3.2.5 In places that are dirty and may damage the organization, the electric energy meter should be installed in a protective cabinet.

3.2.6 When installing and wiring, you should follow the wiring diagram on the terminal button cover of the watt-hour meter or the corresponding wiring diagram in this manual. It is best to adapt to the introduction of multiple copper wires to prevent the watt-hour meter from working abnormally or burned due to poor contact.

3.3 Instructions for use

3.3.1 When the electric energy meter is used in areas with more lightning, lightning protection measures should be taken to avoid damage to the electric energy meter due to lightning strikes.

3.3.2 The load capacity of the electric energy meter is betweer0.05 1b" 1max (directiy connected) or 0.02 1b~1max (connected via transformer). If the load capacity is exceeled, the electric energy meter will be inaccurate or. The current coil heats up and burns out.

3.3.3 When the watt-hour meter is used with a transformer, that is, the current transformer-connected watt-hour meter must be multiplied by the transformer multiplier after reading its electrical energy value to be the actual power consumption.

3.3.4 Power supply indication: When the three LED indicators A, B, and C are on, it indicates that the three-phase power supply is normal; when a phase voltage is lacking, the corresponding voltage loss indicator is off.

3.3.5 Pulse indication: When the PULSE indicator light is on, it means that an electric energy pulse is detected (when there isa sampling signal, the pulse indicator light is on for about 80ms)

3.3.6 Reverse power consumption indication: When the Rev indicator light is on, it means it is in the direction power consumption state.

5, measurement method

The electric energy meter is equipped with a photoelectric coupling type electric energy pulse test output port, which is located on the terminal button box. Connect the +5vdc of the test equipment to the No. 8 (positive) terminal, and the signal wires to the No.7 (negative) terminal. can

6. communication interface

The electric energy meter is equipped with RS485 communication function, the communication interface is located on the terminal button box, and the communication equipment is connected to No.16 (A) and No.15 (B).

7. Transportation and storage

7.1 The transportation and unpacking of the electric energy meter should not be subject to severe impact, and should be transported and stored in accordance with the provisions of ZBY002-81 "Basic Environmental Conditions and Test Methods for Transportation and Storage of Instruments and Meters"

7.2 The electric energy meter should be stored in the original packaging box. The ambient temperature of the storage place is -30°+65C. the relative humidity does not exceed 95%, and the air does not contain enough gas to cause corrosor, and the ambient temperature should not change drastically.

7.3 The electric energy meter should be placed on the stand under the condition of the original packaging, and the sta cking height should not exceed five boxes. After unpacking, the stacking height of a single-packagied electric energy meter should not exceed five. After unpacking the inner packaging (plastic bag) The electric energy meter should not be stored

8. Guarantee period

Within 12 months from the date of manufacture of the electric energy meter, if the user finds that the electric energy meter does not meet the above characteristics and the technical requirements specified in the product standard, the remanufacturer inspection lead seal is still complete

(Or certified by the relevant power measurement department) and fully comply with the transportation, storage, installation and use rules stated in this manual if there is a quality problem, the manufacturer will repair or replace it free of charge.

Attached Table 1 Communication Identification (when the communication protocol is DL/T645-2007)

| Serial number | Data item name | Data Format | Data length | Read/write | Communication logo |
|---|---|---|---|---|---|
| 1 | Total positive active energy | XXXXXX. XX | 4 | Read only | 00010000 |
| 2 | Table number | NNNNNNNNNN | 6 | Read/write | 04000401 |
| 3 | Meter constant | XXXXXX | 3 | Read only | 04000409 |
| 4 | Meter status word 1 | XXXXXX | 3 | Read only | 04000501 |
| 5 | Password permissions and passwords | XXXXXXXX | 4 | write | 04000C01 |

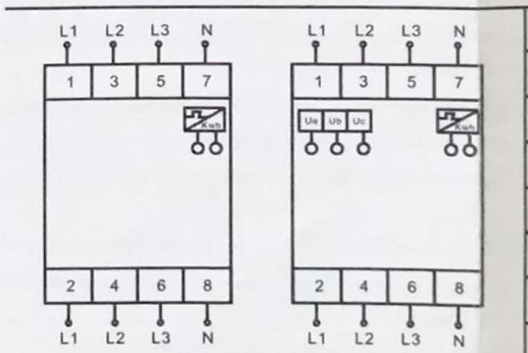


Attached Table 2 Communication Identifier (when the communication protocol is MUDBUS-RTU)

| Serialnumber | Address (16 in HEX) | Data item name | Data Format | Read/write | Data length | Remarks |
|---|---|---|---|---|---|---|
| 1 | 0000H—0001H | Total active power | XXXXxx.Xx kWh | Read only | 4 | |
| 2 | 0004H | Active constant | XXXX | Read only | 2 | |
| 3 | 0006H | Clear the bottom | When command data C119, clearthe battery (low is 0xc1; highis0X19). | | 2 | |
| 4 | 0007H Low byte | Table address | 001—247 | Read/write | 1 | |
| 5 | 0008H Low byte | Through tRrate | 01：9600；<br>02：4800；<br>03：2400；<br>04：1200； | Read/write | 1 | default<br>01：9600 |
| 6 | 0009H Low byte | Data Format | 01：N，8，1；<br>02：0，8，1；<br>03：E，8，1； | Read/write | 1 | default<br>01：N，8，1 |

Display mode: LCD screen display Accuracy: Level 1 Dimensions: width 76 * length 101 *thickness 65 (mm)
Power consumption: less than or equal to 2W/5VA Product weight: about 0.5KG

## PRODUCT.WIRING METHOD




| Terminals | note |
|---|---|
| 1/2 | L1 in and out (the arrow indicates that it is in) |
| 3/4 | L2 in and out (the first instruction is to enter) |
| 5/6 | L3 in and out (the arrow indicates that it is in) |
| 7/8 | N neutral |
| 9/11/13 | Ua/Ub/UC (CT access) |
| 23/24 | Pulse terminal |
| | |

1. Overview

The three-phase four-wire guide rail electronic watt-hour meter is a new type of triathlon electronic watt-hour meter developed by our company using microelectronics technology to measure electrical energy, imported special large- scale integrated circuits, digital sampling processing technology and advanced technologies such as SMTI art. The electric energy meter fully complies with the relevant technical requirements of the GB/T17215.321-2008 national standard and the EC62053-21 international standard for the class 1 three-phase active energy meter; it can directly and accurately measure the positive active energy in the energy metering, and the 7-digit LCD display shows Active power consumption, with good reliabillity, small size, light weight, beautiful appearance, advanced technology, 35mmDIN standard rail type installation and other characteristics: and has good anti-electromagnetic interference, low self-consumption, power saving, high precision, high, overload, high Stability, anti-theft, long life.

This meter is suitable for measuring three-phase AC active energy with a rated frequency of 50Hz or 60Hz. For fixed in stallation indoors, suitable for ambient temperature not exceeding -25-+55C, relative humidity not exceeding 95%, and the air does not contain corrosive gases and avoid dust, mold, saltspray, condens ation, insects, etc. influences.

2. Main specifications and technical parameters

2. 1 Electric energy meter specifications:

| name | model | Accuracy | Rated voltage Ub | specification: |
|---|---|---|---|---|
| Three-phase guide rail Meter | DTS | Level 1 | 220/380V<br>57.5/100V | 1.5(6)、5 (20)、5 (30)、10 (50) A<br>10 (60) A、15 (90) A、20 (80) A、20 (100) A、5 (65) A、5 (100) A |

Note: In the rated current column, the value before the brackets is the nominal current value 1b, and the value in the brackets is the rated maximum current value Imax.

2.2 Technical parameters

2.2.1 Error limit:

Basic error limit of electric energy meter with balanced load

| Current value | | Power factor (COS ) | Percentage error limit (%) | |
|---|---|---|---|---|
| DC access | Access via transformer | | Level 1 | Level 2 |
| 0.05Ib | 0.02 Ib | 1.0 | ±1.5 | ±2.5 |
| 0.1 Ib | 0.05 Ib | 0.5L | ±1.5 | ±2.5 |
| | | 0.8C | ±1.5 | — |
| 0.1 Ib~Imax | 0.05 Ib~Imax | 1.0 | ±1.0 | ±2.0 |
| 0.2 Ib~Imax | 0.1 Ib~Imax | 0.5L | ±1.0 | ±2.0 |
| | | 0.8C | ±1.0 | — |

The basic error limit of the electric energy meter with a single-phase load

| Current value | | Power factor (COS ) | Percentage error limit (%) | |
|---|---|---|---|---|
| Direct access | Access via transformer | | Level 1 | Level 2 |
| 0.1 Ib~Imax | 0.05 Ib~Imax | 1.0 | ±2.0 | ±3.0 |
| 0.2 Ib~Imax | 0.1 Ib~Imax | 0.5L | ±2.0 | ±3.0 |



2.2.2 Start

Under the conditions of rated voltage, rated frequency and COso=1, when the load current of the electric energy meter is the value specified in the following table, the electric energy meter can start and continuously measure electric energy.

| Instrument type | Accuracy level 1 | Accuracy level 2 |
|---|---|---|
| Direct access | 0.004Ib | 0.005Ib |
| Connected via transformer | 0.002Ib | 0.003Ib |

2.2.3 Creeping

When there is no current in the current circuit of the electric energy meter, and the voltage applied to the voltage circuit is 115% of the rated value, the test output of the electric energy meter should not generate more than one pulse.

2.2.4 Insulation performance

All circuits of the electric energy meter can withstand a pulse voltage with a waveform of 1.2//50u s and a peak value of 6KV between the shells. Under different polarities, each continuous test 10 times without arc discharge or breakdown. All circuits of the electric energy meter can withstand the actual sine wave AC voltage 2KV with a frequency of 50Hz between the watch case or the metal parts that can be touched outside the watch case, and the test will not break down for one minute.

2.2.5 Operating voltage limit: 70-115%Ub

2.2.6 Consumption: <2W and 10VA

2.2.7 Display LCD display

2.2.8 The data can be stored for 12 months. After the power is off, the data can be stored for at least 10 years.

3. Installation and use

3.1 Installation precautions and methods

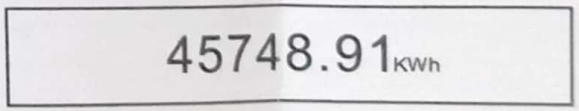
3.1.1 The watt-hour meter has been inspected and qualified before leaving the factory, and sealed with a lead seal. It can be installed and used. For electric energy meters that are lead-free or stored for too long, they should be re-inspected by the relevant department before installation and use.

3.1.2 When the electric energy meter is taken out from the original packing box, if the inner packaging or outer casing is damaged, please do not install or power on the meter, please contact our company's technical service department.

3.1.3 The installation of electric energy meters requires experienced electricians or professionals, and be sure to read this manual.

3.1.4 The electric energy meter should be installed in a ventilated and dry place indoors, using 35mmDIN standard rail type installation. The bottom plate of the electric energy meter should be fixed on a solid fire-resistant and non-vibrating wall.

3.1.5 In places that are dirty and may damage the organization, the electric



# How to wire