HPA, HPZ606

Single-Phase Digital Amperemeter and Voltmeter

User Manual

Before installing and using this product,
please carefully read this manual,
and keep it for reference

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1.Overview

This series of meter uses the AC/DC sampling, digital signal processing technology and the modular design to directly measure AC voltage, AC current, DC voltage and DC current from the power grid.

With long-life LED display, there are four programming keys on the meter panel. The user can perform the parameter programming setting at site conveniently with strong flexibility.

2.Features

a)Direct reading, four-in-one highlighted LED display;

b)High accuracy, good linearity in full scale;

c)Smooth operation, reliable performance.

3.Application

This product is mainly used as meter panel for high and low voltage switchgears, power cabinets, control cabinets and various electrical control devices on the power transmission and distribution systems, and are good alternative products of the electrical measuring meter with direct action simulation.

The performance of the meter complies with the standard IEC 60068-2, IEC 61010-1, IEC 60529, IEC 61000-4, IEC 61557-1.

4. Main technical parameters (see Table 1)

Table 1

Input signal	Network		Single–phase, Three–phase
	Voltage	Overload	Continuous: 1.2 × Un; Instantaneous: 2 × Un for lasting 1s
	Current	Overload	Continuous: 1.2 × In; Instantaneous: 10 × In for lasting 5s
	Frequency		45Hz ~ 65Hz
Display	Four–digit LED display in one row		
Accuracy	Current, voltage and frequency		Class 0.5
Auxiliary power supply	Range		AC220V ±15%
	Power loss		<2.5W
Safety	Voltage withstand	Input and auxiliary power supply	>2kV50Hz/1min
		Input and output	>2kV50Hz/1min
		Output and auxiliary power supply	>2kV50Hz/1min
	Insulation resistance		Auxiliary power, input, output versus meter enclosure >100MΩ
Environment	Ambient temperature: –10℃~45℃; relative humidity: ≥85%RH		
	Altitude: ≤2000m		

5 Model & Specification (see Table 2)

Table 2

Product name	Range	Connection Method
Single–phase AC voltmeter	0~500V	Direct connection
	500V/100V~600V/100V	External voltage transformer connection
Single–phase AC amperemeter	0~5A	Direct connection
	1A/A~10kA/1A, 5A/5A~10kA/5A	External current transformer connection
DC voltmeter	0~600V	Direct connection
	750V~1.5kV	External constant resistor connection
DC amperemeter	0~5A	Direct connection
	5A/75mA~10kA/75mA	External current divider connection

(Note: Special specification requires to be customized)

6 Installation and wiring

6.1 Outline dimensions and mounting-hole size (see Table 3)

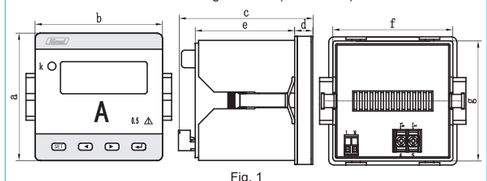
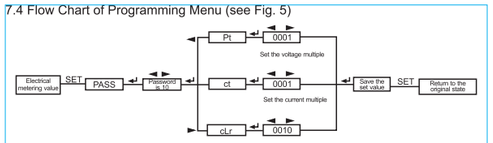


Fig. 1

Table 3 Unit: mm

Model	Dimensional code							Mounting–hole size	Remark
	a	b	c	d	e	f	g		
72□1	72	72	100.5	13.5	74.5	66	66	67 × 67	
96□1	96	96	100.5	13.5	74.5	90	90	92 × 92	
48□1	48	96	100.5	13.5	74.5	91	43	45 × 92	

7.4 Flow Chart of Programming Menu (see Fig. 5)



Threshold of minimum metering value: If 10 is set, it means one-thousandth of the range is not displayed

Fig. 5

8 Transportation and storage

The storage temperature is between -25℃ to +50℃, and the relative humidity does not exceed 85%RH. The harmful matters in air are not enough to cause corrosion to the meter.

7 Operation Introduction

7.1 Panel diagram (see Fig. 4)

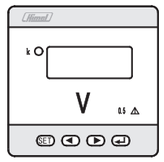


Fig. 4

7.2 Keyboard Functions

There are four keyboards such as"SET" " ◄ " " ► " " ↵ "

"SET": main menu key, used to enter the state of meter parameters setting, return to the previous menu or ignore the operation;

" ◄ ": "Add" key, used to select the function menu or do "add" operation when entering digits or ignore the operation;

" ► ": "Subtract" key, used to select the function menu or do "subtract" operation when entering digits or ignore the operation;

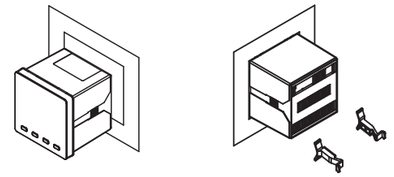
" ↵ ": "OK" key, used to enter the next menu or confirm or ignore the operation.

7.3 Instruction for Display Characters (see Table 4)

Table 4

Layer 1	Layer 2	Description
PT	0000-9999	Voltage transformation ratio
ct	0000-9999	Current transformation ratio
cLr	0000-100	Threshold of minimum metering value

6.2 Installation diagram (see Fig. 2)



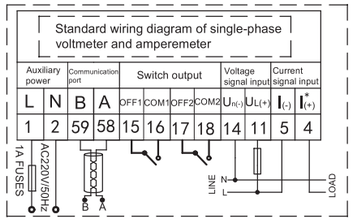
Front view Rear view

Fig. 2

6.3 Installation Introduction

The meter should be installed firmly. The meter must be working at the rated working power, and the external equipped constant resistor, current divider, current transformer and voltage transformer must be conformed to the nominal transformation ratio of the meter, which match the meter accuracy class with good contact in the circuit. Before use, the meter should be powered on only without metering work for 15 minutes. Do not operate with the live meter during the installation, repairing or maintaining to avoid personal risk and equipment damage.

6.4 Wiring Diagram (see Fig. 3)



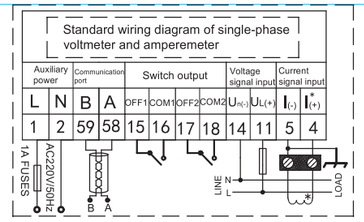


Fig. 3

6.5 Wiring Instructions

Wiring must follow the correct method on the meter wiring diagram, otherwise the meter may be damaged or displays the incorrect reading. Cable plug must be in good contact with the meter terminal block, and screws must be tightened firmly to avoid poor contact resulting in meter being burnt. The amperemeter is connected to the circuit in series which is being measured. The voltmeter and frequency meter are connected in parallel to the circuit which is being measured.

Voltage input: the input voltage is not higher than the rated input voltage of the product, otherwise PT should be considered to be used. For convenient maintenance, the terminal block is recommended. A fuse is recommended on the voltage input side to ensure safe operation;

Current input: the input current should not be higher than the rated input current of the product. If it is more than the rated current, the external CT should be used. For convenient maintenance, the terminal block is recommended. Before the meter is powered on for measurement, carefully check whether the wiring in the circuit is correct. Voltmeter and frequency meter cannot be in short-circuit, and amperemeter cannot be in open-circuit.