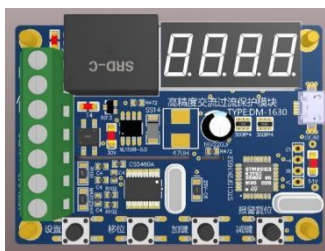


DM-1630 High Precision AC Overcurrent Protection Module



1. Product Introduction

When using the DM-1630 series AC ammeter module with an external current transformer, it is necessary to use the transformer that has been paired with our company's factory and cannot be replaced. It can achieve multiple functions such as measuring current and alerting for overload events. TTL communication output function, standard MODBUS RTU communication protocol, can be networked to achieve centralized data management. This product uses industrial grade components. Reliable terminal input, using high-quality domestic terminal blocks with high voltage resistance and overcurrent rating. Suitable for data collection of complete sets of intelligent high and low voltage distribution cabinets, intelligent box transformers, and small household appliance performance testing systems.

2. Product Introduction

Measuring Range	Measurement Error	Resolving Power	Overload	Transformer threading turns
0-9.999A	(0.1% reading+0.1% range)	0.001A	Continuous 120%, instantaneous 2x/30S	4 turns
0-40.00A	(0.1% reading+0.1% range)	0.01A	Continuous 120%, instantaneous 2x/30S	1 turn

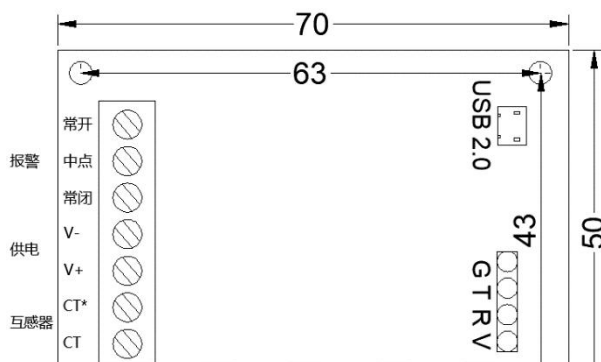
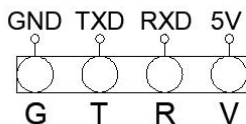
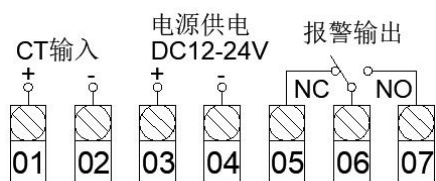
The 9.999A and 40.00A gears can be switched for use. Enter the password 808, switch the parameters first, and then switch the corresponding number of turns

Alarm Output	Relay control output, AC220V/3A, DC24V/3A (resistive load)
Communication Output:	TTL communication interface, baud rate 1.20-57.60Kbps, MODBUS RTU communication protocol
Working Power Supply	DC12~24V。 Power consumption<2W
Size	Module size 70mm * 50mm, fixed hole spacing 63 * 43mm, aperture 3.0mm

3. Safety precautions

Only qualified personnel are allowed to engage in the installation and use of this product, and must follow the prescribed installation procedures. Please equip yourself with personal safety protective equipment that has passed inspection when engaging in electrical installation and commissioning work. It is not allowed to operate it alone. Please turn off all power before performing installation operations. Please disconnect all power sources before inspecting, testing, and maintaining this instrument. Please pay attention to the design details of the power system, including possible backup power sources. The successful installation of this instrument relies on proper installation, operation, and usage guidelines. Neglecting basic installation requirements may result in personal injury and damage to electronic instruments or other property.

4、 Terminal wiring, product dimensions



5、 Parameter settings

(1) The key functions of the instrument panel are touch sensitive keys, please do not press them hard when using.

Key	Remarks
SET	The parameter setting key is used to store the new set value of the parameter and enter the next set parameter when in the setting state. Press and hold the SET key for about 5 seconds to exit the setting state.
displacement ◀	When setting the state, press this key to shift the corresponding numerical bit.
Add key ▲	Set value increase key, used to increase the numerical value when in the set state. When the relay alarm mode is 0 in working state, press the<one key start stop>button to control the relay status.
Reduce key ▼ /Reset	The set value decrease key is used to decrease the numerical value when in the set state. In working mode, press the<Alarm Reset>button

(2) Parameter setting

In working state, the module displays the current measurement value. In the set state, display parameter prompt information first, and then display the corresponding set value. If there is no button operation for about 60 seconds during the setting process, it will automatically return to operation. After setting a parameter, press the SET key to confirm and enter the next parameter setting state.

Number	parameter	Remark	Factory value
01	-Cd-	Press and hold the settings button for about 1 second, and the display window will show the prompt - Cd -. After about 2 seconds, the corresponding value 0800 will be displayed. Set the password 0800 to 0808 and then press the settings button to confirm before entering the parameter setting state. Entering other values is invalid to prevent non-technical personnel from misoperation.	0800
02	Addr	Mailing address, ranging from 1 to 99.	0001
03	bAud	The baud rate for communication ranges from 12.0 to 57.60K bps.	9.60
04	Pari	Communication checksum, no checksum, even checksum, odd checksum.	none
05	Sn	Set the input range, with options of 9.999A or 40.00A	9.999
06	Lb	Measure the filtering damping coefficient of the value, ranging from 0 to 20. The larger the value, the more stable the measurement and the slower the response.	0005
07	CLr	Small signal resection, range 0.0-10.0%. When set to 0.5, the measured value is displayed as 0 if it is less than 0.5% of the range.	000.5
08	oSEt	Zero point correction coefficient, measured value before correction+oSEt=displayed value after correction, factory default is 0.0.	0.000
09	FSEt	Adjust the calibration coefficient range to 0.500~2.000, (measured value before correction+oSEt) x FSEt=displayed value after correction	1.000
10	HA	Upper limit alarm value, range 0-9999.	3.000
11	LA	The lower limit alarm value should be less than the upper limit alarm value.	1.000

12	Lo	Low current does not trigger an alarm. When the current is below this value, it indicates that the user's load is not in working condition. When set to 0, this parameter is invalid and must be less than the lower limit alarm.	0.300
13	A-tS	The alarm judgment time starts counting when the measured value is in the alarm state, and only outputs the alarm after being in the alarm state for a continuous period of time to prevent misoperation. Note that during the timing process, if the measured current value returns to normal and is not within the alarm range, the timing value will reset.	005.0
14	r-tS	The alarm reset time starts counting when the state transitions to a non alarm state, and is only reset after being in a non alarm state for a continuous period of time.	005.0
15	Fun	Alarm mode, range 0-7.	0002
	0	Relay manual control, press the<one key start stop>button to switch relay action and reset. Write 1 action for alarm status of communication register 4x014, write 2 reset. After the relay is activated, it will automatically reset according to the set alarm reset time r-tS, and will not reset automatically when r-tS=0.	
	1	When the measured current remains greater than HA during the A-tS time, the relay will activate; When the measured current is continuously less than the HA relay reset within r-tS time. It can also be manually or through communication reset. When r-tS=0, it can only be reset through manual<alarm reset>or communication reset (the same below, except for the last charging mode).	
	2	When the measured current remains greater than HA during the A-tS time, the relay will activate; When the measured current is continuously less than LA relay reset within r-tS time.	
	3	When the measured current is less than LA within A-tS time, the relay will activate; When the measured current is greater than LA relay reset within r-tS time.	
	4	When the measured current is less than LA within A-tS time, the relay will activate; When the measured current is greater than the HA relay reset within r-tS time.	
	5	When the measured current is between LA and HA during the A-tS time, the relay will activate; Measure the current and reset the relay outside this range within r-tS time.	
	6	When the measured current is less than LA and greater than Lo or greater than HA during the A-tS time, the relay will activate; Reset the relay outside this range within r-tS time.	
	7	Battery charging mode (connected to normally open contacts), after power on, the relay will close the normally open contacts and enter a charging state. After being fully charged, the current will decrease below LA, and the relay will reset and the normally open contacts will open, no longer charging; Manual<alarm reset>or communication control action (register 4x014 writes 1) or relay action returns to charging state after module is powered on again. When the current value is greater than HA during the charging process (charging fault occurs due to excessive charging current), the relay will operate normally and the contact will open. It is recommended to set r-tS to be greater than 10.0 seconds and A-tS to not exceed 5.0 seconds in this mode to quickly disconnect and no longer charge when the current is too high.	
Parameter setting is complete, display - End, and the instrument automatically enters the running state.			

Error correction algorithm: According to the formula: displayed value=(actual value+zero point correction) x full-scale correction. First, set the decimal point position and range, zero correction OE=0, and full correction FS=1.000. Example: The range of the transformer is 0-5A. Before correction, two sets of values were measured, and when inputting 1.000A, the instrument displayed 0.844; At 4.000A, 3.705A is displayed. According to the equations $1.000=(0.844+OE) \times FS$ and $4.000=(3.705+OE) \times FS$, FS=1.050 and OE=0.110 are calculated.

Precautions and product maintenance

- a. Instruments should be used in the recommended working environment, as even harsher environments may reduce the accuracy of test parameters and shorten the product's lifespan.
- b. Do not measure beyond the input signal range of the instrument.
- c. This series of instruments is precision measuring equipment, and violent impact on the instruments is strictly prohibited
- d. The working power supply voltage of the instrument must meet the technical requirements, and excessive power supply voltage may burn out the instrument; Low power supply voltage cannot guarantee the normal operation of the instrument.