

## TEK 811 Cellular Ultrasonic Sensor (C1D2)

Our TEK 811 Cellular Ultrasonic sensor 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 Rochester Sensors 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
- CE Conformance, ROHS, REACH and PTCRB Compliant
- International Approvals
- Programmable alarms
  - Full alert
  - Empty alert
  - Spill alert (bundled tanks)
  - Fill alert
  - Low and High levels
  - 24/7 Monitoring



DS-5049-10

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Since the suitability of these products depends upon a wide range of factors not in our control, Rochester Sensors expects and understands that you will conduct the testing and evaluation necessary to determine that these products are suitable for your application. Whilst every effort is made to ensure the above details are correct at the time of printing, Rochester Sensors reserves the right to make material changes, and or technical changes without notification

## 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 <b>(Note 1)</b>
Storage Temperature	-30°C to 60°C / -22°F to 140°F <b>(Note 1)</b>
Altitude Range	<2Km/1.25miles above sea level
Environmental Protection	IP67 – Outdoors
Radio Frequency (Modem dependent)	BG96 LTE FDD (Cat M1 & Cat NB1): B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 LTE TDD (Cat M1): B39 EGPRS: 850/900/1800/1900MHz  BG95 LTE FDD (Cat M1): B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85 LTE FDD (Cat NB2): B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85 EGPRS: 850/900/1800/1900MHz
GNSS (GPS) (Modem dependent)	BG96 GPS, GLONASS, BeiDou/Compass, Galileo, QZSS BG95 GPS, GLONASS, BeiDou, Galileo, QZSS
Safety	Class 1 Div 2, Groups A,B,C, & D (-20°C < Tamb < +50°C). UL 121201 9 <sup>th</sup> Ed.
Ultrasonic Range	>12cm to <4m / >4.7" to 157" at 20°C(-4°F) <b>(Note 2)</b>
Ultrasonic Signal Diversion	See polar plot <b>(Note3)</b>
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	<b>(Note 4)</b>
Power requirements	4 of Type C LR14 Alkaline 1.5V (fitted)
Battery life	5 Years <b>(Note 5)</b>
Tank mounting options	Fit directly into 1 ¼", 1 ½" or 2" BSP existing tank connection

## Accessories

SIM Card	Options available
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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 2 Directive (2011/65/EU) and Delegated Directive RoHS 3 (EU) 2015/863	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.
REACH Compliance	In accordance with (EC) 1907/2006
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

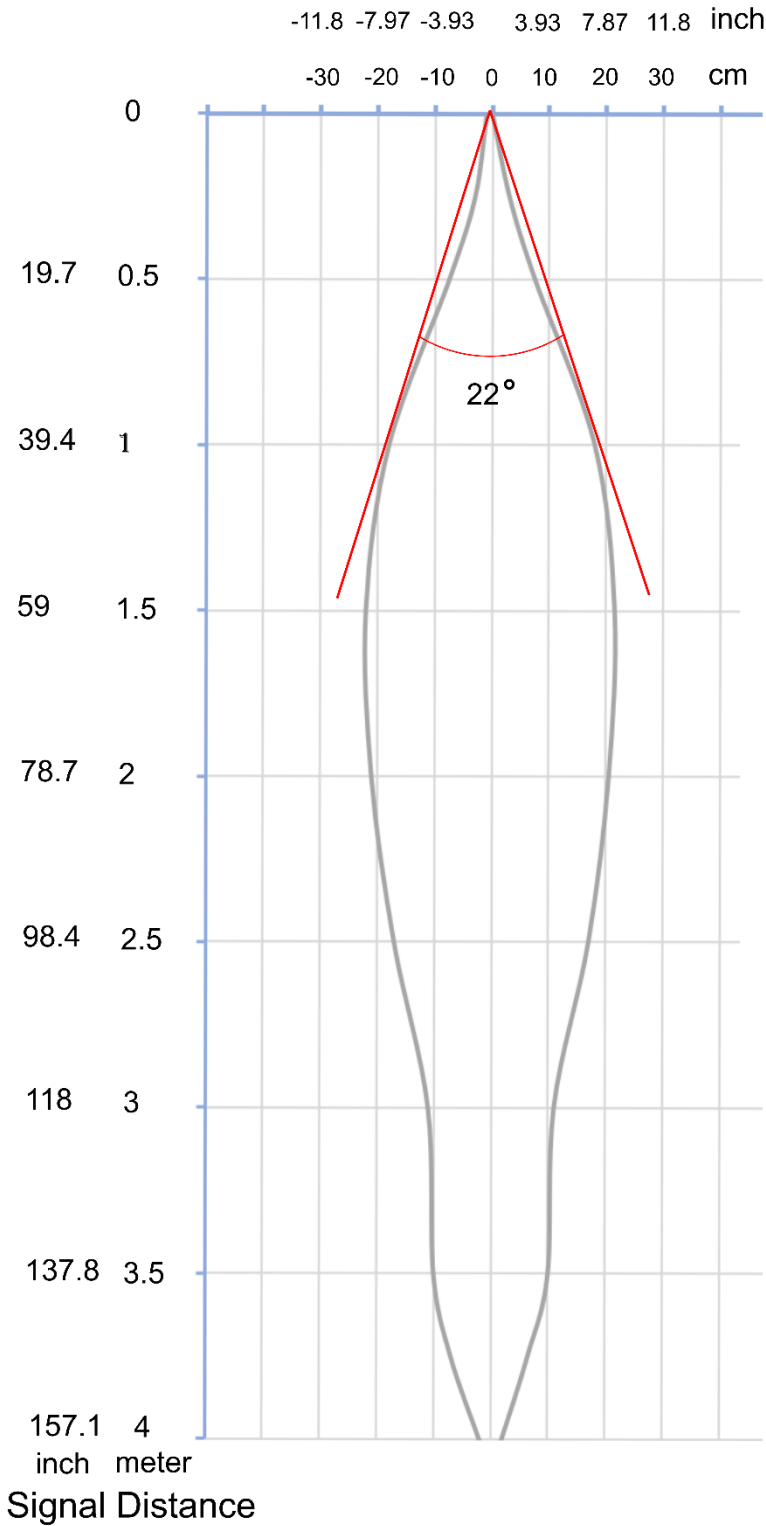
**Note 2:** Based on a measurement to a flat liquid target of size 30cm<sup>2</sup> / 4.7"²

**Note 3:** The maximum spatial diversion of the ultrasonic signal is shown on a polar plot included with this datasheet.

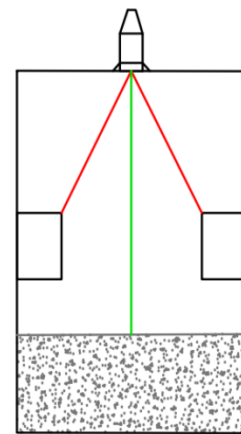
**Note 4:** Suitable for use in tanks for the storage of water diesel fuel, kerosene, gas oil types A2,C1,C2 and D as defined by BS2869.

**Note 5:** Based on one data drop per day in standard configuration at a location with adequate CAT-M1/NB-IoT coverage.

Signal Divergence



Signal Divergence



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

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