

# WxS 8800-004

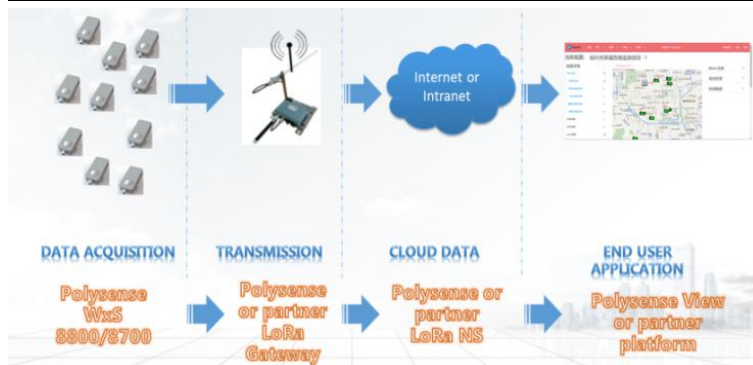
LoRaWAN Noise sensor

## Product Highlights

- ✓ Omni-directional silicon acoustic sensor;  
Transcendent silicon voice sensor;Excellent acoustic performance: range is 30dB~120dB;Noise accuracy: 0.5db;20~ 12.5khz wide frequency measurement.
- ✓ High performance prepolarized back electret capacitor microphone is adopted, with wide dynamic range and stable performance.
- ✓ The output interface TTL or rs-485 is optional.
- ✓ With two modes of slow speed and fast measurement, it can meet the requirements of different customers.
- ✓ 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 and Sample Applications





Industrial environmental noise collection; Smart city noise collection;  
 Animal husbandry wearable accessories; Smart Home Sensor Hub/Cluster;  
 Internet of Things Acoustic Sensor Node; Digital camera/camcorder;  
 Game console/controller;

## Specifications

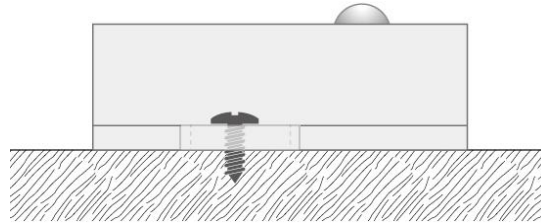
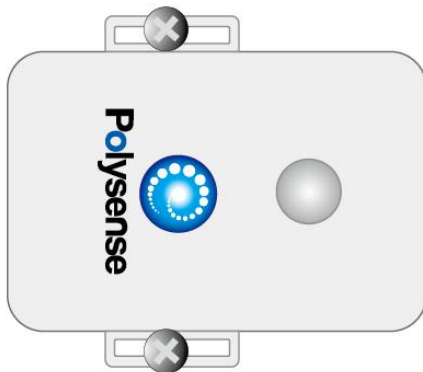
Parameter	Value	
<b>Sensor</b>		
Range:	30dB – 120dB	
Frequency	20Hz – 12.5kHz	
Resolution:	±0.5dB(In reference intonation, 94db@1khz)	
UART or RS-485communications parameters	9600 N 8 1	
output signal	UART (TTL)	Output voltage: 0~ 3.3v Input voltage: 0~ 3.3v compatible with 5V
	RS-485	Modbus-rtu communication protocol
	analog output	Output voltage: 0~3V corresponds to 30~120dB
response time	fast mode	500ms
	slow mode	1.5s
Dust cover effect	Within the range of 50~115dB, the influence is 0.5dB Other ranges within the range influence 0.7dB	
work environment	The air temperature: - 40 ~ + 60 °C Relative humidity: 25%~90% Static pressure: 65 kpa to 106 kpa There is no strong mechanical vibration, impact, strong electromagnetic field and corrosive gas around	



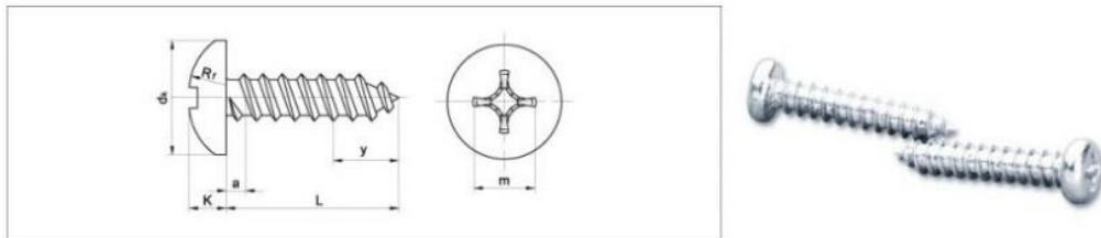
Data Report	Cross-threshold report, plus periodic report every 2 hours (the threshold and the periodic report cycle are both user-configurable)
<b>Wireless</b>	
ISM Band	EU 863 – 870MHz; US 902 – 928MHz China 779 – 787MHz; EU 433MHz AS 923MHz; CN 470 – 510MHz
Maximum Link Budget	168dB
Distance	Up to 5km NLOS; up to 18km LOS
Antenna	Integrated internal antenna or external 1/2 wavelength whip antenna (SMA)
<b>Mechanical</b>	
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
<b>Electrical</b>	
Supply Voltage	3.0 – 3.66 VDC
Power Type	Replaceable 1 or 2 AA 3.6V Li-SOCI2 Battery; DC 4.5V – 12V optional
Battery Life	5 – 10 years (assume one motion event one day)
<b>Compliance/Certification</b>	
 <b>LoRa Alliance</b>	LoRaWAN 1.0.2
	FCC(America): 2A07W-WXS8000, IC(Canada): 23701-WXS8000 CE(European Union): B1810246 ROHS(European Union): R2BJ180927F0664E

## Installation Guide

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						

### Application scenarios



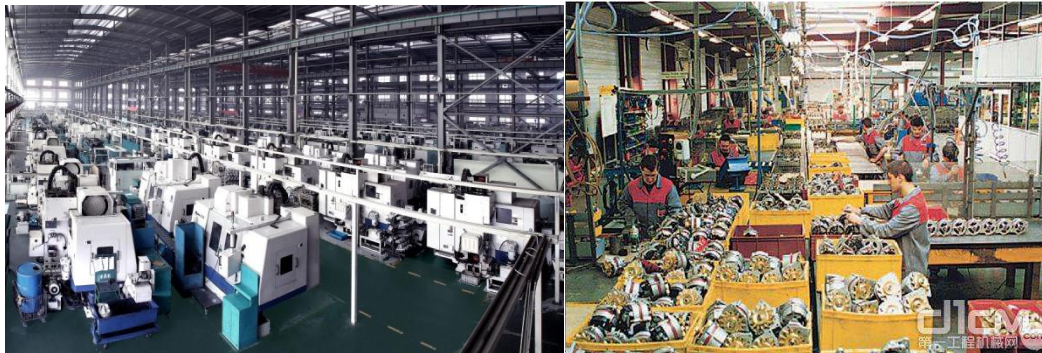
- **Smart cities**

According to the ISO survey, Working in an environment with noise levels of 85 decibels and 90 decibels for 30 years. The likelihood of deafness is 8% and 18%, respectively. In an environment with a noise level of 70 decibels, conversation is difficult.



● **Smart industry**

ISO proposes that workers work 8 hours a day in a noisy environment, but in no case exceed 115 decibels.



● **Motor preventive maintenance**

Industrial motors specify different limits for noise generation based on factors such as rated power and operating load. In the 70 to 110 decibel interval.



POLYSENSE's WxS880-004 noise sensor, sampling low power battery solution. IP67 meets the needs of mobile arming applications for outdoor inspection.





# Polysense Technologies

## 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)

## Contact Polysense

### Silicon Valley Office

Address : 3000 Scott Blvd, Suite 108  
Santa Clara, CA 95054  
Telephone : 408 980 9466  
Mailbox : info@polysense.net



### Sao Paulo, Brazil Office

Address : rua bela cintra 746 3ro  
Sao Paulo Brazil, Mauricio Jancic  
Telephone : + 54 9113644-385  
Mailbox : mauricioj@artimar.com.br



### Beijing Office

Address : 26 Shangdi Xinxu Road. Room 0820  
Haidian Dist. Beijing China 100085  
Telephone : 010- 60607008  
Mailbox : info@polysense.net



### Shanghai Office

Address : 88 Shengrong Road, Building 1,  
Room 416, Pudong Dist, Shanghai,  
China 200120  
Mailbox : info@polysense.net





## Polysense Technologies

---

### Guangzhou Office

Address : No. 100, keyun north road, tianhe district, Guangzhou Chuangjing entrepreneurial industrial park h7-101

Mailbox : info@polysense.net



### Luoyang Office

Address : 2 Chongqing Road, 6/F CITIC Marketing Building, Jianxi Dist.Luoyang, Henan Province,China 471039

Telephone : 0379-62220518

Mailbox : info@polysense.net

