



## 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	1, 2, 3, 5, 10 (or other ranges up to 200)	m H2O
• Level Accuracy (combined linearity, hysteresis, repeatability)	±0.2 (typ.)	%Span
• Temperature Accuracy	±2 (temperature sensor is mounted on the back of level sensor and doesn't reflect the media temperature)	°C
• 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 / 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	~1300 (for 3m range)	g
• Protection Rate	IP66, UV Protected enclosure and IP68 sensor head	

# PLD2-L Spec-sheet

## Communication

• LoRaWAN® Version, Class	1.0.2revB, Class A (Class C on request)
• LoRaWAN® Frequency Zone	AS923, EU868, US902-928, AU915-928 <small>(other zones available on request)</small>
• 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 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, TagIO, 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




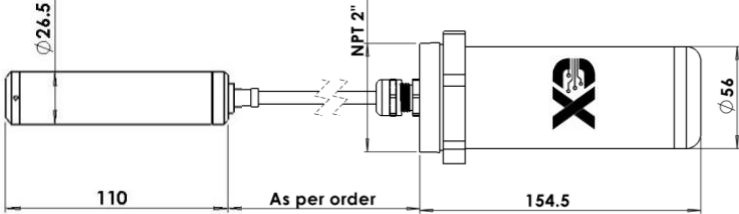

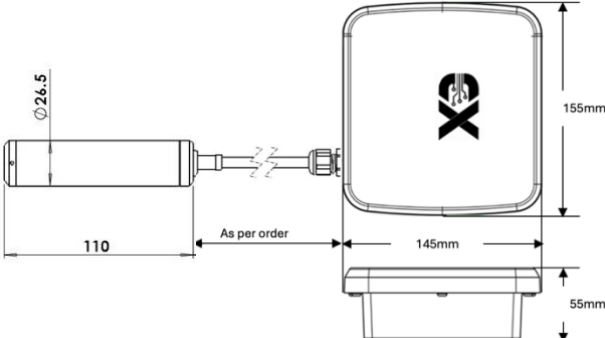
Scalable



Composable & API first

# PLD2-L Spec-sheet

## MODEL GUIDE

Model	Options:
<p>C Model:</p> 	 <p>IP68 sensor head, connected to IP66 POM enclosure with on/off switch</p>
<p>E Model:</p> 	 <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

# PLD2-L Spec-sheet



## 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:

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

