

# ATEX MSFM LITE ULTRASONIC LEVEL MONITOR

WIRELESS LEVEL MONITORING SOLUTION FOR TANKS, SILOS AND TRADE EFFLUENT STORAGE SYSTEMS, INCLUDING THOSE LOCATED IN POTENTIALLY EXPLOSIVE ATMOSPHERES.

## HOW IT WORKS

It uses power saving technology developed by Detectronic to provide up to 5 years of battery life; significantly longer than competitive systems and more cost effective than traditional wired telemetry.

The MSFM Lite's two main components; the ultrasonic sensor and 2G/3G/LTE-M1/NB-IoT capable data logger are connected by a 10 metre cable. This allows the sensor to be positioned directly above the measured surface, with the data logger located elsewhere.

The liquid level is inferred from the measured distance from the ultrasonic sensor to the surface of the liquid. This distance is calculated by measuring the time taken for the ultrasonic pulses to traverse the return path from the probe to the liquid surface. Compensation for the effects of changes in environmental temperature is applied automatically.

The data is read and recorded by the MSFM Lite at predetermined logging intervals set by the user. Logged data is then transmitted via GSM/GPRS at user-selectable intervals (typically once an hour, once a day, once a week or once a month). Data can be transmitted direct to a host computer or viewed on Detectronics secure website.

Internal dimensions information can be used to calculate volume within the website.



*Installation examples:  
Left: Tank, Right: Silo*



# ULTRASONIC LEVEL MONITOR

## KEY FEATURES

- IS certified (Europe and worldwide)
- Embedded 2G/3G/LTE-M1/NB-IoT GPRS remote data delivery
- Worldwide roaming data tariffs
- Ultrasonic level sensor 3m range
- 5 years battery life for GPRS comms, logger and sensor
- Hi / low alarms with 'send latest data' feature. includes ability to send data to a local output (e.g. sampler)
- IP68/NEMA 6P construction
- Military specification connectors
- Custom internal hi-gain underground antenna
- External antenna option (for marginal signal sites)
- Calculate liquid volume where internal dimensions of storage tank known

## TECHNICAL SPECIFICATION

### CSO ULTRASONIC LEVEL SENSOR

**Range:** 0.0m to 3.0m (with 300mm deadband)

**Accuracy:**  $\pm 3$ mm

**Main Beam Angle:** 10° (-3dB)

### DATA LOGGER AND GPRS/GSM COMMUNICATION

**Memory:** solid state 512K - 60K per channel (rotating store or store until full)

Recording interval programmable between 1 minute and 1 hour

2G/3G/UMTS GSM/GPRS communication (worldwide compatibility)

**Data transmission:** GPRS - 15 minutes, hourly, daily, weekly, monthly at programmable intervals

**Data logger power supply:** 5 years typical life span internal lithium battery pack (user replaceable. Internal battery voltage logged as an additional channel of data)

### ALARM DIAL OUT

High/ low threshold and profile alarms with 'send latest data' with alarm message

### ENVIRONMENTAL

**Operating temperature:** -40°C to +60°C

**Protection:** IP68 / NEMA6P

**Connectors:** IP68 Mil - Spec

#### Dimensions:

MSFM Lite - L = 280mm x W = 150mm x D = 100mm

CSO Probe - L = 280mm x W = 80mm x D = 85mm

**Weight:** 3.5 kg (including sensor and 10m cable)

### APPROVALS

MSFM S2.5T:

Sira 19ATEX2255X

II 1G

Ex ia IIB T4 Ga

Ta = -40°C to +60°C

CSO Ultrasonic Probe v2:

Sira 12ATEX2259X

II 1G

Ex ia IIC T4 Ga

Ta = -20°C to + 60°C

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