AT131Y
Digital Three-Phase Ammeter
User's Manual
V1.0

Hangzhou Antin Power Technology Co., Ltd

Declarations

The Company reserves the right to modify the specifications of the products described in this manual without prior notice. Before ordering, please contact the Company or your local agent for the latest specifications of this product.

Content

Chapter 1 Product Overview

1.1 Product Introduction

This series three-phase ammeter is an ideal device for monitoring current. The meter can realise the functions of programming, automation measurement, LCD liquid crystal display, open in and open out, variable output, over-limit alarm, digital communication and so on. The product adopts advanced microprocessor and digital signal processing technology, integrating digital, intelligent and networked, with superior performance, high measurement accuracy, beautiful appearance and strong EMC compatibility, it can completely replace the traditional analogue and digital instrumentation, and at the same time, it can be used as the terminal component of the electric power monitoring and scheduling system, SCADA system, DCS system, BAS system, etc., to realise remote data acquisition and monitoring. monitoring and control.

1.2 Product Features

- Three-phase current measurement
- Selectable three-phase three-wire, three-phase four-wire
- Current multiplier adjustable
- Switching input
- With RS485 communication function
- Switching remote control output
- Broken code liquid crystal display

1.3 Product Parameters

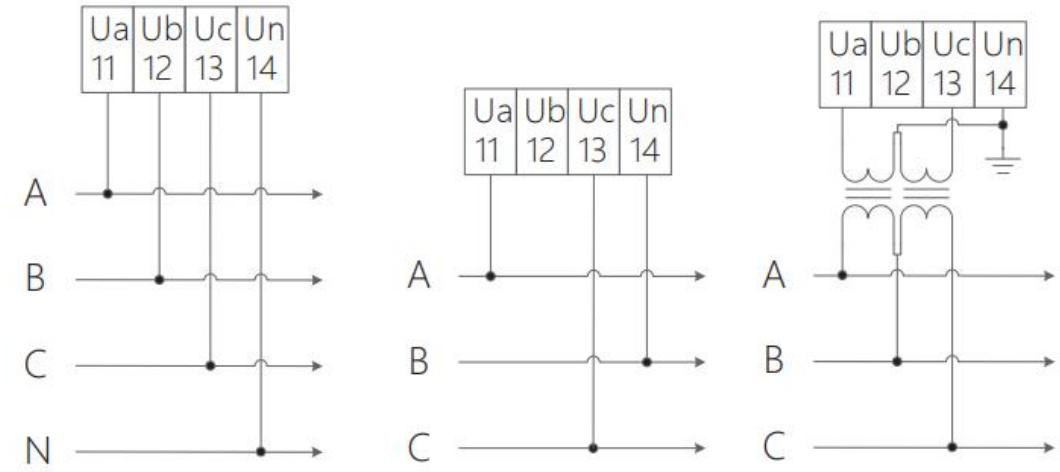
Measurement and metrology	
Electric current	Three-phase current
Display Mode	Broken code liquid crystal display
Communication Functions	
Communication protocols	MODBUS-RTU
Communication Methods	RS485

Chapter 2 Technical Specifications

2.1 Technical Parameters

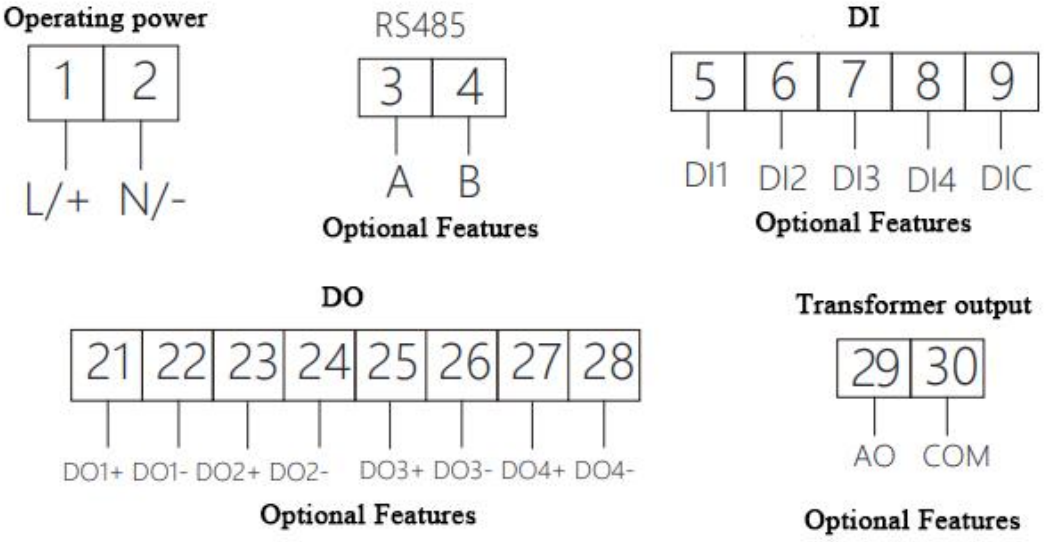
Technical parameters			Norm
Operating power		Voltage ranges	AC/DC 85~265V
		Power consumption	<5VA
Accuracy Class			0.5 class
Importation	Electric current	Rating	AC 5A(0.02A-6A)
		power consumption	<0.2VA/Phase
	Switching input		Dry contact input, optically isolated
Output	Switching output		Relay output; alarm can be set, default remote control
	Analogue outputs		0~20mA/0~5V（Can be set arbitrarily）
	Digital communication interface		RS485/Modbus-RTU
EMC Electromagnetic Compatibility Testing	Electrostatic Discharge Immunity Testing		GB/T 17626.2-2006：Test level 4, test voltage 8kV
	RF electromagnetic field immunity test		GB/T 17626.3-2006：试验等级 3 级，试验场强 10V/m
	Fast Transient Pulse Swarm Test		GB/T 17626.4-2008：Test class 2, current voltage 1kV, other 500V
	Surge (shock) immunity test		GB/T 17626.5-2008：Test level 4, test voltage 4kV
	Conducted Nuisance Immunity Test for RF Field Induction		GB/T 17626.6-2008：Test class 3, test field strength 10V/m
	Immunity tests for voltage dips, short-term interruptions and voltage variations		GB/T 17626.11-2008：Passed current and voltage test error
	Oscillatory wave immunity test		GB/T 17626.12-1998：Class B ITE test, pass

2.2 Wiring Diagram

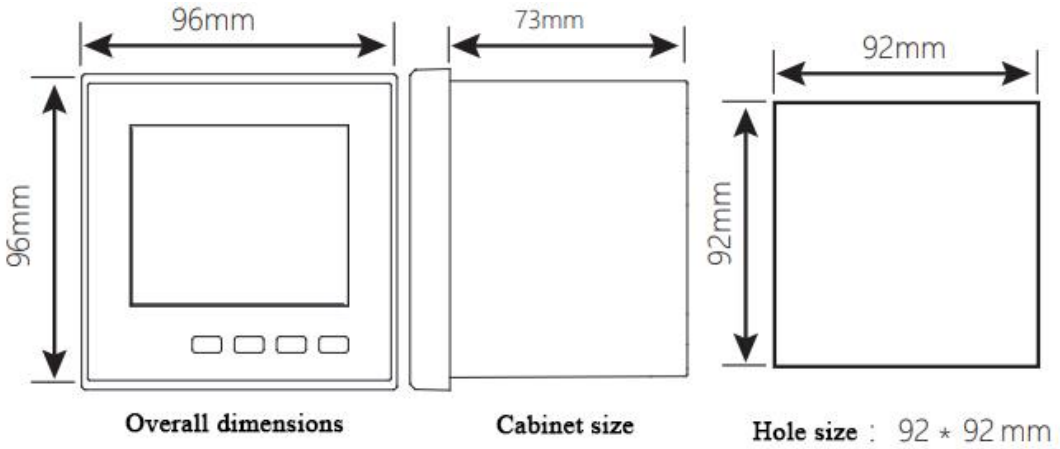


Three-phase four-wire wiring diagram

Three-phase three-wire wiring diagram

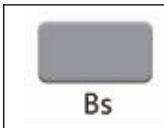


2.3 Dimensions and Installation Diagram

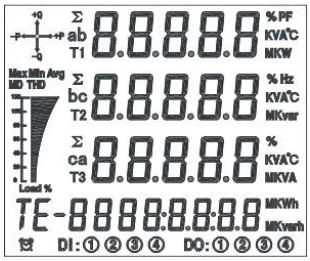
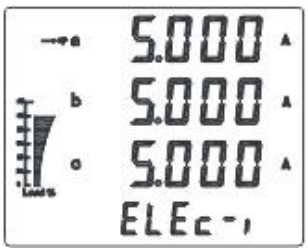


Chapter 3 Operating Instructions

3.1 Key Description

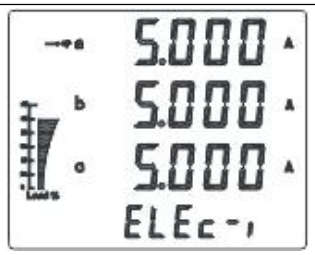
	Bs key:Returns to the previous menu level. It is used as a shift key to move the blinking bit during parameter setting, if it is in the last level menu.
	Up key:View the previous screen display of the power, when setting up, select the previous option of the same level menu or type in the value when the value is incremented.
	Dn key:View the next screen display of the power, setup, select the next option in the same level menu or type in the value of the value decreases.
	St key: enter the next level menu. In the parameter setting, if in the last level menu, it will be "save and return to the previous level menu"; when the current menu is the password input menu, it will judge whether the password is correct or not, if it is correct, it will enter the next level menu, otherwise, it will return to the previous level menu. -Otherwise, it returns to the previous menu.

3.2 Launch screen

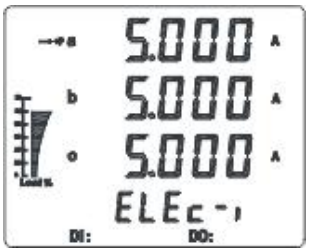
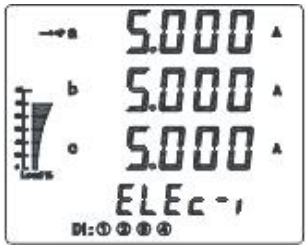
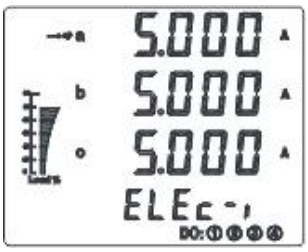
	The startup interface displays all segment codes on the full screen, and the interface stays for 1s, which is used to detect whether the digital tube can display normally.
	After the startup interface completes the self-test, it enters the three-phase current display interface and acts as the main interface to display the instrument power parameters.

3.3 Battery Level Enquiry

3.3.1 Power parameter query

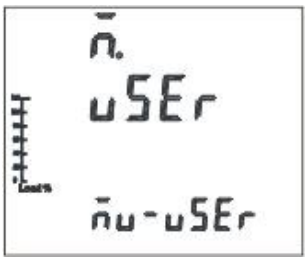
	By default, the real-time three-phase current is displayed.

3.3.2 Other parameter enquiry (optional function)

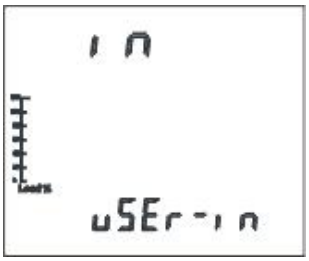
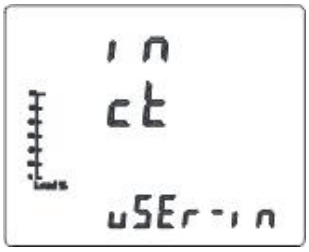
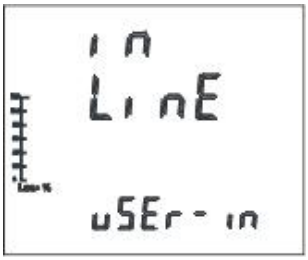
	Instruments with the open-in open-out quantity function display DIDO below any parameter screen, as shown on the left.
	Under any parameter interface, the left figure shows open in, indicating that the current 4-channel open in quantity is valid.
	Under any parameter interface, the left figure shows open out, indicating that the current 4-channel open out is valid.

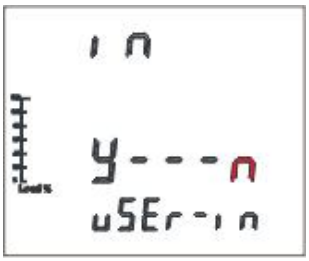
3.4 Parameter setting

Under the initial display interface, press "St" key continuously and "Dn" key continuously to find the menu item of user setting, as shown in the following figure, press "St" key to enter the user password input interface to complete the password input, increase or decrease the number through "Up" key and "Dn" key, and shift the number blinking through "Bs" key. The initial factory password is "0001", which is the same as the initial password of the factory. The initial factory password is "0001".

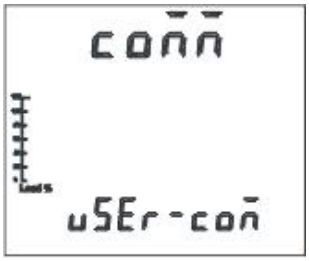
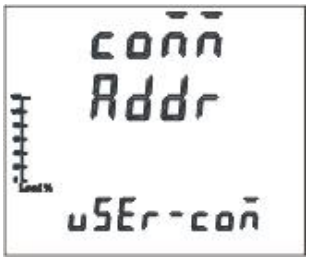
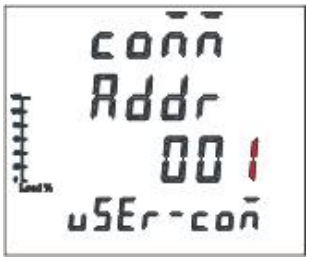
	In the initial interface, press the "St" key, and then press the "Dn" key continuously to find the menu item of User Setting, as shown in the figure on the left.
	Press "St" key, the password input interface will be displayed, as shown in the left figure, enter the correct setup parameter to enter the setup parameter interface, the factory initial password is 0001.

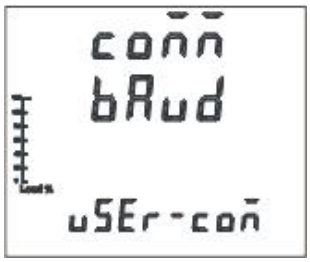
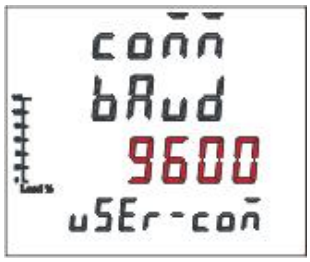
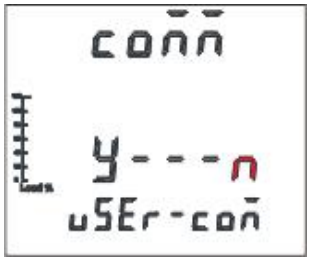
3.4.1 Power parameter setting

	Enter the user parameter setting interface, press the "Dn" key to find the power parameter setting menu item interface, as shown in the left figure.
	Press the "St" key to display the electrical parameter setting option interface, use the "Up" and "Dn" keys to find the CT ratio setting menu item, as shown in the left figure.
	Press the "St" key to display the CT ratio parameter setting interface, as shown in the left figure, through the digital increase and decrease key and "Bs" shift key to set the desired CT ratio value (setting value: 1-5000).
	Press the "St" key to return to the electrical parameter setting options interface, through the "Up" and "Dn" keys, to find the line system setting menu items, as shown in the figure on the left.

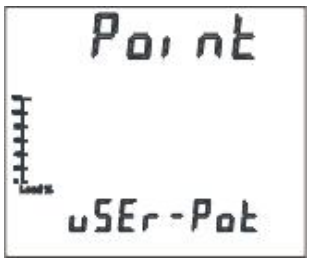
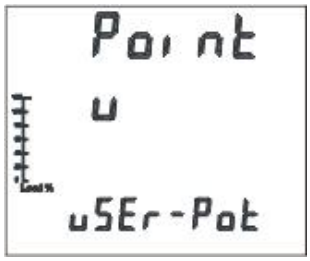
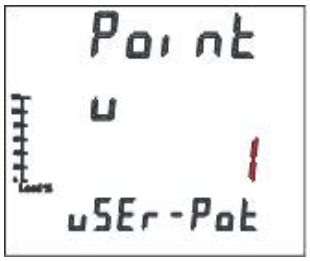
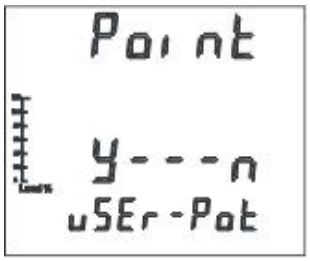
	Press the "St" key to display the line system parameter setting interface, and use the "Up" and "Dn" keys to set the desired line system value (setting options: 3P4L, 3P3L).
	After setting, press "St" to confirm the setting, press "Bs" continuously to select "y" blinking, and press "St" to confirm the saving parameters. Press "Bs" key continuously to select "y" blinking, and press "St" key to confirm the saving parameters, as shown in the left figure.

3.4.2 Communication parameter setting

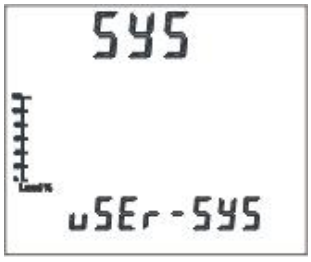
	Enter the user parameter setting interface, press the "Dn" key to find the communication parameter setting menu item interface, as shown in the left figure.
	Press the "St" key to display the communication parameter option interface, use the "Up" and "Dn" keys to find the communication address setting menu item, as shown in the left figure.
	Press the "St" key to display the communication address setting interface, as shown in the left figure, use the "Up" and "Dn" keys to set the desired communication address value (setting value: 1-253). Set the desired communication address value (setting value:1-253) by "Up" and "Dn" keys.

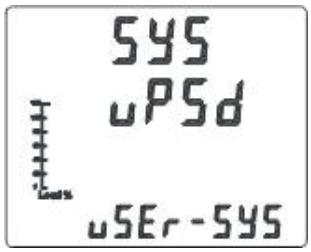
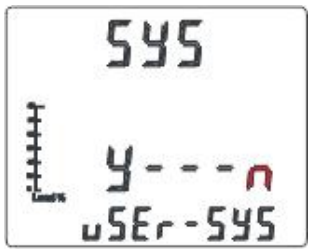
	Press the "St" key to return to the communication parameter option interface, use the "Up" and "Dn" keys to find the communication baud rate menu item, as shown in the left figure.
	Press the "St" key to display the baud rate setting interface, use the "Up" and "Dn" keys to set the desired communication baud rate (setting options: 4800/9600/19200). 19200).
	Press the "St" key to return to the communication parameter option interface, and use the "Up" and "Dn" keys to find the communication verification setting menu item, as shown in the left figure.
	Press "St" key to display the parity parameter setting interface, as shown in the left figure, set the required parity bit by "Up" and "Dn" keys (setting value: no/even/ odd). odd)
	After setting, press "St" to confirm the setting, press "Bs" continuously to select "y" blinking, and press "St" to confirm the saving parameters. Press the "Bs" key continuously to select "y" blinking, and press the "St" key to confirm the saving parameters, as shown in the left figure.

3.4.3 Display valid bit setting

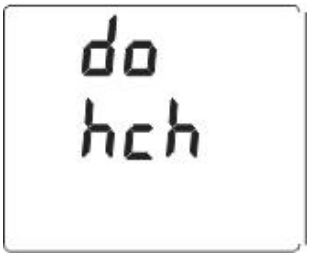
	Enter the user setting interface, press the "Dn" key, and find the valid bit parameter menu item interface, as shown in the left figure.
	Press the "St" key to display the effective bit parameter option interface, pass the "Up" and "Dn" keys to find the voltage effective bit menu item, as shown in the left figure.
	Press the "St" key to display the effective bit parameter setting interface, as shown in the left figure, use the "Up" and "Dn" keys to set the desired effective bit value (setting value: 0-3).
	After setting, press "St" to confirm the setting, press "Bs" continuously to select "y" blinking, and press "St" to confirm the saving parameters. Press the "Bs" key continuously to select "y" blinking, and press the "St" key to confirm the saving parameters, as shown in the left figure.

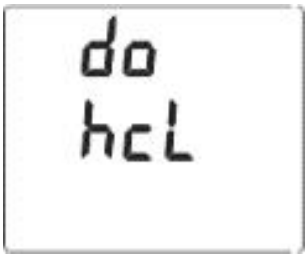
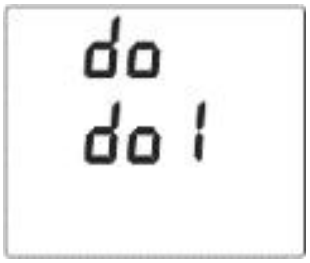
3.4.4 User Password Setting

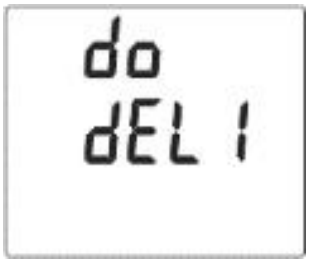
	Enter the user setup interface, press the "Dn" key to find the system parameter setup menu item interface, as shown in the left figure.

	Press the "St" key to display the system parameter setting interface, use the "Up" and "Dn" keys to find the user password menu item, as shown in the left figure.
	Press the "St" key to display the user password setting interface, use the "Up" and "Dn" keys to set the desired new user password, as shown in the left figure.
	After setting, press "St" to confirm the setting, press "Bs" continuously to select "y" blinking, and press "St" to confirm the saving parameters. Press "Bs" key continuously to select "y" blinking, and press "St" key to confirm the saving parameters, as shown in the left figure.

3.4.5 Parameter setting for open volume

	Enter the interface of user setting parameter, press the "Dn" key to find the menu item interface of setting parameter of open quantity, as shown in the left figure.
	Press the "St" key to display the open volume setting options interface, through the "Up" and "Dn" keys, to find the upper limit of the return parameter setting menu items, as shown in the figure on the left.
	Press "St" key to display the upper limit differential parameter setting interface, through the "Up" and "Dn" keys, set the upper limit differential value (the default is 0.9: that is, the action value is 0.9 times of the setting value), as shown in the left figure. 0.9 times of the set value), as shown in the left figure.

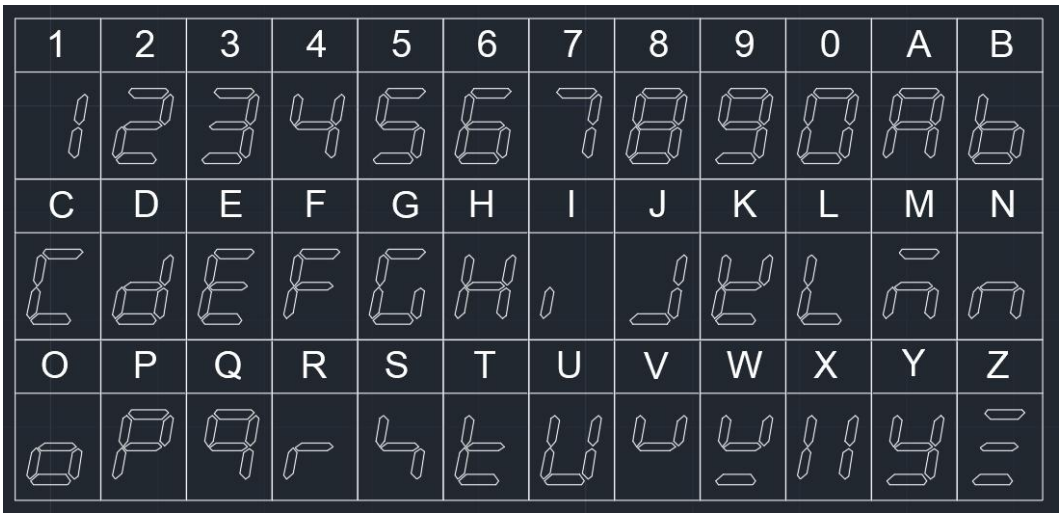
	Press the "St" key to return to the open volume setting options interface, through the "Up" and "Dn" keys, to find the lower limit return parameter setting menu items, as shown in the figure on the left.
	Press "St" key to display the lower limit return parameter setting interface, through the "Up" and "Dn" keys, set the lower limit return value (the default is 1.1: that is, the action value is 1.1 times of the setting value), as shown in the left figure. (default is 1.1: i.e. the action value is 1.1 times of the setting value), as shown in the left figure.
	Press the "St" key to return to the output setting options screen, and use the "Up" and "Dn" keys to find the DO1 output setting menu item, as shown in the left figure.
	Press the "St" key to display the DO1 output parameter setting interface, the default is DO1 output parameter channel selection menu item, as shown in the left figure.
	Press the "St" key to display the DO1 parameter channel setting interface, use the "Up" and "Dn" keys to set the desired channel parameter (setting value: IH/IL, etc. is optional; no is remote control output). no is remote control output).
	Press the "St" key to return to the DO1 output parameter setting interface, through the "Up" and "Dn" keys, find the DO1 parameter multiplier setting menu item, as shown in the left figure.

	Press the "St" key to display the multiplier setting option interface, use the "Up" and "Dn" keys to set the DO1 parameter multiplier (setting value: 1, K (i.e., the actual value = setting value x 1000), default is 1). x1000), default is 1).
	Press the "St" key to return to the DO1 output parameter setting interface, and use the "Up" and "Dn" keys to find the DO1 parameter setting menu item, as shown in the left figure.
	Press the "St" key to display the parameter setting option interface, use the "Up" and "Dn" keys to set the parameters of DO1 channel (Setting value: change based on the default parameter value, such as The upper limit value of current is 5A by default).

*Note: The power parameters corresponding to the open quantity output and the transformer output are all quadratic values, i.e. the current range is 0-5A.

3.5 Cautionary note

- Do not touch the terminals under the energised state or it will cause electric shock.
- Do not allow foreign objects such as liquids, combustibles, metals, etc. to penetrate into the product. Failure to do so may result in abnormal heat or smoke.
- Do not perform work (connection, disassembly, etc.) while the product is energised. Failure to do so may result in electric shock.
- Access voltage signals greater than 400V need to be accessed via PT, otherwise it may cause equipment malfunction.
- Please take safety measures (set fuses) on the outside of the product so that the safety of the whole system can be guaranteed in case of malfunction of the product or abnormalities due to external causes.
- Connect the wires and terminals correctly by referring to the wiring diagram. Poor contact can also cause abnormal heating or malfunction of the equipment.



After-sales service

1. If the user does not understand the description in the manual during installation and commissioning, please contact the aftersales team.
2. The company's technology is ready to answer product-related questions.
3. The problems arising in the use of the product will be replied within one working day.
4. Our company has a one-year free warranty for the above products from the date of sale.

Technical descriptions are subject to change without notice

Hangzhou Antin Power Technology Co.,Ltd.

R&D headquarters: 8th floor, Lufang Science and Technology Innovation Building, Xihu District, Hangzhou City, Zhejiang Province

Intelligent manufacturing base: 4th Floor, Building 3, Block C, Qinglan Science and Technology Innovation Park, Xihu District, Hangzhou City, Zhejiang Province

Email: sales@china-antin.com

Website: http://www.china-antin.com