

WxS8800-362021

LoRaWAN Sound/Noise Smart Sensor & RTU 2-in-1 Terminal

Product Highlights

- ❖ LoRaWAN Sound/Noise 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)
- ❖ High sensitivity sensor (30-130dB) with protective cover for outdoor usage
- ❖ 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 and LoRaWAN network iServer
- ❖ LoRaWAN Compliance

Products includes following parts:

- ❖ WxS8800 LoRa Smart IoT and RTU 2-in-1 Terminal
- ❖ ENC-102001 WxS Series 4.0 Enclosure(φ145x90x55mm, IP67)
- ❖ PSS-362021 Sound/Noise Sensor (Range: 30~130dB, Outdoor)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(φ145x90x55mm, IP67) , as shown in the figure below
- ❖ The sensor is externally connected. See the following document PSS-362021 for the sensor picture



WxS8800

LoRa Smart IoT and RTU 2-in-1 Terminal

Related Products

Product .	Interf.	Descriptions
WxS8800	11MPI+RS485+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx00, PSB-BD01, & Enclosure)
WxS8801	RS485+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx01, PSB-BD01, & Enclosure)
WxS8802	0-20mA*1+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx02, PSB-BD01, & Enclosure)
WxS8803	0-20mA*4+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx03, PSB-BD01, & Enclosure)
WxS8804	0-3.3V*2+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx04, PSB-BD01, & Enclosure)
WxS8805	0-3.3V*4+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx05, PSB-BD01, & Enclosure)
WxS8806	0-10V*2+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx06, PSB-BD01, & Enclosure)
WxS8807	0-10V*4+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx07, PSB-BD01, & Enclosure)
WxS8808	PT100*1+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx08, PSB-BD01, & Enclosure)
WxS8809	PT100*5+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx09, PSB-BD01, & Enclosure)
WxS880A	Switch*1+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0A, PSB-BD01, & Enclosure)
WxS880B	Switch*5+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0B, PSB-BD01, & Enclosure)
WxS880C	Unibus*1+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0C, PSB-BD01, & Enclosure)
WxS880D	Unibus*18+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0D, PSB-BD01, & Enclosure)
WxS880E	IIC*1+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0E, PSB-BD01, & Enclosure)
WxS880F	SPI*1+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0F, PSB-BD01, & Enclosure)
WxS880G	Uart*2+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0G, PSB-BD01, & Enclosure)
WxS880H	Uart*3+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0H, PSB-BD01, & Enclosure)
WxS880J	Uart*1+RS485+OD*2+PWR*2	LoRa Smart IoT and RTU 2-in-1 Terminal (Inc. WxS88xx, PSM-xx0J, PSB-BD01, & Enclosure)
WxS8850	Ai/Ao/Di/Pi/Ro/IIC/SPI/Ci + RS232/485/Ro/RJ45	LoRa 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 interfaces

- 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
 - LoRaWAN ISM Global Bands Supported and SW Configurable
 - LoRaWAN 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
- ❖ The transmission reaches 5km in NLoS (non-line of sight) and 18km in LoS (line of sight) environment
- ❖ LoRaWAN 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	
ISM Regional Parameters	AS923 (AS923-1, AS923-2, AS923-3, AS923-4) AU915 CN470 CN779 EU433 EU868 IN865 KR920 RU864 US915
Maximum Link Budget	168dB
Distance	Up to 5km in NLOS; up to 18km in LOS
Antenna	Integrated internal antenna or external 1/2 wavelength whip antenna (SMA)

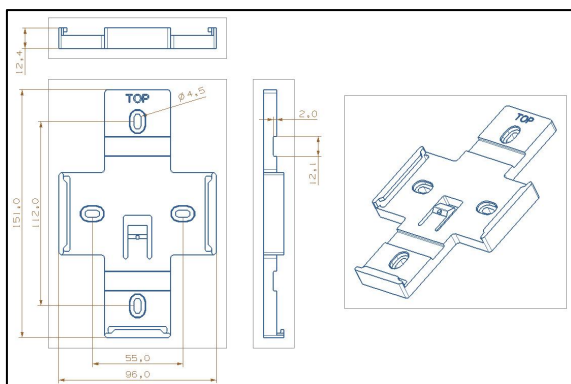
Mechanical	
Dimension	3 Enclosure options with different size WxS Series 4.0 Enclosure(ϕ 145x90x55mm, IP67) WxS Series 4.0 Poromeric Enclosure(ϕ 145x90x59mm) WxS Series 4.0 High Poromeric Enclosure(ϕ 145x90x70mm)
IP rating	IP65 & IP67
Operating Temperature	-40C to +85C
Total Weight	150 g
Electrical	
Supply Voltage	3.6VDC
Power Type	Replaceable 1 ER34615H/M 3.6V Li-SOCI2 Battery (H/M); DC 4.5V – 12V optional
Compliance/Certification	
	LoRaWAN 1.0.2
	FCC(America): 2A07W-WXS8000, IC(Canada): 23701-WXS8000 CE(European Union): B1810246 ROHS(European Union): R2BJ180927F0664E

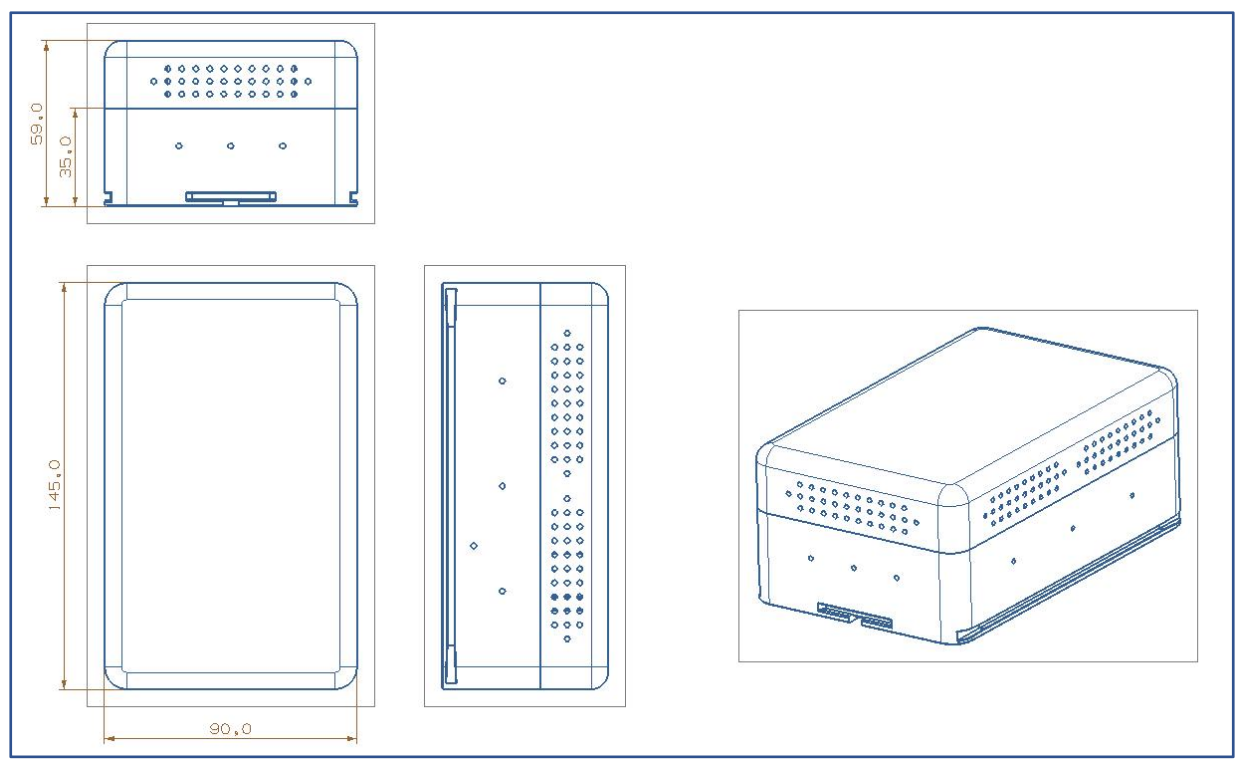
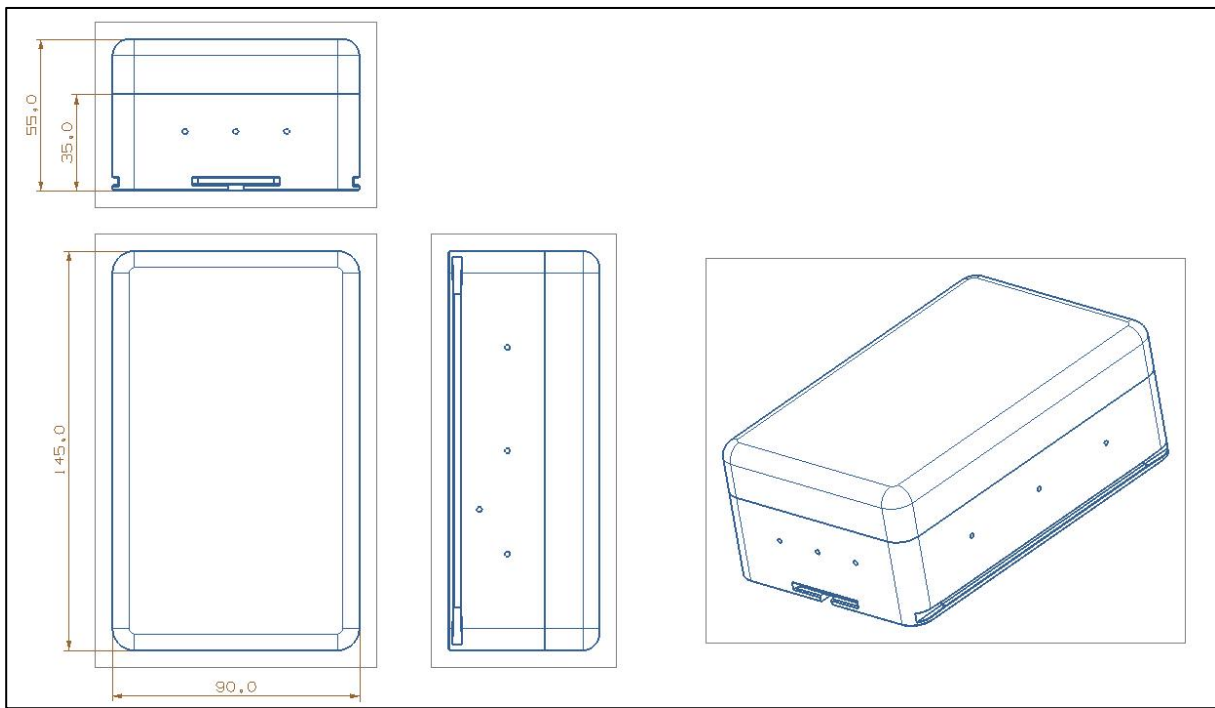
Configuration Tool

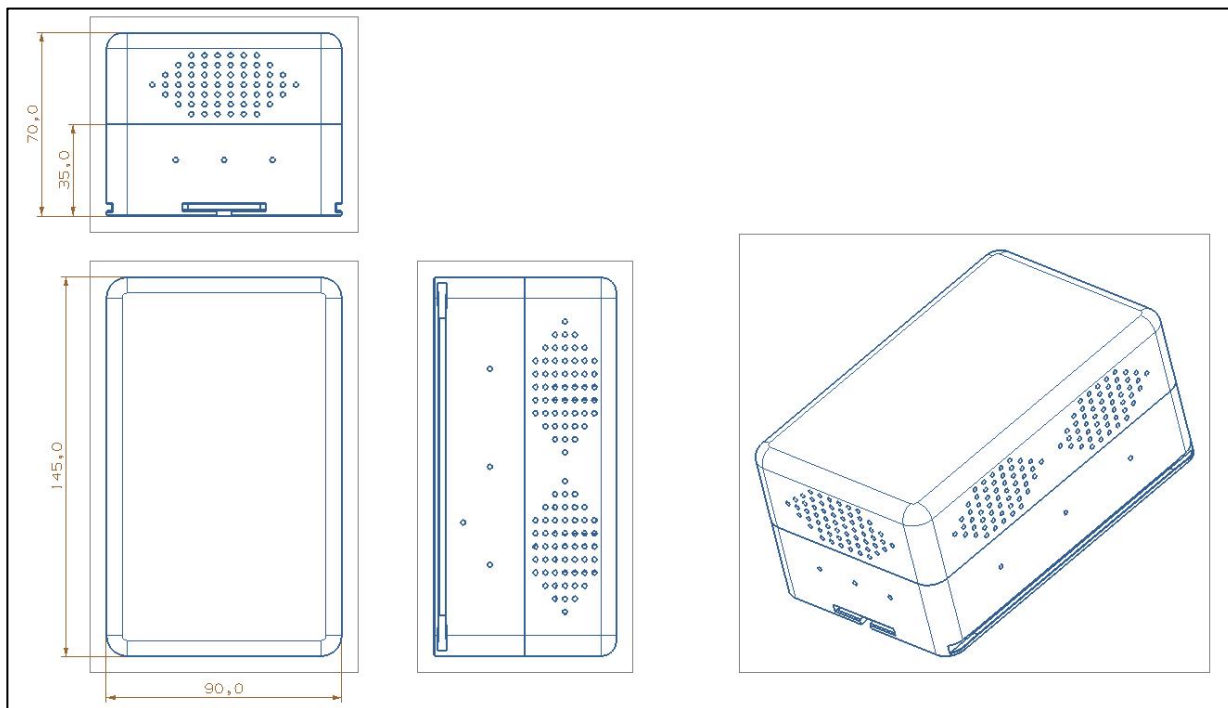
- ❖ iEdge4.0 WxS IoT Terminal products can be configured with PolySuite software-visual based Configuration Tool or CLI interface command or OTA via IoT platform, such as PolySuite PaaS platform iView.
- ❖ Download link <http://ota.polysense.online/wincc/ConfigurationTool.rar>

Installation Guide

- ❖ Below diagram shows the general installation guide for WxS8800, it can be installed on any flat and solid surface:

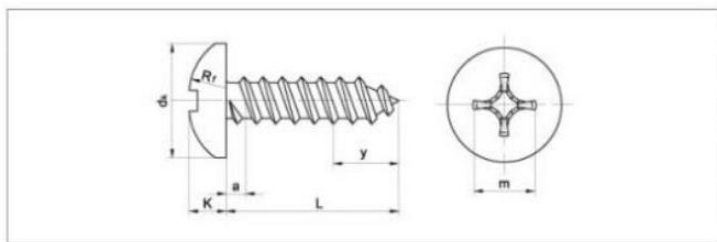






❖ Below is the recommendation of the self-tapping screw and its sizes:

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-362021

Outdoor Sound/Noise Sensor

Related Products

Product.	Interf.	Descriptions
PSS-362021	UART	Sound/Noise Sensor (Range:30-130dB, Frequency: 20-12.5KHZ) 5VDC
PSS-362022	UART	Sound/Noise Sensor (Range:30-130dB, Frequency: 20-12.5KHZ) 12VDC
PSS-362023	RS485	Sound/Noise Sensor (Range:30-130dB, Frequency: 20-12.5KHZ) 12VDC
PSS-362024	0-10V	Sound/Noise Sensor (Range:30-130dB, Frequency: 20-12.5KHZ) 24VDC
PSS-362025	4-20mA	Sound/Noise Sensor (Range:30-130dB, Frequency: 20-12.5KHZ) 12VDC

Product introduction

PSS-362021 The sound sensor is a high-precision sound measuring instrument with a measuring range of up to 30dB~130dB, which can meet the needs of daily measurement and is widely used in home, office, workshop, automobile measurement, industrial measurement and other fields.

Detection principle

The sensor is equipped with a condenser electret microphone which is sensitive to sound. The sound wave makes the electret film in the microphone vibrate, leading to the change of capacitance, which generates a small voltage corresponding to the change, thus realizing the conversion of optical signal to electrical signal.

Product features

- ❖ Intelligent sensor detection item: sound
- ❖ 30 ~ 130dBA wide range, 20Hz ~ 12.5KHz wide frequency measurement
- ❖ High sensitivity condenser microphone with stable signal and high accuracy
- ❖ Wide measuring range and good linearity
- ❖ Easy to use, easy to install, long transmission distance



Product parameters

Parameters	
Monitoring parameter	Sound
Detection principle	Capacitive
Detection range	30dB~130dB
Noise accuracy	± 0.5dB (at reference pitch, 94dB@1kHz)
Frequency response range	20Hz~12.5kHz
Response time	≤3s
Stability	Less than 2% in service life
Interface	
Output signal	UART (TTL)
Warranty	
Warranty period	1 year
Material	

Size	Length 254mm * 45mm (45mm is the diameter of fixed flange plate)
Working temperature	-20°C~+60°C
Working humidity	0~80%RH
Power	
Power	5VDC

Application

Used in home, office, workshop, automobile measurement, industrial measurement and other fields.

Ordering Guide

- ❖ PSS-362021 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:
 - WxS7800-362021 WiFi Series Sound/Noise Smart Sensor Smart Sensor & RTU 2-in-1 Terminal
 - WxS8800-362021 LoRaWAN Series Sound/Noise Smart Sensor Smart Sensor & RTU 2-in-1 Terminal
 - WxS9800-362021 NB-IoT (China) Sound/Noise Smart Sensor Smart Sensor & RTU 2-in-1 Terminal
 - WxS9900-362021 NB-IoT (Global) Series Sound/Noise Smart Sensor Smart Sensor & RTU 2-in-1 Terminal
 - WxSC800-362021 LTE Cat1 Series Sound/Noise Smart Sensor Smart Sensor & RTU 2-in-1 Terminal
 - WxSC900-362021 LTE Cat1 w/GPS Series Sound/Noise Smart Sensor Smart Sensor & RTU 2-in-1 Terminal
 - WxSD800-362021 LTE Cat4 Series Sound/Noise Smart Sensor Smart Sensor & RTU 2-in-1 Terminal
 - CxS1800-362021 Ethernet (RJ45) Series Sound/Noise Smart Sensor Smart Sensor & RTU 2-in-1 Terminal