WxS7800-3570A1

WiFi Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal

Product Highlights

- WiFi Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal
- 2-in-1 smart sensor(s) and RTU terminal product
- Optional DC 12V power supply
- Optional Battery power supply (ER34615H 19,000mAh/ER34615M 13,500mAh)
- It can monitor the power consumption, current, voltage, power and other parameters of single-phase electricity
- Expandable with 2 of 14 types PSS gas sensors with aluminum sleeve enclosure
- Up to 8 working simultaneously including sensors and controllers; Customization needed if more than 8 working at the same time
- RTU controlling signal and interfaces OD/PWR triggered by sensor(s) data or OTA command for solenoid valve or other devices
- Optional (Public/Private) IoT cloud platform PolySuite iView

Products includes following parts:

- WxS7800 WiFi Smart IoT and RTU 2-in-1 Terminal
- ENC-102001 WxS Series 4.0 Enclosure(Φ 145x90x55mm, IP67)
- PSS-3570A1 Uni-phase Electric Energy Meter

Configuration Tool

- iEdge4.0 WxS IoT Terminal products can be configured with PolySuite software-visual based Configuration Tool or CLI interface command or OTA via IoT platform, such as PolySuite PaaS platform iView.
- Download link http://ota.polysense.online/wincc/ConfigurationTool.rar

Product Image

- The shell is WxS Series 4.0 Enclosure(Φ 145x90x55mm, IP67) , as shown in the figure below
- The sensor is externally connected. See the following document PSS-3570A1 for the sensor picture


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WxS7800

WiFi Smart IoT and RTU 2-in-1 Terminal

Related Products

Product #	Interf.	Descriptions
WxS7800	11MPI+RS485+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx00,PSB-BD01,&Enclosure)
WxS7801	RS485+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx01,PSB-BD01,&Enclosure)
WxS7802	0-20mA*1+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx02,PSB-BD01,&Enclosure)
WxS7803	0-20mA*4+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx03,PSB-BD01,&Enclosure)
WxS7804	0-3.3V*2+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx04,PSB-BD01,&Enclosure)
WxS7805	0-3.3V*4+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx05,PSB-BD01,&Enclosure)
WxS7806	0-10V*2+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx06,PSB-BD01,&Enclosure)
WxS7807	0-10V*4+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx07,PSB-BD01,&Enclosure)
WxS7808	PT100*1+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx08,PSB-BD01,&Enclosure)
WxS7809	PT100*5+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx09,PSB-BD01,&Enclosure)
WxS780A	Switch*1+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0A,PSB-BD01,&Enclosure)
WxS780B	Switch*5+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0B,PSB-BD01,&Enclosure)
WxS780C	Unibus*1+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0C,PSB-BD01,&Enclosure)
WxS780D	Unibus*18+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0D,PSB-BD01,&Enclosure)
WxS780E	IIC*1+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0E,PSB-BD01,&Enclosure)
WxS780F	SPI*1+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0F,PSB-BD01,&Enclosure)
WxS780G	Uart*2+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0G,PSB-BD01,&Enclosure)
WxS780H	Uart*3+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0H,PSB-BD01,&Enclosure)
WxS780J	Uart*1+RS485+OD*2+PWR*2	WiFi Smart IoT and RTU 2-in-1 Terminal (Inc.WxS78xx,PSM-xx0J,PSB-BD01,&Enclosure)
WxS7850	Ai/Ao/Di/Pi/Ro/IIC/SPI/Ci + RS232/485/Ro/RJ45	WiFi Smart RTU

Product Highlights

- Interfaces supported:
  - MPI:(AIN(0-20mA)*2, PT100*1, VIN(0-10V/0-3.3V)*2, Switch*1 ,Unibus*1, IIC *1， SPI*1, Uart(3.3V TTL)*2), RS485*1
  - RTU interfaces
    - OD*2 output for external devices controlling
    - PWR*2 output for external devices/sensors power supply or customization usage
- 2-in-1 DC(5V/12V)+Battery(3.6V Li-SOCl2 ER34615H/M) Power Supply, DC in priority
- Up to 8 working simultaneously including sensors and controllers; Customization needed if more than 8 working at the same time
- Built-in sensor options including:
  - PSS-403011 IIC Temperature and Humidity Sensor (Indoor)
  - PSS-403012 RS485 Temperature and Humidity Sensor (Indoor)
  - PSS-403013 IIC Temperature and Humidity Sensor (IP67,Outdoor)
  - PSS-403014 RS485 Temperature and Humidity Sensor (IP67,Outdoor)

- PSS-403015 IIC Temperature and Humidity Sensors (Indoor)
- PSS-403016 RS485 Temperature and Humidity Sensors (Indoor)
- PSS-403017 IIC Temperature and Humidity Sensors (IP67,Outdoor)
- PSS-403018 RS485 Temperature and Humidity Sensors (IP67,Outdoor)
- PSS-403019 IIC Temperature and Humidity Sensors (Indoor)
- PSS-40301A RS485 Temperature and Humidity Sensors (Indoor)
- PSS-40301B IIC Temperature and Humidity Sensors (IP67,Outdoor)
- PSS-40301C RS485 Temperature and Humidity Sensors (IP67,Outdoor)
- PSS-403021 IIC Temperature + Humidity + Barometric Pressure Sensors(Indoor)
- PSS-403022 RS485 Temperature + Humidity + Barometric Pressure Sensors(Indoor)
- PSS-403023 IIC Temperature + Humidity + Barometric Pressure Sensors (IP67,Outdoor)
- PSS-403024 RS485 Temperature + Humidity + Barometric Pressure Sensors (IP67,Outdoor)
- PSS-33B011 RS485 illumination Sensor(Indoor)
- PSS-423011 Uart AQI(PM2.5/10, SO2,NO2, O3, CO,Temp,Humidity) PPM Level Sensors
- PSS-423031 Uart IAQ(PM2.5/10, CO2, HCHO, Temp,Humidity) Sensors
- PSS-423041 Uart IAQ(PM2.5/10, CO2, TVOC, Temp,Humidity) Sensors
- PSS-423051 Uart IAQ(PM2.5/10, CO2, HCHO, TVOC,Temp,Humidity)Sensors
- PSS-318711 Uart GPS/Beidou Positioning Sensor
- PSS-318712 RS485 GPS/Beidou Positioning Sensor
- PSS-319311 0-3.3V Tilt / Inclination Sensor (SHM- Structure Health Monitoring)
- PSS-333051 0-3.3V PIR Sensor (3-4 Meters)
- PSS-333052 0-3.3V PIR Sensor (up to 20 Meters)
- PSS-334061 0-3.3V UV Sensor (Range:0-15 grade, outdoor)
- PSS-355051 Switch Uni-Call Button & Controller
- PSS-362011 Uart Sound/Noise Sensor (30~130dB range, Indoor)
- All Gas Sensors with Product No. PSS-21xxxx

❖ Support 1-8 enclosure externally connected sensors

- All enclosure external PSS sensors w/o separate power supply

❖ RTU OD&PWR(PWM) output control inerfaces

- OD output control interface for controlling external devices such as electric relay,AC contactor, beeper, draught fan, lamps and lantern etc.
- PWR*2 output, one default for external devices/sensors power supply voltage output, one with 3.3V voltage; or customization usage,such as for PWM port
- PWR port signal can be used as PWM output to control stepper moter or lamp
- Sensor(s) data or OTA Command triggered OD/PWR controlling signal&interfaces

❖ Power supply options:

- PSB-BT01 WxS Terminal Battery Power (3.6VDC Output) (3.6V Li-SOCl2 ER34615H/M)
- PSB-BT02 WxS Terminal Battery Power Board (3/5/9/12VDC Output) (3.6V Li-SOCl2 ER34615H/M)
- PSB-DC01 WxS Terminal DC Power Board (Inc. PSP-DC012V)
- PSB-BD01 WxS Terminal Battery (3.6V Li-SOCl2 ER34615H/M) & DC Power Board(Inc. PSP-DC012V)
- Battery capacity ER34615H: 19000mAh/ER34615M: 13500mAh

- iEdge 4.0 terminal enclosure options
  - ENC-102001 WxS Series Standard Enclosure(145x90x55mm)IP67
  - ENC-102002 WxS Series Poromeric Enclosure(145x90x59mm)
  - ENC-102003 WxS Series High Poromeric Enclosure(145x90x70mm)

- Terminal and sensor parameters configurable with Configuration Tool running on PC
  - WiFi Bands Supported and SW Configurable
  - WiFi Uplink Transmission Cycle Configurable
  - Sensor Parameters Configurable
  - Sensor Data Report Cycle Configurable

- FOTA (Over The Air) firmware upgrade, including to upgrade loader and application images
- OTA (Over The Air) terminal running parameters supported including output signal
- Low power consumption, years of battery operational life with 3.6V Li-SOCl2 ER45615H/M Battery with various scenarios
- Integrated internal antenna, or optional external SMA/IPEX antenna
- WiFi Compliance

Specifications

Parameters	Value
Smart Terminal	
Interfaces	MPI Interfaces-Any Mixture of Following: MPI:(AIN(0-20mA) *2, PT100 *1, VIN(0-10V/0-3.3V) *2, Switch *1 ,Unibus*1, IIC *1， SPI*1, Uart(3.3V TTL)*2), RS485*1 Output Control: OD*2&PWR*2
Data Report	Cross-threshold report, plus periodic report (the threshold and the periodic report cycle are both user-configurable)
Intensive data sampling and averaging	Support intensive data sampling and averaging to improve data accuracy
Wireless	
Wireless standards	802.11 b/g/n
output power	+20 dBm in 802.11b mode
frequency range	2.4GHz-2.5GHz (2400M-2483.5M)
Data connection	UART/HSPI/I2C/I2S/Ir Remote Contorl
Wireless network mode	station/softAP/SoftAP+station
Network Protocol	IPv4, TCP/UDP/HTTP/FTP
Power	Power consumption in standby mode is less than 1.0 mW (DTIM3)
Antenna	Integrated internal antenna or external 1/2 wavelength whip antenna (SMA)
Mechanical	
Dimension	3 Enclosure options with different size WxS Series 4.0 Enclosure(ϕ145x90x55mm, IP67) WxS Series 4.0 Poromeric Enclosure(ϕ145x90x59mm) WxS Series 4.0 High Poromeric Enclosure(ϕ145x90x70mm)
IP rating	IP65&IP67

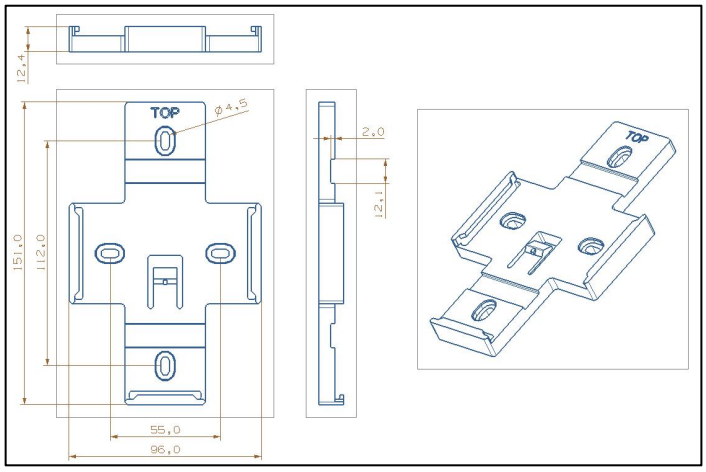
Operating Temperature	-40C to +85C
Total Weight	150 g
Electrical	
Supply Voltage	3.6VDC
Power Type	Replaceable 1 ER34615H/M 3.6V Li-SOCI2 Battery (H/M); DC 4.5V – 12V optional

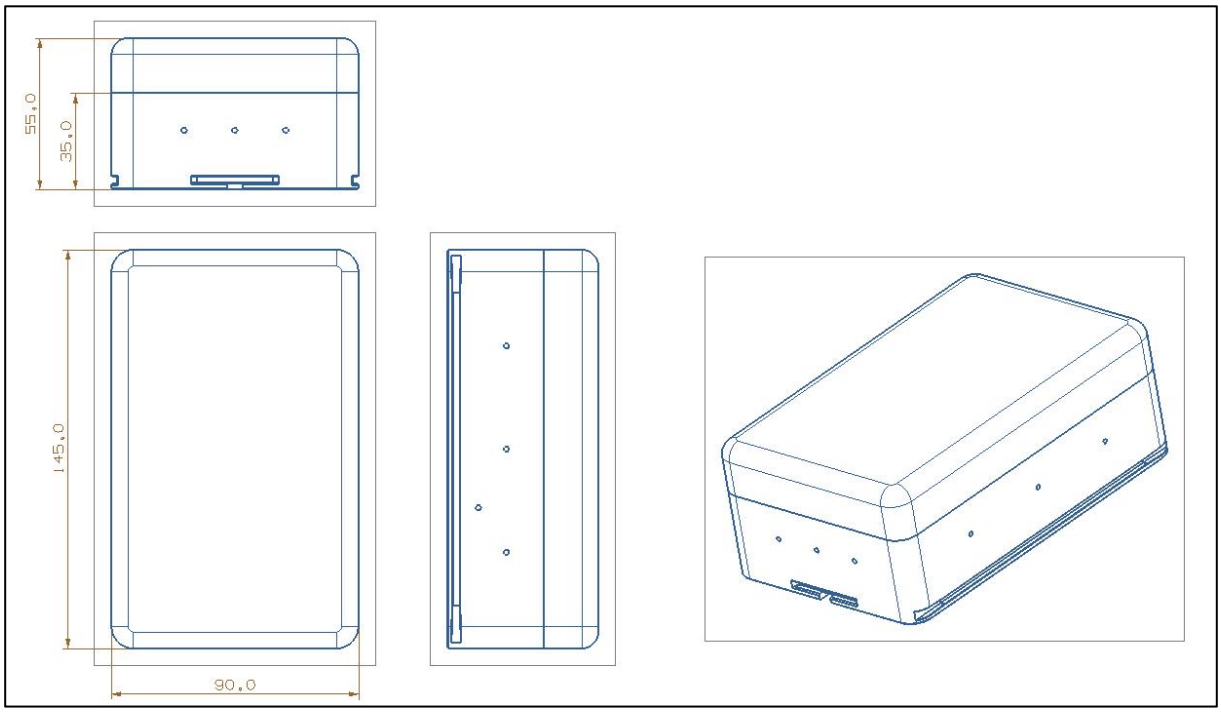
Configuration Tool

- iEdge4.0 WxS IoT Terminal products can be configured with PolySuite software-visual based Configuration Tool or CLI interface command or OTA via IoT platform, such as PolySuite PaaS platform iView.
- Download linkhttp://ota.polysense.online/wincc/ConfigurationTool.rar

Installation Guide

- Below diagram shows the general installation guide for WxS7800, it can be installed on any flat and solid surface:

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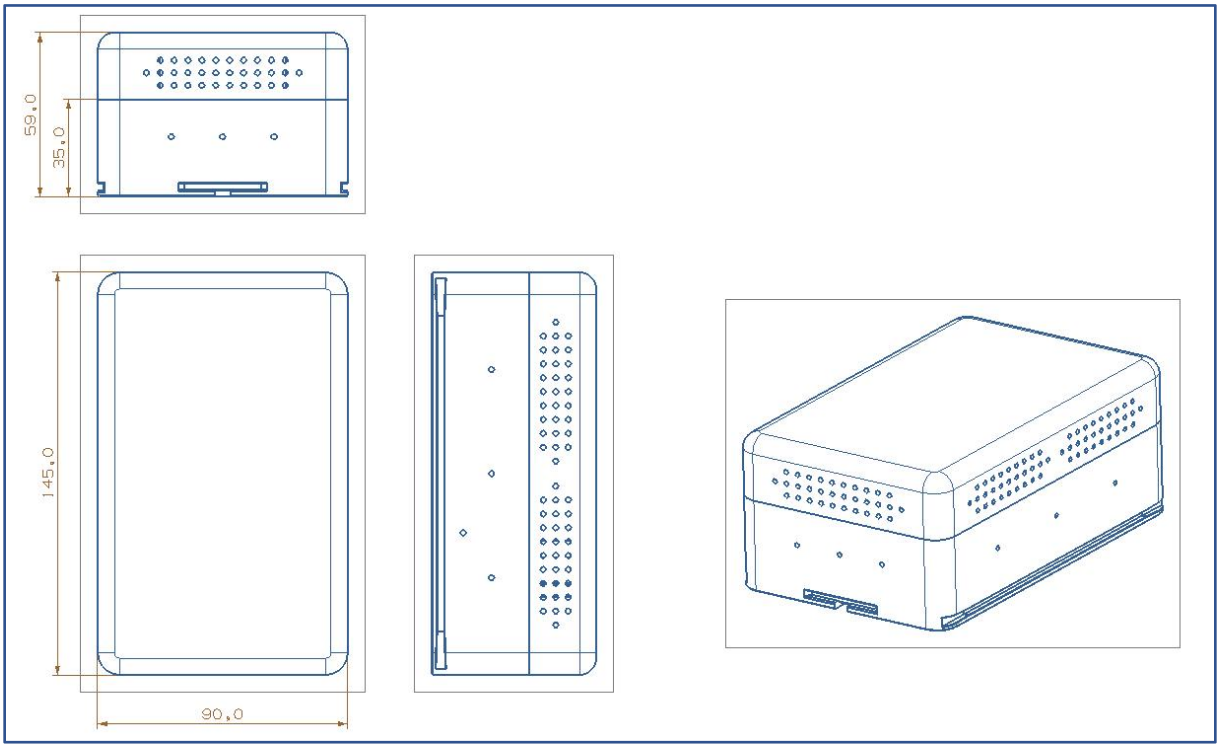
90.0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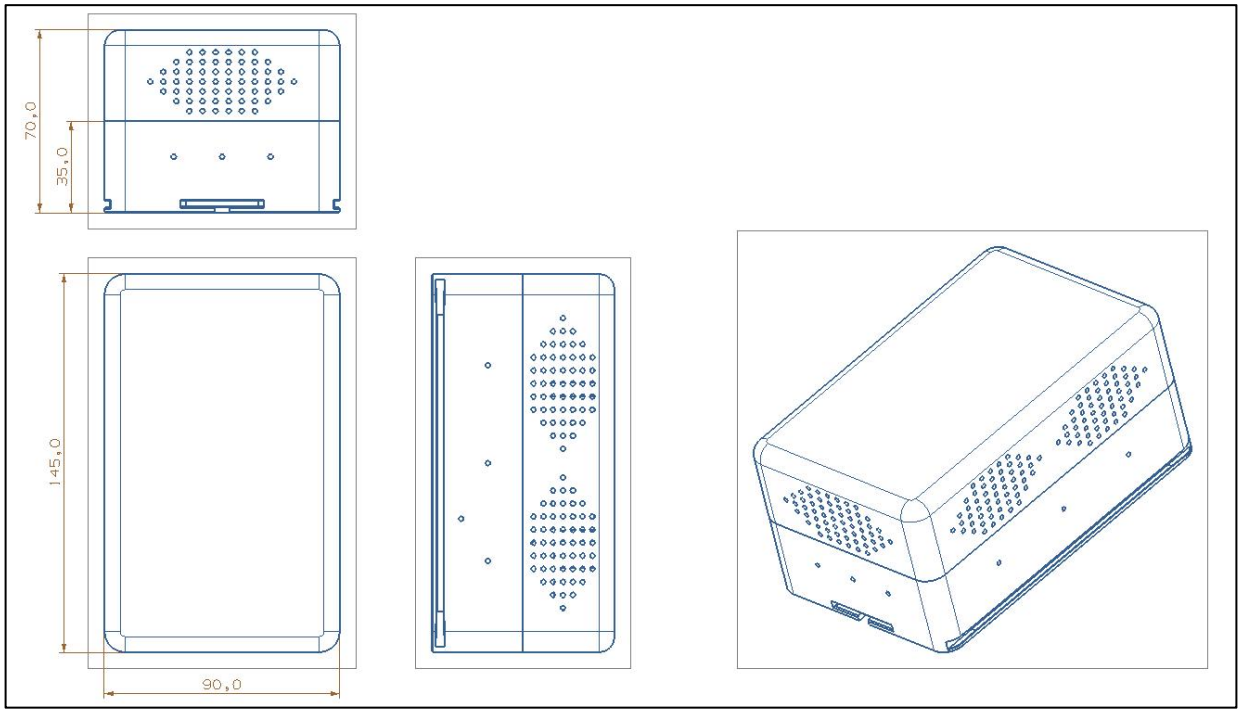
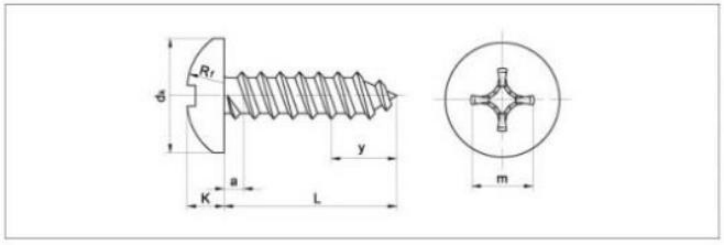
35.0
145.0
90.0



❖ Below is the recommendation of the self-tapping screw and its sizes:

螺纹规格		ST2.2	ST2.9	ST3.5	ST4.2	ST4.8	ST5.5	ST6.3
dk	min	3.7	5.3	6.64	7.64	9.14	10.57	11.57
K	min	1.4	2.15	2.35	2.8	3.4	3.7	4.3
m		1.9	3	3.9	4.4	4.9	6.4	6.9
L		4.5mm~100mm						



Product Images

❖ WxS Series 4.0 Enclosure(ϕ145x90x55mm, IP67)

❖ WxS Series 4.0 Poromeric Enclosure(ϕ145x90x59mm)

❖ WxS Series 4.0 High Poromeric Enclosure(ϕ145x90x70mm)

PSS-3570A1

Uni-phase Electric Energy Meter

Product introduction

PSS-3570A1 single-phase electric energy meter is a single-phase two-wire rail type electric energy meter, which uses a special metering chip to measure active electric energy with high reliability and accuracy. Multi range selection; In the linear power supply mode, the metering chip converts electric energy into pulses, and the microprocessor completes the functions of electric energy collection, power calculation, electric energy pulse output, L display processing, etc.

Detection principle

When the electric energy meter is connected to the circuit to be tested, alternating current flows through the current coil and voltage coil, and these two alternating currents generate alternating magnetic flux in their iron cores respectively; The alternating magnetic flux passes through the aluminum disk and induces eddy current in the aluminum disk; The eddy current is also subject to the force in the magnetic field, so that the aluminum disk can get the torque (active torque) and rotate. The greater the power consumed by the negative track load, the greater the current through the current coil, the greater the eddy current induced in the aluminum disk, and the greater the torque that makes the aluminum disk rotate. That is, the torque is proportional to the power consumed by the load. The greater the power, the greater the torque, and the faster the aluminum disk rotates. When the aluminum disc rotates, it is also affected by the braking torque generated by the permanent magnet. The braking torque is in the opposite direction to the active torque; The braking torque is proportional to the rotating speed of the aluminum disc. The faster the aluminum disc rotates, the greater the braking force capacity torque. When the active torque and braking torque reach a temporary balance, the aluminum disc will rotate at a uniform speed. The electrical energy consumed by the load is proportional to the number of revolutions of the aluminum disk. When the aluminum disk rotates, it drives the counter to indicate the consumed electric energy

Product features

- Detection items: voltage, current, active power, power factor, frequency, total active energy
- Track installation
- LCD screen display
- Multi range optional
- Flame retardant thickened shell, safe and reliable
- High precision and sensitivity
- Easy installation

Product parameters

Parameters	
Working voltage	220V
Operating current	2.5 (10) A/5 (20) A/10 (40) A/15 (60) A/20 (80) A/30 (100) A according to customer requirements

Starting current	≤ 0.004b (direct access)
Working frequency	50Hz±10%
Internal power consumption	≤2W/10VA
Data display	Voltage, current, active power, power factor, frequency, total active energy
Interface	
Output signal	RS485
Mechanical	
Size	100mm×65mm×35mm
Work environment	-10℃ ~+50℃； ≤75%RH
Storage environment	-30℃ ~+70℃； ≤95%RH
Weight	0.2kg
Power	
Power	12V DC

Application

It is widely used in power monitoring system of large sports venues, airport power monitoring system, conference center power monitoring system, power monitoring and power consumption monitoring of each system unit.

Ordering Guide

- PSS-3570A1 sensor is a sensor only, it needs to use with WxS terminals to combine to different product series; On the basis of the combination, multiple PSS sensors can be loaded through the Multiple Purpose Interface (MPI) of the intelligent IoT terminal.
- According to the specific scenario of use case, the enclosure and antenna of intelligent IoT terminal will be replaced to ensure the product quality and performance.
- PSS sensors can be integrated with the WxS terminal via the MPI interface to form different product series.
- Example of products are as follows:

  - WxS7800-3570A1 WiFi Series Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal
  - WxS8800-3570A1 LoRaWAN Series Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal
  - WxS9800-3570A1 NB-IoT (China) Series Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal
  - WxS9900-3570A1 NB-IoT (Global) Series Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal
  - WxSC800-3570A1 LTE Cat1 Series Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal
  - WxSC900-3570A1 LTE Cat1 w/GPS Series Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal
  - WxSD800-3570A1 LTE Cat4 Series Uni-phase Electric Energy Meter & RTU 2-in-1 Smart Terminal