

ATEX MSFM MULTI SENSOR FLOW MONITOR S2U

Remote-reporting flow measurement system for water and wastewater applications:

- COMBINED SEWERS
- OPEN-CHANNELS
- STORM SEWERS
- INDUSTRIAL EFFLUENT

MSFM S2U is designed to monitor raw sewage, industrial effluents and storm waters. Automatic GPRS data retrieval is standard and can be used worldwide*. An additional standard input accepts Detectronic Ultrasonic Level Sensor or PTI Pressure-Depth Sensor.

Certified to ATEX/IEC Ex Zone 1.



THREE HEADS ARE BETTER THAN ONE

The MSFM records data from 3 sensor inputs: Pressure Depth, Ultrasonic Velocity and (optional) Ultrasonic Level/PTI. Readings can be logged at regular intervals between 1 and 60 minutes.

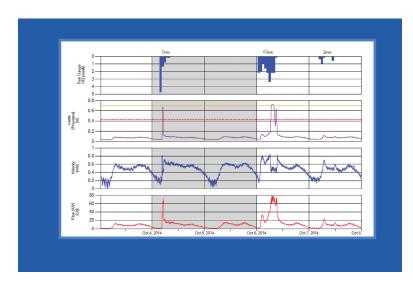
TELEMETRY

Thanks to its custom-designed antenna, which improves signal sensitivity in underground locations, 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).

When using the Ultrasonic Level Sensor, depth of flow is inferred from the measured distance from the sensor to the surface of the flow. This distance is calculated by measuring the time taken for the ultrasonic pulses to traverse the return patch from the probe to the water surface. Compensation for the effects of changes in air temperature is applied automatically.

ADDITIONAL I/O FLEXIBILITY AS STANDARD

2 spare logger channels included (e.g. rainfall/float/intruder) plus high/low local alarm output (e.g. sampler/pulse).

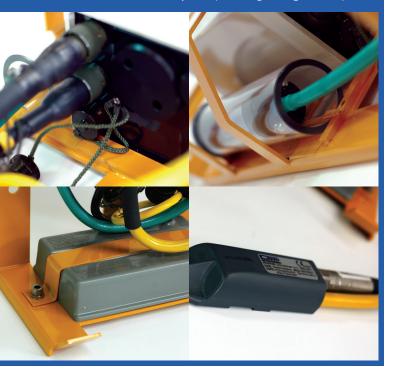


ATEX MSFM MULTI SENSOR FLOW MONITOR S2U

FEATURES

IS certified (Europe and worldwide)

- Embedded GPRS remote data delivery
- Worldwide roaming data tariffs
- Combined A/V sensor
- Hydrostatic (pressure) depth sensor
- Ultrasonic velocity sensor
- Pressure Transducer Interface (optional 3rd sensor)
- Ultrasonic level sensor (optional 3rd sensor)
- 2 spare logger channels (e.g. rainfall/float/intruder)
- External Li-ion rechargeable sensor battery
- 30+ weeks at 5 min battery life A/V sensor
- 5 years battery life for GPRS comms, logger and sensor
- Hi/low alarms with 'send latest data' feature
- Hi/low alarms with 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)



TECHNICAL SPECIFICATION

Velocity Sensor - Dual Piezoelectric Elements

Velocity range: 0.03m/s to 4.00m/s (resolution 1mm/s)

Linearity: ±1%

Accuracy: ±2.5% FS (±1% in calibrated range 0.05m/s - 2.00m/s)

Depth Sensor (Hydrostatic Pressure)

Titanium diaphragm isolated silicon sensor

(integrated temperature compensation)

Range: 0.0m to 6.0m (resolution 1.0mm)

Linearity: 0.1% BSL

Accuracy: ±0.2% FS (±0.1% in calibrated range 0.03m - 2.00m)

Optional Level Sensor (Ultrasonic)

CSO Temperature Compensated Ultrasonic Depth Probe

Range: 0.0m - 3.00m (with 200mm deadband)

Accuracy: ±0.25% FS (integrated temp compensation)

Main beam angle: 10° (-3dB)

Optional Depth Sensor (PTI) Pressure Transducer Interface

Ranges available between 0-3m and 0-100m

Accuracy dependent upon pressure range, typically +/-0.1% F.S.

Resolution: +/-1.0mm

Data Logger and GPRS/GSM Communication

Memory: solid state 128K - 40K per channel (rotating store or store until full)

Recording interval programmable between 1 minute and 1 hour

GSM/GPRS communication worldwide compatibility:

900MHz, 1800MHz integral antenna (worldwide except North America),

850MHz, 1900MHz integral antenna (North America)

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

Data logger and GPRS comms power supply: 5 years typical life span internal lithium battery pack (user replaceable)

Main Sensor Power Supply and Operating Capacity

12V ATEX Li-ion rechargeable battery pack

Full Charge provides 30+ weeks at 5 min logging rate

Alarm Dial Out

High/low threshold and profile alarms on each channel with 'send latest data' on alarm and option to repeat data send

Additional I/O

2 analogue/digital input channels

1 pulse output

Environmental

Operating temperature: -20°C to +60°C

Protection: IP68/NEMA6P

Connectors: IP68 Mil – Spec

Dimensions: $530 \times 213 \times 150$ (maximum) including battery pack

and protection frame

Weight: 8.5kg (including battery pack, frame, depth and velocity sensors

with standard 10m cables)

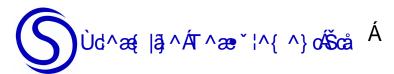
Approvals

SIRA 12 ATEX 2110X Ex II 1G Ta -40°C to +60°C

IEC Ex SIR 12.0044X Ex ia IIB T4 Ga Ta -40°C to +60°C

GSM Communication Certification

IC: 2417C-SL6087 FCC ID: N7NSL6087



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