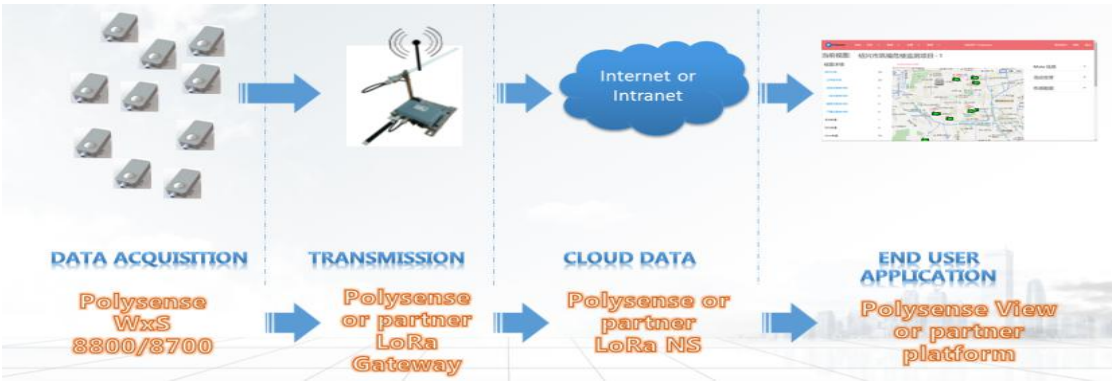
WxS 8800-012

CO Sensor

Product Highlights

- ✓ CO sensor
- ✓ High sensitivity, high resolution, detection range 0~1000ppm
- ✓ Low power consumption, working voltage 3V, current <5mA
- ✓ Using the environment: - 20 ℃ to 50 ℃; 15% ~ 90% RH
- ✓ Output UART or analog voltage
- ✓ Cross-threshold report, plus periodic report every 2 hours (the threshold and the periodic report cycle are both user-configurable)
- ✓ OTA (Over The Air) firmware upgrade, including to upgrade loader and application images
- ✓ Analog and digital interface for external sensor connectivity and pulse counting (MPI)
- ✓ Low power consumption, 5 – 10 years of battery operational life with 2 x AA Li-SOCI2 Battery
- ✓ Optional DC 5V power source
- ✓ Integrated internal antenna, or optional external SMA/IPEX antenna
- ✓ Up to 5km reach in NLoS (Non-Line-of-Sight) and up to 18km LoS (Line-of-Sight) environments
- ✓ IP67 enclosure rating

Application Architecture

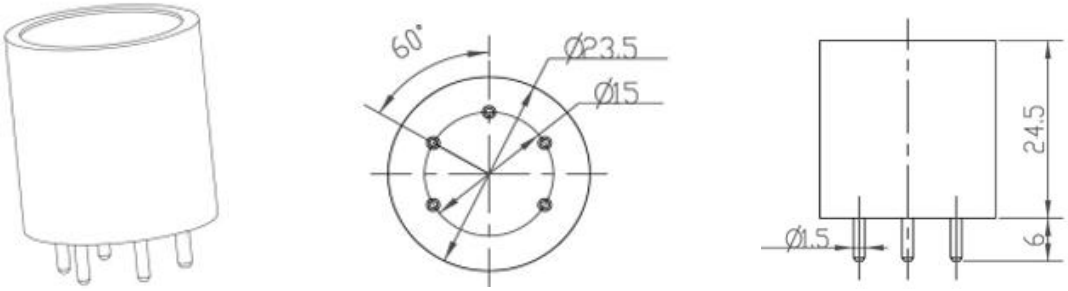


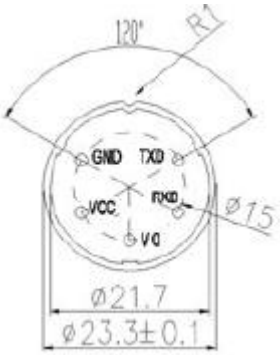
Specifications

Parameter	Value
Sensor	
CO	Range: 0-1000 PPM Resolution: 0.5 PPM Response time (T90) : <50S 50S Working voltage 5V, Current < 5 ma Using the environment: - 20 ℃ to 50 ℃;15% ~ 90% RH Output: UART or analog voltage
Data Report	Cross-threshold report, plus periodic report every 2 hours (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 Band	EU 863 – 870MHz； US 902 – 928MHz China 779 – 787MHz； EU 433MHz AS 923MHz； CN 470 – 510MHz
Maximum Link Budget	168dB
Distance	Up to 5km NLOS; up to 18km LOS
Antenna	Integrated internal antenna or external 1/2 wavelength whip antenna (SMA)
Mechanical	
Dimension	60mm x 100mm x 35mm (WxS8800)
IP rating	IP67 (WxS8800)
Operating Temperature	-40C to +85C (WxS8800)；
Cable length	0.5 meters
Total Weight	120 g
Electrical	
Supply Voltage	3.0 – 3.66 VDC
Power Type	Replaceable 1 or 2 AA 3.6V Li-SOCI2 Battery; DC 4.5V – 12V optional
Compliance/Certification	
LoRa Alliance	LoRaWAN 1.0.2
FC IC	FCC(America): 2AO7W-WXS8000, IC(Canada): 23701-WXS8000 CE(European Union)： B1810246 ROHS(European Union): R2BJ180927F0664E

Installation Guide

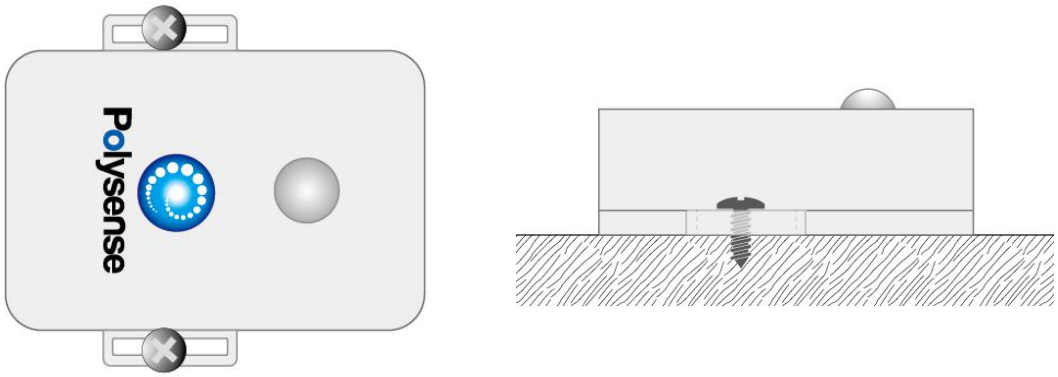
The following figure shows the specification and pin definition of the CO sensor



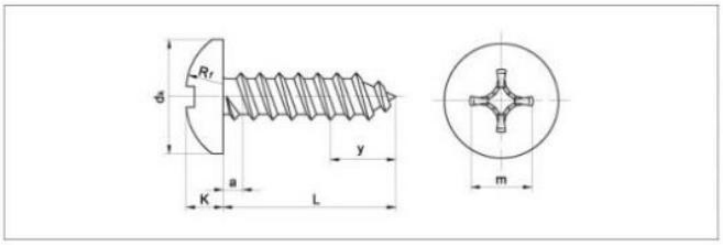


GND: power ground
VCC: power supply
VO: original voltage output of the sensor
RXD: serial port input
TXD: serial port output

Below diagram shows the general installation guide for WxS8800, it can be installed on any flat and solid surface, the lid is contacted with the surface and fixed via 2 self-tapping screws:



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

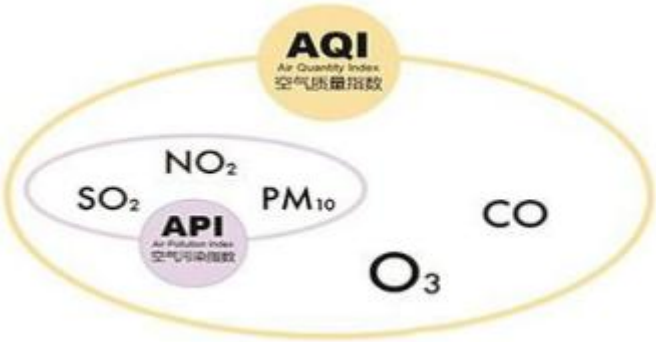


螺纹规格		ST2.2	ST2.9	ST3.5	ST4.2	ST4.8	ST5.5	ST6.3
dk	min	3.7	5.3	6.64	7.64	9.14	10.57	11.57
K	min	1.4	2.15	2.35	2.8	3.4	3.7	4.3
m		1.9	3	3.9	4.4	4.9	6.4	6.9
L		4.5mm–100mm						

The Sample Application

- **AQI Index detection**

The measured concentration of various pollutants has become an important indicator of AQI: sulfur dioxide (SO2);Nitrogen dioxide (NO2);And ozone (O3);Carbon monoxide (CO);For CO concentration calculation, the zero voltage and test point voltage provided by the manufacturer shall be used for calculation.
For example, when leaving the factory, the zero-point voltage Vout0= 0.6v; when 200ppm, Vout1= 0.9v; the current V0 voltage Voutx= 1.2v; then the CO concentration N in the current environment
=200/(vout1-vout0)*(voutx-vout0)=400ppm.



- **Detection of indoor gas leakage**

The kitchen, living room and other indoor installation of CO sensors, accurate detection of gas leakage in closed space and timely alarm.

- **Detect CO and other gases released in the non-combustion phase**

Detect whether the humidity of the environment has reached the combustion index. Once it has reached the target, the sensor will give early warning.In the following non-combustion stage, smoke is released, which may contain CO2, CO and other gases. The sensor will alarm and detect the temperature after combustion.

About Polysense

Located in Santa Clara, California,the heart of Silicon Valley,it also has marketing operations, product development and industrialization bases in Sao Paulo, Brazil, Beijing, Shanghai, Guangzhou and Luoyang, China. Relying on R&D experience and strength in China, Silicon Valley and South America, Polysense provides sensor IoT technology, services, products and end-to-end solutions for the market; products include distributed fiber optic sensing,wireless low-power sensor based on LPWAN LoRa, NB -IoT, LTE Cat-M, passive optical network (PON) and cloud-based data management and analysis platform. (iView)

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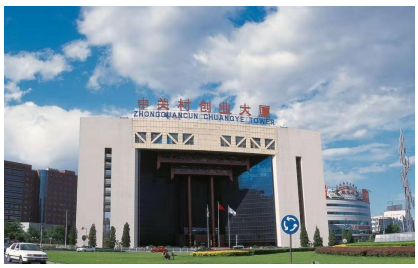

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