</td><td>17.80</td><td>17.80</td><td>50.01</td><td>0.81</td><td>50.00</td><td>50.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr> </tbody> </table>										load%	power (kW)	Ua (V)	Uc (V)	Uv (V)	Ia (A)	Ic (A)	Iv (A)	frequency (Hz)	power factor (PF)	steady frequency (Hz)	steady frequency (Hz)	voltage adjustment range	frequency adjustment range	voltage regulation (rated %)	50%	2275	219.5	221.4	221.4	8.90	8.90	8.90	50.01	0.81	50.00	50.00	0.00	0.00	0.00	60%	2730	219.5	221.4	221.4	10.68	10.68	10.68	50.01	0.81	50.00	50.00	0.00	0.00	0.00	70%	3185	219.5	221.4	221.4	12.46	12.46	12.46	50.01	0.81	50.00	50.00	0.00	0.00	0.00	80%	3640	219.5	221.4	221.4	14.24	14.24	14.24	50.01	0.81	50.00	50.00	0.00	0.00	0.00	90%	4095	219.5	221.4	221.4	16.02	16.02	16.02	50.01	0.81	50.00	50.00	0.00	0.00	0.00	100%	4550	219.5	221.4	221.4	17.80	17.80	17.80	50.01	0.81	50.00	50.00	0.00	0.00	0.00
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<b>(E) Load fluctuation test</b> 1. Load fluctuation test: constant adjustment rate: steady time: constant adjustment rate: steady time: constant adjustment rate: steady time: constant adjustment rate: steady time: 1% 0.1s 0.05s 2% 0.1s 0.1s 5% 0.1s 0.1s 10% 0.1s 0.1s																																																																																																																		
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### FREQUENCY AND VOLTAGE CURVES



### HARMONIC CURVE

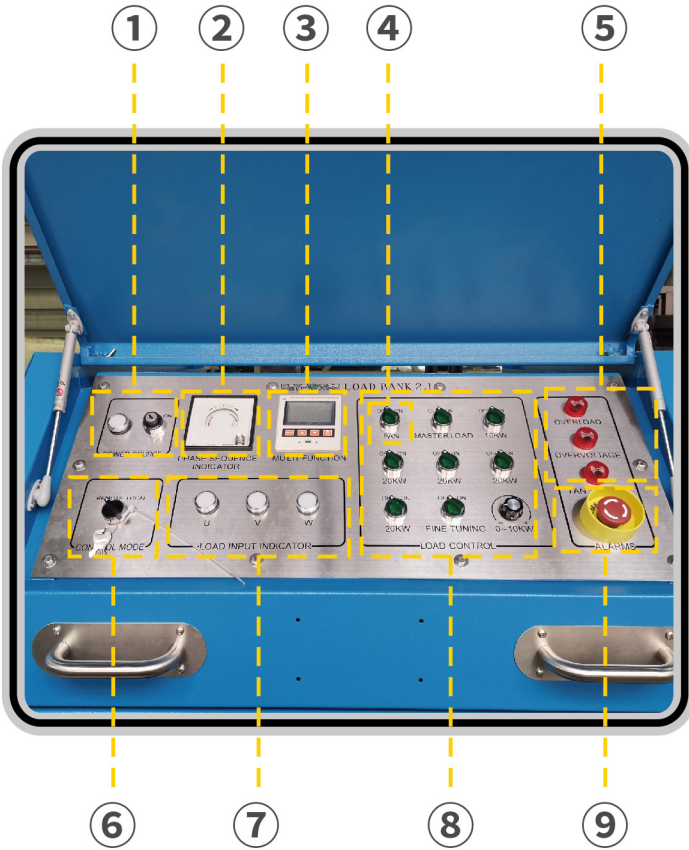


This generator tester can measure most electric parameters of a single-phase or three-phase AC generator. The standards it complied with are GB/T 2820-1997 and GB 2820-90. The signal frequency can be measured varies from 45 Hz to 65Hz. You can select one wiring mode from four modes – 1Φ2W, 3Φ3W, 3Φ4W and 3V3A. The following table shows the parameters: It's the best way to replicate, prove and verify the real-life demands on critical power systems.

MEASUREMENT MODE	PARAMETERS
Normal	Voltage, Current, Active Power, Reactive Power, Apparent Power, Power Factor, Frequency, Energy runtime, Imbalance degree of Voltage
Harmonic	Voltage & Current: 2~50th order and the THD (Total harmonic distortion)
Adjustment	In 100 seconds: Records the maximum & minimum value of Voltage & Frequency. Calculates the increase & decrease range of Voltage & Frequency and the percentage of adjustment.
Fluctuation	In 60 seconds: Records the maximum & minimum value of Voltage & Frequency. Calculates the NORMAL frequency rang, NORMAL voltage offset, voltage modulation, percentage of fluctuation and frequency.
Load	In 12 seconds: Records the minimum value of Voltage & Frequency. Records the maximum value of Current and the recovery time. Calculates the offset of Voltage & Frequency.
Unload	In 12 seconds: Records the maximum value of Voltage & Frequency. Record the minimum value of Current and the recovery time. Calculates the offset of Voltage & Frequency.
Wave Record	Records the real-time voltage waves by five optional modes. The recording time is between 5 seconds and 5 minutes by different modes.



## Control Panel



MANUAL CONTROL	FUNCTION
① Turn on / off power source	Tested power source input
② Phase sequence indicator	Indicate phase sequence of tested power right or not
③ Multi-function meter	Show testing parameters
④ Master load on / off	One step loading / unloading
⑤ Alarm	Load bank protection: Overload alarm / Overvoltage alarm / Fan failure alarm
⑥ Control mode selection	Choose control mode: Local manual control / Touch screen control / Remote control
⑦ Load input indicator	Indicate U V W load input normal or not
⑧ Load Steps	Loading / unloading
⑨ Emergency stop button	Emergency stop

In addition to all manual control functions, Intelligent/remote control also contains the following functions:

- Touch screen control/remote control
- Auto loading/unloading test
- Data setting

Intelligent control system with **Mitsubishi**<sup>®</sup> PLC



**KEYPOWER** Fuzhou GFF KEYPOWER Equipment Co., Ltd.

MANUAL	L-L VOLTAGE		CURRENT		P / Q / S / POWER			
	Uab	0 V	Ia	0 A	P	0 KW	COSφ	0.00
	Ubc	0 V	Ib	0 A	Q	0 KVAR	FRE	0.0 HZ
	Uac	0 V	Ic	0 A	S	0 KVA	ON LOAD	0 MIN
AUTO	RATED POWER: 1000 KW <input type="checkbox"/> CONFIRM		LOAD SETTING		① 0 KW	② 250 KW	③ 500 KW	
	<input type="button" value="START"/> <input type="button" value="PAUSE"/> <input type="button" value="STOP"/>		ON LOAD DURATION		④ 750 KW	⑤ 1000 KW	⑥ 1100 KW	
SETTING	PF CHOICE: PF=1.0 <input type="checkbox"/> PF=0.8 <input type="checkbox"/>		OFF LOAD DURATION		① 1 MIN	② 5 MIN	③ 5 MIN	
ALARM	GENSET RATED VOLTAGE: 0 V				④ 10 MIN	⑤ 10 MIN	⑥ 10 MIN	
					① 1 MIN	② 1 MIN	③ 1 MIN	
					④ 1 MIN	⑤ 1 MIN		

Intelligent Control Interface