

# PLM2-L



## 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 (m H2O)	1, 2, 3, 5, 10 (or other ranges up to 200)
• Accuracy (combined linearity, hysteresis, repeatability) (%Span)	±0.25 (typ.)
• Resolution (%Span)	±0.01
• Pressure Reference	Sealed Gauge (with Built-in Atmospheric Pressure Sensor)
• Temperature Coefficient of Zero (%FS/°C)	≤±0.03
• Temperature Coefficient of Span (%FS/°C)	≤±0.03
• Long Term Stability (1 year) (%Span)	≤ 0.2
• Overload Protection (%FS)	150
• Load Cycles (Zero to Full Scale) (Million)	10+
• Storage / Operation Temperature (°C)	-20 ~ +85
• Compensated Temperature (°C)	0 ~ +60

### Power

• Power Supply	Built-in Replaceable Lithium Battery, External Power (option)
• Rated Voltage (V)	3.6
• Battery Lifetime	100,000+ readings and 20,000+ transmission (More than 10 years for most applications)

### Physical

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



www.10sorex.com



Sales@10sorex.com



+1 (424) 400-4964

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## 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

## NETWORK CONNECTION AND VISUALIZATION

### Network Integration

- Integratable to all main networks (Activity, Alibaba, Cisco, Digita, Everynet, Helium, Kerlink, kpn, Lorient, machine-Q, Objenious, Orange, Orbiwise, Proximus, Senet, Sens, Swisscom, TATA, The Things Network (TTN), TTI and any other network)

### Visualization And Data Management

- 10Sorex 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, ALSO AllThingsTalk, HPE IoT and any other major IoT platform).

### 10Sorex 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



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[Sales@10sorex.com](mailto:Sales@10sorex.com)



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## INDUSTRIES



Water &  
Wastewater



Agriculture &  
Farming



Oil & Gas



Marine &  
Oceanography



Mining &  
Construction



Food &  
Beverage

## APPLICATIONS

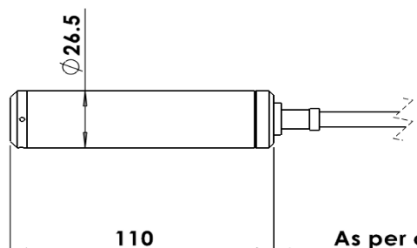
- Ground Water Level Monitoring for Narrow Wells

## MODEL GUIDE

### Model Options

#### Sensor head options

**S:** standard size

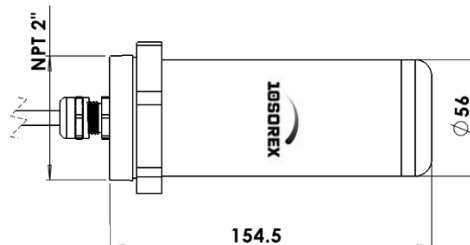


**M:** miniature size with 15.8mm sensor head diameter

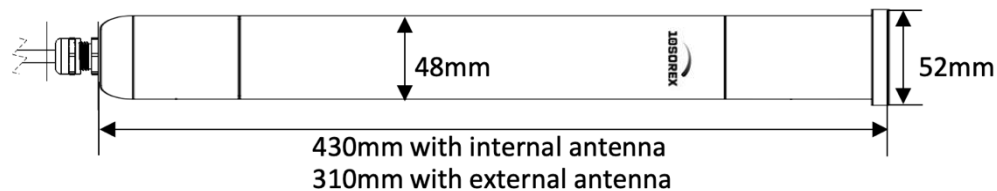


#### Enclosure options

**C:** cylindrical with standard size



**N:** narrow cylindrical with less than 2inch diameter



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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) <sup>1</sup>
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 H<sub>2</sub>O, with Polyurethane cable and cylindrical narrow enclosure, without on-off switch and external antenna.

### <sup>1</sup>) Product Options:

- **EP**: sensor with external power supply connector for 12V supply (only for E type enclosure, adaptor is not included)
- **EPB**: connector for 12V supply with internal battery backup (only for E type enclosure)
- **HG**: high-gain external antenna
- **HCB**: high-capacity battery (only for N and E type enclosure)

