



NB IoT – Cat-M1 Operated Low Power Level Transmitter With Narrow Sensor Head 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



TECHNICAL SPECIFICATION

Sensor

• Range:	1, 2, 3, 5, 10 (or other ranges up to 200)	m H ₂ O
• Accuracy: (combined linearity, hysteresis, repeatability)	±0.25 (typ.)	%Span
• Resolution:	±0.01	%Span
• Pressure reference:	Vented Gauge	
• 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:	Typ. 50,000+ readings / 10,000+ transmission (connected to ellenex platform and standard network quality)	

Physical Specification

• Materials:	O-ring: Viton, Body: SS304, Diaphragm: SS316, Oil: Silicon, Enclosure: ASA/POM	
• Process Connection:	No Process Connection (or on request)	
• Weight:	~1,300 (for 3m range)	g
• Protection Rate:	IP66 and UV protected enclosure and IP68 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	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)

Visualization 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, 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 customization available on request



Encrypted & ultra-low power



Integratable



Dynamic alerting



Multi-tenant



Scalable



Composable & API first

PLM2-N Spec-sheet



MODEL GUIDE

Model Options	
Sensor head options	
<p>S: standard size</p>	<p>M: miniature size with 15.8mm sensor head diameter</p>
Enclosure options	
<p>C: cylindrical with standard size</p>	
<p>N: narrow cylindrical with less than 2inch diameter</p>	

INDUSTRIES



Water & Wastewater



Agriculture & Farming



Oil & Gas



Marine & Oceanography



Mining & Construction



Food & Beverage

APPLICATION

- Ground Water Level Monitoring for Narrow Wells

PLM2-N Spec-sheet

ORDERING CODE

PLM2-N								
Communication Type								
B: NB-IoT					C: Cat-M1			
Measurement Range								
1, 3, 5, 10, 20, 50, 100, 200m H ₂ O (or any other non-standard range)								
Cable Length								
S: approximately same as measurement range						Others		
Sensor Head								
S: standard size (27mm diameter)					M: miniature size (15.8mm diameter)			
Enclosure								
C: Cylindrical Standard			N: Cylindrical Narrow			E: Rectangular		
Device Activation								
S: on/off switch <small>(only for C and E type enclosure)</small>						X: No switch <small>(always on)</small>		
Antenna								
I: Internal					E: External			
Options								
(On request) ¹								
PLM2-N	B	10m	S	M	N	X	I	

Sample Product Code:

- PLM2-N-B-10m-S-S-N-S-I

NB IoT level sensor with Narrow Head, measurement range of 10m H₂O, with 10m Polyurethane cable and narrow cylindrical enclosure, without on-off switch and operated with internal antenna.