

WxSC800-311126

LTE Cat1 Pressure Smart Sensor & RTU 2-in-1 Terminal

Product Highlights

- ❖ LTE Cat1 Pressure Smart Sensor & RTU 2-in-1 Terminal
- ❖ 2-in-1 smart sensor(s) and RTU terminal product
- ❖ Optional DC 5V/DC 12V power supply
- ❖ Optional Battery power supply (ER34615H 19,000mAh/ER34615M 13,500mAh)
- ❖ It can monitor the pressure of water/oil/gas, thread G3/4, industrial pressure transmitter
- ❖ Expandable with additional Polysense PSS sensors
- ❖ 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-311126 Pressure sensor (Oil/Water/gas) G3/4 External Thread Diameter 26.3mm

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-311126 for the sensor picture



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-SOCI2 ER34615H/M)
- PSB-BT02 WxS Terminal Battery Power Board (3/5/9/12VDC Output) (3.6V Li-SOCI2 ER34615H/M)
- PSB-DC01 WxS Terminal DC Power Board (Inc.PSP-DC012V)
- PSB-BD01 WxS Terminal Battery (3.6V Li-SOCI2 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-SOCI2 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

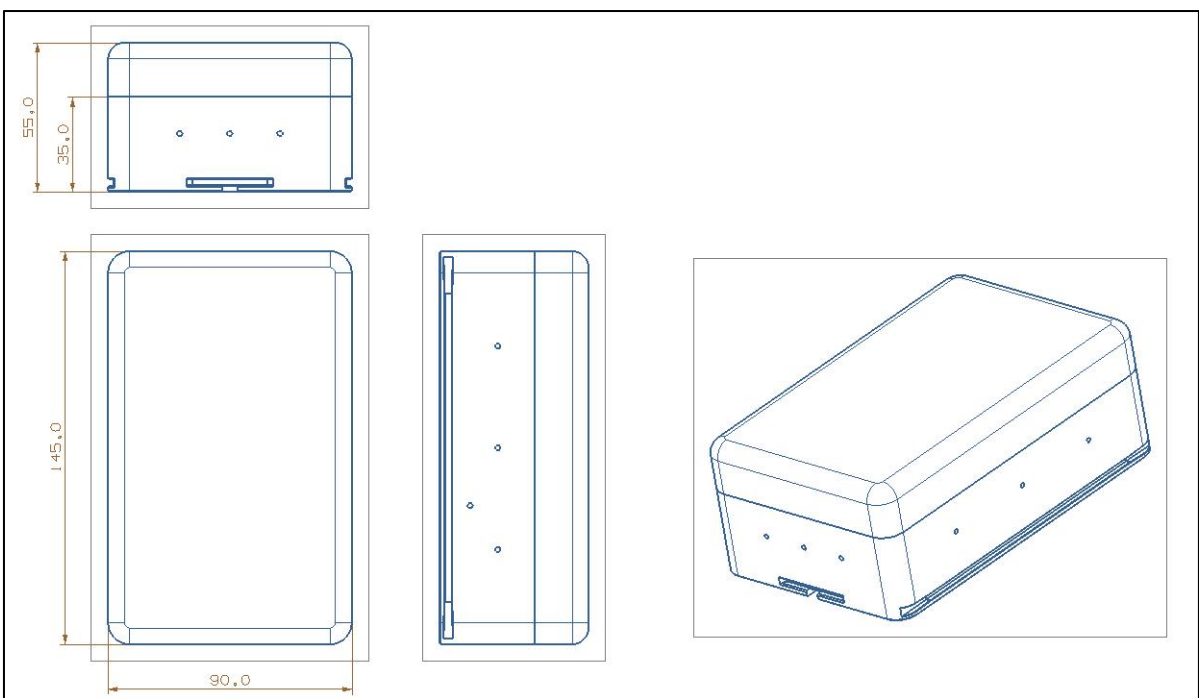
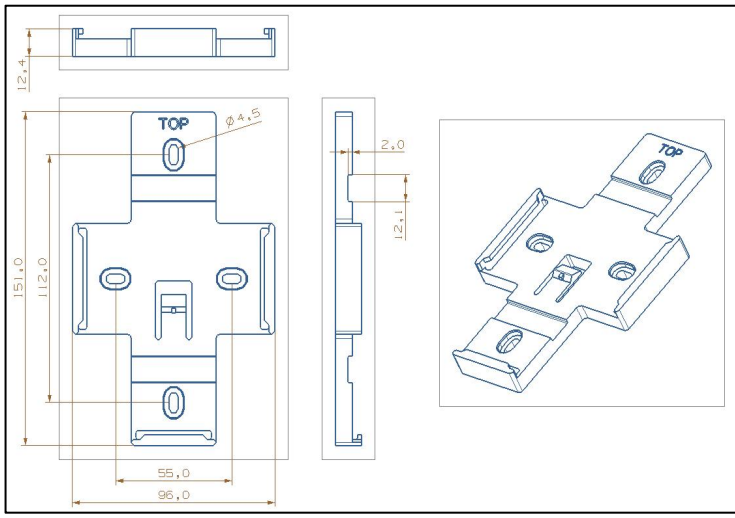
Output power	LTE-TDD: Class3 (23dBm+1/- 3dB) LTE-FDD: Class3(23dBm+-2dB)
Power consumption	1uA @ power off 0.6mA @ Sleep, typical
Interface	1 USB 2.0 high-speed interface (up to 480Mbps); Dual 1.8V/3.0V (U) SIM card interface 2 NETLIGHT interfaces (NET_STATUS and STATUS) 1 channel digital I2S interface, 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

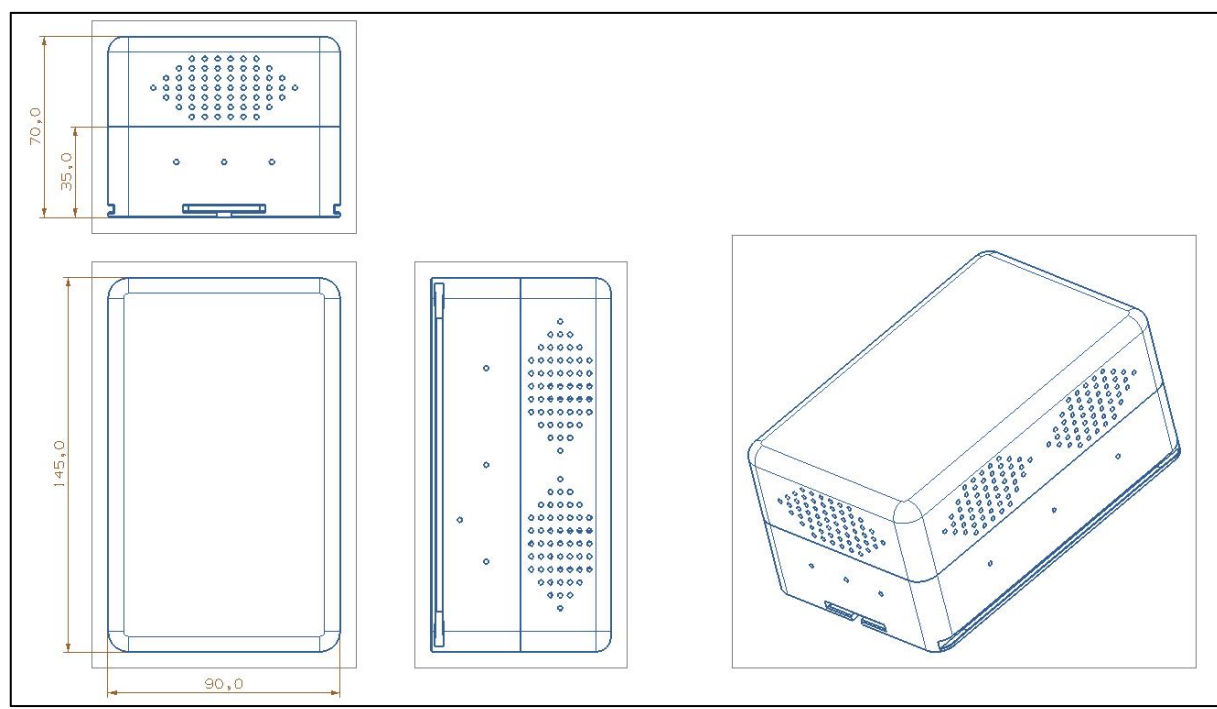
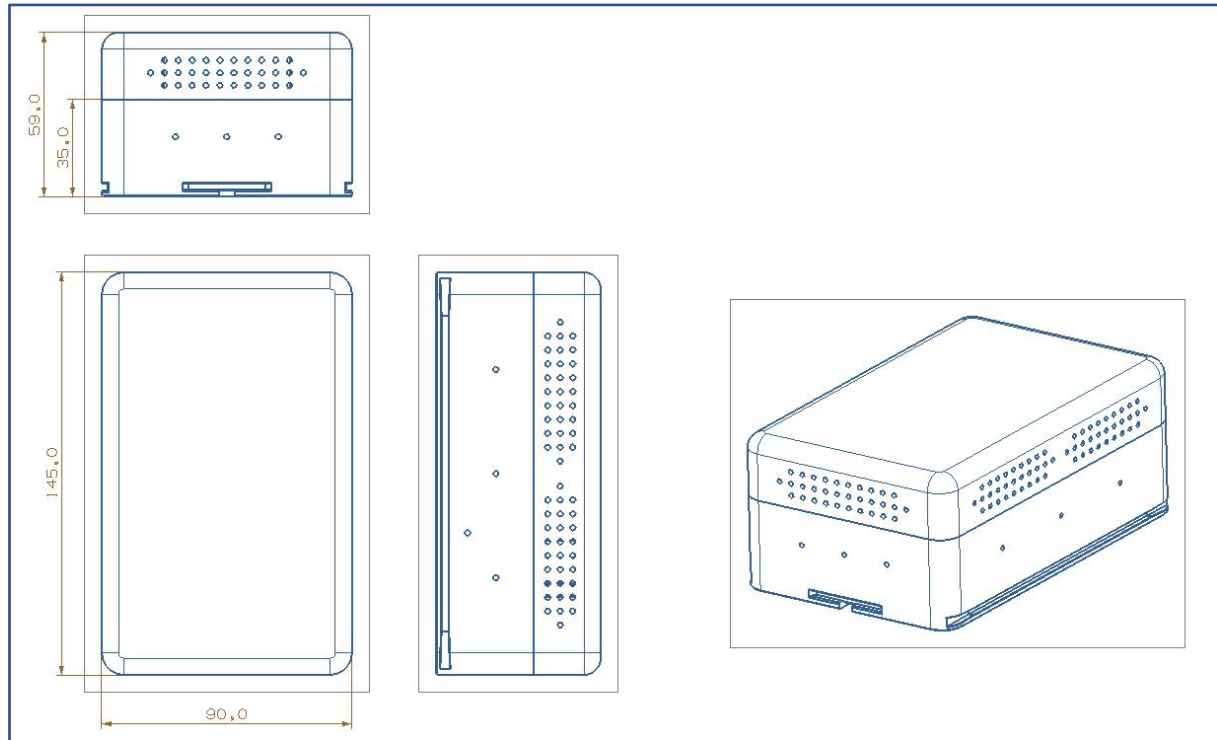
Configuration Tool

- ❖ 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

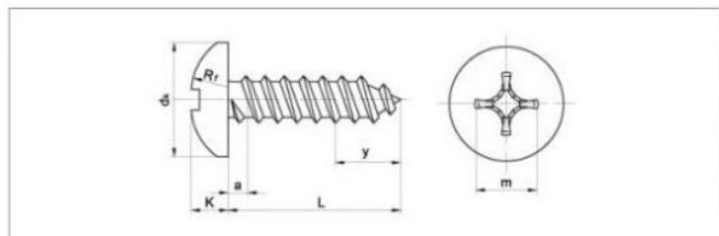
- ❖ Below diagram shows the general installation guide for WxSC800, it can be installed on any flat and solid surface:





❖ 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-311126

Pressure sensor

Related Products

Product.	Interf.	Descriptions
PSS-311121	0-3.3V	Pressure sensor (Oil/Water/gas) M20*1.5 External Thread Diameter 20mm
PSS-311122	0-3.3V	Pressure sensor (Oil/Water/gas) G1/2 External Thread Diameter 20.95mm
PSS-311123	0-3.3V	Pressure sensor (Oil/Water/gas) G1/4 External Thread Diameter 13mm
PSS-311124	0-3.3V	Pressure sensor (Oil/Water/gas) R1/4
PSS-311125	0-3.3V	Pressure sensor (Oil/Water/gas) 1/4 NPT
PSS-311126	0-3.3V	Pressure sensor (Oil/Water/gas) G3/4 External Thread Diameter 26.3mm
PSS-311127	0-3.3V	Pressure sensor (Oil/Water/gas) M10*1 External Thread Diameter 10mm
PSS-311128	0-3.3V	Pressure sensor (Oil/Water/gas) G1 External Thread Diameter 33.2mm

Product introduction

PSS-311126 Intelligent sensor, industrial pressure transmitter, adopting high-precision pressure core and precise compensation technology, has the characteristics of strong earthquake resistance, impact resistance, long-term stability, convenient installation and wide range. At the same time, it has different threaded interfaces and signal output. Support RS232 / RS485 communication protocol through built-in Polysense The support of intelligent terminal operating system provides the scene requirements of edge computing, comprehensive sensing and intelligence for the IoT.

Detection principle

Using the piezoresistive effect of monocrystalline silicon, a single silicon is used as the matrix, the elastic element is formed by micromachining technology, and four equivalent strain resistors are formed at appropriate positions through integrated circuit process to form a Wheatstone bridge and make it output. The voltage signal is amplified and output with a voltage signal proportional to the applied pressure.

Product features

- ❖ Industrial pressure transmitter
- ❖ Accuracy better than $\pm 0.5\%$
- ❖ Stainless steel package
- ❖ Small size, OEM customizable
- ❖ Good stability and repeatability
- ❖ Support RS232 / RS485 communication protocol
- ❖ Support 4-20mA current signal, 0 ~ 10V, 0 ~ 5V, 0.5 ~ 4.5V and 1 ~ 5V voltage signal



Product parameters

Parameters	
Range	- 0.1-600MPa optional
Accuracy	0.5%FS、0.25%FS
Current signal	4-20mA
Voltage signal	0-10V、0-5V、0.5-4.5V、1-5V
MV signal	1mV/V、1.5mV/V、2mV/V
Process connection	G3/4
Thread size	Thread outer diameter 26.3mm

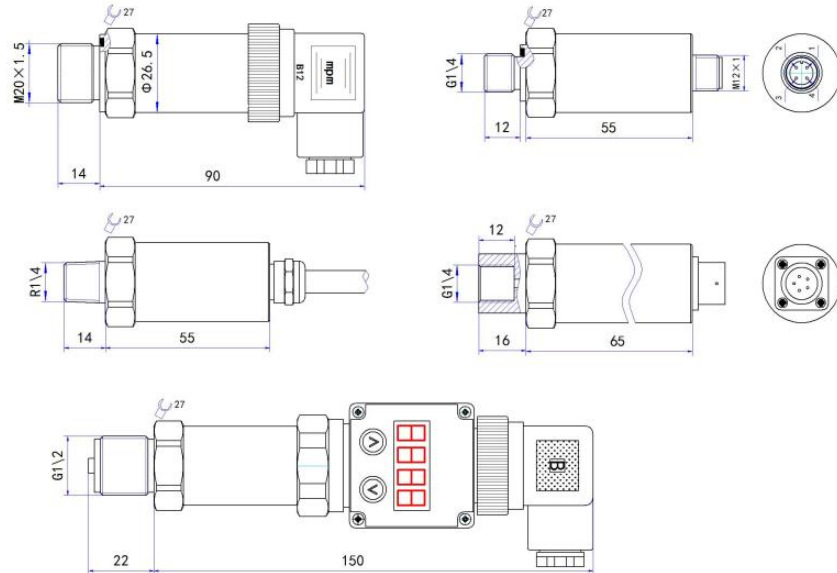
Electrical connection	Din hesman, aviation plug, Gran waterproof, M12 * 1 four core aviation plug-in
Load capacity	Current type $\leq 500 \Omega$ R=supply voltage - 8V/0.02
Compensation temperature	0-85 ° C
Operating temperature	- 20-120 ° C
Safe overload capacity	150%
Ultimate overload capacity	200%
Temperature drift	0.02% FS/° C
Long term stability	0.2% FS/year

Warranty

Warranty period	1year
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Mechanics

Size According to different thread models and sizes, refer to the following:



Power

Power	5-24V DC
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Application

Diffused silicon piezoresistive "pressure transmitter" is a high-performance pressure transmitter. The advantages are: all stainless steel structure, convenient installation, anti-vibration, anti-impact, high precision and good stability.

It is widely used in pressure and liquid level measurement and process control in petroleum, chemical industry, metallurgy, water conservancy, electric power, food, medicine and other industries.

Ordering Guide

- ❖ PSS-311126 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 as follows:
 - WxS7800-311126 WiFi Series Pressure Smart Sensor & RTU 2-in-1 Terminal
 - WxS8800-311126 LoRaWAN Series Pressure Smart Sensor & RTU 2-in-1 Terminal
 - WxS9800-311126 NB-IoT (China) Series Pressure Smart Sensor & RTU 2-in-1 Terminal
 - WxS9900-311126 NB-IoT (Global) Series Pressure Smart Sensor & RTU 2-in-1 Terminal
 - WxSC800-311126 LTE Cat1 Series Pressure Smart Sensor & RTU 2-in-1 Terminal
 - WxSC900-311126 LTE Cat1 Series Pressure Smart Sensor & RTU 2-in-1 Terminal
 - WxSD800-311126 LTE Cat4 Series Pressure Smart Sensor & RTU 2-in-1 Terminal
 - CxS1800-311126 Ethernet (RJ45) Pressure Smart Sensor & RTU 2-in-1 Terminal