SET48/120-1KLC Sine-Wave Inverter

Users Manual

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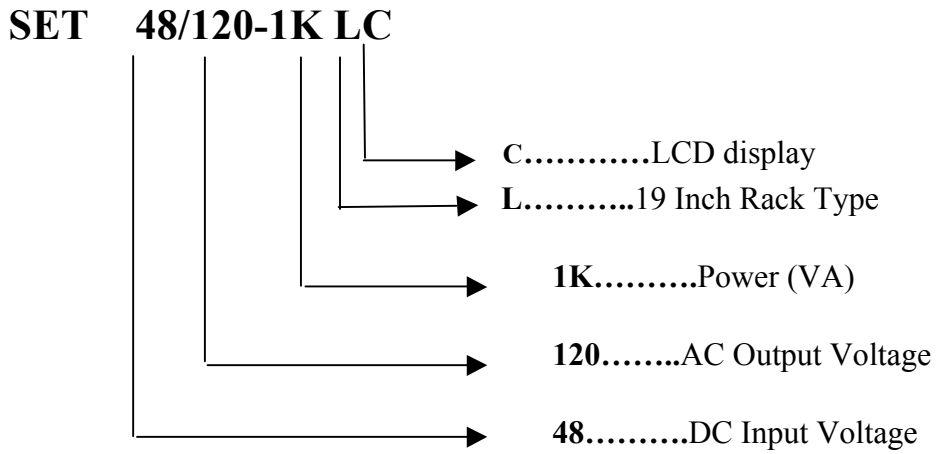
IMPORTANT SAFETY NOTES

- Please keep this manual for future use.
- Please read this manual carefully at the first time when install, operation and maintain according to the manual instructions.
- AC input voltage of the series is 120V/60Hz, DC input voltage of the series is 48VDC; please connect as per the instructions to avoid the possible damage.
- Please turn off the inverter and disconnected all cables before moving.
- To avoid the damage and hurt to people and inverter, please don't open cover by yourself.
- Do not use it with overload which can affect inverter life.
- Please put the inverter in the dry place, at least 10cm away from the wall.
- Protecting from direct sunlight, rain and moisture.
- Please put it far away from fire and high temperature.
- Please do not put things on the top of inverter.
- Please contact dealer or manufacturer service center for any problem, do not open the cover to avoid any further damage and risk.

Warning:

The product can be affected by the radio under certain circumstances, further protection equipment is needed.

I. SET48/120-1KLC Model Notes:



II. SET48/120-1KLC Functions

With the development of information and network technology, the new generation DC-AC power supply, sine-wave inverter, are widely used in telecom, mobile, air field, banking, office, industry, hospitals, military and research fields. By using battery as DC input, and sine-wave AC output after inverter, the output voltage and frequency of Sine-wave inverter are very steady and can work continuously, avoiding the problems of power break, voltage unsteady, noise and lightning invasion. With the sine-wave inverter can guarantee the utility and equipment reliable work and system safety.

Sine-wave Inverter is a kind of DC-AC power supply, the output wave is pure sine-wave by SPWM technology, with the features of fast reaction, low wave distortion, output voltage and frequency steady. This inverter is also equipped with the protections of over DC input, low voltage, over AC output, overload, circuit shortage and internal over heat, these can guarantee good performance, working reliability and other technical specifications.

Sine-Wave inverter is designed based on center control system to meet the power supply requirements of computer and other terminals, mainly applying for:

- Various managing equipment of digital communication system, including terminal, monitor and cashier equipment.
- Server, intelligent platform of information network system, power system and instrument.
- Suitable for system which has only DC power and don't have AC power system.

Features of Inverter:

a) With micro-CPU control, SET48/120-1KLC inverter is an intelligence model product, good designing and reliability are the advantages.
b) SET48/120-1KLC inverter is adopting SPWM technology, with the output of stabilized voltage and frequency, pure sine-wave.
c) SET48/120-1KLC inverter has good compatibility, built-in by-pass switch, high overload feature for reliable and continuous power supply.
d) SET48/120-1KLC inverter is AC power type. The city power supply is main when the city power is normal, when city power is off, inverter comes into work state.
e) With the excellent designing, SET48/120-1KLC inverter can be auto switched to bypass on the running state, it's easy to maintain and replace the battery without effecting load power supply.
f) In case there is battery voltage high/low or overload, the overload warning shutdown output, when battery voltage recovers normal, battery voltage recovers; power supply output will auto recovers in 50 seconds after overload off. This function is very suitable for the communication station in which there is no person on duty.
g) SET48/120-1KLC inverter can support network communication system; power working state can be monitored by the supervision software.
h) SET48/120-1KLC inverter provides with two dry connectors which can be used for DC input fault checking and AC output problem warning.

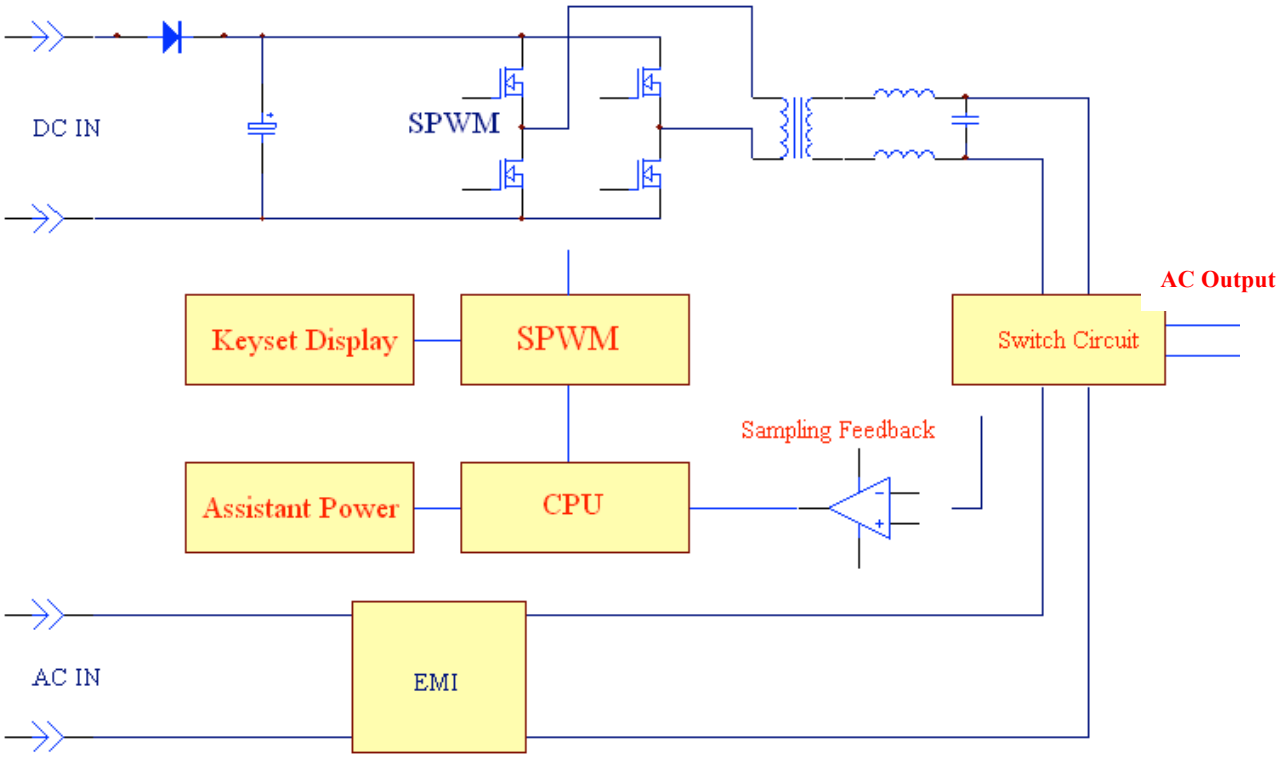


Figure1：Inverter Function Diagram

III. SET48/120-1KLC Technical Specifications

Chart1：SET48/120-1KLC Technical Specifications

Output power		1KVA
Run mode		Pure inverter/online interactive
DC Input	Rated input voltage	48V
	Rated input current	24A
	Turn-off voltage range	42V-59V
	Turn-on voltage range	45V-57V
	Anti-noise current irrigation	≤10%
AC Input	Bypass voltage(V)	145~95(±10V)
	Rated input current（A）	10.5A
	Bypass transfer time（ms）	≤5ms
AC Output	Rated capacity	1000VA
	Rated output power	800W
	Rated output voltage and frequency	120Vac，60Hz
	Wave shape	Pure sine wave
	Rated output current	6.7A
	Output voltage accuracy	120 V±1.5%
	Output frequency accuracy	60Hz±0.1%
	Waveform distortion	≤3%
	Dynamic Response Time	5%
	Power factor	0.8
	Overload	120%，30s
	Efficiency（80% Resistive load）	≥85%
Work environment	Dielectric Strength	Input & output 1500Vac，1min
	Noise（1m）	≤40dB
	Ambient temperature	-25℃~+50℃
	Humidity	0~90%，Non-condensing
	Altitude（m）	≤1000
	Cooling	Forced air
Interface communication interface	HMI	LCD display
	Communication interface	RS232
	stem load output	3ch output
	TCP/IP network interface	Optional
Protection		Input undervoltage, overvoltage; output overload, short circuit protection; AC input high and low voltage protection
Output wiring		Terminal Blocks
Net Weight		8KG
Dimension		482（W）×88（H）×358（D）mm

IV. SET48/120-1KLC Operation Method

- **Installation**
  1. Open the package and check accessories (8pc output terminals and 1 Manual)
  2. Choose a clean and ventilation area.
  3. Make sure DC voltage and battery voltage are inverter required.
  4. Check the power Positive and Negative line.
  5. Connecting Positive Cable with the terminal DC48V**"+"** on the back panel，and negative Cable with the **"-"**.
  6. Connecting AC input L/N/G with AC Input terminals L/N/G.(AC Ground must be connected into ground area)
  7. Connecting load cables with AC output terminals L/N/G.
- **Start**
  a) Make sure that input DC and AC output cables are right connected.
  b) Turn on DC input switch.
  c) Put the start switch on"I"，inverter comes into the state of self-inspection, showing inverter is on.

Notes: Self-inspection------Before the output is delivered, the inverter will check the related parts and system state. When the all meters of inverter is in normal, the inverter will be in working status of power supply and inversion. This checking takes about 10 seconds, indication LED lights from left to right two times during this period.

- **Shutdown**

Put the start switch on"O"，all LED light and becomes dark, inverter is shutdown.

V. SET48/120-1KLC Maintenance Information

- **Figures**

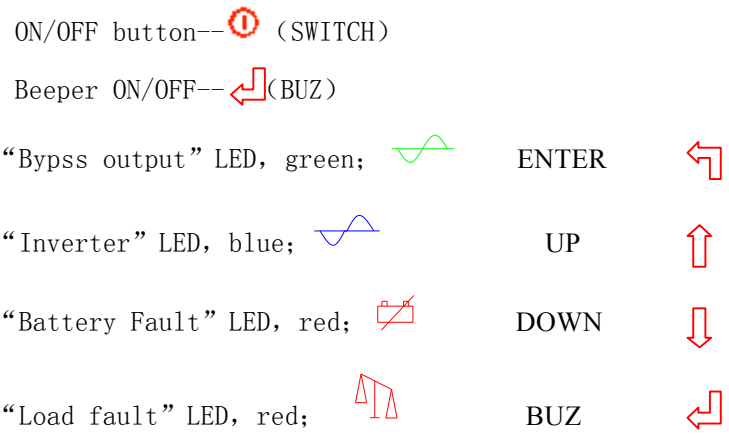


Chart2： LED Lights and Indication

Status / Item		Output	Out Type	Power Green	Inver. Blue	Battery Red	Load Red
1	Self Test	Yes	Inversion or Power	On→	→On→	→On→	→On→
2	Battery Fault	Yes	Yes	Dark	On	Blink	Dark
		No	No				
3	Power Normal	Yes	Power	Light	Dark	Dark	Dark
4	Power to Inversion	Yes	Inversion	Dark	Light	Dark	Dark
5	DC Voltage Low	Yes(Lower than start voltage)	Power/ Inversion	Dark	Blink	Dark	Dark
6	DC Start Voltage Low	No	No	Dark	Dark	Dark	Dark
7	DC input voltage High	Yes	Yes	Blink	Dark	Dark	Blink
		No	No				
8	Inversion Output Fault	Yes	Yes	Dark	Blink	Blink	Dark
		No	No				
9	Overload Shutdown	No	No	Dark	Dark	Blink	Light
10	Shortage Shutdown	No	No	Light	Light	Blink	Light
11	Inversion Wave Fault	Yes	Yes	Blink	Blink	Blink	Dark
		No	No				
12	DC 0ff	Yes	Yes	Light	Dark	Dark	Dark

Notes：**“→”**shows that the LED lights in order,“×”shows no light.

1） For protecting battery, inverter can only start when battery voltage in within the *Starting Voltage* .After entering into working state, inverter can work normally as the battery voltage is within *Working Voltage* .

2）When battery voltage reduced to *Starting Voltage* there is a voltage warning, when the voltage goes lower than *Working Voltage* inverter will shutdown.

VI. SET48/120-1KLC Mechanical Information

Figure1： front

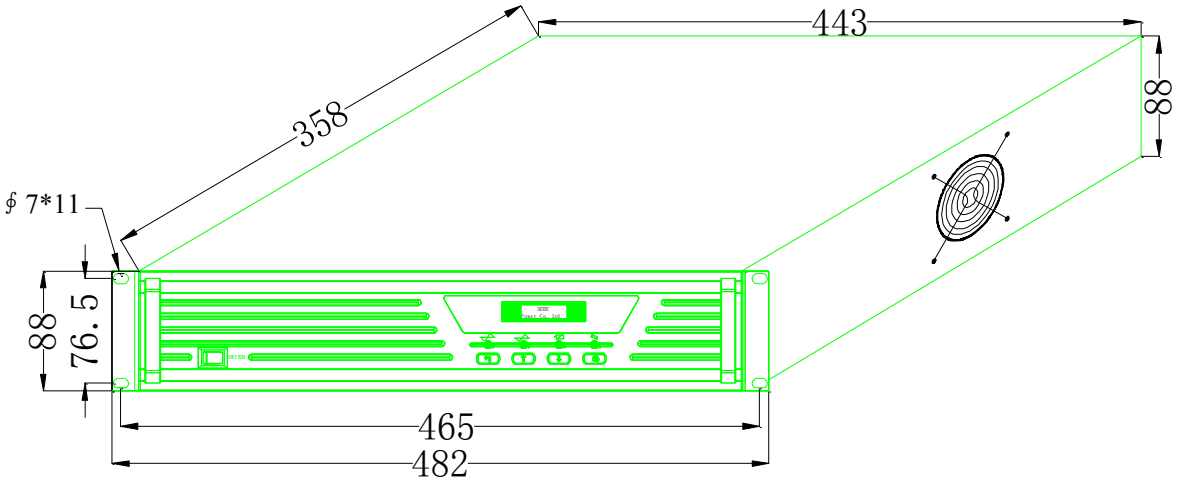
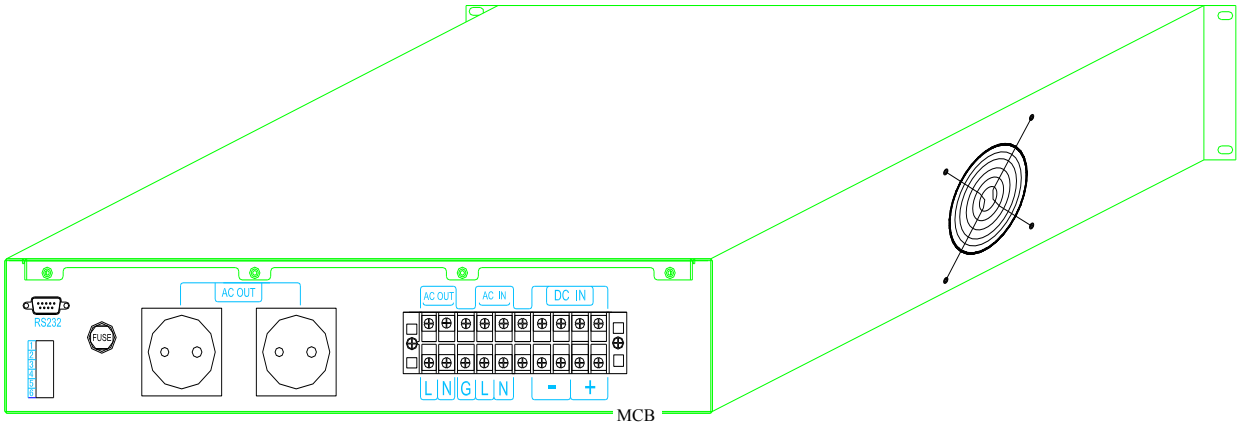


Figure2：rear



Warranty Letter

We warrant that this product is free from defects in material and workmanship and agree to remedy any defect (or at its option replace the product) for a period of two years from the date of purchase. Parts may be replaced under this warranty with new or remanufactured parts.

This warranty will not apply to any product that has been improperly installed (as described in the installation manual), misused, abused, used in ways the product was not designed, altered or repaired in any way which may affect the performance or reliability of operation, sustained damage by power surges or electrical storms, or sustained shipping damage, or repaired by any unauthorised repair centre.

We make no other warranties, express or implied, including any warranty of fitness for a particular purpose. In no event shall be responsible for indirect or consequential damages or lost profits even if we have been advised of the possibility of such damages. Our sole obligation to you shall be the repair or replacement of a non-conforming product.

User's Information

User Company:_____ **Contact person:**_____

Address:_____ **Phone:**_____

Dealer company: _____ **Post code:**_____

Model:_____ **Serial number:**_____

Purchase date:_____ **Handling person:**_____

Repair Record

Date	Record	Abstract	Technician	Signature