PTD2-L Spec-sheet

LoRaWAN®

**LoRaWAN® Operated
Low Power Pressure Transmitter
for Liquid and Gas Media with Built-in
Temperature Sensor**

- Compatible with all LoRaWAN® frequencies
- 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 reflects 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

LoRaWAN® Version, Class:	1.0.2revB, Class A (Class C on request)
LoRaWAN® Frequency Zone:	AS923, EU868, US902-928, AU915-928 (other zones available on request)
LoRaWAN® Activation Type:	OTA (default), ABP
Sampling Type:	Periodic (default), Event triggered
Sampling Period:	Configurable via downlink (default 4 hours)
Transmission Type	Per sample (default), Event triggered, Conditional
Parameter Configuration:	Over-the-air via LoRaWAN® downlinks Locally via wireless connectivity
Firmware update:	Locally via wireless connectivity, Over The Air

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NETWORK CONNECTION AND VISUALISATION

Network Integration

Integratable to all main networks (Actility, Alibaba, Cisco, Digita, Everynet, GeoWAN, Kerlink, kpn, Loriot, machine-Q, Objenious, Orange, Orbiwise, Proximus, Senet, Sens, Swisscom, TATA, The Things Network (TTN), TTI 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
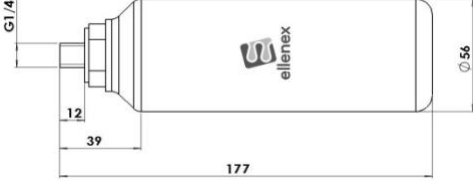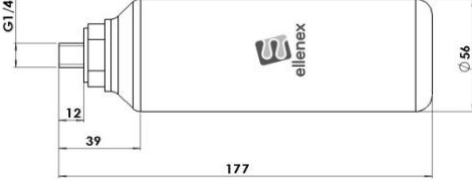
 Multi-tenant

 Scalable
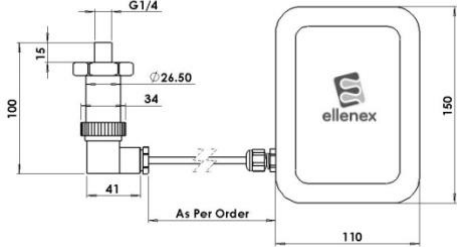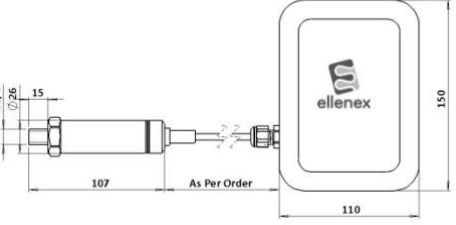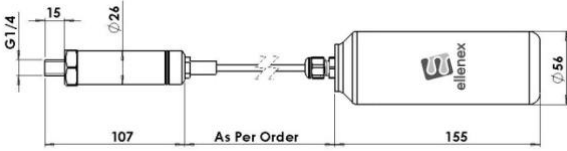
 Composable&
API first

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MODEL GUIDE

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

INDUSTRIES

- Water & Environment
- Agriculture & Farming
- Oil & Gas
- Marine & Oceanography
- Mining & Construction
- Smart Building & HVAC
- Transport & Logistics
- Food & Beverage
- Hydraulics and Compressed Air Systems

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APPLICATIONS

- 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-L

Frequency Zone

AS (AS923)	EU (EU868)	USx (US902-928, sub-band x)	AUx (AU915-928, sub-band x)	Others

LoRaWAN® Activation

A (Over The Air Activation - OTAA)	P (Activation By Personalization ABP)

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 (¼" BSPP male)	G1/2 (½" BSPP male)
NPT1/4 (¼" 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-L	AS	A	0.5bar	V	G1/4	C5	S	E

Sample Product Code:

- **PTD2-L-AS-A-0.5bar-V-G1/4-C5-S-E**

  Pressure-temperature sensor operated on LoRaWAN®, frequency of AS923, Over The Air Activated, range of 0.5bar vented, process connection of G1/4, with C5 housing (compact and IP65 rated), activated by on-off switch and external antenna.

Integrated IoT Solutions

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