

Pressure Monitoring Solution



Pressure Monitoring

ThingsLog Pressure monitoring is solution aims to provide low power pressure monitoring of water, non-aggressive or aggressive fluids, air or gas in locations with difficult access. It is based on ThingsLog low power data loggers and specially designed pressure sensors suitable for low power monitoring.



Applicable for

- » **Pressure monitoring in water pipe distribution networks**
- » **Air pressure monitoring**
- » **Gas pressure monitoring**
- » **Pressure monitoring in food processing industry**
- » **HVAC**
- » **Chemical industry**
- » **Installations for nitrogen / oxygen production**

Features

- ✓ **Network type:** 2G, NB-IoT or LoRa/LoRaWAN
- ✓ **Environment:** air | water, non-aggressive liquids (water) | aggressive fluids (fuels, acids and others)
- ✓ **Pressure ranges:** from 10 kPa up to 35 bar absolute pressure; up to 1000 bar relative pressure
- ✓ **Power supply options:** Lithium batteries/Solar/24V
- ✓ **Reverse-polarity protection:** YES
- ✓ **Working temperature:** 0 ÷ 70 °C
- ✓ Low / high level -> **pressure** instant alarms
- ✓ **Working temperature:** -20 ÷ 100 °C
- ✓ **Max. allowable pressure:** 1.5 x FSO
- ✓ **Process connection:** 1/4 NPT; G1/4"BSP M;G3/8" BSP M; G1/2"BSP M; M20x1.5;G1"; G1 1/4"
- ✓ **Accuracy:** 0.5% for 100% of FSO
- ✓ **Electrical connection:** LIYY or UNITRONIC ROBUST cable
- ✓ **Accuracy:** 0.5% for 100% of FSO
- ✓ **Electrical connection:** ventilated cable
- ✓ **Probe material:** stainless steel 304/316 L
- ✓ **Built-in stainless steel membrane** 316 SS
- ✓ **Protection class:** IP 65/IP 68
- ✓ **ATEX sensor protection class for gas and aggressive fluids:**
 - II 2 G Ex ia IIC T4 Gb
 - II 1 D Ex ia IIIC T100°C IP65 (IP68) Da (-20°C≤Ta≤+100°C)
 - or
 - II 2 G Ex ia IIC T5 Gb
 - II 1 D Ex ia IIIC T90°C IP65 (IP68) Da (-20°C≤Ta≤+90°C)

Solution Description

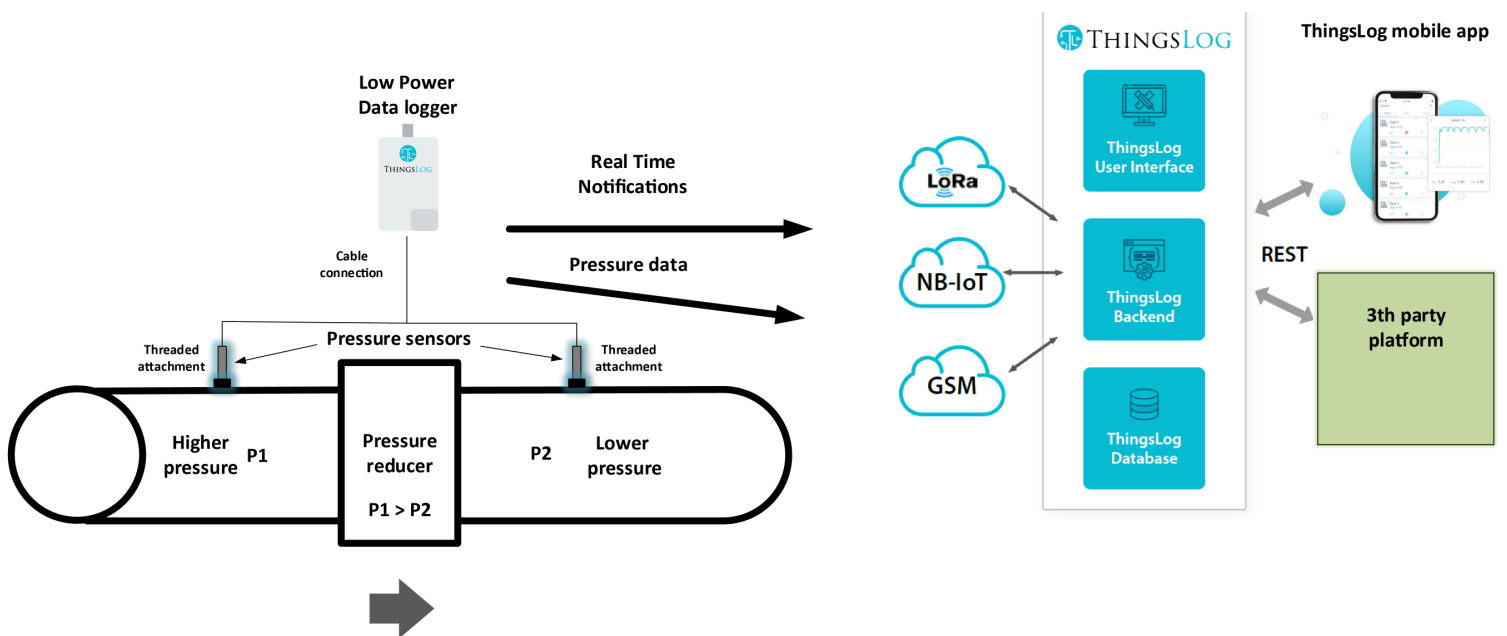
Sensor Details

Sensor is attached through a threaded connection to a pipe with fluid or an air duct. Each sensor is carefully selected for the fluid and the pressure range that will be monitored. We support relative pressure up to 1000 bar and absolute pressure up to 35 bar.

Data Logger Operation

The data logger wakes up on configurable interval of time, provides power supply to the sensor, reads the measurements and records the values in memory. Logger wakes on configurable transmission interval and transmits the recorded readings. If the reading is bridging a preconfigured low/high pressure threshold values the logger wakes up and transmits an instant alarm. Alarms are forwarded to the subscribed users through an email, mobile notification or an API message.

How it Works



Pressure Monitoring Ordering Codes

PDL (Pressure Data Logger) order code taxonomy

PDL-XXXX-YYY-E-CL-PS

| XXXX (NETWORK TYPE) | DESCRIPTION |
|-----------------------------------|---------------------------------|
| 1101 - 2G/GSM | 6K data transmissions |
| 1102 - NB-IoT | 10K data transmissions |
| 1102na - NB-IoT for North America | 10K data transmissions |
| 1103 - LoRa/LPWAN for Europe | 868 MHz, 10K data transmissions |
| 1103na - NB-IoT for North America | 915 MHz, 10K data transmissions |

| YYY (RANGE CODE) | RANGE | YYY (RANGE CODE) | RANGE |
|------------------|---------------|------------------|--------------------------|
| 306 | 0 - 100 kPa | 407 | 0 - 16 bar |
| 307 | 0 - 100 kPa | 408 | 0 - 25 bar |
| 308 | 100 - 100 kPa | 501 | 0 - 40 bar (0 - 4 MPa) |
| 401 | 0 - 1.6 bar | 502 | 0 - 50 bar (0 - 5 MPa) |
| 402 | 0 - 2.5 bar | 503 | 0 - 60 bar (0 - 6 MPa) |
| 403 | 0 - 4 bar | 504 | 0 - 100 bar (0 - 10 MPa) |
| 404 | 0 - 5 bar | 601 | 0 - 160 bar (0 - 16 MPa) |
| 405 | 0 - 6 bar | 602 | 0 - 250 bar (0 - 25 MPa) |
| 406 | 0 - 10 bar | | |

E - Environment type

- 0 – Air
- 1 – Non aggressive fluids (Water)
- 2 – Aggressive fluids with ATEX
- 3 – Gas (ATEX)

CL - Cable length

- 01 – 1m (default option)
- 02 – 2m
- ..

PS - Power Supply

- 11 – Low power with lithium battery pack (200000 sensor readings)
- 22 – Solar
- 33 – 24 VDC
- 44 – Custom

An example order code for a 2G GSM low power water level monitor for PN16 with 2 meters extra cable length would be:

PDL-1101-407-1-02-11

Same with NB-IoT would be:

PDL-1102-407-1-02-11

Package

- » Each pressure monitoring data logger is offered with a **pressure sensor**, cable with 2 m extra length (by default), **batteries** and **1 year** free ThingsLog platform **subscription**.

Delivery Terms

- » **30 Working Days** for 10+ QTY
- » **10 Working Days** for samples
- » **EXW**

ThingsLog Platform Subscription

Subscription packages are reading based
A reading is one digit read from a meter or sensor



Package options are:

10k

10 thousands readings
per year

100k

100 thousands readings
per year

1M

1 million readings per
year

10M

10 million readings per
year

100M

100 million readings per
year

Subscription packages count for all customer's data loggers, e.g one subscription package spans across many loggers

| SUBSCRIPTION PACKAGE | NUMBER OF READINGS | ANNUAL PRICE |
|----------------------|--------------------|--------------|
| 10K | 10 000 | \$ 5 |
| 100K | 100 000 | \$ 40 |
| 1M | 1 000 000 | \$ 200 |
| 10M | 10 000 000 | \$ 1000 |
| 100M | 100 000 000 | \$ 5000 |

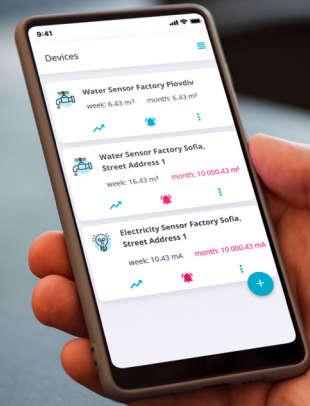


If you don't see your package don't hesitate to ask for a custom option on

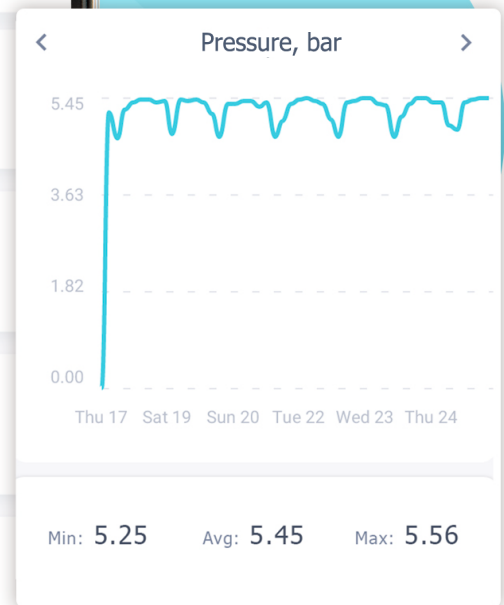
sales@thingslog.com

ThingsLog Mobile App

Level monitoring has never been so easy!



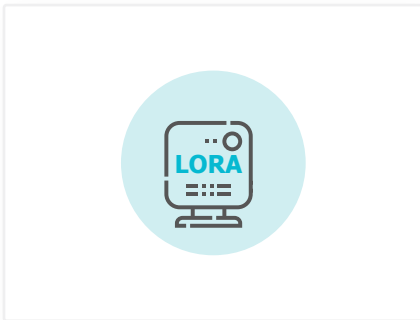
Get instant pressure monitoring on your phone and receive instant notifications if value leaves a pre-established range of low/high thresholds.



How to Calculate Platform Subscription

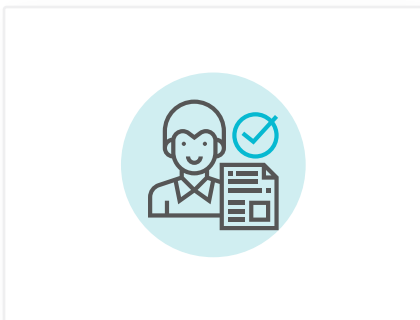
| NUMBER OF DEVICES | READING INTERVAL | READINGS | TOTAL READINGS | PROPER PACKAGE |
|-------------------|------------------|-----------------------------------------------------------------------|----------------|--------------------|
| 100 | 15 minutes | 4 readings per hour 96 readings per day 35040 readings per year | 3504000 | Between 1M and 10M |
| 100 | 1 hour | 24 readings per day 8760 readings per year | 876000 | 1M package |

How to Order



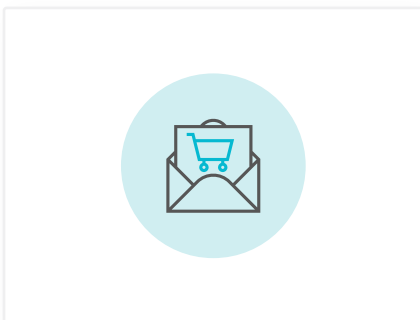
Step 1.

Choose the right data logger for your business case



Step 2.

Define your initial subscription package



Step 3.

Send us a purchase order sales@thingslog.com