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2017 電能表系列



## 产品选型目录 PRODUCT CATALOG

# ZHIMING GROUP

指明集团有限公司  
ZHIMING GROUP CO.,LTD.

# 指明集团与您共同成长

## Zhiming Group Appliance grows up with you



董事长:

赵可安



## 集团简介

### GROUP BRIEF

指明集团有限公司地处中国电器之都 - 浙江省乐清市，成立于1999年的金秋时节，注册资金壹亿壹仟捌佰万元，是一家全国性无区域企业，并被认定为浙江省高新技术企业，为国家电网公司合格入围供应商。

集团公司专业生产高低压电力电容器，智能集成电容器，电容器投切开关，无功补偿控制器，无功补偿装置系列，单、三相电能表，三相多功能电能表，智能型多用户电能表等高、低压电器元件产品。公司通过自主与合作研发等途径，不断加快产品的更新换代及开发，众多产品质量达到了国内领先水平和国际标准。集团公司先后通过了ISO9001质量管理体系认证、ISO14001环境管理体系认证、OHSAS18001职业健康安全管理体系认证，“指明”牌产品通过了中国质量认证中心的CCC、CQC等产品质量体系的认证，公司也多次被评为省级“高新技术企业”、“科技型企业”、“诚信民营企业”、“信用管理示范企业”等荣誉称号。公司技术力量雄厚，先后获得多项产品技术专利，公司研发中心被认定为“温州市企业技术研究开发中心”。

集团公司在满足国内客户需求的同时，产品还远销东南亚、中南美洲、俄罗斯、中东地区等地，获得广大客户的一致认可。公司将以“质量第一、优质服务、积极进取”为宗旨，诚邀广大国内外朋友携手并进、共创辉煌！

ZHIMING GROUP CO., LTD. located at Yueqing, Zhejiang, the Electric city, was established in the Autumn of 1999, the registered capital RMB 118 Million Yuan, one the unlimited regional enterprise in China, now classified as Zhejiang Hi-tech Enterprises, one of the supplier member of China State Grid.

The group professionally produces high and low voltage power capacitors, intelligent integrated capacitor, capacitor switch, reactive power compensation controller, reactive power compensation devices, single, three phases energy meters, three-phase multi-functional meters, intelligent energy meter for multiple users and etc. through self-research and cooperation, we continued developing new products, many products have reached up to domestic latest level and complied with international standards. Our group has awarded ISO9001, ISO14001, and OHSAS18001 certificates, ZHIMING brand products passed the attestation of CCC, CQC issued by China Quality Attestation Center. Our company had achieved the titles of Hi-tech Enterprises, Technical Enterprise, Private Credit Enterprise, Typical Enterprise of Credit Management and etc. Our company occupied powerful technical strength, attained many technical patents. our research center is classified as Wenzhou Technical Research Center.

Our products not only supply for the demand of domestic customers, also exported to Southeast Asia, Middle America, Russia, Middle east and etc, won the wide acceptance from the users. we would insisted on the tenet of "Quality first, Best Services, Active Striving", welcome the domestic and foreign friends to cooperate and build a splendid future.



资质证书  
QUALIFICATIONS &  
HONORS



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# DDS450

## 系列单相电子式电能表(计数器)

Single-Phase Electronic Watt-hour Meters(Counter)



### 产品规格 Produce Specification

参比电压 Reference voltage	参比频率 Reference frequency	精度等级 Accuracy grade	基本电流(最大电流) Basic current (max current)
220、240V	50Hz、60Hz	1级、2级 Class	1.5(6)A, 2.5(10)A, 5(20)A, 10(40)A, 15(60)A, 20(80)A, 20(100)A, 5(30)A, 10(60)A

### 主要技术参数

- 工作电压范围：0.9Un-1.1Un；
- 功耗：小于2W(10VA)；
- 执行标准：GB/T 17215.321-2008；
- 温度特性好，-25 至55 温度范围内误差不超过精度范围；
- 轻载特性好，仪表在极低负载时工作具有良好的准确度等级；
- 实际在线计量准确度高；可靠性高，长寿命；
- 安装操作简便，安装位置不受影响；
- 过载能力强，仪表在准确度等级范围内的过载能力可达6倍以上；
- 抗运输能力强，仪表在各种正常运输条件下不会引起误差变化，用户开箱后可无须调整。

### Main Technical data

- Working voltage: 0.9Un-1.1Un;
- Power consumption: less than 2W/10VA;
- Executive standard: GB/T 17215.321-2008 ；
- Good temperature performance: the error shall not exceed accuracy range within the temperature range -25 ~55 ；
- Good light-load performance; the instrument has fine accuracy class at ultra-light load;
- High accuracy of actual online measuring, high reliability, long service life;
- Simple installation and operation; the installation position can't be affected by anything;
- Strong overload capability; the meter overload ability can reach above 6 times within the accuracy class.
- Strong ability of transportation resistance; the instrument can't cause the change of error under kinds of normal transportation conditions, user needn't adjust it after opening the box.

### 适用范围 Application

DDS450系列单相电子式电能表采用超大规模专用数字电能计量芯片及SMT技术，关键元器件选用国际品牌工业级元器件，大大提高了产品的可靠性和使用寿命。产品外型端庄、稳重、结构坚固、性能优良、运行寿命长，该表还具有防窃电功能，适用于计量参比频率为50Hz或60Hz交流单相有功电能。

DDS450 series single-phase electronic watt-hour meter adopts ultra-large digital energy measurement chip and SMT technology, its key components selects that of international brand industrial class, to greatly improve the reliability and service life of product. The product presents graceful appearance, firm structure, good performance and long service life, besides, it has the function of anti-electricity theft, is suitable for measuring AC single-phase active energy of reference frequency 50Hz or 60Hz.

### 正常工作条件及安装条件

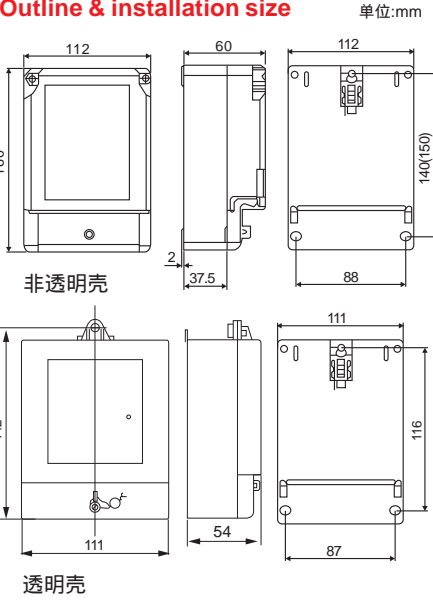
#### Normal working conditions and installation conditions

- 规定的工作温度范围：-25 ~55 ；
- 极限工作温度范围：-25 ~60 ；
- 相对湿度不超过85% (环境温度23 时)；
- 在空气中不应含有足以引起腐蚀的有害物质。

- Specified working temperature: -25 ~55 ；
- Utmost working temperature: -25 ~60 ；
- Relative humidity: 85% (at environment temperature 23 )
- There shall be no harmful substance causing the corrosion in the air.

### 外形及安装尺寸

#### Outline & installation size



# DTS450, DSS450

## 系列三相电子式电能表(计数器)

Three-phase electronic watt-hour meters(Counter)



### 产品规格 Produce Specification

型号 Model	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)
DTS450	3x57.7/100V	1.5(6)A, 3(6)A(互感器CT); 5(20)A, 10(40)A, 15(60)A, 20(80)A, 30(100)A (直接式)
	3x220/380V	
DSS450	3x100V	
	3x380V	

### 主要技术参数 Main Technical data

- 执行标准：GB/T 17215.321-2008/IEC 61036:2000、GB/T17882-1999
- 等级指数：1级、2级
- 功耗：< 2W(10VA)
- 参比频率：50Hz
- 长期工作不须调校
- 三相电源供电，断一相或二相，电能表均正常工作
- 温度特性好，-25 至60 温度范围内误差不超过准确度等级
- 轻载特性好，仪表在极低负载时工作具有良好的准确度等级
- 实际在线计量准确度高
- 安装操作简便，安装位置不受影响
- 抗运输能力强，仪表在各种正常运输条件下不会引起误差变化，用户开箱后无须调整。

- Executive standard: GB/T 17215.321-2008/IEC 61036:2000 and GB/T17882-1999
- Class index: class 1 and class 2
- Power consumption: < 2W(10VA)
- Reference frequency: 50Hz
- Needn't to be corrected after working a long time.
- Supplied with three-phase power, any one phase or two phases fail, the watt-hour meter still works normally;
- Good temperature performance: the error shall not exceed accuracy range within the temperature range -25 ~55 ；
- Good light-load performance: the instrument has fine accuracy class at ultra-light load;
- High accuracy of actual online measuring;
- Simple installation and operation; the installation position can't be affected by anything;
- Strong ability of transportation resistance: the instrument can't cause the change of error under kinds of normal transportation conditions, user needn't adjust it after opening the box.

### 适用范围 Application

DTS450、DSS450系列三相电子式电能表用于测量三相四线，三相三线电能，它采用高精度宽量程数字化电能计量芯片，设计结构合理，具有性能稳定，可靠性高，低功耗，电能表具有使用寿命长，免维护。提供脉冲输出，方便用户检测。

DTS450 and DSS450 series three-phase electronic watt-hour meter is used for measuring electric energy at three-phase four-wire system and three-phase three-wire system, it adopts digital electric energy measurement chip of high accuracy and wide range, has obvious features like reasonable structure, stable performance, high reliability, low consumption, long service life, free maintenance and so on, besides, it provides pulse output to take convenience for detecting.

### 正常工作条件及安装条件

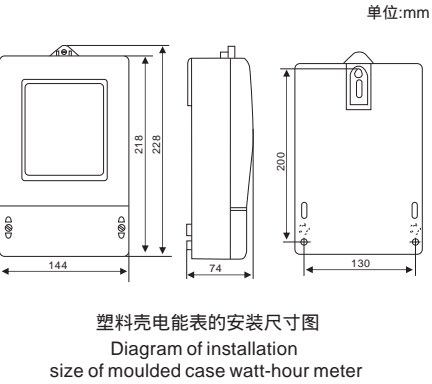
#### Normal working conditions and installation conditions

- 规定的工作温度范围：-10 ~+45 ；
- 极限工作温度范围：-25 ~+60 ；
- 相对湿度不超过85% (环境温度+23 下)；
- 空气中不应含有足以引起腐蚀的有害物质。

- Specified working temperature: -10 ~+45 ；
- Utmost working temperature: -25 ~+60 ；
- Relative humidity: 85% (at environmental temperature 23 )
- There shall be no harmful substances causing corrosion in the air

### 外形及安装尺寸

#### Outline & installation size



# DDS450L

## 系列单相液晶电子式电能表

Single-Phase Electronic Watt-hour Meters with LCD



### 产品规格 Produce Specification

参比电压 Reference voltage	参比频率 Reference frequency	精度等级 Accuracy grade	基本电流(最大电流) Basic current (max current)
220V、240V	50Hz、60Hz	1级、2级 Class	1.5(6)A, 2.5(10)A, 5(20)A, 10(40)A, 15(60)A, 20(80)A, 20(100)A, 5(30)A, 10(60)A

### 主要技术参数

- 工作电压范围：0.9Un-1.1Un；
- 功耗：小于2W(10VA)；
- 执行标准：GB/T 17215.321-2008；
- 温度特性好，-25 至55 温度范围内误差不超过精度范围；
- 轻载特性好，仪表在极低负载时工作具有良好的准确度等级；
- 实际在线计量准确度高；可靠性高，长寿命；
- 安装操作简便，安装位置不受影响；
- 过载能力强，仪表在准确度等级范围内的过载能力可达6倍以上；
- 抗运输能力强，仪表在各种正常运输条件下不会引起误差变化，用户开箱后可无须调整。

### Main Technical data

- Working voltage: 0.9Un-1.1Un;
- Power consumption: less than 2W/10VA;
- Executive standard: GB/T 17215.321-2008；
- Good temperature performance: the error shall not exceed accuracy range within the temperature range -25 ~55 ；
- Good light-load performance; the instrument has fine accuracy class at ultra-light load;
- High accuracy of actual online measuring, high reliability, long service life;
- Simple installation and operation; the installation position can't be affected by anything;
- Strong overload capability; the meter overload ability can reach above 6 times within the accuracy class.
- Strong ability of transportation resistance; the instrument can't cause the change of error under kinds of normal transportation conditions, user needn't adjust it after opening the box.

### 适用范围 Application

DDS450系列单相电子式电能表采用超大规模专用数字电能计量芯片及SMT技术，关键元器件选用国际品牌工业级元器件，大大提高了产品的可靠性和使用寿命。产品外型端庄、稳重、结构坚固、性能优良、运行寿命长，该表还具有防窃电功能，适用于计量参比频率为50Hz或60Hz交流单相有功电能。

DDS450 series single-phase electronic watt-hour meter adopts ultra-large digital energy measurement chip and SMT technology, its key components selects that of international brand industrial class, to greatly improve the reliability and service life of product. The product presents graceful appearance, firm structure, good performance and long service life, besides, it has the function of anti-electricity theft, is suitable for measuring AC single-phase active energy of reference frequency 50Hz or 60Hz.

### 正常工作条件及安装条件

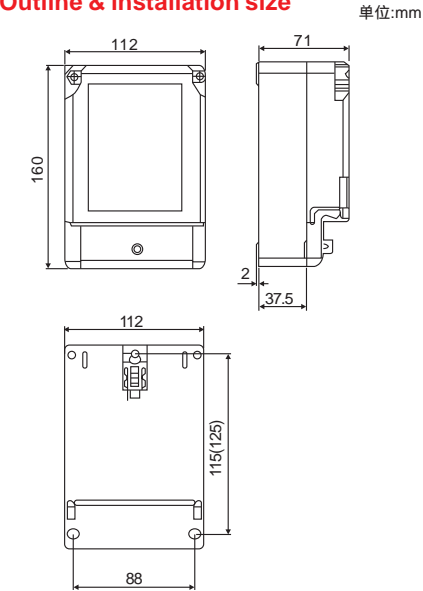
#### Normal working conditions and installation conditions

- 规定的工作温度范围：-25 ~55 ；
- 极限工作温度范围：-25 ~60 ；
- 相对湿度不超过85% (环境温度23 时)；
- 在空气中不应含有足以引起腐蚀的有害物质。

- Specified working temperature: -25 ~55 ；
- Utmost working temperature: -25 ~60 ；
- Relative humidity: 85% (at environment temperature 23 )
- There shall be no harmful substance causing the corrosion in the air.

### 外形及安装尺寸

#### Outline & installation size



# DTS450L, DSS450L

## 系列三相液晶电子式电能表

Three-phase electronic watt-hour meters with LCD



### 产品规格 Produce Specification

型号 Model	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)
DTS450L	3×57.7/100V	1.5(6)A, 3(6)A(互感器CT); 5(20)A, 10(40)A, 15(60)A, 20(80)A, 30(100)A (直接式)
	3×220/380V	
DSS450L	3×100V	
	3×380V	

### 主要技术参数 Main Technical data

- 执行标准：GB/T 17215.321-2008
- 等级指数：1级、2级
- 功耗：< 2W(10VA)
- 参比频率：50Hz
- 长期工作不须调校
- 三相电源供电，断一相或二相，电能表均正常工作
- 温度特性好，-25 至60 温度范围内误差不超过准确度等级
- 轻载特性好，仪表在极低负载时工作具有良好的准确度等级
- 实际在线计量准确度高
- 安装操作简便，安装位置不受影响
- 抗运输能力强，仪表在各种正常运输条件下不会引起误差变化，用户开箱后无须调整。

- Executive standard: GB/T 17215.321-2008
- Class index: class 1 and class 2
- Power consumption: < 2W(10VA)
- Reference frequency: 50Hz
- Needn't to be corrected after working a long time.
- Supplied with three-phase power, any one phase or two phases fail, the watt-hour meter still works normally;
- Good temperature performance: the error shall not exceed accuracy range within the temperature range -25 ~55 ；
- Good light-load performance: the instrument has fine accuracy class at ultra-light load;
- High accuracy of actual online measuring;
- Simple installation and operation; the installation position can't be affected by anything;
- Strong ability of transportation resistance: the instrument can't cause the change of error under kinds of normal transportation conditions, user needn't adjust it after opening the box.

### 适用范围 Application

DTS450、DSS450系列三相电子式电能表用于测量三相四线，三相三线电能，它采用高精度宽量程数字化电能计量芯片，设计结构合理，具有性能稳定，可靠性高，低功耗，电能表具有使用寿命长，免维护。提供脉冲输出，方便用户检测。

DTS450 and DSS450 series three-phase electronic watt-hour meter is used for measuring electric energy at three-phase four-wire system and three-phase three-wire system, it adopts digital electric energy measurement chip of high accuracy and wide range, has obvious features like reasonable structure, stable performance, high reliability, low consumption, long service life, free maintenance and so on, besides, it provides pulse output to take convenience for detecting.

### 正常工作条件及安装条件

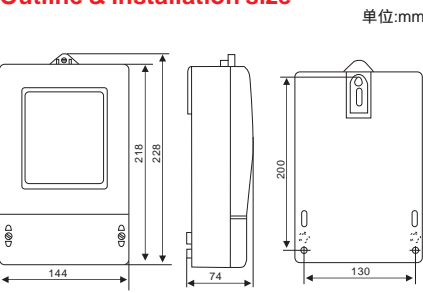
#### Normal working conditions and installation conditions

- 规定的工作温度范围：-10 ~+45 ；
- 极限工作温度范围：-25 ~+60 ；
- 相对湿度不超过85% (环境温度+23 下)；
- 空气中不应含有足以引起腐蚀的有害物质。

- Specified working temperature: -10 ~+45 ；
- Utmost working temperature: -25 ~+60 ；
- Relative humidity: 85% (at environmental temperature 23 )
- There shall be no harmful substances causing corrosion in the air

### 外形及安装尺寸

#### Outline & installation size



塑料壳电能表的安装尺寸图  
Diagram of installation size of moulded case watt-hour meter



# DDSY450

## 系列单相电子式预付费电能表

Single-phase electronic prepaid watt-hour meters



### 产品规格 Produce Specification

参比电压 Reference voltage	参比频率 Reference frequency	等级指数 Class index	基本电流(最大电流) Basic current (max current)
220V	50Hz	1级、2级 Class	1.5(6)A, 5(20)A, 5(30)A, 5(40)A, 10(40)A, 15(60)A, 20(80)A, 30(100)A

### 主要技术参数

- 仪表常数：按铭牌参数
- 电气参数：正常工作电压：0.9~1.1参比电压  
极限工作电压：0.8~1.2参比电压  
功率消耗： 2W/10VA
- 数据保护：断电后数据保存时间10年以上。

### 主要功能及特点

- 有功电能计量，长期工作无须调校；
- 先购电，后用电；
- 剩余电量不足时报警，当电量用完后自动断电，断电阀值可设置；
- 能记录用户所发生的用电情况；
- 一户一卡，具有防窃电功能；
- 能显示剩余电量、累计电量、报警电量；
- 具有将用户用电信息回读的功能；
- 具有电能测试脉冲输出

### Main Technical data

- Meter constant: refer to parameter in the nameplate.
- Electric parameter: normal working voltage: 0.9~1.1 of reference voltage  
Utmost working voltage: 0.8~1.15 of reference voltage  
Power consumption: 2W/10VA
- Data protection: data stored time after power off: 10 years

### Main functions and features

- Measure active electric energy, needn't to be corrected after working a long time.
- Purchase electricity first, then use electricity;
- Alarm for lack of residual electricity
- Record information of power utilization
- One card for one user, anti-electricity theft
- Display residual electricity, accumulate and alarm electricity;
- Can read user power utilization information backward
- Test pulse of electric energy output

### 适用范围 Application

DDSY450 系列单相电子式预付费电能表各项性能指标符合 GB/T18460.3-2001《预付费电度表》、GB/T 17215.321-2008《1级和2级静止式交流有功电度表》标准中对单相电子式电能表的全部技术要求。

Each performance index of DDSY450 series single-phase electronic prepaid watt-hour meter conforms to standard GB/T18460.3-2001 Prepaid Watt-hour Meters, all technical requirements for single-phase electronic watt-hour meters within standard GB/T 17215.321-2008 Alternating Current Static Watt-hour Meters for Active Energy (Classes 1 and 2).

### 正常工作条件及安装条件

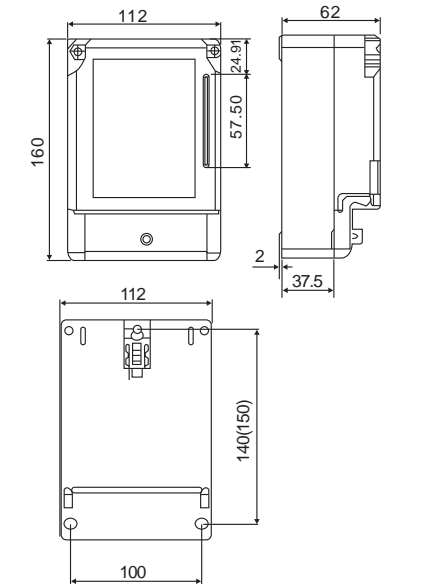
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- 规定的工作温度范围：-10 ~+45 ；
- 极限工作温度范围：-25 ~+60 ；
- 相对湿度不超过85% (环境温度23 下)；
- 在空气中不应含有足以引起腐蚀的有害物质。

- Specified working temperature：-10 ~+45 ；
- Utmost working temperature：-25 ~+60 ；
- Relative humidity: 85% (at environmental temperature 23 )
- There shall be no harmful substances causing corrosion in the air

### 外形及安装尺寸

#### Outline & installation size



# DTSY450, DSSY450

## 系列三相电子式预付费电能表

Three-phase electronic prepaid watt-hour meters



### 规格型号及技术指标 Technical Specifications

#### 1、规格型号 Specification

型号 Type	准确度等级 Accuracy class	参比电压Un Reference voltage	额定电流Ib Rated current	接入方式 Connection	仪表常数 imp/kWh
DTSY450 DSSY450	1级，2级	3x220/380V 3x57.7/100V	1.5(6)A	互感式 CT type	1600
			5(20)A	直接式 Direct type	800
			10(40)A	直接式 Direct type	400
			15(60)A	直接式 Direct type	400
			20(80)A	直接式 Direct type	400
			30(100)A	直接式 Direct type	400

#### 2. 起动

在参比电压，参比频率及COS =1.0的条件下，负载电流为0.004Ib(1级)、0.005Ib(2级)仪表应能连续计量电量0。

#### 3. 潜动

电压回路加额定电压115%，电流线路中无电流时，仪表的测试输出不应产生多于一个的脉冲。

#### 4. 电压范围

正常工作电压：0.9Un-1.1Un  
极限工作电压：0.8Un-1.2Un

#### 5. 功耗

电压线路功耗： 2W和10VA  
电流线路功耗： 4.0VA

### 主要功能及特点

- 有功电能计量，长期工作无须调校；
- 先购电，后用电；
- 剩余电量不足时报警，当电量用完后自动断电，断电阀值可设置；
- 能记录用户所发生的用电情况；
- 一户一卡，具有防窃电功能；
- 能显示剩余电量、累计电量、报警电量；
- 具有将用户用电信息回读的功能；
- 具有电能测试脉冲输出

#### 2. Startup

Under the condition of reference voltage, freq and COS =1.0, the meter measurement shall be zero when loading current is 0.004Ib (class 1.0), 0.005Ib (class 2.0).

#### 3. Potential rotation

When voltage circuit applied with 115%Ue, current circuit has no current, the measurement output of the meter shall not exceed one pulse.

#### 4. Voltage range

Normal Operating voltage: 0.9Un-1.1Un  
Limiting Operating Voltage: 0.8Un-1.2Un

#### 5. Consumption

Voltage circuit power consumption: 2W and 10VA  
Current circuit power consumption: 4.0VA

### Main functions and features

- Measure active electric energy, needn't to be corrected after working a long time.
- Purchase electricity first, then use electricity;
- Alarm for lack of residual electricity
- Record information of power utilization
- One card for one user, anti-electricity theft
- Display residual electricity, accumulate and alarm electricity;
- Can read user power utilization information backward
- Test pulse of electric energy output

### 适用范围 Application

DTSY450/DSSY450-D系列三相电子式预付费电能表系我公司采用进口专用大规模集成电路，16位A/D转换、数字乘法器、应用数字采样处理技术并由先进的单片机处理系统进行数据的采集、处理和保存及应用SMT工艺制造的新型仪表。适用于计量额定频率为50Hz或60Hz的三相三线或三相四线交流电网中有功电能的消耗。产品符合GB/T17215.321-2008《1级和2级静止式交流有功电能表》和GB/T18460.1-2001《IC卡预付费售电系统第3部分：预付费电能表》的全部技术要求。

主要特点：应用计算机管理，先购电后用电；在额定电流范围内能限制最大使用功率（由供电部门限定）；

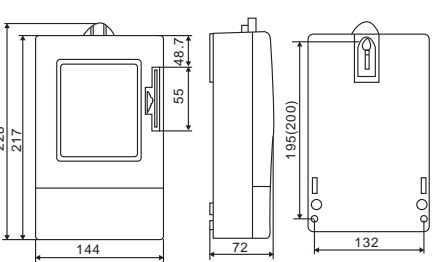
该表供固定安装在室内使用，适用于环境温度不超过-20~+55，相对湿度不超过85%，且空气中不含有腐蚀性气体及避免尘砂、霉菌、昆虫等影响。

DTSY450/DSSY450-D series three-phase electronic prepaid energy meter made by SMT technology as our new type, adopted the imported large scaled integrated circuit, 16 bits A/D converter, digital multiplier, digital sampling and processing technology, and advanced chipset to perform data acquisition, processing and saving, it is suitable for measuring the active energy of AC50Hz or 60Hz, three-phase three-wire, or three-phase four-wire system. The meter complies with the technical requirements of standard of GB/T17215.321-2008《Class 1.0 and 2.0 static AC active energy meters》and GB/T18460.1-2001《IC card prepaid energy selling system Part 3: Prepaid energy meters》.

Main features: administrated y computer, first purchase electric energy, then consume the electricity, within rated current it can limit the maxi operating power (controlled by power supply department)

This meter fixed indoor, operating in the ambient conditions as ambient temperature -20~+55，relative humidity not exceeding 85%, in the air there shall have no corrosive gas, and dust, mildew and insects shall be prevented

### 外形及安装尺寸 Outline & installation size



# DDSY450P

## 单相电子式射频卡预付费电能表

Single phase electronic prepaid energy meter with RFID card



### 规格型号及技术指标 Technical Specifications

1、规格型号 Specification

型号 Type	准确度等级 Accuracy class	参比电压Un Reference voltage	额定电流Ib Rated current
DDSY450P	1.0级,2.0级	220V	5(30)A,10(50)A,15(60)A

2、基本误差 Basic error 其它规格需要定制

负载电流 Current value	功率因数 Power Factor ( )	基本误差(%)Basic error	
		1.0级	2.0级
0.05Ib	1	±1.5	±2.5
0.1 Imax	1	±1.0	±2.0
0.1Ib	0.5(滞后 Inductive)	±1.5	±2.5
	0.8(超前Capacitive)	±1.5	±2.5
0.2Ib Imax	0.5(滞后 Inductive)	±1.0	±2.0
	0.8(超前Capacitive)	±1.0	±2.0

3.参比频率：50Hz、60Hz。  
4.准确度长期工作不需调校。

3.Reference frequency：50Hz、60Hz  
4.The accuracy of long-term work without adjustment.

### 主要功能及特点

- 1.采用全数字芯片计量单相有功电能，能实现先买电后用电。
- 2.剩余电量不足时报警：根据设定的电量限值闪烁灯报警,及断电报警,提示用户要赶快购电。
- 3.超负荷断电：当负载超过最大电流时断电，提醒用户降低负载，约五分钟后恢复供电，若仍然超负荷，将继续断电告警。
- 4.射频卡采用先进的无线通讯技术，通过射频卡在管理系统和电表间传送数据，射频卡经多重软硬加密，安全可靠，使用方便。
- 5.可双向计量电能，具有防窃电功能。
- 6.断路装置采用磁保持继电器，过载能力强，可靠性高，寿命长。
- 7.采用非接触射频卡,表壳全封闭,不会出现IC卡座易受攻击的问题。

### Main functions and features

- 1.Full digital chipset used for measuring single phase active energy, able to make user to purchase electricity in advance.
- 2.Alarm in case of absent electricity: according the setting value of low electricity limit, indicator flash for alarming, then cut off power supply and alarm again, remind user to purchase the electricity earlier.
- 3.Power off in case of overloading: when loading current exceed the maxi setting, the meter will cut off power supply, remind user of reducing loads, recover power supply after 5minutes, if it continue overloading, then continue cutting off power supply and alarming.
- 4.RFID card use advanced wireless communication technology, transfer the data between management system and meter via RFID card, this card encrypted through software and hardware several times, safely and reliably.
- 5.Bidirectional metering energy, anti-tamper
- 6.The breaker with magnetic holding relay, high overloading ability, high reliable, long service life
- 7.No-contact RFID card is used, the meter shell is sealed completely, the problem of easily being attacked does not occur.

### 适用范围 Application

DDSY450P单相电子式射频卡预付费电度表采用屏蔽式、密封型结构，用单片微控制器进行数据采集，处理和保存。具有良好的抗电磁干扰，低功耗，高准确度了，高过载，长寿命。安全符合GB/T17215-2002、GB/T18460.3-2001和DL/T645-1997标准中对电子式单相预付费电度表的全部技术要求。

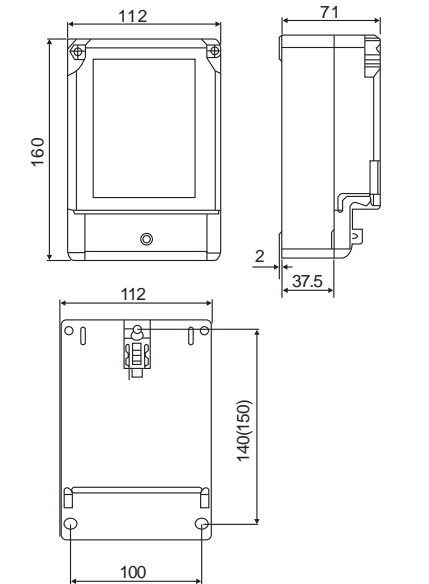
DDSY450P Single phase electronic prepaid energy meter with RFID card adopted the shielded, sealing structure, microchip controller collect, process, and save the data, with good electromagnetic immunity, low power loss, high accuracy, long overloading ability, long service life. The meter complies with the technical requirements of standards: GB/T17215-2002、GB/T18460.3-2001 and DL/T645-1997

### 正常工作条件 Environmental conditions

- 1.基本工作温度：-20 ~+55
- 2.极限工作温度：-25 ~+60
- 3.相对湿度： 85%
- 4.周围空气中不应有腐蚀性气体，避免尘砂、盐雾、凝露等。

1. Specified working temperature：-20 ~+55 ；
- 2.Utmost working temperature：-25 ~+60 ；
- 3.Relative humidity: 85%
- 4.There shall be no harmful substances causing corrosion in the air

### 外形及安装尺寸 Outline & installation size



# DTSY450P, DSSY450P

## 三相电子式射频卡预付费电能表

Three phase electronic prepaid energy meter with RFID card



### 规格型号及技术指标 Technical Specifications

1、规格型号 Specification

型号 Type	准确度等级 Accuracy class	参比电压Un Reference voltage	额定电流Ib Rated current
DTSY450P/DSSY450P	1.0级,2.0级	3×220/380V	1.5(6)A,10(40)A,30(100)A

2、基本误差 Basic error 其它规格需要定制

负载电流 Current value	功率因数 Power Factor ( )	基本误差(%)Basic error	
		1.0级	2.0级
0.05Ib	1	±1.5	±2.5
0.1 Imax	1	±1.0	±2.0
0.1Ib	0.5(滞后 Inductive)	±1.5	±2.5
	0.8(超前Capacitive)	±1.5	±2.5
0.2Ib Imax	0.5(滞后 Inductive)	±1.0	±2.0
	0.8(超前Capacitive)	±1.0	±2.0

3.参比频率：50Hz、60Hz。  
4.准确度长期工作不需调校。

3.Reference frequency：50Hz、60Hz  
4.The accuracy of long-term work without adjustment.

### 主要功能及特点

- 1.采用全数字芯片计量三相有功电能，能实现先买电后用电。
- 2.剩余电量不足时报警：根据设定的电量限值闪烁灯报警,及断电报警,提示用户要赶快购电。
- 3.超负荷断电：当负载超过最大电流时断电，提醒用户降低负载，约五分钟后恢复供电，若仍然超负荷，将继续断电告警。
- 4.射频卡采用先进的无线通讯技术，通过射频卡在管理系统和电表间传送数据，射频卡经多重软硬加密，安全可靠，使用方便。
- 5.可双向计量电能，具有防窃电功能。
- 6.断路装置采用磁保持继电器，过载能力强，可靠性高，寿命长。
- 7.采用非接触射频卡,表壳全封闭,不会出现IC卡座易受攻击的问题。

### Main functions and features

- 1.Full digital chipset used for measuring single phase active energy, able to make user to purchase electricity in advance.
- 2.Alarm in case of absent electricity: according the setting value of low electricity limit, indicator flash for alarming, then cut off power supply and alarm again, remind user to purchase the electricity earlier.
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- 5.Bidirectional metering energy, anti-tamper
- 6.The breaker with magnetic holding relay, high overloading ability, high reliable, long service life
- 7.No-contact RFID card is used, the meter shell is sealed completely, the problem of easily being attacked does not occur.

### 适用范围 Application

DTSY450P三相四线、DSSY450P三相三线电子式射频卡预付费电度表采用屏蔽式、密封型结构，用单片微控制器进行数据采集，处理和保存。具有良好的抗电磁干扰，低功耗，高准确度了，高过载，长寿命。安全符合GB/T17215-2002、GB/T18460.3-2001和DL/T645-1997标准中对电子式三相四线预付费电度表的全部技术要求。

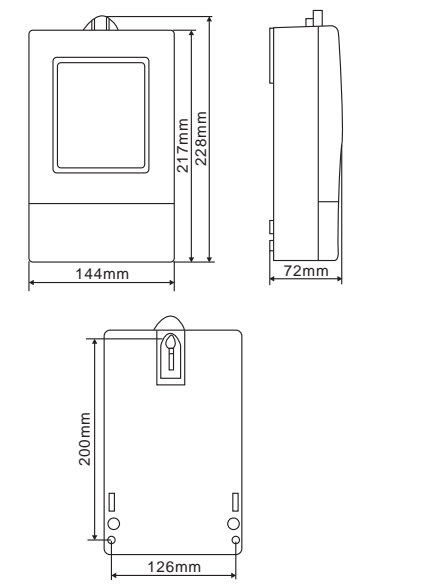
DTSY450P, DSSY450P three phase electronic prepaid energy meter with RFID card adopted the shielded, sealing structure, microchip controller collect, process, and save the data, with good electromagnetic immunity, low power loss, high accuracy, long overloading ability, long service life. The meter complies with the technical requirements of standards: GB/T17215-2002、GB/T18460.3-2001 and DL/T645-1997

### 正常工作条件 Environmental conditions

- 1.基本工作温度：-20 ~+55
- 2.极限工作温度：-25 ~+60
- 3.相对湿度： 85%
- 4.周围空气中不应有腐蚀性气体，避免尘砂、盐雾、凝露等。

1. Specified working temperature：-20 ~+55 ；
- 2.Utmost working temperature：-25 ~+60 ；
- 3.Relative humidity: 85%
- 4.There shall be no harmful substances causing corrosion in the air

### 外形及安装尺寸 Outline & installation size





# DDSF450

## 系列单相电子式多费率电能表

Single-phase electronic multi-tariff watt-hour meters



### 产品规格 Produce Specification

参比电压 Reference voltage	参比频率 Reference frequency	等级指数 Class index	基本电流(最大电流) Basic current (max current)
220V	50Hz	1级、2级 Class	1.5(6A),2.5(10)A, 5(20)A, 5(30)A , 10(40)A, 10(60)A, 20(80)A

### 主要技术参数

1. 执行标准：GB/T 15284-2002、DL/T 645-1997、GB/T 17215.321-2008/IEC 61036:2000；
2. 功耗：小于2W (10VA)；
3. 显示功能：可编程设定轮显内容，停电不显示；
4. 分时费率：峰、平、谷3费率8时段电能计量；
5. 通讯：支持红外通讯抄表，RS485通讯抄表 (可选)；
6. 时钟精度：时钟准确度不大于0.5s/d(23 )；
7. 静态工作 (无市电) 电流：< 10 μ A；
8. 电池：3.6V，12Ah，可靠停电使用时间大于75000小时；
9. 抄表日：任定于某日某时，保存12个月电量；
10. 负荷代表日：行定于某日；
11. 规定的工作温度：-25 ~55 极限工作温度：-25 ~60 ；

### Main Technical data

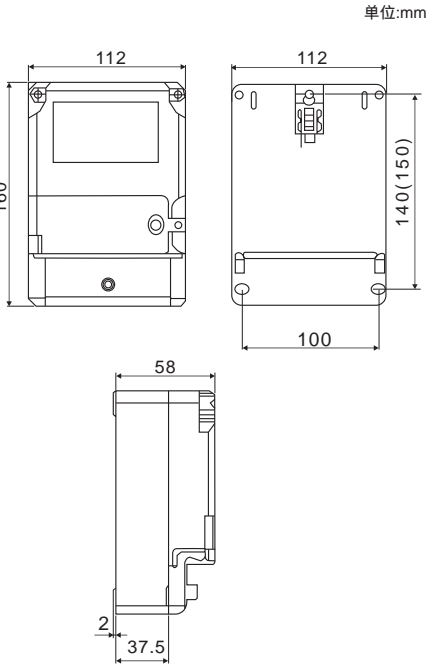
1. Executive standard: GB/T 17215.321-2008, DL/T 645-1997 and GB/T 17215-2002/ IEC 61036:2000.
2. Power consumption: less than 2W (10VA).
3. Display function: can program and set the contents of alternation display, it doesn't display when power is off.
4. Time-sharing tariff: measure electric energy with three tariffs: peak, level, off-peak and 8 time intervals.
5. Communication: support infrared communication meter reading, RS485 communication meter reading (selectable).
6. Clock accuracy: it is not more than 0.5s/d(23 ).
7. Quiescent working current (no commercial power): < 10 μ A.
8. Battery: 3.6V, 12Ah, reliable service time is more than 75,000hours.
9. Day of meter reading: decide any day and any time, store electricity for 12months.
10. Typical load day; decide any day.
11. Specified working temperature: -25 ~55 Utmost working temperature：-25 ~60 .

### 适用范围 Application

DDSF450系列单相电子式多费率电能表用于测量单相220V、50Hz有功电能，它采用最新微处理器技术和高精度宽量程数字化电能计量芯片，设计具有高精度、宽量程、稳定性高、低功耗，结构端庄稳重。采用专用LCD显示，以及军用元器件生产，从而使电能表具有使用寿命长，免维护，抄表方便。该产品能正反双向计量，具有一定防窃电能力，并提供脉冲输出，方便用户检测，是国家推行分时电价政策的优选产品。

DDSF450 series single-phase electronic multi-tariff watt-hour meter is for measuring active energy of single phase 220V and 50Hz, it adopts the latest MPU tech-nology and digital energy measurement chip of high accuracy and wide range, it has many features such as high accuracy, wide range, high stability, low power consumption and graceful appearance. Because LCD or LED and military components are used, it is characterized with long service life, free maintenance and convenient meter reading. It can measure positively and negatively, and has ability of anti-electricity theft and output pulse, to take convenience for detecting. It is the first selection product for implementing national time-sharing electricity price policy.

### 外形及安装尺寸 Outline & installation size



# DTSF450, DSSF450

## 系列三相电子式多费率电能表

Three-phase electronic multi-tariff watt-hour meters



### 产品规格 Produce Specification

型号 Model	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)
DTSF450 三相四线	3×57.7/100V	1.5(6)A, 3(6)A(互感器CT); 5(20)A, 10(40)A, 15(60)A, 20(80)A, 30(100)A (直接式)
	3×220/380V	
DSSF450 三相三线	3×100V	
	3×380V	

### 主要技术参数 Main Technical data

1. 执行标准：GB/T 15284-2002、DL/T 645-1997、GB/T 17215.321 -2008/IEC 61036:2000；
2. 等级指数：1级、2级
3. 功耗：< 2W (10VA)
4. 显示功能：可编程设定轮显内容，停电显示
5. 分时费率：峰、平、谷3费率8时段，峰、尖、平、谷4费率12时段电能计量
6. 通讯：支持红外通讯抄表，RS485通讯抄表 (可选)
7. 时钟精度：时钟准确度不大于0.5s/d(23 )
8. 静态工作 (无市电) 电流：< 10 μ A
9. 电池：3.6V，960mAh，可靠停电使用时间大于 75000小时
10. 抄表日：任定于某日某时，保存12个月电量
11. 负荷代表日：行定于每月1~28日
12. 规定的工作温度：-25 ~55 极限工作温度：-25 ~60

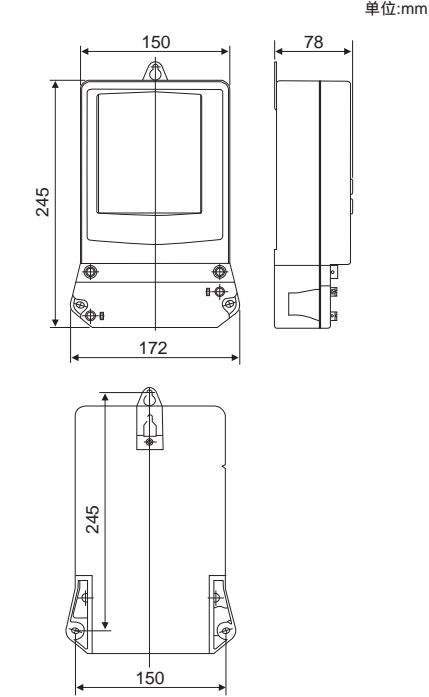
1. Executive standard: GB/T 15284-2002, DL/T 645-1997, GB/T 17215.321 -2008/ IEC 61036:2000；
2. Class index: 1 and 2
3. Power consumption: < 2W (10VA)
4. Display function: can program and set the contents of alternation display, it doesn't display when power is off.
5. Time-sharing tariff: measure electric energy with three tariffs: peak, level, off-peak and 8 time intervals as well as four tariffs: peak, sharp, level, off-peak and 12 time intervals.
6. Communication: support infrared communication meter reading, RS485 communication meter reading (selectable)
7. Battery: 3.6V, 960mAh, reliable service time is more than 75,000hours.
8. Day of meter reading: decide any day and any time, store electricity for 12months.
9. Typical load day; decide 1st~28th of every month.
10. Specified working temperature：-25 ~55 Utmost working temperature：-25 ~60

### 适用范围 Application

DTSF450、DSSF450系列三相四线、三相三线电子式多费率电能表用于测量三相四线和三相三线的有功电能，它采用最新微处理器技术和高精度宽量程数字化电能计量芯片，设计具有高精度、宽量程、稳定性高、低功耗。结构端庄稳重，采用专用LCD显示，以及军用元器件生产，从而电能表使用寿命长，免维护，抄表方便。该产品能正反双向计量，具有一定防止反接窃电能力，并提供脉冲输出，方便用户检测，是国家推行分时电价政策的优越产品。

DTSF450 and DSSF450 series three-phase four-wire,three-phase three-wire electronic multi-tariff watt-hour meter can be used for measuring active energy at three-phase four-wire system and three-phase three-wire system. It adopts the latest MPU technology and digital energy measurement chip of high accuracy and wide range, it has many features such as high accuracy, wide range, high stability, low power consumption and graceful appearance. Because LCD or LED and military components are used, it is characterized with long service life, free maintenance and convenient meter reading. It can measure positively and negatively, and has ability of anti- electricity theft and pulse output, to take convenience for detecting. It is the first selection product for implementing national time - sharing electricity price policy.

### 外形及安装尺寸 Outline & installation size





# DTS(X)450, DSS(X)450

## 系列三相电子式有功无功组合电能表

Three-phase electronic combination watt-hour meters for active and reactive energy



### 产品规格 Produce Specification

准确等级 Accuracy grade	有功1级 无功2级 Active energy: class 1 Reactive energy: class 2	
参比电压 Reference voltage	DSS(X)450(三相三线)	3x100V 3x380V
	DTS(X)450(三相四线)	3x57.7/100V 3x220/380V
基本电流(最大电流) Basic current (max current)	1.5(6)A, 5(20)A, 10(40)A, 20(80)A, 30(100)A	
参比频率 Reference frequency	50Hz	

### 主要技术参数 Main Technical data

- 正常工作电压：0.9Un~1.1Un (Un为参比电压)
  - 功耗：每相电压回路功率消耗小于2W (10VA)
  - 启动电流：经电流互感器接入，有功：0.002In，无功：0.003In；直接接入：  
有功：0.004In，无功：0.005In
  - 潜动：当电压线路加115%Un，电流回路断开时电能表的有功、无功测试输出发出的脉冲不应多于1个
  - 百分数误差范围：符合GB/T17215.321-2008，GB/T17882-1999规定要求
  - 规定的工作温度范围：-10 ~45
  - 工作极限温度范围：-25 ~55
  - 相对湿度：25~95%
- 
- Normal working voltage：0.9Un~1.1Un (Un is reference voltage )
  - Power consumption: each voltage circuit power consumption is less than 2W (10VA)
  - Starting current: connected through current transformer, active: 0.002In, reactive: 0.003In ;  
connected directly: active: 0.004In, reactive: 0.005In
  - Creeping: when voltage circuit voltage is 115%Un , current breaks, the active and reactive output test pulse shall be not more than one.
  - Error range (%): conform to standards GB/T17215.321-2008 and GB/T17882-1999.
  - Specified working temperature: -10 ~45
  - Utmost working temperature: -25 ~55
  - Relative humidity: 25~95%

### 适用范围 Application

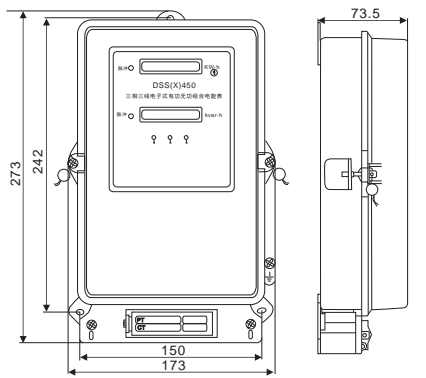
DT/SS(X)450系列三相电子式有功无功组合电能表采用超低功耗大规模集成电路技术和SMT制造工艺；产品的技术可靠性高，寿命长，能准确测量参比频率为50Hz的三相电网中有功电能和无功电能，产品的技术指标符合GB/T 17215.321-2008、GB/T 17882-1999标准对三相静止式有功、无功电能表的要求。

DT/SS(X)450 series three-phase electronic combination watt-hour meter for active and reactive energy adopts ultra-low power consumption large-scale integrative circuit technology as well as SMT technology, it presents high reliability and long service life, can measure active energy and reactive energy at three-phase power grid of reference frequency 50Hz correctly, each technical index of product conforms to requirements for three-phase static watt-hour meters for active and reactive energy stipulated in standards GB/T 17215.321-2008 and GB/T 17882-1999.

### 主要功能 Main functions

- 电能计量功能：有功电能和无功电能计量；
  - 三相电源供电，一相或两相断电，计量准确度不受影响；
  - 输出接口：具有带光耦隔离有功、无功无源脉冲输出接口；
  - 缺相指示：用三个发光管指示是否缺相，分别代表A、B、C三相，某相缺相时相应指示灯熄灭。
- 
- Measurement function: measure active energy and reactive energy.
  - Supplied with three-phase power, any one phase or two phases fail, the accuracy of measurement isn't affected.
  - Output interface: active and reactive and passive pulse output interface with optical coupling isolation.
  - Phase failure indication: Three luminescent tubes indicates the phase failure, they represents A phase, B phase, C phase respectively, some phase failures, its corresponding indicator lamp goes out.

### 外形及安装尺寸 Outline & installation size



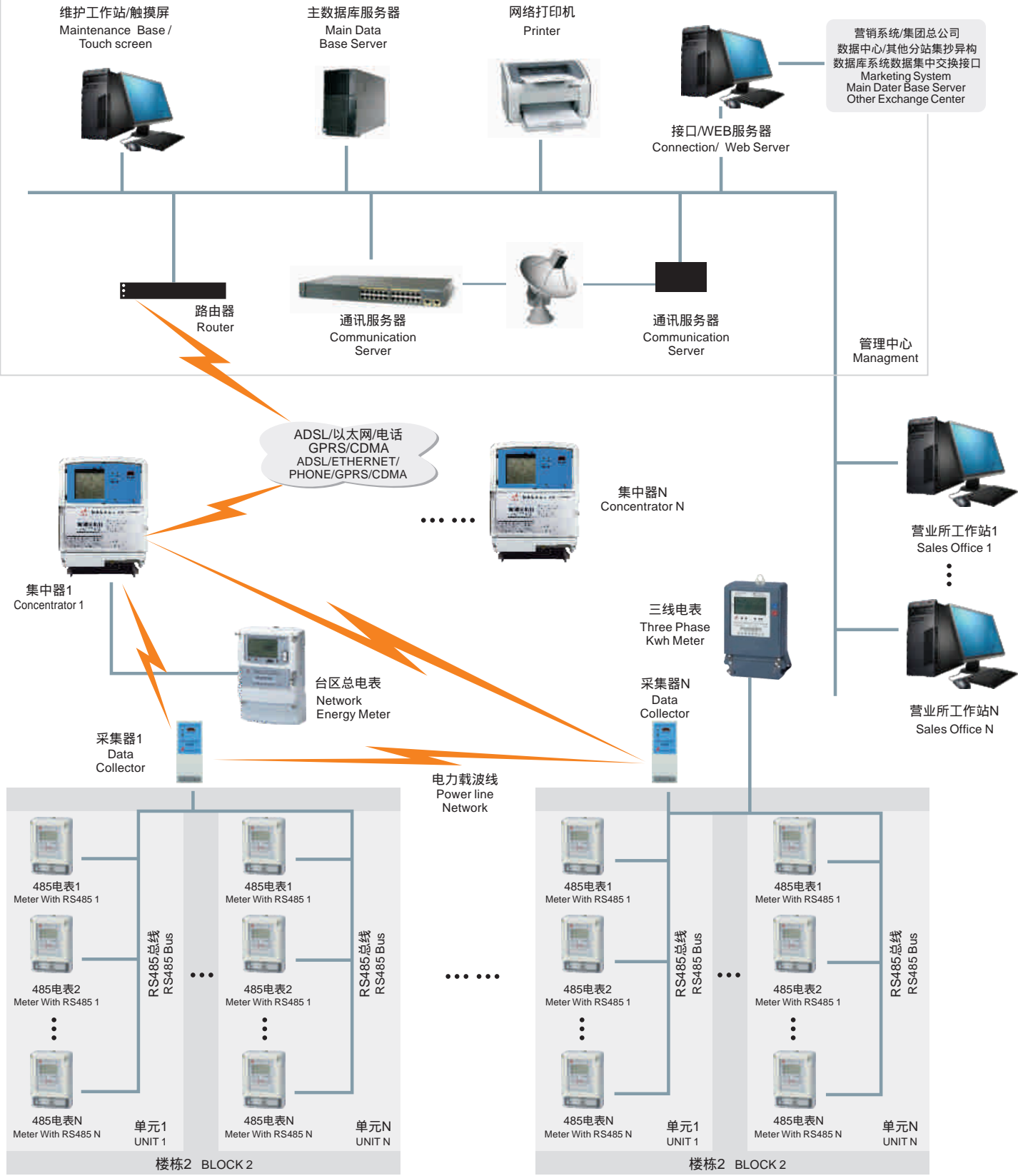
# 以RS485通信为主 小无线通信组网的抄表方案

## AMR System Based On RS485 Communication

### 集中抄表系统拓补图 AMR system Topological graph

#### 城乡结合部环境及类似区域 Area between city and rural

集抄设备由小无线集中器、小无线采集器等，抄读RS485电表。  
Data collection equipment including wireless collection, wireless adaptor to read RS485 meter



# DSSD450

## 系列三相电子式多功能电能表

Three-phase electronic multi-function watt-hour meters



### 产品规格 Produce Specification

规格 Spec. 名称 Name	型号 Model	额定电压V Rated voltage	标定电流值A Basic current	等级指数 Class index
三相三线 Three-phase three-wire	DSSD450	3×100V 3×380V	1(2)A, 1.5(6)A, 5A	有功：0.5级/1级 无功：2级 Active energy: 0.5/1 Reactive energy: 2
三相四线 Three-phase four-wire	DTSD450	3×220/380V 3×57.7/100V	1.5(6)A, 10(40)A 20(80)A, 30(100)A	

### 主要技术参数(多功能)

- 等级指数：有功0.5s、1，无功2；
- 时钟误差：0.5秒/天；
- 参比温度：23；
- 数据保护：断电后数据保存时间10年；
- 环境条件：规定工作温度：-20 ~45；  
极限工作温度：-25 ~55；  
相对湿度：85%(环境温度23下)。

### 主要功能(多功能)

- 电能计量功能  
可分别计量并显示有功、无功电能，并具有相互独立的有功、无功脉冲信号输出端口。
- 复费率功能  
a. 四种费率，十个时段；  
b. 百年日历(1996-2095)自动切换；  
c. 可记录并保存累计总有功、无功电量及在各种费率下的有功、无功电量。
- 需量统计功能  
a. 可记录有功最大需量及发生时间；  
b. 需量统计采用滑差法；  
c. 最大需量按月存档；  
d. 具有超负荷自动报警和跳闸功能。
- 失压记录功能  
a. 具有9个失压和停电记录，并可记录其起始和恢复时间；  
b. 可记录未失压相的有功、无功总电量。
- 编程和抄表功能  
a. 仪表具有RS485通讯接口；  
b. 编程及抄表可采用RS485通讯接口、红外通讯接口、掌上电脑等多种方式，同时可通过遥控器轮显方式进行抄表。
- 零点抄表功能  
a. 抄表设定日为每月的1~28日，仪表可在设定日的24时自动结算并存储前一月的各种数据；  
b. 仪表可同时存储并显示3个月的各种结算数据。
- 停电抄表功能  
仪表内自备独立抄表电池，可在停电的情况下完成抄表功能。

### Main Technical data(multifunction)

- Class index: active energy: class 0.5s, 1, reactive energy: class 2
- Clock error: 0.5s/day
- Reference temperature: 23；
- Data protection: data stored time after power off: 10years
- Environment conditions:  
specified working temperature: -20 ~45；  
Utmost working temperature: -25 ~55  
Relative humidity: 85%(at environment temperature 23 )

### Main functions(multifunction)

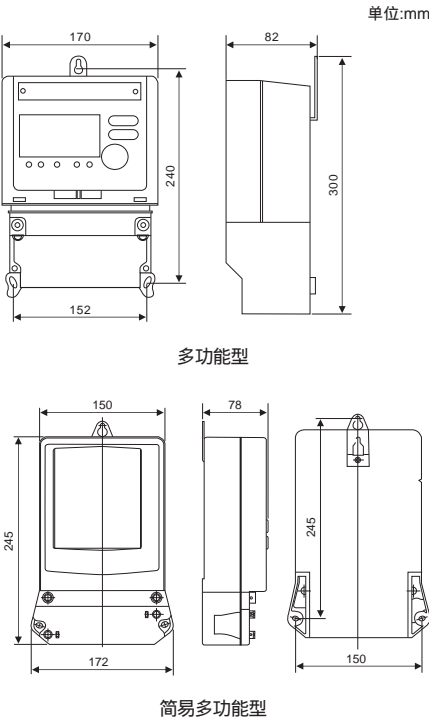
- Measurement function  
Can measure active energy and reactive energy respectively, and have separate active and reactive pulse signal output interfaces.
- Multi-tariff function  
a. Four tariffs, ten time intervals.  
b. Calendar for a century (1996-2095) can switch automatically.  
c. Record and store the total active energy and reactive energy and active energy and reactive energy under kinds of tariffs.
- Demand statistics  
a. Record active max demand and its occurring time  
b. Demand statistics adopts slip method.  
c. Max demand is stored as per month.  
d. Automatically alarm and trip for overload
- Record voltage loss  
a. Record 9 voltage loss and information of power failure, also, can record their initial and restoring time.  
b. Record total active energy and reactive energy of no voltage -loss phase
- Programming and meter reading  
a. RS485 communication interface  
b. The programming and meter reading are performed by RS485 communication interface, infrared communication interface and palm computer, also it can perform meter reading through remote controller and alternation displaying.
- Meter reading at zero o'clock  
a. The setting day for meter reading is 1st~28th of every month, the meter can calculate and store the data in the last month at zero o'clock of setting day.  
b. Can store and display calculated data for past three months at the same time.
- Meter reading at power off  
The meter is provided with individual meter reading batteries, so it can finish meter reading at power off.

### 适用范围 Application

DSSD450系列三相电子式多功能电能表，是我公司最新推出的可实现有功和无功电能计量、复费率等多种功能的新一代产品，本产品采用模块化设计、多种功能可自由组合，以适应广大用户对电表的不同需求。本产品各项性能指标符合DL/T 614-1997《多功能电度表》、DL/T 645-1997《多功能电度表通讯规约》GB/T 17215.321-2008/IEC 61036标准中对三相电子式多功能电能表的全部技术要求。

DSSD450 series three-phase electronic multi-function watt-hour meter is a new generation product that can measure reactive energy and active energy with multi-tariff, it is designed by modularization, its multi functions can be combined freely to meet users requirements. Each performance index of it conforms to standard DL/T 614-1997 Multifunctional Watt-hour Meter and standard DL/T 645-1997 Multi-function Watt-hour Meters Communication Protocol as well as total technical requirements for three-phase electronic multi-function watt-hour meters stipulated in standard GB/T 17215.321-2008/IEC 61036.

### 外形及安装尺寸 Outline & installation size



# DTSD450

## 系列三相电子式多功能电能表

Three-phase electronic multi-function watt-hour meters



### 产品规格 Produce Specification

型号 Model	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)
DTSD450 三相四线	3×57.7/100V 3×220/380V	1.5(6)A, 3(6)A(互感器CT); 5(20)A, 10(40)A, 15(60)A, 20(80)A, 30(100)A (直接式)
DSSD450 三相三线	3×100V 3×380V	

### 主要技术参数 Main Technical data

- 执行标准：GB/T 15284-2002、DL/T 645-1997、GB/T 17215.321 -2008/IEC 61036:2000；
- 等级指数：1级、2级
- 功耗：< 2W (10VA)
- 显示功能：可编程设定轮显内容，停电显示
- 分时费率：峰、平、谷3费率8时段，峰、尖、平、谷4费率12时段电能计量
- 通讯：支持红外通讯抄表，RS485通讯抄表 (可选)
- 时钟精度：时钟准确度不大于0.5s/d(23 )
- 静态工作 (无市电) 电流：< 10 μA
- 电池：3.6V，960mAh，可靠停电使用时间大于75000小时
- 抄表日：任定于某日某时，保存12个月电量
- 负荷代表日：行定于每月1~28日
- 规定的工作温度：-25 ~55 极限工作温度：-25 ~60

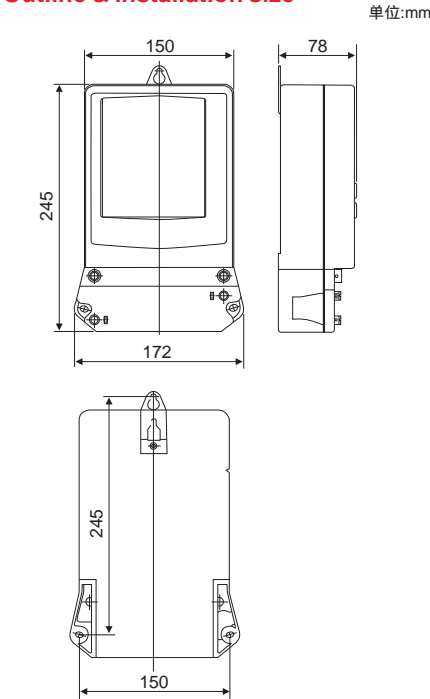
- Executive standard: GB/T 15284-2002, DL/T 645-1997, GB/T 17215.321 -2008/ IEC 61036:2000；
- Class index: 1 and 2
- Power consumption: < 2W (10VA)
- Display function: can program and set the contents of alternation display, it doesn't display when power is off.
- Time-sharing tariff: measure electric energy with three tariffs: peak, level, off-peak and 8 time intervals as well as four tariffs: peak, sharp, level, off-peak and 12 time intervals.
- Communication: support infrared communication meter reading, RS485 communication meter reading (selectable)
- Battery: 3.6V, 960mAh, reliable service time is more than 75,000hours.
- Day of meter reading: decide any day and any time, store electricity for 12months.
- Typical load day: decide 1st~28th of every month.
- Specified working temperature: -25 ~55 Utmost working temperature: -25 ~60

### 适用范围 Application

DTSD450、DSSD450系列三相四线、三相三线电子式多费率电能表用于测量三相四线和三相三线的有功和无功电能，它采用最新微处理器技术和高精度宽量程数字化电能计量芯片，设计具有高精度、宽量程、稳定性高、低功耗。结构端庄稳重，采用专用LCD显示，以及军用元器件生产，从而电能表使用寿命长，免维护，抄表方便。该产品能正反向双向计量，具有一定防止反接窃电能力，并提供脉冲输出，方便用户检测，是国家推行分时电价政策的优越产品。

DTSF450 and DSSF450 series three-phase four-wire, three-phase three-wire electronic multi-tariff watt-hour meter can be used for measuring active energy and reactive power at three-phase four-wire system and three-phase three-wire system. It adopts the latest MPU technology and digital energy measurement chip of high accuracy and wide range, it has many features such as high accuracy, wide range, high stability, low power consumption and graceful appearance. Because LCD or LED and military components are used, it is characterized with long service life, free maintenance and convenient meter reading. It can measure positively and negatively, and has ability of anti-electricity theft and pulse output, to take convenience for detecting. It is the first selection product for implementing national time-sharing electricity price policy.

### 外形及安装尺寸 Outline & installation size





DDS450J

单相电子式液晶电能表(带红外和RS485通讯功能)

Single-phase electronic watt-hour meters with LCD and RS485 communication



产品规格 Produce Specification

参比电压 Reference voltage	参比频率 Reference frequency	精度等级 Accuracy grade	基本电流(最大电流) Basic current (max current)
220V	50Hz、60Hz	1级、2级 Class	1.5(6)A, 2.5(10)A, 5(20)A, 5(30)A,10(40)A, 10(60)A, 15(60)A, 20(80)A, 20(100)A

备注：根据要求本表可加装远程分断功能、停电显示功能、红外抄表功能。

主要技术参数

1. 执行标准：GB/T 17255-321-2008/ IEC 61036:2000, DL/T645-1997
2. 规定的工作电压范围：0.9Un~1.1Un
3. 功率消耗：小于2W (10VA)
4. 起动电流：1级表 0.4%Ib，2级表0.5%Ib
5. 潜动：具有防潜动逻辑电路
6. 规定的工作温度范围：-10 ~45
7. 工作极限温度范围：-25 ~55
8. 过载能力强，仪表在准确度等级范围内的过载能力可达6倍以上
9. 具有计量正、反二个方向的电量，正向累计，发光管指示，有一定的防窃电能力
10. 仪表在线计量准确、抗干扰性强，可靠性高，寿命可达15年以上。
11. 具有远程断电功能。
12. 输出接口RS485和红外通信。

Main Technical data

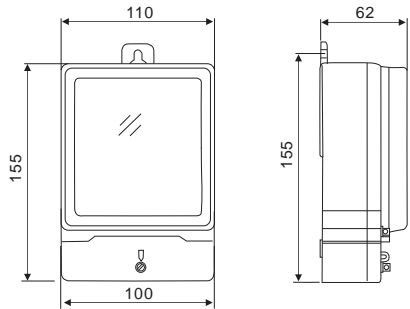
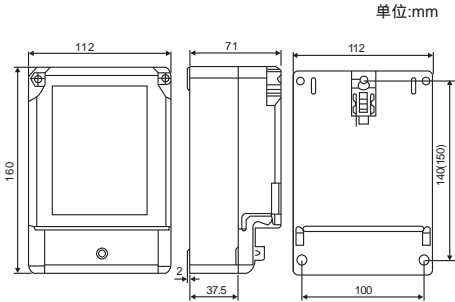
1. Executive standard: GB/T 17255-321-2008/ IEC 61036:2000, DL/T645-1997
2. Specified working voltage: 0.9Un~1.1Un
3. Power consumption: less than 2W (10VA)
4. Starting current: class 1 meter: 0.4%Ib; class 2 meter: 0.5%Ib
5. Creeping: anti-creeping logical circuit
6. Specified working temperature: -10 ~45
7. Utmost working temperature: -25 ~55
8. Strong overload capability: the meter overload ability can reach above 6 times within the accuracy class.
9. It can measure electric energy positively and negatively, can accumulate positively and has function of anti-electricity theft, luminescent tube indicates.
10. Accurate online measurement, strong ability of anti-interference, high reliability, the life can be more than 15 years.
11. Remote interruption of power supply function
12. Output interface RS485 and infrared communication

适用范围 Application

DDS450J系列单相电子式RS485通讯电能表采用最新微处理器、低功耗大规模集成电路技术和SMT制造工艺设计制造的，具有测量精度高、性能稳定可靠、显示直观等优点，设计采用专用液晶LCD，具有正、反双向计量电能，有一定防窃电能力，适用于测量参比电压为220V参比频率为50Hz单相有功电能，通讯规约符合DL/T645-1997《多功能表通讯规约》。

DDS450J series single-phase electronic watt-hour meter adopts the latest MPU and low-power consumption large-scale integrated circuit technology as well as SMT technology, it has many features such as high accuracy, high stability, visible display, adopts LCD, can measure electric energy positively and negatively, and has ability of anti-electricity theft, is suitable for measuring AC single-phase active energy of reference voltage 220V and reference frequency 50Hz, and its communication protocol has conformed to DL/T6451997 Multi-function Watt-hour Meter Communication Protocol.

外形及安装尺寸  
Outline & installation size



DTS450J,DSS450J

三相电子式液晶电能表(带红外和RS485通讯功能)

Three-phase watt-hour meters with LCD and RS485 communication



产品规格 Produce Specification

型号 Model	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)
DTS450J	3×57.7/100V	1.5(6)A, 3(6)A(互感器CT); 5(20)A, 10(40)A, 15(60)A, 20(80)A, 30(100)A (直接式)
	3×220/380V	
DSS450J	3×100V	
	3×380V	

主要功能 Main functions

电能计量  
可计量正反两向电量，反向电能与正向电能累加计量显示，也可显示反向电能。可有效防止电流反向窃电。  
检测接口  
具有光电隔离脉冲输出检测端子，便于检验。  
通讯接口  
具有RS485通讯接口，可方便用于集抄系统。  
保护措施  
产品内部设计有抗雷击和高频电磁场干扰的保护线路。  
宽工作电压  
三个发光管分别代表A、B、C相，在某相缺相时，相对应指示灯会熄灭。

Energy measurement  
It can measure the forward and reverse electric quantity, display the measurement and accumulation of reverse energy and forward energy, also can indicate the reverse energy amount. Meanwhile, it can prevent the electricity being theft by reversing the current.  
Detection interface  
There is a detection terminal of photoelectric isolation and pulse output, for checking the meter.  
Communication interface  
There is a RS485 communication interface, convenience for the centralized meter reading system.  
Protection measures  
The product internal design has the protection circuit of resisting the lightning strike and high-frequency electromagnetic interference.  
Wide range of working voltage  
Three luminotrons, representing phase A, phase Band phase C respectively, indicates whether the phase failure happens, if any phase is failure, the corresponding indicator lamp goes out.

适用范围 Application

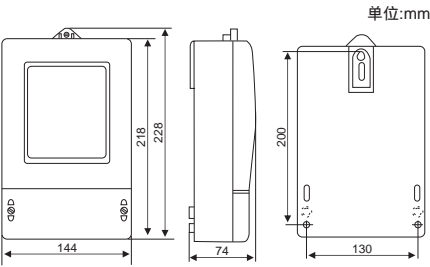
DTS450J、DSS450J型三相电子式有功电能表(液晶显示带RS485通讯表)是为方便电力部门或用户监控电网质量而设计开发的电能表。具有较高的准确度和可靠性。本电能表采用国际先进的超低功耗大规模集成电路技术及SMT工艺制造。电子式三相有功电能表供参比频率为50Hz的三相电网中精确计量有功电能。该表型根据国家标准GB/T17215-2002《1级和2级静止式交流有功电度表》设计，通讯规约符合DL/T645-1997《多功能表通讯规约》。

DTS450J/ DSS450J type three-phase electronic active watt-hour meter (also called watt-hour meter with LCD and RS485 interface) is designed and developed for electric power department or user to monitor the power grid quality, with high accuracy and reliability. The watt-hour meter adopts the advanced international large-scale integrated circuit of ultra-low power consumption and SMT process. It accurately measures the active energy of three-phase power grid with the reference ratio of 50Hz. It is designed according to the national standard of GB/T172152002 Alternating Current Static Watt-hour Meters for Active Energy (Classes 1 and 2) and its communication protocol has conformed to DL/T6451997 Multi-function Watt-hour Meter Communication Protocol.

主要技术参数 Main Technical data

1. 正常工作电压：0.8~1.1 参比电压  
极限工作电压：0.7~1.2参比电压
2. 绝缘电压：2000VAC
3. 每相电压线路功耗：2 W和 10VA
4. 正常工作温度(户外)：-25 ~55  
极限工作温度(户外)：-45 ~70  
存储和运输温度(户外)：-40 ~70  
相对湿度范围：25%~75%RH。
1. Normal working voltage: 0.8~1.1 of reference voltage  
Utmost working voltage: 0.7~1.2 of reference voltage
2. Insulation voltage: 2000VAC
3. Voltage circuit power consumption: 2 W and 10VA
4. Normal working temperature(outdoor): -25 ~55  
Utmost working temperature(outdoor): -45 ~70  
Storage and transport temperature(outdoor): -40 ~70  
Relative humidity: 25% ~ 75%RH

外形及安装尺寸 Outline & installation size



塑料壳电能表的安装尺寸图  
Diagram of installation  
size of moulded case watt-hour meter

- 1.采用高质量、高精度、高灵敏、高稳定、宽量程、低功耗的专用计量芯片。
- 2.主要元器件采用高质量的、专为电子式电能表设计的专用元器件。
- 3.电压采样回路采用电阻分压方式。
- 4.电流采样回路采用高质量、高精度、高稳定、宽量程的锰铜分流器。
- 5.显示采用高可靠的LCD显示器。
- 6.外壳结构牢固，阻燃、抗老化、密封性能好。
- 7.RS485通信接口采用独立电源供电，并具有防静电和浪涌保护电路。
- 8.采用专利技术自保持继电器，高可靠、低功耗。
- 9.采用标准IC卡作为电量传递介质，一表一卡，数据经过加密运算，安全性好。
- 10.用电数据可回抄到IC卡中。

1. High quality high accuracy high agility high stabilization , width measure ,low loss and other professional measure core were adopted
2. Mainly component was take high quality and profession electric meter design's component
3. Voltage collect signal loop is resistor sub voltage way
4. Current collect signal loop take high quality ,high accuracy high stability high measure's manganin shunt
5. Display is stability LCD
6. Cover instruction is substance anti fire and anti aging ,good sealing
7. RS 485 communication adaptor take independence power supply electric ,and have prevent static surge protect circuit
8. Patent technology Auto protect relay was adopted it is high stability and low loss
9. IC card is transmit medium ,one card one meter ,the data will calculate after encrypting ,good safety
10. The use data will copy back to IC card

[illegible]

用于新建或改造的城镇居民小区及农村等单相用电用户电能计量,具有预付费功能,特别适合居民住宅小区、机关、厂矿、学校等安装现场,可有效解决收费难问题,是推进需求侧管理工作有效手段。

- 1. Infrared, RS485 or carry wave communication way;
- 2. LCD, LED and extra register to display;
- 3. Real times clock ,history data ,event record function;
- 4. Alarm owe tick and over load testing function;
- 5. IC card can choose memory card and logistic encrypting card or CPU card.
- 6. All kinds of communication choosing way to choose.

- GB/T 18460.3-2001(IC card prepaid sell power system third section : prepaid kwh meter )
- GB/T 17215.321-2008 《class 1 and class 2static ac power meter 》
- DL/T 645-1997 《multi function kwh meter communication》

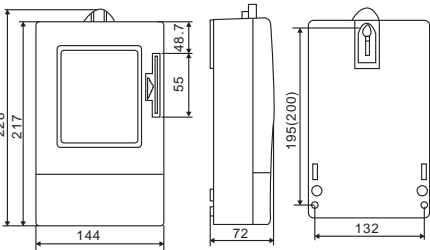
## The image shows two identical white smart meters standing upright against a light blue background. Each meter has a rectangular LCD screen at the top. Below the screen, there are several rows of printed text in Chinese, including technical specifications like voltage (220V) and frequency (50Hz), and a barcode. At the bottom of each meter's faceplate, the company name "南明集团有限公司" (Nanming Group Co., Ltd.) is visible. The meters have a slightly weathered appearance with some minor scuffs.

型号 Type	准确度等级 Accuracy class	参比电压Un Reference voltage	额定电流Ib Rated current	接入方式 Connection	仪表常数 imp/kWh
DTSY450J DSSY450J	1级, 2级	3x220/380V	1.5(6)A	互感式 CT type	1600
			5(20)A	直接式 Direct type	800
			10(40)A	直接式 Direct type	400
		3x57.7/100V	15(60)A	直接式 Direct type	400
			20(80)A	直接式 Direct type	400
			30(100)A	直接式 Direct type	400

- 1.采用高质量、高精度、高灵敏、高稳定、宽量程、低功耗的专用计量芯片。
- 2.主要元器件采用高质量的、专为电子式电能表设计的专用元器件。
- 3.电压采样回路采用电阻分压方式。
- 4.电流采样回路采用高质量、高精度、高稳定、宽量程的锰铜分流器。
- 5.显示采用高可靠的LCD显示器。
- 6.外壳结构牢固，阻燃、抗老化、密封性能好。
- 7.RS485通信接口采用独立电源供电，并具有防静电和浪涌保护电路。
- 8.采用专利技术自保持继电器，高可靠、低功耗。
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1. High quality high accuracy high agility high stabilization , width measure ,low loss and other professional measure core were adopted
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## 单位:mm





DCZL23-ZM10型采集器Data collecting terminal



功能特点 Function Features

序号功能Function			
1	数据接口 Data interface	抄表接口 Meter reading interface	采集器提供RS485接口进行电能数据采集 The collector provides RS485 port to measure electric energy data
		维护接口 Maintenance interface	采集器提供红外接口进行本地维护 The collector provides infrared port for local maintenance
2	数据传输 Data communication	与集中器通信 Communicate with the concentrator	实现对集中器下发指令的透明转发，并将RS485电表的响应回传 Transparently transfer the instructions to others, and send the response of energy meter via RS485 back  为集中器路由提供载波中继功能 Provide carrier relaying function for concentrator routing.
		与电能表通信 Communicate with the watt-hour meter	采集器通过RS485接口与电能表通信 Collector perform communication with energy meters via RS485 port  与电表通信規約符合DL/T645規約 Its communication protocol with energy meter complies with DL/T465 rules
3	本地功能 Local function	本地状态指示 Local state indicating	具有电源、工作状态、通信状态指示 Indicators for power source, working status, communication status provided.
		本地维护接口 Local maintenance interface	具备红外本地维护接口，可查询参数和抄读电能数据 Provide local infrared maintenance port for seeking and reading the data of energy meter
4	维护功能 Maintenance function	初始化 Initialization	通过本地维护接口可进行初始化操作 Also initialization can be operated via local maintenance port  采集器具有自检自恢复功能 Self-detection and auto-recovery function provided.
		参数查询 Parameter query	采集器能通过本地维护接口进行版本维护和查询 The collector can maintain and check software version via local maintenance port.

主要技术参数 Main Technical data

1. 工作电源额定电压：AC220V±20%

2. 频率范围：50Hz，允许偏差-6%~+2%

3. 外形尺寸：100x40x50mm

4. 正常工作温度：-25 ~+55

5. 极限工作温度：-40 ~+70

6. 存储和运输温度：-40 ~+70

7. 存储和工作湿度：95%

8. 电表規約：DL/T645-1997 DL/T645-2007

9. 数据传输接口：1路载波通信接口、1路RS485抄表接口、1路红外维护口

10. 可靠性：MTBF 10x10^4h
1. Working power supply rated voltage: AC220V±20%

2. Rated frequency: 50Hz, Accuracy - 6% ~ + 2%

3. Dimensions: 100 x40x50mm

4. Normal working temperature: 25 ~ + 55

5. Limit working temperature: - 40 ~ + 70

6. Storage and transportation temperature: - 40 ~ + 70

7. Storage and work humidity: 95%

8. Meters specifications: DL/T645-1997 DL/T645-2007

9. Data transmission interface: 1 carrier communication interface, 1 way RS485 interface meter, 1 way Infrared maintenance

10. Reliability: MTBF 10x10^4h

适用范围 Application

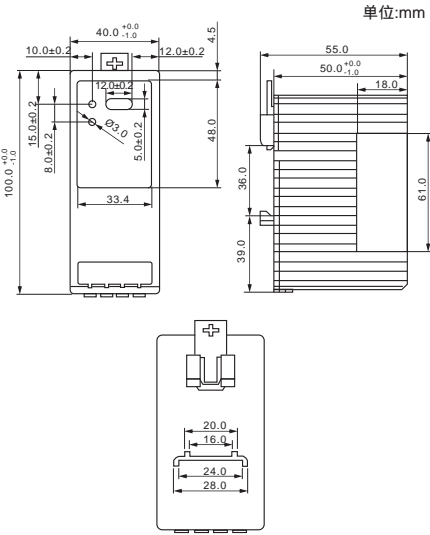
DCZL23-ZM10型采集器是低压电力线载波集中抄表系统的重要组成部分。该采集器符合 国 家 电 网 公 司 Q/GDW1375.3-2013、Q/GDW1374.2-2013等《电力用户用电信息采集系统》系列标准，应用现代数字通信技术、计算机软硬件技术、低压电力线载波技术等进行电能采集。

该采集器电磁兼容性能优良，温度适应范围广，电压适用范围宽，可以查询和修改设备参数；采集器外壳采用ABS阻燃材料，壁挂式结构设计，体积轻巧，安装方便。

DCZL23-ZM10 type collector is one of the important component of LV power line carrier AMRS, in compliance with the standards of Q/GDW1375.3-2013, Q/GDW1374.2-2013 and etc "Information Acquisition System for Power User" issued by State grid Corporation, adopt modern digital communication technology, computer software and hardware technology, low voltage power line carrier technology to collect electric energy values.

This collector has excellent electromagnetic compatibility, wide applicable temperature scope, able to seek and modify the parameters of the equipment, the shell of collector made of flammable ABS material, wall-hung structure, small size, easy installation.

外形及安装尺寸 Outline & installation size



DJGZ-ZM01型集中器Data collecting terminal



性能指标 Specification

参比电压 Reference voltage	参比电流 Reference current	频率范围 Frequency	外形尺寸 Dimensions
3x220/380V(三相四线)	3x1.5(6)A	50Hz,允许偏差 -6%~+2%	290x180x95mm
3x57.7/100V(三相四线)			
3x380V(三相四线)			
3x100V(三相四线)			

主要技术参数 Main Technical data

1. 正常工作电压：0.8Un~1.2Un

2. 有功功率：10W

3. 视在功率：15VA

4. 时钟准确度(日误差)：0.5s/d(0 ~+40 时:±2ppm; -40 ~+85 时:±3.5ppm)

5. 电池寿命：10年

6. 电池连续工作时间：5年

7. 停电后数据保存时间：10年

8. 正常工作温度：-25 ~+55

9. 极限工作温度：-45 ~+75

10. 存储和运输温度：-50 ~+85

11. 存储和运输湿度：95%

12. 主站規約：Q/GDW1376.1-2013《电力用户用电信息采集系统通信协议；主站与采集终端通信协议》

13. 面板显示：160x160点阵单色LCD,LED背光

14. 键盘：6个按键：上移、下移、左移、右移、取消、确认

15. 本地传输接口：1路维护RS232维护串口、2路RS-485、1路USB、1路调制式红外接口、1路GPRS通信接口。

16. 远程升级：支持

17. 存储容量：64MB FLASH

18. 可靠性：MTBF 10x10^4h
1. Normal working voltage: 0.8Un ~ 1.2Un

2. Active Power: 10W

3. Apparent Power: 15VA

4. Clock accuracy (Day error): 0.5s / d (0 ~ + 40 : ± 2ppm; -40 ~ + 85 : ± 3.5ppm)

5. Battery life: 10 years

6. Battery continuous working time: 5 years

7. After power data retention time: 10 years

8. Normal operating temperature: -25 ~ + 55

9. Limit working temperature: -45 ~ + 75

10. Storage and transport temperature: -50 ~ + 85

11. Storage and transport humidity: 95%

12. Master of the Statute: Q / GDW1376.1-2013 "power user information collection Body system communication protocol; and Adopting the master terminal communication protocol. "

13. Panel Display: 160x160 dot matrix monochrome LCD, LED backlight

14. Keyboard: 6 buttons: Move up, down, left, right, cancel, confirm

15. Local Transmission Interface: 1 Road Maintenance Maintenance serial RS232, 2way RS-485, 1 channel USB, 1 road modulated infrared interface, 1 GPRS communication interface.

16. Remote Upgrade: Support

17. Storage capacity: 64MB FLASH

18. Reliability: MTBF 10x10^4h

适用范围 Application

DJGZ23-ZM01型集中器是用电信息采集系统的重要组成部分。应用现代数字通信技术、嵌入式技术、计算机软硬件技术等进行用电需求侧信息采集与分析处理。

该产品电磁兼容性能优良，能抵御高压尖峰脉冲、强磁场、强静电、雷击浪涌的干扰，且具有较强的温度自适应能力范围；宽电压范围设计使其具有更高的可靠性；可以在本地/远程方便地修改设备参数，支持当地/远方软件的在线升级；大容量的主板FLASH存储芯片保证各种数据的方便存储；ABS防水阻燃材料，壁挂式结构、体积轻巧、安装方便。

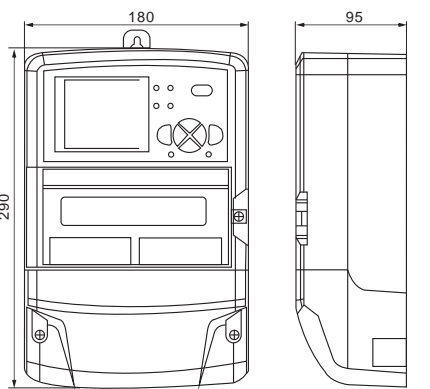
该产品具有功能强大、使用简单、运行稳定、维护方便、可靠性高、存储容量大、开放性好、性价比高的特点，能够很好的满足用户的应用需求。

DJGZ23-ZM01 type collector is one of the important parts of electric acquisition system, to collect and analyze the information on electric load side via modern digital communication technology, plug-in technology, computer software and hardware and etc.

This product has excellent electromagnetic compatibility, able to resist high voltage sharp peek pulse, strong magnetic field, high electrostatic, lightning surge, able to operate under large temperature range, wide voltage scope; the parameters can be modified locally or remotely, support software updated locally or remotely, all data can be saved in FLASH storage device with large capacity on mainboard, the shell made of ABS waterproof material, wall hung type, small size, easy to be mounted.

The product has powerful function, easy to be used, run steadily, convenient to be maintained, high reliably, large storage, able to meet well with user demand.

外形及安装尺寸 Outline & installation size



# DDSY450-E

## 一卡通单相电子式预付费电能表(IC卡)

Single phase electronic prepaid energy meter with one card (IC)



### 功能及特点 Function and Features

- 1.电能计量:电能表对用户用电量进行准确计量。
- 2.预付费:预先支付电费,然后才可以用电,便于用电管理。
- 3.电量告警:当电能表中的剩余电量 设定显示报警值时,报警灯以1HZ频率闪烁,提示剩余电量不足。  
当电能表中的剩余电量 = 设定断电报警值时,报警灯常亮,继电器断开。用户必须插入用户卡一次,可合闸继续用电至剩余电量为0,期间报警灯以1HZ频率闪烁。  
当剩余电量为0时,继电器断开,报警灯常亮,此时用户必须购电方能合闸正常使用。
- 4.买多少电,就可以使用多少,绝不进行任何限制,维护了使用者的利益。
- 5.过零计量:当剩余电量为0时,由于继电器故障等原因无法断开继电器用户仍可使用电量时。此时用户用电,表正常计量用户用电量,此时剩余电量为负值;并在存储器保存继电器故障信息,用户下次充值时反写于用户卡,供管理部门查询。插入购电卡后当前购电量扣除已负电量为表内剩余量。故障状态只能由管理部门使用检查卡清除。
- 6.功率限制:当前用户使用的用电器总功率超过电能表设定最大允许功率值时,断开继电器,提示超负荷,用户插任意卡可合闸,继续用电。功率计算时间为2分钟。售电管理中心在售电软件中设定电能表的功率最大值。
- 7.防伪功能:本表为一表一卡,如果卡与表的户号、表号、系统号等不同错误插卡。显示相应错误代码,参考见附表。
- 8.失卡不失电:用户的购电卡一旦遗失,可在相应售电部门补办一张用户卡;补卡成功后,已购电量继续有效,防止给用户造成经济损失。
- 9.防囤积:为响应国家的用电政策,杜绝用户恶意大量购电,每次可购电量都有最大值限制,保证电能表内的可用电量不超过事先规定门限。
- 10.区域识别功能:电表出厂时根据安装地省份,设置省份地区代码。用户卡插入表后比较此代码,卡和表的地区代码不同,表不认卡。便于用户管理,防止代理商互相窜货扰乱市场。
- 11.补卡功能:用户的购电卡一旦遗失,可在售电部门补办一张用户卡。
- 12.退购功能(过户):要把电表剩余电量退还给用户时,发行退购态用户卡,把剩余电量带回,由管理部门退还给用户剩余金额。
- 13.即时通断功能:即刻让电表断电和通电。
- 14.缴费作废功能:当操作员把购电量输错后,可以返回到交费前状态。

### 适用范围 Application

DDSY450-E电子式单相预付费电能表是我公司自主研发的新一代智能电能表,符合国家标准 GB/T17215.321-2008、GB/T18460-2001。本产品电能计量部分采用先进设计,使计量更准确;数据处理部分应用高速微电脑芯片,使数据处理速度快、精度高。采用现代微电子技术,产品自身功耗低,使用寿命长。

DDSY450-E Single phase electronic prepaid energy meter is a new smart energy meter developed by our company, complies with national standards: GB/T17215.321-2008、GB/T18460-2001, its metering part adopted advanced technology to design, make higher accuracy, the data processing part composed of hi-speed microcomputer chipset, can run more quickly, more accurately, lower power loss, longer service life.

### 主要技术参数 Main Technical data

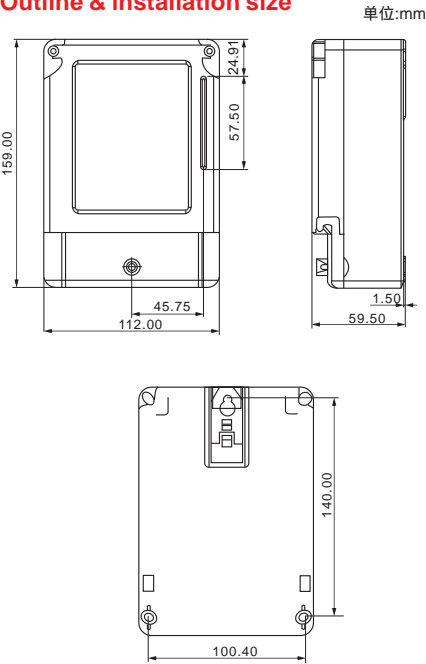
参比电压 Reference voltage	AC220V			
参比电流 Reference current	5(20)A	10(40)A	15(60)A	20(80)A
脉冲常熟 Impulse	3200 imp/kWh	1600 imp/kWh	1600 imp/kWh	800 imp/kWh
准确度等级 Accuracy	1.0级			

起动电流:在负载电流为0.004Ib时,电能表起动,进行准确计量,满足国标规定。

自身功耗: <2W,10VA

Startup current: the meter can start measure when loading current is 0.004Ib or larger, in compliance with national standard  
Self power loss: <2W, 10VA

### 外形及安装尺寸 Outline & installation size



# DTSY450-E、DSSY450-E

## 一卡通三相电子式预付费电能表(IC卡)

Three phase electronic prepaid energy meter with one card (IC)



### 功能及特点 Function and Features

- 1.电能计量:电能表对用户用电量进行准确计量。
- 2.预付费:预先支付电费,然后才可以用电,便于用电管理。
- 3.电量告警:当电能表中的剩余电量 设定显示报警值时,报警灯以1HZ频率闪烁,提示剩余电量不足。  
当电能表中的剩余电量 = 设定断电报警值时,报警灯常亮,继电器断开。用户必须插入用户卡一次,可合闸继续用电至剩余电量为0,期间报警灯以1HZ频率闪烁。  
当剩余电量为0时,继电器断开,报警灯常亮,此时用户必须购电方能合闸正常使用。
- 4.买多少电,就可以使用多少,绝不进行任何限制,维护了使用者的利益。
- 5.过零计量:当剩余电量为0时,由于继电器故障等原因无法断开继电器用户仍可使用电量时。此时用户用电,表正常计量用户用电量,此时剩余电量为负值;并在存储器保存继电器故障信息,用户下次充值时反写于用户卡,供管理部门查询。插入购电卡后当前购电量扣除已负电量为表内剩余量。故障状态只能由管理部门使用检查卡清除。
- 6.功率限制:当前用户使用的用电器总功率超过电能表设定最大允许功率值时,断开继电器,提示超负荷,用户插任意卡可合闸,继续用电。功率计算时间为2分钟。售电管理中心在售电软件中设定电能表的功率最大值。
- 7.防伪功能:本表为一表一卡,如果卡与表的户号、表号、系统号等不同错误插卡。显示相应错误代码,参考见附表。
- 8.失卡不失电:用户的购电卡一旦遗失,可在相应售电部门补办一张用户卡;补卡成功后,已购电量继续有效,防止给用户造成经济损失。
- 9.防囤积:为响应国家的用电政策,杜绝用户恶意大量购电,每次可购电量都有最大值限制,保证电能表内的可用电量不超过事先规定门限。
- 10.区域识别功能:电表出厂时根据安装地省份,设置省份地区代码。用户卡插入表后比较此代码,卡和表的地区代码不同,表不认卡。便于用户管理,防止代理商互相窜货扰乱市场。
- 11.补卡功能:用户的购电卡一旦遗失,可在售电部门补办一张用户卡。
- 12.退购功能(过户):要把电表剩余电量退还给用户时,发行退购态用户卡,把剩余电量带回,由管理部门退还给用户剩余金额。
- 13.即时通断功能:即刻让电表断电和通电。
- 14.缴费作废功能:当操作员把购电量输错后,可以返回到交费前状态。

- 1.**Energy metering:** measure the accurate electric energy of user.
- 2.**Prepayment:** the user pays the charge of electric energy in advance, then consume electricity, this way make administration easily.
- 3.**Alarm of Electricity shortage:** when the rested electricity less than setting value, the alarm lamp will flash at 1Hz, remind user of electricity being not enough.  
When the rested electricity equal to setting value of alarming, the alarm lamp keep lighting, relay is opened, the user has to insert the user card one, relay will close and let user consume again till rested electricity is zero, during this period, alarm lamp will flash at 1Hz.
- 4.How much the user purchase, how much he can consume, no more limit, make the obligation very clear.
- 5.**Metering if the purchased electricity is negative**, when rested electricity is zero, if relay has fault and can't be opened, the power supply for user is still ON, the meter can measure the electric consumption, but the data is negative and the information will be saved in storage device for check, when the user purchase next time and insert the card, the meter will deduct the electric consumption automatically, the fault information has to be cleared by the administration department.
- 6.**Power limited:** when the total consumed power exceed the maxi setting value of meter, it will open the relay, remind of overloading, the user insert card for reclosing, continue electric consumption, power counting take 2 minutes. The administration department set the maxi power value in the software of the meter.
- 7.**Anti-counterfeit:** one meter one card, if user code, meter code of the card and meter are different, when the card inserted, the meter will display error code, please refer to attached table
- 8.**Purchased electricity not missed even if card lost**, once the card is lost, the user can go to administration department and replace a new card, and the purchased electricity in former card is still valid.
- 9.**Anti-hoard:** according to national policy, prevent user purchasing in great deal, the user is limited to purchase every time, to ensure the maxi electricity in meter does not exceed the specified value.
- 10.**Zone identification function:** during ex-works, the province, zone code has been set in the meter. When user card inserted in the meter, if zone code between card and meter is different, the meter will not identify, this can help user management, prevent the different agents selling the meters to other unauthorized zone.
- 11.If purchase card is lost, the user can replace a new card from administration department.
- 12.**Refund function:** if the rest electricity shall be returned to user, the user shall return the card, and administration refund the balance amount to user.
- 13.**Real time ON/OFF function:** the administration department can switch on/off the power supply through meter at real time.
- 14.**Cancellation:** when the operator input wrong electricity value, it can return to former unpaid status.

### 适用范围 Application

DTSY450-E、DSSY450-E电子式三相预付费电能表是我公司自主研发的新一代智能电能表,符合国家标准 GB/T17215.321-2008、GB/T18460-2001。本产品电能计量部分采用先进设计,使计量更准确;数据处理部分应用高速微电脑芯片,使数据处理速度快、精度高。采用现代微电子技术,产品自身功耗低,使用寿命长。

DTSY450-E、DSSY450-E Three phase electronic prepaid energy meter is a new smart energy meter developed by our company, complies with national standards: GB/T17215.321-2008、GB/T18460-2001, its metering part adopted advanced technology to design, make higher accuracy, the data processing part composed of hi-speed microcomputer chipset, can run more quickly, more accurately, lower power loss, longer service life.

### 主要技术参数 Main Technical data

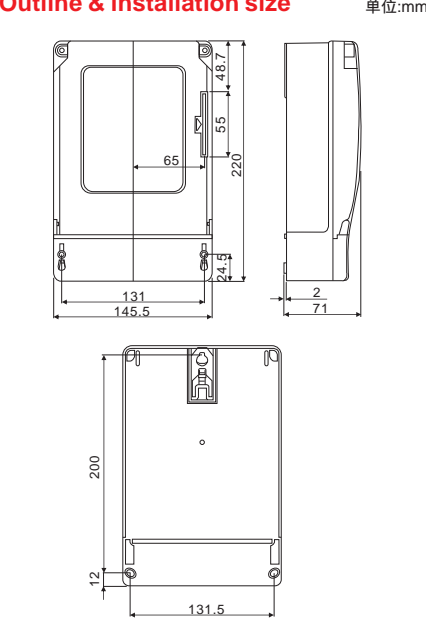
参比电压 Reference voltage	3x220/380V				
参比电流 Reference current	1.5(6)A	5(20)A	10(40)A	15(60)A	20(80)A
脉冲常熟 Impulse	1600 (互感器)	800 imp/ kWh	400 imp/ kWh	400 imp/ kWh	400 imp/ kWh
准确度等级 Accuracy	1.0级				

起动电流:在负载电流为0.004Ib时,电能表起动,进行准确计量,满足国标规定。

自身功耗: <2W,10VA

Startup current: the meter can start measure when loading current is 0.004Ib or larger, in compliance with national standard  
Self power loss: <2W, 10VA

### 外形及安装尺寸 Outline & installation size





# ZMSB450

## 一卡通预付费智能水表(IC卡)

### Smart prepaid water meter with one card (IC)



#### 功能及特点 Function and Features

1. 预付费功能 量控：就是水量预付费，用户购买的水量输入到表中去，用多少水量从剩余水量中扣减多少水量，剩余水量用完后关闭停水；  
复费率水价预付费：内置两套费率单价，每套的月间隔对应一个用水单价，一年中不同的月可以有不同的单价。
2. 一卡通功能：一张卡（SLE4442卡和射频卡）可实现电能表、水表及热量表预付费抄控功能。
3. 剩余/透支报警功能：当水表剩余水量（金额）小于报警水量（金额）时，水表阀门关闭，液晶显示报警提示（提醒用户及时交费充值），把用户卡插入水表中，阀门打开，液晶报警提示消失；
4. 报警提示功能：电池欠压、剩余水量（金额）不足、强磁干扰、阀故障、阀漏水及其他故障信息，都会在液晶上提示报警错误信息代码；欠压和磁保护后蜂鸣器（发光二极管）报警6声，同时关闭阀门，报警时间大约5S左右。
5. 欠压检测功能：当电池电压不足时，水表会提示“欠压”字样，并关闭阀门；
6. 掉电关阀功能：当用户电池欠压更换电池（碱性电池）或用户把水表铅封打开拆卸电池（锂电池）时，阀门会自动关闭，停止供水。
7. 数据冻结功能：水表保存12个月、7日冻结数据，数据上传后方便进行日结算和月结算及报表统计。
8. 快速换表功能：旧表到了使用年限后要更换新表，直接用一张换表卡把旧表数据取出后插入新表，旧表数据换到了新表中，从而快速实现换表。
9. 数据上传功能：IC卡(SLE4442)水表用户每次充值，会把相关数据信息带回管理系统，让管理方及时了解用户的用水情况及表状态。
10. 阀门自维护功能：阀门定时旋转，及时清掉阀门水垢，保证阀门灵活性。
11. 阀门故障检测功能：当阀门转动被污垢卡住后，阀门自动向相反方向转动后再向初始动作方向转动，已达到把污垢清除目的。
12. 阀门漏水检测功能：当阀门关闭后仍然有大于0.1m³的水流出。
13. 计量反向检测功能：当水表方向与水管水量方向不一致时，走水在0.1m³内能检测出水表装反，并关阀报警。
14. 即时换表功能：一张换表卡把旧表数据取出，插入新表后把旧表数据存入新表中，达到快速换表功能。
15. 防囤水功能：通过系统软件可灵活设置充值上下限，防止用户囤水。
16. 防滴水功能：配合防滴水基表，实现防滴水功能。
17. 更换电池方便

1. **Prepayment, volume control**: the water volume that user purchased input into the water meter, during consumption, the meter deduct the actual used volume at real time, if the purchased volume used up, the meter close the valve and stop water supply;  
Multi-tariff prepayment: two sets of built-in tariffs, each set has one price in every month interval. The different month in a year may have different prices.
2. **One multifunctional card**: one card (SLE4442 and RF card) can realize prepayment, read and control of energy meter, water meter, and calorimeter
3. **Alarm for lower rest/overdraft**: when rested volume (amount) less than the setting value for alarm, the valve of water meter will be closed, LCD give alarm indication (remind user of purchasing and charging again), then insert user card into water meter, valve opened, and LCD alarming indication disappear.
4. **Alarm reminding function**: the information of battery under-voltage, rest volume (amount) not enough, strong magnetic interference, valve fault, valve leakage and other faults, all of these alarming codes will be displayed on LCD; after protection of under-voltage and magnetic protection, buzzer (lighting diode) produce 6 sounds, and close the valve at same time, alarming time about 5s.
5. **Detection of under-voltage**: when battery voltage is too low, water meter will display U/V, and close valve.
6. **Close valve in case of power failure**: when the user replace battery (alkali) or open Pb seal and dismantle (Li) battery, the valve will be closed automatically and stop water supply.
7. **Data frozen**: water meter will keep all frozen data of 12 months, 7 days, only after data is uploaded, then it can do daily and monthly settlement, and statistic report.
8. **Quick replace meter**: when old meter service period is expired, it need replace new one, use a change card to read the data in old meter, then insert into the new meter, data will be transferred to new meter very quickly.
9. **Data upload**: when the user of IC card (SLE4442) charge the meter each time, it will upload the data to management system, let supply department know the user consumption status and meter status.
10. **Self-maintenance of valve**: the valve will rotate periodically, clear off water scale, ensure the valve workable.
11. **Fault detection on valve**: when valve is blocked because of waste or water scale, valve will rotate automatically in opposite direction, then rotate in initial direction again, to perform clearing off waste or water scale
12. **Detection of water leakage on valve**: when valve is closed, water flow still more than 0.1m3
13. **Measurement of water flow at reverse direction**: when water flow is in reverse direction, within 0.1m3 flow, it can detect the problem, close the valve and give alarming.
14. **Real-time replace meter**: use a change card to read the data in old meter, then insert into the new meter, data will be transferred to new meter very quickly.
15. **Anti-hoard**: the software can set to limit the maxi charging volume, to prevent user hoarding water
16. **Water drop proof**: cooperated with water drop proof meter, to perform this water drop function (water drop but not measure)
17. **Easy to replace battery**

#### 适用范围 Application

预付费智能水表是我公司最新研发的高科技机电一体化智能水表，以先进的微电脑控制为核心，IC卡接触式高智能化仪表。它集预付费、自动计量、状态报警及防止不正当使用等功能于一体；具有计量准确、性能可靠、结构紧凑合理等特点。

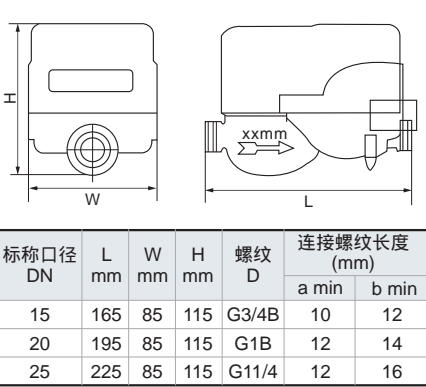
Smart prepaid water meter is the hi-tech integral smart water meter, developed by our company, cored by microprocessor, as IC touching meter, integrates with prepayment, auto measurement, status alarm and anti-tamper, advantages: high accuracy, reliability, compact structure and etc.

#### 主要技术参数 Main Technical data

- 1.使用温度:储存温度: 1 -50 ;工作温度: 1 -30
- 2.使用湿度: 90%
- 3.安装环境 B/C类
- 4.电磁环境 E1
- 5.工作电压：锂电池：3.6V
- 6.最大允许工作压力： 1MPa
- 7.电池寿命：锂电池：6+1年；
- 8.静态工作电流：SLE4442卡：Ib 3～5uA;
- 9.耐用性能：SLE4442卡座刷卡次数 100000次
- 10.计量等级 2级

1. Operating Temperature: Storage Temperature: 1 -50 ; Working temperature: 1 -30
2. Humidity: 90%
3. Installation Environment: B / C class
4. Electromagnetic Environment: E1
5. Operating voltage: lithium battery: 3.6V
6. The maximum allowable working pressure: 1MPa
7. Battery life: Lithium Battery: 6 + 1 year;
8. Quiescent current: SLE4442 card: Ib 3 ~ 5uA;
9. Durability: SLE4442 card deck number 100000 times
10. Level of measurement: 2

#### 外形及安装尺寸 Outline & installation size



# DDZY450

## 单相费控智能电能表

### Single phase tariff controlled intelligent energy meter



#### 产品特点

1. 具有正反向有功、组合有功总及分费率电能计量和存储功能，组合有功特征字可设；
2. 具有远程费控功能；
3. 具有上12个结算周期的历史电量储存功能，能存储正反向有功、组合有功的总及分费率电能数据；
4. 具有电压、电流、功率、功率因数等实时参量测量功能；
5. 具有定时、瞬时、约定、整点及日冻结功能，冻结特征字可设；
6. 具有两套费率时区、时段表、可在约定的时刻自动转换；
7. 具有停电显示功能，停电后可通过按键或红外唤醒显示；
8. 具有红外通信口，RS485通信口，方便与外界交换数据；
9. 采用全自动软件校表技术，校表简单，速度快，准确度高；
10. 采用罩盖和盖板的一体化设计，造型新颖，美观实用；
11. 主要用于智能电网中单相居民用户的电能计量。

#### 技术参数 Main Technical data

项目 Item	技术指标 Main Technical data
准确度等级 Accuracy class	有功1级、2级 Active 1,2
电压规格 Voltage rating	220V
电流规格 Current rating	1.5(6)A, 5(40)A, 5(60)A, 10(60A), 10(100)A, 20(100)A, 基它规格需要定制。
参比频率 Reference frequency	50Hz
工作电压范围 Operating voltage range	规定工作电压范围Specified operating voltage range：0.9Un~1.1Un 扩展工作电压范围Extended operating voltage range：0.8Un~1.2Un
工作温度范围 Operating temperature range	规定工作温度范围Specified operating temperature range：-25 ~+55 极限工作温度范围Ultimate operating temperature range：-40 ~+70 储存和运输极限温度范围Storage and transport temperature：-40 ~+70
电压回路功耗 Voltage circuit power consumption	非通信状态: 1.5W和10VA Non-communication state: 1.5W and 10VA 通信状态: 3W和12VA Communication status: 3W and 12VA
电流回路功耗 Current circuit power consumption	1VA
年时区表套数 In time zone meter ploidy	2
日时段表套数 Day time meter ploidy	2
费率数 Rate number	4
年时区数 Years time zone	14
日时段表数 Day time meter number	8
日时段 Day time	14
时钟准确度 Clock accuracy	0.5s/d(23 ±2 )
计度范围 Meter range	-799999.99kWh~799999.99kWh
显示方式 Display	LCD显示，6位整数，2位小数 LCD display, six integers, 2 decimals
红外通信参数 Infrared communication parameters	通信角度 ±15°，通信波特率固定为1200bps
RS485通信波特率S485 communication baud rate	默认2400bps,可设置为1200bps,2400bps, 4800bps, 9600bps
技术标准 Technology standard	GB/T 17215.321-2008, GB/T15284-2002, DL/T645-2007, Q/GDW355-2009, Q/GDW354-2009, Q/GDW 364-2009, Q/GDW 365-2009
外形尺寸 Dimensions	160mmx112mmx58mm(以实物为准)

备注：电流规格为1.5(6)A和最大电流超过60A的电能表需要外配控制器支持通断电功能。  
Note: the meter of current rating 1.5(6)A and maxi current exceeding 60A need extra controller to switch on/off power supply.

#### 适用范围 Application

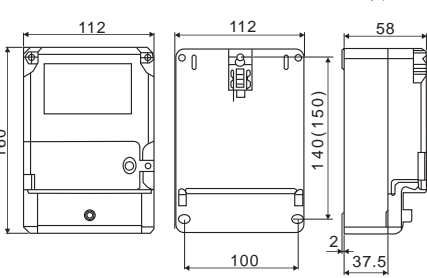
DDZY450 型单相费控智能电能表(以下简称电能表)是采用大规模集成电路，应用数字采样技术，根据智能电网“信息化、自动化、互动化”建设对电能表的要求而设计制造。

DDZY450 type single phase intelligent tariff control energy meter (hereinafter call: energy meter) adopted large scaled integrated circuits, digital sampling, which is designed for the demand of information, automation, and communication,

#### Product Features

- 1.Measure forward and reverse active, combined active power, total and respective energy of every timezone tariff, and save the data, combined active power feature character is settable.
- 2.with remote tariff control
- 3.Energy data saving function of more than 12 cycles of tariff period, able to save total and time-zone forward, reverse active power and combined power
- 4.At real time measure voltage, current, power, power factor and etc.
- 5.Freezing function at fixed time, instantaneously, appointment time, whole point of hour, and whole day, freezing feature character is settable.
6. Two sets of tariff time zones, time section table, it can shift free at appointment time.
- 7.Display in case of power off, it can wake up the display by use of pushbutton or infrared ray.
- 8.Infrared port, RS485 port and wave carrying port are provided for data exchange.
- 9.Fully automatic software calibration technology: simple, quick and accurate.
- 10.Cover and plates are integrated, new style, good figure, practical.
- 11.It is mainly used for single phase user who needs smart control.

#### 外形及安装尺寸 Outline & installation size



# DDZY450-Z

## 单相费控智能电能表

Single phase tariff controlled intelligent energy meter



### 性能指标 Specification

型号 Type	参比电压 Reference voltage	参比电流 Reference current	精度等级 Accuracy grade
DDZY450-Z	220V	5(20)A, 5(30)A, 5(40)A, 5(60)A, 10(40)A, 10(60)A, 15(60)A, 20(80)A, 20(100)A, 10(100)A	1级、2级 Class

### 功能特点 Product Features

电能计量功能

1.具有正向有功电能、反向有功电能计量功能，能存储其数据，并可以据此设置组合有功。

2.具有分时计量功能，有功电能量按相应的时段分别累计、存储总、尖、峰、平、谷电能量。

3.至少存储上12个月的总电能和各费率电能量；数据存储分界时刻为月末24时，或在每月1号至28号内的整点时刻。

本地、远程费控功能

1.费控功能通过CPU卡固态介质实现实现，电费计算在远程售电系统中完成，表内不存储、显示与电费、电价相关信息。电能表接收到远程售电系统下发的拉闸、允许合闸、ESAM数据抄读指令时，通过严格的密码验证及安全认证后表计才会执行相应的各项指令。

2.可通过无线通讯进行远程操控

测量及监测

能测量、记录、显示当前电能表的电压、电流（包括零线电流）、功率、功率因数等运行参数。测量误差（引用误差）不超过±1%。

事件记录功能

1．能永久记录电能表清零事件的发生时刻及清零时的电能量数据。

2．能记录编程总次数，最近10次编程的时刻、操作者代码、编程项的数据标识。

3．能记录校时总次数（不包含广播校时），最近10次校时的时刻、操作者代码。

4.能记录掉电的总次数，最近10次掉电发生及结束的时刻。

5．能记录最近10次远程控制拉闸和最近10次远程控制合闸事件，记录拉、合闸事件发生时刻和电能量等数据。

6．能记录开表盖总次数，最近10次开表盖事件的发生、结束时刻。

费率、时段

具有两套费率时段表，可在约定的时刻自动转换,时段的最小间隔为15min;时段可跨越零点设置。

**Electricity measurement function**

1.To measure the positive and negative active energy, save the data, combine the active power according this setting.

2.Measurement at different time section, the active energy shall be accumulated according to different time section, save total, highest, high, normal, and low electricity consumption data.

3.Save the total electricity, and energy at each tariff at least 12 months, the dividing time for data saving is the 24 O'clock of the last day of each month, or the o'clock from 1th ~ 28th of each month as setting.

**Local and remote tariff control**

1. Tariff control is realized through CPU card, the electricity cost will be calculated by remote electricity selling system, the meter will not save and display the details related to electricity cost and price. When the meter receive the instruction of tripping, closing, reading and copying ESAM data, only after the strict password verification and safety confirmation are passed, then perform that instruction.

**Measurement and supervision**

Able to measure, record, display the voltage, current (current of neutral line), power, power factor and etc at present, the measurement error not exceed ±1%

**Record the events**

1. Able to record the occurrence time and energy data of being cleared

2.Record the total programming times; the time, operator code, programming data marks of latest 10 times operations

3.Record the total times of time adjustment (not including broadcasting time adjustment), the time and operator code of latest 10 times operations

4.Record the total times of power failure, the occurrence and ending time of latest 10 power failures

5.Record the latest 10 times of remotely controlling tripping and closing operations separately, the occurrence and electricity data of latest 10 operations independently

6.Record the total times of opening meter cover, the occurrence and ending time of latest 10 events

**Tariff, time section**

Two sets of tariff and time sections, they can be automatically converted at setting time, shortest time interval/section is 15 min, time section can cross over zero

### 适用范围 Application

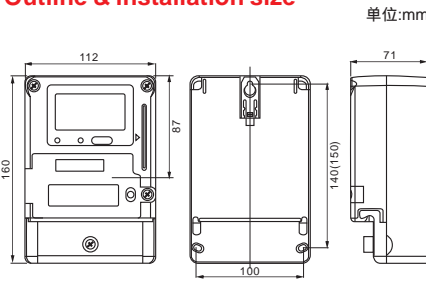
DDZY450-Z型单相费控智能电能表电能表是采用先进的电能计量芯片，应用数字采样处理技术及SMT工艺。本产品可计量正向、反向及四费率电量并存储其数据,可实现清零、校时、编程、掉电、开表盖等事件记录，并具有电能脉冲输出、时钟信号输出等功能,采用CPU卡，能通过无线通讯对数据进行抄读。

该产品性能指标符合GB/T 17215.321-2008《交流电测量设备 特殊要求-第21部分静止式有功电能表(1级和2级)》、GB/T 15284-2002《多费率电能表 特殊要求》、GB/T 17215.211-2006《交流电测量设备通用要求 试验和试验条件-第11部分：测量设备》、DL/T 614-2007《多功能电能表》、通讯規約符合DL/T 645-2007《多功能电能表通信协议》。

DDZY450-Z type single phase tariff control smart electricity meter adopts the advanced metering chipset, digital data acquisition and treatment, SMT technology. This meter can measure the positive, negative, four-tariff rate energy, and save the data, recording the events of clearing data, time adjustment, programming, power failure, opening the meter cover, have energy pulse output, time signal output and etc, adopt CPU card, able to read and copy the data through wireless communication.

This meter complies with standard of GB/T 17215.321-2008 "Electricity metering equipment (a.c.) - Particular requirements - Part 21: Static meters for active energy (classes 1 and 2), GB/T 15284-2002 "Multi-tariff energy meter Particular requirements ", GB/T 17215.211-2006 "General requirements of Electricity metering equipment Test and test conditions - Part 11: Test equipments", DL/T 614-2007 "Multifunctional electricity meters", its communication protocol complies with DL/T 645-2007 "The communication protocol for multifunctional electricity meters"

### 外形及安装尺寸 Outline & installation size



# DTZY450-Z

## 三相费控智能电能表

Three phase tariff controlled intelligent energy meter



### 性能指标 Specification

项目 Item	技术指标 Main Technical data
参比电压 Reference voltage	3×220/380V, 3×57.7/100V, 3×100V
表计工作电压范围 Operating voltage range	0.8Un-1.15Un
电流测量范围 Current measurement range	互感器接入式(Transformer type)：1.5(6)A、0.3(1.2)A 直通式(Direct type)：5(60)A、10(100)A
准确度等级 Accuracy class	有功：0.2S级、0.5S级、1级 Active: Class0.2S, Class0.5S, Class1 无功：2级 Reactive: Class 2
工作温度 Operating temperature	-25°C~+60°C
极限工作温度 Limit operating temperature	-40°C~+70°C
大气压力 Air pressure	63kPa~106.0kPa(海拔4000m及以下)，特殊订货要求除外。 63kPa~106.0kPa(Altitude 4000m), except for special order requirements
相对湿度 Relative humidity	95%(无凝露No icing)
频率范围 Frequency Range	(45~65)Hz
启动电流 Starting current	互感器接入式(Transformer type)：1‰In (0.2S级)、1‰In (0.5S级)、2‰In (1级) 直通式(Direct type)：4‰Ib(1级)
表计功耗 Power consumption	< 2W,10VA
MTBF	6×10 <sup>4</sup> h

脉冲输出常数 Pulse output constant 出厂设置以表计面板标识为准。	参比电流 Reference current	3×220/380V的低压表		3×57.7/100V, 3×100V的高压表	
		有功 Active	无功 Reactive	有功 Active	无功 Reactive
	1.5(6)A	6400imp/kW·h	6400imp/kvar·h	20000imp/kW·h	20000imp/kvar·h
	5(60)A	400imp/kW·h	400imp/kvar·h		
脉冲输出宽度 Pulse output width	10(100)A	300imp/kW·h	300imp/kvar·h		
	0.3(1.2)A	100000imp/kW·h	100000imp/kvar·h		
脉冲输出宽度 Pulse output width		(80±16)ms			
最大容许通过电流 Maximum current		10mA(DC)			
工作电压 Operating Voltage		5V~24V(DC)			

日历时钟 Calendar clock	
时钟误差 Clock Accuracy	0.5 s/d(0°C~ +40°C: ±2ppm; -40°C~ -85°C: ±3.5ppm)
时钟频率 Clock Frequency	1Hz
电池寿命 Battery Life	10年 /years
电池连续工作时间 Battery operating time	5年 /years

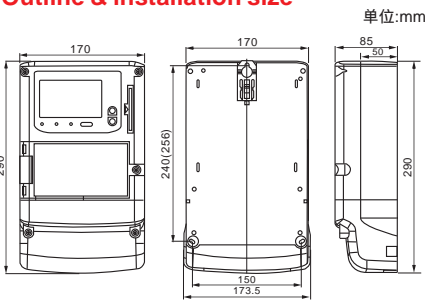
其它数据 Other data		
外形规格 (mm)	安装尺寸 (mm)	适用表型
290×170×85	240(256) ×150	0.5S级三相远程费控智能表（载波）
		1级三相远程费控智能表（载波）
		0.2S级三相远程费控智能表（载波）

### 适用范围 Application

DTZY450-Z型三相费控智能电能表是自主研发研制生产，符合GB/T17215.301-2007和DL/T614-2007 等电能表有关标准，采用DL/T645-2007通信規約，功能丰富，附加值高。

DTZY450-Z type 3-P tariff control smart electricity meter is self-developed and produced by our company, complied with GB/T17215.301-2007 and DL/T614-2007 standards, adopts DL/T645-2007 communication protocol, has full functions

### 外形及安装尺寸 Outline & installation size





# DDZY450C

## 单相费控智能电能表

Single phase tariff controlled intelligent energy meter



### 产品特点

- 1. 具有正反向有功、组合有功总及分费率电能计量和存储功能，组合有功特征字可设；
- 2. 具有本地费控功能；
- 3. 具有上12个结算周期的历史电量储存功能，能存储正反向有功、组合有功的总及分费率电能数据；
- 4. 具有电压、电流、功率、功率因数等实时参量测量功能；
- 5. 具有定时、瞬时、约定、整点及日冻结功能，冻结特征字可设；
- 6. 具有两套费率时区、时段表、可在约定的时刻自动转换；
- 7. 具有停电显示功能，停电后可通过按键或红外唤醒显示；
- 8. 具有红外通信口，RS485通信口，方便与外界交换数据；
- 9. 采用全自动软件校表技术，校表简单，速度快，准确度高；
- 10. 采用罩盖和盖板的一体化设计，造型新颖，美观实用；
- 11. 主要用于智能电网中单相居民用户的电能计量。

### 技术参数 Main Technical data

项目 Item	技术指标 Main Technical data
准确度等级 Accuracy class	有功1级、2级 Active 1, 2
电压规格 Voltage rating	220V
电流规格 Current rating	1.5(6)A, 5(40)A, 5(60)A, 10(60A), 10(100)A, 20(100)A, 基它规格需要定制。
参比频率 Reference frequency	50Hz
工作电压范围 Operating voltage range	规定工作电压范围Specified operating voltage range：0.9Un~1.1Un 扩展工作电压范围Extended operating voltage range：0.8Un~1.2Un
工作温度范围 Operating temperature range	规定工作温度范围Specified operating temperature range：-25 ~+55 极限工作温度范围Ultimate operating temperature range：-40 ~+70 储存和运输极限温度范围Storage and transport temperature：-40 ~+70
电压回路功耗 Voltage circuit power consumption	非通信状态: 1.5W和10VA Non-communication state: 1.5W and 10VA 通信状态: 3W和12VA Communication status: 3W and 12VA
电流回路功耗 Current circuit power consumption	1VA
年时区表套数 In time zone meter ploidy	2
日时段表套数 Day time meter ploidy	2
费率数 Rate number	4
年时区数 Years time zone	14
日时段表数 Day time meter number	8
日时段 Day time	14
时钟准确度 Clock accuracy	0.5s/d(23 ±2 )
计度范围 Meter range	-799999.99kWh~799999.99kWh
显示方式 Display	LCD显示，6位整数，2位小数 LCD display, six integers, 2 decimals
红外通信参数 Infrared communication parameters	通信角度 ±15°，通信波特率固定为1200bps
RS485通信波特率S485 communication baud rate	默认2400bps,可设置为1200bps,2400bps, 4800bps, 9600bps
技术标准 Technology standard	GB/T 17215.321-2008, GB/T15284-2002, DL/T645-2007, Q/GDW355-2009, Q/GDW354-2009, Q/GDW 364-2009, Q/GDW 365-2009
外形尺寸 Dimensions	160mmx112mmx58mm(以实物为准)

备注：电流规格为1.5(6)A和最大电流超过60A的电能表需要外配控制器支持通断电功能。  
Note: the meter of current rating 1.5(6)A and maxi current exceeding 60A need extra controller to switch on/off power supply.

### 适用范围 Application

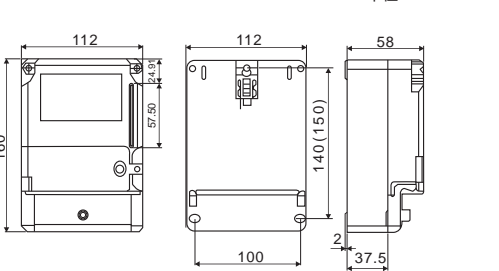
DDZY450C 型单相费控智能电能表(以下简称电能表)是采用大规模集成电路，应用数字采样技术，根据智能电网“信息化、自动化、互动化”建设对电能表的要求而设计制造。

DDZY450C type single phase intelligent tariff control energy meter (hereinafter call: energy meter) adopted large scaled integrated circuits, digital sampling, which is designed for the demand of information, automation, and communication,

### Product Features

- 1.Measure forward and reverse active, combined active power, total and respective energy of every timezone tariff, and save the data, combined active power feature character is settable.
- 2.with local tariff control
- 3.Energy data saving function of more than 12 cycles of tariff period, able to save total and time-zone forward, reverse active power and combined power
- 4.At real time measure voltage, current, power, power factor and etc.
- 5.Freezing function at fixed time, instantaneously, appointment time, whole point of hour, and whole day, freezing feature character is settable.
6. Two sets of tariff time zones, time section table, it can shift free at appointment time.
- 7.Display in case of power off, it can wake up the display by use of pushbutton or infrared ray.
- 8.Infrared port, RS485 port and wave carrying port are provided for data exchange.
- 9.Fully automatic software calibration technology: simple, quick and accurate.
- 10.Cover and plates are integrated, new style, good figure, practical.
- 11.It is mainly used for single phase user who needs smart control.

### 外形及安装尺寸 Outline & installation size



# DDZY450C-Z

## 单相本地费控智能电能表

Single phase local tariff controlled intelligent energy meter



### 性能指标 Specification

型号 Type	参比电压 Reference voltage	参比电流 Reference current	精度等级 Accuracy grade
DDZY450C-Z	220V	5(20)A, 5(30)A, 5(40)A, 5(60)A, 10(40)A, 10(60)A, 15(60)A, 20(80)A, 20(100)A, 10(100)A	1级、2级 Class

### 功能特点 Product Features

- 电能计量功能
- 1.具有正向有功电能、反向有功电能计量功能，能存储其数据，并可以据此设置组合有功。
  - 2.具有分时计量功能，有功电能按相应的时段分别累计、存储总、尖、峰、平、谷电能量。
  - 3.至少存储上12个月的总电能和各费率电能量；数据存储分界时刻为月末24时，或在每月1号至28号内的整点时刻。
- 本地、远程费控功能
- 1.费控功能通过CPU卡固态介质实现实现，电费计算在远程售电系统中完成，表内不存储、显示与电费、电价相关信息。电能表接收到远程售电系统下发的拉闸、允许合闸、ESAM数据抄读指令时，通过严格的密码验证及安全认证后表计才会执行相应的各项指令。
  - 2.可通过无线通讯进行远程操控
- 测量及监测
- 能测量、记录、显示当前电能表的电压、电流（包括零线电流）、功率、功率因数等运行参数。测量误差（引用误差）不超过±1%。
- 事件记录功能
- 1．能永久记录电能表清零事件的发生时刻及清零时的电能量数据。
  - 2．能记录编程总次数，最近10次编程的时刻、操作者代码、编程项的数据标识。
  - 3．能记录校时总次数（不包含广播校时），最近10次校时的时刻、操作者代码。
  - 4.能记录掉电的总次数，最近10次掉电发生及结束的时刻。
  - 5．能记录最近10次远程控制拉闸和最近10次远程控制合闸事件，记录拉、合闸事件发生时刻和电能量等数据。
  - 6．能记录开表盖总次数，最近10次开表盖事件的发生、结束时刻。
- 费率、时段
- 具有两套费率时段表，可在约定的时刻自动转换，时段的最小间隔为15min；时段可跨越零点设置。

- Electricity measurement function**
- 1.To measure the positive and negative active energy, save the data, combine the active power according this setting.
  - 2.Measurement at different time section, the active energy shall be accumulated according to different time section, save total, highest, high, normal, and low electricity consumption data.
  - 3.Save the total electricity, and energy at each tariff at least 12 months, the dividing time for data saving is the 24 O'clock of the last day of each month, or the o'clock from 1th ~ 28th of each month as setting.
- Local and remote tariff control**
1. Tariff control is realized through CPU card, the electricity cost will be calculated by remote electricity selling system, the meter will not save and display the details related to electricity cost and price. When the meter receive the instruction of tripping, closing, reading and copying ESAM data, only after the strict password verification and safety confirmation are passed, then perform that instruction.
  2. Able to perform remote operation and control through wireless communication
- Measurement and supervision**
- Able to measure, record, display the voltage, current (current of neutral line), power, power factor and etc at present, the measurement error not exceed ±1%
- Record the events**
1. Able to record the occurrence time and energy data of being cleared
  - 2.Record the total programming times; the time, operator code, programming data marks of latest 10 times operations
  - 3.Record the total times of time adjustment (not including broadcasting time adjustment), the time and operator code of latest 10 times operations
  - 4.Record the total times of power failure, the occurrence and ending time of latest 10 power failures
  - 5.Record the latest 10 times of remotely controlling tripping and closing operations separately, the occurrence and electricity data of latest 10 operations independently
  - 6.Record the total times of opening meter cover, the occurrence and ending time of latest 10 events
- Tariff, time section**
- Two sets of tariff and time sections, they can be automatically converted at setting time, shortest time interval/section is 15 min, time section can cross over zero

### 适用范围 Application

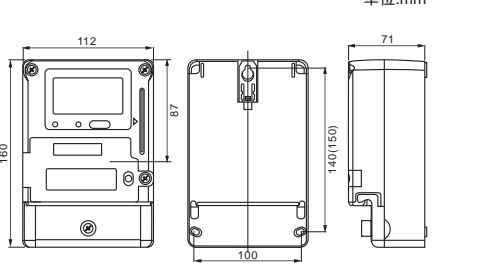
DDZY450C-Z型单相费控智能电能表电能表是采用先进的电能计量芯片，应用数字采样处理技术及SMT工艺。本产品可计量正向、反向及四费率电量并存储其数据,可实现清零、校时、编程、掉电、开表盖等事件记录，并具有电能脉冲输出、时钟信号输出等功能,采用CPU卡，能通过无线通讯对数据进行抄读。

该产品性能指标符合GB/T 17215.321-2008《交流电测量设备 特殊要求-第21部分静止式有功电能表(1级和2级)》、GB/T 15284-2002《多费率电能表 特殊要求》、GB/T 17215.211-2006《交流电测量设备通用要求 试验和试验条件-第11部分：测量设备》、DL/T 614-2007《多功能电能表》、通讯規約符合DL/T 645-2007《多功能电能表通信协议》。

DDZY450C-Z type single phase tariff control smart electricity meter adopts the advanced metering chipset, digital data acquisition and treatment, SMT technology. This meter can measure the positive, negative, four-tariff rate energy, and save the data, recording the events of clearing data, time adjustment, programming, power failure, opening the meter cover, have energy pulse output, time signal output and etc, adopt CPU card, able to read and copy the data through wireless communication.

This meter complies with standard of GB/T 17215.321-2008 " Electricity metering equipment (a.c.) - Particular requirements - Part 21: Static meters for active energy (classes 1 and 2), GB/T 15284-2002 "Multi-tariff energy meter Particular requirements ", GB/T 17215.211-2006 "General requirements of Electricity metering equipment Test and test conditions - Part 11: Test equipments", DL/T 614-2007 "Multifunctional electricity meters", its communication protocol complies with DL/T 645-2007 "The communication protocol for multifunctional electricity meters"

### 外形及安装尺寸 Outline & installation size



# DTZY450C-Z

## 三相费控智能电能表

Three phase tariff controlled intelligent energy meter



### 性能指标 Specification

项目 Item	技术指标 Main Technical data
参比电压 Reference voltage	3×220/380V, 3×57.7/100V, 3×100V
表计工作电压范围 Operating voltage range	0.8Un-1.15Un
电流测量范围 Current measurement range	互感器接入式(Transformer type) : 1.5(6)A、 0.3(1.2)A 直通式(Direct type) : 5(60)A、 10(100)A
准确度等级 Accuracy class	有功 : 0.2S级、0.5S级、1级 Active: Class0.2S, Class0.5S, Class1 无功 : 2级 Reactive: Class 2
工作温度 Operating temperature	-25°C~+60°C
极限工作温度 Limit operating temperature	-40°C~+70°C
大气压力 Air pressure	63kPa~106.0kPa(海拔4000m及以下) , 特殊订货要求除外。 63kPa~106.0kPa(Altitude 4000m), except for special order requirements
相对湿度 Relative humidity	95%(无凝露No icing)
频率范围 Frequency Range	(45~65)Hz
启动电流 Starting current	互感器接入式(Transformer type) : 1%In (0.2S级)、1%In (0.5S级)、2%In (1级) 直通式(Direct type) : 4%Ib(1级)
表计功耗 Power consumption	< 2W,10VA
MTBF	6×10 <sup>4</sup> h

光耦脉冲 Optocoupler pulse					
脉冲输出常数 Pulse output constant 出厂设置以表计面板标识为准。	参比电流 Reference current	3×220/380V的低压表		3×57.7/100V, 3×100V的高压表	
		有功 Active	无功 Reactive	有功 Active	无功 Reactive
	1.5(6)A	6400imp/kW·h	6400imp/kvar·h	20000imp/kW·h	20000imp/kvar·h
	5(60)A	400imp/kW·h	400imp/kvar·h		
	10(100)A	300imp/kW·h	300imp/kvar·h		
	0.3(1.2)A	100000imp/kW·h	100000imp/kvar·h		
脉冲输出宽度 Pulse output width		(80±16)ms			
最大容许通过电流 Maximum current		10mA(DC)			
工作电压 Operating Voltage		5V~24V(DC)			

日历时钟 Calendar clock	
时钟误差 Clock Accuracy	0.5 s/d(0°C~ -40°C: ± 2ppm; -40°C~ -85°C: ± 3.5ppm)
时钟频率 Clock Frequency	1Hz
电池寿命 Battery Life	10年 /years
电池连续工作时间 Battery operating time	5年 /years

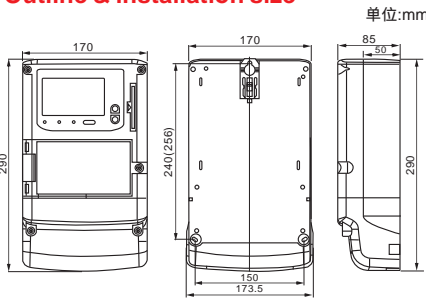
其它数据 Other data		
外形规格 (mm)	安装尺寸(mm)	适用表型
290×170×85	240(256) ×150	0.5S级三相远程费控智能表（载波）
		1级三相远程费控智能表（载波）
		0.2S级三相远程费控智能表（载波）

### 适用范围 Application

DTZY450C-Z型三相费控智能电能表是自主研发研制生产，符合GB/T17215.301-2007和DL/T614-2007等电能表有关标准，采用DL/T645-2007通信规约，功能丰富，附加值高。

DTZY450C-Z type 3-P tariff control smart electricity meter is self-developed and produced by our company, complied with GB/T17215.301-2007 and DL/T614-2007 standards, adopts DL/T645-2007 communication protocol, has full functions

### 外形及安装尺寸 Outline & installation size



# 以载波通信为主多种通信方式并存

## 自动路由切换的抄表方案

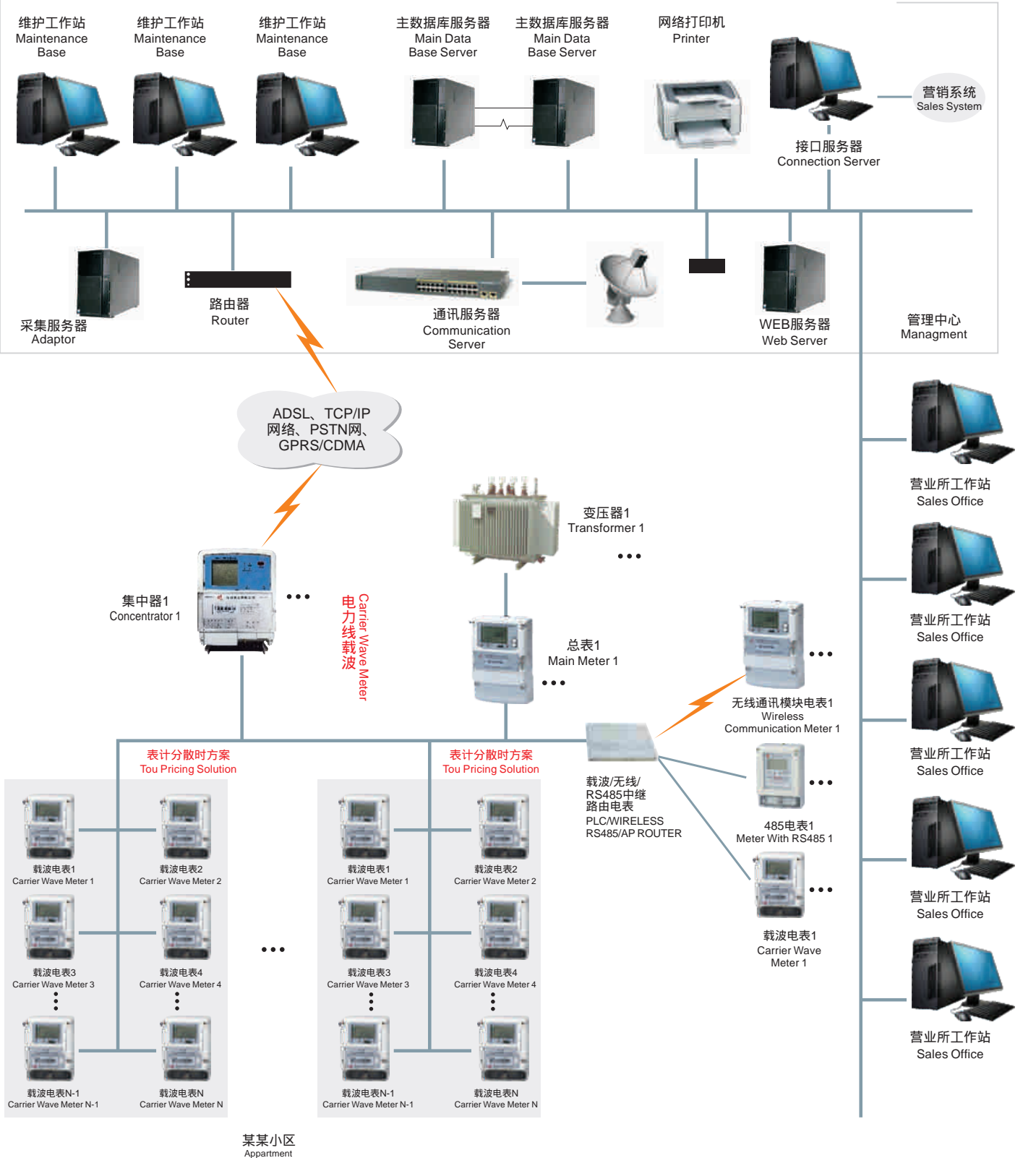
Multi-AMR System Mainly Working With Carrying Wave System



### 集中抄表系统拓补图(自由载换方案) AMR system Topological graph

#### 农村环境及类似区域 Rural And Similar Area

集抄设备由载波集中器、具有多种通信功能的中继器、具有载波、小无线和RS485多种通信方式并存自动路由切换的电表等设备组成，抄读载波电表、RS485电表、小无线通信电表。  
AMR system equipment including carrying wave adpoter, transformer, meter work with carring wave, RS485 and meter reader





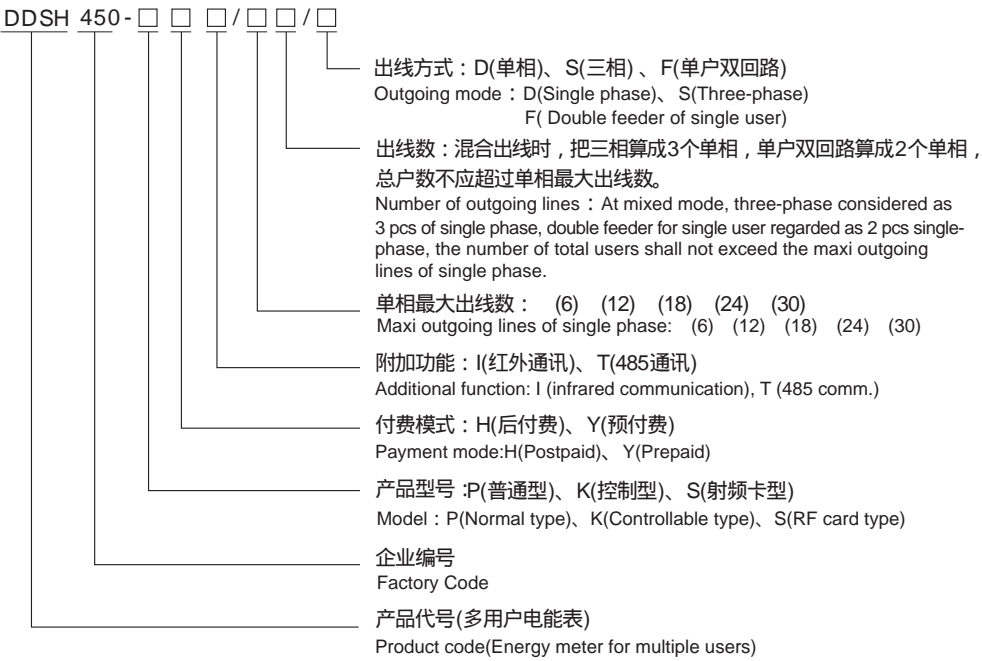
DDSH450

系列多用户电能表

series electronic three-phase carrier watt-hour meters



型号及其含义



主要技术参数

Main Technical data

	(6)	(12)	(18)	(24)	(30)
输入电压 Input voltage	3 × 220V /380V				
频率 Frequency	50HZ				
标定电流 Nominal current	10(60)A				
脉冲常数 Pulse constant	1200imp/kWh				
精度等级 Accuracy	1级				
环境温度 Ambient temperature	-25 -55				
仪表类别 Meter category	直接接入式				

概述 Overview

DDSH450系列多用户电能表是一种全电子式智能化多用户电能表，采用模块化的结构形式，以单片机为核心，每户配备独立的计量单元，实现分户计量、集中显示的功能，可进行单相 /三相 /单户双回路 / 单三回路的混合计量。

该产品精度高、体积小、安装方便，广泛应用于工矿企业、城乡居民小区、学生公寓、农网、旧楼改造、高层建筑的用电计量。

产品符合标准：GB 17215 321 2008《静止式有功电能表（1级和2级）》和JB 10451 2004《多用户静止式交流有功电能表》。

DDSH450 series energy meter is one kind of electronic intelligent KWH meter for multiple users, adopting module structure, based on MCU, provide an independent measuring unit for each user, to perform separately collecting the electric consumption, and centrally displaying all the data, able to measure the mixed modes: single phase/ three phase/double feeder of one user/triple feeders of one user.

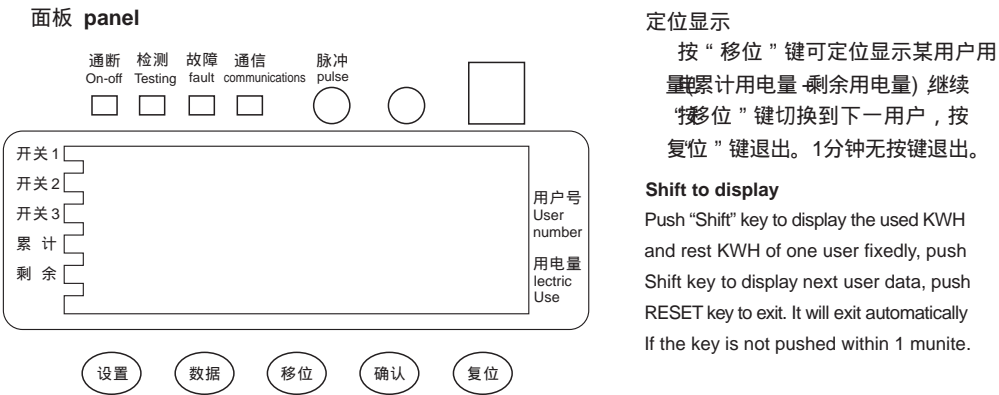
This product has the advantages of high accuracy, small size, easy installation, widely used in mineral and industrial enterprises, urban and suburban living zone, student apartment, rural network, reforming the old buildings, high buildings to measure the electric energy.

The meter complies with standard of GB/T17215.321-2008 "Static Active Energy Meter 《class 1.0 and 2.0》 and JB/T10451-2004 《AC Static Active Energy Meter for Multiple Users》

选配功能 Optional functions

型号	强制断送电 超负荷断送电 forcely switch off power supply, switch off power supply in case of overloading	预付费 Prepaid	红外通讯(红外抄表) Infrared comm. (reading meter by infrared communication)	485通讯 485 comm		射频卡售电 Sell KWH through RF card
				远程抄表 Remotely read meter	远程售电 Remotely sell KWH	
普通型 Normal type	PH					
	PHI					
	PHT					
控制型 Controllable type	KH					
	KHI					
	KHT					
射频卡型 RF card type	KYT					
	SY					
	SYI					

操作说明 Instruction manual



主要功能 Main functions.

具有双向计量功能，精确计量正负两个方向的能，且以同一方向累计，有效杜绝了偷电、漏电现象。

采用数码管和LED循环显示各户的户号、累计用电量和剩余用电量(预付费型)。

每15分钟记录一次用户电量，断电保存。具有清表功能，并备份数据，以供查询。配有按键，可设定表号、功率上限，并实现强制断送电、清表等功能(需要密码验证，密码可修改)。

Able to measure the bi-directional energy, exactly the negative and positive energy, both to be accumulated at one direction, effectively avoid the tampering user and electric loser

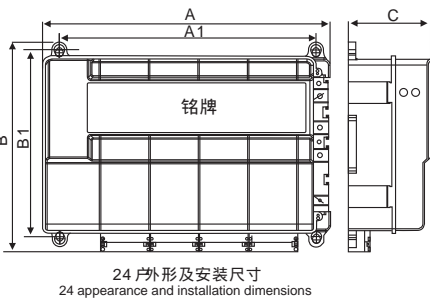
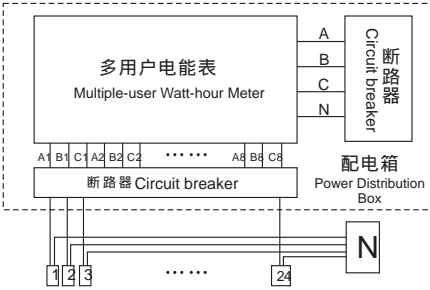
LED used to display the user code, accumulated the consumed KWH and rest KWH in turns (for prepaid type meter)

It will record the KWH datum every 15 minutes, and save them in case of power failure.

Able to clear the datum, and backup the data for check

Push key provided to set meter No, maxi power limit, able to forcedly switch off power supply, clear off the data (need to verify the password, and the password can be changed).

接线方式 wiring patterns



# ZMM18S/SA

## DIN导轨式单相电能表

### Single Phase Electronic DIN-rail Active Energy Meter



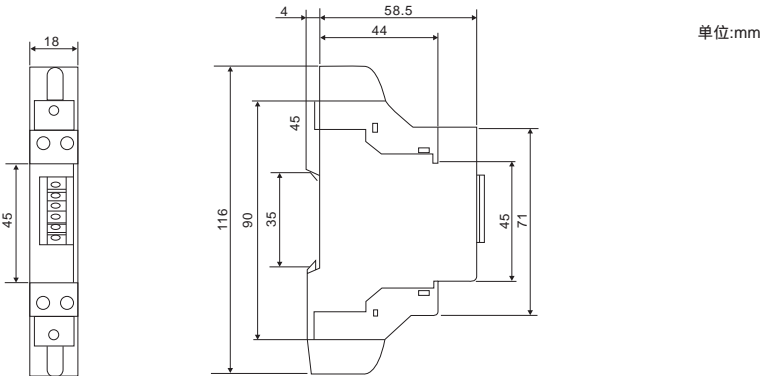
#### 功能及特点 Function and Features

- 1、35mm DIN标准导轨安装，符合DIN EN 5002标准。
  - 2、18mm宽度，符合DIN43880标准。
  - 3、可选5+1位(99999.1kWh)和6+1位(999999.1kWh)LED显示。
  - 4、无源脉冲输出，符合DIN43864标准。
- 1. 35mm standard DIN rail installation, complying with standard DIN EN50022.
  - 2. Single pole width (Modules 18mm), complying with standard DIN43880.
  - 3. Standard configuration 6+1 digits display (999999.1kWh) by step and machinery counter, May select 5+1 digits display (99999.1kWh).
  - 4. Standard configuration pulse output with no power complying with standard IEC 62053-31 and DIN 43864.

#### 主要技术参数 Main Technical data

型号 Model	精度 Accuracy	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)	起动电流 Starting current	绝缘性能 Insulation performance
ZMM18S	1级 Class 1	220V	5(20)A,5(25)A	0.4%Ib	工频交流电压2kV 历时1分钟，冲击电压6kV AC voltage 2kV for 1 minute, 1.2/50us waveform impulse voltage 6kV
	2级 Class 2	120V	5(30)A,5(32)A	0.5%Ib	

#### 外形及安装尺寸 Outline & installation size



# ZMM75S/SA/SC

## DIN导轨式单相电能表

### Single Phase Electronic DIN-rail Active Energy Meter



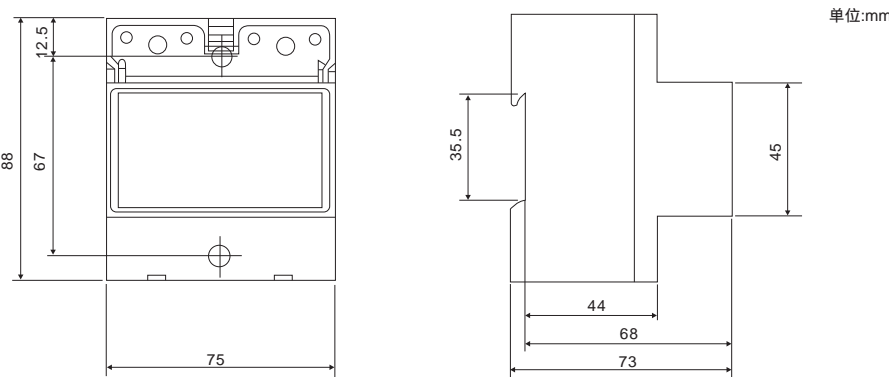
#### 功能及特点 Function and Features

- 1、可选35mm DIN导轨或板前安装。
  - 2、可选5+1位进式计数器显示或LCD液晶显示。
  - 3、无源脉冲输出，符合DIN43864标准。
  - 4、可选常规或简便接线方式。
- 1. 35mm standard DIN rail installation ,or front board setting (mounting holes center distance 63 mm), users can choose any one.
  - 2. May select 5+1 digits display (99999.1kWh) or LCD display.
  - 3. Standard configuration pulse output with no power complying with standard IEC 62053-31 and DIN 43864.
  - 4. Standard configuration connection (Inlet from bottom, outlet from top) for direct connect to use, we can also choose another type of connection, and use CT and PT & CT for operation.

#### 主要技术参数 Main Technical data

型号 Model	精度 Accuracy	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)	起动电流 Starting current	绝缘性能 Insulation performance
ZMM75S	1级 Class 1	220V	2.5(10)A, 3(15)A 5(20)A, 10(30)A	0.4%Ib	工频交流电压2kV 历时1分钟，冲击电压6kV AC voltage 2kV for 1 minute, 1.2/50us waveform impulse voltage 6kV
	2级 Class 2	120V	15(90)A, 20(100)A 5(40)A, 5(100)A	0.5%Ib	

#### 外形及安装尺寸 Outline & installation size





# ZMM75SF

## DIN导轨式单相多费率电能表

Single Phase Electronic DIN-rail Active Energy Meter



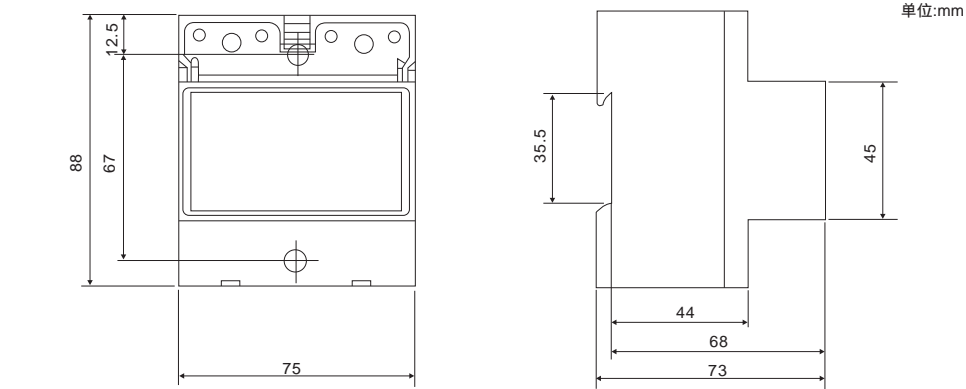
### 功能及特点 Function and Features

- 1、可选35mm DIN导轨或板前安装。
  - 2、7位LCD显示。
  - 3、可选红外载波和RS485接口数据通讯。
  - 4、无源脉冲输出，符合DIN43864标准。
  - 5、可选常规或简便接线方式。
1. 35mm standard DIN rail installation ,or front board setting (mounting holes center distance 63 mm), users can choose any one.
2. Seven digits LCD monitors.
3. It can be arbitrary set by users from far infrared or port of RS485 data communication.
4. Standard configuration pulse output with no power complying with standard IEC 62053-31 and DIN 43864.
5. Standard configuration connection (Inlet from bottom, outlet from top) for direct connect to use, we can also choose another type of connection, and use CT and PT & CT for operation.

### 主要技术参数 Main Technical data

型号 Model	精度 Accuracy	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)	起动电流 Starting current	绝缘性能 Insulation performance
ZMM75SF	1级 Class 1	220V	5(20)A,10(30)A 15(90)A,20(100)A	0.4%Ib	工频交流电压2kV 历时1分钟，冲击电压6kV AC voltage 2kV for 1 minute, 1.2/50us waveform impulse voltage 6kV
	2级 Class 2	120V	5(40)A,5(100)A	0.5%Ib	

### 外形及安装尺寸 Outline & installation size



### 适用范围 Application

ZMM75SF导轨式单相电能表系我公司最新研制开发的新型单相全电子式电能表。该表性能完全符合GB/T17215.321-2008国家标准和国际标准IEC62053-21中1或2级单相电能表的相关技术要求，可直接精确地测量额定频率为50Hz或60Hz的单相交流电网中有功电能，由LCD液晶显示总用电量；具有可靠性好、体积小、重量轻、外形美观、安装灵活方便等特点，通讯规约符合DL/T645-1997《多功能表通讯规约》。

Model ZMM75SF single phase electronic DIN rail active energy meter is a kind of new style single phase two wire active energy meter, it adopts micro-electronics technique, and imported large scale integrate circuit, uses advanced technique of digital and SMT techniques, etc. The meter completely accords with relevant technical requirements of class 1 single phase active energy meter stipulated in international standard IEC 62053-21. It can accurately and directly measure 50Hz or 60Hz active energy consumption from single phase AC electricity net, This meter has seven digits LCD monitors shows the active energy power consumption. It has following features: Good reliability, small volume, light weight, specious nice appearance, convenient installation, etc, and its communication protocol has conformed to DL/T6451997 Multi-function Watt-hour Meter Communication Protocol.

# ZMM1250S/SA/SC

## DIN导轨式三相电能表

Three Phase Electronic DIN-rail Active Energy Meter



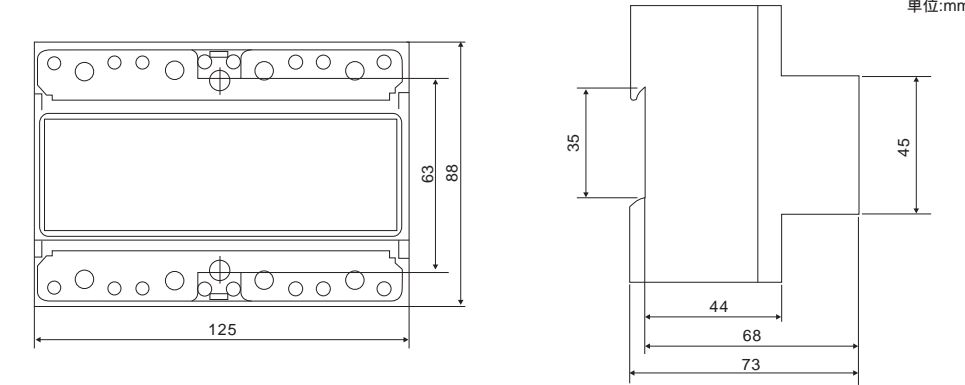
### 功能及特点 Function and Features

- 1、可选35mm DIN导轨或板前安装。
  - 2、可选5+1位进式计数器显示或7位LCD液晶显示。
  - 3、可选红外载波和RS485接口数据通讯。
  - 4、无源脉冲输出，符合DIN43864标准。
1. 35mm standard DIN rail installation ,or front board setting (mounting holes center distance 63 mm), users can choose any one.
2. May select 5+1 digits display (99999.1kWh) or Seven digits LCD monitors.
3. It can be arbitrary set by users from far infrared or port of RS485 data communication.
4. Standard configuration pulse output with no power complying with standard IEC 62053-31 and DIN 43864.

### 主要技术参数 Main Technical data

名称 Name	型号 Model	精度 Accuracy	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)
三相四线有功电子式电能表 Three phase four wire electronic DIN rail active energy meter	ZMM1250S/ SA/SC	1级 Class 1	3×220/380V	1.5(6)A,3(6)A
		2级 Class 2	3×57.7/100V	5(30)A,10(50)A
三相三线有功电子式电能表 Three phase three wire electronic DIN rail active energy meter	ZMM1250S/ SA/SC	1级 Class 1	3×100V	15(90)A,20(100)A
		2级 Class 2	3×380V	5(40)A,5(100)A

### 外形及安装尺寸 Outline & installation size



# ZMM1250SF

## DIN导轨式三相多费率电能表

### Three Phase Electronic Multi-tariff DIN-rail Active Energy Meter



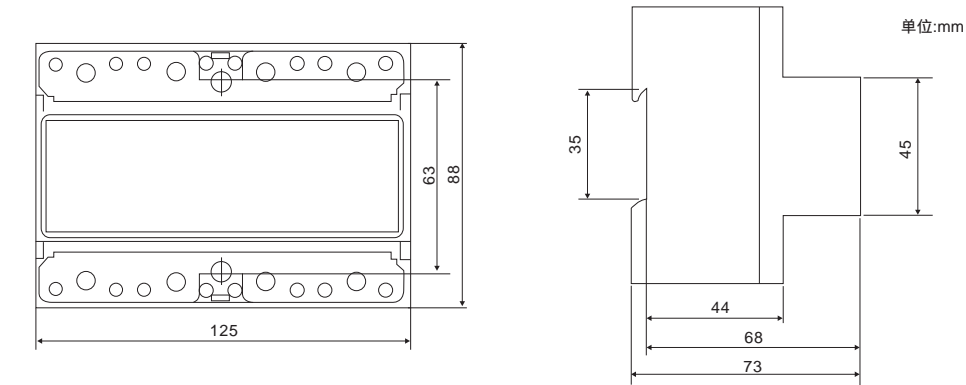
#### 功能及特点 Function and Features

- 1、可选35mm DIN导轨或板前安装。
  - 2、具有3种费率，12个日时段，可选双休日单费率功能。
  - 3、内置时钟，断电数据永久保存，内置后备电池，免维护。
  - 4、功率方向自动识别，故障自动检测。
1. 35mm standard DIN rail installation ,or front board setting (mounting holes center distance 63 mm), users can choose any one.
2. Have three tariffs, may select 12 daily period of times. May select single tariff function in weekend.
3. There is a clock and Maintenance-free backup lithium batteries in it . B attery capacity detection and display all the time. It can keep the electricity data for 12 months. The data can be kept forever after power out off.
4. The power direction automatic identification, automatic fault detection.

#### 主要技术参数 Main Technical data

名称 Name	型号 Model	精度 Accuracy	参比电压 Reference voltage	基本电流(最大电流) Basic current (max current)
三相四线有功电子式电能表 Three phase four wire electronic DIN rail active energy meter	ZMM1250SF	1级 Class 1	3×220/380V	1.5(6)A,3(6)A
		2级 Class 2	3×57.7/100V	5(30)A,10(50)A
三相三线有功电子式电能表 Three phase three wire electronic DIN rail active energy meter	ZMM1250SF	1级 Class 1	3×100V	15(90)A,20(100)A
		2级 Class 2	3×380V	5(40)A,5(100)A

#### 外形及安装尺寸 Outline & installation size



#### 适用范围 Application

ZMM1250SF导轨式三相多费率电能表系我公司最新研制开发的，具有7位宽温度型液晶显示，复费率(分时)电能计量，红外载波通讯及RS485接口串行通讯抄表/设表等多种功能为一体的智能化全电子式电能表。该表性能完全符合国标GB/T17215.321-2008中1或2级三相电能表的相关技术要求，通讯规约符合DL/T645-1997《多功能表通讯规约》。具有可靠性好、体积小、重量轻、外形美观、安装灵活方便等特点。

Model ZMM1250SF three phase electronic multi-tariff DIN-rail active energy meter is a kind of three phase four wire three tariffs (time-sharing billing) active energy meter, the meter completely accord with relevant technical requirements of class 1 three phase active energy meter stipulated in international standard IEC 62053-21. and its communication protocol has conformed to DL/T6451997 Multi-function Watt-hour Meter Communication Protocol. It can accurately and directly measure 50Hz or 60Hz active energy consumption data and information. And there are far infrared and RS485 communication module in it . It is use for setting and reading the meter. Contact with all kind of AMR system conveniently. It has following features: good reliability, small volume, light, weight, specious nice appearance, convenient installation, etc.

# ZMDS4501

## Single phase electric socket meter



#### Specification and main technician data

- Meter Type: ZMDS4501
- Connection: Socket Type
- Reference Voltage: 120V、240V
- Basic Current: 10(60)A、15(100)A
- Reference frequency: 50Hz 60Hz
- Accuracy: Class1 Class2
- Starting Current: 0.4%Ib(Class 1) 0.5%Ib(Class 2)
- Running with no-load: Logic design for running with no-load
- Power Loss: =1W/6VA
- Working condition: Standard working condition: -10 ~60
- Relative Humidity=80%

#### Working principle and structure:

**Working principle:**  
ZMDS4501 single phase electronic kWh meters adopts special Large-scale integration circuit to measure the kWh(Indicated by the broken line of the picture). The measurement of the Kwh consumed by the users, through the sampling of the signal by the voltage separator circuit and the shunt, processing the A/D converting procedure, the digital signal which is processed by the multiplier would be sent to the D/F converter, the impulse which is output by the converter circuit would drive the register to get the accumulated KWh, display the electricity consumption velocity by the kWh indicator.

**Structure:**  
The meter shell is composed of meter base, holder and transparent cover, Lead sealing is put between the cover and the base The appearance of the register displaying type

#### Application

ZMDS4501 single phase electronic kWh meters adopts special Large-scale integration circuit has the characteristics of few peripheral elements, simple structure, high reliability, low power loss, long life-span, which is the single phase AC power electric meter and the reference frequency is 60 Hz.

The meter can be installed indoor or outdoor, adapt to the environment temperature is -10 ~+60 , relative humidity is less than 80%. All the capability and specification is in accordance with all the technical requirements of ANSI12.1 standards, especially for single phase electronic meter.

#### Function and characteristics

- Adopting special LSI and SMT surface installation technique, advanced craft work, simple structure. Using the latest electric integrate circuit compacted with inner digital multiplier, greatly improve the dynamic working range, enlarge the over loading capability several times more.
- All the elements of the meter is ling life-span and highly reliable.
- Precise unidirectional measurement of the active energy, ling service time without callbration.
- Impulse output indicating when the meter is working.
- Expandable infrared communication or RS-485 communication function.
- High Electro-Magnetic Compatibility, and anti-tampering function with LED indicator.
- Adopting Mechanism register to display the KWh clearly and straightly; step-upon electric motor with shielding cover, good anti-jamming capability; LCD displaying module is selective.
- Good Measurement characteristic, working under the condition of variety of power factor all complied with flat and suitable load curve.
- Low power loss designing, power loss is not more than 1W.
- Wide voltage range designing, make sure the meter can work normally between 0.7UN~1.2UN. The meter cover and base is made of Bakelite , PC, ABS etc., in accordance with Type insulation protection requirements, good anti-fire and insulation capability, firm structure and nice appearance.



# ZM-100R

Series Meter Socket



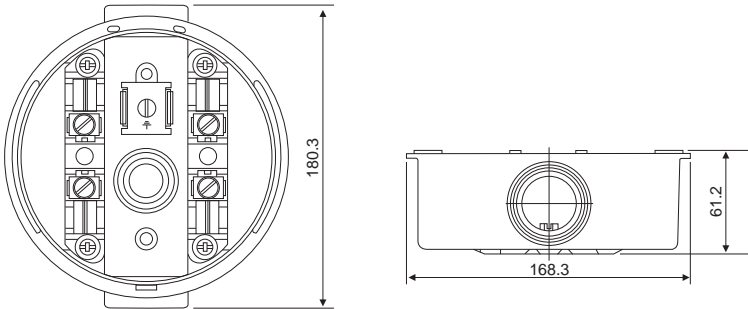
Housing

- Die cast Aluminum electrostatically applied epoxy baked gray powder finished.
- Round type base.
- NEMA 3R Rating for outdoor use.

Specification

Product Number	Description	Fixed Hubs Size
ZM-100B	1 Phase, 100A, 120/240Vac, 4 jaw	1/2"
ZM-100C	1 Phase, 100A, 120/240Vac, 4 jaw	3/4"
ZM-100D	1 Phase, 100A, 120/240Vac, 4 jaw	1"
ZM-100E	1 Phase, 100A, 120/240Vac, 4 jaw	1-1/4"

Dimensions



Stainless Steel Sealing Ring

Product Number	Description	Thickness
ZM-1	Snap type	0.35mm
ZM-2	Snap type	0.35mm
ZM-3	Belt type	0.35mm

# ZM-100S/125/200

Series Meter Socket



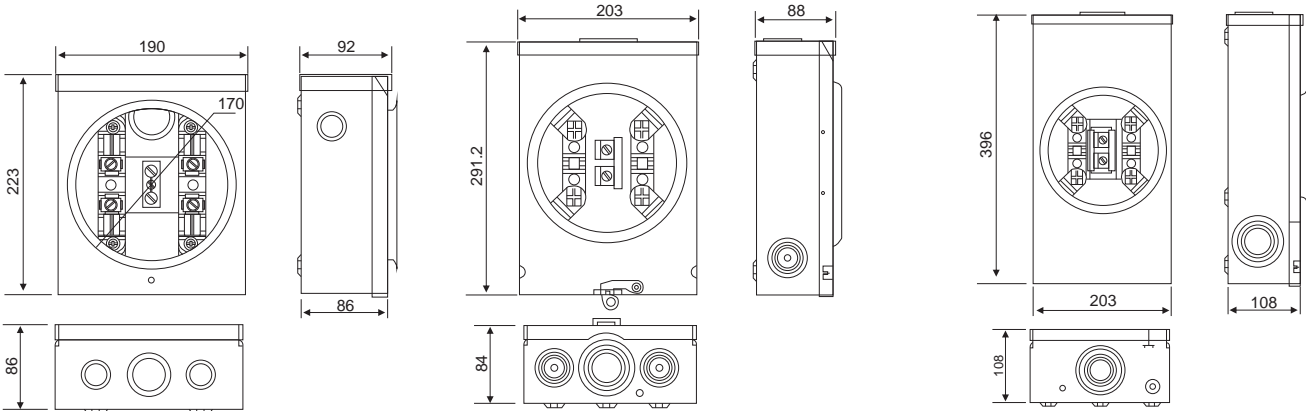
Features

- 100A/125A,600V max, Single phase, 2 or 3 200Amps, 600V AC.
- Connectors Line and load size #6-350 Cu-Al.
- Heavy duty tinned copper jaw with reinforced clip.
- C/W center neutral bar.
- NEMA 3R type construction 1.2mm thickness (#18 gauge) or 1.5mm thickness (#16 gauge) galvanized steel sheet, electrostatically applied epoxy baked gray powder finished.
- Ample gutter space for easy wiring.
- Convenient knockouts in the side back and bottom.
- Lay in type terminal with pressure plates for easy connections.
- The fixed hub size 1/2 " to 2-1/2 " for option.

Specification

Product Number	Description	Outline Dimensions		
		H	W	D
ZM-100S-4J-H	1 Phase, 100A, 4jaw, ring type	223	190	86
ZM-100S-4J	1 Phase, 100A, 4jaw, ring type	223	190	86
ZM-125-4J-R	1 Phase, 125A, 4jaw, ring type	291	203	84
ZM-125-5J-R	1 Phase, 125A, 5jaw, ring type	291	203	84
ZM-125-5J-RL	1 Phase, 125A, 5jaw, ringless type	291	203	84
ZM-125-5J-RL	1 Phase, 125A, 5jaw, ringless type	291	203	84
ZM-200-4J-R	1 Phase, 200A, 4jaw, ring type	396	203	108
ZM-200-5J-R	1 Phase, 200A, 5jaw, ring type	396	203	108
ZM-200-7J-R	3 Phase, 200A, 7jaw, ring type	396	203	108
ZM-200-4J-RL	1 Phase, 200A, 4jaw, ringless type	396	203	108
ZM-200-5J-RL	1 Phase, 200A, 5jaw, ringless type	396	203	108
ZM-200-7J-RL	3 Phase, 200A, 7jaw, ringless type	396	203	108
ZM-200B-4J-RL	1 Phase, 200A, 4jaw, ringless type	396	280	108

Dimensions



# ZM-20/ZM-320

## Series Meter Socket



### Specification

Product Number	Description	Outline Dimensions		
		H	W	D
ZM-20-13J-RL	1 Phase, 20A, 13 Terminal, ringless type	355	203	84
ZM-20-6J-RL	1 Phase, 20A, 6 Terminal, ringless type	355	203	84

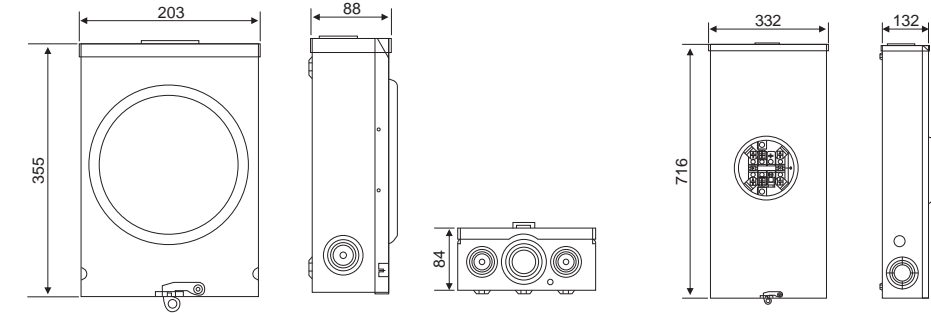
### MT-320 Series Meter Socket Features

- 320Amps, 600VAC, 4Terminals, single phase, 3 wire, ringless type.
- NEMA 3R type construction 1.5mm thickness(#16 gauge) galvanized steel sheet (AISI G90), electrostatically applied epoxy baked gray powder finished.
- Heavy duty lever bypass.
- Heavy duty tin plated copper jaw.
- OVERHEAD / UNDERGROUND.
- Convenient knockouts in the side back and bottom.
- The fixed hub size 2" to 2-1/2" for option.

### Specification

Product Number	Description	Outline Dimensions		
		H	W	D
ZM-320-4J-RL	1 Phase, 320A, 4jaw, ringless type	716	332	132

### Dimensions



# DD862

## 型单相电能表

### Single-phase watt-hour meters



### 产品规格 Produce Specification

型号 Model	等级指数 Class index	参比电压V Reference voltage	基本电流IbA Basic current	过载能力 Overload capacity	起动电流 Starting current	绝缘性能 Insulation performance
DD862-2	2	220	3(6), 2.5(5), 5(10), 10(20) 20(40), 30(60), 40(80)	200%Ib	0.5%Ib	工频交流电压2kV历时1分钟； 波形, 1.2/50 μ s峰值6kV AC power-frequency voltage 2KV for 1 minute；
DD862-4	2	220	1.5(6), 2.5(10), 5(20), 3(12) 10(40), 15(60), 20(80), 30(100)	400%Ib		

### 主要技术参数 Main Technical data

- 该电度表符合国家标准GB/T17215.311-2008《0.5、1和2级交流有功电度表》与IEC521国际标准中2级单相电度表的全部技术要求；
- 电度表可制成直接接入式和经万用电流互感器或万用电压互感器接入式两种；
- 根据用户需要可制成各种特殊的电度表，包括不同的参比频率、参比电压，各种电流规格及正反转累加计度和止逆的电度表；
- 起动：电度表在参比电压、参比频率及COS =1的条件下，负载电流不超过0.5%基本电流时，电度表转子能起动并连续不停地转动；
- 潜动：当电度表的电流线路中无电流，加在电压线路上的电压为参比值80%~110%时，电度表的转盘不超过一整圈；
- 功率损耗：电度表在参比电压、参比温度、参比频率的条件下，其电压线路的有功损耗不超过2W；
- 介电性能：电度表能经受冲击波形是标准的1.2/50 μ s波形，峰值6kV的冲击电压各10次不损坏。电度表的线路对地能耐受2kV，频率为45~65Hz的正弦波形的交流电压下历时1分钟的试验。

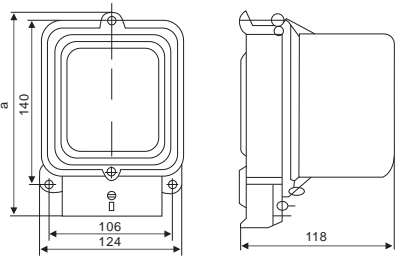
- The watt-hour meter conforms to all technical requirements stipulated in national standard GB/T17215.311-2008 Alternating Current Watt-hour Meters for Active Energy (Classes 0.5, 1 and 2), and total technical requirements for single-phase watt-hour meters (class 2) stipulated in international standard IEC 521.
- The watt-hour meter can be designed into two kinds: direct connection type and the type of connection through multi-purpose current transformer or multi-purpose voltage transformer.
- According to users requirements, the special watt-hour meters can be designed, including the watt-hour meter that has different reference frequency, reference voltage, different current specifications, positive and negative accumulation and not-return function
- Start: under reference voltage, reference frequency and COS =1, when the load current can't exceed 0.5% of basic current, the rotor of watt-hour meter can start and rotate continuously.
- Creeping: when current circuit of watt-hour meter has no current, and the voltage applied to voltage circuit is 80%~110% of reference value, the rotary disc of watt-hour meter rotates not more than 1 circle.
- Power consumption: under the reference voltage, reference temperature and reference frequency, the active energy consumption of watt-hour meter voltage circuit can't exceed 2W.
- Dielectric performance: when the watt-hour meter can withstand impact waveform (standard 1.2/50 μ s waveform) and impact voltage of 6Kv peak value for 10 times respectively, it won't be damaged. Thecircuit-to-earth of watt-hour meter can withstand sine waveform of 2Kv and 45~65Hz at AC voltage for 1min.

### 适用范围 Application

DD862型单相电度表系感应式单相交流有功电度表，用于测量频率为50Hz或60Hz单相交流电网中有功电能的消耗。该仪表设计新颖、结构合理、具有高过载、低功耗、使用寿命长、稳定性好等特点，且调整维修方便。

DD862 type single-phase watt-hour meter, that is, inductance type single-phase AC active energy watt-hour meter, it is used for measuring active energy at single -phase AC power grid of 50Hz or 60Hz. It has many features such as original design, reasonable structure, high overload capability, lower power consumption, long service life, good stability, convenient adjustment and maintenance, etc.

### 外形及安装尺寸 Outline & installation size



单位 Unit: mm	
规格 Specification	a
15(60)A, 20(80)A, 30(100)A	173
1.5(6)A, 2.5(10)A, 3(6)A, 5(20)A, 10(40)A	167



# DD862F

## 型防窃电单相电能表

Single-phase watt-hour meters (anti-electricity theft)



### 产品规格 Produce Specification

型号名称 Model name	DD862F 型防窃电单相电度表 DD862F type single-phase watt-hour meter (anti-electricity theft)
参比电压V Reference voltage	220
参比频率Hz Reference frequency	50
等级指数 Class index	2
基本电流(额定最大电流A) Basic current (rated max current A)	1.5(6), 2.5(10), 5(20), 10(40)

### 主要技术参数

- 防倒线功能(进、出线换位)：  
如对电度表的进、出线调换位置进行窃电时，本产品此时虽然倒转，但计度器采用正反累加计度器，仍正向按1~5倍速度计数，使窃电者达不到窃电目的，并受到处罚；
- 防脱钩：  
本产品的金属小钩连接在表内，无法取下，避免了因金属小钩脱钩引起电度表停转而窃电；

### Main Technical data

- Anti-wire inversing  
If the electricity is stolen by the way of exchanging the inlet wire and outlet wire of watt-hour meter, this watt-hour meter register which can accumulate positively and negatively still counts positively as per speed of 1~5 times, however this watt-hour meter rotates inversely, so that the thief can't steal the electricity and is punished.
- Anti-unhook  
The metallic hook is connected in the meter that can't be removed, so that the electricity can't be stolen for stopping running of watt-hour meter, which is resulted in metallic hook is unconnected.

### 适用范围 Application

该仪表系本公司研制开发的一种在一只感应式电度表上，具有多种防窃电功能的单相交流有功电度表，使用该表时性能与DD862电度表相同，并且接线线路完全与DD862电度表一致，维修和使用方便。技术参数与DD862相同。

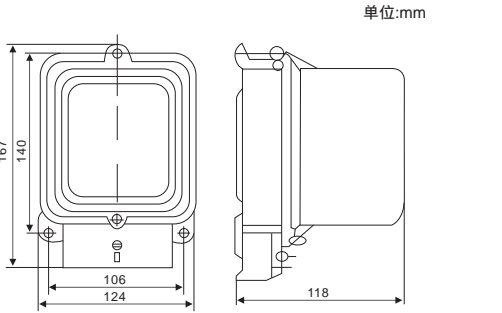
It is the single-phase active energy watt-hour meter with multi functions of anti-electricity theft on an induction watt-hour meter, its performance is the same with that of DD862 series watt-hour meter, even, the connection circuit is completely same with that of DD862 series watt-hour meter, so it is convenient to main-tain and operate it. Besides, its technical parameter is the same with that of DD862 series watt-hour meter too.

### 正常工作条件及安装条件

#### Normal working conditions and installation conditions

- 规定的工作温度范围：-10 ~45 ；
  - 工作极限温度范围：-25 ~55 ；
  - 相对湿度不超过85% (环境温度为23 )；
  - 空气中不应含有腐蚀性气体及避免尘砂、霉菌、昆虫等影响。
- Specified working temperature：-10 ~45 ；
  - Utmost working temperature：-25 ~55 ；
  - Relative humidity: 85% (at environment temperature23 )；
  - There shall be no corrosive gas and dust, mold and insect in theair.

### 外形及安装尺寸 Outline & installation size



# DD450

## 型长寿命技术单相电能表

Long-life single-phase watt-hour meters



### 结构特征 Structure features

- 电压、电流、阻尼磁钢部件与基架的组合，及与底座部件的组合采用了加强式紧固，保证表内的零件不移位；
  - 不易氧化的强磁性，高稳定性材料的磁轴承，导向部分采用了自润滑耐磨损的进口石墨轴承和高硬度的不锈钢轴销针组成了长寿命的转动元件，保证了仪表的稳定性和长寿命；
  - 阻尼磁钢采用铝镍钴强磁性材料，并具有良好的温度补偿特性；
  - 潜动不需调整，由圆盘上的防潜孔来完成；
  - 电压线圈采用环氧树脂灌封或塑封，可耐受浪涌电压6kV以上；
- The combination of current, voltage, damping magnetic steel parts with pedestal, as well as with base parts adopts reinforced fastening, to ensure the parts in the meter can't move.
  - Strong magnetic property, magnetic bearing made of high stability material, the guiding part adopts import graphite bearing of self-lubrication and anti-abrasion and stainless steel axle pin of high strength that constitute long-life rotating element, so that the stability and long life of meter can be ensured.
  - Damping magnetic steel adopts alnico material, it has good temperature compensating characteristics.
  - The creeping needn't to be adjusted, can be finished by anti-creeping hole on the disc.
  - The voltage coils are imbedded or plastic sealed, it can withstand surge voltage more than 6kV.

### 主要技术参数

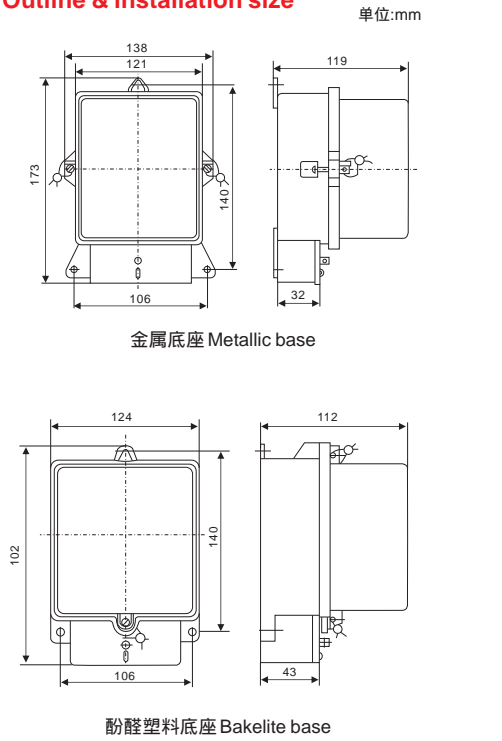
- 执行标准：GB/T17215.311-2008、IEC 62052-11-2003、 IEC 62053-11-2003 ；
- 等级指数：2级；
- 参比电压：220V、230V、240V ；
- 参比频率：50Hz或60Hz ；
- 电压线路功耗：小于1W和小于5VA ；
- 起动电流：最大为基本电流的0.5% ；
- 耐受冲击电压：冲击波表1.2/50 μs，峰值6kV，冲击电压各10次不损坏 ；
- 外部结构与使用寿命：
  - 金属底座及透明塑料表盖，使用寿命在15年以上 ；
  - 酚醛塑料底座及聚碳酸脂表盖，使用寿命在25年以上 ；
- 基本电流规格：1.5(6)A、2.5(10)A、5(20)A、10(40)A、15(60)A、20(80)A 5(30)A、10(60)A。

### 适用范围 Application

DD450型系列长寿命技术单相感应式电能表，用于测量参比频率为50Hz或60Hz的单相交流有功电能。该型表其结构可靠，性能稳定，具有长寿命、宽负载、高精度、低功耗及外形美观等特点。

DD450 series long-life single-phase watt-hour meter is used for measuring single-phase AC active energy of reference frequency 50Hz or 60Hz. It has many features such as reliable structure, stable performance, long life, wide load, high accuracy, low power consumption, nice appearance and so on.

### 外形及安装尺寸 Outline & installation size



D86
系列三相电能表
Three-phase watt-hour meters



产品规格 Produce Specification

型号 Model	名称 Name	等级指数 Class index	规格 Spec.	起动电流 Starting current	接线方式 Connection way
DT862 3×220V/380V	三相四线有功电表 Three-phase four-wire active energy watt-hour meter	2	3×1.5(6)A 3×3(6)A	0.5%Ib	经万用电流互感器接入 Connected through multi-purpose current transformer
DT862 3×220V/380V		2	3×5(20)A 3×10(40)A 3×15(60)A 3×20(80)A 3×30(100)A	0.5%Ib	直接接入 Direct connection
DT864 3×220V/380V		1	3×1.5(6)A 3×3(6)A	0.4%Ib	经万用电流互感器接入 Connected through multi-purpose current transformer
DS862 3×380V	三相三线有功电表 Three-phase three-wire active energy watt-hour meter	2	3×1.5(6)A 3×3(6)A	0.5%Ib	直接接入 Direct connection
DS862 3×380V		2	3×5(20)A 3×10(40)A 3×15(60)A 3×20(80)A 3×30(100)A	0.5%Ib	直接接入 Direct connection
DS862 3×100V		2	3×1.5(6)A 3×3(6)A	0.5%Ib	经万用电流、电压互感器接入 Connected through multi-purpose current voltage transformer
DS864 3×380V		1	3×1.5(6)A 3×3(6)A	0.4%Ib	经万用电流、电压互感器接入 Connected through multi-purpose current voltage transformer
DS864 3×100V		1	3×1.5(6)A 3×3(6)A	0.4%Ib	经万用电流、电压互感器接入 Connected through multi-purpose current voltage transformer
DX862 3×380V	三相四线无功电表 Three-phase four-wire reactive energy watt-hour meter	3	3×1.5(6)A 3×3(6)A	1%Ib	经万用电流互感器接入 Connected through multi-purpose current transformer
DX862 3×100V		3	3×1.5(6)A 3×3(6)A	1%Ib	经万用电流、电压互感器接入 Connected through multi-purpose current voltage transformer
DX864 3×380V		2	3×1.5(6)A 3×3(6)A	0.5%Ib	经万用电流、电压互感器接入 Connected through multi-purpose current voltage transformer
DX864 3×100V		2	3×1.5(6)A 3×3(6)A	0.5%Ib	经万用电流、电压互感器接入 Connected through multi-purpose current voltage transformer
DX865 3×380V	三相三线无功电表 Three-phase three-wire reactive energy watt-hour meter	3	3×1.5(6)A 3×3(6)A	1%Ib	经万用电流互感器接入 Connected through multi-purpose current transformer
DX865 3×100V		3	3×1.5(6)A 3×3(6)A	1%Ib	经万用电流、电压互感器接入 Connected through multi-purpose current voltage transformer
DX863 3×380V		2	3×1.5(6)A 3×3(6)A	0.5%Ib	经万用电流互感器接入 Connected through multi-purpose current transformer
DX863 3×100V		2	3×1.5(6)A 3×3(6)A	0.5%Ib	经万用电流、电压互感器接入 Connected through multi-purpose current voltage transformer

主要技术参数

- 1. 该系列产品中的有功电能表符合国家标准GB/T17215.311-2008《0.5、1和2级交流有功电能表》中各相应等级的全部技术要求，无功电能表符合国家标准GB/T17215.311-2008《无功电能表》中各相应等级的全部技术要求。
- 2. 电表可制成直接接入式和经万用电流互感器或万用电压互感器接入式两种。
- 3. 起动：电能表在参比电压，参比频率及COS =1(无功表sin =1)条件下，负载电流不超过表中所列起动电流时，电能表转盘能起动并连续不停地转动；
- 4. 潜动：当电能表的电流线路中无电流，加在电压线路上的电压为参比值的80%~110%时，电能表的转盘不超过一整圈；
- 5. 介电性能：电能表能经受冲击波形是标准的1.2/50 μ s波形，峰值为6kV的冲击电压各10次不损坏。电能表的线路对地能耐受2kV，频率为45~65Hz的正弦波形的交流电压下历时1分钟的试验。

D86K
系列三相嵌入式电能表
Series embedded type three-phase watt-hour meters



产品规格 Produce Specification

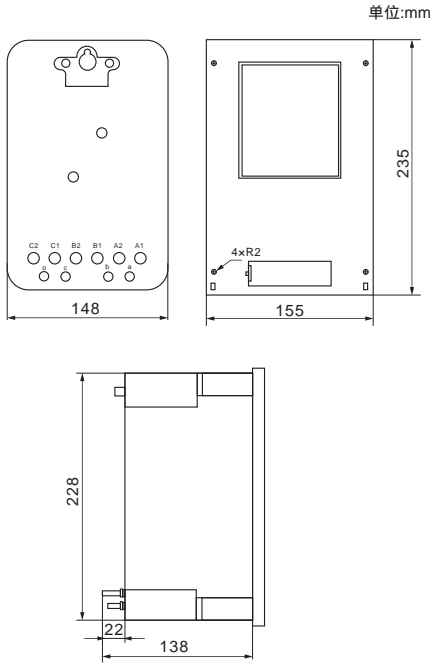
型号 Model	名称 Name	等级指数 Class index	电压 voltage	规格 Spec.	接线方式 Connection way
DT862K	三相四线有功电表 Three-phase four-wire active energy watt-hour meter	2	3×220/380V	3×3(6)A, 3×1.5(6)A	经电流互感器接入式 Connected through current transformer
DS862K	三相三线有功电表 Three-phase three-wire active energy watt-hour meter	2	3×380V	3×3(6)A, 3×1.5(6)A	经电流互感器接入式 Connected through current transformer
			3×100V	3×3(6)A, 3×1.5(6)A	电压互感器、电流互感器接入式 Connected through current/voltage transformer
DX862K	三相四线无功电表 Three-phase four-wire reactive energy watt-hour meter	3	3×380V	3×3(6)A, 3×1.5(6)A	经电流互感器接入式 Connected through current transformer
			3×100V	3×3(6)A, 3×1.5(6)A	电压互感器、电流互感器接入式 Connected through current/voltage transformer
DX864K	三相四线无功电表 Three-phase four-wire reactive energy watt-hour meter	2	3×380V	3×3(6)A, 3×1.5(6)A	经电流互感器接入式 Connected through current transformer
			3×100V	3×3(6)A, 3×1.5(6)A	电压互感器、电流互感器接入式 Connected through current/voltage transformer
DX863K	三相三线无功电表 Three-phase three-wire reactive energy watt-hour meter	2	3×380V	3×3(6)A, 3×1.5(6)A	经电流互感器接入式 Connected through current transformer
			3×100V	3×3(6)A, 3×1.5(6)A	电压互感器、电流互感器接入式 Connected through current/voltage transformer
DX865K	三相三线无功电表 Three-phase three-wire reactive energy watt-hour meter	3	3×380V	3×3(6)A, 3×1.5(6)A	经电流互感器接入式 Connected through current transformer
			3×100V	3×3(6)A, 3×1.5(6)A	电压互感器、电流互感器接入式 Connected through current/voltage transformer

适用范围 Application

D86K系列嵌入式三相电能表是板表式安装结构的三相系列电能表，除仪表外形及安装尺寸、接线方式以外，其余均同D86系列三相表，该表供配电柜使用。

D86K series embedded type three-phase watt-hour meter is the three-phase meter with the panel type mounting structure, it is same with D86 series three-phase watt-hour meter except the outline and mounting dimensions as well as connection way. This meter is used for the distribution cabinet.

外形及安装尺寸
Outline & installation size





# DD28 (DD17)

## 系列单相电能表(出口)

Series single phase watt-hour meters (export)



### 产品规格 Produce Specification

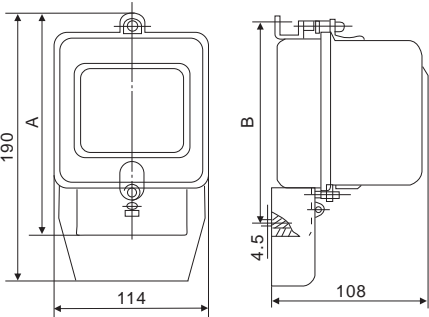
型号 Model	精度 Accuracy	额定电压(V) Rated voltage(V)	额定电流(A) Rated Current(A)	过载能力 Overload capacity	起动电流 Starting current	绝缘性能 Insulation performance
DD282	2	220~240	2(4), 2.5(5), 3(6), 5(10) 10(20), 20(40), 20(80)	400%Ib	0.5%Ib	工频交流电压2kV 历时1分钟；冲击电压6kV AC power-frequency voltage2KV for 1 minute ;
DD284	2	220~240	5(20), 3(12), 10(40), 15(60), 20(80)	200%Ib		

### 功能及其特点 Fuction and Features

1. 采用分离式铁芯结构；
2. 轴承具有单宝石、双宝石、磁推式三种结构，外壳采用铝、塑料和玻璃三种；
3. 基架由优质铝合金压铸而成，具有良好的机械强度。

1. The meter has separable iron core structure;
2. The bearing has three kinds: single-jewel, dual jewel, magnetic floating; The case has therr kinds: Aluminum, plastic and glass;
3. The die-casting frame is alloy aluminum with excellent mechanical strength.

### 外形及安装尺寸 Outline & installation size



单位Unit: mm

规格 Specification	I <sub>max</sub> > 20A	I <sub>max</sub> 20A
A	160	154
B	147	142

# DT8

## 系列三相电能表(出口)

Series three phase wathour meters (export)



### 产品规格 Produce Specification

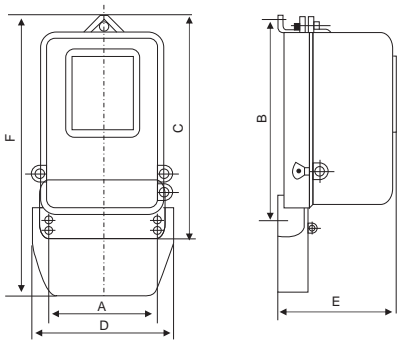
型号 Model	精度 Accuracy	额定电压(V) Rated voltage(V)	额定电流(A) Rated Current(A)	接线方式 Connection Mode
三相四线有功电能表 Three-phase Four- wire Reactive Watt- hour Meter	2	3×220/380V	3×5	经电流互感器接入式 Input through current transformer
			3×5, 3×10, 3×15, 3×20, 3×25, 3×30, 3×40,3×60, 3×80, 3×100, 3×120	直接接入式 Directly input

### 功能及其特点 Fuction and Features

1. 半封闭式铁芯结构，铝合金压铸整体支架，确保磁路稳定可靠；
2. 仪表轴承可选双宝石或磁推式二种结构；
3. 可选5+1位或5位计数器；
4. 可选择胶木、PC、ABS塑料、玻璃、铝等5种外壳。

1. Sub-close iron core the die-casting frame is made of alloy aluminum, to assure the magnetic line stable and reliably;
2. Meter bearing has two kinds, may select dual jewel or magnetic thrust;
3. May select 5+1 digits or 5 digits register;
4. May select 5 kinds of cases: bakelite, PC, ABC plastic, glass and Aluminum.

### 外形及安装尺寸 Outline & installation size



单位Unit: mm

规格 Specification	A	B	C	D	E	F
I <sub>max</sub> 40	128	236	253	165	126	320
I <sub>max</sub> > 40	132	242	260	165	128	320

### 适用范围 Application

DT8型系列三相电能表系计量额定频率为50Hz，三相交流电网中有功电能消耗的感应式仪表。该系列三相有功电能表技术性能完全符合GB/T15283-1994《0.5、1和2交流有功电度表》国家标准及IEC521国际标准。

DT8 series three-phase watt-hour meter is a induction meter, which is applicable to measure the rated frequency 50Hz and power loss of active energy meter. The series active energy meter are completely conformed to National Standard GB/T 15283-1994 Class 0.5, 1 and 2 AC Active Watt-hour Meter and International Standard IEC521

指针式仪器仪表系列
Instruments & meters series



主要技术参数 Main Technical data

- 1、准确度为：1.5级，2.5级
  - 2、使用条件：-20 +50
  - 3、相对湿度： 85%
  - 4、耐压影响：自额定值变化±15%，引起指示值误差不超过基本误差
  - 5、机械性能：能承受加速为30米/秒² ,冲击频率每分钟80-120次 ,二小时运输颠簸
  - 6、工作位置：垂直方向使用
- 1. Accuracy: class 1.5, class 2.5
  - 2. Operating condition: -20 +50
  - 3. Relative humidity: 85%
  - 4. Effect of withstand voltage: self-frequency constant value changes ±15%, error of indicated value should not be beyond the fundamental error.
  - 5. Mechanical property: it is able to withstand transportation for 2h with shock under conditions of acceleration 30m/s² and 80-12 times of strokes per minute.
  - 6. Working position: operate in vertical.

名称 Name		量限	备注 Note
交流电流表 AC ammeter	A	50mA-50A	直通 Direct through
	kA	1kA-10kA	经电流互感器二级电流5A Through current transformer with secondary current 5A
交流电压表 AC Voltage Meter	V	5V-750V	直通 Direct through
	kV	1kV-450kV	经电压互感器二级电压100V Through voltage transformer with secondary voltage 100V
直流电流表 DC ammeter	mA	50mA-500mA	直通 Direct through
	mA	1mA-500mA	
	A	1A-10A	外附装置 External attached device 外附分流器 External attached current divider
	kV	1kA-10kA	
直流电压表 DC voltmeter	V	1V-750V	直通 Direct through
	kV	1kV-450kV	
频率表 Frequency table	Hz	45Hz-55Hz	经电压互感器二级电压100V Through voltage transformer with secondary voltage 100V
		45Hz-65Hz	
		55Hz-65Hz	
		100V 220V 380V	
频率表 Frequency table	kW	100V 380V 5A	经电流互感器二级电流5A Through current transformer with secondary current 5A
		380V-380kV/100V 5A-10kA/5	
功率因数表 Power factor meter	cosf	cosf=0.5-1-0.5	经电压互感器二级电压100V Through voltage transformer withsecondary voltage 100V
		100V、220V、380V 5A	

适用范围 Application

安装式电工仪表是用途很广的直接作用模拟指示电测仪表、适用于直流电路和工频交流电路测量：电压、电流、频率、功率因素以及同步指示等电量参数，安装板表固有的优点是可以显示被测电量的变化趋势，除单独使用外，主要是为了各高、低电压开关柜，电源柜、控制柜以及各种电控装置、做仪表盘配套使用，产品各项指标符合GB/T7676-1998国家标准技术要求。


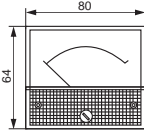

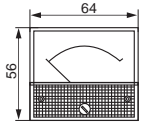

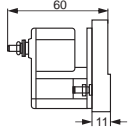

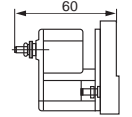

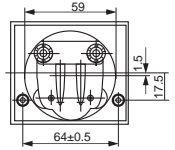

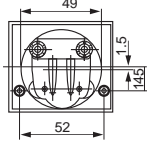

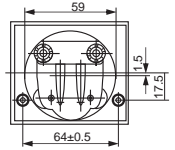

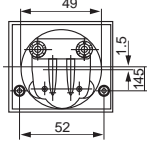

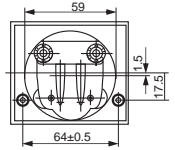

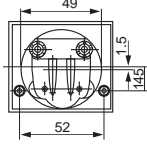
塑料或胶木外壳、大窗口、广视角，造型简洁明快、美观大方。

Mounting type electric meter is a direct acting indicating analogue electrical-measuring instrument with wide application range, it is applicable for measurement of DC circuits and power frequency AC circuits: electric parameters such as voltage, current, frequency, power factor, synchronous indication, etc. Intrinsic advantages of mounting panel meter: display the change trend of measured electric quantity, in addition to single use, it is mainly matched with instrument board for various HV and LV switch gears, power cabinets, control cabinets as well as various electrical control devices, its the indexes are in accordance with the technical requirements of national standard GB/T7676-1998. It is featured with plastic or bakelite housing, large window, wide visual angle, laconic and lucid construction, elegant appearance, etc.

断路器不同环境温度下的持续电流变动
Continuous current change under different ambient temperature conditions of circuit breaker

1、42系列 Series			2、6系列 Series		
产品名称 Product	产品型号 Model	图示 Icon	产品名称 Product	产品型号 Model	图示 Icon
电流表 Ammeter	42L6-A, 42C3-A		电流表 Ammeter	6L2-A, 6C2-A	
电压表 Voltmeter	42L6-V, 42C3-V		电压表 Voltmeter	6L2-V, 6C2-V	
功率表 Wattmeter	42L6-W, 42L6-var		功率表 Wattmeter	6L2-W, 6L2-var	
频率表 Frequency meter	42L6-Hz		频率表 Frequency meter	6L2-Hz	
功率因数表 Power factor meter	42L6-cosf		功率因数表 Power factor meter	6L2-cosf	

1、59系列 Series			2、44系列 Series		
产品名称 Product	产品型号 Model	图示 Icon	产品名称 Product	产品型号 Model	图示 Icon
电流表 Ammeter	59L1-A , 59C2-A		电流表 Ammeter	44L1-A, 44C2-A	
电压表 Voltmeter	59L1-V , 59C1-V		电压表 Voltmeter	44L17-A, 44C17-A	
功率表 Wattmeter	59L1-W , 59L1-var		功率表 Wattmeter	44L1-V, 44C2-V	
频率表 Frequency meter	59L1-Hz		频率表 Frequency meter	44L17-V, 44C17-V	
功率因数表 Power factor meter	59L1-cosf		功率因数表 Power factor meter	44L1-W, 44L1-var	
				44L17-W, 44C17-var	
				44L1-Hz	
				44L17-Hz	
				44L1-cosf	
				44L17-cosf	

1、69系列 Series			1、85系列 Series		
产品名称 Product	产品型号 Model	图示 Icon	产品名称 Product	产品型号 Model	图示 Icon
电流表 Ammeter	69L9-A, 69C9-A	 	电流表 Ammeter	85L1-A, 85C1-A	 
	69L17-A, 69C17-A			85L17-A, 85C17-A	
	69L17-A, 69C13-A				
电压表 Voltmeter	69L9-V, 69C9-V	 	电压表 Voltmeter	85L1-V, 85C1-V	 
	69L17-V, 69C17-V			85L17-V, 85C17-V	
	69L13-V, 69C13-V				
功率表 Wattmeter	69L9-W, 69L9-var	 	功率表 Wattmeter	85L1-W, 85L1-var	 
	69L17-W, 69C17-var			85L17-W, 85C17-var	
	69L13-W, 69C13-var				
频率表 Frequency meter	69L9-Hz	 	频率表 Frequency meter	85L1-Hz	 
	69L17-Hz			85L17-Hz	
	69L13-Hz				
功率因数表 Power factor meter	69L9-cosf	 	功率因数表 Power factor meter	85L1-cosf	 
	69L17-cosf			85L17-cosf	
	69L13-cosf				



指针式仪器仪表系列
Instruments & meters series

断路器不同环境温度下的持续电流变动
Continuous current change under different ambient temperature conditions of circuit breaker

1、96系列 Series			1、72系列		
产品名称 Product	产品型号 Model	图示 Icon	产品名称 Product	产品型号 Model	图示 Icon
电流表 Ammeter	96T1-AC, 96C1-A		电流表 Ammeter	72T1-A, 72C1-A	
电压表 Voltmeter	96T1-VC, 96C1-A		电压表 Voltmeter	72T1-V, 72C1-V	
功率表 Wattmeter	96L1-W, 96L1-var		功率表 Wattmeter	72L1-W, 72L1-var	
频率表 Frequency meter	96L1-Hz		频率表 Frequency meter	72L1-Hz	
功率因数表 Power factor meter	96L1-cosf		功率因数表 Power factor meter	72L1-cosf	

1、99系列 Series			1、80系列Series		
产品名称 Product	产品型号 Model	图示 Icon	产品名称 Product	产品型号 Model	图示 Icon
电流表 Ammeter	99T1-A, 99C1-A		电流表 Ammeter	RM80-A	
电压表 Voltmeter	99T1-V, 99C1-V		电压表 Voltmeter	RM80-V	
功率表 Wattmeter	99L1-W, 99L1-var		功率表 Wattmeter	RM80-W, RM80-var	
频率表 Frequency meter	99L1-Hz		频率表 Frequency meter	RM80-Hz	
功率因数表 Power factor meter	99L1-cosf		功率因数表 Power factor meter	RM80-cosf	

1、670系列 Series			1、60系列Series		
产品名称 Product	产品型号 Model	图示 Icon	产品名称 Product	产品型号 Model	图示 Icon
电流表 Ammeter	RM670-A		电流表 Ammeter	RM60-A	
电压表 Voltmeter	RM670-V		电压表 Voltmeter	RM60-V	
功率表 Wattmeter	RM670-W, RM670-var		功率表 Wattmeter	RM60-W, RM60-var	
频率表 Frequency meter	RM670-Hz		频率表 Frequency meter	RM60-Hz	
功率因数表 Power factor meter	RM670-cosf		功率因数表 Power factor meter	RM60-cosf	

数显表功能简易选型
Digital Meter Function Easy Selection

规格选型 Specifications Selection

产品 Model	电量测量 Electricity measurement	电能计量 Energy metering	分时计费 Sharing billing	谐波测量 Harmonic measurement	电力质量 Power Quality	电能脉冲 Energy pulse	通讯接口 Communication Interface	开关量 输入 Switch input	开关量 输出 Switch output	模拟量 输出 Analog output	事件记录 Event record
ZM-AV、DV、3AV系列数显电压表 Series Digital Voltage Meter		-	-	-	-	-					-
ZM-AA、DA、3AA系列数显电流表 Series Digital Ammeter		-	-	-	-	-					-
ZM-F系列数显频率表 Series Digital Frequency Meter		-	-	-	-	-					-
ZM-P、Q、3P、3Q系列数显功率表 Series Digital Power Meter		-	-	-	-	-					-
ZM-H、3H系列数显功率因数表 Series Digital Power Factor Meter		-	-	-	-	-					-
ZM系列数显组合表 Series Digital Combination table		-	-	-	-	-					-
ZM-D、3D系列多功能电力仪表 Series Multi-function monitoring instrument			-	-	-						-
ZM-3FD系列多费率电能表 Series Multi-rate energy meter				-	-						-
ZM-3HD系列谐波多功能表 Series Harmonic energy meter			-		-						-
ZM系列电量变送器 Series Electricity Transducer		-	-	-	-			-	-		-

典型应用选型 Typical applications for selection

开关柜类型 Type of Switchgear	规格型号 Model	面框尺寸 Frame size(mm)	功能说明 Function Description
进线柜 Incoming Cabinet	ZM-3D2/3D2Y	120×120	电网全部电量参数实时测量(三相电压、三相电流、有功功率、无功功率、视在功率、功率因数、频率)、正反向有功/无功电能计量 Real-time measurement of all the power of the grid parameters(three-phase voltage, active power, reactive power, apparent power, power factor, frequency), Forward and reverse active /reactive energy measurement
	ZM-3D3	96×96	
	ZM-3D3Y(液晶LCD)	96×96	
	ZM-3HD2Y(液晶LCD)	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量、谐波测量 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, harmonic measurement
	ZM-3HD3Y(液晶LCD)	96×96	
	ZM-3FHD2Y(液晶LCD)	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量、谐波测量、分时计费、电力品质分析、实时波形显示、事件记录 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, harmonic measurement, sharing billing, power quality analysis, real-time waveform display, event record
	ZM-3FHD3Y(液晶LCD)	96×96	
	ZM-3FD2Y(液晶LCD)	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量、分时计费、定时抄表、需量功能、事件记录 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, sharing billing, timing meter reading, demand function, event record
出线固定柜 (GGD) Outgoing fixed cabinet	ZM-3LH3	96×96	电量参数测量、电能计量、漏电监控 Measurement of electric parameters, energy metering, leakage monitoring
	ZM-AA21	120×120	单相电流 Single-phase current
	ZM-AA31	96×96	
	ZM-3AA23	120×120	三相电流 Three-phase current
	ZM-3AA33	96×96	
	ZM-AV21	120×120	单相电压 Single-phase voltage
	ZM-AV31	96×96	
	ZM-3AV23	120×120	三相电压 Three-phase voltage
	ZM-3AV33	96×96	
	ZM-3D2	120×120	电网全部电量参数实时测量 Real-time measurement of all the power of the grid parameters
	ZM-3D3	96×96	
	ZM-3D3Y(液晶LCD)	96×96	
	ZM-3E21	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement,
	ZM-3E31	96×96	
	ZM-3E3Y(液晶LCD)	96×96	
	ZM-3LD3	96×96	电量参数测量、电能计量、漏电监控 Measurement of electric parameters, energy metering, leakage monitoring

数显表功能简易选型
Digital Meter Function Easy Selection

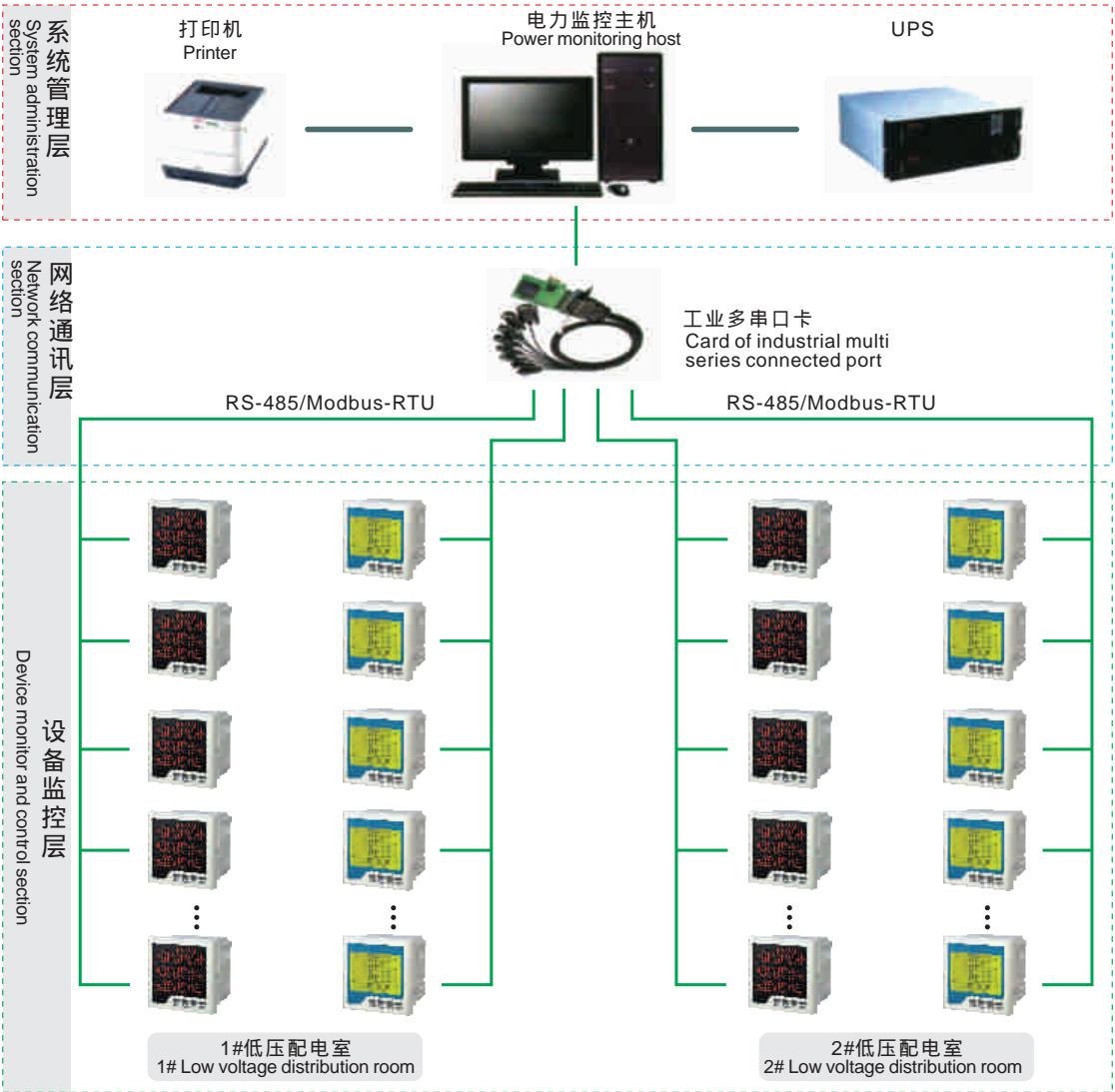
典型应用选型 Typical applications for selection

开关柜类型 Type of Switchgear	规格型号 Model	面框尺寸 Frame size(mm)	功能说明 Function Description
出线抽屉柜 (GCK/GCS/ MNS) Outgoing drawer cabinet	ZM-AA71	80×80	单相电流 Single-phase current
	ZM-AA81	48×48	
	ZM-AA51	96×48	
	ZM-3AA73	80×80	三相电流 Three-phase current
	ZM-3AA83	48×48	
	ZM-AV71	80×80	单相电压 Single-phase voltage
	ZM-AV81	48×48	
	ZM-AV51	96×48	
	ZM-3AV73	80×80	三相电压 Three-phase voltage
	ZM-3AV83	48×48	
	ZM-3D7	80×80	电网全部电量参数实时测量 Real-time measurement of all the power of the grid parameters
出线计量柜 Outgoing metering cabinet	ZM-3D7	80×80	电网全部电量参数实时测量、正反向有功/无功电能计量 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement,
	ZM-3HD7Y(液晶LCD)	80×80	电网全部电量参数实时测量、正反向有功/无功电能计量 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement,
	ZM-3D2	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement,
	ZM-3D3	96×96	
	ZM-3D3Y(液晶LCD)	96×96	
	ZM-3D7Y(液晶LCD)	80×80	
	ZM-3HD2Y(液晶LCD)	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量、谐波测量 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, harmonic measurement
	ZM-3HD3Y(液晶LCD)	96×96	
	ZM-3FD3Y(液晶LCD)	96×96	电网全部电量参数实时测量、正反向有功/无功电能计量、分时计费 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, sharing billing
	ZM-3FD2Y(液晶LCD)	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量、分时计费、定时抄表、需量功能、事件记录 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, sharing billing, timing meter reading, demand function, event record
母联柜 Busbar connections cabinet	ZM-3PQ23	120×120	有功功率、无功功率、视在功率 Active power, reactive power, apparent power
	ZM-3D2	120×120	电网全部电量参数实时测量 Real-time measurement of all the power of the grid parameters
	ZM-3D2	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement,
	ZM-3FD2Y(液晶LCD)	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量、分时计费、定时抄表、需量功能、事件记录 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, sharing billing, timing meter reading, demand function, event record
电容柜 Capacity cabinet	ZM-3PQ33	96×96	有功功率、无功功率、视在功率 Active power, reactive power, apparent power
	ZM-3PQ23	120×120	有功功率、无功功率、视在功率 Active power, reactive power, apparent power
	ZM-3PQH23	120×120	功率因数、有功功率、无功功率 Active power, reactive power, apparent power
	ZM-3D2	120×120	电网全部电量参数实时测量 Real-time measurement of all the power of the grid parameters
	ZM-3D2	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement,
	ZM-3H21	120×120	电量参数实时测量，功率因数控制 Real-time measurement of power parameters, power factor control
配电计量柜 Power distribution metering cabinet	ZM-3PQ33	96×96	有功功率、无功功率、视在功率 Active power, reactive power, apparent power
	ZM-3FD3Y(液晶LCD)	96×96	电网全部电量参数实时测量、正反向有功/无功电能计量、分时计费 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, sharing billing
	ZM-3FD2Y(液晶LCD)	120×120	电网全部电量参数实时测量、正反向有功/无功电能计量、分时计费、定时抄表、需量功能、事件记录 Real-time measurement of all the power of the grid parameters, forward and reverse active /reactive energy measurement, sharing billing, timing meter reading, demand function, event record

ZM2000
电力综合监控系统
Power Composite Monitoring System

系统典型应用方案 Typical applications scheme for system

小型化单机单网系统 Small single machine independent system



- 说明：
1. 现场监控层设备接口:单RS-485接口；标准Modbus通讯规约;
  2. 网络结构:总线单/双网、光纤、无线传输等可供选择;
  3. 设备数据传输介质:屏蔽双绞线、网络传输介质：可选择屏蔽双绞线、单模/多模光纤;
  4. 网络传输介质：可选择屏蔽双绞线、单模/多模光纤;
  5. 带载能力:建议每条总线带载8-32台智能设备，可根据现场情况制定实施方案;
  6. 适用场合:中小型企业、学校、机场、智能楼宇等。

- Notices :
1. Device interface of local monitoring and control section: RS-485 port, standard Modbus protocol
  2. Network structure: bus single/dual net, optic fiber, wireless transmission and etc for choice.
  3. Device data transmission medium: shielded twisted pair
  4. Network transmission medium: shielded twisted pair, single mode/multimode fiber for choice
  5. Carrying capacity: each bus carry 8-32 pcs of intelligent device, perform the proper arrangement according to actual conditions.
  6. Applicable site: middle and small enterprises, school, airport, intelligent building and etc.

功能介绍 Features





# ZM2000

## 电力综合监控系统

### Power Composite Monitoring System

- 强大的数据采集
- 1、ZM2000内建了丰富的设备支持库，支持常见的PLC设备、智能仪表、智能模块，可采集和处理电力系统中几乎所有的遥测量、遥信量、脉冲量等。如需使用虚拟节点进行复杂的数据运算，运算后数据也可以被显示记录；
  - 2、遥测量：电压、电流、有功、无功等；
  - 3、遥信量：开关状态、刀闸位置、保护动作信号、事故跳闸总信号、预告信号等；
  - 4、脉冲量：电度量、周波、时间量、设备参数、保护定值等；非电量：温度、压力、湿度、火灾报警、防盗报警等；
  - 5、系统通过Modbus-RTU或Modbus-TCP通讯协议进行直接通讯。可扩展平台让用户在初始投资的基础上，能根据需求添加新的设备和客户端，并与其他
  - 6、自动化系统(如SCADA、BAS、DCS、ERP)进行数据共享。

#### 技术指标

- 1、遥信传送时间：<2S
- 2、遥测传送时间：<2S
- 3、变位响应时间：<2S
- 4、遥控、遥调传送时间：<2S
- 5、事故推画面时间：<1S
- 6、调用画面响应时间：<2S
- 7、操作员从上位机接口发出命令到就地控制单元时间：<1S
- 8、单元控制装置接受命令到开始执行时间：<1S
- 9、网络速率：100Mbps或1000Mbps
- 10、事件记录正确率：99.9999%
- 11、遥控正确率：100%
- 12、遥信正确率：100%
- 13、遥调正确率：100%
- 14、遥测正确率：99.9999%
- 15、系统时钟误差：<10MS/年
- 16、海拔高度：4000m
- 17、工作环境温度：-20 ~+65
- 18、存储环境温度：-40 ~+85
- 19、相对湿度：<95%ZM
- 20、系统使用寿命：>10年
- 21、系统平均无故障运行时间(MTBF)：>50000小时
- 22、CPU负载率：正常<10%，事故<30%

#### 系统结构

- 1、ZM2000电力综合监控系统主要采用分层分布式结构，分为系统管理层、网络通讯层和现场监控层。
- 2、系统管理层包括：监控计算机、打印机、UPS电源等设备。
- 3、网络通讯层包括：网络交换机、网络通讯控制器以及相关网络线缆等设备。
- 4、现场监控层包括：低压系统的智能数显仪表、多功能监控仪表、电气火灾监控探测器、无功功率自动补偿控制器及电动机保护控制器等设备，高压系统的微机综合保护装置及测控仪表。
- 5、其中网络通讯层可以根据现场的具体情况，采用通讯电缆、无线传输、以太网或光纤进行网络配置。
- 6、ZM2000电力综合监控系统支持多种通讯协议：CDT、IEC-60870-101/102/103/104、DNP3.0、1801、MODBUS等，可与SEL、ABB、西门子、施耐德、GE、南瑞、南自、四方、许继等微机保护装置通过以上协议联网；同时支持多种通讯协议转发、模拟盘通讯控屏及规约扩展；支持各种现场总线，包括：工业以太网、PROFIBUS、DEVICE NET、LONWORKS、CANBUS等。

Powerful data acquisition

1. ZM2000 set up the full device support database, support the popular PLC device, intelligent instruments, intelligent module, it can acquisition and process all remote measured, signaling, and pulse values from the power system, if it need virtual node to perform complicated data calculation, the resulted data can be displayed and record.
2. Remote measurement values: voltage, current, active power, reactive power and etc.
3. Remote signaling value: the status of switch, blade position, protection tripping signal, fault tripping signal, pre-alarming signal and etc;
4. Pulse values: energy value (KWh), cycle, time, device parameters, tripping values and etc, Non electric values: temperature, pressure, humidity, fire alarm, anti-tamper alarm and etc.
5. The system performs direct communication via Modbus-RTU or Modbus-TCP protocol, The extensible function, can help user add new device and end users according to requirement based on the former system, and shared the data with other automatic system (such as SCADA, BAS, DCS, ERP)

#### Technical index

1. Transmission time of remote signaling：<2S
2. Transmission time of remote measured value：<2S
3. Response time of displacement：<2S
4. Transmission time of remote control and remote adjustment：<2S
5. Time from fault occur to panel display：<1S
6. Picture invoked response time：<2S
7. Time from operator sending a command in host machine to local controlled unit: <1S
8. Time from command receipt to starting execution<1S
9. Network speed rate: 100Mbps or 1000Mbps
10. Accuracy rate of event record：=99.9999%
11. Accuracy rate of remote control：100%
12. Accuracy rate of remote signaling：100%
13. Accuracy rate of remote adjustment：100%
14. Accuracy rate of remote measurement：=99.9999%
15. System clock error: <10ms/per year
16. Altitude：=4000m
17. Ambient working temperature：-20 ~+65
18. Storage temperature：-40 ~+85
19. Relative humidity：<95%ZM
20. System servicing life: > 10 years
21. Average operating time of the system without fault (MTBF): > 50000 hours
22. CPU loading rate: < 10% at normal status, < 30% under fault.

#### System structure

1. ZM2000 power comprehensive monitor and control system adopted stratified structure, divided into system administration section, network communication section and local monitor and control section.
2. System administration section includes: monitoring computer, printer, UPS power source and etc.
3. Network communication section covers: network switch, network communication controller and associated network cables and etc.
4. Local monitoring and control section contains: low voltage system intelligent digital displaying instruments, multifunctional monitoring meters, electric fire protection detector, reactive power auto compensation controller and motor protected controller and etc, micro-computer comprehensive protective device and measurement and control instrument in high voltage system
5. According to local actual condition, network communication section can adopt cable, wireless transmission, Ethernet or optical fiber to set up network system.
6. ZM2000 power comprehensive monitor and control system supported many communication protocols: CDT、IEC-60870-101/102/103/104、DNP3.0、1801、MODBUS and etc, it can link with micro computer protective devices of SEL、ABB、SIMENS、SCHNEIDER、GE、NARI、NANJING AUTOMATION、SIFANG、XJ GROUP and etc via above-mentioned protocols, also it supported many protocol to forward, simulate communication control panel and stipulation extension, supported local different bus, including industrial Ethernet、PROFIBUS、DEVICE NET、LONWORKS、CANBUS and etc.

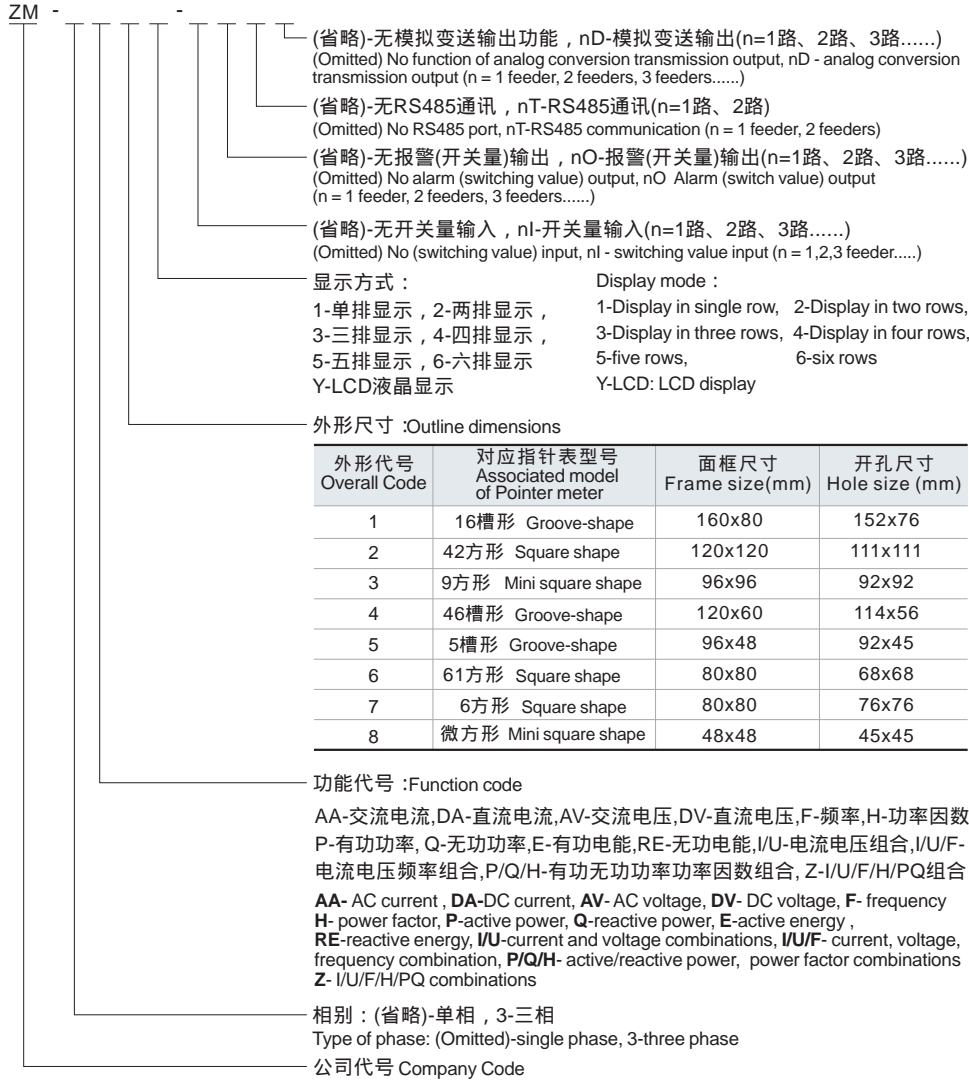
# ZM

## 智能数显仪表

### Series Intelligent Digital Meter



#### 型号及其含义 Code and implication



#### 适用范围 Application

智能数显仪表适用于电力电网、自动化控制系统中对电压、电流、有功功率、无功功率、视在功率、功率因数和频率等电参量的测量，由数码管(LED)或液晶(LCD)直接显示。具有显示直观、精度高、性能稳定、隔离性强、抗振动等优点。可选配多种扩展功能，包括RS-485通讯、开关量输入、开关量输出和模拟量变送输出等，丰富的外型尺寸可方便地替代指针式仪表。

Intelligent digital display meter is suitable for power network, automatic control system to measure voltage, current, active power, reactive power, apparent power, power factor, frequency and etc parameters, directly displayed via LED or LCD. Advantages: direct display, high accuracy, stable, high isolation, anti-shock and etc. it can provide different extension functions, including RS-485 port, switching value input, switching value output, analog conversion output and etc, with different sizes. It can replace pointer meters completely.

#### 产品标准 Conforming to standards

- 1、GB/T 22264.1-2008：安装式数字显示电测量仪表第1部分：定义和通用要求
- 2、GB/T 22264.2-2008：安装式数字显示电测量仪表第2部分：电流表和电压表的特殊要求
- 3、GB/T 22264.3-2008：安装式数字显示电测量仪表第3部分：功率表和无功功率表的特殊要求
- 4、GB/T 22264.4-2008：安装式数字显示电测量仪表第4部分：频率表的特殊要求
- 5、GB/T 22264.5-2008：安装式数字显示电测量仪表第5部分：相位表和功率因数表的特殊要求
- 6、GB/T 22264.8-2008：安装式数字显示电测量仪表第8部分：推荐的试验方法

1. GB/T 22264.1-2008：Mounted digital display electric measuring instruments-Part1: Definitions and general requirements
2. GB/T 22264.1-2008：Mounted digital display electric measuring instruments-Part2: Special requirements for ammeter and voltmeter.
3. GB/T 22264.1-2008：Mounted digital display electric measuring instruments-Part3: Special requirements for power meter and reactive power meter
4. GB/T 22264.1-2008：Mounted digital display electric measuring instruments-Part4: Special requirement for freq meter
5. GB/T 22264.1-2008：Mounted digital display electric measuring instruments-Part5: Special requirement for phase angle meter and power factor meter
6. GB/T 22264.1-2008：Mounted digital display electric measuring instruments-Part8: Recommended test methods

# ZM-AA、DA

## 系列数显单相电流表

Series Digital Single-phase Ammeter



### 技术指标

测量精度  
电流：0.5级

信号输入  
接线方式：单相  
额定电流：AC 1A、AC 5A、DC 20mA、DC 1A、DC 5A、DC 75mV  
过负载：1.2倍(持续)，10倍/5秒(瞬时)  
功耗：<0.4VA/相  
阻抗：<20m  
频率：45~65Hz或直流

辅助电源  
工作范围：AC/DC 80V~270V、AC220V、  
功耗：<4VA

功能模块  
通讯接口：1路RS-485通讯，Modbus-RTU协议；  
波特率：1200~9600bps，默认2400 bps  
开关量输入：支持2路干结点输入  
开关量输出：支持2路继电器输出，容量：AC 250V/5A，DC 30V/5A  
变送输出:支持1路模拟量输出:0/4~20mA或0~5/10V

环境  
工作温度：-10 ~+55  
存储温度：-25 ~+70  
相对湿度：93%，无腐蚀性气体场所  
海拔：2500m

安全  
绝缘电阻：>100M  
交流耐压：AC 2KV

电磁兼容性能  
静电放电：4级  
电快速瞬变脉冲群：4级  
浪涌(冲击)：4级

### Technical index

**Accuracy of measurement**  
Current level 0.5

**Signal input**  
Connection mode single phase  
Rated current of AC 1A, AC 5A, DC 20mA, DC 1A, DC 5A, DC 75mV  
Over load(Continued)1.2 times, 10times for/5 seconds (instantaneous)  
Power consumption<0.4VA/phase  
Impedance<20m  
The frequency 45~65Hz or DC

**Auxiliary power supply**  
Working range of AC/DC 80V~270V, AC220V  
Power consumption<4VA

**Function module**  
Communication interface 1 way RS-485 communication, Modbus-RTU protocol baud rate:1200~9600bps, the default 2400bps  
Switch input: support 2 stem node input  
The switch output: support 2 relay output, capacity: AC 250V/5A, DC 30V/5A  
Transmission output: support 1 analog output: 0/4~20mA or 0~5/10V

**Environment**  
Working temperature: -10 ~+55  
Storage temperature: -25 ~+70  
Relative humidity is less than 93%, no corrosive gas  
Elevation 2500m

**Safety**  
Insulation resistance>100M  
AC withstand voltage AC 2KV

**Electromagnetic compatibility**  
ESD level 4  
Electrical fast transient burst level 4  
Surge(impact) level 4

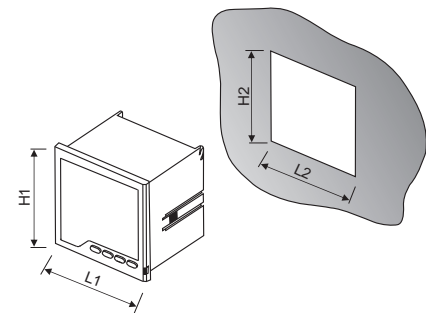
### 性能特点

- 1、高精度测量单相交流电流或直流电流
- 2、提供数码管显示，本地数据查询
- 3、电流变比可编程设置
- 4、支持RS-485通讯，Modbus-RTU协议
- 5、支持开关量输入、开关量输出、模拟量变送输出
- 6、辅助电源：AC/DC 80V~270V、AC220V
- 7、多种外形选择，满足不同柜体电气回路的要求

### Performance characteristics

1. High precision to measure single phase alternating current or DC current
2. Provide the digital tube display, local data query
3. Current ratio programmable settings
4. Support for RS- 485 communication, Modbus -RTU protocol
5. Support for switching input, output, analog quantity transmitting output
6. Auxiliary power supply: AC/DC 80V~270V, AC220V
7. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

### 外形尺寸 Outline dimensions



面框尺寸(mm)：L1xH1  
开孔尺寸(mm)：L2xH2  
Frame size(mm): L1xH1  
Hole size(mm): L2xH2

面框尺寸(mm)：120x120；80x80；96x48；  
96x96；80x80；48x48；120x60；160x80  
开孔尺寸(mm)：111x111；76x76；92x45；  
92x92；68x68；45x45；114x56；152x76  
Frame size(mm) of 120x120；80x80；96x48；  
96x96；80x80；48x48；120x60；160x80  
Hole size(mm) of 111x111；76x76；92x45；  
92x92；68x68；45x45；114x56；152x76

# ZM-3AA

## 系列数显三相电流表

Series Digital Three-phase Ammeter



### 技术指标

测量精度  
电流：0.5级

信号输入  
接线方式：三相四线、三相三线  
额定电流：AC 1A、AC 5A  
过负载：1.2倍(持续)，10倍/5秒(瞬时)  
功耗：<0.4VA/相  
阻抗：<20m  
频率：45~65Hz

辅助电源  
工作范围：AC/DC 80V~270V、AC220V  
功耗：<4VA

功能模块  
通讯接口：1路RS-485通讯，Modbus-RTU协议；  
波特率：1200~9600bps，默认2400 bps  
开关量输入：支持4路干结点输入  
开关量输出：支持3路继电器输出，容量：AC 250V/5A，DC 30V/5A  
变送输出：支持3路模拟量输出：0/4~20mA或0~5/10V

环境  
工作温度：-10 ~+55  
存储温度：-25 ~+70  
相对湿度：93%，无腐蚀性气体场所  
海拔：2500m

安全  
绝缘电阻：>100M  
交流耐压：AC 2KV

电磁兼容性能  
静电放电：4级  
电快速瞬变脉冲群：4级  
浪涌(冲击)：4级

### Technical index

**Accuracy of measurement**  
Current level 0.5

**Signal input**  
Connection mode of four phase three wire, three phase three line  
Rated voltage of AC 1A, AC 5A  
Over load(Continued)1.2 times, 10times for/5 seconds (instantaneous)  
Power <0.4VA/phase  
Impedance<20m  
The frequency fo 45~65Hz

**Auxiliary power supply**  
Working range of AC/DC 80V~270V, AC220V  
Power consumption<4VA

**Function module**  
Communication interface 1 way RS-485 communication, Modbus-RTU protocol baud rate:1200~9600bps, the default 2400bps  
Switch input: support 2 stem node input  
The switch output: support 2 relay output, capacity: AC 250V/5A, DC 30V/5A  
Transmission output: support 1 analog output: 0/4~20mA or 0~5/10V

**Environment**  
Working temperature: -10 ~+55  
Storage temperature: -25 ~+70  
Relative humidity is less than 93%, no corrosive gas  
Elevation 2500m

**Safety**  
Insulation resistance>100M  
AC withstand voltage AC 2KV

**Electromagnetic compatibility**  
ESD level 4  
Electrical fast transient burst level 4  
Surge(impact) level 4

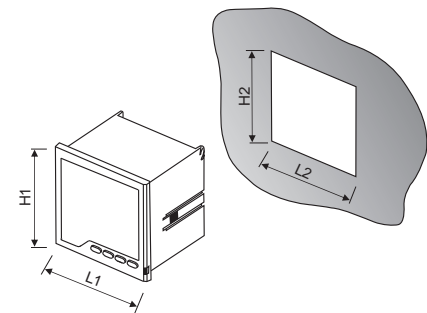
### 性能特点

- 1、高精度测量三相交流电流
- 2、提供数码管显示，本地数据查询
- 3、电流变比可编程设置
- 4、支持RS-485通讯，Modbus-RTU协议
- 5、支持开关量输入、开关量输出、模拟量变送输出
- 6、辅助电源：AC/DC 80V~270V、AC220V
- 7、多种外形选择，满足不同柜体电气回路的要求

### Performance characteristics

1. High precision to measure single phase alternating current or DC current
2. Provide the digital tube display, local data query
3. Current ratio programmable settings
4. Support for RS- 485 communication, Modbus -RTU protocol
5. Support for switching input, output, analog quantity transmitting output
6. Auxiliary power supply: AC/DC 80V~270V, AC220V
7. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

### 外形尺寸 Outline dimensions



面框尺寸(mm)：L1xH1  
开孔尺寸(mm)：L2xH2  
Frame size(mm): L1xH1  
Hole size(mm): L2xH2

面框尺寸(mm)：120x120；80x80；96x48；  
96x96；80x80；48x48  
开孔尺寸(mm)：111x111；76x76；92x45；  
92x92；68x68；45x45  
Frame size(mm) of 120x120；80x80；96x48；  
96x96；80x80；48x48  
Hole size(mm) of 111x111；76x76；92x45；  
92x92；68x68；45x45



# ZM-V、DV

## 系列数显单相电压表

Series Digital Single-phase Voltage Meter



### 技术指标

测量精度  
电压：0.5级

信号输入  
接线方式：单相  
额定电压：AC 57.7V、AC 100V、AC 220V、AC380V、DC 2V、DC20V、DC200V、DC600V  
过负载：1.2倍(持续)，2倍/1秒(瞬时)  
功耗：<1VA/相  
阻抗：>300K  
频率：45~65Hz或直流

辅助电源  
工作范围：AC/DC 80V~270V、AC220V  
功耗：<4VA

功能模块  
通讯接口：1路RS-485通讯，Modbus-RTU协议  
波特率：1200~9600bps，默认2400 bps  
开关量输入：支持2路干结点输入  
开关量输出：支持2路继电器输出，容量：AC 250V/5A，DC 30V/5A  
变送输出：支持1路模拟量输出：0/4~20mA或0~5/10V

环境  
工作温度：-10 ~+55  
存储温度：-25 ~+70  
相对湿度：93%，无腐蚀性气体场所  
海拔：2500m

安全  
绝缘电阻：>100M  
交流耐压：AC 2KV

电磁兼容性能  
静电放电：4级  
电快速瞬变脉冲群：4级  
浪涌(冲击)：4级

### Technical index

Accuracy of measurement  
Electric current 0.5

Signal input  
Connection mode of single phase  
Rated voltage of AC 57.7V、AC 100V、AC 220V、AC380V、DC 2V、DC20V、DC200V、DC600V  
Over load 1.2 times(Continued), 2 times/second (instantaneous)  
Power <1VA/phase  
Impedance>300K  
The frequency fo 45~65Hz or DC

Auxiliary power supply  
Working range of AC/DC 80V~270V, AC220V  
Power consumption<4VA

Function module  
Communication interface 1 way RS-485 communication, Modbus-RTU protocol baud rate:1200~9600bps, the default 2400bps  
Switch input: support 2 stem node input  
The switch output: support 2 relay output, capacity: AC 250V/5A, DC 30V/5A  
Transmission output: support 1 analog output: 0/4~20mA or 0~5/10V

Environment  
Working temperature: -10 ~+55  
Storage temperature: -25 ~+70  
Relative humidity is less than 93%, no corrosive gas  
Elevation 2500m

Safety  
Insulation resistance>100M  
AC withstand voltage AC 2KV

Electromagnetic compatibility  
ESD level 4  
Electrical fast transient burst level 4  
Surge(impact) level 4

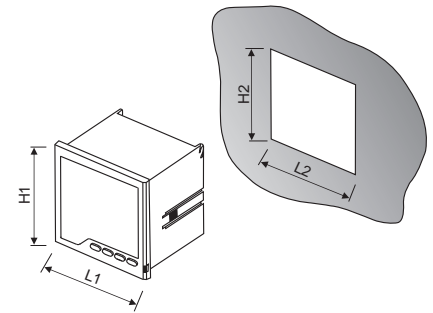
### 性能特点

- 1、高精度测量单相交流电压或直流电压
- 2、提供数码管显示，本地数据查询
- 3、电压变比可编程设置
- 4、支持RS-485通讯，Modbus-RTU协议
- 5、支持开关量输入、开关量输出、模拟量变送输出
- 6、辅助电源：AC/DC 80V~270V、AC220V
- 7、多种外形选择，满足不同柜体电气回路的要求

### Performance characteristics

1. High precision measurement of single phase AC voltage or DC coltage
2. Provide the digital tube display, local data query
3. Programmable voltage ratio
4. Support for RS- 485 communication, Modbus -RTU protocol
5. Support for switching input, output, analog quantity transmitting output
6. Auxiliary power supply: AC/DC 80V~270V, AC220V
7. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

### 外形尺寸 Outline dimensions



面框尺寸(mm)：L1xH1  
开孔尺寸(mm)：L2xH2  
Frame size(mm): L1xH1  
Hole size(mm): L2xH2

面框尺寸(mm)：120×120；80×80；96×48；96×96；80×80；48×48；120×60；160×80  
开孔尺寸(mm)：111×111；76×76；92×45；92×92；68×68；45×45；114×56；152×76  
Frame size(mm) of 120×120；80×80；96×48；96×96；80×80；48×48；120×60；160×80  
Hole size(mm) of 111×111；76×76；92×45；92×92；68×68；45×45；114×56；152×76

# ZM-3V

## 系列数显三相电压表

Series Digital Three-phase Voltage Meter



### 技术指标

测量精度  
电压：0.5级

信号输入  
接线方式：三相四线、三相三线  
额定电压：AC 57.7V、AC 100V、AC 220V、AC380V  
过负载：1.2倍(持续)，2倍/1秒(瞬时)  
功耗：<1VA/相  
阻抗：>300K  
频率：45~65Hz

辅助电源  
工作范围：AC/DC 80V~270V、AC220V  
功耗：<4VA

功能模块  
通讯接口：1路RS-485通讯，Modbus-RTU协议  
波特率：1200~9600bps，默认2400 bps  
开关量输入：支持4路干结点输入  
开关量输出：支持3路继电器输出，容量：AC 250V/5A，DC 30V/5A  
变送输出：支持3路模拟量输出：0/4~20mA或0~5/10V

环境  
工作温度：-10 ~+55  
存储温度：-25 ~+70  
相对湿度：93%，无腐蚀性气体场所  
海拔：2500m

安全  
绝缘电阻：>100M  
交流耐压：AC 2KV

电磁兼容性能  
静电放电：4级  
电快速瞬变脉冲群：4级  
浪涌(冲击)：4级

### Technical index

Accuracy of measurement  
Voltage level 0.5

Signal input  
Connection mode of four phase three wire, three phase three phase three line  
Rated voltage of AC 57.7V、AC 100V、AC 220V、AC380V  
Over load 1.2 times(Continued), 2 times/second (instantaneous)  
Power <1VA/phase  
Impedance>300K  
The frequency fo 45~65Hz or DC

Auxiliary power supply  
Working range of AC/DC 80V~270V, AC220V  
Power consumption<4VA

Function module  
Communication interface 1 way RS-485 communication, Modbus-RTU protocol baud rate:1200~9600bps, the default 2400bps  
Switch input: support 4 stem node input  
The switch output: support 3 relay output, capacity: AC 250V/5A, DC 30V/5A  
Transmission output: support 3 analog output: 0/4~20mA or 0~5/10V

Environment  
Working temperature: -10 ~+55  
Storage temperature: -25 ~+70  
Relative humidity is less than 93%, no corrosive gas  
Elevation 2500m

Safety  
Insulation resistance>100M  
AC withstand voltage AC 2KV

Electromagnetic compatibility  
ESD level 4  
Electrical fast transient burst level 4  
Surge(impact) level 4

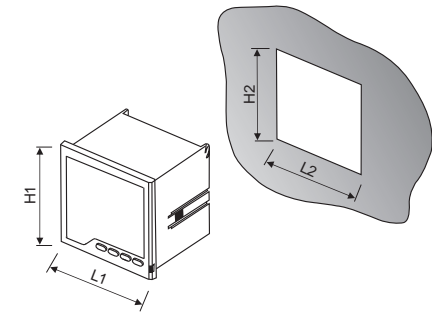
### 性能特点

- 1、高精度测量三相交流电压
- 2、提供数码管显示，本地数据查询
- 3、电压变比可编程设置
- 4、支持RS-485通讯，Modbus-RTU协议
- 5、支持开关量输入、开关量输出、模拟量变送输出
- 6、辅助电源：AC/DC 80V~270V、AC220V
- 7、多种外形选择，满足不同柜体电气回路的要求

### Performance characteristics

1. High precision measurement of three- phase AC voltage
2. Provide the digital tube display, local data query
3. Programmable voltage ratio
4. Support for RS- 485 communication, Modbus -RTU protocol
5. Support for switching input, output, analog quantity transmitting output
6. Auxiliary power supply: AC/DC 80V~270V, AC220V
7. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

### 外形尺寸 Outline dimensions



面框尺寸(mm)：L1xH1  
开孔尺寸(mm)：L2xH2  
Frame size(mm): L1xH1  
Hole size(mm): L2xH2

面框尺寸(mm)：120×120；80×80；96×48；96×96；80×80；48×48  
开孔尺寸(mm)：111×111；76×76；92×45；92×92；68×68；45×45  
Frame size(mm) of 120×120；80×80；96×48；96×96；80×80；48×48  
Hole size(mm) of 111×111；76×76；92×45；92×92；68×68；45×45

ZM-F  
系列数显频率表  
Series Digital Frequency Meter



技术指标

测量精度  
频率：±0.02Hz

信号输入  
接线方式：单相  
额定频率：45~65Hz  
额定电压：AC 57.7V, AC 100V, AC 220V, AC 380V  
过负载：1.2倍(持续)，2倍/1秒(瞬时)  
功耗：<1VA/相  
阻抗：>300K

辅助电源  
工作范围：AC/DC 80V~270V ,AC220V, AC380V  
功耗：<4VA

功能模块  
通讯接口：1路RS-485通讯，Modbus-RTU协议  
波特率：1200~9600bps，默认2400 bps  
开关量输入：支持2路干结点输入  
开关量输出：支持2路继电器输出，容量：  
AC 250V/5A，DC 30V/5A  
变送输出：支支持1路模拟量输出：0/4~20mA或  
0~5/10V

环境  
工作温度：-10 ~+55  
存储温度：-25 ~+70  
相对湿度：93%，无腐蚀性气体场所  
海拔：2500m

安全  
绝缘电阻：>100M  
交流耐压：AC 2KV

电磁兼容性能  
静电放电：4级  
电快速瞬变脉冲群：4级  
浪涌(冲击)：4级

Technical index

Accuracy of measurement  
Frequency: 0.02Hz

Signal input  
Connection mode of single-phase  
Rated frequency: 45~65Hz  
Rated voltage AC 57.7V, AC 100V, AC 220V, AC 380V  
Overload: 1.2 times(Continued), 2 times/second  
(instantaneous)  
Power consumption: <1VA/phase  
Impedanc :>300mK

Auxiliary power supply  
Working range of AC/DC 80V~270V, AC220V, AC380V  
Power consumption<4VA

Function module  
Communication interface 1 way RS-485 communication,  
Modbus-RTU protocol baud r ate:1200~9600bps, the  
default 2400bps  
Switch input: support 2 stem node input  
The switch output: support 2 relay output, capacity: AC  
250V/5A, DC 30V/5A  
Transmission output: support 1 analog output: 0/4~20mA  
or 0~5/10V

Environment  
Working temperature: -10 ~+55  
Storage temperature: -25 ~+70  
Relative humidity is less than 93%, no corrosive gas  
Elevation 2500m

Safety  
Insulation resistance>100M  
AC withstand voltage AC 2KV

Electromagnetic compatibility  
ESD level 4  
Electrical fast transient burst level 4  
Surge(impact) level 4

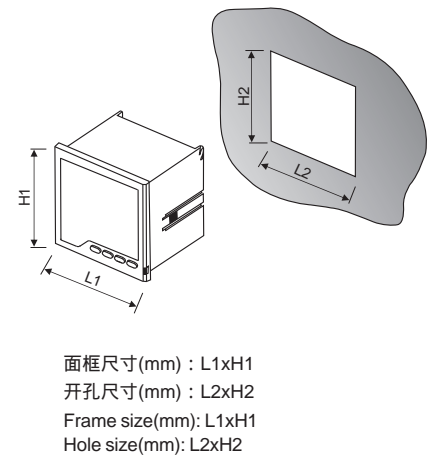
性能特点

- 1、高精度测量单相交流频率
- 2、提供数码管显示，本地数据查询
- 3、支持RS-485通讯，Modbus-RTU协议
- 4、支持开关量输入、开关量输出、模拟量变送输出
- 5、辅助电源：AC/DC 80V~270V、AC220V
- 6、多种外形选择，满足不同柜体电气回路的要求

Performance characteristics

- 1. High precision measurement of single- phase AC frequency
- 2. To provide a nixie tube or liquid crystal display, local data query
- 3. Support for RS- 485 communication, Modbus -RTU protocol
- 4. Support for switching input, output, analog quantity transmitting output
- 5. Auxiliary power supply: AC/DC 80V~270V, AC220V
- 6. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

外形尺寸 Outline dimensions



面框尺寸(mm)：120×120；80×80；96×48；  
96×96；80×80；48×48  
开孔尺寸(mm)：111×111；76×76；92×45；  
92×92；68×68；45×45  
Frame size(mm) of 120×120；80×80；96×48；  
96×96；80×80；48×48  
Hole size(mm) of 111×111；76×76；92×45；  
92×92；68×68；45×45

ZM-P、Q  
系列数显功率表  
Series Digital Power Meter



技术指标

测量精度  
有功功率：0.5级  
无功功率：0.5级  
视在功率：0.5级

信号输入  
接线方式：单相、三相四线、三相三线  
额定电压：AC 57.7V, AC 100V, AC 220V, AC 380V  
额定电流：AC 1A、AC 5A  
过负载：电压：1.2倍(持续)，2倍/1秒(瞬时)  
电流：1.2倍(持续)，10倍/5秒(瞬时)  
功耗：电压：<1VA/相，电流：<0.4VA/相  
阻抗：电压：>300k，电流：<20m  
频率：45~65Hz

辅助电源  
工作范围：AC/DC 80V~270V、AC220V、AC380V  
功耗：<4VA

功能模块  
通讯接口：1路RS-485通讯，Modbus-RTU协议  
波特率：1200~9600bps，默认2400 bps  
开关量输入：支持4路干结点输入  
开关量输出：支持3路继电器输出，容量：  
AC 250V/5A，DC 30V/5A  
变送输出:支持3路模拟量输出:0/4~20mA或0~5/10V

环境  
工作温度：-10 ~+55  
存储温度：-25 ~+70  
相对湿度：93%，无腐蚀性气体场所  
海拔：2500m

安全  
绝缘电阻：>100M  
交流耐压：AC 2KV

电磁兼容性能  
静电放电：4级  
电快速瞬变脉冲群：4级  
浪涌(冲击)：4级

Technical index

Accuracy of measurement  
Active power 0.5  
Reactive power level 0.5  
Depending on the power level 0.5

Signal input  
Connection mode of single-phase, three-phase four  
wire, three phase three line  
Rated voltage AC 57.7V, AC 100V, AC 220V, AC 380V  
Rated current AC 1A, AC 5A  
Overload voltage:1.2 times(Continued), 2 times/second  
(instantaneous)  
current:1.2 times(Continued), 10 times/5 second  
(instantaneous)  
Power consumption voltage:<1VA/, current:<0.4VA/phase  
Impedance voltage:>300mK，current:<20m  
The frequency 45~65Hz

Auxiliary power supply  
Working range of AC/DC 80V~270V, AC220V, AC380V,  
Power consumption<4VA

Function module  
Communication interface 1 way RS-485 communication,  
Modbus-RTU protocol baud r ate:1200~9600bps, the  
default 2400bps  
Switch input: support 4 stem node input  
The switch output: support 3 relay output, capacity: AC  
250V/5A, DC 30V/5A  
Transmission output: support 3 analog output: 0/4~20mA  
or 0~5/10V

Environment  
Working temperature: -10 ~+55  
Storage temperature: -25 ~+70  
Relative humidity is less than 93%, no corrosive gas  
Elevation 2500m

Safety  
Insulation resistance>100M  
AC withstand voltage AC 2KV

Electromagnetic compatibility  
ESD level 4  
Electrical fast transient burst level 4  
Surge(impact) level 4

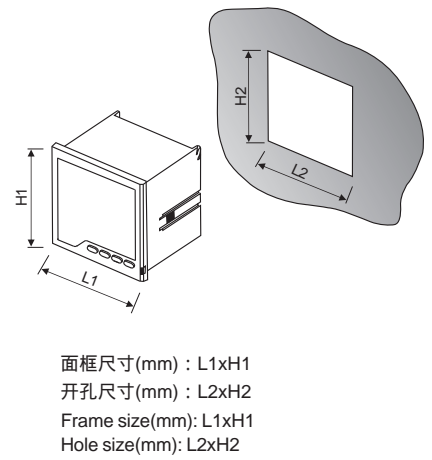
性能特点

- 1、高精度测量三相电网的有功功率、无功功率、视在功率
- 2、提供数码管或液晶显示，本地数据查询
- 3、电流、电压变比可编程设置
- 4、支持RS-485通讯，Modbus-RTU协议
- 5、支持开关量输入、开关量输出、模拟量变送输出
- 6、辅助电源：AC/DC 80V~270V、AC220V
- 7、多种外形选择，满足不同柜体电气回路的要求

Performance characteristics

- 1. High precision measurement of three- phase active power, reactive power, apparent power
- 2. To provide a nixie tube or liquid crystal display, local data query
- 3. Current and voltage gain programmable settings
- 4. Support for RS- 485 communication, Modbus -RTU protocol
- 5. Support for switching input, output, analog quantity transmitting output
- 6. Auxiliary power supply: AC/DC 80V~270V, AC220V
- 7. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

外形尺寸 Outline dimensions



面框尺寸(mm)：120×120；80×80；96×48；  
96×96；80×80；48×48；120×60；160×80  
开孔尺寸(mm)：111×111；76×76；92×45；  
92×92；68×68；45×45；114×56；152×76  
Frame size(mm) of 120×120；80×80；96×48；  
96×96；80×80；48×48；120×60；160×80  
Hole size(mm) of 111×111；76×76；92×45；  
92×92；68×68；45×45；114×56；152×76



ZM-H
系列数显功率因数表
Series Digital Power Factor Meter



技术指标

测量精度
功率因数：0.5级

信号输入

接线方式：单相、三相三线
额定电压：AC 57.7V,AC 100V,AC 220V,AC 380V
额定电流：AC 1A、 AC 5A
过负载：电压：1.2倍(持续)，2倍/1秒(瞬时)
电流：1.2倍(持续)，10倍/5秒(瞬时)
功耗：电压：<1VA/相，电流：<0.4VA/相
阻抗：电压：>300k ，电流：<20m
频率：45~65Hz

辅助电源

工作范围：AC/DC 80V~270V、AC220V、AC380V、AC100V、DC48V、DC24V
功耗：<4VA

功能模块

通讯接口：1路RS-485通讯，Modbus-RTU协议
波特率：1200~9600bps，默认2400 bps
开关量输入：支持4路干结点输入
开关量输出：支持3路继电器输出，容量：AC 250V/5A，DC 30V/5A
变送输出：支持1路模拟量输出：0/4~20mA或0~5/10V

环境

工作温度：-10 ~+55
存储温度：-25 ~+70
相对湿度： 93%，无腐蚀性气体场所
海拔： 2500m

安全

绝缘电阻：>100M
交流耐压：AC 2KV

电磁兼容性能

静电放电：4级
电快速瞬变脉冲群：4级
浪涌(冲击)：4级

Technical index

Accuracy of measurement
Power factor 0.5

Signal input

Mode of connection of single-phase three-phase three wire
Rated voltage AC 57.7V,AC 100V,AC 220V,AC 380V
Rated current of AC 1A, AC 5A
Overload voltage:1.2 times(Continued), 2 times/second (instantaneous)
current:1.2 times(Continued), 10 times/5 second (instantaneous)
Power consumption voltage:<1VA/, current:<0.4VA/phase
Impedance voltage:>300mK , current:<20m
The frequency 45~65Hz

Auxiliary power supply

Working range of AC/DC 80V~270V, AC220V, AC380V, AC100V,DC48V、DC24V
Power consumption<4VA

Function module

Communication interface 1 way RS-485 communication, Modbus-RTU protocol baud r ate:1200~9600bps, the default 2400bps
Switch input: support 4 stem node input
The switch output: support 3 relay output, capacity: AC 250V/5A, DC 30V/5A
Transmission output: support 3 analog output: 0/4~20mA or 0~5/10V

Environment

Working temperature: -10 ~+55
Storage temperature: -25 ~+70
Relative humidity is less than 93%, no corrosive gas
Elevation 2500m

Safety

Insulation resistance>100M
AC withstand voltage AC 2KV

Electromagnetic compatibility

ESD level 4
Electrical fast transient burst level 4
Surge(impact) level 4

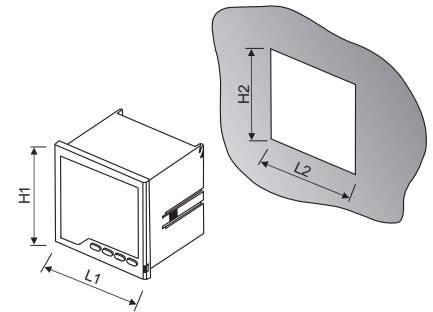
性能特点

- 1、高精度测量三相电网的功率因数
- 2、提供数码管显示，本地数据查询
- 3、电流、电压变比可编程设置
- 4、支持RS-485通讯，Modbus-RTU协议
- 5、支持开关量输入、开关量输出、模拟量变送输出
- 6、辅助电源：AC/DC 80V~270V、AC220V
- 7、多种外形选择，满足不同柜体电气回路的要求

Performance characteristics

- 1. High precision measurement of three- phase power factor
- 2. Provide the digital tube display, local data query
- 3. Current and voltage gain programmable settings
- 4. Support for RS- 485 communication, Modbus -RTU protocol
- 5. Support for switching input, output, analog quantity transmitting output
- 6. Auxiliary power supply: AC/DC 80V~270V, AC220V
- 7. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

外形尺寸 Outline dimensions



面框尺寸(mm)：L1xH1
开孔尺寸(mm)：L2xH2
Frame size(mm): L1xH1
Hole size(mm): L2xH2

面框尺寸(mm)：120×120；80×80；96×48；96×96；80×80；48×48；120×60；160×80
开孔尺寸(mm)：111×111；76×76；92×45；92×92；68×68；45×45；114×56；152×76
Frame size(mm) of 120×120；80×80；96×48；96×96；80×80；48×48；120×60；160×80
Hole size(mm) of 111×111；76×76；92×45；92×92；68×68；45×45；114×56；152×76

ZM
系列数显组合表
Series Digital Combination table



技术指标

测量精度
电压：0.5级
电流：0.5级
有功功率：0.5级
无功功率：0.5级
功率因数：0.5级
频率：±0.02Hz

信号输入

接线方式：单相、三相四线、三相三线
额定电压：AC 57.7V、 AC 100V、 AC 220V、 AC 380V
额定电流：AC 1A、 AC 5A
过负载：电压：1.2倍(持续)，2倍/1秒(瞬时)
电流：1.2倍(持续)，10倍/5秒(瞬时)
功耗：电压：<1VA/相，电流：<0.4VA/相
阻抗：电压：>300k ，电流：<20m
频率：45~65Hz

辅助电源

工作范围：AC/DC 80V~270V、AC220V
功耗：<4VA

功能模块

通讯接口：1路RS-485通讯，Modbus-RTU协议
波特率：1200~9600bps，默认2400 bps
开关量输入：支持4路干结点输入
开关量输出：支持3路继电器输出，容量：AC 250V/5A，DC 30V/5A
变送输出：支持1路模拟量输出：0/4~20mA或0~5/10V

环境

工作温度：-10 ~+55
存储温度：-25 ~+70
相对湿度： 93%，无腐蚀性气体场所
海拔： 2500m

安全

绝缘电阻：>100M
交流耐压：AC 2KV

电磁兼容性能

静电放电：4级
电快速瞬变脉冲群：4级
浪涌(冲击)：4级

Technical index

Accuracy of measurement

Voltage level 0.5
Current level 0.5
Active power 0.5
Reactive power level 0.5
Power factor 0.5
Frequency ±0.02Hz

Signal input

Connection mode of single-phase, three-phase four wire, three phase three line
Rated voltage AC 57.7V,AC 100V,AC 220V,AC 380V
Rated current AC 1A, AC 5A
Overload voltage:1.2 times(Continued), 2 times/second (instantaneous)
current:1.2 times(Continued), 10 times/5 second (instantaneous)
Power consumption voltage:<1VA/, current:<0.4VA/phase
Impedance voltage:>300mK , current:<20m
The frequency 45~65Hz

Auxiliary power supply

Working range of AC/DC 80V~270V, AC220V
Power consumption<4VA

Function module

Communication interface 1 way RS-485 communication, Modbus-RTU protocol baud r ate:1200~9600bps, the default 2400bps
Switch input: support 4 stem node input
The switch output: support 3 relay output, capacity: AC 250V/5A, DC 30V/5A
Transmission output: support 3 analog output: 0/4~20mA or 0~5/10V

Environment

Working temperature: -10 ~+55
Storage temperature: -25 ~+70
Relative humidity is less than 93%, no corrosive gas
Elevation 2500m

Safety

Insulation resistance>100M
AC withstand voltage AC 2KV

Electromagnetic compatibility

ESD level 4
Electrical fast transient burst level 4
Surge(impact) level 4

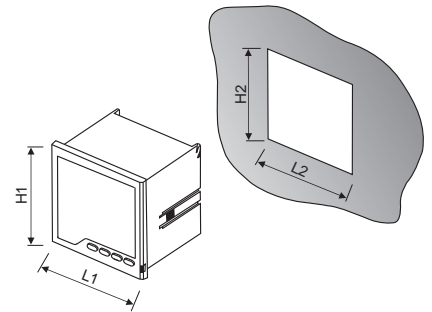
性能特点

- 1、高精度测量三相电压、三相电流、有功功率、无功功率、视在功率、功率因数、频率等电参量
- 2、提供数码管或液晶显示，本地数据查询
- 3、电流、电压变比可编程设置
- 4、支持RS-485通讯，Modbus-RTU协议
- 5、支持开关量输入、开关量输出、模拟量变送输出
- 6、辅助电源：AC/DC 80V~270V、AC220V
- 7、多种外形选择，满足不同柜体电气回路的要求

Performance characteristics

- 1. High precision measurement of three- phase voltage, three - phase current, active power, reactive power, apparent power, power factor, frequency of electric parameters
- 2. To provide a nixie tube or liquid crystal display, local data query
- 3. Current and voltage gain programmable settings
- 4. Support for RS- 485 communication, Modbus -RTU protocol
- 5. Support for switching input, output, analog quantity transmitting output
- 6. Auxiliary power supply: AC/DC 80V~270V, AC220V
- 7. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

外形尺寸 Outline dimensions



面框尺寸(mm)：L1xH1
开孔尺寸(mm)：L2xH2
Frame size(mm): L1xH1
Hole size(mm): L2xH2

面框尺寸(mm)：120×120；80×80；96×48；96×96；80×80；48×48；120×60；160×80
开孔尺寸(mm)：111×111；76×76；92×45；92×92；68×68；45×45；114×56；152×76
Frame size(mm) of 120×120；80×80；96×48；96×96；80×80；48×48；120×60；160×80
Hole size(mm) of 111×111；76×76；92×45；92×92；68×68；45×45；114×56；152×76

ZM-E/RE
系列电能表
Series Digital Energy meter



技术指标

测量精度
有功电能：1.0级
无功电能：2.0级

信号输入
接线方式：单相、三相四线、三相三线
额定电压：AC 57.7V, AC 100V, AC 220V ,AC 380V
额定电流：AC 1A、 AC 5A
过负载：电压：1.2倍(持续)，2倍/1秒(瞬时)
电流：1.2倍(持续)，10倍/5秒(瞬时)
功耗：电压：<1VA/相，电流：<0.4VA/相
阻抗：电压：>300k ，电流：<20m
频率：45~65Hz

辅助电源
工作范围：AC/DC 80V~270V、AC220V、AC380V、AC100V
功耗：<4VA

功能模块
通讯接口：1路RS-485通讯，Modbus-RTU协议
波特率：1200~9600bps，默认2400 bps
开关量输入：支持4路干结点输入
开关量输出：支持3路继电器输出，容量：AC 250V/5A，DC 30V/5A

环境
工作温度：-10 ~+55
存储温度：-25 ~+70
相对湿度： 93%，无腐蚀性气体场所
海拔： 2500m

安全
绝缘电阻：>100M
交流耐压：AC 2KV

电磁兼容性能
静电放电：4级
电快速瞬变脉冲群：4级
浪涌(冲击)：4级

Technical index

Accuracy of measurement
Active energy level 1.0
Reactive energy level 2.0

Signal input
Connection mode of single-phase, three-phase four wire, three phase three line
Rated voltage AC 57.7V,AC 100V,AC 220V,AC 380V
Rated current AC 1A, AC 5A
Overload voltage:1.2 times(Continued), 2 times/second (instantaneous)
current:1.2 times(Continued), 10 times/5 second (instantaneous)
Power consumption voltage:<1VA/, current:<0.4VA/phase
Impedance voltage:>300mK , current:<20m
The frequency 45~65Hz

Auxiliary power supply
Working range of AC/DC 80V~270V, AC220V, AC380V, AC100V
Power consumption<4VA

Function module
Communication interface 1 way RS-485 communication, Modbus -RTU protocol baud r ate:1200~9600bps, the default 2400bps
Switch input: support 4 stem node input
The switch output: support 3 relay output, capacity: AC 250V/5A, DC 30V/5A

Environment
Working temperature: -10 ~+55
Storage temperature: -25 ~+70
Relative humidity is less than 93%, no corrosive gas
Elevation 2500m

Safety
Insulation resistance>100M
AC withstand voltage AC 2KV

Electromagnetic compatibility
ESD level 4
Electrical fast transient burst level 4
Surge(impact) level 4

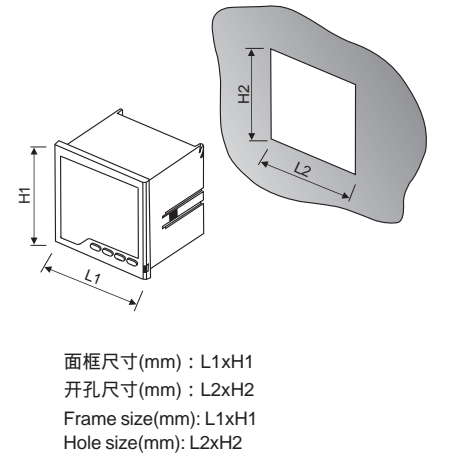
性能特点

- 1、高精度测量单相有功电能、无功电能，三相有功电能、三相无功电能
- 2、提供数码管或液晶显示，本地数据查询
- 3、电流、电压变比可编程设置
- 4、支持RS-485通讯，Modbus-RTU协议
- 5、支持开关量输入、开关量输出
- 6、一路或两路脉冲输出
- 7、辅助电源：AC/DC 80V~270V、AC220V
- 8、多种外形选择，满足不同柜体电气回路的要求

Performance characteristics

- 1. High precision measurement of active energy, reactive energy, three- phase active energy, three- phase reactive energy
- 2. To provide a nixie tube or liquid crystal display, local data query
- 3. Current and voltage gain programmable settings
- 4. Support for RS- 485 communication, Modbus -RTU protocol
- 5. Support for switching input, output, analog quantity transmitting output
- 6. One or two pulse output
- 7. Auxiliary power supply: AC/DC 80V~270V, AC220V
- 8. A variety of shapes, to meet the different requirements of the cabinet body electric circuit

外形尺寸 Outline dimensions



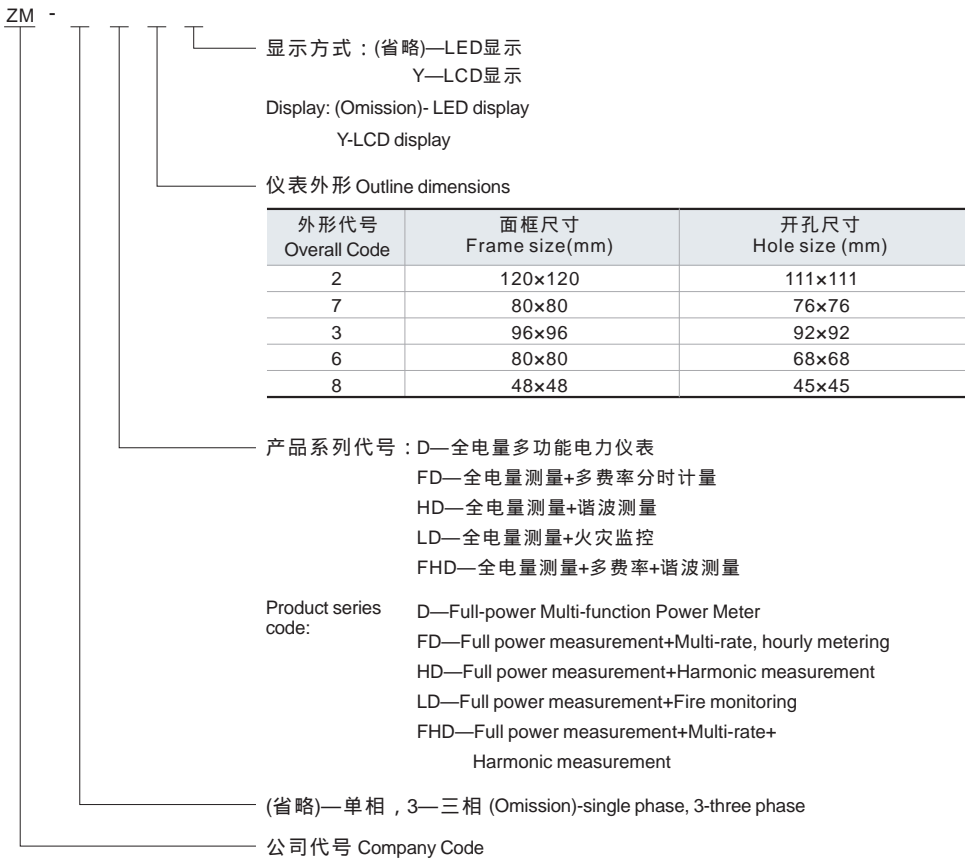
面框尺寸(mm)：L1xH1
开孔尺寸(mm)：L2xH2
Frame size(mm): L1xH1
Hole size(mm): L2xH2

面框尺寸(mm)：120x120；80x80；96x48；96x96；80x80；48x48；120x60；160x80
开孔尺寸(mm)：111x111；76x76；92x45；92x92；68x68；45x45；114x56；152x76
Frame size(mm) of 120x120；80x80；96x48；96x96；80x80；48x48；120x60；160x80
Hole size(mm) of 111x111；76x76；92x45；92x92；68x68；45x45；114x56；152x76

多功能监控仪表
Series Multi-function monitoring instrument



型号及其含义 Code and implication



适用范围 Application

多功能监控仪表是高性能的监控仪表，具有高精度电力参数实时测量、谐波测量、正反向有功/无功电能计量、分时电能计量、分时电能定时抄表、电力品质分析、实时波形显示、事件记录、需量等功能，并配置有丰富的输入输出接口可用于现场设备状态的监测与控制，还集成了RS-485通讯接口，可与各种智能配电系统和能量管理系统集成，共享丰富的监测数据和电能质量数据。多功能监控仪表有着极高的性价比，可以直接取代常规电力变送器、测量仪表、电能计量表以及相关的辅助单元，应用领域非常广泛，如能源管理系统、电力监控系统、工矿企业、公共设施、智能建筑和开关柜等配电网络系统。

Multi-functional monitor and control meter is a high performance intelligent instrument, with such functions of measuring power parameters and harmonic waves at real time, measuring positive and negative active / reactive energy, measuring energy at separate time zone, reading energy at fixed time zone, analyzing electric quality, displaying wave at real time, recording events, demands and etc. also it provides various input and output interfaces for monitoring and control on site, and integrated with RS-485 port, cooperated with different intelligent distribution system and administration system, share the parameters and data of system. This meter has very high performance and price index, completely replace power transmitter, measuring instruments, energy meters and associated parts, widely used in energy administration system, power monitoring system, mineral enterprises, public facilities, smart buildings, switchgears and etc intelligent power system.

产品标准 Conforming to standards

- 1、GB/T 22264.1-2008：安装式数字显示电测量仪表 第1部分：定义和通用要求
- 2、GB/T 22264.7-2008：安装式数字显示电测量仪表 第7部分：多功能仪表的特殊要求
- 3、GB/T 22264.8-2008：安装式数字显示电测量仪表 第8部分：推荐的并验方法
- 4、GB/T 17215.322-2008：交流电测量设备-特殊要求-第22部分：静止式有功电能表(0.2S级和0.5S级)
- 5、GB/T 17215.323-2008：交流电测量设备-特殊要求-第23部分：静止式无功电能表(2级和3级)
- 6、DL/T 614-2007：多功能电能表
- 7、GB14287-2005：电气火灾监控系统
- 8、GB50045-95：高层民用建筑设计防火规范
- 9、GB50054-95：低压配电设计规范
- 10、GB50096：住宅设计规范
- 11、GB13955-2005：剩余电流动作保护装置的安
- 装和运行
- 12、GB50016-2006：建筑设计防火规范



多功能监控仪表
Series Multi-function monitoring instrument

Conforming to standards

- 1. GB/T 22264.1-2008：Mounted digital display electric measuring instruments-Part1: Definitions and general requirements
- 2. GB/T 22264.7-2008：Mounted digital display electric measuring instruments-Part 7: Special requirements for multi-functional meters
- 3. GB/T 22264.8-2008：Mounted digital display electric measuring instruments-Part8: Recommended test methods
- 4. GB/T 17215.322-2008：AC electric measurement devices Special requirements Part 22: Static active energy meter (class 0.2S and 0.5S)
- 5. GB/T 17215.323-2008：AC electric measurement devices Special requirements Part 23: Static reactive energy meter (Class 2 and 3)
- 6. Multi-functional energy meter
- 7. Detector for electric fire protection
- 8. Code for Fire Protection Design of Tall Civil Buildings
- 9. Code for Low voltage distribution design
- 10. Code for living building design
- 11. Installation and operation of residual current tripping protective device
- 12. Code of Design on Building Fire Prevention

技术指标

测量精度
电压：0.5级
电流：0.5级
有功功率：0.5级
无功功率：0.5级
功率因数：0.5级
频率：±0.02Hz
有功电能：0.5S级或0.2S级
无功电能：1级或2级

信号输入
接线方式：三相四线, 三相三线
额定电压：AC 57.7V, AC 100V, AC 220V, AC 380V
额定电流：AC 1A, AC 5A
过负载：电压：1.2倍(持续)，2倍/1秒(瞬时)
电流：1.2倍(持续)，10倍/5秒(瞬时)
功耗：电压：<1VA/相，电流：<0.4VA/相
阻抗：电压：>300k，电流：<20m
频率：45~65Hz

辅助电源
工作范围：AC/DC：80V~270V
功耗：<4VA

功能模块
通讯接口：1路RS-485通讯，Modbus-RTU协议
波特率：1200~9600bps，默认2400 bps
开关量输入：支持4路干结点输入
开关量输出：支持3路继电器输出，容量：AC 250V/5A，DC 30V/5A
变送输出：支持1路模拟量输出0/4~20mA或0~5/10V
电能脉冲输出：支持2路电能脉冲输出，常数：8000imp/KWh(Kvarh)

环境
工作温度：-10 ~+55
存储温度：-25 ~+70
相对湿度：93%，无腐蚀性气体场所
海拔：2500m

安全
绝缘电阻：>100M
交流耐压：AC 2KV

电磁兼容性能
静电放电：4级
电快速瞬变脉冲群：4级
浪涌(冲击)：4级

Technical index

Accuracy of measurement
Voltage level 0.5
Current level 0.5
Active power 0.5
Reactive power level 0.5
Frequency ±0.02Hz
Active electric energy class 0.5S or class 0.2S
Reactive energy grade 1 or grade 2
Power factor 0.5

Signal input
Connection mode of four phase three wire, three phase, three line
Rated voltage AC 57.7V, AC 100V, AC 220V, AC 380V
Rated current AC 1A, AC 5A
Overload voltage: 1.2 times(Continued), 2 times/second (instantaneous)
current: 1.2 times(Continued), 10 times/5 second (instantaneous)
Power consumption voltage: <1VA/, current: <0.4VA/phase
Impedance voltage: >300mK, current: <20m
The frequency 45~65Hz

Auxiliary power supply
Working range AC/DC 80V~270V
Power consumption<4VA

Function module
Communication interface 1 way RS-485 communication, Modbus-RTU protocol baud rate: 1200~9600bps, the default 2400bps
Switch input: support 4 stem node input
The switch output: support 3 relay output, capacity: AC 250V/5A, DC 30V/5A
Transmission output: support 3 analog output: 0/4~20mA or 0~5/10V
Electric energy pulse output support 2 electric energy pulse output, constant: 8000imp/KWh(kvarh)

Environment
Working temperature: -10 ~+55
Storage temperature: -25 ~+70
Relative humidity is less than 93%, no corrosive gas
Elevation 2500m

Safety
Insulation resistance>100M
AC withstand voltage AC 2KV

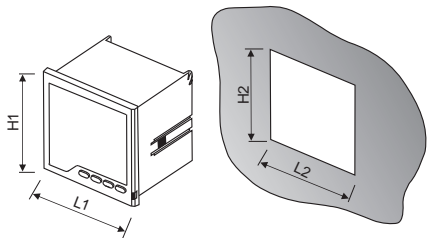
Electromagnetic compatibility
ESD level 4
Electrical fast transient burst level 4
Surge(impact) level 4

性能特点 Performance Characteristics

高精度测量三相电压、三相电流、有功功率、无功功率、视在功率、功率因数、频率等电参量
正反向有功/无功电能计量
分时电能计量、分时电能定时抄表
测量三相电压、三相电流的总谐波畸变率(THD)，2-31次奇次谐波分量
提供数码管或液晶显示，本地数据查询
菜单直观，按键操作简单
电流、电压变比可编程
提供多回路的漏电流监控
提供多回路控制节点，可用于报警、跳闸等控制
支持消防联动，远程切断故障回路
支持RS-485通讯，Modbus-RTU协议
支持开关量输入、开关量输出、模拟量变送输出、电能脉冲输出
安装方便，接线简单，工程量小
宽范围交直流通用电源：AC/DC 80V~270V
可完成SCADA、PLC中多种通讯软件的组网

High precision measurement of three-phase voltage, active power, reactive power, apparent power, power factor, frequency of electric parameters
Forward and reverse active /reactive energy measurement
Division of electric energy metering, time-sharing/power timing meter reading
Measurement of three-phase voltage, three-phase current total harmonic distortion (THD), 2-31 odd harmonic component
To provide a nixie tube or liquid crystal display, local data query
Menu button intuitive, simple operation
Current, voltage gain Programmable
Provide multiple circuit leakage current monitoring
Provide multiple loop control nodes, can be used for the alarm, trip control
Support for fire control, remote cut off the fault circuit
Support for RS-485 communication, Modbus-RTU protocol
Support for switching input, output, analog quantity transmitting output
Convenient installation, wiring is simple, small engineering quantity
A wide range of AC/DC power supply: AC/DC80V-270V
To be completed by SCADA, PLC in a variety of communications software networking.

外形尺寸 Outline dimensions



面框尺寸(mm)：L1xH1
开孔尺寸(mm)：L2xH2

面框尺寸(mm)：120x120；80x80；96x48；96x96；80x80；48x48；120x60；160x80
开孔尺寸(mm)：111x111；76x76；92x45；92x92；68x68；45x45；114x56；152x76
Frame size(mm) of 120x120；80x80；96x48；96x96；80x80；48x48；120x60；160x80
Hole size(mm) of 111x111；76x76；92x45；92x92；68x68；45x45；114x56；152x76

ZM-WSK
智能温湿度控制器
Intelligent temperature and humidity controller



技术指标

电源电压
AC: 开关电源85V~265V, 50~60Hz
AC: 变压器110V, 220V, 380V, 50~60Hz
DC: 24V, 36V, 48V, 110V, 220V

测量精度
温度：±0.5℃
湿度：±5%RH
分辨率：14bit
采样周期：0.5Sec

测控范围
温度：-40~100℃
湿度：0~100% RH

显示方式
测量值、设定值数码管显示
输出状态、报警状态LED灯指示

控制方式
二位式控制(回差可自由设置)

控制输出
继电器输出：触点容量250VAC 3A(阻性负载)
电压脉冲输出：0~12V(适用于固态继电器SSR)

输出触点
电耐久性：1x10次
机械耐久性：1x10次

安装方式
面板式安装，嵌入式安装，具体安装开孔尺寸见表

其它
绝缘电阻：≥50M (500VDC)
绝缘强度：1500VAC/1分钟
功耗：≤0VA
使用环境：0~50℃, 30~85% RH的无腐蚀性气体的场合
重量：约0.5kg(产品电源为开关电源)

Technical index

Voltage
AC: switching power supply 85V ~ 265V, 50 ~ 60Hz
AC: Transformer 110V, 220V, 380V, 50 ~ 60Hz
DC: 24V, 36V, 48V, 110V, 220V

Measuring accuracy
Temperature: ±0.5℃
Humidity: ±5% RH
Resolution: 14bit
Sampling period: 0.5Sec

Monitoring and control range
Temperature: -40 ~ 100℃
Humidity: 0 ~ 100% RH

Display method
measured value, set the value of digital display
output status, alarm status LED indicator

Control method
Two-position control (hysteresis can be set free)

Control output
Relay output: contact capacity 250VAC 3A (resistive load)
Voltage pulse output: 0 ~ 12V (for solid-state relay SSR)

Output contacts
Electrical durability: 1x10 times
Mechanical durability: 1x10 times

Installation
panel installation, embedded installation, the specific size of the installation hole table

Other
Insulation resistance:> 50MO (500VDC)
Dielectric strength: 1500VAC / 1 minute
Power consumption: <10VA
The use of the environment: 0 ~ 50℃, 30 ~ 85% RH
non-corrosive gases occasions
Weight: about 0.5kg (product power supply for the switching power supply)

性能特点

1、温湿度控制器采用专用的微处理器，SMT贴片技术和高精度温湿传感器。使产品精致小巧，性能可靠，测控温湿度精度高，抗干扰能力强，控制方式简单。可广泛应用在工业、农业、医疗、化工、仓库等需要温湿度测量和控制的地方。
2、本控制器具有温度，湿度过程报警功能，加热器断线报警功能，通讯功能，在自动化控制领域得到更为广泛的应用。

注：过程报警和断线报警为同一输出触点。

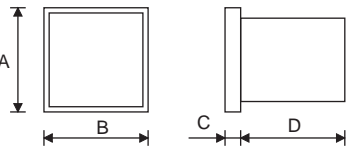
Performance characteristics

1. Temperature and humidity controller using a dedicated microprocessor, SMT placement technology and high-precision temperature and humidity sensors. So that products exquisite small, reliable, high temperature and humidity control accuracy, anti-interference ability, simple control. Can be widely used in industrial, agricultural, medical, chemical, storage and other needs of temperature and humidity measurement and control of the place.
2. The controller has a temperature and humidity alarm process, the heater break alarm function, communication functions, in the field of automation and control to be more widely used.

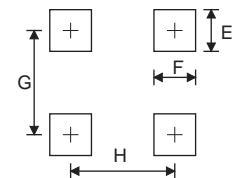
Note: The process alarm and the break alarm are the same output contact.

外形尺寸 Outline dimensions

面框尺寸 Frame size(mm)



开孔尺寸 Hole size(mm)



型号 Type	A	B	C	D	E	F	G	H
WSK0308	48	48	6	80	45	45	80	80
WSK0307	80	80	13	80	76	76	100	100
WSK0306	80	80	13	80	68	68	100	100
WSK0305	96	48	13	80	92	45	116	80
WSK0303	96	96	13	80	92	92	116	116
WSK0302	120	120	13	80	111	111	140	140
WSK0301	160	80	13	80	152	76	180	100

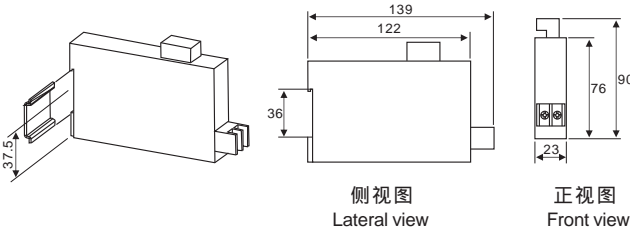
电量变送器
Electricity Transducer



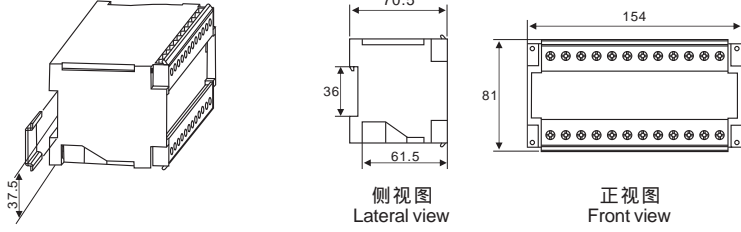
通用技术条件 General technical conditions

技术参数 Technical parameters		指标 Index
精度等级 Accuracy class		0.5 , 0.2
输入 Input	标称值 Nominal value	电流 Current AC/DC 1A, 5A；电压Voltage AC/DC 100V, 300V, 500V等
	过载 Overload	持续1.2倍，瞬时电流10倍/5秒；瞬时电压2倍/30秒 And for 1.2 times, an instantaneous current of 10 times / 5 seconds; 2 times the instantaneous voltage / 30 secretary.
	吸收功率 Absorbed power	0.3VA(电流输入Current input);电压输入Voltage input 0.3VA(100V) 0.6VA(300V), 1VA(500V)
	频率 Frequency	50±Hz , 60±5Hz
输出 Output	标称值 Nominal value	4-20mA、0-20mA、4-12-20mA、0-5V , 0-10V等
	负载电阻 Load resistance	电 流输出时Current output 600 , 电压输出时Voltage output 1000
	波纹含量 Corrugated content	<0.5%峰值 peak value
响应时间 Response time		400ms
电源 Power	电压 Voltage	AC110/220V±15%、AC、DC 85~270V
	功耗 Power consumption	交流电流, 电压类AC Current and voltage class 3VA , 功率类Power class 4VA
绝缘电阻 Insulation Resistance		100M
耐压强度 Dielectric strength		输入/输出/电源之间 between Input / output / power : 2.0kV/1min,50Hz
温度系数 Temperature Coefficient		100ppm/
环境 Environment	温度 Temperature	工作 Operating : -25~+55 存贮 Storage : -25~+70
	湿度 Humidity	90%RH, 不结露，无腐蚀性气体场所 No dew, No corrosive gas
	海拔 Altitude	2000m
安装方式 Installation		TS35导轨 , 或用螺钉固定柜体上 TS35 rail or with screws on the cabinet

单相变送器 Single-phase Transducer



三相变送器 Three-phase Transducer

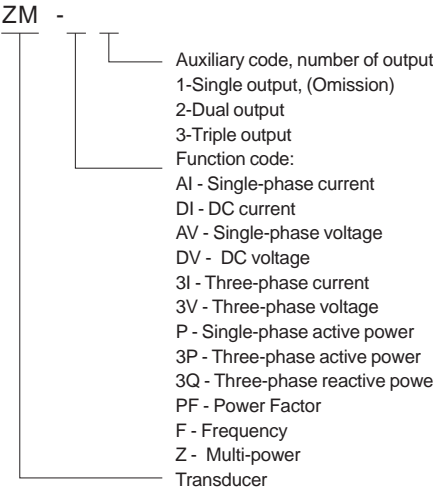
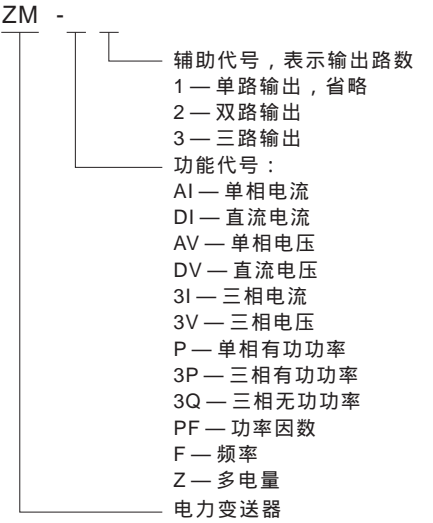


适用范围 Application

ZM系列电力变送器是一种将电网中的电流、电压、频率、功率、功率因数等电参量，经隔离变送成线性的直流模拟信号或数字信号装置。产品符合GB/T13850-1998、IEC-688标准。

ZM series power transmitter is the device to convert the electric parameters of current, voltage, frequency, power, power factor and etc, to linear DC analog signal or digital signal via electric isolation. The product complies with GB/T13850-1998、IEC-688 standards

型号及其含义 Code and implication



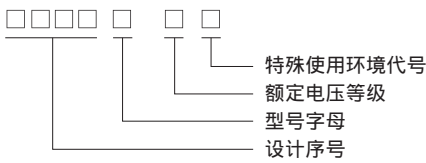
互感器概述
Description of transformer

前言

互感器是电力系统中重要的电器设备之一，它和电力变压器相似，也是用来转换线路的电压或电流。但是，电力变压器转换电压和电流的目的在于传递电能，互感器转换电压或电流的目的，在于测量和监视线路的电压或电流，一般来说，电力压器的容量大，电压或电流的变化误差也大，互感器的容量小，电压或电流的变化误差则小。在测量线路中，用来转换电流，向电压仪表和继电器供电的互感器叫做电压互感器。

型号及其含义

电流互感器和电压互感器的型号组成分为两部分，前一部分分为产品型号字母和设计序号，后一部分分为额定电压等级(KV)和特殊使用环境代号。（型号字母含义附录）



互感器特殊使用环境代号

- 高原地区用代表符号：“GY”
- 污秽地区用代表符号见表1
- 腐蚀地区用代且符合：“F”
- 干热带地区用代表符合：“TA”
- 湿热带地区用代表符合：“TH”
- 干、湿热带地区用代表符合“T”
- 温升限值比标准规定限值降低5K以上时用“WS”表示。

污秽地区用代表符号	GB5582-85中规定	
	污秽等级	最小公爬电比距(mm/kV)
-	0	14.8
-	I	16
W1	II	20
W2	III	25
W3	IV	31

互感器的分类

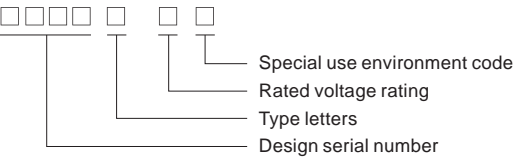
- 按原理分类：电压互感器可分为电容式电压互感器和电磁式互感器；电流互感器均为电流互感器。
- 按绕组外绝缘介质分类：有干式、浇注式、油浸式和充电式(SF6)。
- 按用途分类：可分为电压互感器、电流互感器两大类，又可分为测量用、保护用、特殊用途及精密型四类。
- 按安装地点分类：可分为户内式和户外式两种。
- 电压互感器按相数分类：可分为单相、三相两种。
- 电压互感器按绕组分类：有双绕组、三绕组两种。
- 电流互感器按安装方式分类：有穿墙式、支持式和装入式三种。
- 电流互感器按电流比分类：有单变比，多变比两种。

Foreword

Instrument transformers are one of important devices for power system, similar to power transformer, used to transform the voltage or current, but power transformer used to transmit the energy, instrument transformer used to measure and monitor the voltage or current, generally saying, the power capacity of power transformer is large, the transformation deviation of voltage or current is large as well, while the power capacity of instrument transformer is small, with small error as well. In the measured line the instrument transformer used to transform the voltage and supply to voltage meters and relays is voltage transformer (VT, PT)

Code and implication

The model of current transformer and voltage transformer divided into two parts, the front is model letter and design code, late part is voltage class (KV) and code of peculiar working conditions (model and meanings attached behind)



Code of peculiar working conditions for transformer

- GY for plateau
- Code for pollution zone as table 1
- F for corrosive zone
- TA for dry tropic zone
- TH for wet tropic zone
- T for dry and wet tropic zone
- WS: temperature rise shall be less 5K than specified value at least

Codes for pollution zone	GB5582-85	
	Contamination level	Min. common creepage distance(mm/kV)
-	0	14.8
-	I	16
W1	II	20
W2	III	25
W3	IV	31

Classification of transformers

- According working theory: voltage transformer can be divided into capacitor type and electromagnetic type, current transformer: not available.
- According to insulated medium: dry type, cast resin type, oil immersed type, gas (SF6) filled type
- According to applications: voltage transformers, current transformers, furthermore: for measurement use, protection use, peculiar use, and precise type
- According to mounting site: indoor type, outdoor type
- According to phase number for voltage transformer: single phase, three-phase
- According to windings: double winding, three-winding
- According to mounting mode for current transformer: through wall, support, flush type
- According to current transformation ratio: single ratio, multiple ration



互感器概述
Description of transformer

适用工作条件

- 1.海拔高度不超过1000米。（高原地区使用时，请提供海拔高度）
- 2.周围气温最大变化不超过-30℃到40℃(特殊要求时，请订货时注明)
- 3．普通型产品使用在相对湿度不大≧5%的地区。
- 4.安装场所无严重影响互感器绝缘的气体、蒸汽、化学性沉积、灰尘、污垢及其它爆炸性和侵蚀性介质，并无严重的震动和颠簸。

引用标准

GB1207-1997 《电压互感器》
GB1208-1997 《电流互感器》
ZBY095-1982 《精密电压互感器技术条件》
ZBY097-1982 《精密电流互感器技术条件》
GB311.1-1997 《高压输变电设备的绝缘配合》
GB17201-1997 《组合互感器》

注意事项

- 1. 电流互感器一次有通过时，二次绕组不得开路，否则有高压电压产生，对产品性能亦有影响；
- 2.电压互感器二次绕组不得短路，否则互感器将被烧毁；
- 3.一次绕组的重复工频耐压，试验应在规定试验电压值的80%下进行。

附：互感器型号字母含义 Annex: Model and meanings of transformers

序号No .	字母含义 Letter meaning	代表字母 Letters	序号No .	字母含义 Letter meaning	代表字母 Letters
1	电流互感器 Current Transformer	L	1	电压互感器 Voltage transformer	J
2	母线式 Bus-type	M	2	单相 Single-phase	D
	贯穿复匝式 Through the complex-turn	F		三相 Three-phase	S
	贯穿单匝式 Through a single turn	D		串联结构 Cascade structure	E
	线圈式 Coil type	Q		浇注式 Casting type	Z
	穿墙式 Through the wall	A	3	油浸式 Oil-immersed	J
	支持式 Supported	B		浇注绝缘 Casting insulation	Z
	支座式 Support type	Z		干式绝缘 Dry insulation	G
	装入式 Loaded	R		六氟化硫绝缘 SF6 insulation	F
	手车式 Hand-car	C		气体绝缘 Gas insulation	Q
3	接地保护 Grounding protection	J	4	户外 Outdoor	W
	低压 Low pressure	Y		接地保护 Grounding protection	J
	浇注绝缘 Casting insulation	Z		保护用 Protection	B
	瓷绝缘 Porcelain insulation	C		带剩余(零序)绕组 With residual (zero sequence) winding	X
	塑料外壳 plastic shell	K		五柱 Five columns	W
	户外式 Outdoor style	W	5	测量和保护分开的二次绕组 Measure and protect separate secondary windings	F
	母线式 Bus-type	M		V形接线 V-shaped wiring	V
	干式 Dry type	G		“串”级式带剩余(零序)绕组 String "type with residual (zero sequence) winding	C
	加强式 Enhanced	Q		五柱三线圈 Five-post three-coil	W
	小体积柜用 Small volume cabinet	X		测量和保护分开的二次绕组 Measure and protect separate secondary windings	F
4	手车柜用 Used with handcart	S		不带金属膨胀器 Without metal expander	N
	差动作用 Differential effect	D	6	防污型爬电比距 ≥20mm/kv Anti-fouling creepage distance> 20mm / kv	
	加强型 Enhanced	Q		防污型爬电比距 ≥25mm/kv Anti-fouling creepage distance> 25mm / kv	
	铝线式 Aluminum wire type	L		高原型适用于高海拔地区 Plateau type suitable for high altitude areas	
	加大容量 Increase capacity	J		干热型适用于干热地区 Dry and hot type for dry and hot areas	
	差动保护用 Differential protection	D		湿热型适用于湿热地区 Damp heat type for hot and humid areas	
	保护用 Protection	N		干、湿热带地区 Dry and humid tropics	

Normal conditions

- 1.Altitude not exceed 1000m (for plateau zone, please specify the altitude)
- 2.The working ambient temperature not exceed -30℃ ~ 40℃ (please specify it if out of this scope)
- 3.The common product shall be operated in the zone with related humidity not over 85%
- 4.The mounting site shall not have the gas, steam, chemical deposition, dust, waste or other explosive, corrosive medium enough to destroy the insulation of transformer, it shall have no severe shake or bumping

Applicable standards

GB1207-1997 "Voltage transformers"
GB1208-1997 "Current transformers"
ZBY095-1982 "Technical conditions for precise voltage transformers"
ZBY097-1982 "Technical conditions for precise current transformers"
GB311.1-1997 "Coordination of insulation in high voltage transmission and distribution equipment"
GB17201-1997 "Combined transformers"

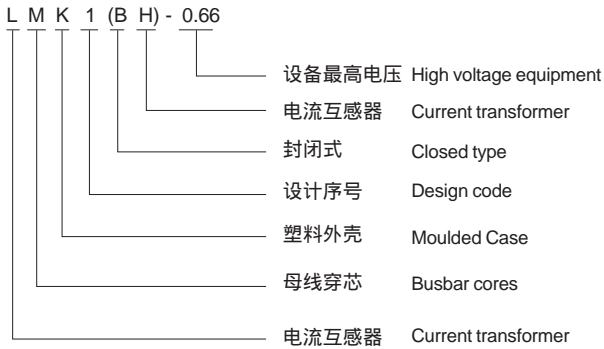
Notices

- 1. If primary winding of current transformer carry current, secondary winding can't be opened, otherwise high voltage will produce, very dangerous, also do hurt to the transformer
- 2.Secondary winding of PT can't be short connected, otherwise the transformer will be burnt.
- 3.The repeated test of PF withstand voltage on primary winding shall be applied with 80% rated withstand voltage

LMK1(BH)-0.66 型
电流互感器
Series Current Transformer



型号及其含义 Code and implication



主要技术参数及外形安装尺寸
Technical parameters and installation size

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)					穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		1级	0.5级	0.5S级	0.2级	0.2S级		
	5/5	5	5	5	5	5		
	10/5	5	5	5	5	5		
	15/5	5	5	5	5	5		
	20/5	5	5	5	5	5		
	25/5	5	5	5	5	5		
	30/5	5	5	5	5	5		
	40/5	5	5	5	5	5		
	50/5	5	5	5	5	5		
LMK1(BH)-0.66实心	75/5	5	5	5	5	5		

适用范围 Application

- LMK1(BH)-0.66型电流互感器主要用于户内，供额定电压为0.66kV及以下，额定频率为50Hz的交流电路中作为电流、电能测量或继电保护用。产品为塑壳式电流互感器，广泛应用于成套柜体，其安装方法可采用母排固定和底板固定安装方法，适合任意方向安装，一次导线可为母排或电缆。
- 符合标准：GB20840
- LMK1(BH) - 0.66 type current transformer is mainly used for indoor, for rated voltage up to and including 0.66 kV, rated frequency 50Hz ac circuit as the electric current and electric energy measurement and relay protection. Product is a plastic shell type current transformer, are widely used in the complete sets of cabinet put oneself in another's position, its installation method can be used bus fixed and base plate fixed installation method, suitable for any direction installation, a conductor for bus or cable.
- Standard: GB20840

正常工作条件及安装条件
Normal working/installation conditions

- 1、安装场所：户内。
- 2、环境温度：-5 ~ 40 。
- 3、环境湿度：相对湿度不大于80%。
- 4、海拔高度：不超过1000m。
- 5、大气条件：大气中无严重污秽。
- 1. Installation sites: Indoor
- 2. Ambient temperature : (-5~40)
- 3. Ambient humidity: 80%
- 4. Altitude: 1000m
- 5. Atmospheric conditions: no serious impurity in the atmosphere.

LMK1(BH)-0.66 型
电流互感器
Series Current Transformer



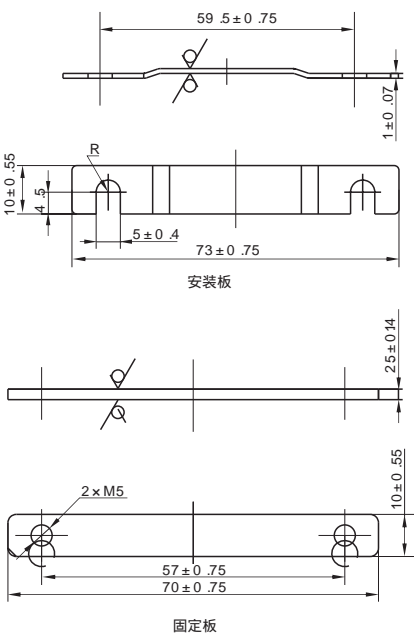
Table with 7 columns: Product chart, Current ratio (A), Secondary load (VA) (1 grade, 0.5 grade, 0.5S grade, 0.2 grade, 0.2S grade), Cross-core turn number, and Appearance and installation dimensions. It lists various LMK1(BH)-0.66 models (30, 30B, 40, 50) with their respective specifications and physical dimensions.

Table with 7 columns: Product chart, Current ratio (A), Secondary load (VA) (1 grade, 0.5 grade, 0.5S grade, 0.2 grade, 0.2S grade), Cross-core turn number, and Appearance and installation dimensions. It lists various LMK1(BH)-0.66 models (60, 80, 100) with their respective specifications and physical dimensions.

订货须知 Ordering instructions

用户在订货时，需提供以下信息：
1、 产品型号及窗口宽度；
2、 额定电流比；
3、 额定输出及相应准确级；
例如：订货LMK1(BH)-0.66型，窗口宽度为30mm，额定电流比200/5A、额定输出5VA、准确级0.5级的互感器。
订货代号为LMK1(BH)-0.66 F 30 200/5A 1匝 5VA 0.5级。
4、 如有特殊要求时，可与厂家协商定制。

安装附件 The installation accessories

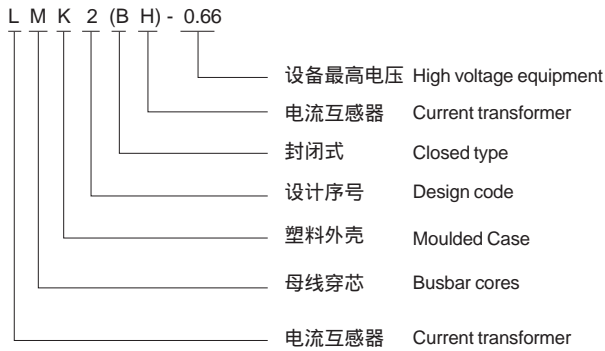




LMK2(BH)-0.66型
电流互感器
Series Current Transformer



型号及其含义 Code and implication



主要技术参数及外形安装尺寸
Technical parameters and installation size

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)					穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		1级	0.5级	0.5S级	0.2级	0.2S级		
	200/5	5	5	5	5	5	1	
	250/5	5	5	5	5	5	1	
	300/5	5	5	5	5	5	1	
	400/5	5	5	5	5	5	1	
	500/5	5	5	5	5	5	1	
	600/5	5	5	5	5	5	1	
	750/5	10	10	10	10	10	1	
	800/5	10	10	10	10	10	1	
	300/5	5	5	5	5	5	1	
	400/5	5	5	5	5	5	1	
	500/5	5	5	5	5	5	1	
	600/5	5	5	5	5	5	1	
	750/5	10	10	10	10	10	1	
	800/5	10	10	10	10	10	1	
	1000/5	10	10	10	10	10	1	
	1200/5	10	10	10	10	10	1	

适用范围 Application

- LMK2(BH)-0.66型电流互感器主要用于户内，供额定电压为0.66kV及以下，额定频率为50Hz的交流电路中作为电流、电能测量或继电保护用。产品为塑壳式电流互感器，广泛应用于成套柜体，其安装方法可采用母排固定和底板固定安装方法，适合任意方向安装，一次导线可为母排或电缆。
- 符合标准：GB20840
- LMK2(BH) - 0.66 type current transformer is mainly used for indoor, for rated voltage up to and including 0.66 kV, rated frequency 50Hz ac circuit as the electric current and electric energy measurement and relay protection. Product is a plastic shell type current transformer, are widely used in the complete sets of cabinet put oneself in another's position, its installation method can be used bus fixed and base plate fixed installation method, suitable for any direction installation, a conductor for bus or cable.
- Standard: GB20840

正常工作条件及安装条件
Normal working/installation conditions

- 安装场所：户内。
  - 环境温度：-5 ~ 40。
  - 环境湿度：相对湿度不大于80%。
  - 海拔高度：不超过1000m。
  - 大气条件：大气中无严重污秽。
- Installation sites: Indoor
  - Ambient temperature : (-5~40)
  - Ambient humidity: 80%
  - Altitude: 1000m
  - Atmospheric conditions: no serious impurity in the atmosphere.

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)					穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		1级	0.5级	0.5S级	0.2级	0.2S级		
	400/5	5	5	5	5	5	1	
	500/5	5	5	5	5	5	1	
	600/5	5	5	5	5	5	1	
	750/5	10	10	10	10	10	1	
	800/5	10	10	10	10	10	1	
	1000/5	10	10	10	10	10	1	
	1200/5	10	10	10	10	10	1	
	1500/5	10	10	10	10	10	1	
	2000/5	10	10	10	10	10	1	
	600/5	5	5	5	5	5	1	
	750/5	10	10	10	10	10	1	
	800/5	10	10	10	10	10	1	
	1000/5	10	10	10	10	10	1	
	1200/5	10	10	10	10	10	1	
	1500/5	10	10	10	10	10	1	
	2000/5	10	10	10	10	10	1	
	2500/5	15	15	15	15	15	1	
	1000/5	10	10	10	10	10	1	
	1200/5	10	10	10	10	10	1	
	1500/5	10	10	10	10	10	1	
	2000/5	10	10	10	10	10	1	
	2500/5	15	15	15	15	15	1	
	3000/5	20	20	20	20	20	1	
	1000/5	10	10	10	10	10	1	
	1200/5	10	10	10	10	10	1	
	1500/5	10	10	10	10	10	1	
	2000/5	10	10	10	10	10	1	
	2500/5	15	15	15	15	15	1	
	3000/5	20	20	20	20	20	1	
	4000/5	30	30	30	30	30	1	
	5000/5	40	40	40	40	40	1	

订货须知 Ordering instructions

- 用户在订货时，需提供以下信息：
- 产品型号及窗口宽度；
  - 额定电流比；
  - 额定输出及相应准确级；
- 例如：订货LMK2(BH)-0.66型，窗口宽度为40mm，额定电流比200/5A、额定输出5VA、准确级0.5级的互感器。
- 订货代号为LMK2(BH)-0.66 F 40 200/5A 5VA 0.5级。
- 如有特殊要求时，可与厂家协商定制。

When the customer ordering, must provide the following information:

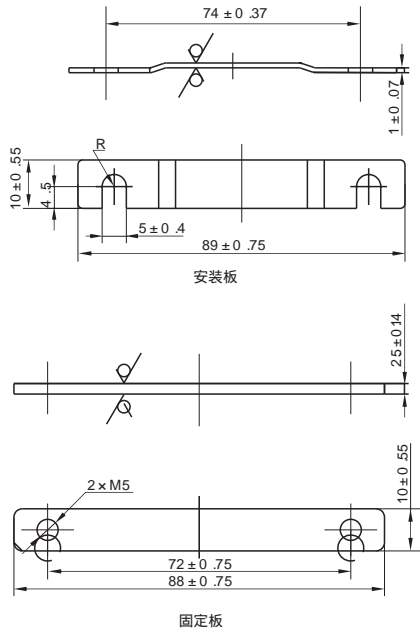
- The product model and window width;
- Rated current ratio;
- Rated output, and the corresponding accurate level;

For example: order LMK2 (BH) - 0.66 type, window width is 40 mm, rated current than 200/5 a and rated output 5 va, accurate magnitude 0.5 on the Richter scale transformer.

Order, code-named LMK2 (BH) 0.66 40 200/5 5 va a 0.5 on the Richter scale are unlikely.

- if you have special requirements, can be customized consultation with the manufacturer.

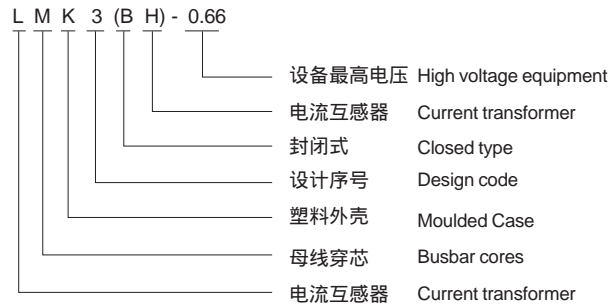
安装附件 The installation accessories



LMK3(BH)-0.66型
电流互感器
Series Current Transformer



型号及其含义 Code and implication



主要技术参数及外形安装尺寸
Technical parameters and installation size

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)				穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		0.5级	0.5S级	0.2级	0.2S级		
	500/5	5	5	5	5	1	
	600/5	5	5	5	5	1	
	750/5	10	10	10	10	1	
	800/5	10	10	10	10	1	
	1000/5	10	10	10	10	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	
	500/5	5	5	5	5	1	
	600/5	5	5	5	5	1	
	750/5	10	10	10	10	1	
	800/5	10	10	10	10	1	
	1000/5	10	10	10	10	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	
	2500/5	15	15	15	15	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	1000/5	5	5	5	5	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	
	2500/5	15	15	15	15	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	2000/5	10	10	10	10	1	
	2500/5	15	15	15	15	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	45	45	45	45	1	
	8000/5	40	40	40	40	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	4000/5	30	30	30	30	1	

适用范围 Application

- LMK2(BH)-0.66型电流互感器主要用于户内，供额定电压为0.66kV及以下，额定频率为50Hz的交流电路中作为电流、电能测量或继电保护用。产品为塑壳式电流互感器，广泛应用于成套柜体，其安装方法可采用母排固定和底板固定安装方法，适合任意方向安装。
- 符合标准：GB20840
- LMK3(BH) - 0.66 type current transformer is mainly used for indoor, for rated voltage up to and including 0.66 kV, rated frequency 50Hz ac circuit as the electric current and electric energy measurement and relay protection. Product is a plastic shell type current transformer, are widely used in the complete sets of cabinet put oneself in another's position, its installation method can be used bus fixed and base plate fixed installation method.
- Standard: GB20840

正常工作条件及安装条件
Normal working/installation conditions

- 安装场所：户内。
  - 环境温度：-5 ~ 40。
  - 环境湿度：相对湿度不大于80%。
  - 海拔高度：不超过1000m。
  - 大气条件：大气中无严重污秽。
- Installation sites: Indoor
  - Ambient temperature : (-5~40)
  - Ambient humidity: 80%
  - Altitude: 1000m
  - Atmospheric conditions: no serious impurity in the atmosphere.

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)				穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		0.5级	0.5S级	0.2级	0.2S级		
	800/5	10	10	10	10	1	
	1000/5	10	10	10	10	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	
	2500/5	15	15	15	15	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	1000/5	5	5	5	5	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	
	2500/5	15	15	15	15	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	2000/5	10	10	10	10	1	
	2500/5	15	15	15	15	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	45	45	45	45	1	
	8000/5	40	40	40	40	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	
	7000/5	40	40	40	40	1	
	8000/5	40	40	40	40	1	
	4000/5	30	30	30	30	1	



LMZJ1-0.5 实心型
电流互感器
Series Current Transformer



型号及其含义
Code and implication
L M Z J 1 - 0.5 实心
额定电压 (kV ) Rated voltage (kV)
设计序号 Design code
加大容量 Increase the capacity
浇注绝缘式 Casting insulation type
母线式 Busbar
电流互感器 Current transformer

主要技术参数及外形安装尺寸
Technical parameters and installation size

Table with 7 columns: Product chart, Current ratio (A), Secondary load (VA) (0.5, 0.5S, 0.2, 0.2S), Cross-core turn number, and Appearance and installation dimensions. Includes a diagram of the transformer with dimensions 116, 88, 85, 110, 68.

订货须知 Ordering instructions

用户在订货时，需提供以下信息：
1、产品型号；电流比额定输出及相应准确级；
例如：订货LMZJ1-0.5实心，电流比150/5A、额定输出5VA、准确级0.5级的互感器。
订货代号为LMZJ1-0.5实心 150/5A 5VA 0.5级。
2、如有特殊要求时，可与厂家协商定制。

LMZJ1-0.5 型
电流互感器
Series Current Transformer



型号及其含义
Code and implication
L M Z J 1 - 0.5
额定电压 (kV ) Rated voltage (kV)
设计序号 Design code
加大容量 Increase the capacity
浇注绝缘式 Casting insulation type
母线式 Busbar
电流互感器 Current transformer

主要技术参数及外形安装尺寸
Technical parameters and installation size

Table with 7 columns: Product chart, Current ratio (A), Secondary load (VA) (0.5, 0.5S, 0.2, 0.2S), Cross-core turn number, and Appearance and installation dimensions. Includes diagrams of the transformer with dimensions 116, 88, 85, 110, 68, 117, 88, 85, 110, 64, 125, 72, 85, 110.

30型


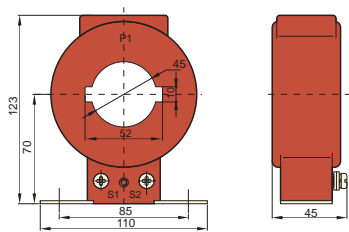

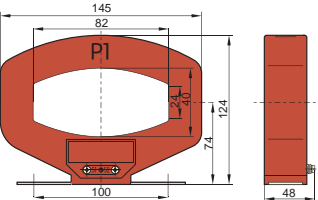

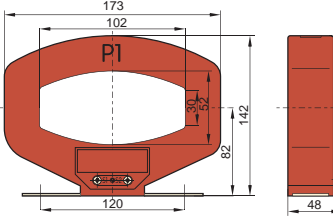

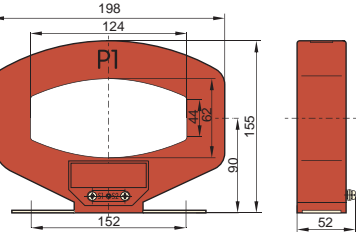

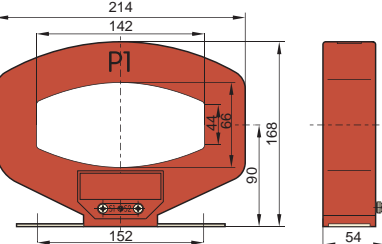
适用范围 Application

- LMZJ1-0.5型电流互感器主要用于户内，供额定电压为0.5kV及以下，额定频率为50Hz的交流电路中作为电流、电能测量或继电保护用，产品采用浇注绝缘，采用安装底板固定安装。
- 符合标准：GB20840
- LMZJ1-0.5 type current transformer is mainly used for indoor, for rated voltage up to and including 0.5kV, rated frequency 50Hz AC circuit as the electric current and electric energy measurement and relay protection, product adopts casting insulation, adopting bottom fixed installation.
- Standard: GB20840

正常工作条件及安装条件
Normal working/installation conditions

- 安装场所：户内。
- 环境温度：-5 ~ 40 。
- 环境湿度：相对湿度不大于80%。
- 海拔高度：不超过1000m。
- 大气条件：大气中无严重污秽。
- Installation sites: Indoor
- Ambient temperature : (-5~40)
- Ambient humidity: 80%
- Altitude: 1000m
- Atmospheric conditions: no serious impurity in the atmosphere.

LMZJ1-0.5型  
电流互感器  
Series Current Transformer

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)				穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		0.5级	0.5S级	0.2级	0.2S级		
	400/5	5	5	5	5	1	
	550/5	5	5	5	5	1	
	600/5	5	5	5	5	1	
	700/5	10	10	10	10	1	
	750/5	10	10	10	10	1	
	800/5	10	10	10	10	1	
	*1000/5	10	10	10	10	1	
	1000/5	10	10	10	10	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	*2000/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	
	2500/5	15	15	15	15	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	

订货须知 Ordering instructions

用户在订货时，需提供以下信息：

- 1、 产品型号及安装母排宽度；
- 2、 电流比；
- 3、 额定输出及相应准确级；

例如：订货LMZJ1-0.5型，电流比600/5A、额定输出5VA、准确级0.5级的互感器。订货代号为LMZJ1-0.5 600/5A 5VA 0.5级。

- 4、如有特殊要求时，可与厂家协商定制。

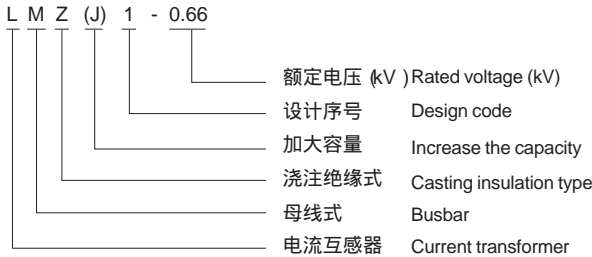
When the customer ordering, must provide the following information:

- 1,product model and Install the bus width;
  - 2, current ratio;
  - 3, rated output, and the corresponding accurate level;
- For example: solid order LMZJ1-0.5, rated output current ratio 600/5 A and 5 VA Accurate magnitude 0.5 magnitude of transformer.
- The order code for LMZJ1-0.5 600/5 5 va a magnitude of 0.5.
- 4, if you have special requirements, can be customized consultation with the manufacturer.


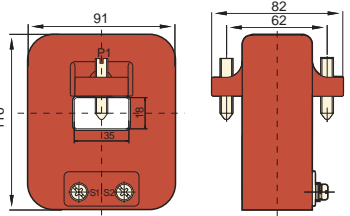

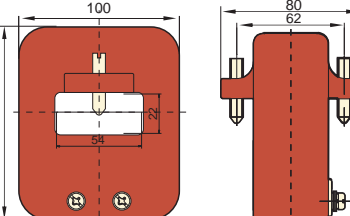
LMZ(J)1-0.66型  
电流互感器  
Series Current Transformer



型号及其含义  
Code and implication



主要技术参数及外形安装尺寸  
Technical parameters and installation size

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)				穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		0.5级	0.5S级	0.2级	0.2S级		
	100/5	5	5	5	5	1	
	150/5	5	5	5	5	1	
	200/5	5	5	5	5	1	
	250/5	5	5	5	5	1	
	300/5	5	5	5	5	1	
	400/5	5	5	5	5	1	
	550/5	5	5	5	5	1	
	600/5	5	5	5	5	1	

适用范围 Application


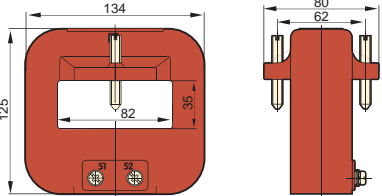

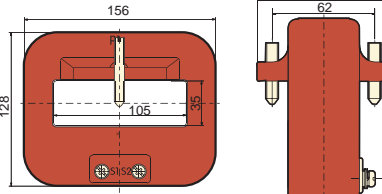

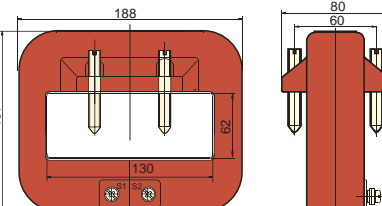

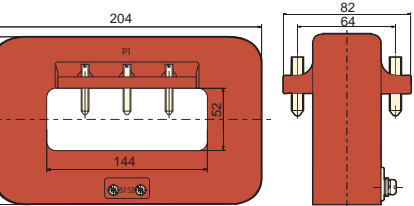
- LMZ (J)1-0.66型电流互感器主要用于户内，供额定电压为0.66kV及以下，额定频率为50Hz的交流电路中作为电流、电能测量或继电保护用，产品采用浇注绝缘，采用安装底板固定安装。
- 符合标准：GB20840
- LMZ(J)1-0.66 type current transformer is mainly used for indoor, for rated voltage up to and including 0.66kV, rated frequency 50Hz AC circuit as the electric current and electric energy measurement and relay protection, product adopts casting insulation, adopting bottom fixed installation.
- Standard: GB20840

正常工作条件及安装条件  
Normal working/installation conditions

- 1、 安装场所：户内。
- 2、 环境温度：-5 ~ 40 。
- 3、 环境湿度：相对湿度不大于80%。
- 4、 海拔高度：不超过1000m。
- 5、 大气条件：大气中无严重污秽。
- 1. Installation sites: Indoor
- 2. Ambient temperature : (-5~40)
- 3. Ambient humidity: 80%
- 4. Altitude: 1000m
- 5. Atmospheric conditions: no serious impurity in the atmosphere.



LMZ(J)1-0.66型  
电流互感器  
Series Current Transformer

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)				穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		0.5级	0.5S级	0.2级	0.2S级		
	750/5	10	10	10	10	1	
	800/5	10	10	10	10	1	
	1000/5	10	10	10	10	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	750/5	10	10	10	10	1	
	800/5	10	10	10	10	1	
	1000/5	10	10	10	10	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	
	2500/5	15	15	15	15	1	
	3000/5	20	20	20	20	1	
	3000/5	20	20	20	20	1	
	4000/5	30	30	30	30	1	
	5000/5	40	40	40	40	1	
	6000/5	40	40	40	40	1	

订货须知 Ordering instructions

用户在订货时，需提供以下信息：

- 1、产品型号及安装母排宽度；
- 2、电流比；
- 3、额定输出及相应准确级；

例如：订货LMZ(J)1-0.66型，母排宽度为50mm,电流比600/5A、额定输出5VA、准确级0.5级的互感器。

订货代号为LMZ(J)1-0.66 600/5A 5VA 0.5级。

- 4、如有特殊要求时，可与厂家协商定制。

When the customer ordering, must provide the following information:

- 1,product model and Install the bus width;
- 2, current ratio;
- 3, rated output, and the corresponding accurate level;

For example: solid order LMZ(J)1-0.66, Bus width is 50mm , rated output current ratio 600/5 a and 5 va, Accurate magnitude 0.5 magnitude of transformer.

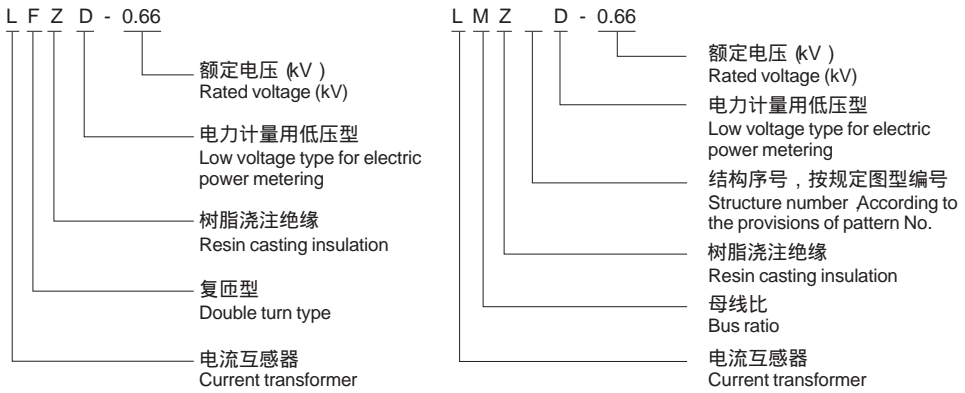
The order code for LMZ(J)1-0.66 600/5 5 va a magnitude of 0.5.

- 4, if you have special requirements, can be customized consultation with the manufacturer.


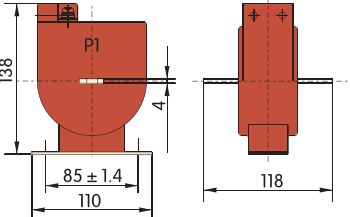
LFZD-0.66/LMZ D-0.66 型  
电流互感器  
Series Current Transformer



型号及其含义  
Code and implication



主要技术参数及外形安装尺寸  
Technical parameters and installation size

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)				穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		0.5级	0.5S级	0.2级	0.2S级		
	5/5	5	5	5	5		
	10/5	5	5	5	5		
	15/5	5	5	5	5		
	20/5	5	5	5	5		
	25/5	5	5	5	5		
	30/5	5	5	5	5		
	40/5	5	5	5	5		
	50/5	5	5	5	5		


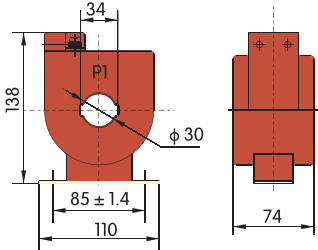

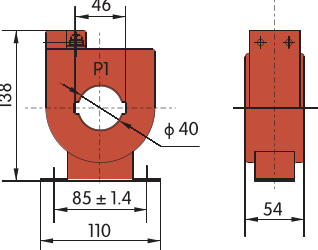

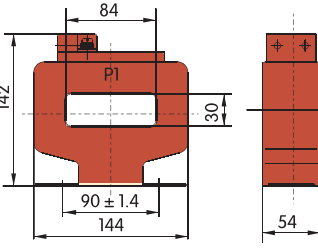

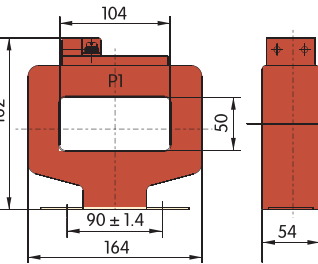
适用范围 Application

- LFZD-0.66和LFZ D-0.66系列电流互感器主要用于户内，供额定电压为0.5kV及以下，额定频率为50Hz的交流电路中作为电流测量或电能计量用，产品为不饱和树脂浇注式，采用底板固定安装方法。
- 符合标准：GB20840
- LFZD-0.66 or LFZ D-0.66 Type current transformer is mainly used for indoor, for rated voltage up to and including 0.66kV, rated frequency 50Hz AC circuit as the Current measurement or electrical energy measurement, The product is an unsaturated resin casting method, and the fixed installation method is adopted.
- Standard: GB20840

正常工作条件及安装条件  
Normal working/installation conditions

- 1、安装场所：户内。
- 2、环境温度：-5 ~ 40 。
- 3、环境湿度：相对湿度不大于80%。
- 4、海拔高度：不超过1000m。
- 5、大气条件：大气中无严重污秽。
- 1. Installation sites: Indoor
- 2. Ambient temperature : (-5~40)
- 3. Ambient humidity: 80%
- 4. Altitude: 1000m
- 5. Atmospheric conditions: no serious impurity in the atmosphere.

LFZD-0.66/LMZ D-0.66 型
电流互感器
Series Current Transformer

产品图 Product chart	电流比A Current ratio (A)	额定负荷VA Secondary load(VA)				穿心匝数 Cross-core turn number	外形及安装尺寸 Appearance and installation dimensions
		0.5级	0.5S级	0.2级	0.2S级		
	75/5	5	5	5	5	1	
	100/5	5	5	5	5	1	
	150/5	5	5	5	5	1	
	200/5	5	5	5	5	1	
	200/5	5	5	5	5	1	
	250/5	5	5	5	5	1	
	300/5	5	5	5	5	1	
	400/5	5	5	5	5	1	
	500/5	5	5	5	5	1	
	600/5	5	5	5	5	1	
	600/5	5	5	5	5	1	
	750/5	10	10	10	10	1	
	800/5	10	10	10	10	1	
	800/5	10	10	10	10	1	
	1000/5	10	10	10	10	1	
	1200/5	10	10	10	10	1	
	1500/5	10	10	10	10	1	
	2000/5	10	10	10	10	1	

订货须知 Ordering instructions

用户在订货时，需提供以下信息：

1、 产品型号及安装母排宽度；

2、 电流比；

3、 额定输出及相应准确级；

例如：订货LMZ1D-0.66型，母排宽度为30mm,电流比150/5A、 额定输出5VA、 准确级0.5级的互感器。

订货代号为LMZ1D-0.66 150/5A 5VA 0.5级。

4、 如有特殊要求时，可与厂家协商定制。

When the customer ordering, must provide the following information:

1,product model and Install the bus width;

2, current ratio;

3, rated output, and the corresponding accurate level;

For example: solid order LMZ1D-0.66, Bus width is 30mm ,rated output current ratio 150/5 A and 5 VA, Accurate magnitude 0.5 magnitude of transformer.

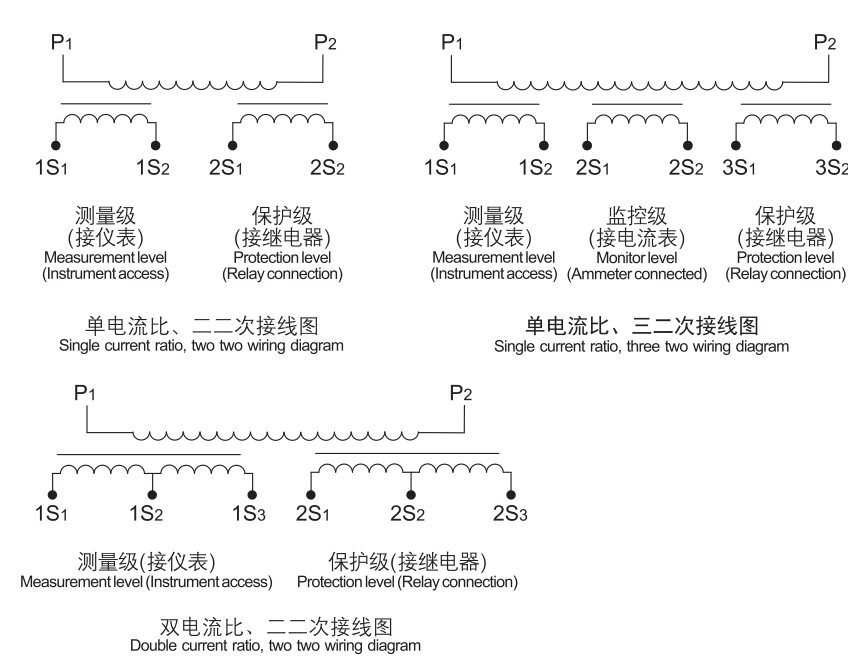
The order code for LMZ1D-0.66 150/5A 5 VA a magnitude of 0.5.

4, if you have special requirements, can be customized consultation with the manufacturer.

LZZBJ9-10型
型户内，全封闭，全工况，干式电流互感器
Indoor, fully enclosed, all conditions, dry-type current transformer



产品接线图 Wiring Diagram



注意：双电流比产品，1S1-1S2, 2S1-2S2为小电流比；1S1-1S3, 2S1-2S3为大电流比

例如：电流比为50-100/5 A；接P1-P2/1S1-1S2，2S1-2S2为50/5 A

接P1-P2/1S1-1S3，2S1-2S3为100/5 A

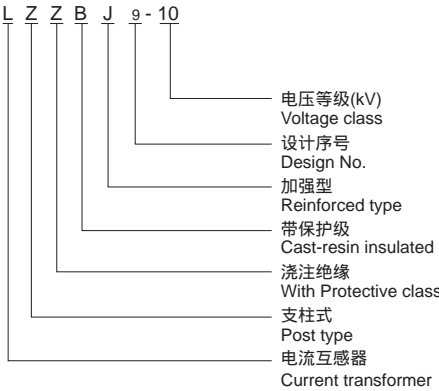
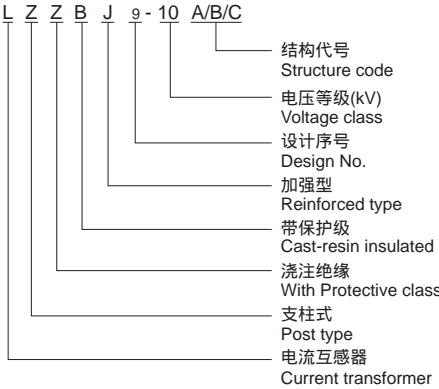
特别提醒：双电流比产品，

使用小电流比时，二次接1S1-1S2，2S1-2S2，将1S3，2S3空着不接线；

使用大电流比时，二次接1S1-1S3，2S1-2S3，将1S2，2S2空着不接线；

单电流比多二次产品，没使用的二次绕组不得开路，必须短接。

型号及其含义 Code and implication





# LZZBJ<sub>9</sub>-10型

## 型户内，全封闭，全工况，干式电流互感器

Indoor, fully enclosed, all conditions, dry-type current transformer

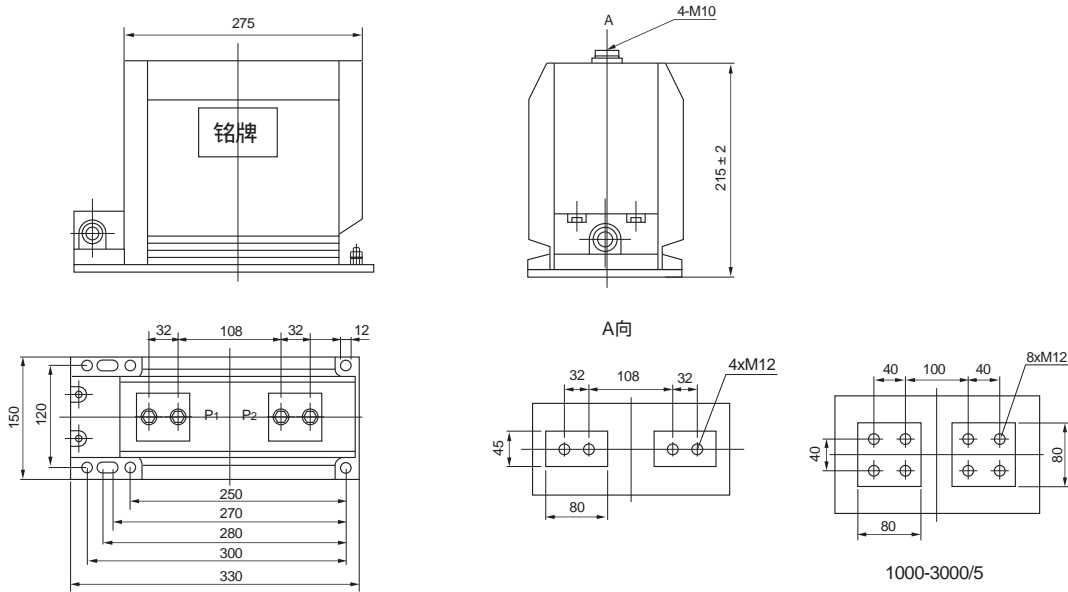


主要技术参数 Technical parameters

额定一次 电流(A) Rated Primary current	准确级组合 Accuracy classes combination	准确等级及输出容量COSØ=0.8(滞后)(VA) Accuracy class and rated output							1S短时热 电流(kA/S) Short-time thermal current	额定动稳定 电流(kA) Rated dynamic current
		0.2S	0.2	0.5S	0.5	10P10	10P15	10P20		
5	0.2S/10P10 0.2S/10P15 0.2S/10P20 0.2 /10P10 0.2 /10P15 0.2 /10P20 0.5 /10P10 0.5 /10P15 0.5 /10P20 0.2S/0.2/10P10 0.2S/0.2/10P20	10	10	10	10	15	15	15	0.5	12.5
10									1	2.5
15									1.5	3.75
20									2	5
25									2.5	6.25
30									3	7.5
40									4	10
50									5	12.5
75									7.5	18.75
100									10	25
150									15	37.5
200									20	50
300									30	75
400									40	100
500									50	75
600									60	150
800									80	200
1000									80	200
1200									80	200
1500									80	200
2000									80	200
2500									80	200
3000									80	200

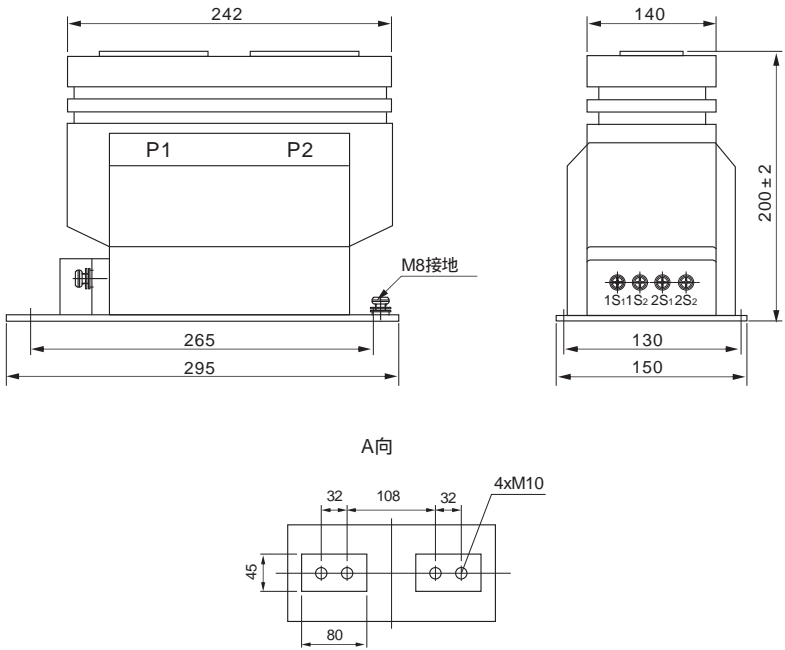
外形尺寸 Outline dimensions

LZZBJ<sub>9</sub>-10A

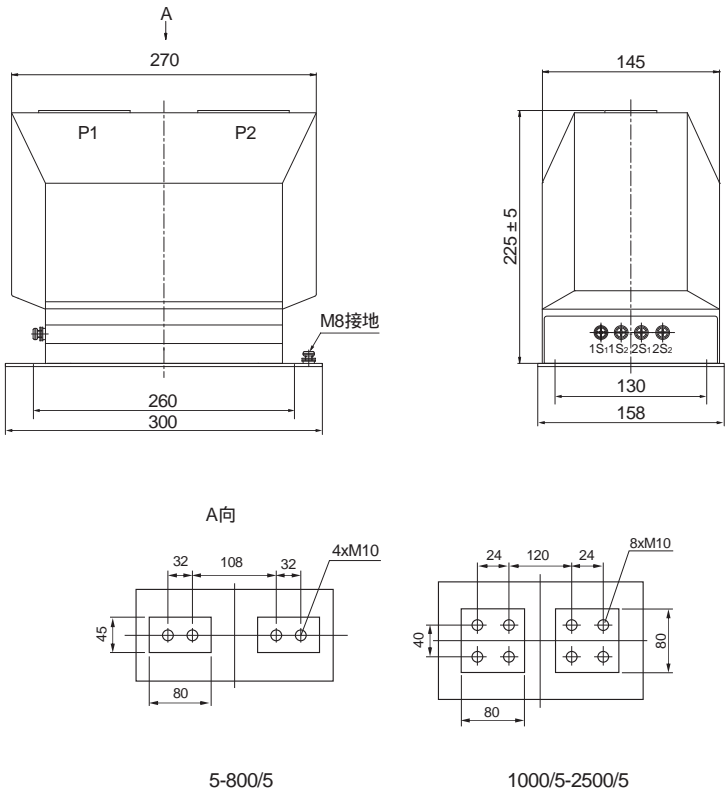


外形尺寸 Outline dimensions

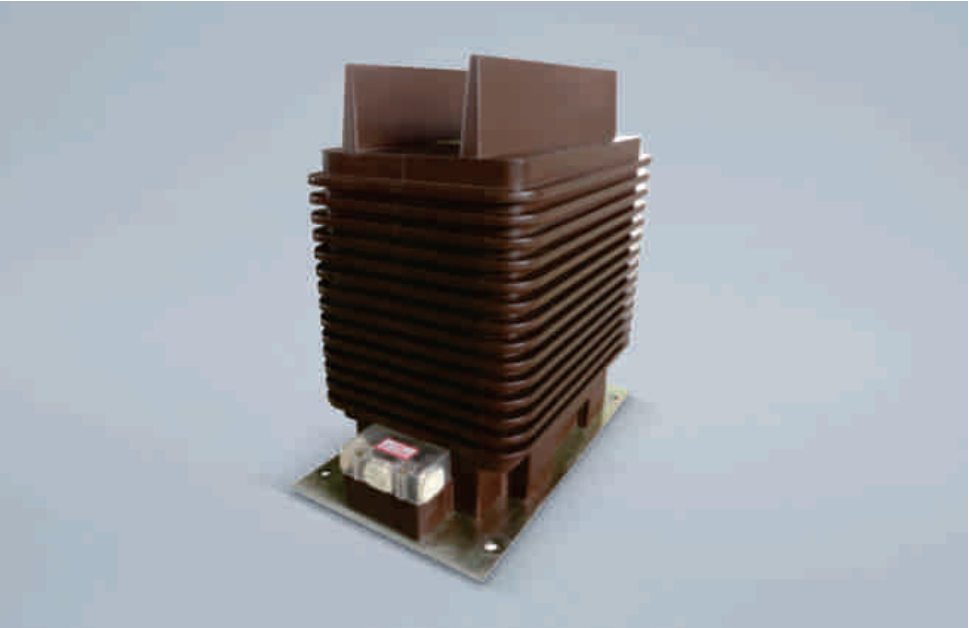
LZZBJ<sub>9</sub>-10



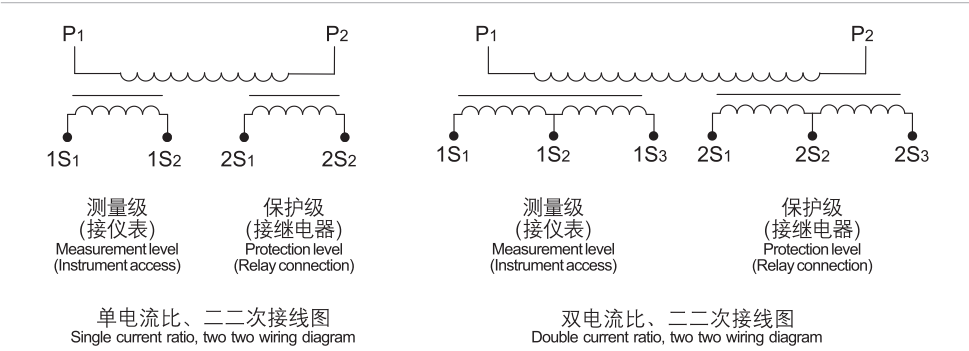
LZZBJ<sub>9</sub>-10C



LZZBJ<sub>9</sub>-35 型  
户内、全封闭、干式电流互感器  
Indoor, closed, dry-type current transformer



产品接线图 Wiring Diagram

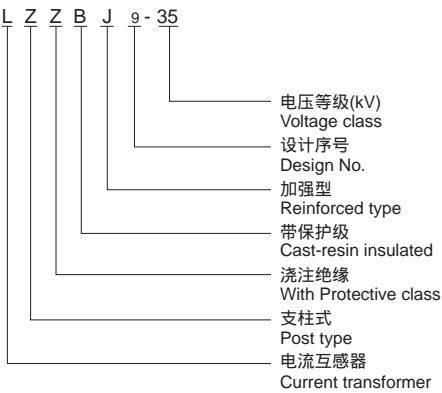


注意：双电流比产品，1S1-1S2, 2S1-2S2为小电流比；1S1-1S3, 2S1-2S3为大电流比  
例如：电流比为50-100/5 A；接P1-P2/1S1-1S2，2S1-2S2为50/5 A  
接P1-P2/1S1-1S3，2S1-2S3为100/5 A  
特别提醒：双电流比产品，  
使用小电流比时，二次接1S1-1S2，2S1-2S2，将1S3，2S3空着不接线；  
使用大电流比时，二次接1S1-1S3，2S1-2S3，将1S2，2S2空着不接线；

主要技术参数 Technical parameters

- 额定一次电流：5~2500A；
- 额定二次电流：5A或1A
- 额定电压：35 KV；
- 计量准确级次：0.2S、0.5S、0.2、0.5
- 保护准确级次：5P15、5P20
- 产品表面爬电距离：满足 I 级污秽等级；
- 负荷的功率因数：COS =0.8（滞后）；
- 产品标准：GB1208-2006《电流互感器》；
- 5P15级在额定负荷时，准确限值系数为15；5P20级在额定负荷时，准确限值系数为20；
- 其他技术参数见下表(二次电流为5A)：
- Rated primary current: 5 ~ 2500A;
- Rated secondary current: 5A or 1A
- Rated voltage: 35 KV;
- Measurement accuracy level: 0.2S, 0.5S, 0.2,0.5
- Protection accuracy level: 5P15, 5P20
- Product surface creepage distance: I grade pollution level;
- Power factor of the load: COSF = 0.8 (hysteresis);
- Product standard: GB1208-2006 "current transformer";
- 5P15 level in the rated load, the exact limit factor of 15; 5P20 level in the rated load, the exact limit factor is 20;
- Other technical parameters in the table below (secondary current 5A)

型号及其含义 Code and implication

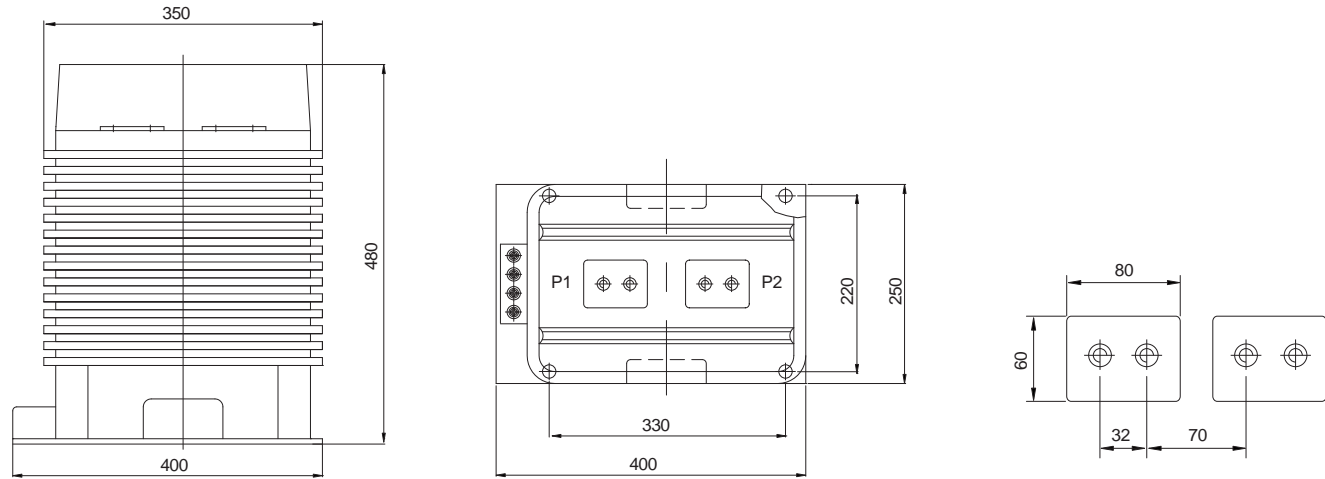


主要技术参数 Technical parameters

额定一次 电流(A) Rated Primary current	准确级组合 Accuracy classes combination	准确等级及输出容量COSØ=0.8(滞后)(VA) Accuracy class and rated output						1S短时热 电流(kA/S) Short-time thermal current	额定动稳定 电流(kA) Rated dynamic current
		0.2S	0.2	0.5S	0.5	5P15	5P20		
20	0.2S/10P10 0.2S/10P15 0.2S/10P20	15	15	15	15	20	20	20	15
25								12	30
30								25	62.5
40								32	80
50									
75	0.2 /10P10								
100	0.2 /10P15								
150	0.2 /10P20								
200	0.5 /10P10								
300	0.5 /10P15								
400	0.2S/0.2/10P10	63	130						
600	0.2S/0.2/10P15								
750	0.2S/0.2/10P20								
800	0.2/0.5/10P10								
1000	0.2/0.5/10P15								
1200	0.2/0.5/10P20								
1500	0.2S/0.2/10P10/10P10								
2000	0.2S/0.2/10P15/10P15								
2500									

外形尺寸 Outline dimensions

LZZBJ<sub>9</sub>-35

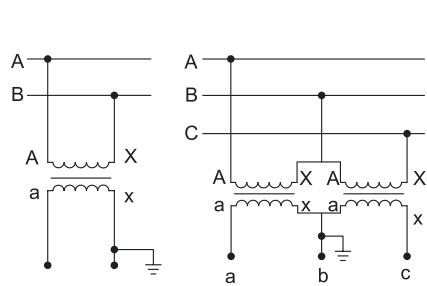




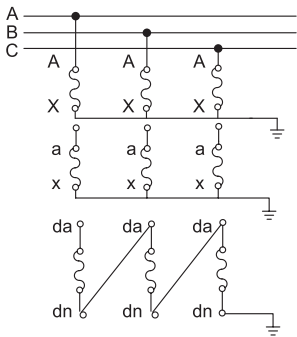
JDZ(J)-3,6,10 型  
单相、半封闭电压互感器  
Single-phase, semi-enclosed voltage transformers



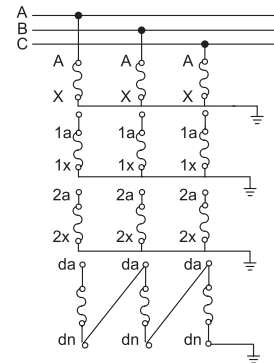
产品接线图 Wiring Diagram



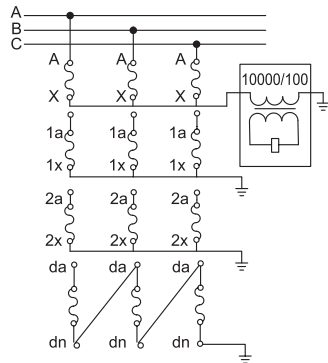
JDZ -3、6、10  
常规接线图 General wiring diagram



JDZJ -3、6、10  
常规接线图 General wiring diagram

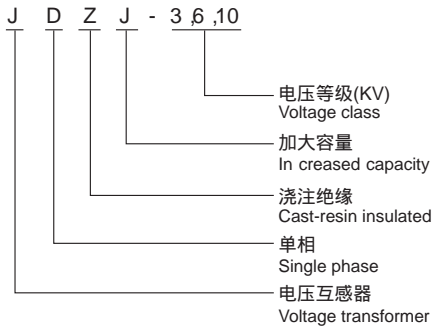
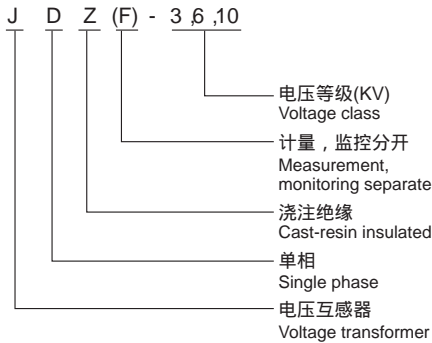


JDZJF -3、6、10  
常规接线图 General wiring diagram



JDZJF -3、6、10  
抗谐振接线图 Anti-resonance wiring diagram

型号及其含义 Code and implication

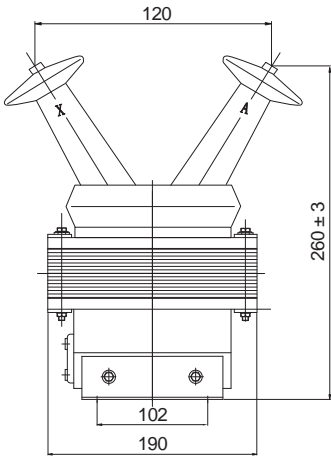


主要技术参数 Technical parameters

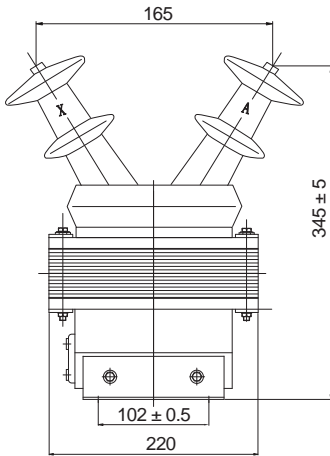
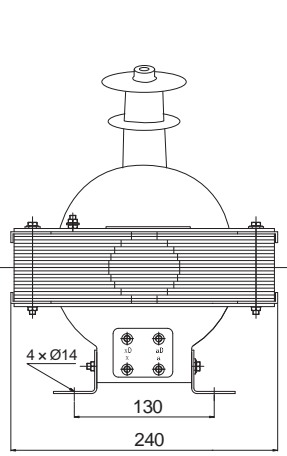
产品型号 Type	额定电压比(kV) Rated voltage ratio	准确级组合 Accuracy classes combination	准确等级及输出容量COSØ=0.8(滞后)(VA) Accuracy class and rated output				热极限输出容量(VA) Thermal limit output capacity	一次工频耐压(kV) Power frequency withstand voltage
			0.2	0.5	1	3		
JDZ-3	3/0.1		20	30	50	80	200	24
JDZ-6	6/0.1		30	50	80	200	300	32
JDZ-10	10/0.1		30	80	150	300	500	42
JDZF-3	3/0.1/0.1		15/15	30/30	50	80	150	24
JDZF-6	6/0.1/0.1	0.2/0.2 0.2/0.5	15/15	30/30	80	200	200	32
JDZF-10	10/0.1/0.1		20/20	50/50	80	300	400	42

产品型号 Type	额定电压比(kV) Rated voltage ratio	准确级组合 Accuracy classes combination	准确等级及输出容量COSØ=0.8(滞后)(VA) Accuracy class and rated output				剩余电压绕组 Residual voltage winding	热极限输出容量(VA) Thermal limit output capacity
			0.2	0.5	1	3		
JDZJ-3	$\frac{3}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{3}$	0.2/6P 0.5/6P	15	30	50	80	50	200
JDZJ-6	$\frac{6}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{3}$		15	30	80	200	100	200
JDZJ-10	$\frac{10}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{3}$		20	40	80	200	100	300
JDZJF-3	$\frac{3}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{3}$	0.2/0.2/6P 0.2/0.5/6P	15/15	25/25	50	80	50	200
JDZJF-6	$\frac{6}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{3}$	0.2/0.2/6P 0.2/0.5/6P	15/15	25/25	80	200	100	200
JDZJF-10	$\frac{10}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{\sqrt{3}} / \frac{0.1}{3}$	0.2/0.2/6P 0.2/0.5/6P	15/15	30/30	80	200	100	300

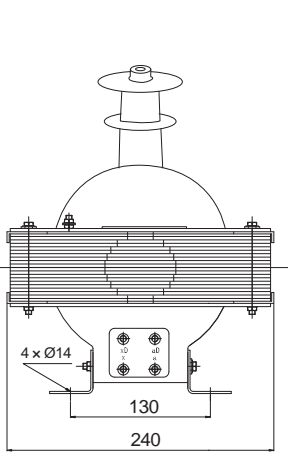
外形尺寸 Outline dimensions



JDZ(J)-3、6; JDZF-3、6



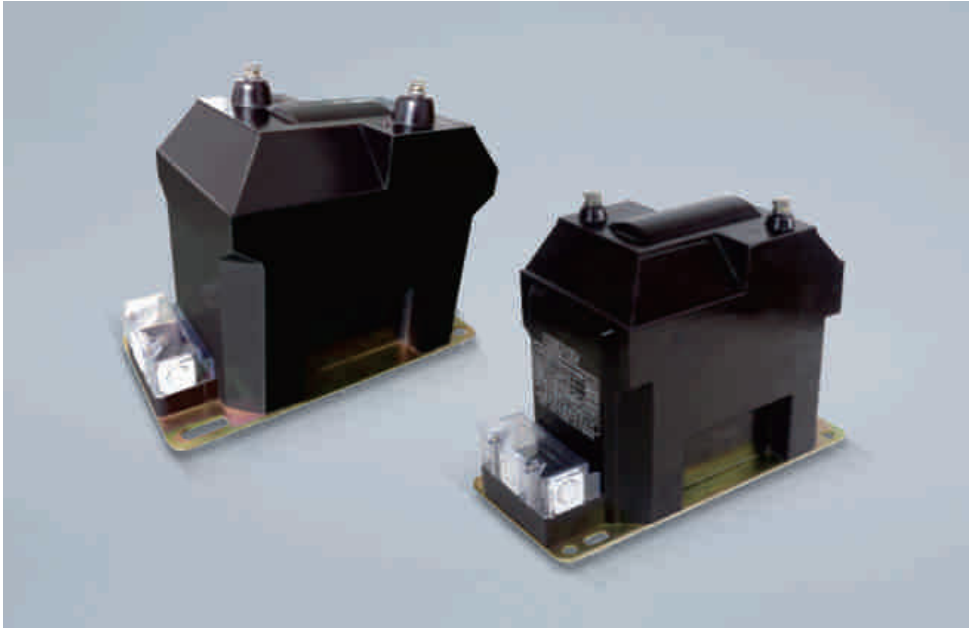
JDZ(J)-10; JDZF-10



# JDZ<sub>10</sub>-3,6,10; JDZF<sub>10</sub>-3,6,10型

## 单相、全封闭电压互感器

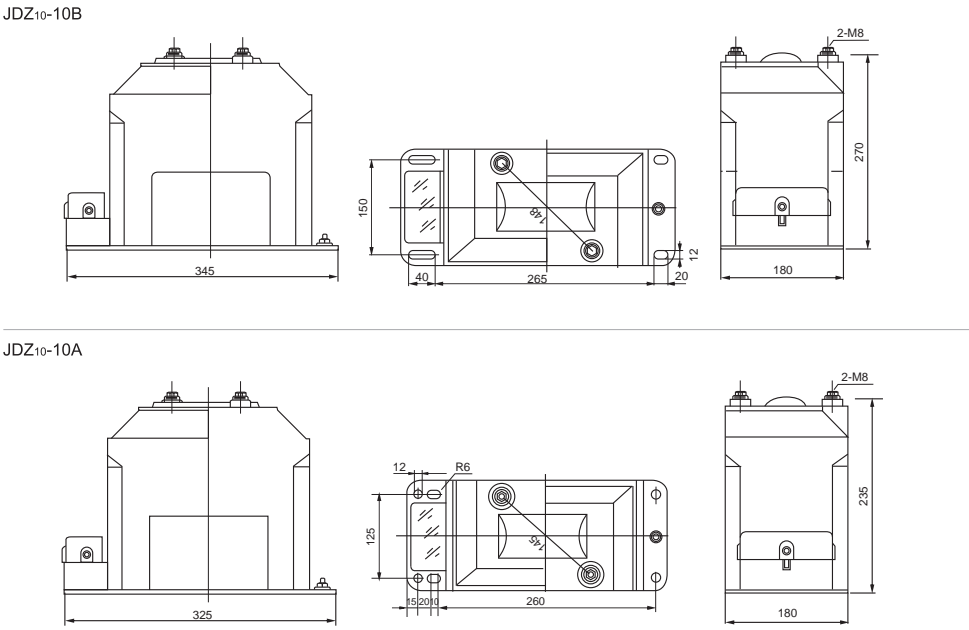
Single-phase, fully-enclosed voltage transformers



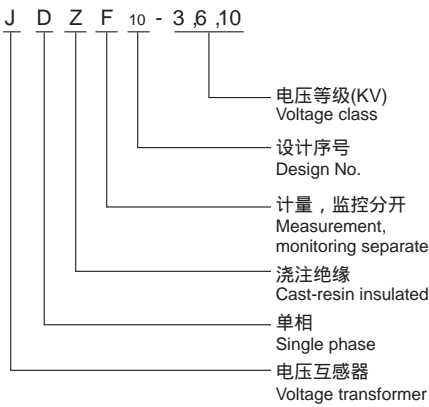
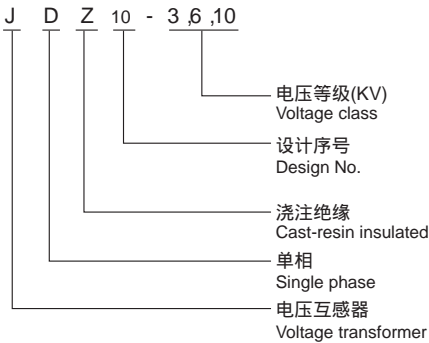
### 主要技术参数 Technical parameters

产品型号 Type	额定电压 比(kV) Rated voltage ratio	准确级组合 Accuracy classes combination	准确等级及输出容量 COSφ=0.8(滞后)(VA) Accuracy class and rated output			热极限输出容量(VA) Thermal limit output capacity	一次工频耐压 (kV) Power frequency withstand voltage
			0.2	0.5	1		
JDZ10-3(RZL10)	3/0.1		15	30	50	200	24
JDZ10-6(RZL10)	6/0.1		15	30	60	200	32
JDZ10-10(RZL10)	10/0.1		15	30	60	200	42
JDZF10-3(RZL10)	3/0.1/0.1		10/10	15/15	50	100	24
JDZF10-6(RZL10)	6/0.1/0.1	0.2/0.2	10/10	25/25	80	150	32
JDZF10-10(RZL10)	10/0.1/0.1	0.2/0.5	10/10	30/30	80	150	42

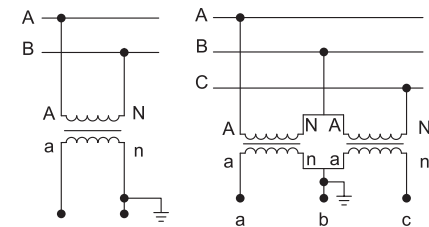
### 外形尺寸 Outline dimensions



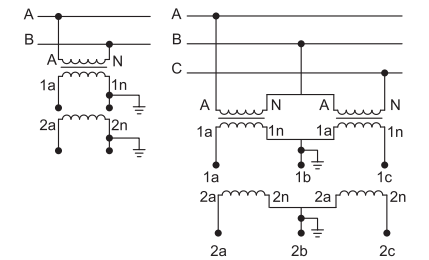
### 型号及其含义 Code and implication



### 产品接线图 Wiring Diagram



JDZ10 -3、6、10  
常规接线图 General wiring diagram



JDZF10 -3、6、10  
常规接线图 General wiring diagram

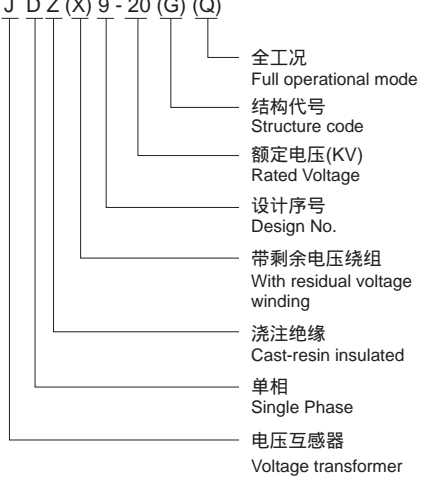
# JDZ(X)9-20,24(G)(Q) 型

## 全封闭电压互感器

Fully-enclosed voltage transformers



### 型号及其含义 Code and implication



### 产品接线图 Wiring Diagram

JDZ9-20Q

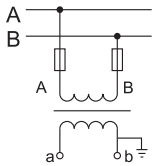


图1

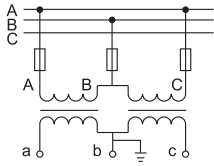


图2

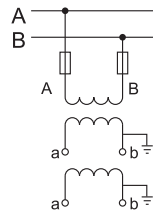


图3

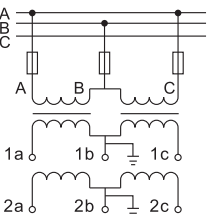


图4

JDZ9-20Q  
JDZ9-20G

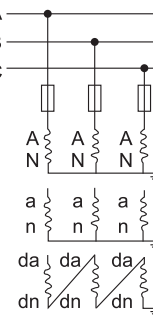


图5

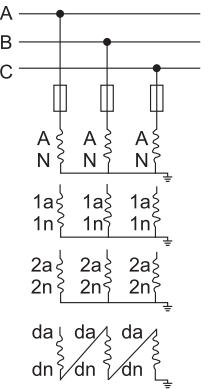


图6



# JDZ(X)9-20,24(G)(Q) 型

## 全封闭电压互感器

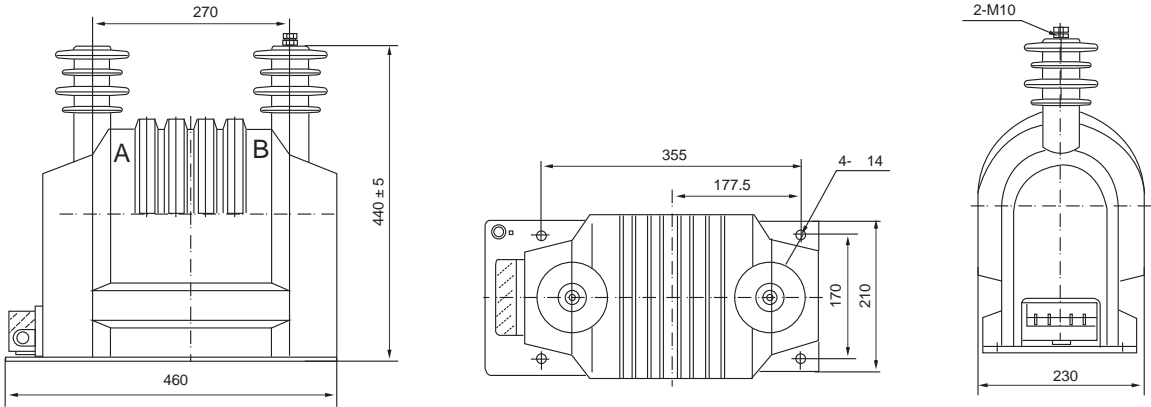
Fully-enclosed voltage transformers

主要技术参数 Technical parameters

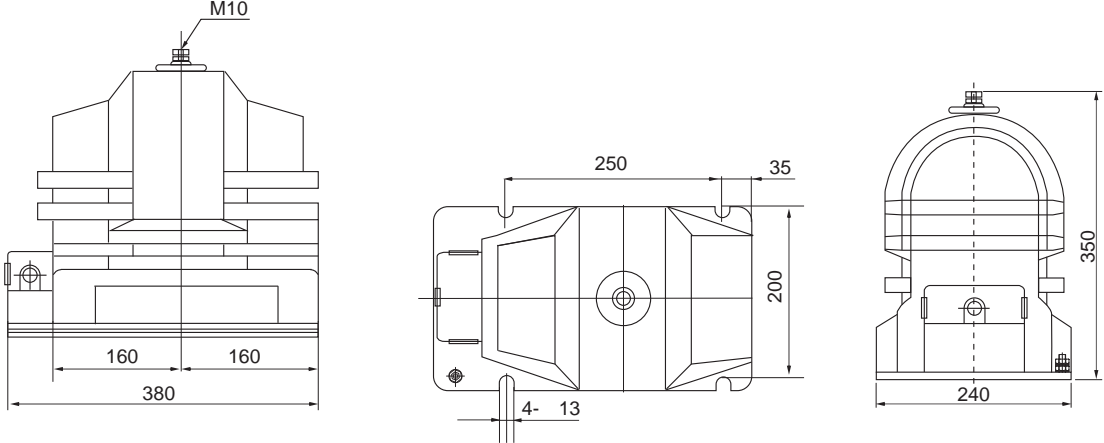
产品型号 Type	额定电压比(kV) Rated voltage ratio	准确级组合 Accuracy classes combination	输出容量(VA) Rated output	极限输出(VA) Limit output	额定绝缘水平 (VA) Rated insulation level
JDZ9-20Q	20/0.1	0.2	50	800	24/65/125
		0.5	100		
	20/0.1/0.1	0.2/0.2	40/40	600	
		0.5/0.5	80/80		
JDZX9-20G	20/ 3/0.1/ 3/0.1/ 3	0.2/6P	30/100	600	
		0.5/6P	50/100		
	20/ 3/0.1/ 3/0.1/ 3/0.1/ 3	0.2/0.5/6P	20/40/100	400	
		0.5/0.5/6P	50/50/100		
		0.2/0.2/6P	30/30/100		
JDZX9-20Q	20/ 3/0.1/ 3/0.1/ 3	0.2/6P	30/100	600	24/65/125
		0.5/6P	50/100		
	20/ 3/0.1/ 3/0.1/ 3/0.1/ 3	0.2/0.5/6P	20/40/100	500	
		0.2/0.2/6P	30/30/100		
		0.5/0.5/6P	50/50/100		

外形尺寸 Outline dimensions

JDZ9-20Q



JDZX9-20Q



# JDZ<sub>9</sub>-35; JDZF<sub>9</sub>-35 型

## 户内电压互感器

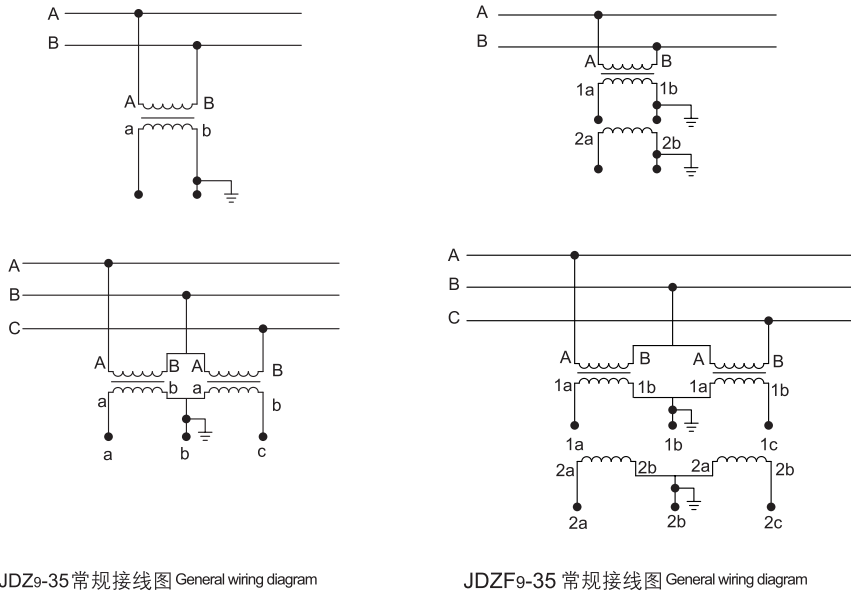
Indoor voltage transformers



主要技术参数 Technical parameters

产品型号 Type	额定电压比(kV) Rated voltage ratio	准确级组合 Accuracy classes combination	准确等级及输出容量 COSØ=0.8(滞后)(VA) Accuracy class and rated output			热极限输出容量(VA) Thermal limit output capacity	一次工频耐压(kV) Power frequency withstand voltage
			0.2	0.5	1		
JDZ9-35	35/0.1		60	120	250	1000	95
JDZF9-35	35/0.1/0.1	0.2/0.2 0.2/0.5	40/40	80/80	250	1000	95

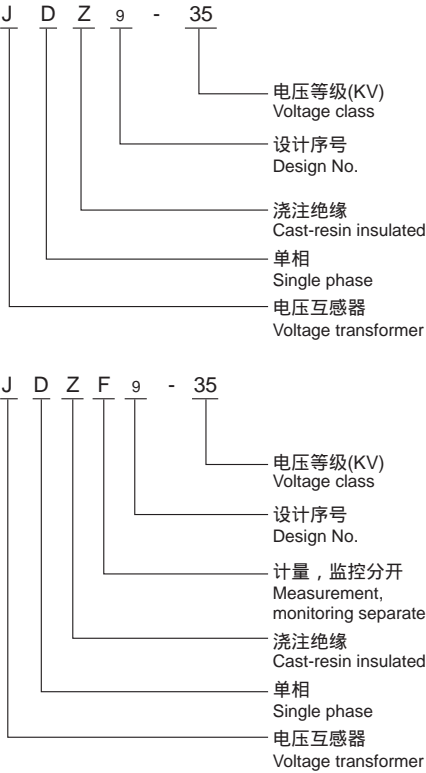
产品接线图 Wiring Diagram



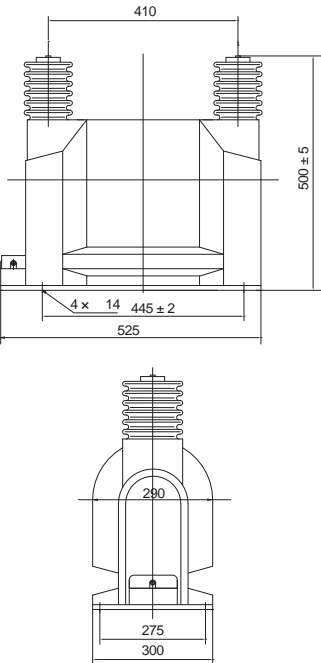
JDZ<sub>9</sub>-35常规接线图 General wiring diagram

JDZF<sub>9</sub>-35 常规接线图 General wiring diagram

型号及其含义 Code and implication



外形尺寸 Outline dimensions



# JDZX<sub>9</sub>-35; JDZXF<sub>9</sub>-35 型

## 户内电压互感器

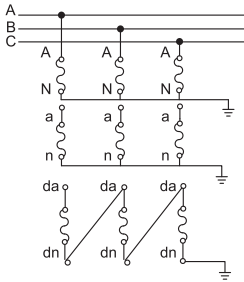
Indoor voltage transformers



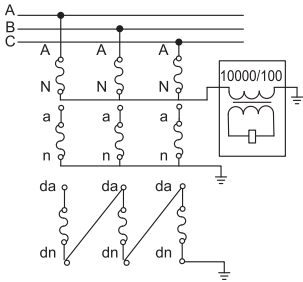
### 主要技术参数 Technical parameters

产品型号 Type	额定电压 比(kV) Rated voltage ratio	准确级组合 Accuracy classes combination	准确等级及输出容量 COSØ=0.8(滞后)(VA) Accuracy class and rated output				剩余电压绕组 Residual voltage winding	热极限输出 容量(VA) Thermal limit output capacity
			0.2	0.5	1	3		
JDZX <sub>9</sub> -35	$\frac{3}{\sqrt{3}}/\frac{0.1}{\sqrt{3}}/\frac{0.1}{3}$	0.2/6P 0.5/6P	40	100	250	500	100	800
JDZXF <sub>9</sub> -35	$\frac{35}{\sqrt{3}}/\frac{0.1}{\sqrt{3}}/\frac{0.1}{\sqrt{3}}/\frac{0.1}{3}$	0.2/0.2/6P 0.2/0.5/6P	30/30	60/60	250	500	100	800

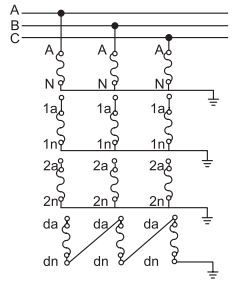
### 产品接线图 Wiring Diagram



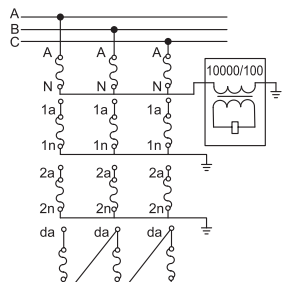
JDZX<sub>9</sub>-35 常规接线图 General wiring diagram



JDZX<sub>9</sub>-35 抗谐振接线图 Anti-resonance wiring diagram

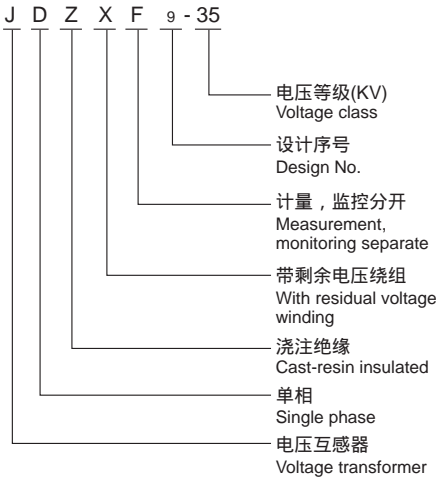
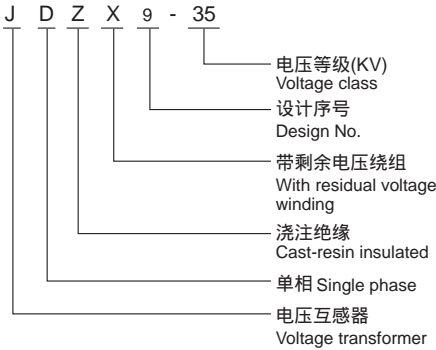


JDZXF<sub>9</sub>-35 常规接线图 General wiring diagram

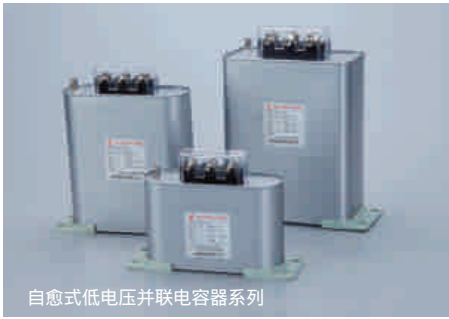
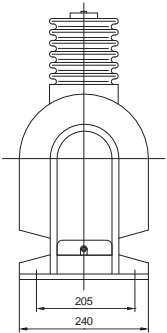
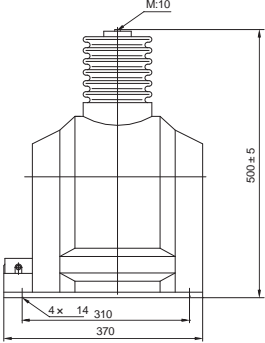


JDZXF<sub>9</sub>-35 抗谐振接线图 Anti-resonance wiring diagram

### 型号及其含义 Code and implication



### 外形尺寸 Outline dimensions



自愈式低电压并联电容器系列



智能无功功率自动补偿控制器系列



智能复合开关系列



交流高压真空接触器系列



低压无功就地补偿装置(静态型)系列



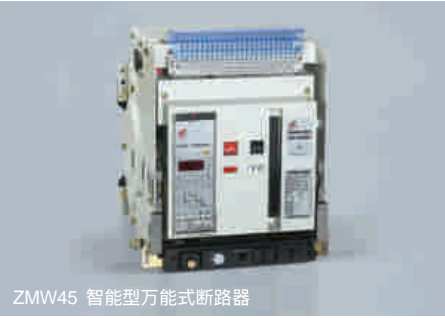
高压无功柱上自动补偿装置系列



DZ47-63 系列小型断路器



SZM1 系列塑料外壳式断路器



ZMW45 智能型万能式断路器



CJ20 系列交流接触器



ZMKBO系列控制与保护开关电器



ZMRZ8 系列智能软起动器

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