8 Transportation and storage

The energy meter shall not be impacted severely during transportation and unpacking. The storage temperature is ranged from -25℃ to +70℃, and the annual average relative humidity does not exceed 75%, and the environment shall be free of corrosive gas and moisture-proof.

Appendix:

Appendix 1: DL/T 645-2007 Data Identification Table

Data Identification				Data Format	Data length (byte)	Unit	Function		Data Item Name
DI₃	DI₂	DI₁	DI₀				Read	Write	
04	00	04	01	XXXXXXXXXXX	6		*		Address
04	00	04	02	XXXXXXXXXXX	6		*		Table No.
00	00	00	00	XXXXXX.XX	4	kWh	*		(Current) total combined active energy
00	01	00	00	XXXXXX.XX	4	kWh	*		(Current) total positive active energy
00	02	01	00	XXXXXX.XX	4	kWh	*		(Current) total negative active energy

HDDS606
Single-phase Electronic Watt-hour Meter (LCD, infrared, and 485)

User Manual

Applicable Standard:IEC 62053-21
□ please carefully read the User Manual before the installation and use of the products, keep it properly as backup.

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1 Overview

HDDS606 single-phase electronic electric watt-hour meters (hereinafter referred to as "meter") can be used to meter the single-phase AC active electric energy in the power network with a reference frequency of 50Hz. This meter is with high accuracy, good reliability, and high stability. This meter is the high-tech product manufactured by SMT process with the international advanced ultra-low power consumption large scale integrated circuit technology. Key components use long-life components which are international brands, improving the reliability and service life of the product. Furthermore, palmtop can be used for infrared communication, and palmtop or PC computer is used for 485 communication for convenient reading by the user.

2 Working principle

The energy meter is mainly composed of two main functional parts: one is energy metering part and the other is microprocessor control part. The energy metering part of this meter uses large-scale application-specific integrated circuits to generate and send impulse sequence that indicates how much electricity is used to the microprocessor for watt-hour metering. After receiving pulse signal, the microprocessor will accumulate the number of input pluses to realize the accurate metering of power energy according to the size of pulse constant, and various interfaces are used to transfer data to realize various control functions, as shown in Fig. 1.
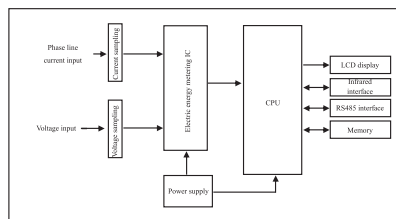

Fig. 1 Working principle block diagram of electric energy metering unit

3 Model & Specifications

Table 1 Watt-hour Meter Specifications

Model	Name	Reference frequency (Hz)	Reference voltage (V)	Basic current (A)	Class
HDDS606	Single-phase electronic watt-hour meter	50	220, 230	1.5 (10) A 5 (50) A 5 (60) A 10 (100) A	Class 1, 2

4 Main technical parameters

4.1 Basic errors listed in the following Table:

Table 2 Basic errors

Current	Power factor COSΦ	Error (%)	
		Class 1	Class 2
0.05Ib ≤ I < 0.1Ib	1	±1.5	±2.5
0.1Ib ≤ I ≤ Imax	1	±1.0	±2.0
0.1Ib ≤ I < 0.2Ib	0.5L	±1.5	±2.5
	0.8C	±1.5	-
0.2Ib ≤ I ≤ Imax	0.5L	±1.0	±2.0
	0.8C	±1.0	-

4.2 Start
The energy meter is in the state with reference voltage, reference frequency, and power factor are 1, and the load current is direct connection type: ≤0.004 Ib (for Class 1) and ≤0.005Ib (for Class 2).
4.3 Creeping
When 115% reference voltage is applied to the voltage circuit and there is no current in the current circuit, the power indicator does not flash, and the output pulse shall not be more than 1.
4.4 Range of working voltage
Range of specified working voltage: 0.9~1.1 reference voltage,
Range of expanded working voltage: 0.8~1.15 reference voltage,
Range of ultimate working voltage: 0.0~1.15 reference voltage.

4.5 Power consumption of voltage circuit: ≤2W/10VA; Power consumption of current circuit: ≤4.0VA.
4.6 Environment conditions
4.6.1 Temperature range
Range of specified working temperature: -10℃~+45℃,
Range of ultimate working temperature: -25℃~+55℃.
4.6.2 Humidity range: Annual average relative humidity: <75%.

5 Main functions

5.1 Metering function for positive active, negative active, and combined active power.
5.2 Energy consumption displayed by 5-integer and 2-decimal reading in LCD.
5.3 Calibration pulse output.
5.4 Communication interface:
Infrared communication; the default communication baud rate is 1200bps.
For 485 communication, 1200bps, 2400bps, 4800bps, and 9600bps can be set; the default communication baud rate is 2400bps.

6 Display description

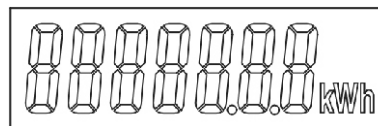The LCD panel is shown below in Fig. 2:

Fig. 2

7 Installation and wiring method

7.1 The energy meter shall pass the inspection and sealed in the manufacturer factory before shipment. Please carefully read this User Manual before installation and use. Please directly contact the manufacturer if found damaged seal. To correctly connect wire, please follow the wiring diagram, otherwise this may cause permanent damage to the energy meter.
7.2 The energy meter can be installed indoors or outdoors. The base plate where the energy meter is installed shall be fixed on a solid and fire-resistant wall

without corrosive gas in the air in order to ensure that the meter shall be installed and used safely and reliably.
7.3 The energy meter shall be wired following the wiring diagram on the wiring box, and the copper cable lug is preferred for connection. The screws in the terminal box shall be tightened firmly to avoid being burnt due to poor contact.
7.4 The energy meter shall be wired properly, and it can enter the normal operation state immediately after power-on. Do not disassemble the meter without permission if found any abnormal phenomenon during operation, and please contact the qualified professional to deal with it.
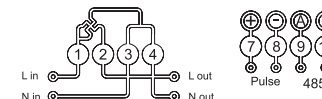7.5 Wiring diagram is shown in Fig. 3.

Fig. 3 Wiring diagram
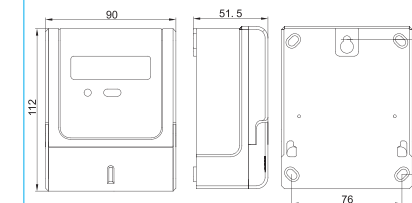
7.6 The outline and installation dimensions are shown in Fig. 4.

Fig. 4 Outline and installation dimensions diagram