NB-IoT/CAT-M1/2G Intrinsically safe ultrasonic level sensor

With an ultrasonic level sensor, the battery powered Intrinsically Safe Liquid Level logger is suitable for monitoring tanks levels.
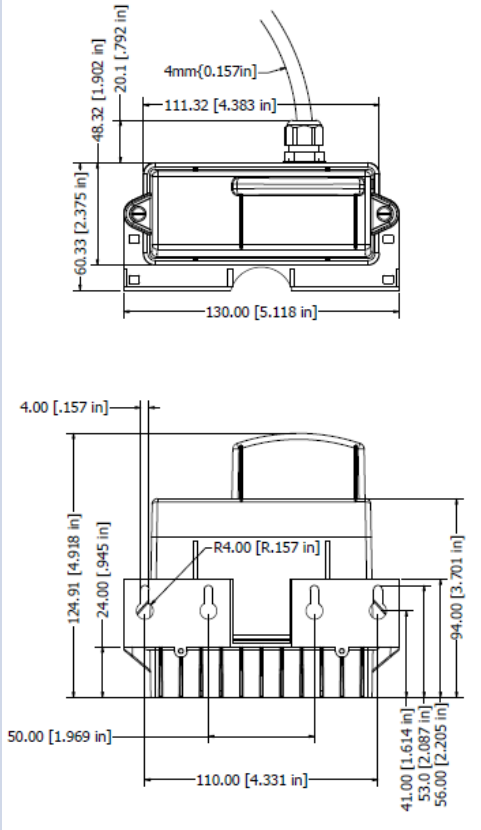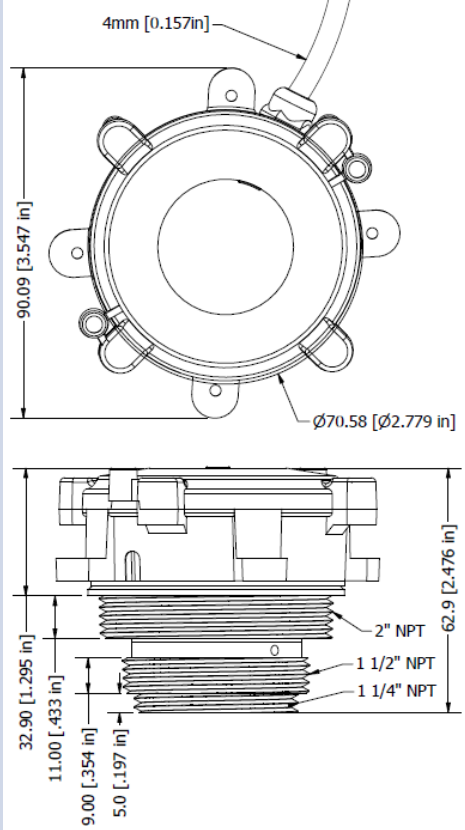
Applications

- Liquid Level Ultrasonic level sensor
    - Kerosene, Diesel, Gasoline
    - Oils/Waste Oils
    - Other hazardous/non hazardous
    - DEF / Adblue
    - Water
- Tanks
    - Fixed or mobile
    - Underground
- Spot and continuous inventory measurement

Benefits

- Accurate, reliable tank level reporting to server monitoring application
- Highly configurable server reporting interval from hourly to once per month
- 28 slot logger with configurable logging interval
- Accuracy to +/-2cm (0.78")
- Optimise delivery or collections
- Programmable Alarms
    - High level
    - Low levels
    - Rate of level change (fill or drain)
- Reports local temperature, radio signal strength, and battery level
- External antenna option for underground locations
- Remote re-configurability from the cloud
- Plug and play installation
- Mounting/attachment options – wall/pole
- International compliance.

WEEE Reg. 00232
Patents granted

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DS-5068-03

Characteristics	Liquid Level logger 4G NB-IoT/CAT-M1 /2G	Ultrasonic level sensor Exi
Dimensions		
Safety	Class I, Div 1, Gr C D CSA.16.70011285 Class I Zone 0 AEx ia IIB T4 Ga Complies with UL 913 II 1 G-Ex ia IIB T4 Ga SIRA15ATEX2103 X IECEx CSA 15.0006X	Class 1, Div 1, Group A,B,C & D T4 Class I, Zone 0 AEx ia IIC T4 Ga Complies with UL 913 SGSNA/20/CA/00003X SGS20ATEX0009X IECEx BAS 20.0005X
Housing Material	Moulded plastic, 2-part, material Glass Reinforced Polyamide, UV resistant.	Moulded plastic, 3- Part, UV Stabilized Polypropylene
Weight	Weight 350g/12oz (excluding cable & gland/external connectors)	140g/5oz (excluding cable & gland/external connectors)
Conformance	ATEX/Hazloc/IECEx, PTCRB (AT&T) & Verizon approvals, RED, FCC, CE, RoHS.	ATEX/Hazloc/IECEx, CE, RoHS.
Manual Activation	Magnetically activated reed switch / Audible buzzer	N/A

Characteristics	Liquid Level logger 4G NB-IoT/CAT-M1 - Ultrasonic sensor Exi
Ultrasonic Resolution	±1cm / ±0.4"
Accuracy	±2cm / ±0.78"
Communication	LTE CAT-M1 or NB-IoT or 2G with GPS
Signal Divergence	See polar plot for the sonic profile included on this datasheet
Battery life	Up to 10 years **(Note 2)**
Battery technology	3.6V Lithium Thionyl Chloride Exi "Bobbin type" construction
Power requirements	Battery pack with standard cell sizes connected with a 2 wire harness included
Humidity	0 – 100% RH
Operating Temperature	-4°F to 131°F (-20°C to 55°C)
Storage Temperature	32°F to 86°F (0°C to 30°C)
Environmental Protection	IP68 - Outdoors
Installation	Plug and play installation

Operation

The Intrinsically Safe Exi ultrasonic sensor is suitable for Monitoring Liquid levels up to 4m / 13 ft depth. It has a 3m / 10 ft cable with an IP68 connector to facilitate mounting.

The Ultrasonic Exi sensor communicates to the logger via UART serial bidirectional communications TTL 3.3V level 1200 baud, no parity, 8 data bits.
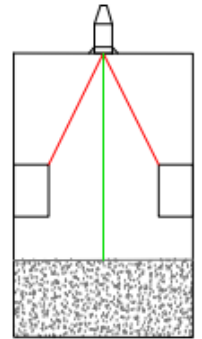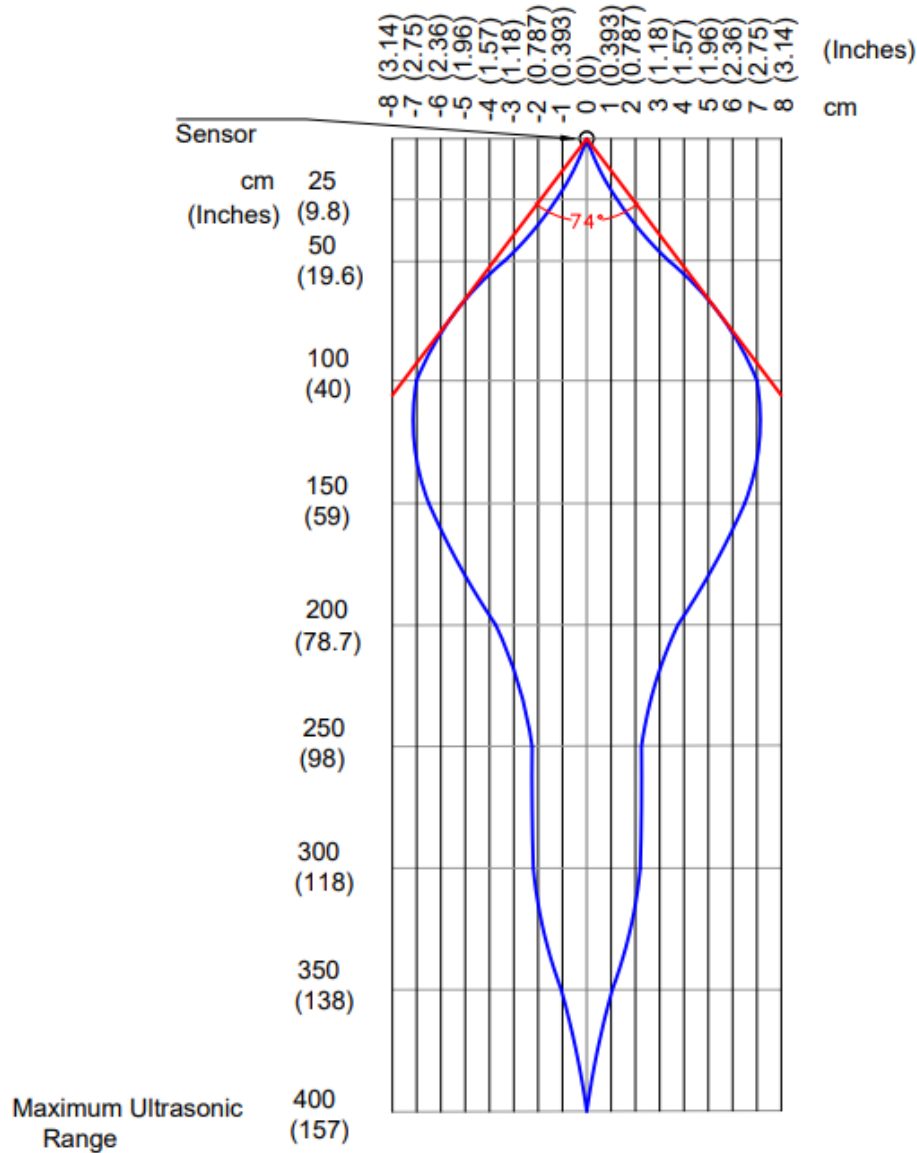
Configuration/Specification Options

External connection	IP68 Cable gland / IP68 bulkhead connector
Antenna	Internal with option for antenna coupler with SMA connector to allow connection of an external GSM antenna
Data Communications	Makes a TCP connection to the server over 2G, NB-IoT or CAT-M1 cellular network and delivers its payload using a proprietary Tekelek binary
Fixing/Mounting	Screw mounts (4), tie wrap, & pole mount features are standard.

Note 1: Note: range de-rates to 8"/20cm < 0°C
Note 2: Based on 1 communication per day and good network coverage

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

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