

# Wireless Differential Air Pressure Sensor

## OVERVIEW:

Sometimes it is not necessary to monitor the absolute air pressure but we need to know the difference of pressures in different points. One example may be before and after a valve in a pipe. If the valve is fully open, the pressure on both sides should be the same. If there's a difference in the pressure, it could be the valve isn't fully open or there's a blockage.

**Differential Pressure Sensor** has two air pressure inputs. It monitors the pressure difference between these two inputs and put the value.

Differential Pressure Sensors can be used in home and industrial environments for applications such as offshore and subsea gas processing, and remote heating systems.

Dragino's Wireless Differential Pressure Sensor includes various model to cover **LoRaWAN**, **NB-IoT** or **CAT-M1** wireless transmission and different range of pressure measurement.

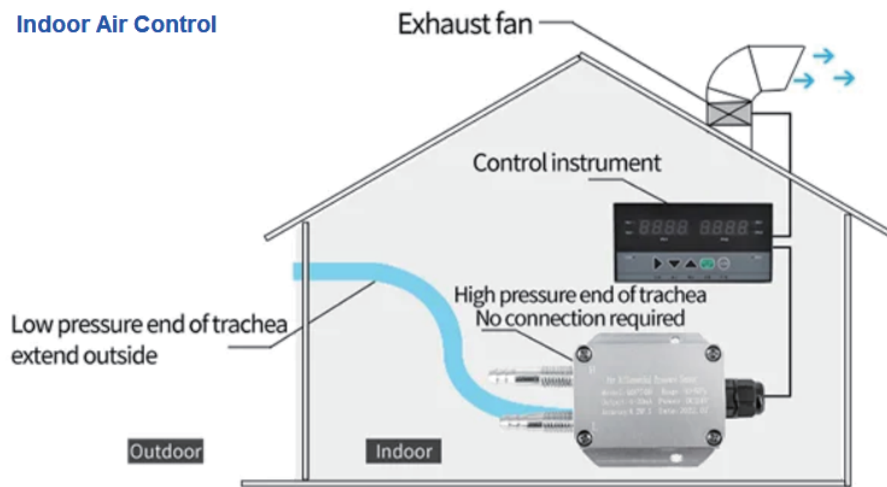
It supports **BLE configure** and **wireless OTA update** which make user easy to use.

The Dragino Air/Water Pressure Sensor series is powered by **8500mA Li/SOC12 battery** or solar panel with **li-on battery** for long term use.

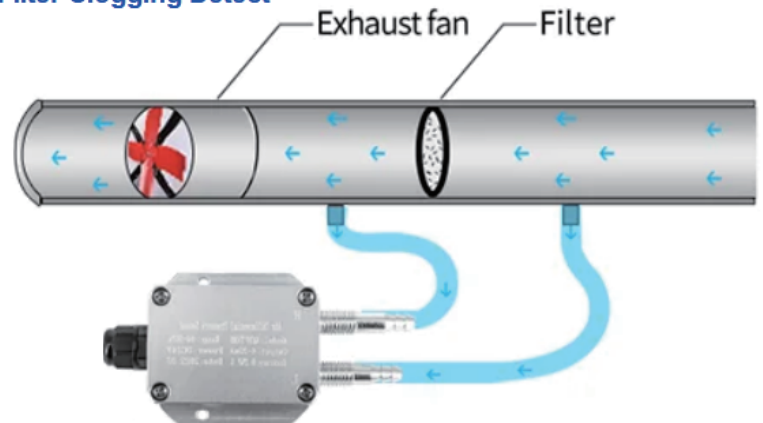


## Applications:

### Indoor Air Control



### Filter Clogging Detect















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# Model Variants

Variants	PS-LB-D	PS-LS-D	PS-NB-D	PS-NS-D	PS-CB-D	PS-CS-D
Connectivity						
Configure Method	TTL, BLE, LoRaWAN	TTL, BLE, LoRaWAN	TTL, BLE, NB-IoT	TTL, BLE, NB-IoT	TTL, BLE, NB-IoT, LTE-M	TTL, BLE, NB-IoT, LTE-M
Upgrade Method	TTL, BLE, LoRa	TTL, BLE, LoRa	TTL, BLE	TTL, BLE	TTL, BLE	TTL, BLE
Features	<p><b>Sensor /Probe:</b></p> <ul style="list-style-type: none"> <li>* Measure the Differential Pressure of two input</li> <li>* Different pressure ranges available ( from 100Pa to 10KPa )</li> <li>* Monitor Battery Level</li> </ul> <p><b>General Features:</b></p> <ul style="list-style-type: none"> <li>* Ultra-low power consumption</li> <li>* Support Bluetooth v5.1 remote configure and OTA update firmware</li> <li>* Uplink on periodically</li> <li>* GNSS for Location Report ( for -CB &amp; -CS models only)</li> <li>* Downlink to change configure</li> </ul>					
Battery & Power	 * 8500 mAh Li/SOCI2 Battery	 * Solar + 3000 mAh Li-on Battery	 * 8500 mAh Li/SOCI2 Battery	 * Solar + 3000 mAh Li-on Battery	 * 8500 mAh Li/SOCI2 Battery	 * Solar + 3000 mAh Li-on Battery
Power Consumption	* Sleep Mode: 5uA @ 3.3v * LoRa Transmit Mode: 125mA @ 20dBm, 82mA @ 14dBm	* Sleep mode: 74uA@3.8V * LoRa Transmit Mode: 206mA@14dBm, 236mA@20dBm	* Sleep mode: 14uA@3.3V * Max Transmit power: 350mA@3.3V	* Sleep mode: 74uA@3.4V * Max Transmit power: 350mA@3.4V	* Sleep mode: 14uA@3.3V * Max Transmit power: 350mA@3.3V	* Sleep mode: 74uA@3.4V * Max Transmit power: 350mA@3.4V
Supply Voltage	2.5v ~ 3.6v	3.7v ~ 4.2v	2.5v ~ 3.6v	3.7v ~ 4.2v	2.6v ~ 3.6v	3.7v ~ 4.2v
Operating Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C

## Battery & Enclosure Option:

### Li-SOCI2 Battery & Enclosure:



- Li/SOCI2 un-chargeable battery
- Capacity: 8500mAh
- Self-Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

### Solar Version & Enclosure:



- 3000mAh Re-chargeable battery
- 0.9W on board solar pannel Suitable to used in the place where sun is sufficient



- This icon means support location feature by: GPS/ GLONASS/BDS/Galileo/ QZSS

## Wireless Option:



- LoRaWAN 1.0.3 Class A
- Bands: CN470/EU433/KR920/US915/EU868/AS923/AU915/IN865
- OTAA or ABP Mode.
- World Wide Unique LoRaWAN Key
- RX sensitivity: down to -139 dBm.
- Max +22 dBm - 100 mW RF output



- CAT NB2 Bands:
- For -NB & -NS: B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B28/B66/B70/B85
- For -CB & -CS: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85
- Uplink via MQTT, MQTTs, TCP, UDP or CoAP
- Multiply Sampling and one uplink



- CAT-M1 / LTE-M Bands: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85
- Uplink via MQTT, MQTTs, TCP, UDP or CoAP
- Multiply Sampling and one uplink

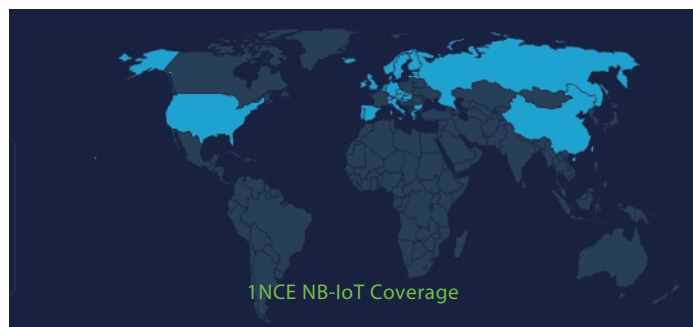
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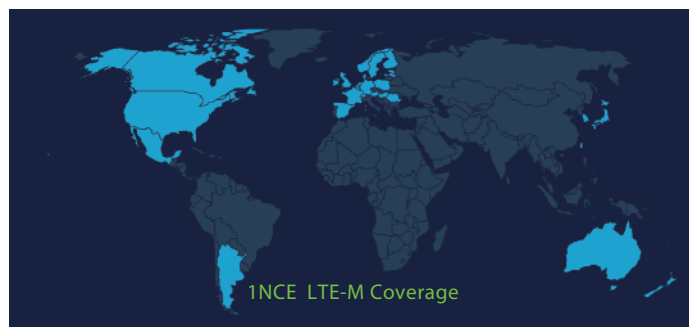
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# What is 1T version for NB-IoT version?

The 1T version of NB-IoT Air/Water Pressure Sensor is with a) 1NCE SIM Card & 2) ThingsEye Pre-configured.  
1NCE SIM Card (10 Years Cellular service with 500MB Data Traffic, Enough for devices to uplink 10 years at 1hour interval).



NB-IoT Network : Austria, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Malta, Netherlands, Norway, Portugal, Puerto Rico, Russia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.



LTE-M Network : Argentina, Austria, Australia, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Ireland, Japan, Jersey, Korea, Republic of, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Puerto Rico, Romania, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.

## ThingsEye.io platform:

1T version with ThingsEye IoT service pre-installed. This save a lot of work from user side to configure IoT server.

Below is Dash Board is the demo in ThingsEye.io.



## Order Info:

PS : Pressure Sensor Series Prefix					
Wireless Tech: L : LoRaWAN , N : NB-IoT , C : CAT-M1					
Battery Type: B: 8500mAH LI-SOIC2 Battery ; S: Solar Panel + Li-on Battery					
Probe Type: D Differential Pressure Sensor					
PRESSURE -- Only for Thread Type					
				01	0-100Pa
				02	0-200Pa
				03	0-300Pa
				04	0-1KPa
				05	0-2KPa
				06	0-3KPa
				07	0-4KPa
				08	0-5KPa
				09	0-10KPa
				10	-100- 100Pa
				11	-200- 200Pa
				12	-1- 1KPa
				Frequency or SIM Version	
				CN470/EU433/KR920/US915/ EU868/AS923/AU915/IN865	
				GE -- General version ( Exclude SIM card)	
				1T -- With 1NCE & ThingsEye Pre-configured	
PS	- L	B	- D	01	EU868 Example: PS-LB-D01-EU868
PS	- L	S	- D	01	CN470 Example: PS-LS-D01-CN470
PS	- N	B	- D	02 - GE	Example: PS-NB-D02-GE
PS	- N	S	- D	02 - 1T	Example: PS-NS-D02-1T
PS	- C	B	- D	03 - GE	Example: PS-CB-D03-GE
PS	- C	S	- D	03 - 1T	Example: PS-CS-D03-1T

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