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General notes

The Eversol is a transformerless string solar inverter which converts the DC current of a PV generator to AC current and feed it into the public grid. When you chose it, you have opted for reliable and powerful technology. With protection class IP65, the units are ready for use in all environmental conditions, and high efficiency meets your requirements.

1 About this manual

1.1 Validity

This operating instructions describes the operation of Eversolar New Energy inverters of the type Eversol-TL 1500 and 2000.

1.2 Target group

This documentation is intended for the operator of the system. Info provided here mainly includes operational methods of the unit, display, and safety instructions and regulations. Be sure to read this manual carefully before using. If you encounter any problems during operation of this unit, first check this manual before contacting your dealer.

Information referring to the installation and startup of the inverter should be taken from the installation manual delivered with the device.

1.3 Retention of the manuals

These documents must be kept with the system and available at all times.

2 Safety instructions and regulations

2.1 Intended use

The Eversol inverter converts the DC power generated by the photovoltaic (PV) modules into AC power and feed this into the power supply. Eversol inverters are built according to the safety rules. However, improper use may cause lethal hazard for the operator, third parties or the units and other property. Meanwhile, any other or additional and mobile use is prohibited. Alternative use, modifications to the Eversol or the operation of inverter not expressly recommended by Eversolar New Energy will invalidate the warranty claims.

2.2 Safety operating instructions

1. The inverters must be installed by an authorized skilled electrician who is responsible for observing existing standards and regulations. In addition, opening of the inverter, and any electrical installation, repair or modification of the inverter may also only be performed by authorized skilled electrician.
2. The Eversol may only be operated with PV generators. Do not connect any other sources of energy to the Eversol.
3. Some part of the Eversol housing become hot during operation, and sometimes the temperature can reach 60 ℃ in normal operation. Don't touch that part for danger of burn.
4. Don't lay flammable and explosive materials close to the system.
5. Be sure that the system is out of the children's reach.
6. Don't put any things on the inverter.
7. Before cleaning, disconnect the system from the power grid by opening the AC breaker and open the DC switch on the PV generator, in order to exclude the danger of electric shocks. Don't touch the inverter in five minutes. Use a soft, dry cloth to clean the system. Never use corrosive, solvent-containing or abrasive cleaners or polishes.
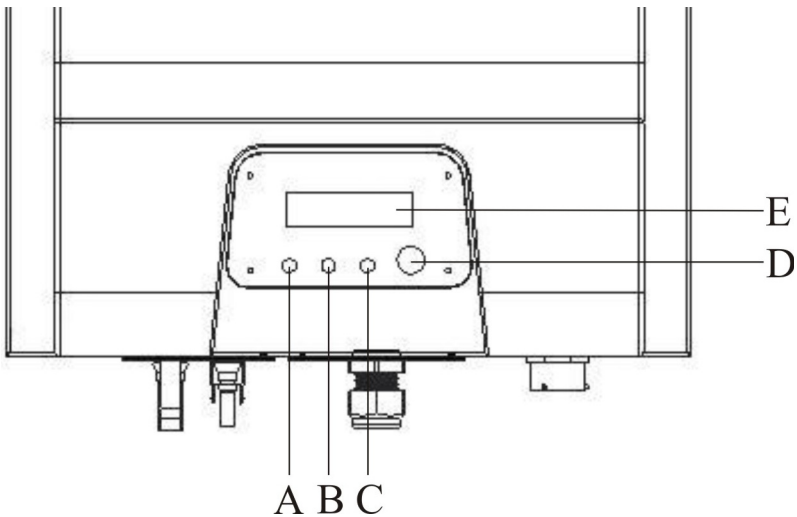
3 Operating

3.1 Overview

Object	Description
A	The inverter is working normally (Green LED)
B	A fault happens (Red LED)
C	The inverter is communicating with other device (Yellow LED)
D	Function key
E	LCD display

3.2 LED display

Eversol inverters are equipped with three LEDs including "green", "red" and "yellow" which provide information about various operating status in the following ways.

Green LED:

The green LED starts to light up once the photovoltaic modules voltage is more than 125 V. The green LED indicates that the inverter is active and working normally. If this LED does not light up, the inverter can not supply power to the grid. In normal, this LED begins to light up in the morning when the sunshine intensity is enough and goes out when it gets dark.

Red LED:

The red LED indicates that the inverter has stopped supplying power to the grid because of a fault, and the exact fault information will display on the LCD at the same time. The faults as follows in the table will active the red LED.

Yellow LED:

The yellow LED lights up during the inverter communicating with other devices including PMU and PC and goes out after the communication finished.

LEDs	State	Comment
Green	Normal	The inverter is operating normally.
Red	Fault including: Output relay failure, EEPROM problem, SCI failure, Output AC sensor abnormal, GFCI detection abnormal, Isolation failure, GFCI failure, Fac Fault, Vac Fault, No Utility, Input voltage too high, Output DC injection too high, Fan abnormal, Temperature abnormal, and Consistent failure.	The inverter has a fault, and it stops feeding. According to the content which displays on the LCD, look over the FAQ part to resolve. If it doesn't do, contact your local service. On elimination of the fault, the inverter resume and the green light on.
Yellow	During communicating	The inverter is communicating with other devices including PMU and PC.

3.3 LCD display

A backlight LCD display is integrated in the cabinet of the Eversol inverters so that it is easily visible. The display consists of 16 characters and 2 lines. The bottom line (Line 2) always displays the output power (Pac = xxxW). The top line (Line 1) shows current state information by default, and by pressing function key it will display different operating information as follows:

Line 1	State information	Current state information: all possible content shows in the following table
	E-today	The energy generated today in kilo watt hours (kWh)
	E-total	The energy generated since starting up the inverter (kWh)
	Vpv	The present voltage of the solar generator
	Ipv	The present current of the solar generator
	Iac	The present grid current
	Frequency	The grid Frequent
	Model	The type of the inverter
	Ver	The Firmware version
	SetLanguage	Several languages provided and you can select one you require
	Vac	The grid voltage
Line 2	**Pac = xxx W**	**The current output power (W)**

Along with the different working states of the inverter, the LCD display different state information as follows:

State	Display	State information
Wait	Waiting	Initialization & waiting
	Reconnect s	Reconnect
	Checking s	Checking
Normal	Normal	Normal state
Fault	Ground I Fault	GFCI failure
	Fac Failure	Grid frequency failure
	Vac Failure	Grid voltage failure
	Utility Loss	No Utility&Island
	PV Over Voltage	Input voltage too high
	Fan Lock	Fan abnormal
	Over Temperature	Temperature abnormal
	Consistent Fault	Consistent failure (occur for the first time)
	Isolation Fault	Isolation failure
	Relay-Check Fail	Output relay failure
	DC INJ High	Output DC injection too high
	EEPROM R/W Fail	EEPROM problem
	SCI Failure	Serial communication interface failure
	AC HCT Failure	Output AC sensor abnormal
	GFCI Failure	GFCI device abnormal
	Consistent Fault	Consistent failure (occur three times in ten minutes)
Flash	F/W Updating	Update

3.4 Function key

The Eversol has a function key which is necessary to switch between the different displays, entering next level and locking.

Press the key once, it displays next information. The menu is continuous, if you are at the last entry of a menu, the first entry will be displayed on LCD when you press the key again.

If you don't press the key for approx. 10 second, it will display the state information again and keep on.

3.4.1 Setting the Language

The Eversol provides several languages.

At the entry of "SetLanguage", press the key for approx. 5 seconds, you can enter the language menu.

Select the language which you require with the function key.

Keep this state without any operation. When it returns to the main menu automatically, the setting is saved.

3.4.2 LOCK

If you want to freeze the display during normal operation, you can press the key for a few seconds when it display the entry you desire. Release the key until you see "LOCK". Then it always shows the selected entry until you press the key again or the working state of the inverter changes.

3.4.3 LCD Backlight control

To save power, the backlight of LCD display automatically turns off after 20 seconds. To enable it, press the key again.

4 FAQ (Frequently asked questions)

Sometimes, your PV system does not work properly, we recommend the following solutions for quick troubleshooting. If there is a fault, the red LED will light up instead of the green LED.

	LCD display	Possible actions
Resumable Fault	Isolation Fault	1. Check the impedance between PV (+) & PV (-) and the inverter is earthed. The impedance must be greater than 2MΩ. 2. Check whether the AC-side has contacts with earth.
	Ground I Fault	1. The ground current is too high. 2. After cut off the AC side connection, unplug the inputs from the PV generator and check the peripheral AC system. 3. After the cause is cleared, re-plug the PV panel and AC connection, and check PV-Inverter status.
	Grid Fault Fac Over Range Vac Over Range	1. Wait for a moment, if the grid returns to normal, PV-Inverter automatically restarts. 2. Make sure grid voltage and frequency meet the specifications.
	Utility Loss	1. Grid is not connected. 2. Check grid connection cables. 3. Check grid usability. 4. If grid is ok, and the problem persists, maybe the fuse in the inverter is open, please call service.
	Over Temperature	1. The internal temperature is higher than specified normal value. 2. Find a way to reduce the ambient temperature. 3. Or move the inverter to a cooler environment.

	PV over Voltage	1. Check the open PV voltage, see if it is greater than or too close to 450VDC (for Eversol-TL 1500) or 500VDC (for Eversol-TL 2000). 2. If PV voltage is less than 450VDC or 500VDC, and the problem still occurs, please call local service.
Permanent Fault	Consistent Fault	Disconnect PV (+) or PV (-) from the input, restart the inverter.
	Relay-Check Fail	1. Disconnect ALL PV (+) or PV (-). 2. Wait for a few seconds. 3. After the LCD switches off, reconnect and check again. 4. If the problems remain please call local service.
	DC INJ High	
	EEPROM R/W Fail	
	SCI Failure	
	AC HCT Fault	
	GFCI Failure	

If there is no display on the panel, please check that the connection of the inverter with PV generator and grid are correct. The safety information in this manual must be fully observed in doing so.

If the PV voltage is higher than 150 V, but the inverter doesn't work, please call your local service.

During periods of little or no sunlight, the inverter may continuously start up and shut down. This is due to insufficient power generated to operate the control circuits. If the problems remain please call service.

5 Service and maintenance

Eversolar New Energy grants a warranty of 60 months as standard, starting from the date of the purchase invoice date marked. Eversolar New Energy will only perform warranty services when the faulty unit is returned to Eversolar New Energy together with a copy of the invoice and warranty card which were issued by the dealer to the user. And the unit should be returned in its original or equivalent packaging, please preserve the original packing. The costs for new packing and shipment are borne by the customer. In addition, the type label on the unit must be fully legible. If these requirements are not fulfilled, Eversolar New Energy reserves the right to deny warranty services.

Warranty claims are excluded for direct or indirect damages due to:

1. Use of the units in ways not intended, improper installation and installation that does not comply with standards, improper operation and unauthorized modifications to the units or repair attempts
2. Without warranty card and serial number.
3. Transport damage.
4. Operating the units with defective protective equipment
5. Influence of foreign objects and force majeure (lightning strike, overvoltage, severe weather, fire, and etc.).
6. Inadequate ventilation.
7. Non-observance to the relevant safety instructions.

6 Recycling and disposal

Both the inverter and its transport packaging are predominantly made of recyclable raw materials. Ensure that they are disposed of appropriately.

7 Contact

If you have technical problems about our product, you can contact us via:

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