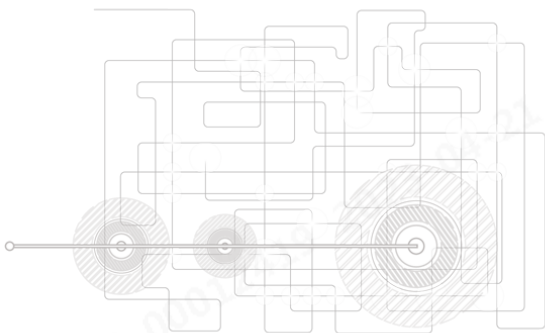


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METROI-3

Three Phase Electronic Energy Meter User Manual



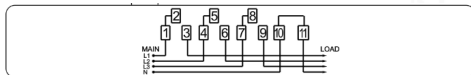
1.Product Appearance



2.Technical Specifications

Item	Parameters
Wiring Method	3P4W L1L1L2L2L3L3NN
Basic Current (I _b)	5A
Max Current (I _{max})	100A
Starting Current (0.4%I _b)	20mA
Nominal Voltage (U _n)	3 x 230/400V
Voltage Range	80% U _n ~ 120%U _n
Frequency (f _n)	50Hz ± 5%
Accuracy Class	Active IEC Class 1.0 Reactive IEC Class 2.0
Pulse Constant	Active 1000imp/kWh Reactive 1000imp/kvarh
Consumption Voltage Circuit Power	≤2W 10VA
Consumption Current Circuit Power	≤4VA
Working Temperature	-25°C~70°C







3. Wiring Diagram








4. LCD Display

4.1. LCD Display Introduction

Meter Full Display:

Symbol	Name	Function
	Short code	Display 3-digit short code
	Main screen	Indicates electricity quantity, demand, time, voltage, current and meter ID number, etc.
	Tariff indication	Display the current tariff
	Unit tag	Indicate the units of measurement data, including: 1) Power: kW, kVA, kvar; 2) Energy: kWh, kVAh, kvarh; 3) Current: A; 4) Voltage: V; 5) Frequency: Hz
	Tampering hand-shaped tag	This symbol is used to indicate whether the meter is in tampering status. The definition of the tampering incident in this project includes: opening the meter cover, opening the terminal cover The display mode is defined as follows: 1) Disappear, no tampering occurred. 2) Blink, tampering detected and being confirmed now. 3) Keep displaying, confirm detection of tampering event.
	Alert tag	This symbol is used to indicate the various alarm states detected by the meter. The definition of the alarm status of this project includes two types: 1) Meter Failure: relay failure, clock failure, unregulated, metering error.

		<p>2) Alert Events: current unbalance, overcurrent, current reverse, low power factor, overvoltage, undervoltage.</p> <p>Display Mode Definition:</p> <p>1) Disappear, no alert status has been detected.</p> <p>2) Blink, alert status has been detected.</p> <p>3) Keep displaying, meter failure has been detected.</p>
<p>L1 ← L2 ← L3 ←</p>	<p>Tags for phase off and current reversed</p>	<p>LCD includes three similar tags, each tag includes two symbols: "Ln" and "←", n ranges from 1 to 3, refers to three phases respectively.</p> <p>Definition of the display mode:</p> <p>1) "L1←": when 'L1' disappears, it means L1 phases off, when the tag keeps displaying, it means the voltage of L1 is normal. When '←' keeps displaying, it means the current of L1 is reversed.</p> <p>2) 'L2←': when L2 disappears, it means L2 phases off, when L2 keeps displaying, it means the voltage of L2 is normal. When '←' keeps displaying, it means the current of L2 is reversed.</p> <p>3) 'L3←': when L3 disappears, it means L3 phases off, when L3 keeps displaying, it means the voltage of L3 is normal. When '←' keeps displaying, it means the current of L3 is reversed.</p> <p>4) L1, L2, or L3 flashing, indicating that the corresponding phase of the meter is overvoltage or undervoltage.</p> <p>5) L1, L2, or L3 keeps displaying, indicating that the corresponding phase of the meter is normal.</p>
	<p>Relay tag</p>	<p>Indicate the status of relay.</p> <p>Definition of the indications:</p> <p>1)  When the tag keeps displaying, the relay is closed;</p> <p>2)  When the tag keeps displaying, the relay is off;</p> <p>3)  When the tag blinks, the relay is in pre-on status;</p> <p>4)  When the tag blinks, the relay in error status (the status of the relay</p>

		detection circuit and the logic status of the relay do not match).
	Energy level tag	In the pre-paid mode of the meter, the current remaining credit limit levels are divided as follows: When the low credit limit is not 0, the grade is divided by the ratio of the low credit limit, when $0 < \text{the remaining credit} \leq \text{the low credit limit}$, the level is grade 1; when the low credit limit $< \text{the remaining credit} \leq 2 \times \text{the low credit limit}$, the level is grade 2, and the subsequent levels are analogized.
	Quadrant tag	
	Payment mode tag	
	External battery tag	
	Reserved	
	Reserved	
	Meter cover opening tag	
	Terminal cover opening tag	
	Reserved	
	Reserved	
	Indicators1~4	

4.2. Display List

- Auto scroll display list for the meter:

Short code	Display item
007	Remaining credit

> Button display list:

Short code	Display item
007	Remaining credit

> Power off display list for the meter:

In prepaid mode:

Short code	Display item
007	Remaining credit

In postpaid mode:


Short code	Display item
001	Total active energy (forward + reversed)

4.3 LED Indicator

LED	Description
Active pulse LED	Red, blinks during the consumption of active power.
Reactive pulse LED	Red, blinks during the consumption of reactive power.
Alert LED	Red, blinks when alert events happen, and keeps displaying when the relay is opened.
Credit LED	Keep displaying in green when the credit is normal.
	The green light blinks when it's on low credit threshold.
	The emergency mode hasn't been activated, the red light blinks when it's arrearage and the relay is off.
	In the emergency mode (or friendly period), the green and red lights flash alternately.
	The emergency mode has been activated, the red light keeps displaying when it is arrearage and the relay is off.

5. Power Purchase Procedure

5.1 Check Meter ID



Input "6" "5" and then press  via keypad, the meter will display the 11-digit meter ID number, which is automatically split into two screens.

Note: the displayed number must be the same as the user ID (for power purchase).

5.2 Power Purchase Process

- Visit the local power sales office to purchase power.
- Provide meter ID number to the operator.
- Inform the operator how much credit you want to buy and pay the bill.
- Obtain the power purchase TOKEN (20-digit).

5.3 Recharge Meter

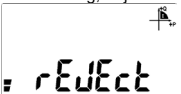
- Input the 20-digit of purchasing TOKEN via keypad.
- Confirm the TOKEN code already entered on the screen.
- If TOKEN is input wrongly, please delete by " on keypad.
- After the input TOKEN is correct, press " to confirm.
- If TOKEN is correct, "accept" will be displayed on screen, and meter recharge is successful.
- If TOKEN is wrong, "reject" will be displayed on screen, and recharge is failed.

6. LCD Data of Purchase Power

- If TOKEN is correct, "accept" will be displayed as follows:



- If TOKEN is wrong, "reject" will be displayed as follows:



- If TOKEN is expired, "old" will be displayed as follows:



- If TOKEN has been used, "used" will be displayed as follows:



7.Troubleshooting

Conditions	Solutions
LCD characters appear missing and unclear, pulse LED flashes but no LCD display.	LCD displays abnormal, contact the manufacturer or local agent to change LCD.
No LCD display, the pulse LED doesn't flash.	1.Check whether the wire is connect correctly or not; 2.Check whether voltage is within operating range.
LCD display is normal, but the energy pulse LED doesn't flash during power consumption.	1. Check whether the wire connects correctly or not; 2. Power consumption less than 0.4%lb.

8.Clean Meter

Use a soft cloth to clean meter until it is clean. The meter must be cleaned regularly.

- Don't use sharp object to clean meter.
- Don't use wet cloth to clean meter.
- Don't use the liquid like alcohol to clean meter.