MPPT-15A/12V/24V waterproof solar charge controller

operation manual

MPPT-15A/12V/24V solar charge controller

Wiring maintenance and service manual

Before installing and using this controller, please read the manual.

I. Main features

■ With auto detection.
■ CRC check and remote transmission.
■ With voltage and current acquisition in display.
■ Contribute or overcharge can be back to the error detection,
■ High performance MCU, stable and reliable.
■ With advanced scanning techniques, various display flicker free.
■ Human-machine interface, intuitive and straightforward, easy to operate.
■ For lead-acid battery optimum charging curve, it provides charging control.
■ Automatic error correction and restart function.
■ Unique counter circuit to prevent battery or solar panel reversed, or to prevent the misuse of the battery.
■ Adaptive testing 12V/24V 2 modes of operations.

II. Performance parameters

Indicator		Rated Value	Maximum Value	Minimum Value	Remarks
Charging Voltage		12VDC	18VDC	0	
		24VDC	33VDC	0	
Charging Current		15A	15A	0	
No-load Current		40mA	60 mA	30mA	P0《1.5W
Power Supply Range		12VDC	33VDC	9VDC	
Overcharge Protection	12VDC	14.7	15.0	14.5	
	24VDC	29.4	30	29.0	
Overcharge Recovery	12VDC	13.0	13.4	13.0	
	24VDC	26.0	26.8	26.0	
Protection functions		Input and output protection against anti-protection, short circuit protection, input due to over voltage protection, over-temperature protection, automatic error correction			
Man-machine Interface		4 LED lights, plus 1602 LCD			
Sampling Resolution		14-bit			
Storage Temperature		25℃	-20℃	70℃	
Humidity		95RH%	100RH%	5 RH%	
Working Temperature		25℃	42℃	-20℃	

Waterproof Grade	IP67 (solar charge controller) IP63 (display module and terminal box)
Weight	0.5KG
Case Size and Material	solar charge controller size 120mmx64mmx22mm, made of aluminum alloy
	External display module size 132mmx68mmx50mm, made of ABS
	Junction Box size 58mmx56mmx28mm, made of ABS

III. Installation and Wiring

1. Appearance of the shape

A. Solar charge controller (see Figure 1)

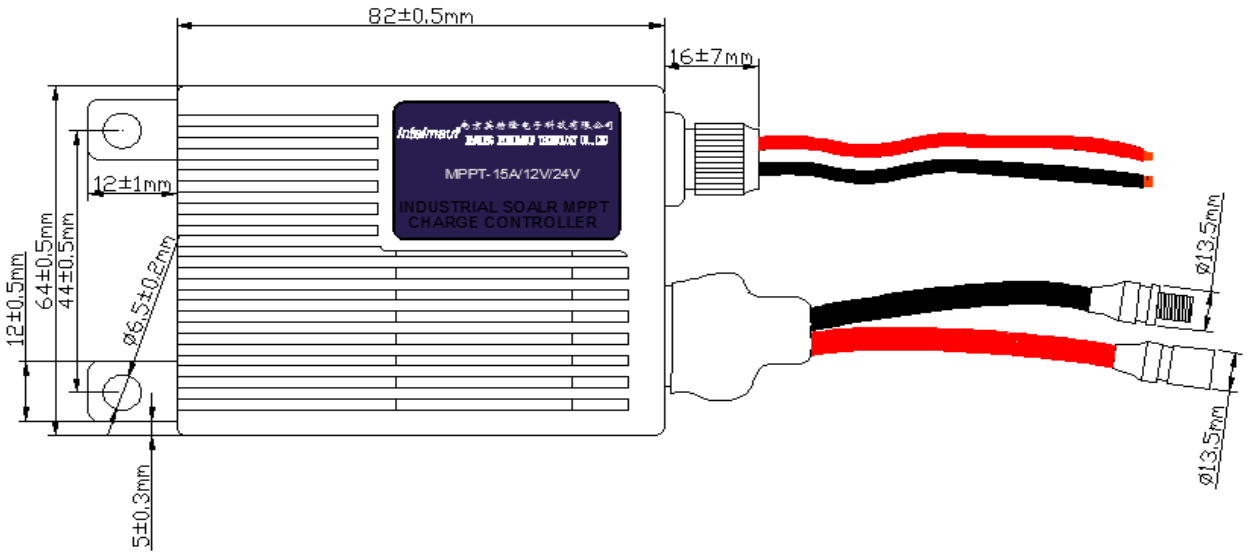

Figure 1

Note: Due to different production batches, the actual color and appearance may mask some differences as to the actual subject.

B. Junction box (see Figure 2)

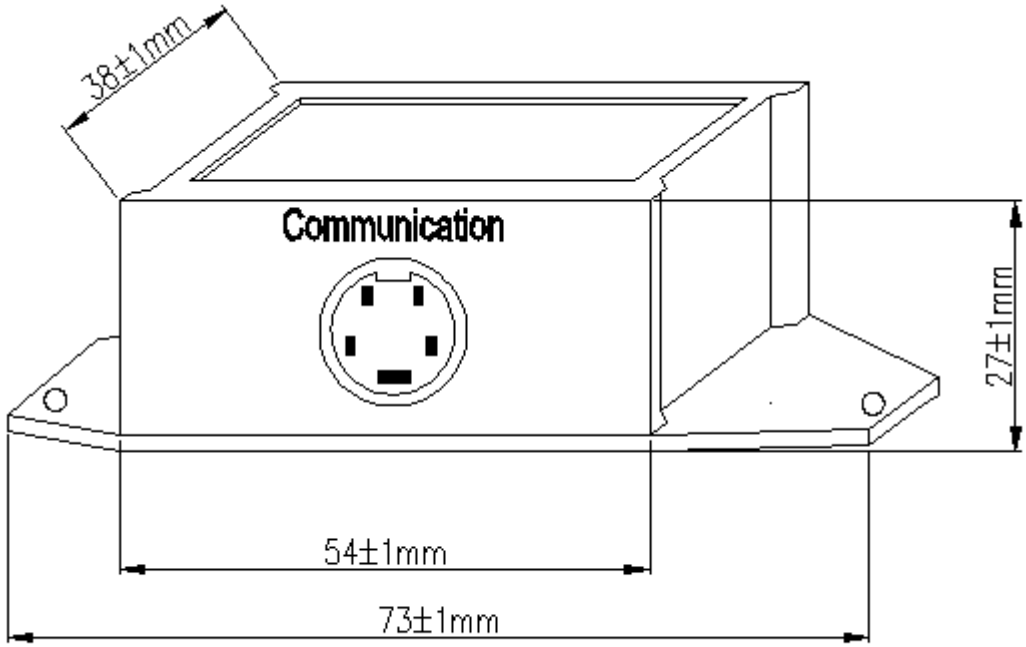

Figure 2

Note: Due to different production batches, the actual color and appearance may mask some differences as to the actual subject.

C. External display module (see Figure 3)

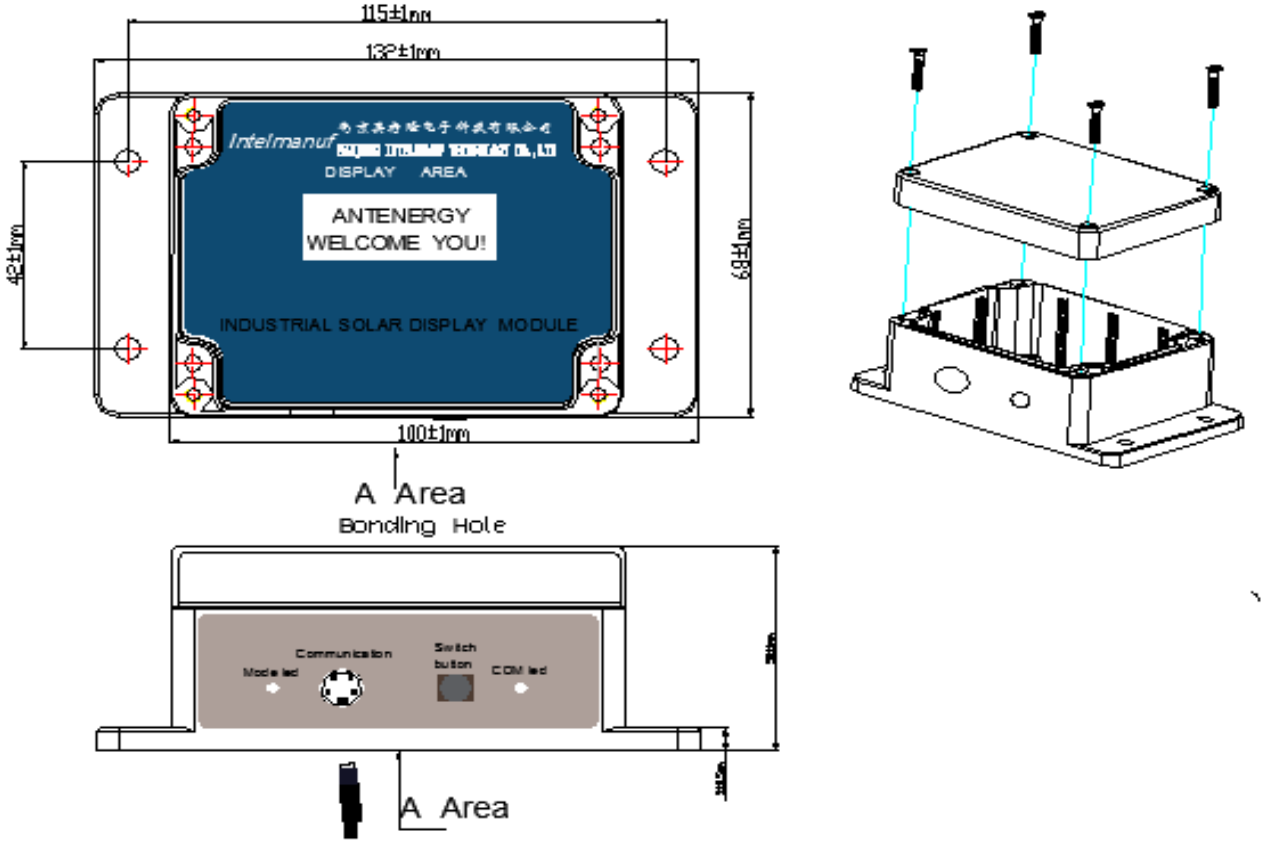

Figure 3

Note: Due to different production batches, the actual color and appearance may mask some differences as to the actual subject.

D. Communication data line (see Figure 4)

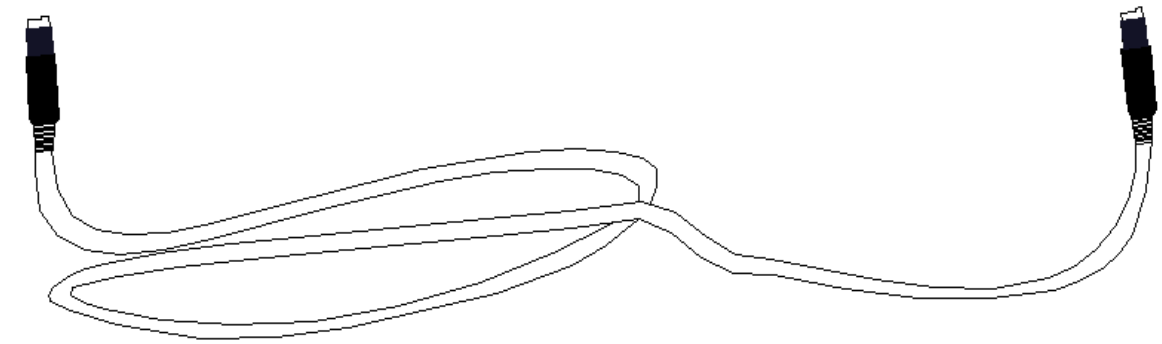

Figure 4

2. Installation

A. Solar charge controller (see Figure 5)

The 2 ¢ 6 mounting holes with screws through and use nuts to secure it.

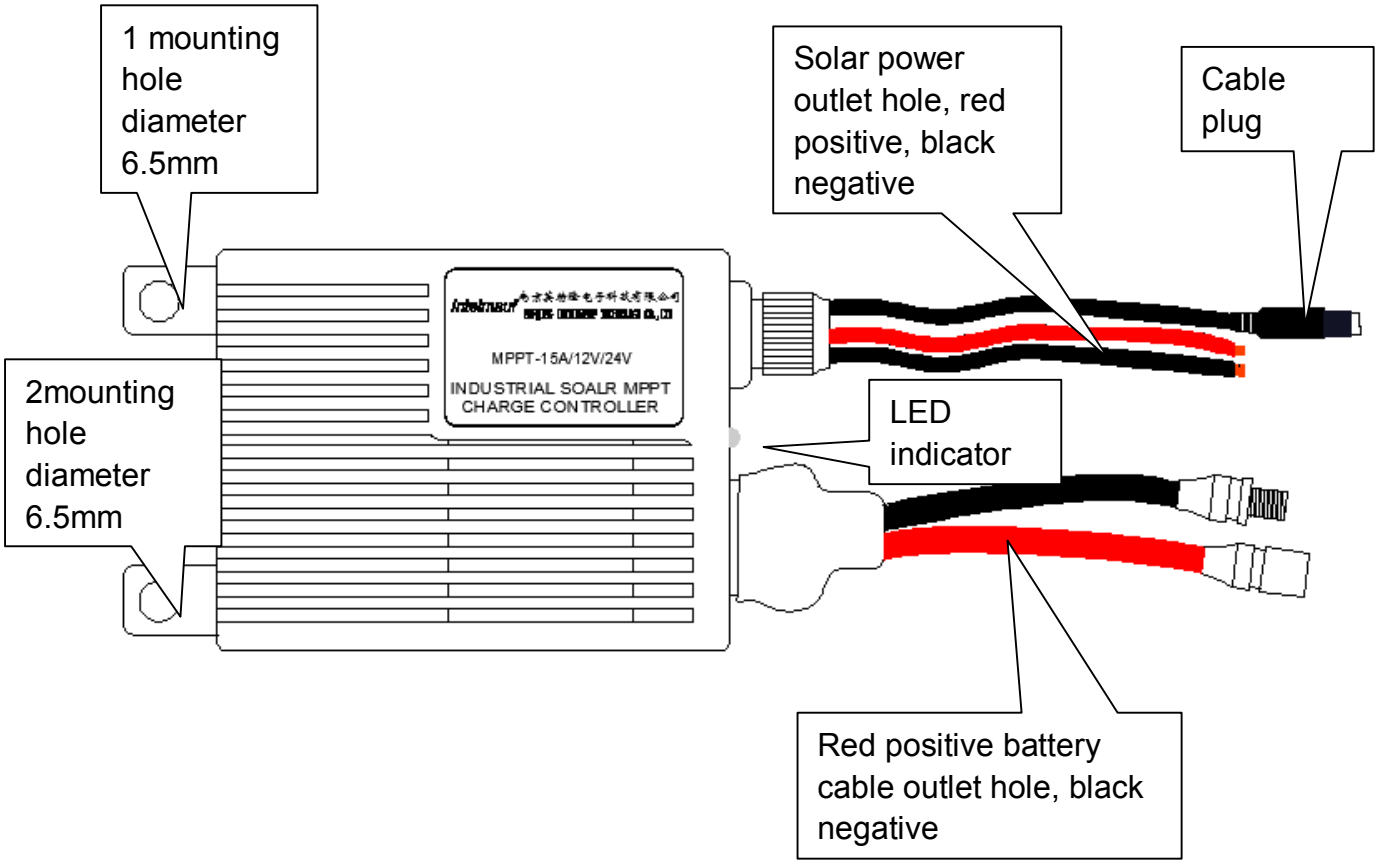

Figure 5

B. External display module (see Figure 6)

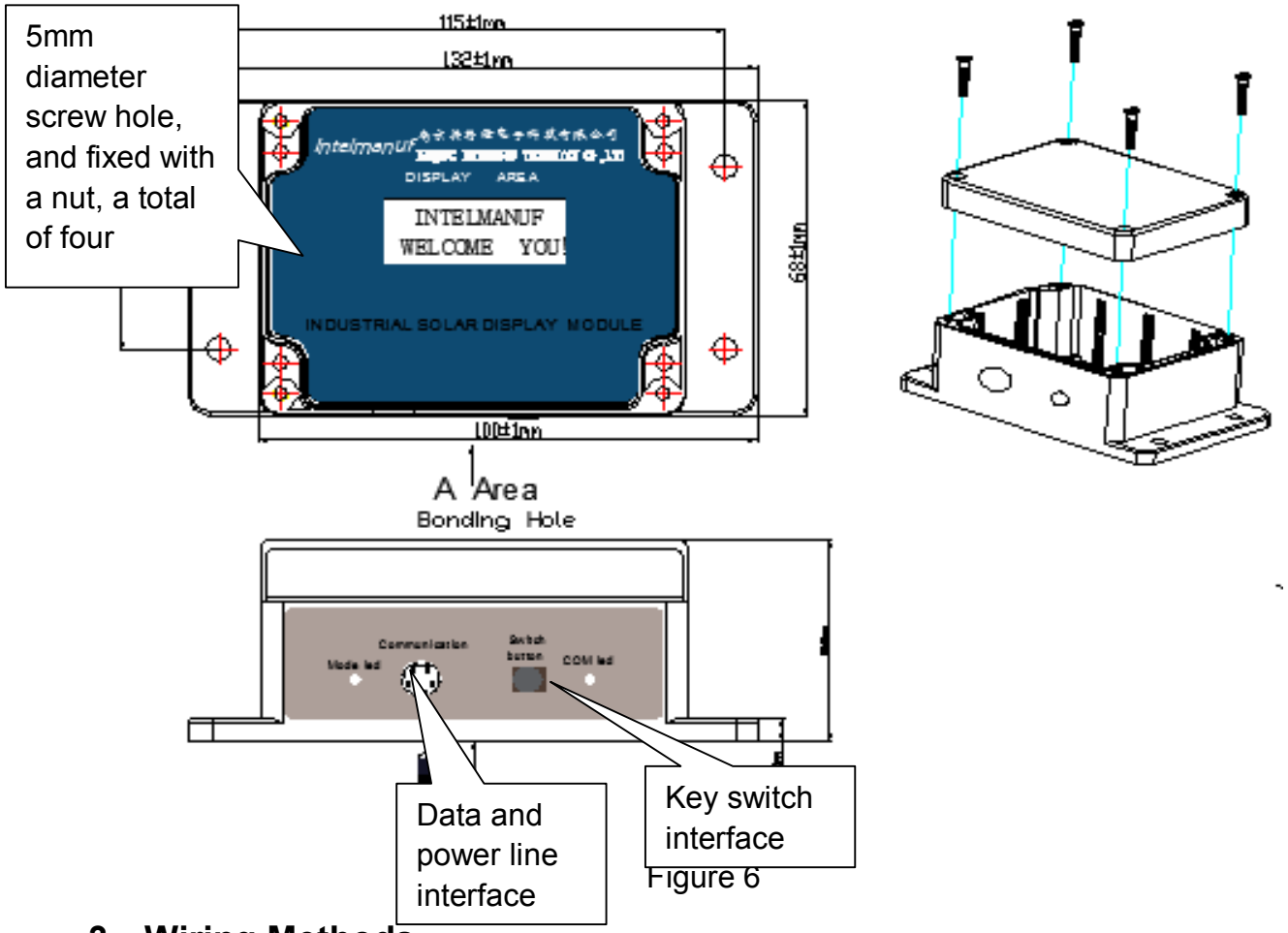

Figure 6

3. Wiring Methods

See Figure 7, in accordance with the wiring hole and outlet connections corresponding label

Grade	Connection	Terminal
BATT+（red）	---------	Battery positive terminal
BATT-（black）	---------	Battery negative terminal
SOLAR+（red）	---------	The positive side of solar panels
SOLAR- （black）	---------	The negative side of solar panels
Data line（RVVP4*0.12）	---------	Adapter box connected directly or connect display module

4. Solar Controller lights

LED Status --------- Three-color indicator, defined as follows:

Red: 24VDC charger working condition.

Red (flashing): 24VDC standby working condition.

Green: 12VDC charger working condition.
Green (flashing): 12VDC standby working condition.
Yellow: The system does not work, the standby mode.
Yellow (flashing): over-temperature protection

5. External display module interface description

Initial power, displays “ANTENERGY ”,Backlight turns off after sustains 2S.
Press button, the backlight turns on, display details as below,
BATT VOLTAGE -------V，Shows a minimum of one decimal precision，eg. 12.2V.
CHARGE VOLTAGE -------V，Shows a minimum of one decimal precision，eg.14.2V。
CHARGE CURRENT --------A，Shows a minimum of one decimal precision, eg.7.0A。
WORKING STATUS -------NO WORKING
12VDC TO WAITING
24VDC TO WAITING
12VDC CHARGING
24VDC CHARGING
CHARGE POWER --------W，Minimum digit display accuracy, eg.100W
When 5S there is no button operation, the backlight will be off.
LED display module definition:
MODE indicator ------12VDC working light, work on 12VDC when the red light on, or off.
24VDC working light, work on 24VDC when the green light on, or off.
COMMUICATION ------- Communication indicator, when the communication light on, or off.
Note: The interface data refresh rate《3S.

6. Solar charge controller determination mode

After power-1S, when the battery voltage is detected on the 10-16VDC, 12VDC procedure selected, the red indicator light on.
When the battery voltage is detected on the 18VDC-30VDC, 24VDC procedure selected the green indicator light on. If not in this range, the system does not work, the yellow light on. See 4 lights instructions.

IV. Whole system wiring diagram (see Figure 7)

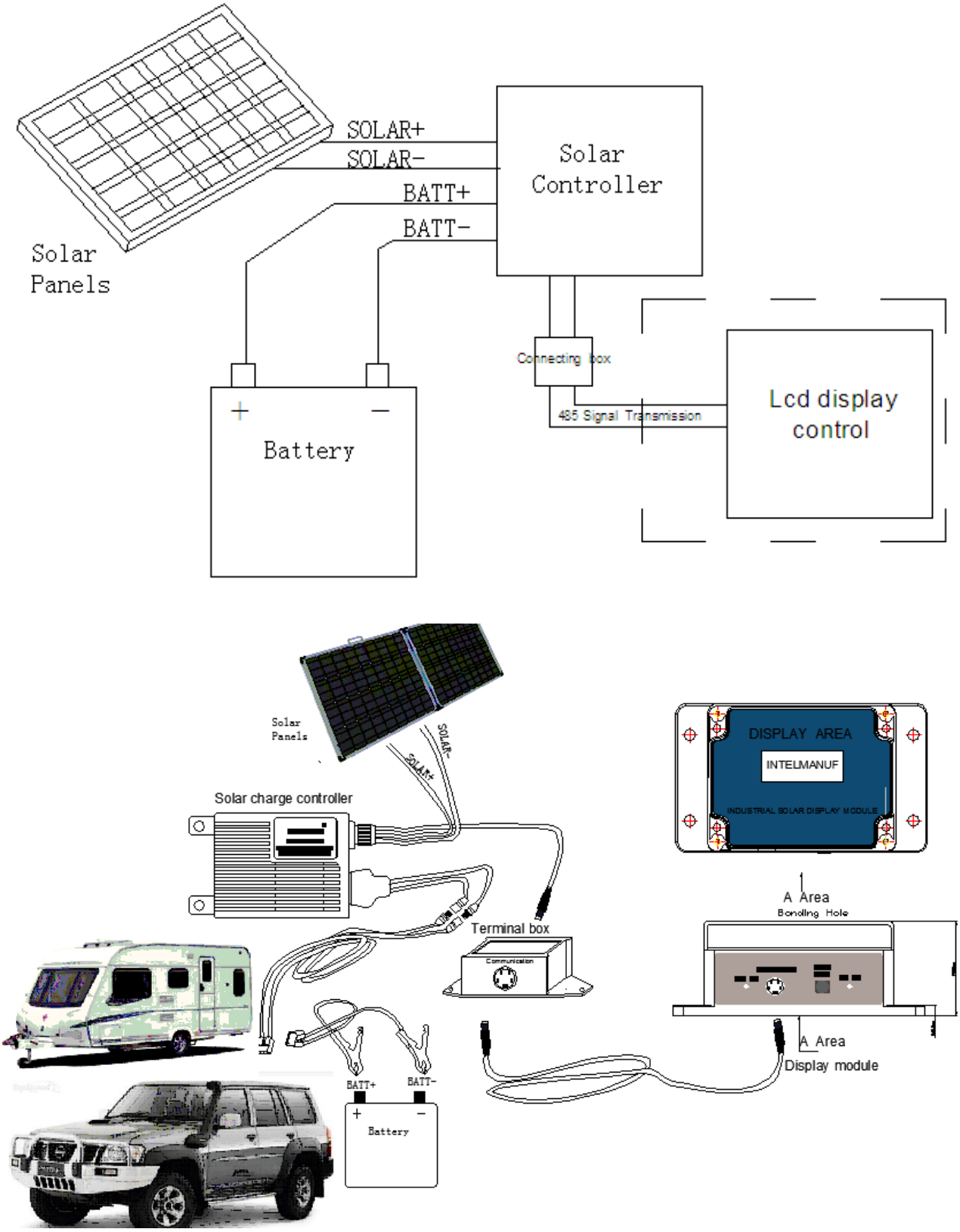

Figure 7

V. Warranty and after-sale

This product is the date from the factory, non-human nature of damage to the one-year warranty; life for maintenance after the warranty period and the cost of product components applied

VI. Notes

1. Avoid direct sunlight, installed in a cool, ventilated place.
2. Do not open the shell, so as not to affect the water level.
3. Batteries. External load or the solar panels should be within the allowable range of products.
4. Wiring qualified person should be carried out in accordance with the access panels were followed before battery order.
5. Wiring connections in accordance with the corresponding line label but not the battery. Load or panel reversed.
6. When communication lines are not used, joints keep dry to avoid short circuit.
7. Basic configurations for the basic functions. It's not including connecting box and LCD display control, which additional charge applied.
8. Connectors and LED lights and other damage due to improper use, when not covered under warranty.
9. Built-in precision components, do not force bump or knock, lest element damage.

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Annex I:

Configuration Checklist					
	Item	Model	Features	Quantity	Remarks
Basic Configuration	Solar Controller	MPPT-15A/12V/24V	MPPT 12V/24V/15AAdaptive	1	With data transmission
	Manual	MPPT-15A/12V/24V Operating Manual	MPPT-15A/12V/24VOperating Instructions	1	Paper Media
Matching Unit	Display Module	DISPLAY-15A/12V/24V	Show the charge voltage, battery voltage, charge current, charge power and working status	1	Data reception
	Adapter box	485 Adapter box	Cable docking	1	
	Data line	Four-core shielded cable	Remote output transfer	1	7.8m