1、Overview

The digital intelligent single and three-phase voltage/current meter is suitable for measuring and displaying electrical parameters of current and voltage in power grids and automation systems. By setting the magnification on the panel, it intuitively displays the operating point parameters of the system on the primary side. It has the advantages of good performance and anti vibration, and has high accuracy and stability. It can directly replace the original pointer instrument.Optional instrument measurement function：
(1) Three phase voltmeter (2) Three phase ammeter
(3) Single phase voltmeter (4) Single phase ammeter

2、Technical parameters

perform ance	**parameter**		
Input measure ment display	network		Single phase, three-phase three wire, three-phase four wire
	Voltage	Rated value	AC25~500V
		Overload	Duration: 1.2 times Instantaneous: 10 times/10 seconds
		power waste	<1VA (per phase)
		impedance	>500kΩ
		accuracy	RMS measurement, accuracy level 0.5
	electric current	Rated value	AC25mA~5A
		Overload	Duration: 1.2 times instantaneous 10 times/10 seconds
		power waste	<0.4VA (per phase)
		impedance	<2mΩ
		accuracy	RMS measurement, accuracy level 0.5
Power Supply	Scope of work		AC 220V±20%
	ower waste		≤5VA
output	Digital interface		RS-485, MODBUS-RTU protocol
environ ment	work environment		-10~55℃
	Storage environment		-20~75℃
security	Voltage resistance		Input/power>2kV, input/output>2kV, power/output>1kV
	insulation		Input, output, and power supply to the chassis>50M Ω

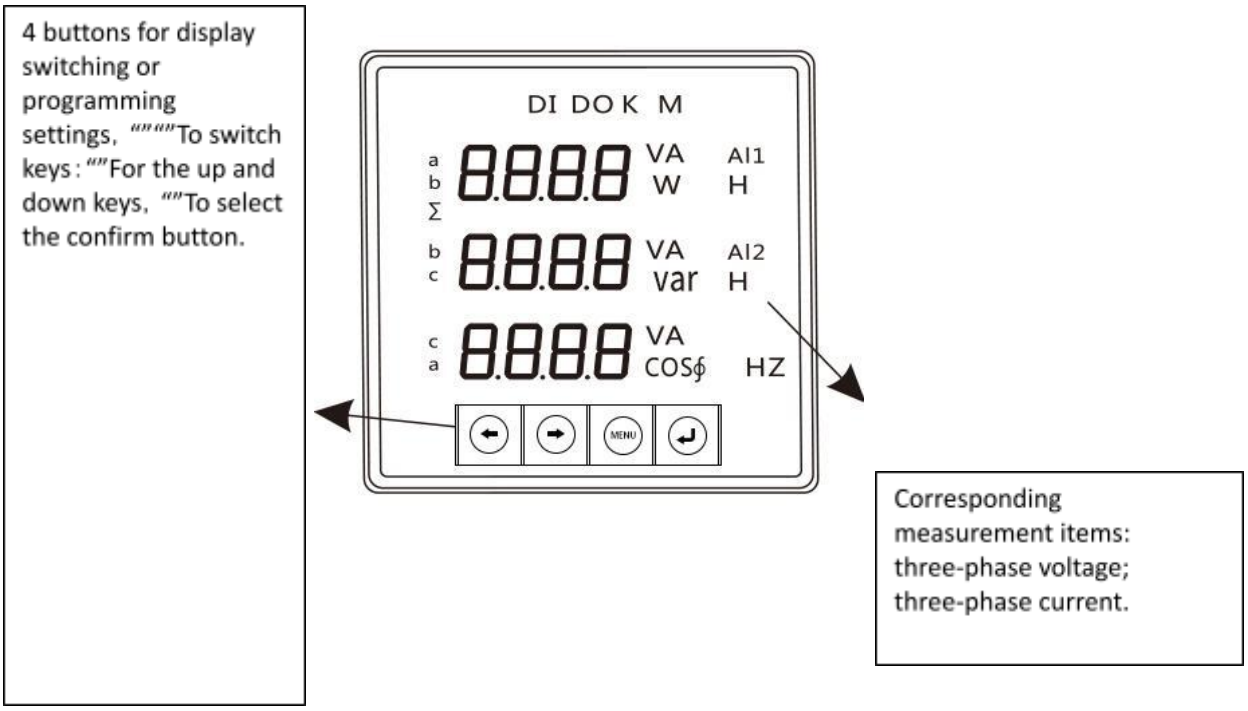
3、Key definition

enter key  ：Password entry confirmation and digital parameter modification confirmation.

Menu key  ：Used for selecting menu interfaces, exiting functions, and returning to higher-level menu functions.

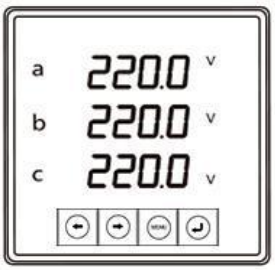
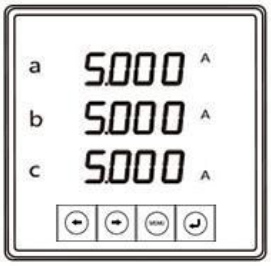
Right arrow key : hen measuring display, perform conversion function. When modifying data, this key is a numeric plus key.

Left : When measuring and displaying, use the conversion function, and when modifying data, use this key as a numeric subtraction key.

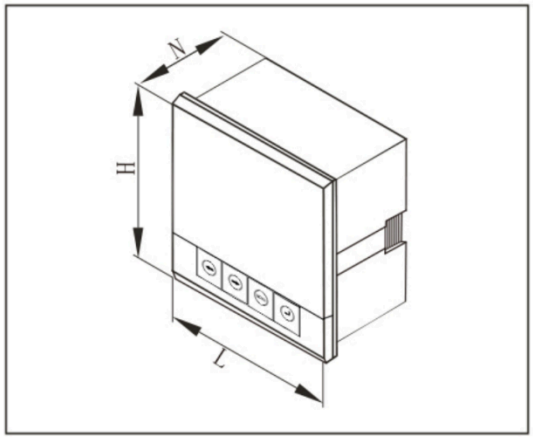


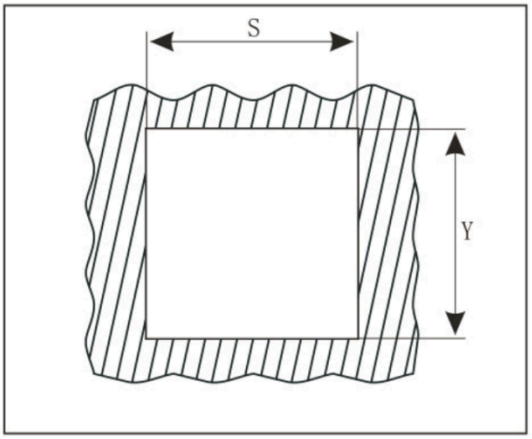
▲Display interface schematic diagram

page	content	explain
XS1=1		The content shown in the left figure is the multiplication of the input voltage value by the set PT conversion value for one voltage measurement.

XS1=2		In the left figure, IA=5.000A displays the current as a primary value, which is calculated by multiplying the input current value by the set CT transformation ratio
XS1=3		Display three-phase phase voltages Ua, Ub, Uc separately, press“ ”The key displays the line voltages Uab, Ubc, Uca. The left image shows the content of measuring the voltage once by multiplying the input voltage value by the set PT conversion value.
XS1=4		Display three-phase currents IA, IB, IC respectively,In the left image, IA=5.000A, IB=5.000A, IC=5.000A Display the current as a single value, which is the product of the input current value and the set CT transformation ratio

4、Installation size





Installation size: S × Y
Hole size: S × Y
Panel size: L × H (unit: mm)

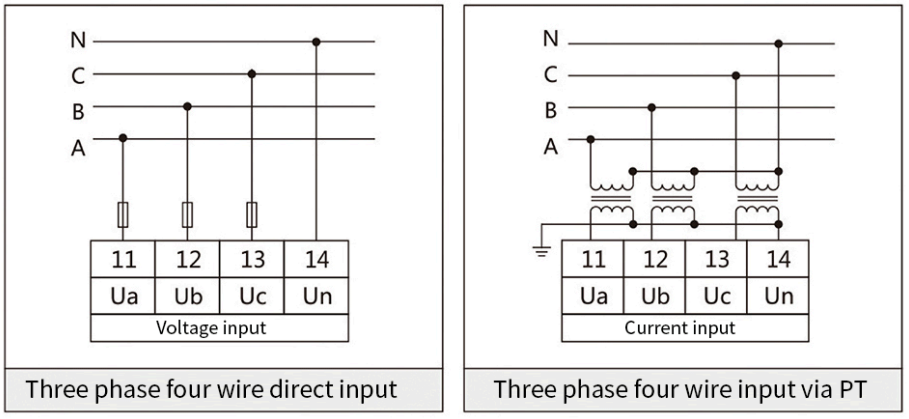
Panel size	Hole size	Total length
96*96	91*91	45

80*80	76*76	45
72*72	67*67	45

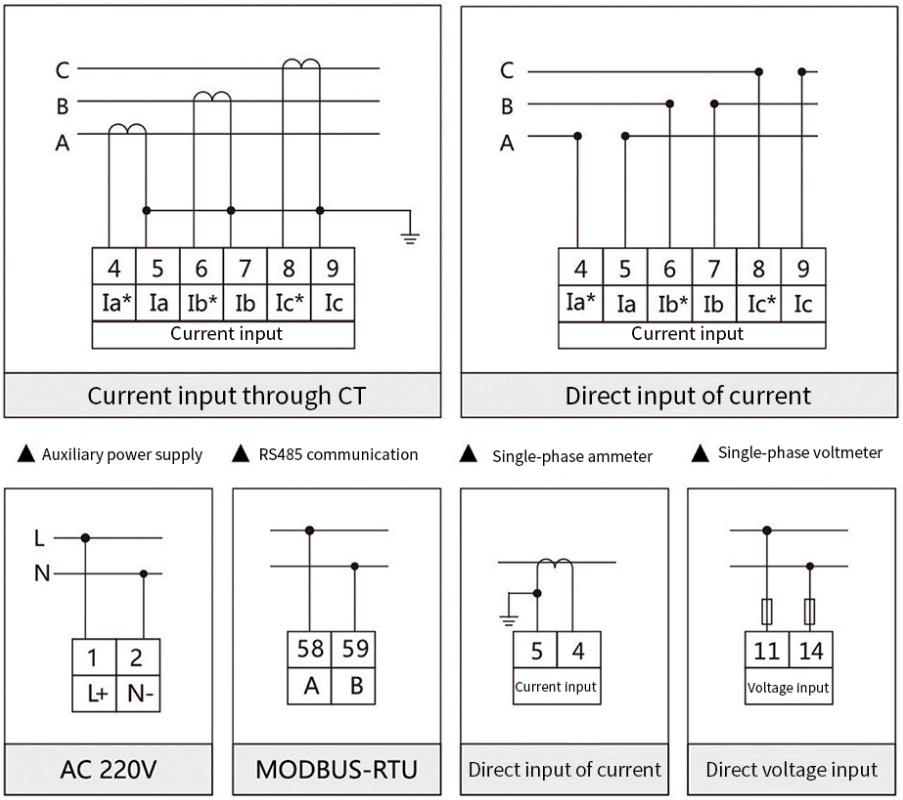
Installation steps:
1) Remove the side mounting card from the meter
2) Make a hole at the installation location that corresponds to the size of the opening
3) Insert the instrument into the hole, reinstall the installation card onto the meter from the back, and tighten it securely

5、Wiring diagram

▲Wiring diagram of three-phase voltmeter



▲Wiring diagram of three-phase ammeter

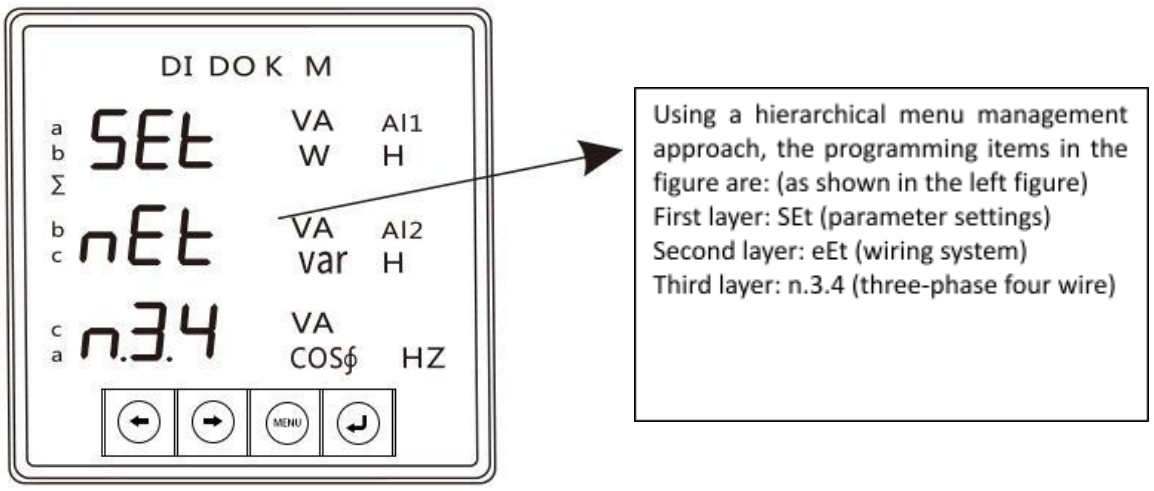


▲Operational programming

Under programming operation, the instrument provides four basic menu items: password verification and modification (CODE), system settings (SET), display settings (DIS), and communication settings (CONN). The hierarchical menu structure management method uses LED display: the first row LED displays the first layer menu information; The second row of LEDs displays the second layer menu information, while the third row of LEDs provides the third layer menu information.

The programming operation of the keyboard adopts a four key operation mode, namely: left and right movement keys“ ”“ ”Key, menu rollback key“ Menu ”、Menu enter/confirm button“ ”To complete all the operations of the above functions.

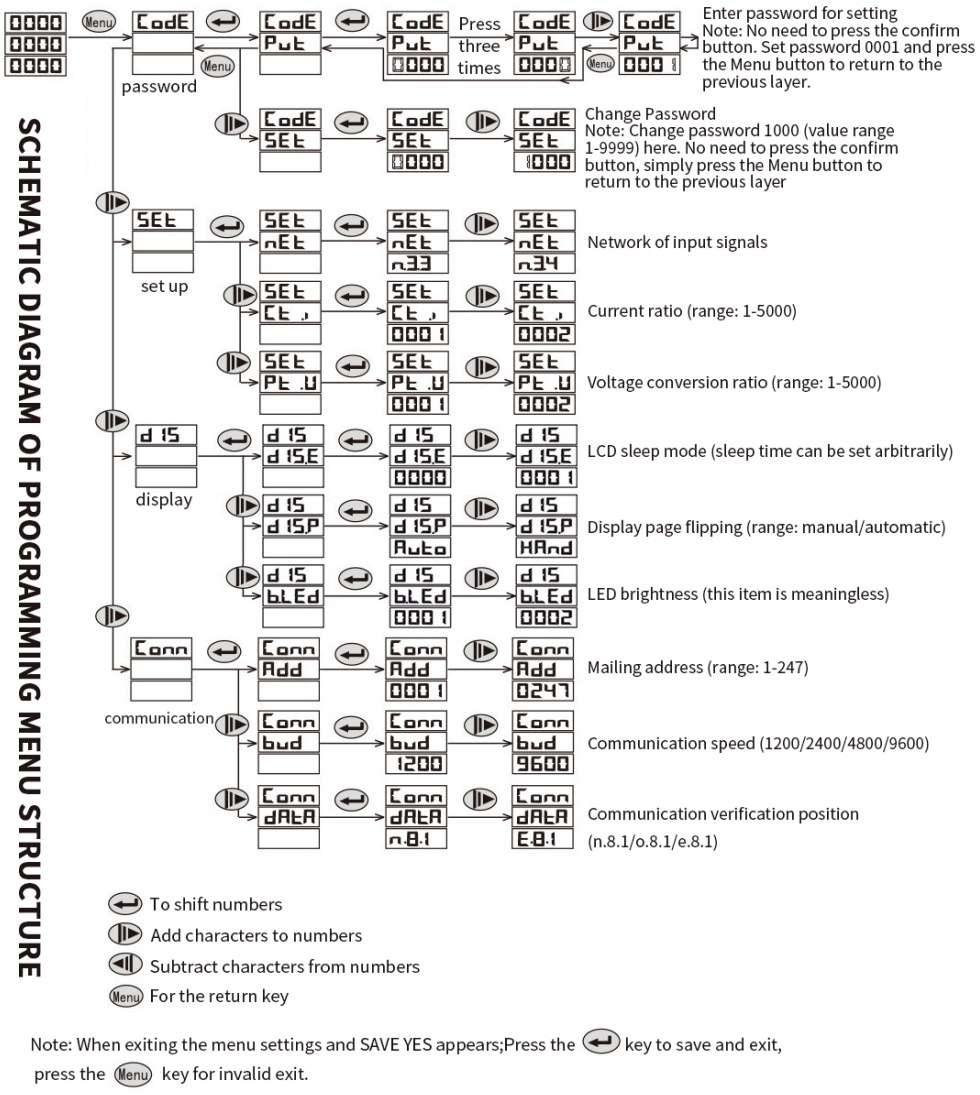
6、Programming operation



The organizational structure of the menu is as follows: Users can choose appropriate

programming settings parameters according to their actual situation.

first layer	The second layer	Third layer	describe
Password CODE	Verify Password Put	Password data(0~9999)	Programming can only be accessed when the entered password is correct. Default password:0001
	Change PasswordSet	Password data(0~9999)	Password verification must be successful before changing the password
system set up Set	Network NET	N. 3.4 and N.3.3	Select the input network for measuring signals
	Voltage conversion ratio PT U	1~5000	Set the voltage signal ratio to the 1st scale/ the 2nd scales Example: 10KV/100V=100
	Current conversion ratio CT I	1~5000	Set the current signal ratio to the 1st scale/ the 2nd scales Example: 200A/5A=40
display set up DIS	Display DISP E	0n/60	Selecting "0n" means it will be displayed continuously, selecting "60" means it will not be displayed after 60 seconds, and the button will not be displayed after another 60 seconds
	Display page flipping DIS P	Auto/HAnd	Auto: Refers to automatic page flipping, flipping every 2 seconds; Hand; Indicates manual page flipping
	Brightness B LED	0~6	Adjust the brightness of the digital display, with "0" being the darkest and "6" being the brightest.
communication parameter CONN	communication parameter CONN	1~247	Instrument address range 1-247
	Communication checksum dAtA	N.8.1/o.8.1/E. 8.1	N. 8.1: No check bit; o. 81: Odd verification; E. 8.1: Even verification
	Communication speed bud	1200-9600	Baud rates of 1200, 2400, 4800, 9600



The programming menu structure diagram allows users to select appropriate programming settings parameters based on their actual situation

MODBUS-RTU Communication Address Information Table					
address(Hex)	Data content	data format	data length(word)	Read/Write (R/W)	explain
0x00~0x09	保留				
Single-phase voltmeter and ammeter					
0x0A	Ua	Float	4	R	Single phase voltage data unit: 0.1V
0x16	Ia	Float	4	R	Single phase current data unit 0.001A

Three phase voltage and current meter					
One grid data (float)					
0x0A	Ua	Float	4	R	Three phase voltage data unit: 0.1V
0x0C	Ub	Float	4	R	
0x0E	Uc	Float	4	R	
0x10	Uab	Float	4	R	Three phase line voltage data unit: 0.1V
0x12	Ubc	Float	4	R	
0x14	Uca	Float	4	R	
0x16	Ia	Float	4	R	Three phase current data unit 0.001A
0x18	Ib	Float	4	R	
0x1A	Ic	Float	4	R	
Secondary power grid data (int/long integer data)					
0x46	Ua	int	2	R	Three phase voltage data unit: 0.1V
0x47	Ub	int	2	R	
0x48	Uc	int	2	R	
0x49	Uab	int	2	R	Three phase line voltage data unit: 0.1V
0x4A	Ubc	int	2	R	
0x4B	Uca	int	2	R	
0x4C	Ia	int	2	R	Three phase current data unit 0.001A
0x4D	Ib	int	2	R	
0x4E	Ic	int	2	R	
Universal mailing address					
0x12C	Instrument communication password	int	2	R/W	0000~9999, default value: 1
0x12D	Instrument communication address	int	2	R/W	1-247
0x12E	Voltage multiplier	int	2	R/W	PT=1-9999
0x12F	Current rate	int	2	R/W	CT=1-9999
0x130	Baud rate	int	2	R/W	0-1200;1-2400; 2-4800;3-9600
0x131	Communication data format	int	2	R/W	Data format 0-N.8.1 1-0.8.1; 2-E.8.1
0x132	Wiring system	int	2	R/W	0-Three phase four wire; 1-Three phase three wire
0x133	Voltage range	int	2	R/W	0-100V;1-220V 2-380V
0x134	current range	int	2	R/W	0-5A;1-1A

Precautions for using an electric meter:

- This device must be installed and maintained by professionals;
- Before wiring the device, the input signal and power must be cut off;
- Always use appropriate voltage monitoring devices to determine whether the

absence of voltage in various parts of the instrument will cause damage to the device or abnormal operation of the device;

- Auxiliary power supply, voltage, and frequency exceed the range;
- Incorrect polarity of current or voltage input;
- Plug and unplug communication plugs with power on;
- Not connecting the terminal wiring as required;

Please don't touch terminal when the meter is in operation