

# WxS 880-0M2

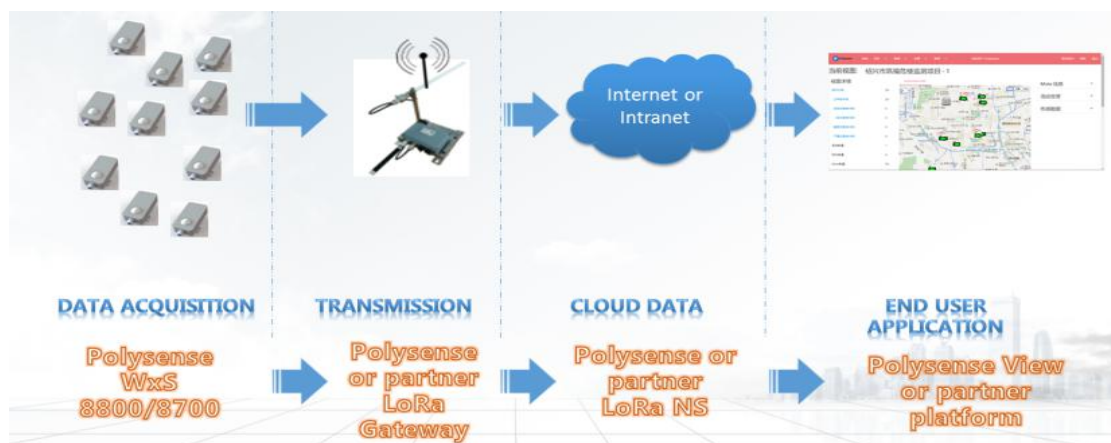
AirPressure Sensor

## Product Highlights






- ✓ AirPressure Sensor
- ✓ Range - 100 ~ 1100 hpa; Baud rate: 115200
- ✓ Measuring accuracy: height 0.1 M
- ✓ Low power consumption 2.1v ~ 3.3v, current 2.5ma
- ✓ Small size, patch mounting
- ✓ 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

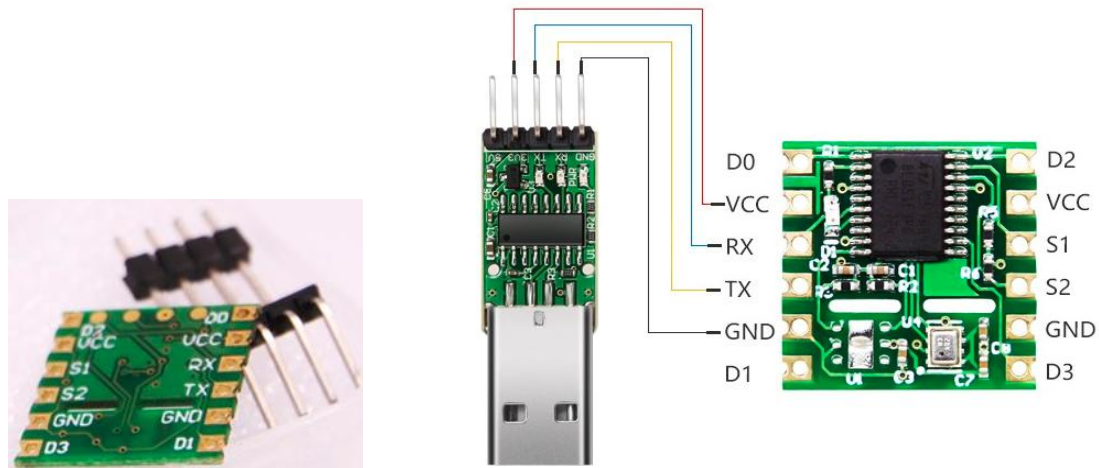


## Specifications

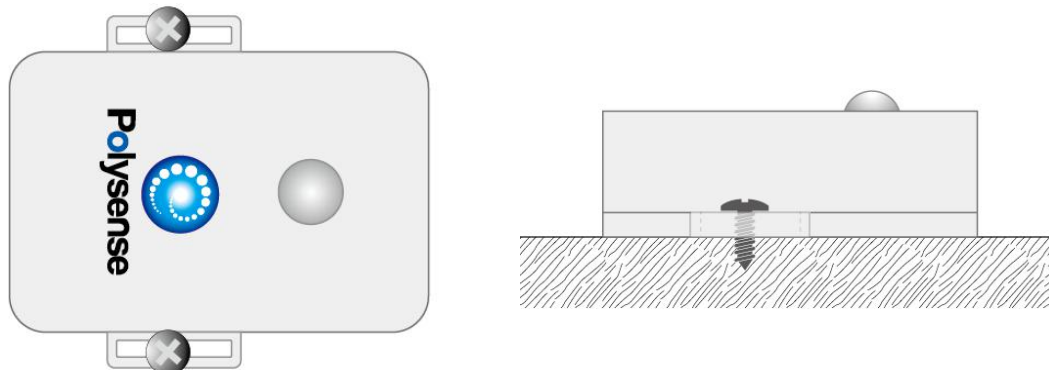
Parameter	Value
<b>Sensor</b>	
AirPressure Sensor	Range: 300~1100HPa Baud rate: 115200 Measurement accuracy: height 0.1m Voltage of 2.1 V to 3.3 V The current 2.5 mA Data interface: serial port (UART TTL level)
Data Report	Cross-threshold report, plus periodic report every 2 hours (the threshold and the periodic report cycle are both user-configurable)
Intensive data sampling and averaging	Support intensive data sampling and averaging to improve data accuracy
<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 30mm (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 – 3.8 VDC
Power Type	Replaceable 1 or 2 AA 3.6V Li-SOCl <sub>2</sub> Battery; DC 4.5V – 12V optional
<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

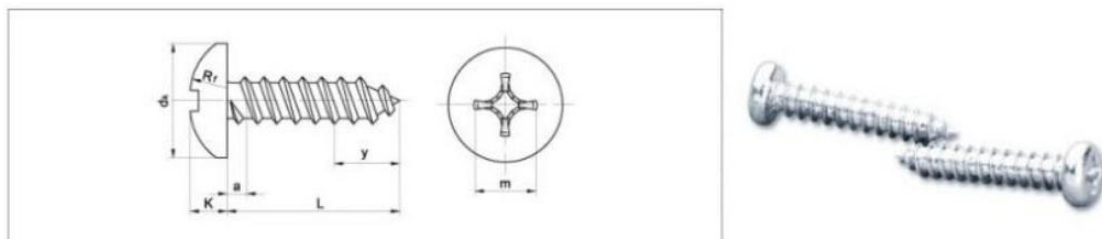
The following figure shows the mounting method of the pressure sensor:



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

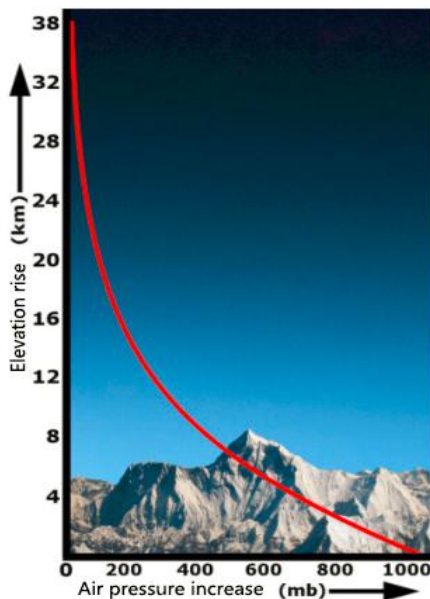
- **Adjust hospital ward air pressure, isolated from bacteria to enter**

The medical pressure sensor can sense the pressure and convert it into usable signal output. The pressure difference in the ward is tested to ensure the normal operation of the patient's HVAC system, so as to maintain the patient's safety. At the same time, the indoor air pressure is adjusted to make the indoor air pressure > and the outdoor air pressure isolated from viruses and bacteria outside the ward. If the pressure difference is too large, too small or wrong direction, will activate the sensor and alarm.



- **Measured altitude by changes in pressure**

In the process of measurement, it is free from the influence of obstacles. The range of measurement height is wide and convenient to move. It can measure the absolute altitude and relative altitude. Applications such as outdoor mountaineering table, outdoor mountaineering mobile phone, hunting camera, parachute, weather equipment. The relationship between the relative ground level and atmospheric pressure is expressed through the linear relationship between the X-axis (atmospheric pressure Pa) and the Y-axis (corresponding altitude m).



The international standard atmospheric pressure data table records the pressure values at intervals of -100~20000m.

The data were discretized into a corresponding query table for the atmospheric pressure and altitude values, and put into the memory of the microcontroller. Then the table was looked up according to the measured atmospheric pressure values, so as to determine the corresponding altitude values.

### ● Museum of cultural relics, the preservation of the grottoes murals

There are many environmental factors that influence the preservation of cultural relics in museums and cave paintings, such as temperature and humidity, light radiation, atmospheric pressure, insect pests and so on. For sculpture, bronze artifacts needed to monitor the air pressure sensor, when enter indoor or visitors in the grottoes every day too much, parameters such as temperature and humidity, atmospheric pressure exceeds bid, cause warping and cracking of the cultural relics, the greater the pressure will affect the structure of the sculptures, murals, the greater the sensor alarm prompt, caves will be closed.







# Polysense Technologies

## About Polysense

Polysense develops products and solutions for Industrial IoT and smart homes, including distributed fiber sensing, LPWAN LoRa and NB-IoT based wireless IoT sensors, Passive Optical Network (PONs) and cloud based data management and analytic platform.

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