

NB-IoT

NB IoT – Cat-M1 Operated IP68 Low Power Level Transmitter for Liquid Media

- 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 compatible with SS and Hastelloy



TECHNICAL SPECIFICATION

Sensor

• Range:	2, 5, 10 (or other ranges up to 200)	m H2O
• Accuracy: (combined linearity, hysteresis, repeatability)	±0.25 (typ.)	%Span
• Resolution:	±0.01	%Span
• Pressure reference:	Sealed Gauge (with Built-in Atmospheric Pressure Sensor)	
• Temperature Coefficient of Zero:	≤±0.03	%FS/°C
• Temperature Coefficient of Span:	≤±0.03	%FS/°C
• Long term stability (1 year):	≤ 0.2	%Span
• Overload Protection:	150	%FS
• Load Cycles (Zero to Full Scale):	10+	Million
• Storage / Operation Temperature:	-20 ~ +85	°C
• Compensated temperature:	0 ~ 60	°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, Enclosure: POM	
• Process Connection:	No Process Connection (or on request)	
• Weight:	~1,300 (for 5m range)	g
• Protection Rate:	IP68 and UV protected enclosure and sensor head	

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


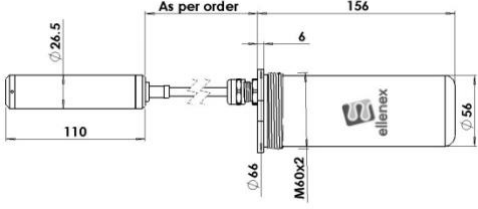
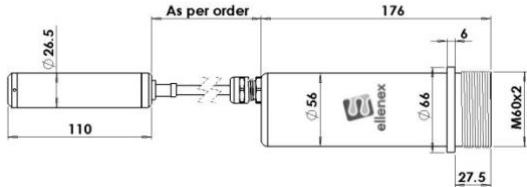

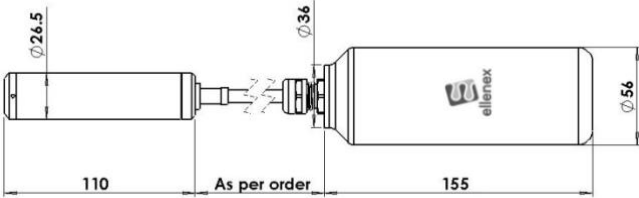


Composable & API first

PLS3-N Spec-sheet



MODEL GUIDE

Model	Options:	
	 <p data-bbox="496 775 850 801">PLS3 with bottom mounting screw</p>	 <p data-bbox="1051 775 1367 801">PLS3 with top mounting screw</p>
	 <p data-bbox="799 1133 1106 1160">PLS3 without mounting screw</p>	

INDUSTRIES



Water & Wastewater



Agriculture & Farming



Oil & Gas



Marine & Oceanography



Mining & Construction



Transport & Logistics

APPLICATIONS

- Bore Hole Level
- Liquid Tanks
- Liquid Delivery Systems
- Wastewater Tank
- Flood Monitoring
- Water Resources Level

ORDERING CODE

PLS3-N									
Communication Type									
D (Dual mode NB-IoT and Cat-M1)			B (NB-IoT only)			C (Cat-M1 only)			
Measurement Range									
1, 2, 5, 10, 20, 50, 100, 200m H ₂ O (or any other non-standard range)									
Sensor Head Material									
S: SS304 orSS316L			H: Hastelloy			Others			
Cable Material									
U: Polyurethane (suitable for oil and Diesel)			E: Polyethylene (suitable for fresh water)			Others			
Cable Length									
S: same as measurement range or 1m extra						Others			
Mounting Thread									
T: top mounting thread					N: No mounting thread				
B: bottom mounting thread					Others				
Device Activation									
X: No switch (always on)					N: NFC (by mobile phone)				
Antenna									
I: Internal					E: External				
Options									
(on request)									
PLS3-N	D	10m	S	U	S	B	X	I	

Sample Product Code:

- PLS3-N-D-10m-S-U-S-B-X-I

IP68 Level sensor operated on dual mode of NB-IoT and LTE Cat M1, measurement range of 10m H₂O, with stainless steel sensor head and Polyurethane cable, standard cable length, enclosure with bottom mounting thread, activated in the factory and equipped with internal antenna.