

PLM2-L Spec-sheet



LoRaWAN Operated Low Power Level Transmitter With Narrow Sensor Head for Liquid Media

- 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 compatible with SS



TECHNICAL SPECIFICATION

Sensor

• Range	1, 2, 3, 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	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. 40,000+ readings / 20,000+ transmission (connected to ellenex platform and standard network quality)	

Physical

• Materials	O-ring: Viton, Body: SS304, Diaphragm: SS316, Oil: Silicon / Olive, Enclosure: ASA/POM	
• Process Connection	No Process Connection (or on request)	
• Weight	~1200 (for 5m range)	g
• Protection Rate	IP66, UV Protected enclosure and IP68 sensor head	

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)	

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• 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

NETWORK CONNECTION AND VISUALISATION

Network Integration

- Pre-configured to ellenex LNS or configurable to all main network servers (AWS, Netmore, ChirpStack, Helium, Kerlink, Kona Tectelic, Lorient, machine-Q, Orange, Orbiwise, Proximus, Swisscom, TATA, The Things Network (TTN), TTI 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

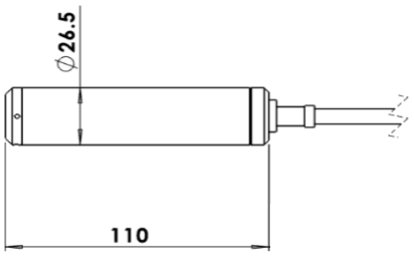

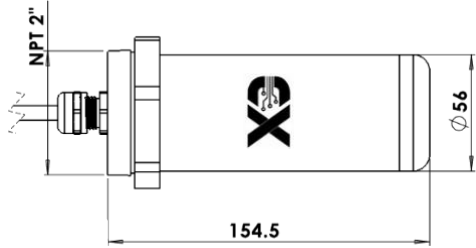
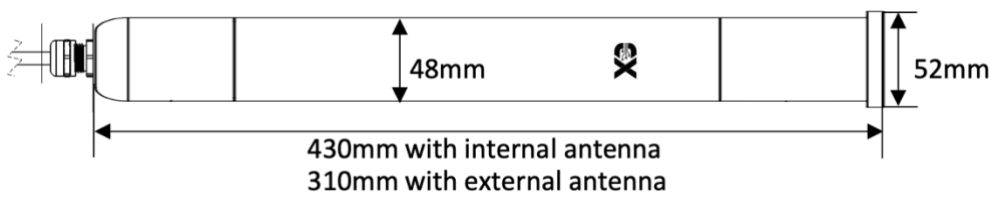


Scalable



Composable & API first

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

APPLICATIONS

- Ground Water Level Monitoring for Narrow Wells

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ORDERING CODE

PLM2-L										
LoRaWAN Frequency Zone										
AS (AS923)		AUx (AU915-928) (Sub Band x)			EU (EU868)			USx (US902-928) (Sub Band x)		
LoRaWAN Activation										
A (Over The Air Activation - OTAA)					P (Activation By Personalization - ABP)					
Measurement Range										
1, 2, 3, 5, 10, 20, 50, 100, 200m H2O (or any other non-standard range)										
Cable Material										
U: Polyurethane					Other options available on request					
Cable Length										
S: Same as measurement length					Other options available on request					
S: standard size (27mm diameter)					M: miniature size (15.8mm diameter)					
Enclosure										
C: Cylindrical Standard			N: Cylindrical Narrow			E: Rectangular				
Device Activation										
S: With On/Off Switch (Only for C and E types)					X: No Switch (Always On)					
Antenna Option										
E: External					I: Internal					
Options										
(On request) ¹										
PLM2-L	AS	A	50m	U	S	M	N	X	E	

Sample Product Code:

- **PLM2-L-AS-A-50m-U-S-M-C-S-E**

LoRaWAN[®] level sensor with narrow head, frequency of AS923, Over The Air Activated, measurement range of 50m H₂O, with Polyurethane cable and cylindrical narrow enclosure, without on-off switch and external antenna.