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**Technical facts**

**FLUXUS® F721XLF** Clamp-on ultrasonic measuring system for extreme low flows

**Measurement Functions**

- **Physical quantities**: Volumetric flow rate, mass flow rate, flow velocity
- **Diagnostic Functions**: Sound speed, signal amplitude, SNR, SCNR, standard deviation of amplitude and transit times

**Measurement**

- **Fluid**: all acoustically conductive liquids with < 2 % gaseous or solid content in volume
- **Reynolds Number**: > 1000
- **Repeatability**: ±0.15 % MV ±0.0006 m/s

**Measurement uncertainty**

- **Volumetric flow rate**: ±0.3 % MV ±0.0006 m/s
- **At the measuring point**: ±1 % MV ±0.0006 m/s

**Transmitter**

- **Number of measuring channels**: 1
- **Explosion protection**: ATEX/IECEx Zone 1/2, FM Class I / Div. 2
- **Power supply**: 100 ... 230 V AC / 50 ... 60 Hz
  - 12 / 24 V DC
- **Outputs**: 4 - 20 mA active
  - 4 - 20 mA Hart active / passive
    - pulse / frequency / binary
- **Inputs**: PT100 / PT1000
  - 4 - 20 mA active / passive / binary
- **Digital communication**: Modbus RTU/TCP, Hart, Profinet PA, Foundation Fieldbus

**Available transducers**

- **Explosion protection**: ATEX/IECEx Zone 1/2, FM Class I / Div. 2
- **Pipe size range**: 10 mm to 50 mm
- **Temperature range**: -40 °C ... +60 °C

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**FLEXIM® F721XLF**

Clamp-on Ultrasonic Measurement of Liquid Low Flows

- **Leading Technology – Improved Accuracy – Superior Performance**

**FLEXIM Sets Standards when measuring matters**

- **Chemical Injection for Oil & Gas Upstream and Midstream**
- **Chemical dosing in Water and Wastewater treatment**
- **Paint spray lines**
- **Pulp & Paper Industry**
- **Chemical and Petrochemical Industries**
- **Semiconductor Industry**

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Achieving accurate measurement of extra low flow rates has been a known challenge for many metering technologies across several industries. Even though traditional metering options are commercially available these come with some undesired effects such as pressure drop and are prone to wear and tear and drifting over time. These ultimately impact measurement accuracy and repeatability, not to mention being costly to install in retrofitted applications and require constant maintenance and calibration.

Understanding that flow rate measurement provides one of the most important process parameters in the chemical, pharmaceutical, petroleum, energy, and power engineering industries, FLEXIM continues to develop and improve our extra low flow capabilities and signal processing techniques and introduces the FLUXUS® F721XLF ultrasonic clamp-on meter.

The new FLUXUS® F721XLF can achieve accurate and reliable measurement of flows as low as 3 l/h or 0.05 l/min and below in small pipe diameters 10 mm to 50 mm, provides bidirectional communications protocols, matched transmitter and transducer calibration as well as aluminium and stainless-steel housing options.

Key features

- Non-intrusive, clamp-on design
- No moving parts, wear & tear is a thing of the past!
- Temperature-compensated transducers
- Atex/IECEx zone 1 & 2, FM Class 1, Div. 2 approval
- Matched transducers, advanced digital signal processing (DSP) and efficient algorithms ensure stable measurements at very low flows

Advantages

- Unimpaired plant availability: Installation and commissioning during ongoing operation
- Independent of operating pressure
- Increased operational and environmental safety: No risk of leakage
- Completely maintenance-free

Chemical Injection for Oil & Gas

Scale and corrosion inhibitors are used in the Oil & Gas industry to prevent scale build-up on pipes and to maintain well integrity. Accurate measurement of these costly chemicals means that oil companies can keep costs down while ensuring optimum flow is maintained.

Upstream: Exploration and Production

Sea Water Treatment pre water injection
Injection of organic biocides as corrosion inhibitors is commonly used in offshore environments to reduce the abrasiveness and solid particles of sea water prior to injection. Due the high cost and quantities needed, these are dosed weekly for a period of 1 to 2 hrs at concentrations up to 1000 mg/l and require reliable and accurate flow measurement.

Removal of Salt on Gas producing wells
Precipitation of salt from reservoir water in gas reservoirs can cause significant decrease in production rates and pipeline blockages. In order to remove salt deposits fresh water treatments are performed at regular intervals to wash out the salt safely. In these applications small amounts of pure water are injected a high pressure and low flow rates to wash out the salt, due to abrasive nature of the salt particles inline metering is often not suitable.

Midstream: Underground Gas Storage

Hydrate Inhibitor Injection
Methanol injection is routine on the Underground Storage operations to mitigate hydrate formation and minimize blockage on valves and pipelines during withdrawal stages. Injecting substances to lower freezing points thus limiting hydrate formation need to be carefully dosed, monitored and controlled. Typical application will employ a combination of high pressure and low flow injection to ensure proper mixing with the gas medium.

Chemical dosing in Water and Wastewater treatment

Specialized chemicals such as chlorine, hydrogen peroxide, sodium chlorite, and sodium hypochlorite (bleach) act as agents to disinfect, sanitize, and assist in the purification of wastewater at treatment facilities. These need to be handled and measured carefully and meticulously to comply with safety regulations.

Other Applications

- Paint spray lines
- Pulp & Paper Industry
- Chemical/Petrochemical Industries
- Semiconductor Industry
- Pharmaceutical Dosing
FLUXUS® F721XLF
The superior solution for liquid low flow measurement

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