

W1 系列单相电子式多回路电能表使用说明书

User Manual of W1 Series Single-Phase Electronic Multi-loop Electric

Energy Meter

一、用途和适用范围 Purpose and scope of application

W1 系列单相电子式多回路电能表是测量额定频率为 50Hz 交流有功电能的全电子式单相仪表。产品符合 GB/T17215.321-2008《静止式有功电能表（1 级和 2 级）》、《DL/T 614—2007》等国家标准以及行业标准。具有测量精度高、性能稳定可靠、长寿命、体积小、重量轻、功耗低、操作简便、易于实现管理功能的扩展、一表多用等特点。如对本手册内容有疑问或异议，请参阅本电表的技术说明书或与本公司技术服务部门联系；本手册内容若有更改恕不另行通知。



W1 series single-phase electronic multi-loop electric energy meter is an all-electronic single-phase instrument that measures AC active energy with a rated frequency of 50Hz. The products comply with national and industrial standards such as GB/T17215.321-2008 "Static Active Energy Meters (Class 1 and 2)", "DL/T 614-2007". It has the characteristics of high measurement accuracy, stable and reliable performance, long life, small size, light weight, low power consumption, easy operation, easy expansion of management functions, and multi-purpose use of one meter. If you have any questions or objections to the contents of this manual, please refer to the technical manual of this meter or contact the technical service department of our company; the contents of this manual are subject to change without prior notice.

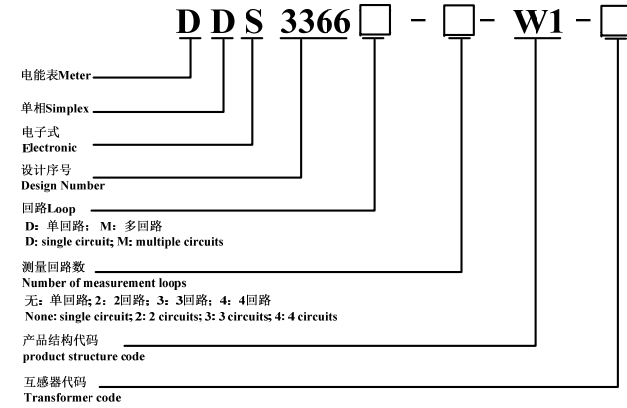
具有以下主要功能 Has the following main functions:

- ◇ 计量：各回路分别计量组合有功电能、正向有功电能、反向有功电能；
Measuring: Each circuit measures the combined active energy, forward active energy and reverse active energy respectively;
- ◇ 带负荷记录，每小时可记录一条各参量的负荷记录；
With load record, one load record of each parameter can be recorded every hour;
- ◇ 各种电参数瞬时量的测量（电压/电流/有功功率/功率因数/频率等）；
Measurement of instantaneous quantities of various electrical parameters (voltage/current/active power/power factor/frequency, etc.);
- ◇ 具有日冻结功能，保存最近 7 日的日冻结数据，且日冻结时间可设；
It has the function of daily freezing, which saves the daily freezing data of the last 7 days, and the daily freezing time can be set;
- ◇ 存储 12 个结算日电量数据；
Stores electricity data for 12 settlement days;
- ◇ 自动轮显和按键显示；
Automatic wheel display and key display;
- ◇ 兼容 DL/T645-2007、Modbus 通讯协议；
Compatible with DL/T645-2007, Modbus communication protocol;
- ◇ 本系列产品规格有 1 回路~4 回路可供选择；
The specifications of this series of products are available from 1 loop to 4 loops;

注 Note:

1. 标称最大电流大于 100A，电表取消负荷记录、冻结数据等功能。
When the nominal maximum current is greater than 100A, the meter cancels functions such as load recording and freezing data.
如：50(200)A、100(400)A 电流规格。Such as: 50 (200) A, 100 (400) A current specifications.
2. Modbus-RTU 规约不能全部读取所有功能的数据，详见产品通讯协议内容。
The Modbus-RTU protocol cannot read all data of all functions, please refer to the content of the product communication protocol for details.

型号定义 Model Definition



二、规格及主要技术参数(以下参数均以铭牌标注为准) Specifications and main technical parameters (the following parameters are subject to the nameplate)

项目 Project	技术要求 Skills requirement	项目 Project	技术要求 Skills requirement
准确度等级 level of accuracy	开环互感器 2 级，闭环互感器 1 级 Open loop transformer class 2, closed loop transformer class 1	通讯方式 Communication method	RS485
额定电压(Un) Rated voltage (Un)	220V	电能存储 Electrical energy storage	月末自动冻结电量，最多可保存 12 个月电量 Automatically freeze power at the end of the month, and save power for up to 12 months
工作电压 Operating Voltage	0.9~1.1Un	工作温度 Operating temperature	-10℃~50℃
功率消耗 Power consumption	<0.8W, 10VA	极限工作温度 Extreme working temperature	-40℃~70℃
起动电流 Starting current	0.004Ib	运输及储存温度 Transport and storage temperature	-40℃~70℃
电流测量范围 Current measurement range	20(100)A、50(200)A 等(与专用互感器配套使用，可按用户需求定制) 20(100)A, 50(200)A, etc. (used in conjunction with special transformers, can be customized according to user requirements)	相对湿度 Relative humidity	年平均湿度: ≤75%RH 30d (一年内以自然方式分布): ≤95%RH 在其他天偶然出现: 85%RH Annual average humidity: ≤75%RH 30d (distributed in a natural way within one year): ≤95%RH Occasional on other days: 85% RH
参比频率 Reference frequency	50 Hz	海拔 Altitude	低于 4000m lower than 4000m
辅助电源 (选配) Auxiliary power (optional)	① AC220V±15%; ② DC20V~60V; ③ AC85V~265V 或 DC85V~330V;	计时准确度 Timing accuracy	日计时误差≤0.5 s/d (23℃)，随温度变化的改变量优于 0.1s/(d·℃) The daily timing error is less than or equal to 0.5 s/d (23℃), and the change with temperature is better than 0.1s/(d·℃)
脉冲常数 Pulse constant	以产品标牌为准 Subject to product label	潜动 Sneak	电压回路加额定电压的 115%，电流线路无电流，仪表测试输出不产生多于一个脉冲 The voltage circuit is added with 115% of the rated voltage, the current circuit has no current, and the test output of the instrument does not generate more than one pulse
外形尺寸 Dimensions	76.5±0.5mm×72±0.5mm×63.5±0.5mm (长×宽×高)(length x width x height)		

三、安装与使用 Installation and use

3.1 功率指示灯: 当电表正常运行时, 指示灯为红色, 且每发出一个脉冲, 该指示灯被点亮一次。

Power indicator light: When the meter is running normally, the indicator light is red, and each time a pulse is sent, the indicator light is lit once.

3.2 液晶显示: 采用 6+2 位液晶显示, 计量范围: 0~999999.99kWh. 上电后参数循环显示。

Liquid crystal display: using 6+2-digit liquid crystal display, measuring range: 0~999999.99kWh. After power-on, the parameters are displayed cyclically.

3.3 目测抄表: 直接观察液晶显示的度数, 将此次抄得电量减去上次抄得电量即本次用电量。

Visual meter reading: directly observe the degree displayed by the liquid crystal, and subtract the electricity obtained from the last time from the electricity obtained this time, which is the electricity consumption this time.

通讯抄表: 可以通过 RS485 通讯直接后台抄取电能数据。

Communication meter reading: The power data can be directly copied in the background through RS485 communication.

3.4 通讯接口: 本仪表配置有一个 RS485 通讯接口。RS485 通讯波特率为 1200bps、2400bps、4800bps、9600bps、19200bps 可设。

Communication interface: The instrument is equipped with an RS485 communication interface. RS485 communication baud rate can be set to 1200bps, 2400bps, 4800bps, 9600bps, 19200bps.

3.5 注意事项 Notes:

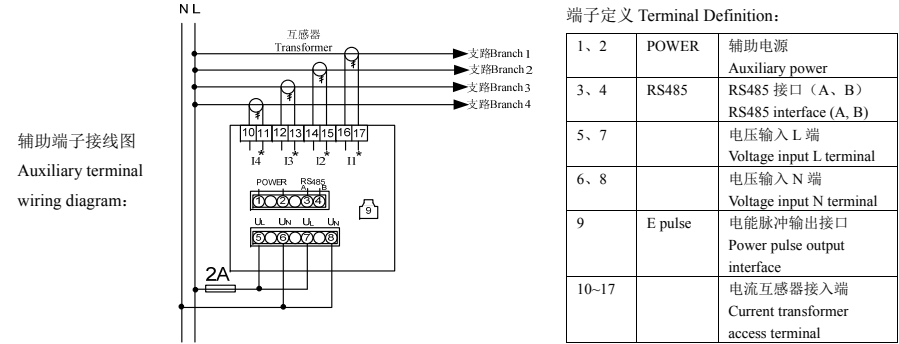
- 电表应安装在牢固、耐火、不易振动的地方, 安装后的电表应垂直不倾斜。不要私自安装电表
The electric meter should be installed in a place that is firm, fire-resistant and not easy to vibrate. The installed electric meter should be vertical and not inclined. Do not install electricity meters without permission.
- 要按照接线图正确接线, 否则可能因为电压过高而烧坏电表。接线时要注意因接触不良和进出线太细而引起打火和烧毁。注意电表量程, 不要超过其范围, 否则可能因为负载电流太大而烧坏电表。
The wiring should be correctly connected according to the wiring diagram, otherwise the meter may be burned out due to the high voltage. When wiring, pay attention to fire and burn due to poor contact and too thin incoming and outgoing wires. Pay attention to the range of the meter and do not exceed its range, otherwise the meter may be burned out due to too much load current.

四、外形图与接线图 Outline drawing and wiring diagram

4.1 外形图 Outline drawing

主机尺寸 (单位: mm, 公差: ±0.5) Host size (Units: mm, Tolerance: ±0.5)	CTF16T 互感器尺寸 (开环) (单位: mm) CTF16T Transformer Dimensions (Open Loop) (Units: mm)
SCT30L 互感器尺寸 (开环) (单位: mm) SCT30L Transformer Dimensions (Open Loop) (Units: mm)	CT21 互感器尺寸 (闭环) (单位: mm) CT21 Transformer Dimensions (Closed Loop) (Units: mm)

4.2 接线图 Wiring diagram



注意: 互感器箭头方向要与负载方向一致, 主机带星号端子接互感器蓝色线, 不带星号端子接白色线。

Note: The direction of the arrow of the transformer should be consistent with the direction of the load. The terminal with an asterisk is connected to the blue wire of the transformer, and the terminal without asterisk is connected to the white wire.

五、储运注意事项 Precautions for storage and transportation

- 产品在运输与拆封时不应受剧烈冲击, 并根据国家标准 GB/T13384-2008 《机电产品包装通用技术条件》的规定运输贮存。
The product should not be severely impacted during transportation and unpacking, and should be transported and stored in accordance with the national standard GB/T13384-2008 "General Technical Conditions for Packaging of Mechanical and Electrical Products".
- 本产品属电子器件, 故搬运、取放时应尽量避免重物撞击和磕碰。
This product is an electronic device, so try to avoid the impact and bumping of heavy objects when handling and handling.
- 保存地点环境温度应为 -40°C~70°C, 相对湿度不超过 85% 且在空气中不含腐蚀性的有害物质。
The ambient temperature of the storage location should be -40°C~70°C, the relative humidity should not exceed 85%, and there should be no corrosive harmful substances in the air.
- 电能表应在原包装的条件下放在仓库保存, 叠放高度不超过 5 箱。拆箱后的电表, 如发现外观损伤, 请不要对电表安装、加电; 单表叠放高度不超过 5 块, 拆包的电表不宜贮存。
The electric energy meter should be stored in the warehouse in the original packaging, and the stacking height should not exceed 5 boxes. If the appearance of the unpacked meter is found to be damaged, please do not install or power on the meter; the stacking height of a single meter should not exceed 5 blocks, and the unpacked meter should not be stored.

六、保证期限 Guarantee period

电表自出厂日起 18 个月内, 如用户发现不符合上述特性及技术要求, 或由有关电力计量部门证明, 又完全按照本说明书中所规定的要求操作的情况下, 我公司负责免费修理。

Within 18 months from the date of delivery, if the user finds that the meter does not meet the above characteristics and technical requirements, or is certified by the relevant power measurement department, and the operation is completely in accordance with the requirements specified in this manual, our company is responsible for free repairs.

注: 以上图片仅供参考, 产品以实物为准,

Note: The above pictures are for reference only, the products are subject to the actual product, 版权所有, 保留一切权利。内容如有改动, 恕不另行通知。

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