WxSC800-311136

LTE Cat1 Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal

Product Highlights

- LTE Cat1 Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal
- 2-in-1 smart sensor(s) and RTU terminal product
- Optional DC 5V power supply
- Optional Battery power supply (ER34615H 19,000mAh/ER34615M 13,500mAh)
- It can monitor the liquid level (0-5m), support customization, and can measure up to 50m
- 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:

- WxSC800 LTE Cat1 Smart IoT and RTU 2-in-1 Terminal
- ENC-102001 WxS Series 4.0 Enclosure(Φ 145x90x55mm, IP67)
- PSS-311136 Immersed liquid level sensor(Range:0-5 Meter,Accuracy:0.5%FS,3-5VDC)

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-311136 for the sensor picture

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WxSC800

LTE Cat1 Smart IoT and RTU 2-in-1 Terminal

Related Products

Product .	Interf.	Descriptions
WxSC800	11MPI+RS485+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx00,PSB-BD01,&Enclosure)
WxSC801	RS485+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal (Inc.WxSC8xx,PSM-xx01,PSB-BD01,&Enclosure)
WxSC802	0-20mA*1+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx02,PSB-BD01,&Enclosure)
WxSC803	0-20mA*4+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx03,PSB-BD01,&Enclosure)
WxSC804	0-3.3V*2+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx04,PSB-BD01,&Enclosure)
WxSC805	0-3.3V*4+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx05,PSB-BD01,&Enclosure)
WxSC806	0-10V*2+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx06,PSB-BD01,&Enclosure)
WxSC807	0-10V*4+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx07,PSB-BD01,&Enclosure)
WxSC808	PT100*1+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx08,PSB-BD01,&Enclosure)
WxSC809	PT100*5+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx09,PSB-BD01,&Enclosure)
WxSC80A	Switch*1+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0A,PSB-BD01,&Enclosure)
WxSC80B	Switch*5+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0B,PSB-BD01,&Enclosure)
WxSC80C	Unibus*1+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0C,PSB-BD01,&Enclosure)
WxSC80D	Unibus*18+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0D,PSB-BD01,&Enclosure)
WxSC80E	IIC*1+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0E,PSB-BD01,&Enclosure)
WxSC80F	SPI*1+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0F,PSB-BD01,&Enclosure)
WxSC80G	Uart*2+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0G,PSB-BD01,&Enclosure)
WxSC80H	Uart*3+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0H,PSB-BD01,&Enclosure)
WxSC80J	Uart*1+RS485+OD*2+PWR*2	LTECat1 Smart IoT and RTU 2-in-1 Terminal(Inc.WxSC8xx,PSM-xx0J,PSB-BD01,&Enclosure)
WxSC850	Ai/Ao/Di/Pi/Ro/IIC/SPI/Ci + RS232/485/Ro/RJ45	LTE Cat1 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-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 4.0 Enclosure(ϕ145x90x55mm, IP67)
- ENC-102002 WxS Series 4.0 Poromeric Enclosure(ϕ145x90x59mm)

- ENC-102003 WxS Series 4.0 High Poromeric Enclosure(ϕ145x90x70mm)

❖ Terminal and sensor parameters configurable with Configuration Tool running on PC

- LTE Cat1 Bands Supported and SW Configurable
- LTE Cat1 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 ER34615H/M Battery with various scenarios
❖ Integrated internal antenna, or optional external SMA/IPEX antenna
❖ LTE Cat1 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	
Regional Parameters	LTE-TDD:B34/B38/B39/B40/B41 LTE-FDD:B1/B3/B5/B8
Data	LTE-TDD： Up and down matching 2 8Mbps (DL) max/2Mbps (UL) max Up and down matching 1 6Mbps (DL) max/4Mbps (UL) max LTE-FDD: Max 10Mbps (DL)/Max 5Mbps (UL)
Sensitivity	FDD B1: -99dBm (10M) FDD B3: -99dBm (10M) FDD B5: -99dBm (10M) FDD B8: -99dBm (10M) TDD B34: -100dBm (10M) TDD B38: -100dBm (10M) TDD B39: -100dBm (10M) TDD B40: -100dBm (10M) TDD B41: -100dBm (10M)
Bandwidth	1.4/3/5/10/15/20MHz

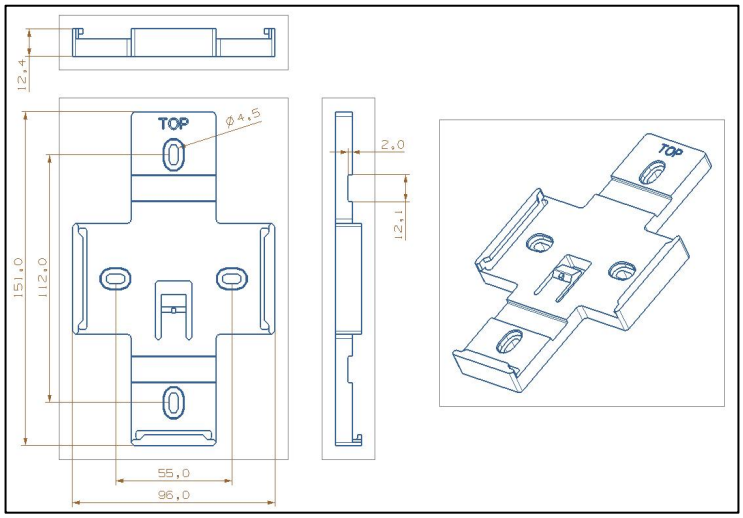
Output power	LTE-TDD: Class3 (23dBm+1/- 3dB) LTE-FDD: Class3(23dBm+-2dB)
Power consumption	1uA @ power off 0.6mA @ Sleep, typical
Interface	1 USB 2.0 high-speed interface (up to 480Mbps); Dual 1.8V/3.0V (U) SIM card interface 2 NETLIGHT interfaces (NET_STATUS and STATUS) 1 channel digital I2S interface, supporting external codec 3 UART interfaces (main serial port, universal serial port, debugging serial port) 1 SPI LCD interface 1 SPI Camera interface PWRKEY (valid at low level) 1 channel ADC interface
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 link http://ota.polysense.online/wincc/ConfigurationTool.rar

Installation Guide

- Below diagram shows the general installation guide for WxSC800, it can be installed on any flat and solid surface: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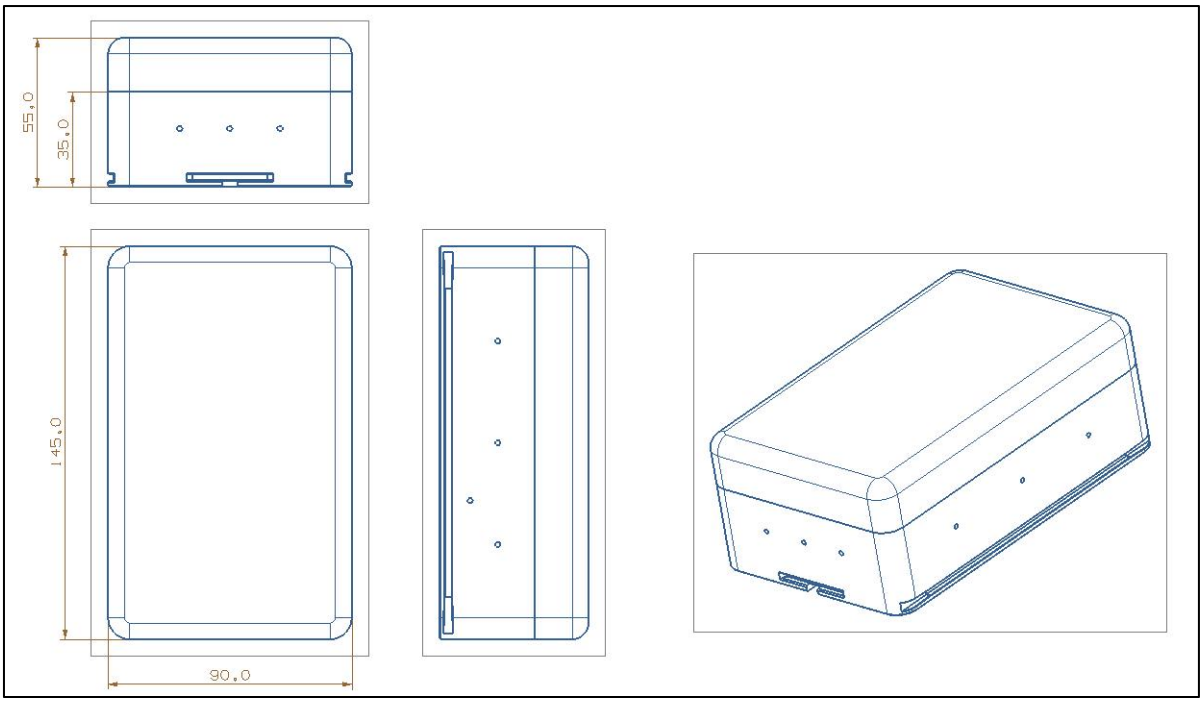
96,0
TOP

UP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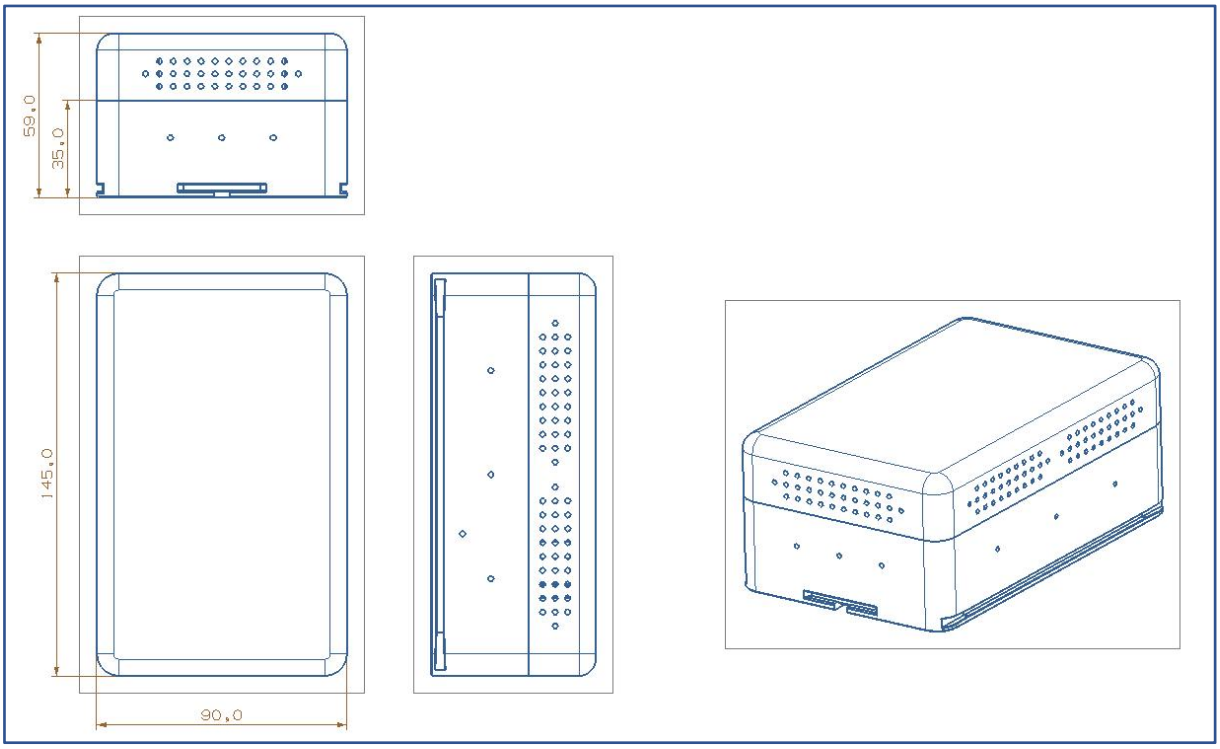
90,0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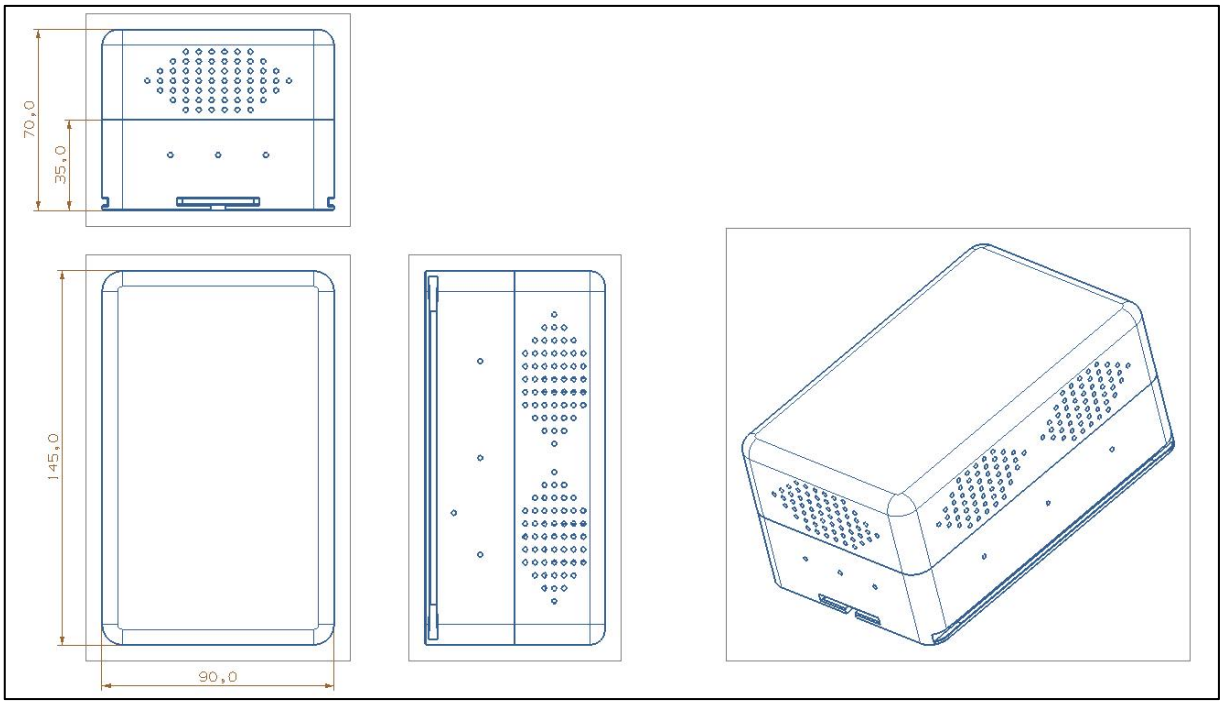
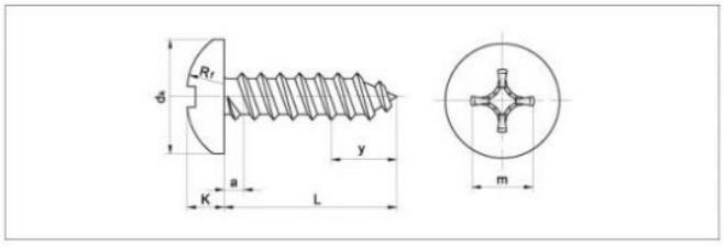
35.0
145.0
90.0


70.0
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-311136

Immersed liquid level sensor

Related Products

Product.	Interf.	Descriptions
PSS-311131	4-20mA	Immersed liquid level sensor(Range:0-3 Meter,Accuracy:0.5%FS,12VDC)
PSS-311132	4-20mA	Immersed liquid level sensor(Range:0-5 Meter,Accuracy:0.5%FS,12VDC)
PSS-311133	4-20mA	Immersed liquid level sensor(Range:0-7 Meter,Accuracy:0.5%FS,12VDC)
PSS-311134	4-20mA	Immersed liquid level sensor(Range:0-10 Meter,Accuracy:0.5%FS,12VDC)
PSS-311135	RS485	Immersed liquid level sensor(Range:0-3 Meter,Accuracy:0.5%FS,3-5VDC)
PSS-311136	RS485	Immersed liquid level sensor(Range:0-5 Meter,Accuracy:0.5%FS,3-5VDC)
PSS-311137	RS485	Immersed liquid level sensor(Range:0-7Meter,Accuracy:0.5%FS,3-5VDC)
PSS-311138	RS485	Immersed liquid level sensor(Range:0-10Meter,Accuracy:0.5%FS,3-5VDC)
PSS-311139	4-20mA	Immersed liquid level sensor(Range:0-3Meter,Accuracy:0.3%FS,12VDC)
PSS-31113A	4-20mA	Immersed liquid level sensor(Range:0-5 Meter,Accuracy:0.3%FS,12VDC)
PSS-31113B	4-20mA	Immersed liquid level sensor(Range:0-7 Meter,Accuracy:0.3%FS,12VDC)
PSS-31113C	4-20mA	Immersed liquid level sensor(Range:0-10 Meter,Accuracy:0.3%FS,12VDC)
PSS-31113D	RS485	Immersed liquid level sensor(Range:0-3 Meter,Accuracy:0.3%FS,3-5VDC)
PSS-31113E	RS485	Immersed liquid level sensor(Range:0-5 Meter,Accuracy:0.3%FS,3-5VDC)
PSS-31113F	RS485	Immersed liquid level sensor(Range:0-7 Meter,Accuracy:0.3%FS,3-5VDC)
PSS-31113G	RS485	Immersed liquid level sensor(Range:0-10 Meter,Accuracy:0.3%FS,3-5VDC)
PSS-311141	4-20mA	High Temperature Immersed liquid level sensor(120℃,Range:0-10 Meter,Accuracy:0.5%FS,12VDC)
PSS-311142	4-20mA	High Temperature Immersed liquid level sensor(120℃,Range:0-10 Meter,Accuracy:0.3%FS,12VDC)
PSS-311143	RS485	High Temperature Immersed liquid level sensor(120℃,Range:0-10 Meter,Accuracy:0.5%FS,12VDC)
PSS-311144	RS485	High Temperature Immersed liquid level sensor(120℃,Range:0-10 Meter,Accuracy:0.3%FS,12VDC)
PSS-311151	4-20mA	Teflon ceramic type anti-corrosion Immersed liquid level sensor(Range:0-10 Meter,Accuracy:0.5%FS,12VDC)
PSS-311152	4-20mA	Teflon ceramic type anti-corrosion Immersed liquid level sensor(Range:0-10 Meter,Accuracy:0.3%FS,12VDC)
PSS-311153	RS485	Teflon ceramic type anti-corrosion Immersed liquid level sensor(Range:0-10 Meter,Accuracy:0.5%FS,12VDC)
PSS-311154	RS485	Teflon ceramic type anti-corrosion Immersed liquid level sensor(Range:0-10 Meter,Accuracy:0.3%FS,12VDC)

Product introduction

The PSS-311136 universal input type liquid level transmitter is designed for water level measurement applications. It has excellent quality and high cost performance. It uses three sealing processes as a whole. It has anti-interference, small temperature drift, high stability, and high measurement accuracy. It is an ideal liquid level measuring instrument in the industrial automation field.

Detection principle

This liquid level transmitter adopts OEM pressure sensor with stainless steel isolation diaphragm as the signal measuring element, and has been automatically tested by the computer. The zero point and sensitivity temperature compensation in a wide temperature range have been carried out with the laser resistance adjustment process. The amplifier circuit is located in the stainless steel housing, which converts the sensor signal into a standard output signal, giving full play to the technical advantages of the sensor.

Product features

- Intelligent sensor detection item: water level
- Diaphragm isolation technology with diffused silicon pressure sensor
- Cable connection, direct use, simple installation
- Amplification circuit adopts integrated chip and wide voltage power supply

- ❖ Anti clogging and anti scaling
- ❖ Lightning protection, frequency cutoff interference design, strong anti-interference capability
- ❖ Wiring reverse and over voltage protection, current limiting protection

Product parameters

Parameters	
Monitoring content	Water H2O level (or compatible with contact material)
Detection principle	Pressure sensing
measuring range	0-5meters (support customization, the deepest can be measured to 50 meters)
accuracy	0.5% FS
resolving power	0.05%
Stable performance	± 0.1% FS/year
Response frequency	≤5Hz
Overload capacity	200% of full scale
power waste	0-2A (acquisition instant)
texture of material	Main body 304 stainless steel
Warranty	
Output signal	RS485
Warranty	
Warranty period	1 year
Mechanical	
Size	122 * 28.5mm (probe size)
Operating temperature	-40℃-60℃
Degree of protection	IP68
Weight	probe ≈ 290g, cable ≈ 60g per meter
Power	
Power	Replaceable 3.6V Li-SOCI2 battery of ER34615 series; DC 3V~5V optional

Application

Water level measurement of rivers and lakes, water level measurement of containers and storage systems, water treatment plants, water recycling plants and other scenarios.

Ordering Guide

- ❖ PSS-311136 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:

  - o WxS7800-311136 WiFi Series Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal
  - o WxS8800-311136 LoRaWAN Series Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal
  - o WxS9800-311136 NB-IoT (China) Series Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal
  - o WxS9900-311136 NB-IoT (Global) Series Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal

- WxSC800-311136 LTE Cat1 Series Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal
- WxSC900-311136 LTE Cat1 w/GPS Series Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal
- WxSD800-311136 LTE Cat4 Series Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal
- CxS1800-311136 Ethernet (RJ45) Series Immersed liquid level Smart Sensor & RTU 2-in-1 Terminal