

# PLD2-L



## LoRaWAN Operated Low Power Level Transmitter for Liquid with Built-in Temperature Sensor

- 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)
• Level Accuracy (combined linearity, hysteresis, repeatability) (%Span)	$\pm 0.2$ (typ.)
• Temperature Accuracy ( $^{\circ}\text{C}$ )	$\leq \pm 2$ (temperature sensor is mounted on the back of level sensor and doesn't reflect the media temperature)
• Resolution (%Span)	$\pm 0.01$
• Pressure Reference	Vented Gauge
• Temperature Coefficient of Zero (%FS/ $^{\circ}\text{C}$ )	$\leq \pm 0.03$
• Temperature Coefficient of Span (%FS/ $^{\circ}\text{C}$ )	$\leq \pm 0.03$
• Long Term Stability (1 year) (%Span)	$\leq 0.2$
• Overload Protection (%FS)	150
• Load Cycles (Zero to Full Scale) (Million)	10+
• Storage / Operation Temperature ( $^{\circ}\text{C}$ )	$-20 \sim +85$
• Compensated Temperature ( $^{\circ}\text{C}$ )	$0 \sim +60$

### 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)	$\sim 1300$ (for 3m range)
• Protection Rate	IP66, UV Protected enclosure and IP68 sensor head



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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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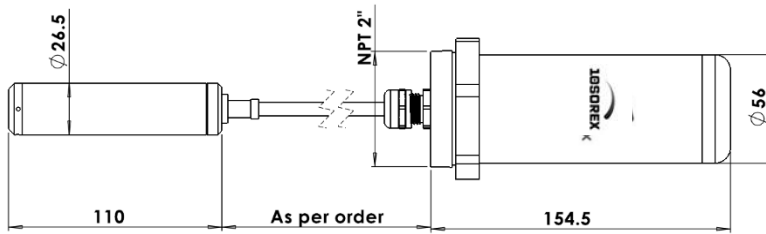

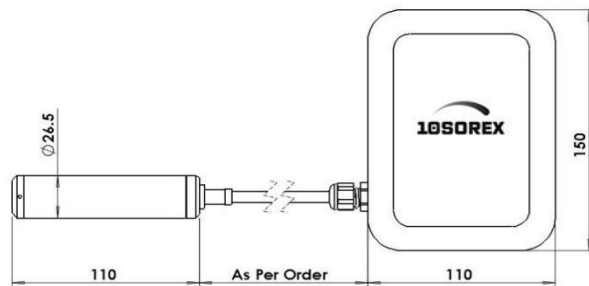
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## MODEL GUIDE

Model	Option / Schematic
<b>C Model</b> 	 <p>IP68 sensor head, connected to IP66 POM enclosure with on/off switch</p>
<b>E Model</b> 	 <p>IP68 sensor head, connected to IP65 ASA enclosure and on/off switch</p>

## INDUSTRIES



Water &  
Wastewater



Agriculture &  
Farming



Oil & Gas



Marine &  
Oceanography



Mining &  
Construction



Smart Building



Transport &  
Logistics



Food &  
Beverage



Hydraulic Oil Storage

## APPLICATIONS

- Water Tank
- Chemical Tanks
- Liquid Delivery Systems
- Water Resources Level
- Flood Monitoring

- Diesel Tank
- Liquid Storage
- Hydraulic Containers
- Wastewater Tank
- Water Trough



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## ORDERING CODE

PLD2-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 H <sub>2</sub> O (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				
Enclosure									
C5: Cylindrical					E5: Rectangular				
Device Activation									
S: With On/Off Switch					X: No Switch (Always On)				
Antenna Option									
E: External					I: Internal				
Options									
(On request) <sup>1</sup>									
PLD2-L	AS	A	3m	U	S	C5	S	E	

### Sample Product Code:

- **PLD2-L-AS-A-3m-U-S-C5-S-E**

LoRaWAN® level-temperature sensor, frequency of AS923, Over The Air Activated, measurement range of 3m H<sub>2</sub>O, with Polyurethane cable and cylindrical enclosure, activated by 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
- **WF**: Active WiFi module on device for communication/ firmware update through Mobile phone NFC module (only for E type enclosure)
- **HCB**: high-capacity battery (only for E type enclosure)



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