

MS1UI7E1 Energy Meter

User Manual



Heyuan Intelligence Technology Co.,Ltd

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IMPORTANT DECLARATIONS

1. This document is an instruction manual for MS1UI7E1. Its content will change as product is upgraded without notice. Please contactwith Heyuan Intelligence Technology Co., Ltd to get the latest product specifications if it is needed.
2. Heyuan shall not be responsible or liable for any damages or injuries caused by improper meter installation and/or operation.
3. Please read this manual carefully before the product is operated, and once you start, you'll be considered to have read this manual and accept all our terms.

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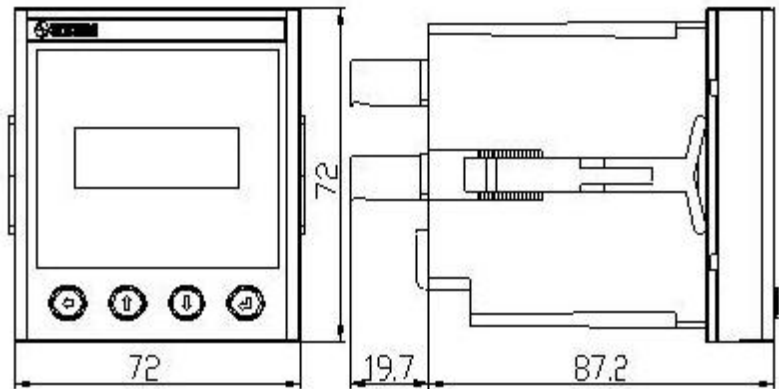
Meter Overview

MS1UI7E1 is a digital energy meter developed by our company independently. The Instrument can measure single phase voltage, single phase current, active power and reactive power, apparent power, power factor, frequency, active energy and reactive energy. Standard configuration only has 1 RS485 communication interface, if need to be able to extend 2 relay control or 4 digital input, this only as optional function use.

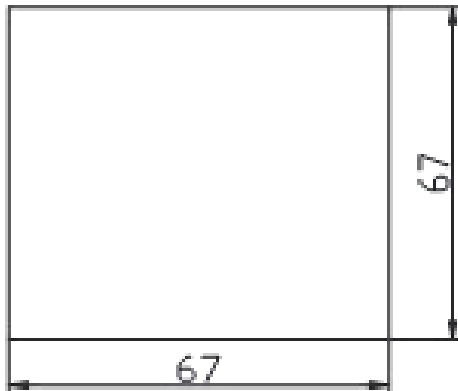
The instrument is widely used in power distribution, energy management, automation and intelligent network monitoring system in various industries.

Display: LED

Product Appearance



Cutout Size

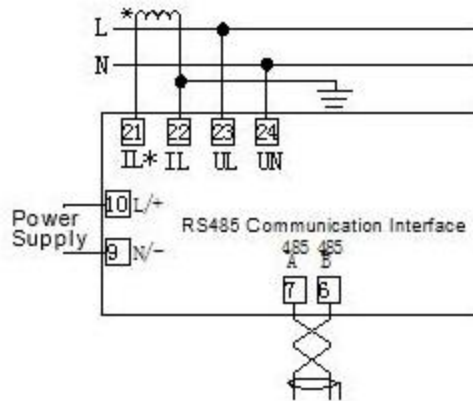


Meter Installation

MS1UI7E1 should be installed in dry, dust-free areas and avoid being placed in the heat source, the source of radiation, the vicinity of the strong interference source. MS1UI7E1 instrument is generally installed on the switch cabinet disk, would hand clamp meter loading disk from the front to rear opening, the dew on the disk on the front panel, after the main shell and the terminal is located in the area. Then, respectively from two fixed card back along the groove on both sides of the mount, and push forward, make the leading edge of the clamp clamping switch plate, this instrument has been installed horizontally on the switch cabinet put oneself in another's position.

Wiring Diagram

1. Voltage and current input terminal wiring instructions.

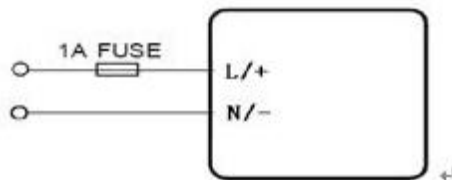


2. Power supply, communication, pulse, switching quantity and relay.

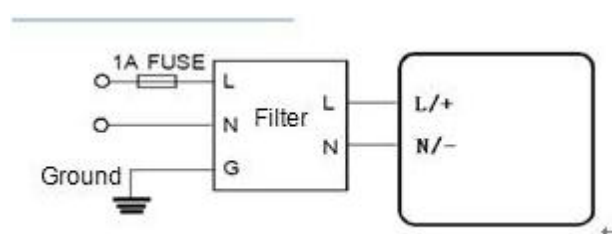
2.1 The power supply: AC85 ~ 265V(45 ~.55HZ) or DC85 ~ 300V.

The power terminals are respectively (L/+,N/-).

Typical power wiring is as follows:



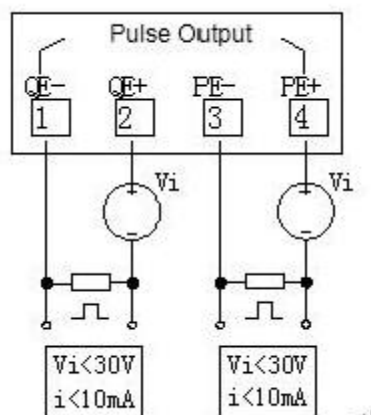
If the power supply for the MS1UI7E1 power supply is poor or serious. Interference, in order to improve the anti-interference ability, it is suggested to add in the auxiliary power circuit. EMC filter, as shown in the figure.



- 2.2 The Communication

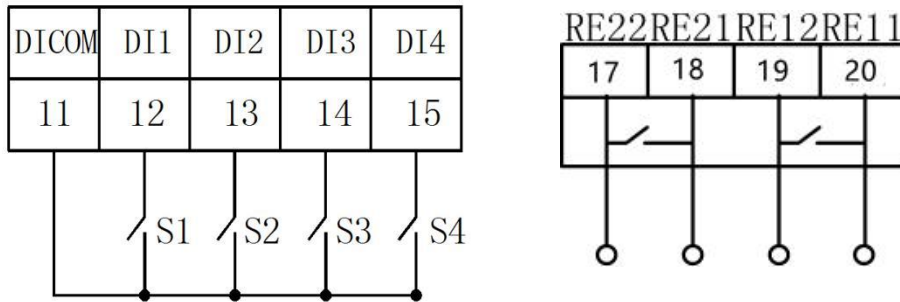
The communications of MS1UI7E1 use the RS485 interface and Modbus RTU communication protocol. The terminals are 485A and 485B respectively.

- 2.3 Pulse Output



Power pulse output (pulse constant of 18000) : PE- and PE+ as active power pulse output, QE- and QE+ as reactive power pulse output.

2.4 Digital Input & Relay Output



Power pulse output (pulse constant of 18000) : PE- and PE+ as active power pulse output, QE- and QE+ as reactive power pulse output.

Basic Operation

The meter usually works in the measurement data display mode, the voltage value measured in real time.

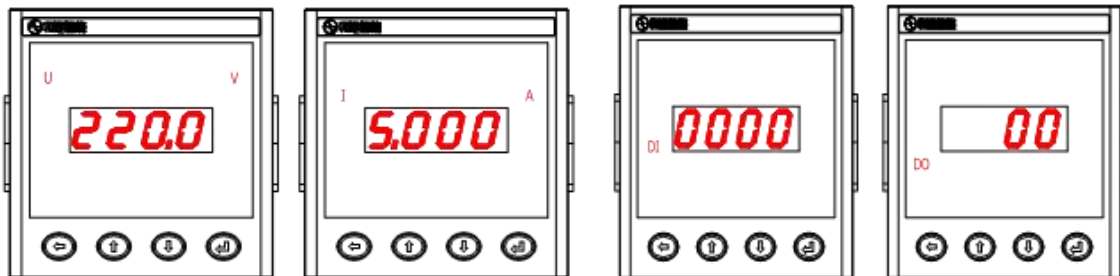
It will appear on the screen. A total of four buttons on the MS1UI7E1 meter are left - shift key

(←), increase key (↑), reduce key (↓), and confirm key (↵).

The parameters can be set by the operation of these four buttons.

1. Parameter display

1.1 The default display interface of the instrument is the voltage interface, and the (↵) button is the voltage interface, current interface, switch volume state interface and the relay control interface and the loop display.



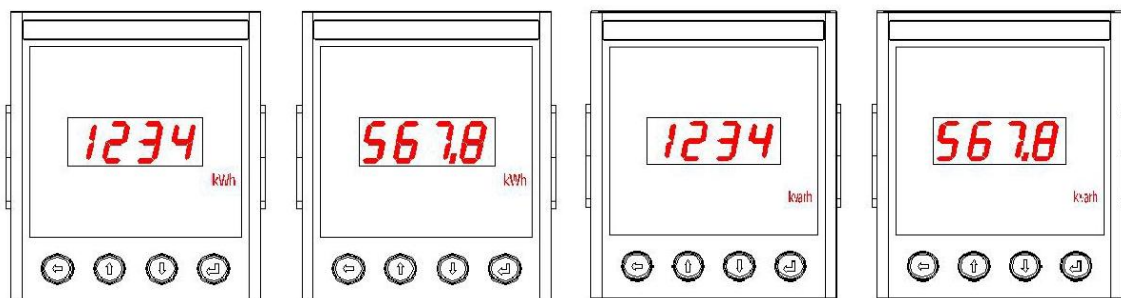
Voltage Interface

Current Interface

DI interface

DO Interface

1.2 (↵) can be used to display the energy parameters.




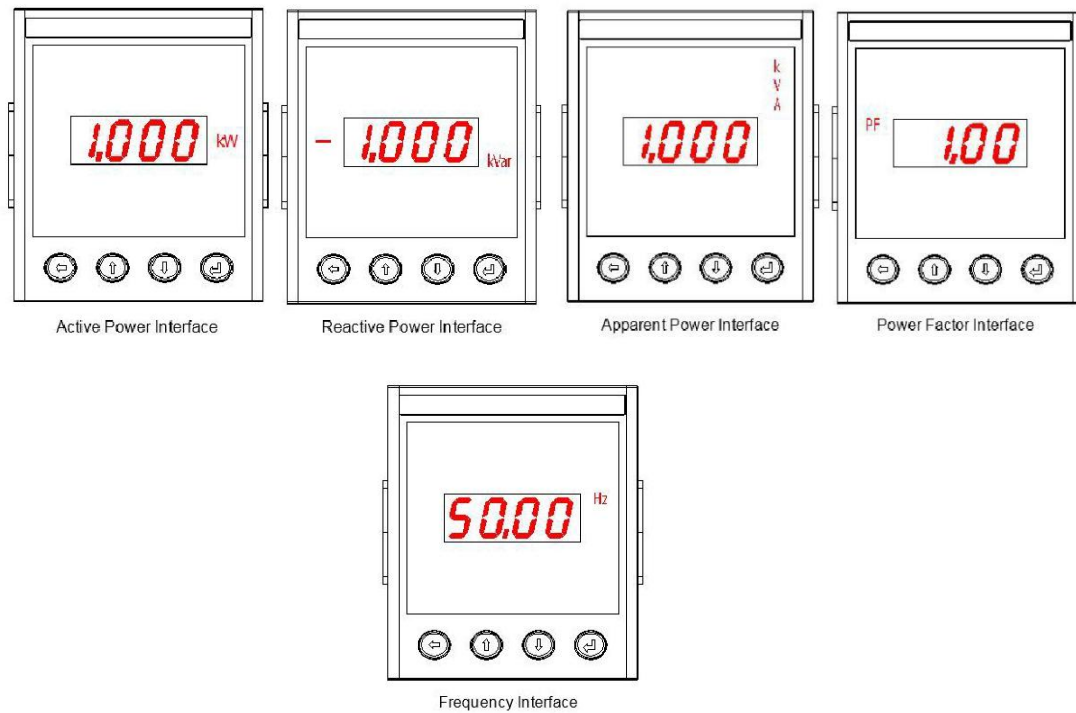
Active Energy High Four Digits Interface

Active Energy Low Four Digits Interface

Reactive Energy High Four Digits Interface

Reactive Energy Low Four Digits Interface


1.3 Press  to circulate the power parameters in turn.











2.1 system parameter setting.

In the measurement data display interface, press the  and  to enter the system parameter setting mode.

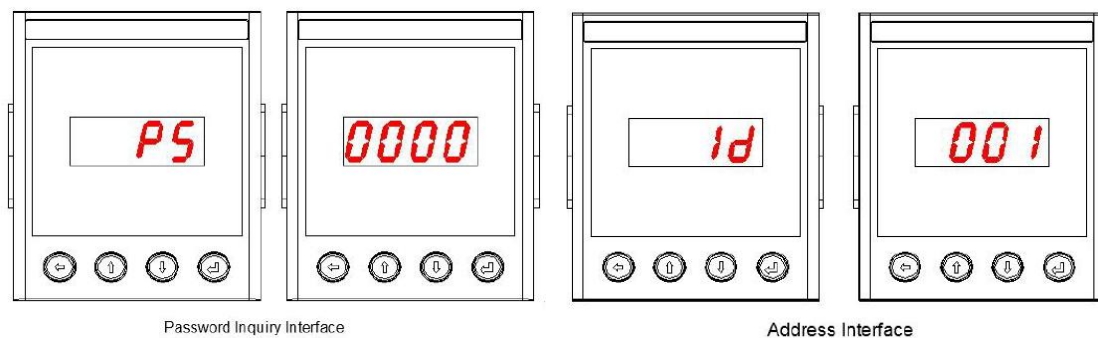
In setting mode:

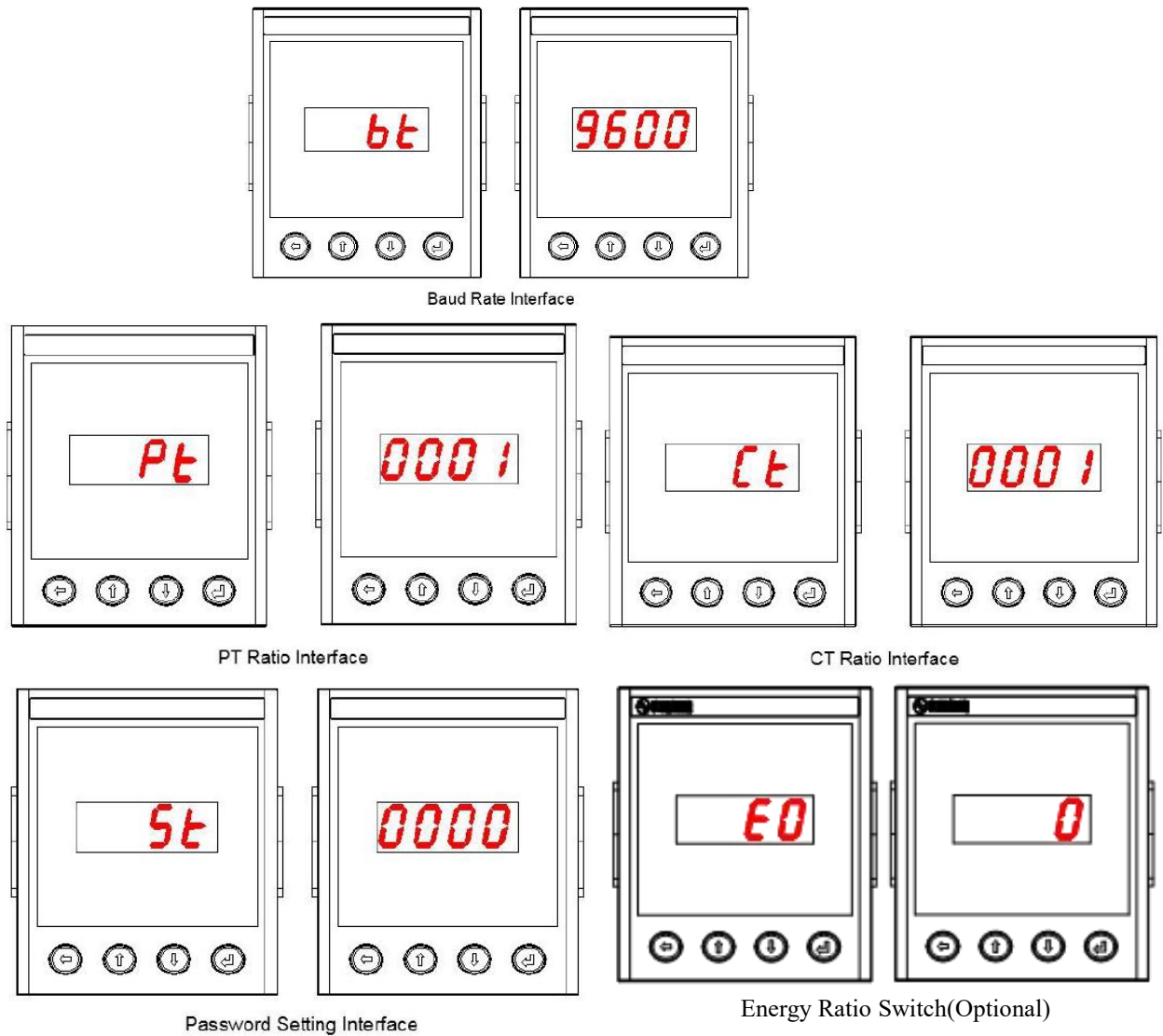
The  button is used to move the cursor, and each time, the cursor moves to the left of the cursor, while the light is at the same time.

The digits of the mark will flash and display;

The  is to add 1 key, namely each press , the position of the cursor is executed once plus 1 operation, full ten return to zero; The  is to subtract 1, that is, each press , the position of the cursor is executed. One operation at a time, minus zero return nine;  to confirm this screen content of parameter settings, and double screen to the next set up project, flip to the last screen, the screen press the  again, exit the system parameter setting mode, and return to the measurement data display; Set the page on any screen and press the  and  to exit parameter setting mode and back to the measurement data display interface.

2.2 Parameter setting Operation Steps





2.3 Parameter Setting Operation Steps.

2.3.1 Under the measurement data display interface, press " \leftarrow " and " \rightarrow " at the same time. Then will enter the system parameter setting mode.

2.3.2.3.2 The first interface of system parameter setting is PS, then press " \rightarrow ", enter the password inquiry interface, enter the meter password (the default password is 0000), press the " \rightarrow " to confirm the input password and enter the ID (address) interface. If the password is incorrect, the next step cannot be performed.

The ID interface is the interface of the meter address, this value is set to 1 ~ 247. After setting, press " \rightarrow " to confirm the current setting and enter the BT (baud rate) interface.

2.3.4. The interface of the BT interface refers to the device's baud rate setting interface, and then press the " \rightarrow ".

The baud rate of this instrument is 9600, 4800, 2400, 1200. After setting, press " \rightarrow " to confirm the current setting and enter the PT (voltage variable ratio) interface.

2.3.5 The PT interface is the instrument PT (transformer ratio). Press the " \rightarrow " to see the PT change ratio of the current meter, which is set. The product range of $PT \times CT$ is not greater than 5500, press the " \rightarrow " to confirm the current setting and enter the CT (current transformer) interface.

Setting examples:

If the instrument requires the PT to be 10KV/100V, the PT value of the meter should be set to 100 (That's 10,000 divided by 100, and the CT is the same as this.)

2.3.6 The CT interface is the interface of the instrument CT(current transformer ratio).

Press the "⊕" to see the CT ratio of the current meter, which is set. The product range of PT and CT is not greater than 5500, press "⊕" and enter the RE1 interface.

2.3.7 RE1 interface is the interface for the control mode of relay 1, which can be used in this interface.

See current meter relay 1 control mode, this value range is 0 ~ 1. 1 represents the pulse control mode

0 means the level control mode, and the setting is finished. Press "⊕" to confirm the setting and enter the RE2 interface.

2.3.8 RE2 interface set the interface for the relay 2 control mode. In this interface, the control mode of the meter relay 2 can be seen. The value range of this value is 0 ~ 1.1 represents the pulse control mode,

0 means the level control mode, and the setting is finished. Press "⊕" to confirm the setting and return the parameter display interface.

2.3.9 Press the "⊕⊕⊕" at the same time, enter the PS interface, this interface for the password inquiry interface enter the password (the default password is 0000) system, press the "⊕", enter the ST interface, if the input password is not correct, the next step is the next step cannot be performed.

2.3.10 ST for the password Settings interface, the interface can be seen the current password, this value range is 0000 ~ 9999, set up then press "⊕", confirm the current Settings, and enter the EO interface.

2.3.11 E0 interface for instrument power than switch Settings interface, the value range of 0 ~ 1, is set to 0 (factory default) electricity variable than switch is closed, instrument power interface shows the electricity value of transformer secondary side, is set to 1 said electricity than switch, instrument power interface of actual electricity power value of transformer. After the setting, press "⊕" to confirm the setting and back to the parameter display interface.

Parameter	Voltage	Range	220V
		Accuracy	Class 0.2
		resolution ratio	0.1V
	Current	Range	1 (6) A
		Accuracy	Class 0.2
		resolution ratio	1mA
	Power	Accuracy	Class 0.5
		resolution ratio	1W
	Energy	Accuracy	Class 0.5S
		resolution ratio	0.1kWh
Power Supply	working range	AC85~265V or DC110~300V	
	Consumption	<3.5W	
Insulation strength	2KV (The test voltage is AC RMS)		
insulation resistance	>5MΩ		
Working conditions	working temperature: -20°C~+70°C Storage temperature:-40°C~+80°C Relative humidity: 5%~95% (No condensation)		

After-sales Service

Product warranty

1. The warranty period is one years.
2. Within three years, the company will be responsible for the replacement or maintenance of the quality problem.

Repair, if the use is improper, then the cost and freight charges.

3. If the warranty period exceeds the warranty period, the maintenance fee will be charged according to the actual situation.

Service commitment

1. Reply within 12 hours of product technical consultation and quality complaint.
2. Provide solutions within 24 hours of quality complaints.
3. Except for statutory holidays, holidays and the irresistible factors.

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