PLC2-N Spec-sheet

NB-IoT LTE-M

NB IoT – Cat-M1 Operated
Low Power Level Transmitter
for Corrosive Liquid Media

- Compatible with most standard communication Protocols (UDP, LwM2M, MQTT, NIDD, etc.)
- Wide range of industrial applications
- High accuracy
- Designed to meet outdoor applications
- Long-term durable performance in harsh environment
- Ultra-low power
- Suitable for corrosive liquids

TECHNICAL SPECIFICATION

Sensor

•	Range:	2, 5, 10 (or other ranges up to 200)	m H_2O
•	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:	50,000+ Readings and 10,000+ Transmission (With UDP protocol/ More than 10 years for most applications)	

Physical Specification

•	Materials:	Body: Hastelloy or PVDF, Diaphragm: Hastelloy or Ceramic (Al2O3), Enclosure: ASA/ POM, O-ring: FKM/ FFKM
•	Process Connection:	No Process Connection (or on request)
•	Weight:	~1,300 (for 3m range) g
•	Protection Rate:	IP66 and UV protected enclosure and IP68 sensor head

Communication

•	SIM Card Type	4FF Nano-SIM, from any Network Provider
•	Firmware Update:	Over The Air, Locally via wireless connectivity
•	Sampling Period:	Configurable via downlink (default 4 hours)
•	Power Consumption:	Power Saving: < 5uA, Transmission: < 220mA

•	Communication Standards	Cat-NB1 (NB-IoT) Cat-M1 (option of back support by GPRS)
•	Communication Bands	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 and B39
•	Data Rates:	Cat-M1: 375Kbps (DL)/375Kbps (UL) NB-IoT: 32Kbps (DL)/70Kbps (UL)
•	TX Power:	23dBm
•	Min Receiver Sensitivity:	Cat-M1: -107dBm NB-IoT: -113dBm
•	Antenna:	Internal (Default)/ External (customised options available)
•	Optional Features:	• Attach without PDN (Packet Data Network) • Support for IPV6 • SMS communication • Mobility support (Cat-M1 only)

NETWORK CONNECTION AND VISUALISATION

Network Integration

Pre-configured or configurable to all main narrow band networks (3, A1, AT&T, China Mobile, DU, Etisalat, KPN, M1 Singapore, Optus, Orange, Proximus, Spark, Sprint, Swisscom, Telefonica, Telstra, T-Mobile, Verizon, Vodafone, 1NCE, Emnify 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, AllThingsTalk Maker, 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

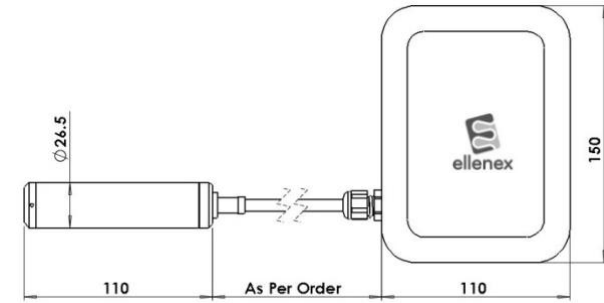|		
Encrypted & ultra-low power	Integratable	Dynamic alerting
Multi-tenant	Scalable	Composable& API first
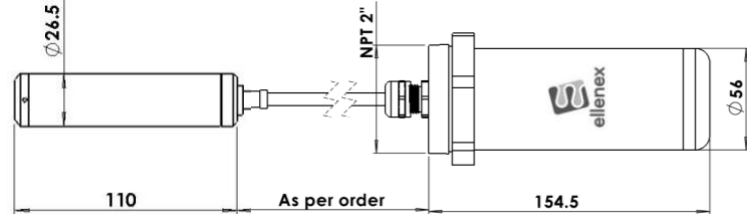
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MODEL GUIDE

Model	Options:
C Model:	IP68 sensor head, connected to IP66 POM enclosure with on/off switch
E Model:	IP68 sensor head, connected to IP65 ASA enclosure and on/off switch

INDUSTRIES

- Water & Wastewater
- Agriculture & Farming
- Oil & Gas
- Marine& Oceanography
- Mining & Construction
- Smart Building
- Transport & Logistics
- Food & Beverage
- Hydraulic Oil Storage

APPLICATIONS

- Chemical Tanks
- Liquid Delivery Systems
- Water Resources Level
- Flood monitoring

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

PLC2-N Spec-sheet

ORDERING CODE

PLC2-N											
	Communication Type										
	B: NB-IoT			**C:** Cat-M1							
		Measurement Range									
		1, 3, 10, 20, 50, 100, 200m H$_2$O (or any other non-standard range)									
			Sensor Head Material								
			H: Hastelloy diaphragm and process connection		**C:** ceramic diaphragm with PVDF process connection		**Others**				
				Cable Material							
				U: Polyurethane		**T:** Teflon coated		**Others**			
					Cable Length						
					S: same as measurement range or 1m extra			**Others**			
						Enclosure					
						E: Rectangular Enclosure		**C:** Cylindrical Enclosure			
							Device Activation				
							S: on/off switch		**X:** No switch (always on)		
								Antenna			
								I: Internal	**E:** External		
									Options		
									(On request)[1]		
PLC2-N	**B**	**3m**	**H**	**T**	**S**	**E**	**S**	**I**			

Sample Product Code:

- **PLC2-N-B-3m-H-T-S-E-S-I**
  NB IoT corrosive resistance level sensor, measurement range of 3m H$_2$O, with Hastelloy sensor head and Teflon coated cable and rectangular enclosure, activated by on-off switch and internal 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)

Integrated IoT Solutions

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