Reliable flow measurement in open channels

Ensure compliance and efficiency with FlexView FMA90 and Micropilot FMR20B

Benefits at a glance

- Precise flow calculation in open channels, weirs, and pipes
- Easy configuration with predefined flumes and weirs (Q/H tables)
- Two independent flow and totalizer calculations with sum or difference of both measurements in one control unit
- Accurate pulse outputs for samplers and plant control systems
- Backwater detection and compensation using a second level sensor
- Fast commissioning and reliable integration into existing systems

Process conditions

- Open channels with varying flow profiles
- Presence of foam, turbulence, and debris
- Outdoor installation exposed to changing weather conditions

Open channel flow measurement is essential in wastewater treatment plants for monitoring influent and effluent flows, ensuring regulatory compliance, and optimizing process control. Unlike closed-pipe systems, open channels rely on gravity-driven flow, making them suitable for raw sewage and treated water streams. Measurement typically uses primary devices such as weirs or flumes, combined with radar or ultrasonic level sensors connected to a control unit. FlexView FMA90 calculates flow based on water level and device geometry, delivering accurate results even under challenging conditions.

The challenge Wastewater flow measurement in open channels faces multiple challenges: fluctuating hydraulic conditions, backwater effects, and environmental influences such as foam, turbulence, and debris. Traditional systems often lack flexibility for different channel types and struggle with accurate compensation when downstream restrictions occur. Additionally, integrating reliable signals for samplers and plant control systems can be complex, especially when multiple measurement points are required. These issues demand a robust, adaptable solution that ensures precision, easy configuration, and dependable performance under harsh conditions.

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Precise open channel flow measurement with FlexView FMA90 – reliable for wastewater applications

Our solution FlexView FMA90 is a versatile control unit for radar, ultrasonic, hydrostatic, HART or universal 4–20 mA level sensors. It offers precise flow calculation in open channels, weirs, and pipes, with easy selection of predefined flumes and integrated Q/H tables for quick configuration. The device supports two independent flow calculations and totalizers in one unit, making it ideal for multi-point monitoring. Advanced backwater detection and compensation using a second level sensor ensures high accuracy even under challenging conditions. Available in field, DIN rail, and panel housing variants, FlexView FMA90 guarantees seamless installation and reliable operation in wastewater plants.

Result By implementing FlexView FMA90 with radar or ultrasonic sensors, the measuring points in wastewater treatment plants achieve highly accurate flow measurements even under changing and harsh environmental conditions. Configuration time is reduced, monitoring becomes seamless, and integration with plant control systems is simplified. The solution ensures compliance, operational efficiency, and dependable performance in demanding open channel applications.

Components

FlexView FMA90 – Control unit for level and flow measurement

Micropilot FMR20B – Compact radar level sensor for open channels

Prosonic FMU30 – Ultrasonic level sensor for open channels

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