Battery Indicator with Hour Meter

Please read and understand following notice carefully, and correctly install and operate the product before using.

1 Notice

WARNING

DO NOT DISASSEMBLE

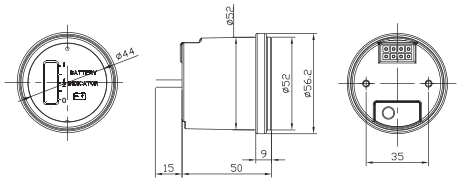
WATERPROOF

1.Please use the product accordance with the user manual strictly.
2.Please do not try to disassemble the main unit and its accessories.
3.This product with waterproof design can be used in the rain, but can not be used underwater.
4.When placed in a large temperature difference, please pay attention to the panel with fog, condensation and water.
5.Fierce vibration and strong impact may make the product failure.
6.Error will be happened when measuring, please notice that the error is not the same when compared to the model products.
7.The product need professional installation, otherwise easy to get an electric shock.

2 Parts list of the product

Product x 1PCS
User manual x 1PCS
8-pin connector
plug spring x 8PCS
8-pin connector x 1PCS
M4 Nuts x 2PCS
Mounting
brackets x 1PCS

3 Product dimension

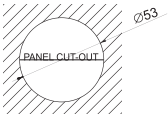


Unit : mm

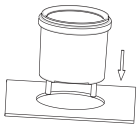
4 Installation

1. How to install

Notice: The mounting plate is required matching installation groove and holes. If there's no groove and holes, please install the groove and drill corresponding holes in the mounting plate.



1 Insert the meter into the mounting plate like below pictures.



2 Mounting brackets pass through the screws and the top side against the mounting plate, and secured by screw nuts.

2. Product contactor definition

3. Docking contactor according definition with the device port one by one

1 / 2	Relay output terminal 1, low current, 1A
3 / 4	Relay output terminal, large current, 5A
5	Power input negative terminal. Connect to battery negative pole.
6	Key switch. Connect to battery positive pole.
7	Positive pole of battery input. (12-36v)
8	Positive pole of battery input. (24-48v)

4. Verify the accuracy of the product installation

Turn on the key switch, LED displays the current bar, it indicates that the installation is correct.

5 Use of products

1 Measurement of electric discharge

a) Electric gear is divided into 10 grades, displaying by LED light.

b) The way of electricity reduction is declined step by step. The delay time of electric power reduction is 155S.

※The delay time of electric power reduction could be customized.

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7 Correlation chart between each bar and color definition

Bars	10th bar	9th bar	8th bar	7th bar	6th bar	5th bar	4th bar	3th bar	2th bar	1th bar
Definition light's	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Red	Red

10th bar	Always lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit
9th bar	Not lit	Always lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit
8th bar	Not lit	Not lit	Always lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit
7th bar	Not lit	Not lit	Not lit	Always lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit
6th bar	Not lit	Not lit	Not lit	Not lit	Always lit	Not lit	Not lit	Not lit	Not lit	Not lit
5th bar	Not lit	Not lit	Not lit	Not lit	Not lit	Always lit	Not lit	Not lit	Not lit	Not lit
4th bar	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Always lit	Not lit	Not lit	Not lit
3th bar	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Always lit	Not lit	Not lit
2th bar	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Flash	Not lit
1th bar	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Not lit	Flash	Flash

2 Battery charging measurement

a) Charging recognition voltage is divided into 10 grades. When charging voltage is suitable for recognition voltage, the gear would move from 0 to present gear. The frequency 0.3s. It means the charging is going on.

b) The way of charging is increasing step by step. The delay time of charging is 200S.

※The delay time of charging could be customized.

【Correlation chart between each bar and electricity when charging】

10th bar	Finish									Start
9th bar	No lit	Finish								Start
8th bar	No lit	No lit	Finish							Start
7th bar	No lit	No lit	No lit	Finish						Start
6th bar	No lit	No lit	No lit	No lit	Finish					Start
5th bar	No lit	No lit	No lit	No lit	No lit	Finish				Start
4th bar	No lit	No lit	No lit	No lit	No lit	No lit	Finish			Start
3th bar	No lit	No lit	No lit	No lit	No lit	No lit	No lit	Finish		Start
2th bar	No lit	No lit	No lit	No lit	No lit	No lit	No lit	No lit	Finish	Start
1th bar	No lit	No lit	No lit	No lit	No lit	No lit	No lit	No lit	No lit	Flash

3 Open-circuit electricity testing

When battery is connected, the meter will test the current power of the battery. And this value is regarded as initial value.

4 Power Supply Mode.

There're two input channels of external power supply: 12V/36V, 24V/48V. The voltage range of 12/36V: DC8-45V. The voltage range of 24/48V: DC18-60V.

5 Battery Types

Many kinds of batteries is suitable and could be chosen by adjusting potentiometer. Default setting is A.

※Battery's parameter could be customized

【Different battery type parameter table】

Type	Battery empty value	Battery full value	Charge value	Type	Battery empty value	Battery full value	Charge value
A	1.73	2.04	2. 32	D	1.90	2.03	2. 31
B	1.85	2.02	2. 30	E	1.98	2.08	2. 36
C	1.75	1.97	2. 25	F	1.63	1.97	2. 26

※The charge voltage value is the value of first bar.

6 Relay output

a) When working normally, these 2 relays are closed.

b) When electricity is <20%, large current relay output cut off.

c) When electricity is <10%, low current relay output cut off.

6 Specification

Operating Voltage	DC 8-60V	Waterproof level	IP65
Voltage accuracy	0.1V	Display model	10 segment LED bar graph
Charging delay time	200S		
Delay time of every bar	155S	Product weight	108g
Housing material	ABS+Aluminum	Dimension	Φ56x65mm

7 Trouble shooting

Problems	Possible reasons	Solutions
No LED display	1. Power supply connection is wrong. 2. Power lines are damaged. 3. Key switch is damaged.	1. Check if the power cable wiring connected according to the instruction. 2. Repair or replace the power lines. 3. Repair or replace the key switch.
No change of voltage value or voltage bar.	1. Power supply connection is wrong. 2. Delay time not reached.	1. Check if connected according to the instruction. 2. Wait for a moment to view.