

MSFM4-TX

Multi-Sensor Flow Meter



Product Datasheet



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The MSFM4-TX is a next-generation multi-sensor flow meter designed to provide accurate and reliable monitoring of water and wastewater flows.

Combining advanced ultrasonic velocity, hydrostatic depth, and optional non-contact level sensing, the MSFM4-TX offers continuous measurement even in the most challenging environments. Engineered for flexibility, it supports multiple sensor inputs, making it an adaptable solution for diverse applications. With robust environmental protection and industry approvals, the MSFM4-TX is a dependable tool for flow monitoring, regulatory compliance, and operational efficiency.

Key Features and Benefits

- **Reverse Flow Detection:** Continuously monitors and detects reverse flow events in the network, providing critical data to identify potential blockages, surcharges, tidal influence and system inefficiencies. This functionality enhances predictive maintenance strategies and helps prevent infrastructure damage.
- **Multi-Sensor Configurability:** Supports a combination of velocity, depth, and level sensors to meet diverse monitoring needs. Includes an expansion interface for additional sensors, allowing for tailored configurations. This flexibility ensures the system maintains operational efficiencies by adapting to specific site requirements.
- **Flexible Communications:** Equipped with Bluetooth (BLE) for seamless local configuration and LTE Cat M1/NB-IoT/2G fall back for remote data transmission, enabling efficient data access from both field teams and central control rooms. The ability to use an internal or external antenna ensures connectivity in a wide range of deployment scenarios.
- **Flow Proportional Sampling:** (Optional Feature) A pulse can be triggered to an automatic water sampler once a set volume of water has passed. This ensures sample collection is directly linked to flow conditions, improving water quality assessments and regulatory compliance. This feature is not available on the standard model and must be specified as an additional option. This ensures sample collection is directly linked to flow conditions, improving water quality assessments and regulatory compliance.
- **OTA updates:** Software and firmware updates can be performed remotely, allowing settings to be adjusted as needed.

Recommended applications

- Combined sewer overflows (CSOs)
- Sanitary sewer overflows (SSOs)
- Stormwater networks
- Open Channels
- Flow Surveys
- Inflow and infiltration studies
- Sewer hydraulic Model Validation
- Industrial Effluent Monitoring

Technical Specifications

Velocity Sensor	
Type	1MHz ultrasonic Doppler using dual piezoelectric elements
Range	0.03m/s to 4.00m/s
Accuracy	±2.5% FS (±1% in calibrated range 0.05m/s - 2.00m/s)

Depth Sensor	
Type	Hydrostatic pressure
Range	0.0m to 10m
Accuracy	±0.2% FS

Optional Radar Level Sensor (LIDoTT®)	
Type	Pulsed Coherent Radar Sensor
Range	0.000 - 7.00m
Accuracy	±5mm

Temperature Sensor	
Type	Digital Temperature Sensor
Range	-40 to +125°C
Accuracy	+/- 0.2°C

Environmental & Certifications	
Operating temperature	-20°C to +60°C
Ingress Protection	IP68 / NEMA6P
Impact Resistance	IK09
Certifications	CE / UKCA, ATEX = Ex ia IIB T4 Ga, Ex II IG

Physical Specifications	
Dimensions	280mm (h) x 150mm (w) x 100mm (l)
Weight	6.4kg

Power & Connectivity	
Power Supply	External battery pack (3V6, DC, <20mA avg.)
Communication	Bluetooth (BLE), 2G/LTE-M/NB-IoT
Integration	Modbus RS485 for SCADA systems
Antenna	Internal/External

Inputs & Outputs	
Inputs	Modbus RS485 x2 (LIDoTT Sensors, MS4 sensor), Expansion interface (Rain Gauge, additional sensors)
Outputs	Sampler/dosing output (open drain transistor, 220Ω resistor)
Antenna	Internal/External option

Data Logging & Memory	
Storage	676 Days of sample storage on board
Channels	8
Data Management	Rolling storage (oldest data automatically overwritten when full)
Sampling	Configurable (2, 5, 15 min)

Specifications are subject to change without notice. While every effort has been made to ensure the accuracy of the information contained in this document, Detectronic assumes no responsibility for any errors or omissions. Users are advised to verify the suitability of the product for their specific application prior to purchase or installation.

