

# DUC3-N



## NB IoT – Cat-M1 IP68 Rated Corrosion Resistant 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: (m)	5,10
• Accuracy: (%Span) (combined linearity, hysteresis, repeatability)	±1 (typ.)
• Resolution: (mm)	1
• Sensor Minimum Distance:	0 ~ 20cm for 5m range 0 ~ 50cm for 10m range
• Reading-to-reading stability:	1mm in 1m (Typ)
• Compensated Temperature: (°C)	-10 ~ +65

### Power

• Power Supply:	Built-in Replaceable Lithium Battery, External Power (option)
• Rated Voltage (V)	3.6
• Battery Lifetime:	50,000+ readings and 10,000+ transmission (With UDP protocol/ More than 10 years for most applications)

### Physical Specification

• Materials:	Enclosure: POM, Sensor Head: Parylene coating applied to the surface of the Aluminium transducer
• Weight: (g)	~500
• Protection Rate: (-)	IP68

### 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)



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• TX Power:	23dBm
• Min Receiver Sensitivity:	Cat-M1: -107dBm NB-IoT: -113dBm
• Antenna:	Internal (Default)/ External (optional) (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 VISUALIZATION

### 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

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, AllThingsTalk Maker, 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



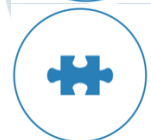
Multi-tenant



Scalable



Dynamic  
alerting

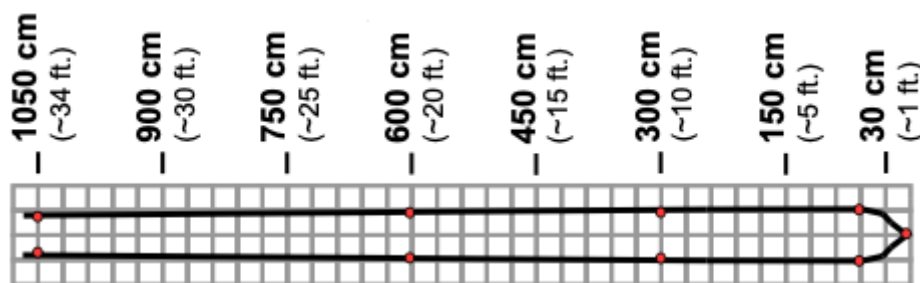


Composable &  
API first




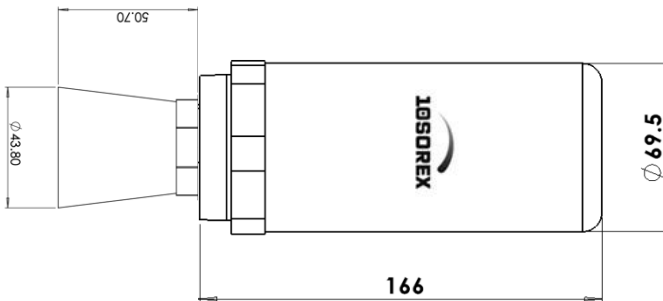
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## Beam pattern



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

## MODEL GUIDE

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

## INDUSTRIES



Water &  
Environment



Agriculture &  
Farming



Oil &  
Gas



Marine &  
Oceanography



Mining &  
Construction



Smart Building  
& HVAC

## APPLICATIONS

- Chemical Tanks
- Liquid Delivery Systems
- Liquid Storage
- Diesel Tank
- Hydraulic Containers
- Wastewater Tank



# DUC3-N

## ORDERING CODE

DUC3-N						
	Communication Type					
	B: NB-IoT			C: Cat-M1		
		Measurement Range				
		5, 10 meters				
		Device Activation				
		X: No switch (always on)		Others on request		
		Antenna				
		I: Internal		E: on request		
		Options				
		(On request)				
DUC3-N	B	10m	X	I		

### Sample Product Code:

- **DUC3-N-B-5m-X-I**

NB-IoT ultrasonic distance sensor, range of 10m, with cylindrical housing (compact and IP68 rated), always on and with internal antenna.

