

# LOAD BANK KPLB-250



### KEYPOWER LOAD BANK:

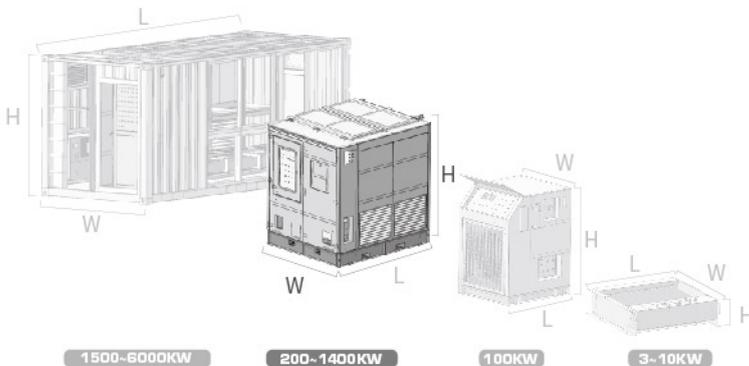
- \* Frequency: 50/60 Hz;
- \* Voltage range: AC 110-690V;
- \* Duty: Continuous;
- \* Cooling system: Industrial grade axle fans;
- \* Discharged air direction: horizontal for 100 kw, vertical for larger models;
- \* Control power phase: Single-phase, two-wire for 500 kw and below; three-phase, four-wire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

### GENERAL SPECIFICATIONS

	Model	KPLB-250
	Capacity	200kW/250kVA
	Type of load	Resistive & inductive
	Power factor	0-1.0
	Duty cycle	Continuous
	Cooling system	Industrial grade axial fan
	Cooling mode	Forced air-cooled
	Airflow	Vertical discharge
	Phase	Available at both single and three phase
	Rated testing voltage	3P3W 110 - 690V
	Rated frequency	50Hz / 60Hz
	Number of fans	4
	Control power input voltage	1P2W 110 - 240V



## Dimension and Weight



DIMENSION		KPLB-250	
	Length (L)	mm	1560
	Width (W)	mm	1310
	Height (H)	mm	1650
	Weight	kg	1600

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 (Control panel side)
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*3, 20kW*3, 50kW*2 (non-intelligent type) 0-10kW*1, 10kW*3, 20kW*3, 50kW*2 (intelligent type)
Load bank protections	Fan failure alarm / Overload alarm / Overvoltage alarm / Overheating 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		304 STAINLESS STEEL RESISTORS
Material	Stainless steel	
Cooling mode	Forced air cooling	
Temperature resistance	500 ~ 600°C	
Load Tolerance	±5%	
Warranty	3 years with unlimited hours	

INDUCTOR FEATURES		INDUCTIVE TYPE
Insulation level	Class H	
Operating temperature	-25 ~ 60°C	
Flame retardant rating	UL94 - V0	
Surface treatment	Conformal coating	
Fastener treatment	Hot-dip galvanized	
Overall treatment	Vacuum impregnation varnish	

## Generator Tester Function

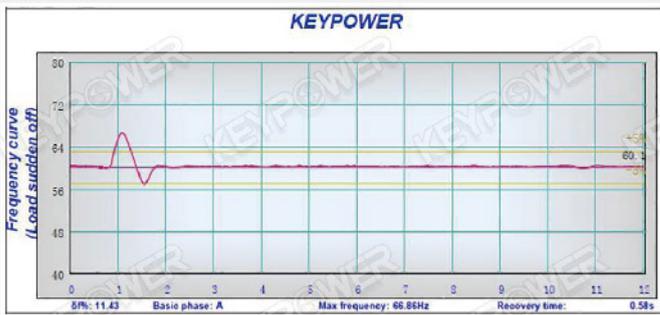
### GENERATOR TESTER



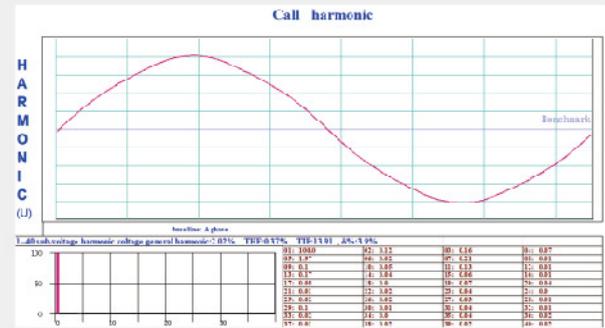
### TEST REPORT

Test report of generator set's steady performance																																																																																																																																												
Source: 002020200		Date of test: 2012-11-10		Test time: 09:30:30																																																																																																																																								
<table border="1"> <tr> <th>Item</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> </tr> <tr> <td>1. Set type</td> <td>1. Voltage</td> <td>230VAC</td> <td>1. Phase</td> <td>3Φ</td> <td>1. Power factor</td> <td>0.8</td> <td>1. Date of production</td> <td></td> <td></td> </tr> <tr> <td>1. Rated frequency</td> <td>50Hz</td> <td>1. Rated power</td> <td>100kVA</td> <td>1. Rated current</td> <td>400A</td> <td>1. Production</td> <td></td> <td>1. AVR type</td> <td></td> </tr> <tr> <td>1. Generator type</td> <td>AVR type</td> <td>1. Generator model</td> <td>AVR type</td> <td>1. Generator serial</td> <td></td> <td>1. AVR type</td> <td></td> <td></td> <td></td> </tr> </table>										Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	1. Set type	1. Voltage	230VAC	1. Phase	3Φ	1. Power factor	0.8	1. Date of production			1. Rated frequency	50Hz	1. Rated power	100kVA	1. Rated current	400A	1. Production		1. AVR type		1. Generator type	AVR type	1. Generator model	AVR type	1. Generator serial		1. AVR type																																																																																														
Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit																																																																																																																																			
1. Set type	1. Voltage	230VAC	1. Phase	3Φ	1. Power factor	0.8	1. Date of production																																																																																																																																					
1. Rated frequency	50Hz	1. Rated power	100kVA	1. Rated current	400A	1. Production		1. AVR type																																																																																																																																				
1. Generator type	AVR type	1. Generator model	AVR type	1. Generator serial		1. AVR type																																																																																																																																						
<table border="1"> <tr> <th>Item</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> </tr> <tr> <td>2. Test of insulation resistance</td> <td>between phase and ground</td> <td>20MΩ</td> <td>environmental temperature</td> <td>22</td> <td>atmosphere</td> <td>50%</td> <td>Test of insulation resistance between auxiliary windings and ground</td> <td></td> <td></td> </tr> <tr> <td colspan="10">Insulation defects: phase sequence</td> </tr> </table>										Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	2. Test of insulation resistance	between phase and ground	20MΩ	environmental temperature	22	atmosphere	50%	Test of insulation resistance between auxiliary windings and ground			Insulation defects: phase sequence																																																																																																														
Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit																																																																																																																																			
2. Test of insulation resistance	between phase and ground	20MΩ	environmental temperature	22	atmosphere	50%	Test of insulation resistance between auxiliary windings and ground																																																																																																																																					
Insulation defects: phase sequence																																																																																																																																												
<table border="1"> <tr> <th>Item</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> </tr> <tr> <td>3. Check error indicator equipment's work condition of motor speed</td> <td>rotational direction</td> <td>check</td> <td>rotational speed</td> <td>check</td> <td>emergency stop</td> <td>check</td> <td>high water temperature</td> <td>check</td> <td>low water temperature</td> </tr> <tr> <td colspan="10">Test of high ambient temperature</td> </tr> </table>										Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	3. Check error indicator equipment's work condition of motor speed	rotational direction	check	rotational speed	check	emergency stop	check	high water temperature	check	low water temperature	Test of high ambient temperature																																																																																																														
Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit																																																																																																																																			
3. Check error indicator equipment's work condition of motor speed	rotational direction	check	rotational speed	check	emergency stop	check	high water temperature	check	low water temperature																																																																																																																																			
Test of high ambient temperature																																																																																																																																												
<table border="1"> <thead> <tr> <th>Item</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>4. Load</td> <td>power (kW)</td> <td>100</td> <td>voltage (V)</td> <td>230</td> <td>current (A)</td> <td>400</td> <td>power factor</td> <td>0.8</td> <td>frequency (Hz)</td> <td>50</td> </tr> <tr> <td>4.1</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.2</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.3</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.4</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.5</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.6</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.7</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.8</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.9</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>4.10</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> </tbody> </table>										Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	4. Load	power (kW)	100	voltage (V)	230	current (A)	400	power factor	0.8	frequency (Hz)	50	4.1	100	230	400	0.8	50	100	230	400	0.8	50	4.2	100	230	400	0.8	50	100	230	400	0.8	50	4.3	100	230	400	0.8	50	100	230	400	0.8	50	4.4	100	230	400	0.8	50	100	230	400	0.8	50	4.5	100	230	400	0.8	50	100	230	400	0.8	50	4.6	100	230	400	0.8	50	100	230	400	0.8	50	4.7	100	230	400	0.8	50	100	230	400	0.8	50	4.8	100	230	400	0.8	50	100	230	400	0.8	50	4.9	100	230	400	0.8	50	100	230	400	0.8	50	4.10	100	230	400	0.8	50	100	230	400	0.8	50
Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit																																																																																																																																			
4. Load	power (kW)	100	voltage (V)	230	current (A)	400	power factor	0.8	frequency (Hz)	50																																																																																																																																		
4.1	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.2	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.3	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.4	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.5	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.6	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.7	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.8	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.9	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
4.10	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
<table border="1"> <tr> <th>Item</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> <th>Value</th> <th>Unit</th> </tr> <tr> <td>5. Load</td> <td>power (kW)</td> <td>100</td> <td>voltage (V)</td> <td>230</td> <td>current (A)</td> <td>400</td> <td>power factor</td> <td>0.8</td> <td>frequency (Hz)</td> <td>50</td> </tr> <tr> <td>5.1</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.2</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.3</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.4</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.5</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.6</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.7</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.8</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.9</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> <tr> <td>5.10</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> <td>100</td> <td>230</td> <td>400</td> <td>0.8</td> <td>50</td> </tr> </table>										Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	5. Load	power (kW)	100	voltage (V)	230	current (A)	400	power factor	0.8	frequency (Hz)	50	5.1	100	230	400	0.8	50	100	230	400	0.8	50	5.2	100	230	400	0.8	50	100	230	400	0.8	50	5.3	100	230	400	0.8	50	100	230	400	0.8	50	5.4	100	230	400	0.8	50	100	230	400	0.8	50	5.5	100	230	400	0.8	50	100	230	400	0.8	50	5.6	100	230	400	0.8	50	100	230	400	0.8	50	5.7	100	230	400	0.8	50	100	230	400	0.8	50	5.8	100	230	400	0.8	50	100	230	400	0.8	50	5.9	100	230	400	0.8	50	100	230	400	0.8	50	5.10	100	230	400	0.8	50	100	230	400	0.8	50
Item	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit																																																																																																																																			
5. Load	power (kW)	100	voltage (V)	230	current (A)	400	power factor	0.8	frequency (Hz)	50																																																																																																																																		
5.1	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.2	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.3	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.4	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.5	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.6	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.7	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.8	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.9	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		
5.10	100	230	400	0.8	50	100	230	400	0.8	50																																																																																																																																		

### FREQUENCY AND VOLTAGE CURVES



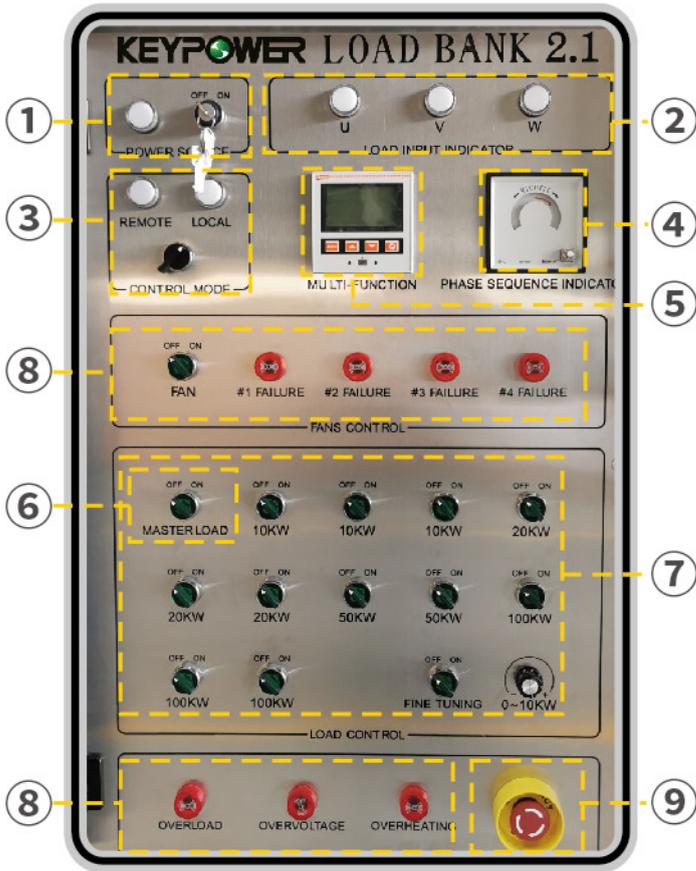
### HARMONIC CURVE



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 Load input indicator	Indicate U V W load input normal or not
③ Control mode selection	Choose control mode: Local manual control / Touch screen control / Remote control
④ Phase sequence indicator	Indicate phase sequence of tested power right or not
⑤ Multi-function meter	Show testing parameters
⑥ Master load on / off	One step loading / unloading
⑦ Load Steps	Loading / unloading
⑧ Alarm	Load bank protection: Fan failure alarm / Overload alarm / Overvoltage alarm / Overheating alarm
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	LL VOLTAGE	CURRENT	P / Q / S / POWER
MANUAL	Uab 0 V	Ia 0 A	P 0 KW
	Ubc 0 V	Ib 0 A	Q 0 KVAR
	Uca 0 V	Ic 0 A	S 0 KVA ON LOAD
			COStg 0.00
			FPF 0.0
			Hz
			MIN

**RATED POWER** 1000 KW **CONFIRM**

**LOAD SETTING**

START PAUSE STOP

**PF CHOICE**

PF=1.0 PF=0.8

**ON LOAD DURATION**

**OFF LOAD DURATION**

SENSSET RATED VOLTAGE: 0 V

Intelligent Control Interface