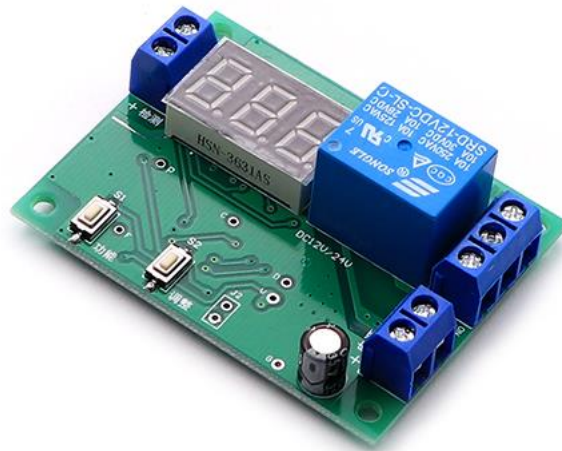


DC 12V Low Voltage Protection Module for Battery Charge/Discharge Controller LED Digital Tube Display for 0V-99.9V Battery



Way of Operation:

- 1- VD_100 voltage detection work mode: the module is on and the relay is off.
At this time, it is a voltmeter and displays the detected voltage value.
- 2- VD_101 voltage detection work mode: (low voltage protection)
 - 1.1) The initial module is on and the relay is off
 - 1.2) The relay is detected when the voltage is less than setting L (low limit) or the voltage is greater than setting H (high limit).
 - 1.3) After the relay is powered on, this state will remain as long as the module is powered on (no voltage detected).
- 3- VD_102 voltage detection work mode: (low voltage protection)
 - 1.1) The initial module is on and the relay is off.
 - 1.2) The relay turns on when the voltage is detected to be lower than setting L (low limit) or the voltage is detected to be higher than setting H (high limit).
 - 1.3) After the relay is on, it can only be released when the voltage is detected to be between the L (low limit) and H (high limit) settings.
 - 1.4) After releasing the relay, repeat steps 2 and 3 to test the voltage repeatedly.
- 4- Vd _ 103 voltage detection work mode: (low voltage protection)
 - 1.1) The start module power relay is off.
 - 1.2) The voltage is detected to be between the L setting (low limit) and the H setting (high limit), and the relay is turned on.
 - 1.3) After the relay is turned on, the relay releases when it detects that the voltage is lower than the setting L (low limit) or the voltage is higher than the setting H (high limit).
 - 1.4) After releasing the relay, as long as the module is continuously powered, this state is maintained (no voltage detected).
- 5- Vd _ 104 voltage detection work mode: (low voltage protection)
 - 1.1) The start module power relay is off.

- 1.2) The relay is detected to be on between setting L (low limit) and setting H (high limit).
- 1.3) After the relay is turned on, the relay releases when it detects that the voltage is lower than the setting L (low limit) or the voltage is higher than the setting H (high limit).
- 1.4) After releasing the relay, repeat steps 2 and 3 to test the voltage repeatedly.

6- Vd _ 105 voltage detection work mode: (undervoltage protection)

- 1.1) The start module power relay is off.
- 1.2) When the voltage is detected to be higher than the setting L (low limit), the relay is turned on.
- 1.3) After the relay is powered on, if it detects the voltage is lower than L (low limit), the relay will release.
- 1.4) After the relay is released, it will only activate when it detects that the voltage is higher than the setting relay H (High Limit).
- 1.5) Repeat steps 3 and 4 to test the voltage repeatedly.

7- Vd _ 106 voltage detection work mode: (undervoltage protection)

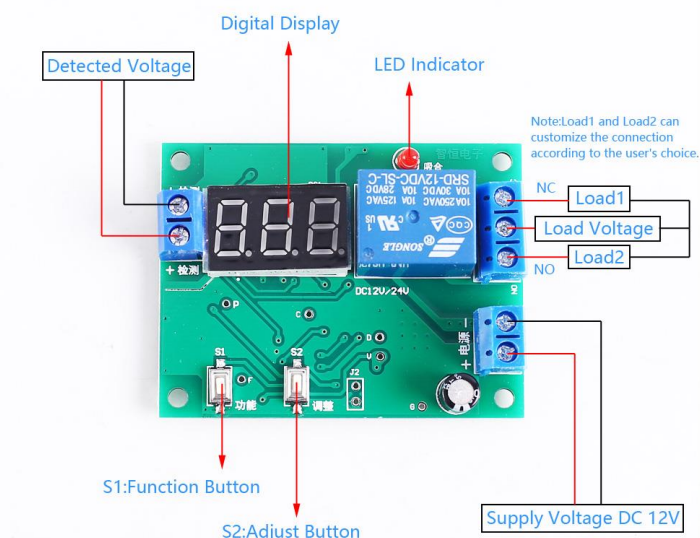
- 1.1) The start module power relay is off.
- 1.2) The relay is on when the voltage is detected to be higher than the H (High Limit) setting.
- 1.3) If the voltage is detected to be lower than L (low limit) after the relay is turned on, the relay releases.
- 1.4) Repeat steps 2 and 3 to test the voltage repeatedly.

8- VD_107 voltage detection work mode: (overvoltage protection)

- 1.1) The initial module is on and the relay is off.
- 1.2) The voltage is detected to be lower than the setting L (low limit) and the relay is turned on.
- 1.3) After the relay is powered on, if the detected voltage is higher than H (High Limit), set the relay to release.
- 1.4) Repeat steps 2 and 3 to test the voltage repeatedly.

9- Vd _ 108 voltage detection work mode: (overvoltage protection)

- 1.1) The initial module is on and the relay is off.
- 1.2) When the voltage is detected to be lower than the high limit H), the relay is turned on.
- 1.3) If the voltage is higher than the setting H (High Limit) after the relay is turned on, the relay releases.
- 1.4) After releasing the relay, the relay turns on only when the voltage is detected to be lower than the L (low limit) setting.
- 1.5) Repeat steps 3 and 4 to test the voltage repeatedly.



Setting Method:

- 1- The module is not powered on, long press S1, and then supply power to the module to enter the setting (Release S1 when the screen displays "---").
- 2- Initial setting, the display shows "---", press S1 to enter the High Limit setting.
- 3- High limit setting: The screen displays "H --" (at this time, press S1 to enter the low limit setting)
 - 1.1) The first step is to display "X" by pressing S2(X is the value, then press S2 to adjust the first digit)
 - 1.2) The second step is to press S1 "X" (press S2 to adjust the value of the second digit)
 - 1.3) The third step is to press S1 "X" (press S2 to adjust the value of the third digit)
 - 1.4) Every time you press the S2 value, the number 0-9 repeats (flashes).
 - 1.5) Finally press S1 to save the settings and go back to the initial one.
- 4- Low limit setting: "L --" is displayed on the screen (at this time, press S1 to enter the mode selection)
 - 1.1) The first step is to display "X" by pressing S2(X is the value, then press S2 to adjust the first digit)
 - 1.2) The second step is to press S1 "X" (press S2 to adjust the value of the second digit)
 - 1.3) The third step is to press S1 "X" (press S2 to adjust the value of the third digit)
 - 1.4) Every time you press the S2 value, the number 0-9 repeats (flashes).
 - 1.5) Finally press S1 to save the settings and go back to the initial one.
- 5- Mode selection: The screen shows "P --", (press S1 to enter the screen activation at this time)
 - 1.1) Then press S2 to display "X" (every time you press S2, it will switch to a different working mode, 100-108.9 cycle ways)
 - 1.2) Finally press S1 to save the settings and return to the initial screen.
- 6- Screen activation: The screen shows "F --" (at this time, press S1 to enter the error correction)
 - 1.1) Then press S2 to display "X" (each time you press S2, the numbers 0 and 1 change, 0 turns off the digital tube display, 1 turns on the digital tube display)
 - 1.2) Finally press S1 to save the settings and return to the initial screen.
- 7- Bug fix: Display shows "C --"
 - 1.1) Then press S2 to display: "X"
 - 1.2) Finally press S1 to save the settings and return to the initial screen.
- 8- After modifying the settings, please turn off the module and turn on the module again to enter the working state.

Note:

- 1- The module must be powered by a separate power supply. It cannot be connected to any other circuit and cannot be powered from other circuits, especially a group of batteries in a series battery. They are not acceptable.
- 2- If the power supply is shared with other connections, you must ensure that the negative pole of the supply voltage and the detection voltage can be connected together.
- 3- Try setting it when no voltage is detected on the interface. Set when the Interface has unsafe voltage, please press the button with an insulated object, do not use your hands.