



## NB IoT – Cat-M1 Low Power Ultrasonic Distance and Level Sensor

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



## TECHNICAL SPECIFICATION

### Sensor

• Range:	10	m
• Accuracy: (combined linearity, hysteresis, repeatability)	±1 (typ.)	%Span
• Resolution:	1	mm
• Sensor Minimum Distance:	0 ~ 50cm for 10m range	
• Reading-to-reading stability:	1mm in 1m (Typ)	
• Compensated Temperature:	-10 ~ +65	°C

### Power

• Power Supply:	Built-in Replaceable Lithium Battery, External Power (option)	
• Rated Voltage	3.6	V
• Battery Lifetime:	Typ. 50,000+ readings / 10,000+ transmission (connected to ellenex platform and standard network quality)	

### Physical Specification

• Materials:	Enclosure: ASA/POM	
• Weight:	~500	g
• Protection Rate:	IP66	-

### 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:	<ul style="list-style-type: none"> <li>• Attach without PDN (Packet Data Network)</li> <li>• Support for IPV6</li> <li>• SMS communication</li> <li>• Mobility support (Cat-M1 only)</li> </ul>

## 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)

### 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, 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 customization available on request



Encrypted & ultra-low power



Integratable



Dynamic alerting



Multi-tenant



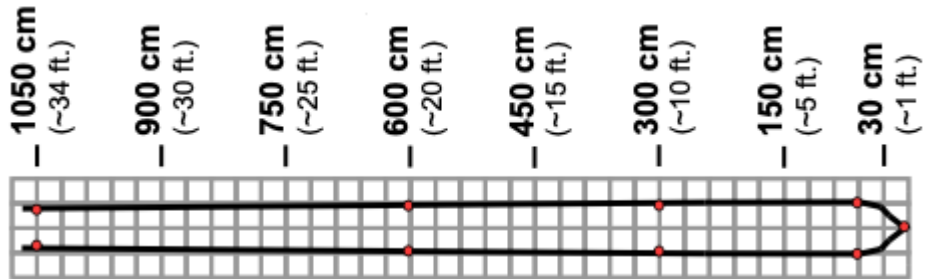
Scalable



Composable & API first


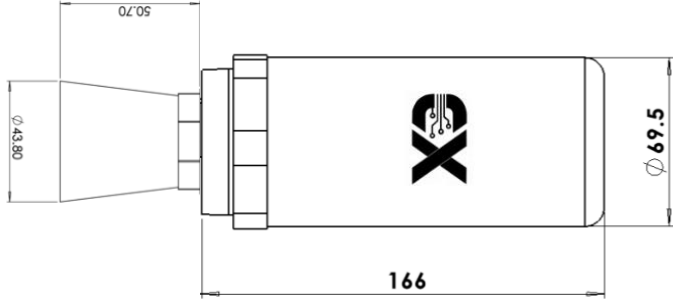
# DUS2-N Spec-sheet

## Beam pattern



Typical beam patter for 30cm target mover left and right with the board parallel to the sensor face

## MODEL GUIDE

Model	Options:
<p>C Model:</p> 	 <p>Cylindrical compact, POM enclosure</p>

## INDUSTRIES



Water & Environment



Agriculture & Farming



Oil & Gas



Marine & Oceanography



Mining & Construction



Smart Building & HVAC

## APPLICATIONS

- Water Tank Level Monitoring
- Diesel Tank Level Monitoring
- Flood Monitoring
- Open Channel Level Monitoring
- Corrosive Liquid Storage Level Monitoring
- Distance Measurement
- People Counting
- Long Range Object Detection

# DUS2-N Spec-sheet

## ORDERING CODE

<b>DUS2-N</b>						
<b>Communication Type</b>						
<b>B: NB-IoT</b>			<b>C: Cat-M1</b>			
<b>Measurement Range</b>						
<b>10 meters</b>						
<b>Enclosure</b>						
<b>C5: Cylindrical housing, IP65</b>			<b>E5: on request</b>			
<b>Device Activation</b>						
<b>S: on/off switch</b> <small>(Only for E Type)</small>			<b>X: No switch</b> <small>(always on)</small>			
<b>Antenna</b>						
<b>I: Internal</b>			<b>E: External</b>			
<b>Options</b>						
<b>(On request)<sup>1</sup></b>						
<b>DUS2-N</b>	<b>B</b>	<b>10m</b>	<b>C5</b>	<b>X</b>	<b>I</b>	

### Sample Product Code:

- **DUS2-N-B-10m-C5-X-I**

NB-IoT ultrasonic distance sensor, range of 10m, with C5 housing (compact and IP65 rated), always on and with internal 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)