PLM2-L Spec-sheet

ellenex

LoRaWAN®

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	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	~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

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

Visualisation 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, ALSO AllThingsTalk, 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 customisation available on request

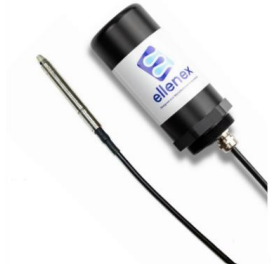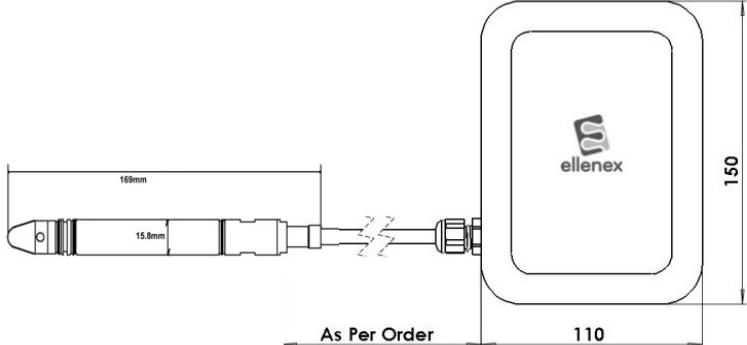|		
Encrypted & ultra-low power	Integratable	Dynamic alerting
Multi-tenant	Scalable	Composable & API first
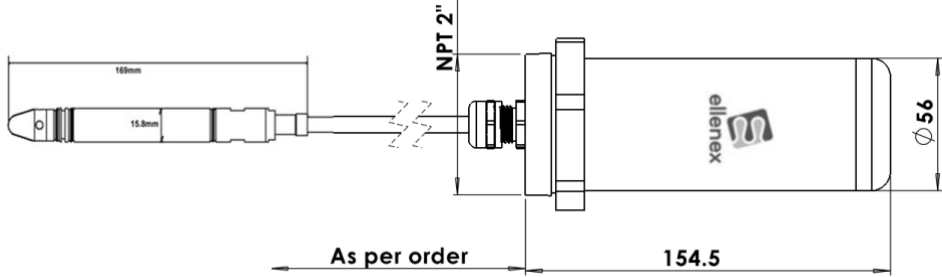
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MODEL GUIDE

Model	Option / Schematic
C Model	NPT 2" · 169mm · 15.8mm · As per order · 154.5 · Ø 56 IP68 sensor head, connected to IP66 POM enclosure with on/off switch
E Model	169mm · 15.8mm · As Per Order · 110 · 150 IP68 sensor head, connected to IP65 ASA enclosure and on/off switch

INDUSTRIES

- Water & Wastewater
- Agriculture & Farming
- Oil & Gas
- Marine & Oceanography
- Mining & Construction
- Food & Beverage

APPLICATIONS

- Ground Water Level Monitoring for Narrow Wells

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		
						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)[1]
PLM2-L	**AS**	**A**	**3m**	**U**	**S**	**C5**	**S**	**E**	

Sample Product Code:

- **PLM2-L-AS-A-3m-U-S-C5-S-E**
  LoRaWAN® level sensor with narrow head, frequency of AS923, Over The Air Activated, measurement range of 3m H2O, with Polyurethane cable and cylindrical enclosure, activated by on-off switch and external antenna.

[1]) 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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