

NB-IoT

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

- 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
- Suitable for liquids and gases compatible with SS316



TECHNICAL SPECIFICATION

Sensor

• Pressure Range:	Selectable between 0~0.5 to 0~1000	bar
• Accuracy: (combined linearity, hysteresis, repeatability)	±0.25 (typ.)	%Span
• 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	-

Geo-location/ GNSS Performance (autonomous at open sky)

• Features	GPS, GLONASS, BeiDou/ Compass, Galileo, QZSS	
• Sensitivity:	<ul style="list-style-type: none"> • Cold start: -146 • Reacquisition: -157 • Tracking: -157 	dBm
• Time to First Fix (TTFF):	<ul style="list-style-type: none"> • Cold start at open sky: 31 • Warm start: 21 • Hot start: 2.7 	s
• GNSS Accuracy:	< 5 (typ.)	m

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 IIoT 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


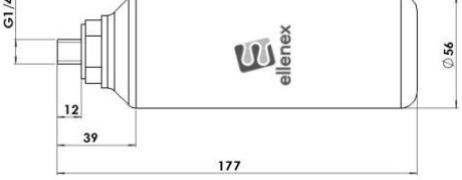


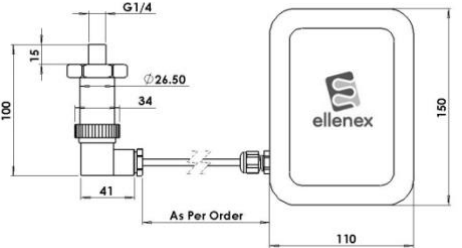
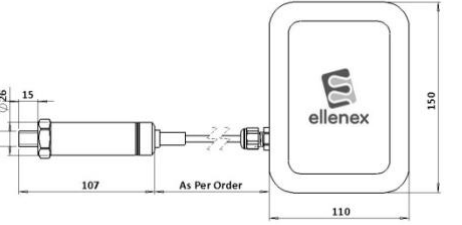
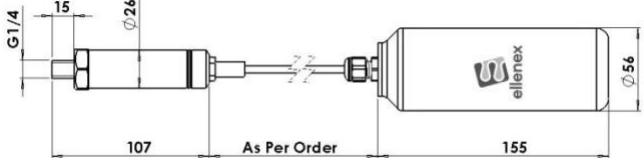


Composable & API first

PTG3-N Spec-sheet



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



Transport & Logistics



Mining & Construction



Agriculture & Farming



Water & Environment



Marine & Oceanography



Oil & Gas



Hydraulics and Compressed Air Systems



Food & Beverage



Smart Building & HVAC

APPLICATIONS

- High Value Remote Pressurised Asset
- Mobile Hydraulic Systems
- Truck Overload Monitoring
- Chiller and Cooling System Monitoring
- Water Delivery Systems
- Diesel Delivery Systems
- Gas and Liquid Delivery Systems
- Mobile Air Compressor Monitoring

ORDERING CODE

PTG3-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)									
PTG3-N	D	0.5bar	V	G1/4	C5	S	I		

Sample Product Code:

- **PTG3-N-D-0.5bar-V-G1/4-C5-S-I**

Pressure sensor with built-in GPS 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.