

MT-5 Tracer Meter

RENOGY MT-5 Tracer Meter Instruction manual for
MPPT Charge Controller

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1. Overview

Save These Instructions

The digital remote meter displays systems operating information, error indications and self-diagnostics read out. Information is displayed on a backlit LCD display. The large numerical display and icons are easy to read and large buttons make navigating the various meter menus easy, the meter can be flush mounted on a wall or surface mounted using the mounting frame (included). The MT-5 is supplied with a 6.5 foot cable and a mounting frame. The MT-5 is connects to the RJ45 port on the Tracer.

Mechanical Drawing

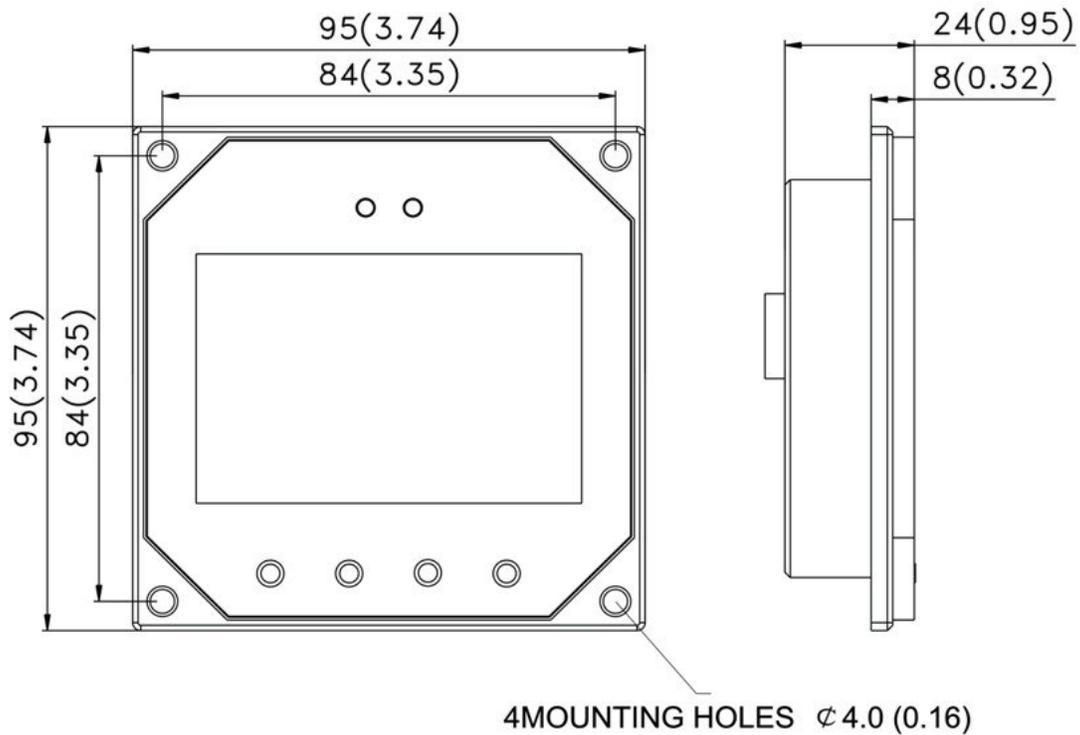


Figure 1.1

Display

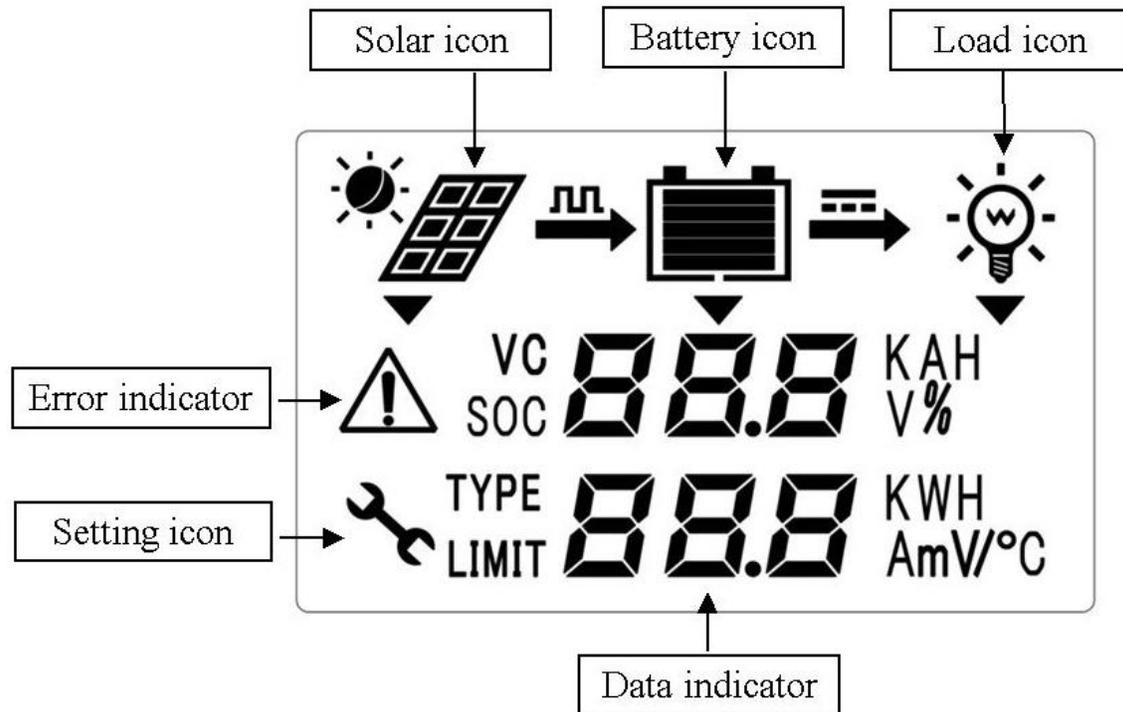


Figure 1.2

The two LED indicators above the LCD show that battery is charging, and a red indicates that show any error conditions.

The LCD has two different brightness levels. After any button is pressed the display will be in high brightness and backlight. To save power, the backlight automatically turns off after 30 seconds.

2. Operational Instructions

The key from left to right is: K1-K4, or **Set**, **Left** (←), **Right** (→), and **ESC** (Load ON/OFF).

2.1 The Meter Display

The meter display the functions in the following order:

1. Solar panel voltage
2. Battery Voltage and battery current
3. Load voltage and load current
4. Battery capacity (Ah) and battery temperature
5. Battery capacity (%) and temperature compensation
6. Battery capacity (Ah) and battery type
7. Load timer 1 mode and load timer 2 mode
8. Discharging accumulation (Ah) and discharging accumulation (Wh)

Use K2, K3 or left and right key to cycle through the data

Reminder: The MPPT charge controller is a maximum power point tracking technology. So the solar panel charging current may not equal the sum of battery charging current and load current.

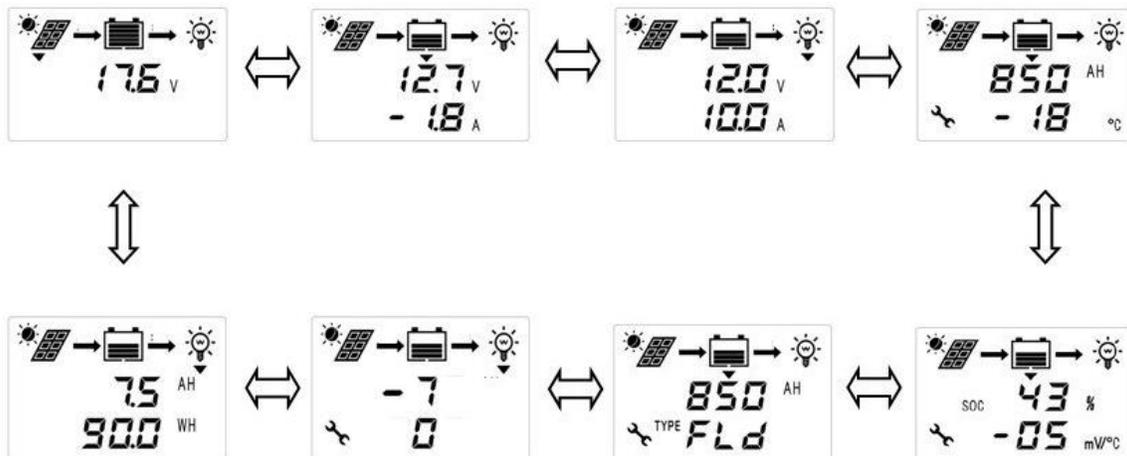


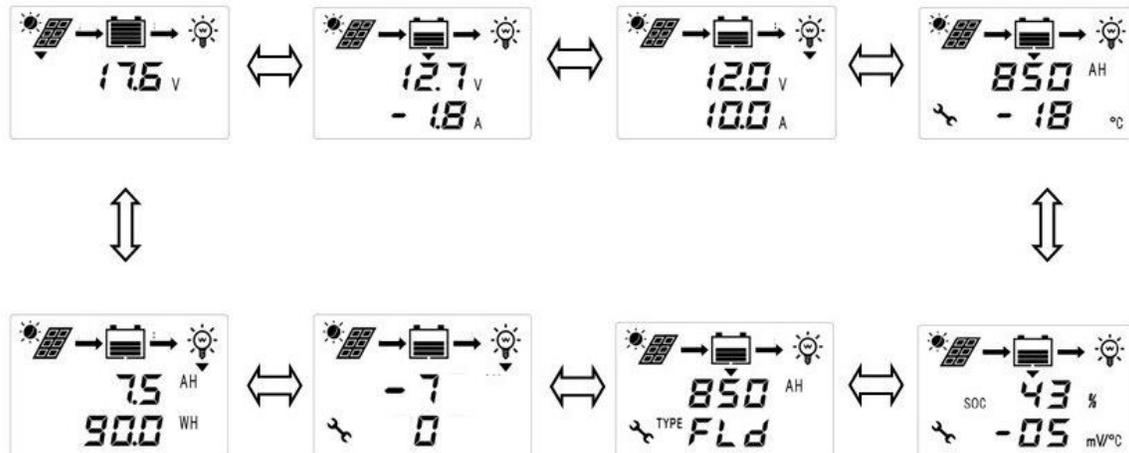
Figure 2.1

The  appears in the SET function. It will disappear when the user is in the reading menu.

3. Data Setting Operation

3.1 Setting Function

Press K1/SET to enter into setting mode, press K2 or K3 to modify the data. Once data is changed, press K1/SET to save the data and return to the reading mode.



4. Data Setting Instruction

4.1 Battery Capacity

The battery capacity modification can range from 10Ah to 900Ah, the default value is 200Ah. The modified data should be equal to or near the real capacity of the user's battery bank. When battery capacity and temperature are displayed, press K1/SET to enter into setting mode. Modify the data by using K2 or K3 to cycle through the various options. Once data is changed, press K1/SET to save the data and return to the reading mode or press K4 to cancel the modifications and to return to the reading menu without saving.

4.2 Battery Temperature Compensation

Temperature compensation data ranges from 0 to 10mV/Cell/°C. When the function is set to 0, there is no temperature compensation function. When battery capacity percentage and temperature compensation is displayed, press K1/SET to enter into setting mode. Modify the data by using K2 or K3 to cycle through the various options. Once data is changed, press K1/SET to save the data and return to the reading mode or press K4 to cancel the modifications and to return to the reading menu without saving.

4.3 Battery Type

Battery type has three options:

1. SEL – sealed lead acid battery

2. GEL – gel battery
3. FLD – flooded battery

When battery capacity and battery type are displayed, press K1/SET to enter into setting mode. Cycle through battery types choose appropriate battery setting.

4.4 Load Mode

Load has two times:

1. Timer 1
2. Timer 2

When the timer 1 and timer 2 function is displayed, press K1 to enter into setting mode. Choose expected work mode by cycling with K2 or K3. Press K4 to exit setting mode. When load mode is set to manual, load can be changed to ON or OFF by pressing the K4 button on the display surface.

Please refer to the controller's user manual for more information.

The controller will automatically delete the accumulated data when it reaches 999. 24-hour data will begin to be accumulated at the moment the solar panel voltage is over 8V for the first time that day.

5. Other Instructions

5.1 Error Icon

Red flashing on error status. Please check the load connection, press K4 for delete error icon.

1. When load current over 1.25 times and less than 1.5 times of rated current, load will be off automatically after 60 seconds.
2. When load current over 1.5 times of rated current but less than short circuit, load will be off automatically after 5 seconds.
3. When load current over short circuit, short circuit protection shut the load.

5.2 LED Indicator

The green LED is on when solar panels are charging battery, the LED indicator will be off when solar panels are not charging.

The yellow LED indicator is on when there is error, whereas off is normal status.

5.3 Telecommunication Port

When the meter running on individual power or the communication is cut off, the MT-5 will display graphical symbols. Press key, no answer. The display will resume while communications is on.

Note: The data displayed got from the communication, check if the cable is connected correctly while error is displayed, or if there is strong interference. Long cables may cause errors as well.

Battery capacity strip flash:

Each strip equals to 20% of battery capacity.

Note: the calculation takes fully charged voltage as 100%, and over discharge as 0%. All is based on battery voltage, not the real battery capacity.

Data updating:

Serial communication happen every 10 seconds between control module and display module, so the data update takes in 10-20 seconds to update.

Battery capacity AH:

AH is the accumulation of charging, each one minute will count. The data is not accurate while the charge current is too small. The min. is 1AH, means 1 amps charging for 1 hour, AH comes to show.

Charging and discharging accumulation WH:

Solar panel displaying is open circuit voltage. It can't be calculated. WH is product of battery voltage and charging current accumulation.

PARAMETERSRemote meter LCD specification

Working current	Backlight and LED indicator off < 15mA
Work temperature	-10°C to +40°C
Communication port	RJ45(8PIN)
Communication cable	2 meters with supplied cable