Ultrasonic 4G NB-IoT/CAT-M1

Our Ultrasonic 4G NB-IoT/CAT-M1 is a flexible and configurable battery operated liquid level sensor with an integrated Cellular modem supporting GSM (2G), LTE-CAT M1 & NB-IoT networks and GPS.

Applications

- Liquid level monitoring
  - Fuel – Oil, Kerosene, Diesel
  - Lubricants
  - Additives
  - DEF / AdBlue
  - Coolants
  - Water
  - Waste Oil
  - Wastewater
  - Chemicals - **This product may not be suitable for monitoring of certain corrosive and hazardous chemicals. List of product compatible chemicals to be verified with a Tekelek representative.*
- Fixed or portable tanks
- Ensure continued supply
- Optimise delivery or collections
- Spot and continuous inventory measurement

Benefits

- Accurate, reliable tank level monitoring
- Programmable data reporting interval
- Remote configurability
- Easy to install
- Minimum 1 year warranty
- CE Conformance, ROHS and PTCRB Compliant
- International Approvals
- Programmable alarms
  - Full alert
  - Empty alert
  - Spill alert (bunded tanks)
  - Fill alert
  - Low and High levels
  - 24/7 Monitoring

WEEE Reg. 00232
Patents granted

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Specification

Characteristic	Transmitter
Dimensions	101mm (W) x 93mm (L) x 150mm (H) ±1mm / 4”(W) x 3.66”(L) x 5.9”(H) ±0.04”
Weight	530g/1.17lbs including 4 x C size batteries - 290g/0.6lbs without batteries
Housing Material	UV Stabilized Polypropylene (compatible with Oil)
Operating Temperature	-20°C to 50°C / -4°F to 122°C **(Note 1)**
Storage Temperature	-30°C to 60°C / -22°F to 140°F **(Note 1)**
Altitude Range	<2Km/1.25miles above sea level
Environmental Protection	IP67 – Outdoors
Radio Frequency:	Cat M1/Cat NB1: LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 LTE TDD: B39 (For Cat M1 Only) EGPRS: 850/900/1800/1900MHz
Gauge Type	Ultrasonic
Ultrasonic Range	>12cm to <4m / >4.7” to 157” at 20°C(-4°F) **(Note 2)**
Ultrasonic Signal Diversion	See polar plot **(Note3)**
Ultrasonic Resolution	±1cm / ±0.04”
Accuracy	Typically ±2cm from 12cm to 3m / ±0.78” from 4.7” to 118”
Software Features	Includes Tekelek’s advanced sonics with quality parameters
Material compatibility	**(Note 4)**
Power requirements	4 of Type C LR14 Alkaline 1.5V (fitted)
Battery life	5 Years **(Note 5)**
GNSS (GPS)	GPS, GLONASS, BeiDou/Compass, Galileo, QZSS
Tank mounting options	Fit directly into 1 ¼”, 1 ½” or 2” BSP existing tank connection

Accessories

SIM Card	Options available

Conformity

EMC directive 2014/30/EU	The Electromagnetic Compatibility (EMC) Directive ensures that electrical and electronic equipment does not generate, or is not affected by, electromagnetic disturbance.
LVD directive 2014/35/EU	The Low Voltage Directive (LVD) ensures that electrical equipment within certain voltage limits provides a high level of protection for European citizens, and benefits fully from the Single Market.
RED directive 2014/53/EU	The Radio Equipment Directive ensures a Single Market for radio equipment by setting essential requirements for safety and health, electromagnetic compatibility, and the efficient use of the radio spectrum.
RoHs directive 2011/65/EU	This Directive lays down rules on the restriction of the use of hazardous substances in electrical and electronic equipment (EEE) with a view to contributing to the protection of human health and the environment, including the environmentally sound recovery and disposal of waste EEE.
CE compliance	Yes

Note 1: Storage and operation above 20°C / 68 °F may reduce battery life. Minimum distance measured is de-rated to 20cm with temperatures <0°C / 32°F
Note 2: Based on a measurement to a flat liquid target of size 30cm^2 / 4.7”^{2}
Note 3: The maximum spatial diversion of the ultrasonic signal is shown on a polar plot included with this datasheet.
Note 4: Suitable for use in tanks for the storage of water diesel fuel, kerosene, gas oil types A2,C1,C2 and D as defined by BS2869.
Note 5: Based on one data drop per day in standard configuration at a location with adequate CAT-M1/NB-IoT coverage.

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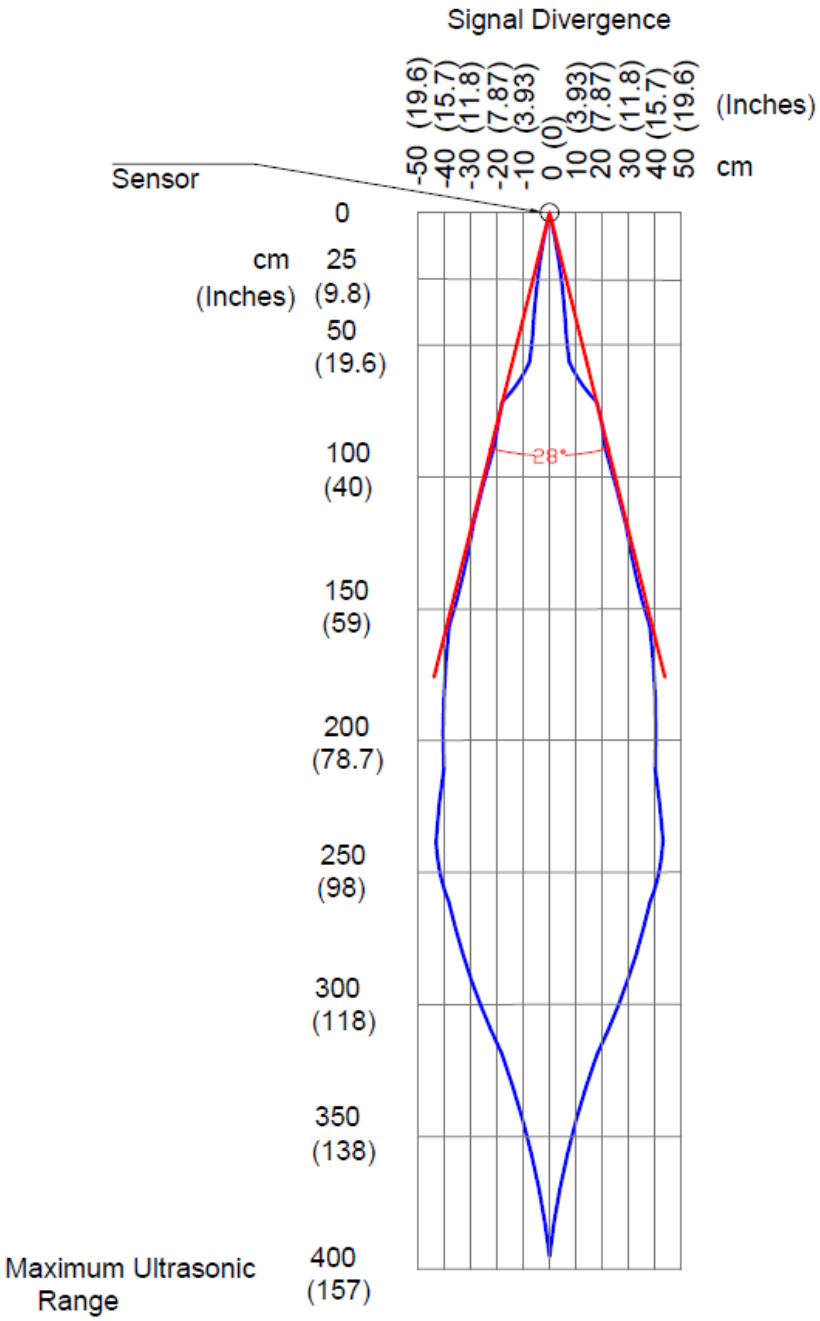
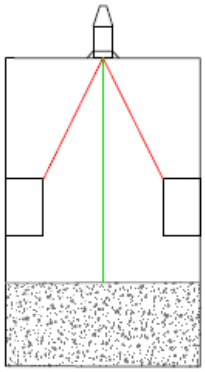
Specification





Find a position for the sensor which respects a clear path for the ultrasonic signal.