OPERATING INSTRUCTIONS

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Backlight LCD Battery Indicator

Please read and understand the following notices carefully, and correctly install and operate the product before using.
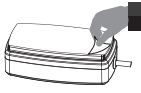
⚠ Notice

1. Please make sure to refer to the installation instructions in the operating instructions to avoid damage caused by installation errors.
2. Failure to install and operate the unit in accordance with these instructions may result in damage or injury.
3. Please install the product in a proper location to avoid the possibility of this product being hit and prevent damage to the product.
4. Installation and start-up must performed by skilled personnel.
5. If instrument failure or malfunction may cause personal injury or material damage, use additional safety measures such as limit switches, guards, etc.
6. This instrument was manufactured and tested according to the applicable technical standards. It complies with all the safety regulations as shipped from the factory.
7. Please use the product at the specified temperature; high temperature environment may cause damage to the product.

PRODUCT ACCESSORIES LIST

1 Product*1	**2** Paper card*1	**3** User manual*1
4 3M adhesive velcro*1	**5** Cable tie*2	**6** Flat washer*2
7 Set screw*2	**8** M3 hex nut*4	

PRODUCT INSTALLATION

1. Velcro installation:

a) Clean properly the surfaces.
Note: Make sure the surface is flat and the oil is clean enough.

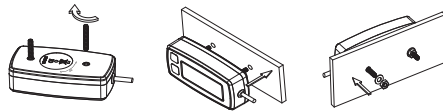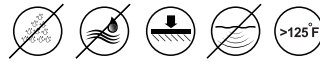b) Paste the velcro hook side in the installation position.

c) Paste the velcro fluffy side on the back of the product.
Note: Before pasting velcro, please make sure the back of the product is clean and tidy, no moisture or oil.

d) Paste the product on the hook side of the velcro and press it tight.

Proper position requirement: no moisture, no grease, is a plane, no violent vibration, and the temperature not exceed 125°F.
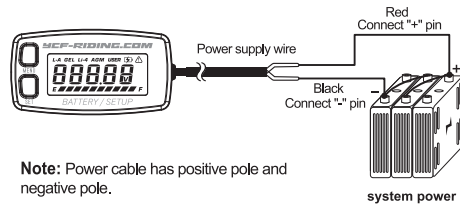
2. Screw installation.

a) Fasten the two M3 bolts on the hour meter;
b) Mount the bolts into the fixed plate holes;
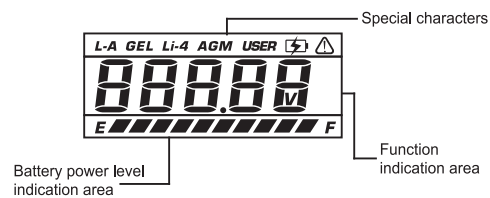c) Insert M3 gasket and fasten with M3 screw nuts to the fixed plate.

Note: The mounting plate is required matching holes, if don't have it, please drill corresponding holes in the mounting plate.

3. Power cable connection.

Power supply wire
Red Connect "+" pin
Black Connect "-" pin
system power

Note: Power cable has positive pole and negative pole.

PRODUCT USAGE

■ **Battery power level indication area + Function indication area**

L-A GEL Li-4 AGM USER ⚡ ⚠
888.88 v
E ▮▮▮▮▮▮▮▮ F

Special characters
Function indication area
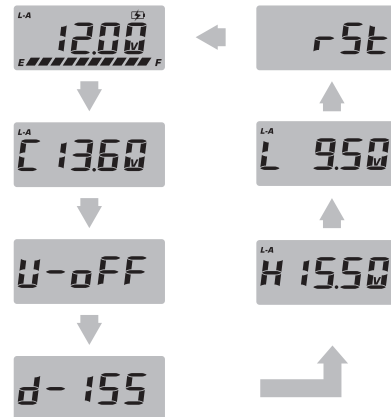Battery power level indication area

PRODUCT USE

■ When connecting to the battery, full display, after 1s, enter the interface of the voltage bar distinguish, the corresponding recognition follows as following:

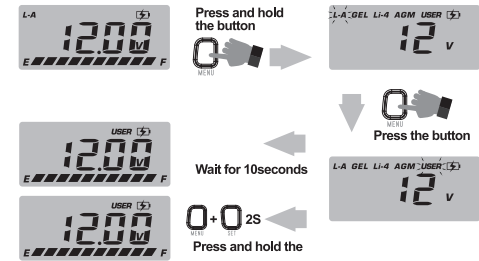| NO.	Voltage range	Display content	Voltage segment distinguish	Voltage segment selection
1	<8.5V	In-Er	Input voltage is less than the minimum voltage range.	Can't select, adjust the connected power.
2	8.5-16V	U-12v	Input voltage is within 12V.	Automatically select for 12V after 1S.
3	16-19V	U-12v / U-24v	Input voltage is between 12V and 24V.	Press the "SET" button to select voltage segment for 12V or 24V, Press and hold the "MENU" button to exit option.
4	19-28V	U-24v	Input voltage is within 24V.	Automatically select for 24V after 1S.
5	28-30V	U-24v / U-36v	Input voltage is between 24V and 36V.	Press the "SET" button to select voltage segment for 24V or 36V, Press and hold the "MENU" button to exit option.
6	30-37V	U-36v	Input voltage is within 36V.	Automatically select for 36V after 1S.
7	37-45V	U-36v / U-48v	Input voltage is between 36V and 48V.	Press the "SET" button to select voltage segment for 36V or 48V, Press and hold the "MENU" button to exit option.
8	45-53V	U-48v	Input voltage is within 48V.	Automatically select for 48V after 1S.
9	53-61V	U-48v / U-60v	Input voltage is between 48V and 60V.	Press the "SET" button to select voltage segment for 48V or 60V, Press and hold the "MENU" button to exit option.
10	>61V	U-60v	Input voltage is within 60V.	Automatically select for 60V after 1S.

PRODUCT USAGE

1. Product interfaces

■ Function indication area has 7 interfaces: Press **"MENU"** button and release to display in turn as below: Battery level and voltage interface, charging voltage interface, charge delay interface, discharge delay interface, High voltage warning interface, Low voltage warning interface, Reset interface.

■ After selecting, stay on the current interface and will not switch to other interfaces.
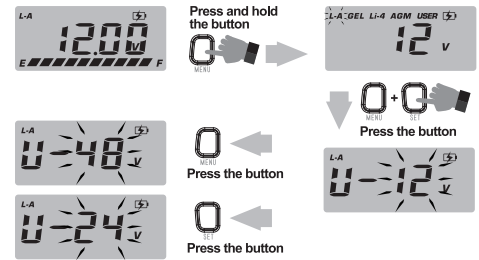

2. Choose the battery type

a) Press and hold the **"MENU"** button at the battery level and voltage display interface to get into the setting mode, battery type icon starts flashing.
b) Press and hold the **"MENU"** or **"SET"** button to change the battery type.

Press and hold the button
Press the button
Wait for 10seconds
Press and hold the

c) Release the button and wait for 10 seconds, display will return to battery level and voltage interface, or press and hold the **"MENU"** button and **"SET"** button at the same time for 2 seconds to save the setting and exit the setting mode.
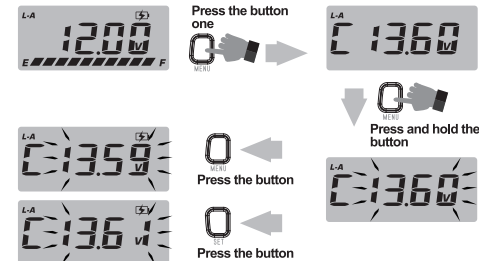
3. Set the battery voltage

a) Press and hold the **"MENU"** button at the battery level and voltage display interface to get into the setting mode, battery type icon starts flashing.
b) Press and hold the **"MENU"** or **"SET"** button to get into the voltage setting mode, and value flashing.
c) Press the **"MENU"** or **"SET"** button to change the voltage type.

Press and hold the button
Press the button
Press the button
Press the button

d) Release the button and wait for 10 seconds, display will return to battery level and voltage display interface, or press and hold the **"MENU"** button and **"SET"** button at the same time for 2 seconds to save the setting and exit the setting mode.
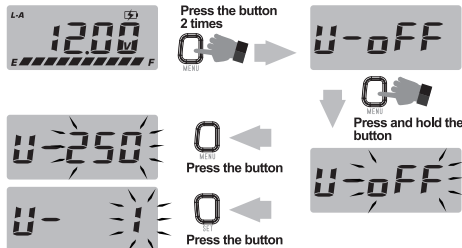
4. Set the charge voltage

a) Press the **"MENU"** button and release at the battery level and voltage display interface to get into the charge voltage interface.
b) Press and hold the **"MENU"** button to get into the setting mode, value flashing.

Press the button one
Press and hold the button
Press the button
Press the button

c) Press the **"MENU"** or **"SET"** button to set the charge voltage value.
d) Release the button and wait for 10 seconds, display will return to battery level and voltage display interface, or press and hold the **"MENU"** button and **"SET"** button at the same time for 2 seconds to save the setting and exit the setting mode.
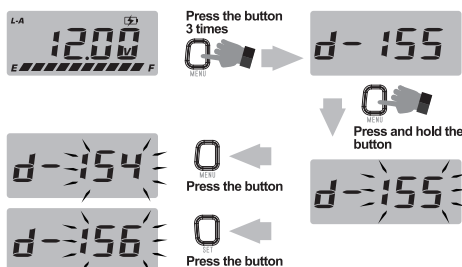
5. Set the charge delay time

a) Press the "**MENU**" button 2 times at the battery level and voltage display interface to get into the charge delay time setting interface.

b) Press and hold the "**MENU**" button to get into the setting mode, value flashing.

c) Press the "**MENU**" or "**SET**" button to change the value.
d) Release the button and wait for 10seconds, display will return to battery level and voltage display interface, or press and hold the "**MENU**" button and "**SET**" button at the same time for 2 seconds to save the setting and exit the setting mode.
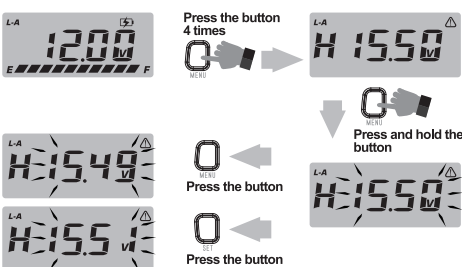
6. Set the discharge delay time

a) Press the "**MENU**" button three times at the battery level and voltage display interface to get into the discharge delay time setting interface.
b) Press and hold the "**MENU**" button to get into the setting mode, value flashing.

c) Press the "**MENU**" or "**SET**" button to change the value.
d) Release the button and wait for 10 seconds, display will return to battery level and voltage display interface, or press and hold the "**MENU**" button and "**SET**" button at the same time for 2 seconds to save the setting and exit the setting mode.

7. High voltage warning setting

a) Press the "**MENU**" button 4 times at the battery level and voltage display interface to get into the high voltage warning setting interface.
b) Press and hold the "**MENU**" button to get into the setting mode, value flashing.

c) Press the "**MENU**" or "**SET**" button to change the high voltage warning value.
d) Release the button and wait for 10seconds, display will return to battery level and voltage display interface, or press and hold the "**MENU**" button and "**SET**" button at the same time for 2 seconds to save the setting and exit the setting mode.

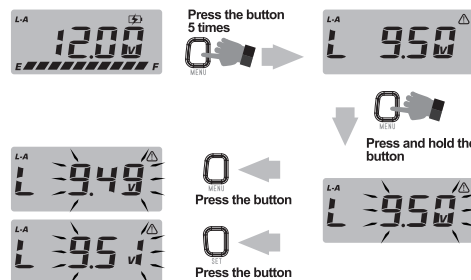## 8. Low voltage warning setting

a) Press the "**MENU**" button 5 times at the battery level and voltage display interface to get into the low voltage warning setting interface.

b) Press and hold the "**MENU**" button to get into the setting mode, value flashing.

c) Press the "**MENU**" or "**SET**" button to change the low voltage warning value.

d) Release the button and wait for 10 seconds, display will return to battery level and voltage display interface, or press and hold the "**MENU**" button and "**SET**" button at the same time for 2 seconds to save the setting and exit the setting mode.
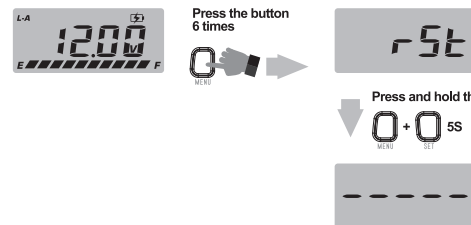
■ Choose the battery discharge type

■ Different types of batteries at the same voltage will have different discharge curves.

■ Choosing the right type of discharge curve can help you more accurately indicate battery usage.

■ This gauge provides 4 types discharge curves for you to choose from. 1 group of user mode for setting the parameter.

Type	Cell empty	Cell full	Voltage Range		Applicable battery type
L-A	1.73V	2.05V	U-12	10.38V~12.30V	Suitable for measuring common types lead-acid batteries from 12V to 60V.
			U-24	20.76V~24.60V	
			U-36	31.14V~36.90V	
			U-48	41.52V~49.20V	
			U-60	51.90V~61.50V	
GEL	1.9V	2.1V	U-12	11.40V~12.60V	Suitable for measuring common types GEL batteries from 12V to 60V.
			U-24	22.80V~25.20V	
			U-36	34.20V~37.80V	
			U-48	45.60V~50.40V	
			U-60	57.00V~63.00V	
Li-4	2.75V	3.4V	U-12	11.00V~13.60V	Suitable for measuring common types LiFePO4 batteries from 12V to 60V.
			U-24	22.00V~27.20V	
			U-36	33.50V~40.80V	
			U-48	44.00V~54.40V	
	2.725V	3.23V	U-60	54.50V~64.63V	
AGM	1.92V	2.08V	U-12	10.50V~12.50V	Suitable for measuring common types AGM batteries from 12V to 60V.
			U-24	21.00V~25.00V	
			U-36	31.50V~37.50V	
			U-48	42.00V~50.00V	
			U-60	52.50V~62.50V	
CUSTOM			U-12	8.50V~12.70V	Custom bar is the 5 parameter of the user setting, meet the actual needs of user, It will automatically range from high to low after setting.
			U-24	18.00V~25.70V	
			U-36	28.00V~38.70V	
			U-48	38.00V~51.70V	
			U-60	46.20V~64.70V	

Note: This table uses a 12V battery. The voltage range of 24V 36V 48V 60V is multiplied by 2 or 3 or 4 or 5 at a voltage of 12V.

When U-24 or U-36 or U-48 or U-60 is selected, the measured voltage value will change automatically.
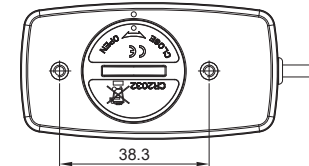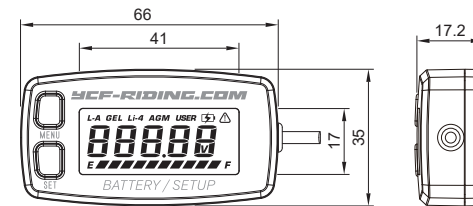
9. Reset

a) Press the "**MENU**" button 6 times at battery level and voltage display interface to get into the Reset interface.

b) Press and hold the "**MENU**" + "**SET**" button 5 seconds to reset product, all parameters are restored to the default values.

PRODUCT SPECIFICATIONS

ITEM NAME	PARAMETERS
Model	RL-BI008A
Voltage display accuracy	0.01V
Voltage bar	12V / 24V / 36V / 48V / 60V
Voltage measurement accuracy6	<±0.5%
Wire length	1.2M
Display mode	LCD+Green backlight display (Red/Blue can be customized)
Housing Materials	ABS
Work voltage	DC8.5-70V
Display window size(visible)	41x17mm
Product size	66x35x17.2mm
Suit for variousbattery type	L-A(Lead acid battery) GEL(GEL battery) Li-4(Lithium Iron Phosphate battery) AGM(AGM battery) USER(Custom battery type)
Waterproof rate	IP65
Product weight	About 47g

PRODUCT DIMENSION

Unit: mm