

NB-IoT

NB IoT – Cat-M1 Operated Low Power Pressure Transmitter for Liquid and Gas Media with Built-in Temperature Sensor

- Compatible with most standard communication Protocols (UDP, LwM2M, MQTT, NIDD, etc.)
- Wide range of industrial applications
- High accuracy
- Designed to meet outdoor applications
- Long-term durable performance in harsh environment
- Ultra-low power
- Suitable for liquids and gases compatible with SS



TECHNICAL SPECIFICATION

Sensor

| | | |
|---|--|---------|
| • Pressure Range: | Selectable between 0~0.5 to 0~1000 | bar |
| • Pressure Accuracy: | ±0.25 (typ.) (combined linearity, hysteresis, repeatability) | %Span |
| • Temperature Accuracy: | ±2 (typ.) (temperature sensor is mounted on the back of pressure sensor and doesn't reflect the media temperature) | °C |
| • Resolution: | ±0.01 | %Span |
| • Pressure Reference: | Vented Gauge, Sealed Gauge, Absolute | |
| • Temperature Coefficient of Zero: | ≤±0.02 | %FS/°C |
| • Temperature Coefficient of Span: | ≤±0.02 | %FS/°C |
| • Long Term Stability (1 year): | ≤ 0.2 | %Span |
| • Pressure Overload: | 300 (range <1bar); 150 (higher range) | %FS |
| • Pressure Cycles (Zero to Full Scale): | 10+ | Million |
| • Compensated Temperature: | -10 ~ +70 | °C |

Power

| | | |
|---------------------|---|---|
| • Power Supply: | Built-in Replaceable Lithium Battery, External Power (option) | |
| • Rated Voltage | 3.6 | V |
| • Battery Lifetime: | 50,000+ readings and 10,000+ transmission (More than 10 years for most applications) | |

Physical Specification

| | | |
|-----------------------|---|---|
| • Materials: | O-ring: Viton, Body: SS304, Diaphragm: SS316, Oil: Silicon / Olive, Enclosure: ASA/POM | |
| • Process Connection: | G1/4 Male (or others on request) | |
| • Weight: | 550 | g |
| • Protection Rate: | IP65 /IP67, UV Protected | - |

Communication

| | | |
|----------------------|---|--|
| • SIM Card Type | 4FF Nano-SIM, from any Network Provider | |
| • Firmware Update: | Over The Air, Locally via Wireless Connectivity | |
| • Sampling Period: | Configurable via downlink (default 4 hours) | |
| • Power Consumption: | Power Saving: < 5uA, Transmission: < 220mA | |

| | |
|-----------------------------|---|
| • Communication Standards | Dual mode (Cat-M1 and Cat-NB1) Cat-NB1 (NB-IoT) Cat-M1 (option of back support by GPRS) |
| • Communication Bands | B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 and B39 |
| • Data Rates: | Cat-M1: 375Kbps (DL)/375Kbps (UL) NB-IoT: 32Kbps (DL)/70Kbps (UL) |
| • TX Power: | 23dBm |
| • Min Receiver Sensitivity: | Cat-M1: -107dBm NB-IoT: -113dBm |
| • Antenna: | Internal (Default)/ External (customised options available) |
| • Optional Features: | <ul style="list-style-type: none"> • Attach without PDN (Packet Data Network) • Support for IPV6 • SMS communication • Mobility support (Cat-M1 only) |

NETWORK CONNECTION AND VISUALISATION

Network Integration

Pre-configured or configurable to all main narrow band networks (3, A1, AT&T, China Mobile, DU, Etisalat, KPN, M1 Singapore, Optus, Orange, Proximus, Spark, Sprint, Swisscom, Telefonica, Telstra, T-Mobile, Verizon, Vodafone, 1NCE, Emnify and any other network)

Visualisation and Data Management

Ellenex white label microservice platform and Integratable to all main IIoT platforms directly or through the API(AWS, Azure, PTC ThingWorx, Bosch IoT, Cisco Jasper & Kinetic, Sierra Numerex, MathWorks ThingSpeak, GE Digital Predix, LandisGyr, Siemens MindSphere, Cumulocity, myDevices, Ubidots, TagoIO, AllThingsTalk Maker, HPE IoT and any other major IoT platform).

Ellenex Platform Main Features

- Encrypted ultra-low power communication protocol
- Advanced device inventory
- Integration APIs for enterprise systems
- Multi-tenant role-based access control
- Data export and import
- White-label platform for enterprise runs on private account
- Variable alarm setting for high and low thresholds and multi-channel alerting
- Sampling and transmission interval configuration
- Transmission condition configuration
- Other configurations and customisation available on request



Encrypted & ultra-low power



Integratable



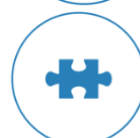
Dynamic alerting



Multi-tenant


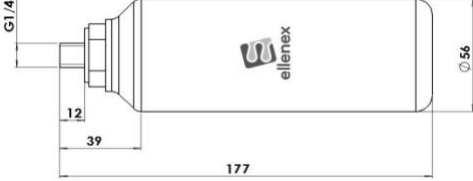
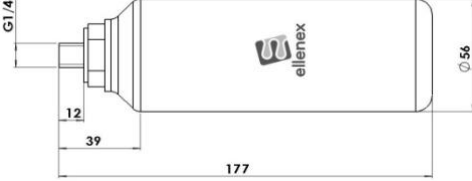

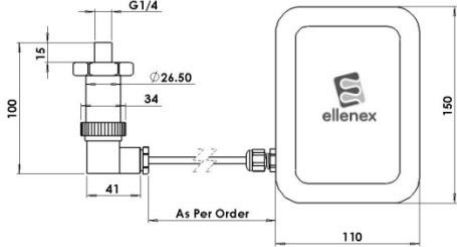
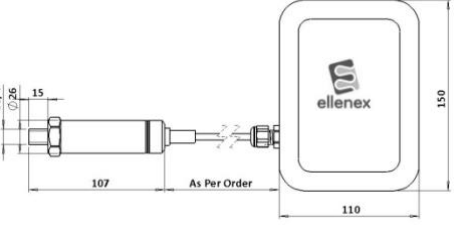
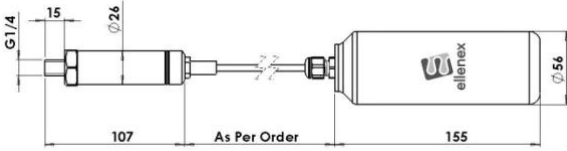


Scalable



Composable & API first

MODEL GUIDE

| Model | Options: | |
|--|--|---|
| <p>C Model:</p>  |  <p>C8: IP68 sealed gauge sensor, compact, POM enclosure with NFC activation</p> |  <p>C5: IP65 vented gauge sensor, compact, POM enclosure with on/off switch</p> |
| <p>E Model:</p>  |  <p>E5: IP65 sensor (vented gauge), wired, IP65 ASA enclosure and on/off switch</p> |  <p>E7: IP67 sensor (sealed gauge), wired, IP67 ASA enclosure and on/off switch</p> |
|  <p>E8: IP68 sensor (sealed gauge), wired with IP68 POM enclosure with NFC activation</p> | | |

INDUSTRIES



Water & Environment



Agriculture & Farming



Oil & Gas



Marine & Oceanography



Mining & Construction



Smart Building & HVAC



Transport & Logistics



Food & Beverage



Hydraulics and Compressed Air Systems

APPLICATIONS

PTD2-N Spec-sheet



- Pump Performance Monitoring
- Water Pipeline Pressure Monitoring
- Pressurised System Monitoring
- Chiller and Cooling System Monitoring
- Hydraulic and Pneumatic Systems Monitoring
- Liquid Storage Level Monitoring
- Spraying System Monitoring
- Air Compressor Monitoring

ORDERING CODE

| | | | | | | | | | |
|--|---|--------|------------------|--|-----------------------------------|-----------------|---|----|--|
| PTD2-N | | | | | | | | | |
| Communication Type | | | | | | | | | |
| D (Dual mode NB-IoT and Cat-M1) | | | B (NB-IoT only) | | | C (Cat-M1 only) | | | |
| Pressure Range | | | | | | | | | |
| 0.5, 1, 2, 5, 10, 20, 50, 100, 200, 400, 700, 1000bar (or any other positive or negative ranges) | | | | | | | | | |
| Pressure Reference | | | | | | | | | |
| V (vented gauge) | | | S (sealed gauge) | | | A (absolute) | | | |
| Process Port | | | | | | | | | |
| G1/4 (1/4" BSPP male) | | | | | G1/2 (1/2" BSPP male) | | | | |
| NPT1/4 (1/4" NPT male) | | | | | Others as specified | | | | |
| Enclosure | | | | | | | | | |
| C5 | | C8 | | E5 | | E7 | | E8 | |
| Compact | | | | Standard cable length: 1m (or other options on request) | | | | | |
| Device Activation | | | | | | | | | |
| S: on/off switch | | | | | N: NFC (by mobile phone) | | | | |
| X: No switch (always on) | | | | | D: Dual switch (on/off + Trigger) | | | | |
| Antenna | | | | | | | | | |
| I: Internal | | | | | E: External | | | | |
| Options | | | | | | | | | |
| (On request) | | | | | | | | | |
| PTD2-N | D | 0.5bar | V | G1/4 | C5 | S | I | | |

Sample Product Code:

- **PTD2-N-D-0.5bar-V-G1/4-C5-S-I**

Pressure-temperature sensor operated on dual mode of NB-IoT and LTE Cat M1, range of 0.5bar vented, process connection of G1/4, with C5 housing (compact and IP65 rated), activated by on-off switch and internal antenna.

