

## XY-CD63L DC 6V-60V 30A Battery Charge Discharge Voltage Monitor

### 1.Description:

XY-CD63L is a DC 6V-60V 30A Battery Charge Discharge Voltage Monitor. It is a discharge protector when the battery is connected to the input terminals. It is a charge protector when the battery is connected to the output terminals. It can connect voltage from DC 6V-60V Battery and the input/output voltage are same. It can set battery discharge/charge voltage to prevent the battery from over-discharging/over-charging and causing damage. The output voltage can continue to provide voltage to the load when the battery charging voltage rises to the allowable discharge value. Therefore, it can effectively protect the service life of the battery and make the use of the battery safer and more reliable.

### 2.Features:

- 1>.30A high current drive
- 2>.Programmable charge/discharge operating modes
- 3>.Real-time battery voltage monitoring
- 4>.Automatically cut off the load to protect the battery
- 5>.Automatically start the load when charging is completed
- 6>.Programmable battery stop value and start value
- 7>.Automatic charging
- 8>.HD LCD display
- 9>.Programmable power saving mode
- 10>.Programmable charging time and delay time
- 11>.Programmable forced-on time to avoid voltage fluctuations causing erroneous operation

### 3.Parameters:

- 1>.Product name:XY-CD63L DC 6V-60V 30A Battery Charge Discharge Voltage Monitor
- 2>.Input voltage:DC 6V-60V
- 3>.Output voltage:Same to input
- 4>.Control precision:0.1V
- 5>.Power consumption:<1.5W
- 6>.Load current:30A(Max)
- 7>.Work mode:Charge and discharge mode
- 8>.Appropriate types:Storage battery, Lithium battery
- 9>.Work Temperature:-25℃~80℃
- 10>.Work Humidity:5%~90%RH
- 11>.Module Size:62\*57\*26mm

### 4.Set Parameters:

#### 1>.Set Work Mode:

- 1.1>.Keep press 'UP' button more than 5second to switch charge and discharge mode.
- 1.2>.Discharge mode: Display the symbol 'OUT' at discharge mode. Battery connect to input terminal to and provide voltage for load. It is used to keep the battery from over-discharging
- 1.3>.Charge mode: Display the symbol 'IN' at Charge mode. Battery connect to output terminal and get voltage form charger at input terminal. It is used to prevent battery overcharge.
- 1.4>.Tips: It is discharge mode if battery connect to input terminal which the battery provide voltage for load. It is charge mode battery connect to output terminal which the battery need get voltage from charger.

#### 2>.Set Upper Limit Voltage Value UP:

- 2.1>.Keep press 'SET' button more than 5second enter into parameters set mode. User can set UP, dn, OP, dOP, FOP(Only for discharge mode)
- 2.2>.The default setting UP value after enter set mode. Then press 'UP' or 'DOWN' button to set the Upper Limit Voltage Value UP value.
- 2.3>.Press 'SET' to switch parameter or keep press 'SET' button more than 5second to save and exit set mode if no need set others.
- 2.4>.Its set value can not less than Lower Limit Voltage Value UP. The system will automatically determine.
- 2.5>.Note:Stop the output after enter the set mode.

#### 3>.Set Lower Limit Voltage Value dn:

- 3.1>.Press 'SET' to switch parameter after set 'UP'.
- 3.2>.Press 'UP' or 'DOWN' button to set the Lower Limit Voltage Value dn value
- 3.3>.Keep press 'SET' button more than 5second to save and exit set mode if no need set others.
- 3.4>.Its set value can not greater than Upper Limit Voltage Value UP. The system will automatically determine.

#### 4>.Set Discharge/Charge Time OP:

- 4.1>.It is used to limit the time the battery can be charged or discharged at two modes.
- 4.2>.Its set range is '00:00h' to '99:59h'. It means turn OFF this function if set '00:00h'.

- 4.3>.Press 'SET' to switch parameter after set 'dn'.
- 4.4>.Press 'UP' or 'DOWN' button to set the Discharge/Charge Time OP value
- 4.5>.Keep press 'SET' button more than 5second to save and exit set mode if no need set others.
- 4.6>.The time is reset to zero when entering the set mode again.
- 4.7>.Example: set the Discharge/Charge Time OP as '02:00h' at Discharge Mode.
  - 4.7.1>.The output will stop after the battery is discharged for 2 hours, regardless of whether the battery voltage is lower than the Lower Limit Voltage dn.
  - 4.7.2>.The output will stop after the battery voltage is lower than the Lower Limit Voltage dn within 2 hours.
  - 4.7.3>.At discharge mode: LCD display 'H:ER' if the Measured Voltage is less than the Lower Limit Voltage Value dn. It is used to remind the user that the time parameter setting is unreasonable; press any button to stop flashing.
  - 4.7.4>.At charge mode: LCD display 'H:ER' if the Measured Voltage is more than the Upper Limit Voltage Value UP. It is used to remind the user that the time parameter setting is unreasonable; press any button to stop flashing.

**5>.Set Startup Delay dOP:**

- 5.1>.It is used to set the time interval for the next startup. It can be used to force a battery rest and cool.
- 5.2>.Its set range is 000s-999s. It means turn OFF this function if set '000h'.
- 5.3>.Press 'SET' to switch parameter after set 'OP'.
- 5.4>.Press 'UP' or 'DOWN' button to set the Startup Delay dOP value
- 5.5>.Keep press 'SET' button more than 5second to save and exit set mode if no need set others.

**6>.Set Forced Startup Time FOP (Only for discharge mode):**

- 6.1>.It is used to force hold output within 0~10s. It mainly prevents the voltage from instantly reducing when the load starts, causing the system to misjudge and stop the output.
- 6.2>.Its set range is 00s-10s. It means turn OFF this function if set '00h'.
- 6.3>.Press 'SET' to switch parameter after set 'dOP'.
- 6.4>.Press 'UP' or 'DOWN' button to set the Forced Startup Time FOP value
- 6.5>.Keep press 'SET' button more than 5second to save and exit set mode if no need set others.

**7>.Switch display percentage % and time:** Short press 'UP' button.

**8>.Query set parameters value:** Short press 'SET' button to display UP, dn, OP, dOP, FOP(Only for discharge mode) in turns.

**9>.Turn ON/OFF output:** Short press 'DOWN' button. Note: It can turn ON output just when then battery voltage is more than the Upper Limit Voltage Value UP.

**10>.Turn ON/OFF Sleep Mode L-P:**

- 10.1>.Keep press 'DOWN' button to turn ON/OFF Sleep Mode L-P.
- 10.2>.ON: Turn ON Sleep Mode. The backlight will remain on display.
- 10.3>.OFF: Turn OFF Sleep Mode. The backlight will turn OFF within 5~10 minute after no any operation.Press any key to restore the backlight.

**11>.Function Principle:**

- 11.1>.For example: Batter discharge mode, the Lower Limit Voltage Value UP is 12V and the Upper Limit Voltage Value UP is 14V.
- 11.2>.It can not output voltage if the input voltage is less 12V when power ON.
- 11.3>.It can not output voltage if the input voltage drops below 12V during working.
- 11.4>.It can not output voltage if the input voltage is more 12V but less than 14V when power ON.
- 11.5>.It can output voltage if the input voltage is more 14V when power ON.
- 11.6>.There is output voltage before the input voltage drops to 12V during working.
- 11.7>.The input battery needs be charged to 14V once battery voltage drops to 12V. Then the output terminal can output voltage again.

**5.Discharge Mode OUT:**

1>.Relay turn ON and output voltage, battery starts to discharge, when Battery Voltage is more than the Upper Limit Voltage Value UP. Red indicator turn ON and flashing symbol 'OUT'.

2>.Relay turn OFF and output no voltage, battery stops to discharge, when Battery Voltage is less than the Lower Limit Voltage Value dn. Red indicator turn OFF and keep display symbol 'OUT'.

**6.Charge Mode IN:**

1>.Relay turn ON and battery starts to charge from charger, when Battery Voltage is less than the Lower Limit Voltage Value dn. Red indicator turn ON and flashing symbol 'IN'.

2>.Relay turn OFF and battery stops to charge, when Battery Voltage is more than the Upper Limit Voltage Value UP. Red indicator turn OFF and keep display symbol 'IN'.

3>.It display 'nbE' if no battery is connected at the output terminal.

**7.Frequently asked questions**

**1>.What is the control voltage range? What is the applicable battery range?**

Q: Control voltage range is DC 6V-60V. But battery voltage max is 48V. Because the voltage of 48V battery is 60V after fully charged.

**2>.Why relay is automatically turned on and off continuously after power on and flashing light?**

Q: This is because your charging current is too large or the battery capacity is too small that cause the battery voltage to immediately exceed the Lower limit voltage 'dn' value and then relay will OFF. But the voltage drops quickly to the Lower limit voltage 'dn' after Relay OFF and then start to charging. Cycle and cycle.

At this point you have to reduce the charging current. Usually the charging current is 10-15% of the battery capacity. For example, if the battery capacity is 20AH, the charging current is 2-3A.

Note that high current charging can cause the battery to heat up, aging, bulging or even exploding.

**3>.What control method?**

Q: This is the voltage control. For example: Lower limit voltage 'dn' is set to 12.0V. Upper limit voltage 'UP' is set to 14.5V. It will close output when the voltage is charged to 14.5V. Relay will ON and begins to charge when the voltage is reduced to 12.0V.

**4>.Can it be automatically cycled?**

Q: Yes, it can. Voltage control mode only controls turn-off and turn-on.

**5>.Can it limit the current?**

Q: It can't limit current, the charging current is completely dependent on your charger.

**6>.Can I charge a 24V battery by inputting 12V? Or charge a 12V battery by inputting 48V?**

Q: This is a simple voltage controller just for ON/OFF. It can not change output voltage. So what kind of charger should you prepare for charging the battery!

**8.Note:**

1>.It is a charging/discharging controller but not a charger or voltage converter!

2>.Both the monitor and the load consume the power of the input terminal battery. Therefore, even if the output voltage is stopped, monitor will continue to consume the battery, which is used to monitor the battery voltage.

3>.Choose the right working mode.

4>.Please read use manual and description before use.

**9.Application:**

1>.Solar and wind power supply system

2>.Electric bicycle

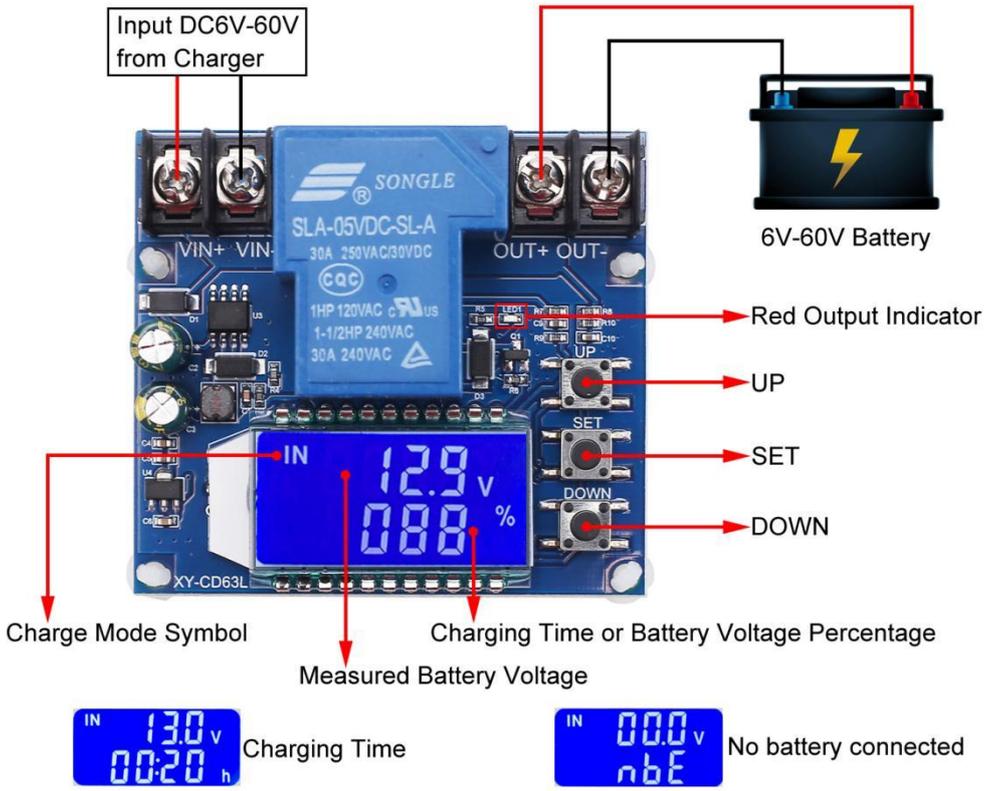
3>.New energy vehicles

4>.Various batteries

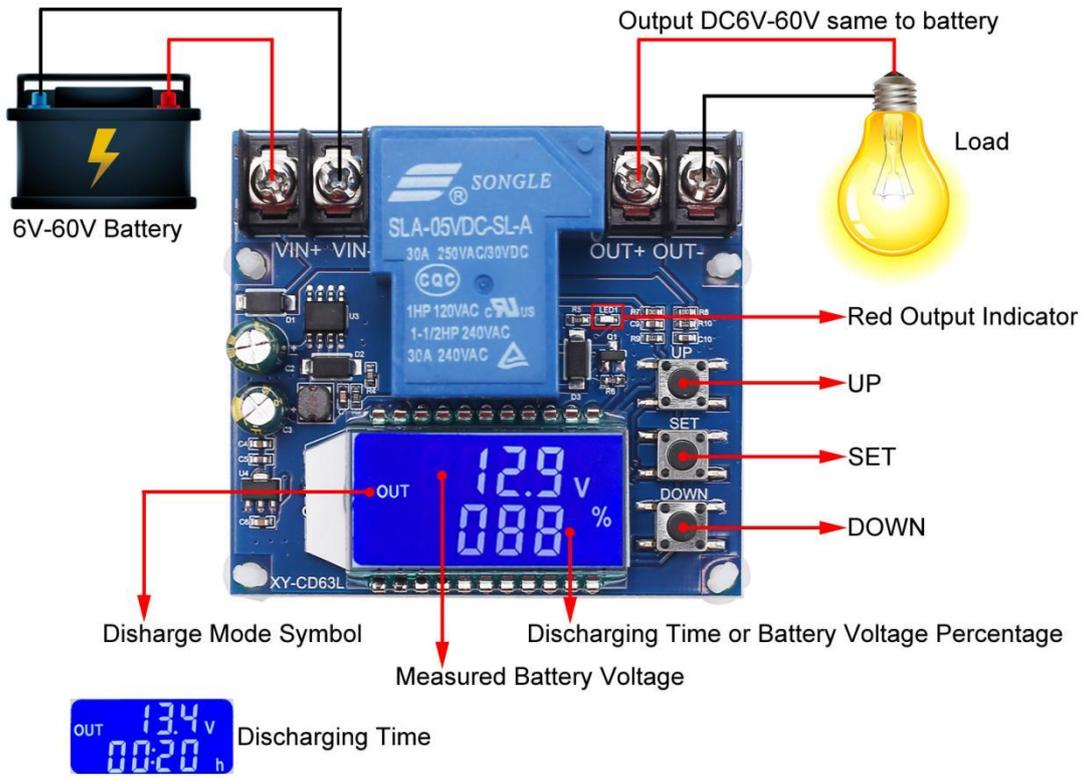
**10.Package:**

1>.1pcs XY-CD63L DC 6V-60V 30A Battery Charge Discharge Voltage Monitor

### Charge Mode IN



### Discharge Mode OUT



<b>Discharge Mode Parameter Table 'OUT'</b>			
<p>1&gt;.Output terminal connect suitable load. Note that the output voltage is same to battery.                      2&gt;.Output turn ON and the battery starts to discharging if battery voltage is more than the Upper Limit Voltage Value UP.                      3&gt;.Output turn OFF and the battery stops to discharging if battery voltage is less then the Lower Limit Voltage Value dn.                      4&gt;.The symbol OUT will flashing when discharging.</p>			
<b>Display Parameters</b>		<b>Set Parameters</b>	
Battery Voltage and Battery Voltage Percentage 	Battery Voltage & Discharging Time 	Forced Startup Time FOP (0~10second) 	
<b>Set Parameters</b>			
Upper Limit Voltage Value UP 	Lower Limit Voltage Value dn 	Discharging Time OP 	Startup Delay Time dOP 0~999s 
<p>Note: 1.Discharging Time OP range 00:00~99:59 hours.                      2.Startup Delay Time dOP range is 0~999second but not 0~999hours!                      3.Discharge Forced Startup Time FOP range is 0~10s but not 0~10h!</p>			

<b>Charge Mode Parameter Table 'IN'</b>			
<p>1&gt;.Output terminal connect 1pcs DC 6V-60V battery. It will display 0.00V and nbE if the battery does not meet the requirements.                      2&gt;.Output turn ON and the input charger starts charging the battery if battery voltage is less than the Lower Limit Voltage Value dn.                      3&gt;.Output turn OFF and the input charger stops charging the battery if battery voltage is more than the Upper Limit Voltage Value UP.                      4&gt;.The symbol IN will flashing when charging.</p>			
<b>Display Parameters</b>			
Input Voltage and Battery Voltage Percentage 	Input Voltage & Charging Time 	No Battery Connected 	
<b>Set parameters</b>			
Upper Limit Voltage Value UP 	Lower Limit Voltage Value dn 	Charging Time OP 	Startup Delay Time dOP 0~999s 
<p>Note: 1.Charging Time OP range 00:00~99:59 hours.                      2.Startup Delay Time dOP range is 0~999second but not 0~999hours!</p>			

