FLUXUS® F/G831 with
intrinsic ally safe Process Inputs
For Operation in Hazardous Environments

Technical Data

FLUXUS® F/G831 Clamp-on ultrasonic measuring system for hazardous environments

Measurement principle Transit time

Measurement functions

<table>
<thead>
<tr>
<th>Physical quantities</th>
<th>Diagnostic functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volumetric flow rate, mass flow rate, flow velocity</td>
<td>Sound speed, signal amplitude, SNR, SCNR, standard deviation of amplitude and transit times</td>
</tr>
</tbody>
</table>

Flow ranges Velocity in m/s

- **F831 (liquids)**: 0.01...25 m/s
- **G831 (gases)**: 0.01...35 m/s

Measurement uncertainty Volumetric flow rate (measurement)

- **F831 (liquids)**: ±1 % of reading ± 0.005 m/s
- **G831 (gases)**: ±1...2 % of reading ± 0.005 m/s
- 0.15 % of reading ± 0.005 m/s

Transmitter

<table>
<thead>
<tr>
<th>Number of measuring channels</th>
<th>Power supply</th>
<th>Explosion protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>100...230 V AC / 50...60 Hz</td>
<td>Aluminium housing: ATEX/IECEx Zone 1, FM Class I/Div. 1</td>
</tr>
</tbody>
</table>

Explosion protection

- Aluminium housing: ATEX/IECEx Zone 1, FM Class I/Div. 1
- Stainless steel housing: ATEX/IECEx Zone 1

Power supply 100...230 V AC / 50...60 Hz

Outputs

- 4...20 mA passive (Ex ia) or active/passive
- 4...20 mA HART passive (Ex ia) or active/passive
- Pulse/frequency/binary (Ex ia) available

Input

- Pt100/Pt1000, (Ex ia) available
- 4...20 mA active (Ex ia) or active/passive

Digital communication

- Modbus RTU, HART, Profibus PA, Foundation Fieldbus
- Modbus RTU, HART

Available transducers

<table>
<thead>
<tr>
<th>Explosion protection</th>
<th>Temperature range (pipe wall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEX/IECEx Zone 1, FM Class I/Div. 1</td>
<td>-60 °C ... +240 °C / Wi: -200 °C ... +630 °C</td>
</tr>
</tbody>
</table>

For more detailed information please download the Technical Specifications here: www.flexim.com.
FLUXUS® F/G831 – Specifically Designed for Process Control Applications in Hazardous Areas

Oil and gas production and chemical processes from the oil field to the refinery and chemical plants require reliable and accurate flow measurement instrumentation to ensure all flows regardless of the fluid composition and abrasiveness are accounted for every step of the way, to improve field management operations and increase efficiencies.

The new FLUXUS® F/G831 checks all the boxes. The combination of rugged and robust area ATEX/IECEx Zone 1 rated design, 1 or 2 measurement channels for liquids and gases, a fast processor, advanced meter diagnostic capabilities and intrinsically safe (Ex-ia) process inputs ensures optimal performance and durability under the harshest environments where additional safety is needed.

The addition of intrinsically safe process inputs for pressure and temperature at the meter location means the FLUXUS® F/G831 flow meters can now provide standard volume flow and mass flow during standard operating conditions.

FLEXIM Offers the Superior Alternative:

- **Unrivaled Performance** – FLEXIM’s ultrasonic flow meters offer exceptional reliability and accuracy at high and low flows due to their matched, calibrated and temperature compensated transducers, advanced signal processing capabilities and diagnostics.
- **Standard Volumetric Flow and Mass Compensation** – Intrinsically safe Ex-ia process inputs for pressure and temperature.
- **Operational Safety** – The ATEX/IECEx Zone 1 area rated measurement system cannot cause potential pipe leaks, be prone to clogging or any other related issues that can hinder process integrity.
- **Flexible Technology** – Suited for multiple applications (liquids and gases) in a wide range of pipe sizes.
- **Economical Solution** – An externally mounted system means no need for process interruptions or additional engineering costs.
- **Maintenance Free** – No contact with flowing media results in a completely maintenance free and durable metering solution capable of withstanding the harshest environments.

**Flowmeter with integrated pressure and temperature compensation**

**Advantages**
- ATEX/IECEx Zone 1 area rated
- Single & dual channel options available
- Powerful processor – Synchronized Channel Averaging
- Intrinsically safe process inputs available
- Temperature compensated transducers
- Wide turndown ratio – Independent of pipe size, material, operating pressure, fluid and temperature
- High tolerance to entrained solids and gases
- Free of wear, tear and abrasion
- Not prone to clogging or corrosion – No pressure loss or source of potential leaks and fugitive emissions

**Chemical Industry**
- Hazardous organic and inorganic fluids
- Acids and caustics
- Process gases
- Polymerization processes
- Infrastructural processes

**Hydrocarbon Product Handling**
- Pipeline integrity monitoring
- Allocation terminals
- LNG terminals
- Underground gas storage
- Gas distribution and compressor stations

**Crude Oil Refining and Gas Processing**
- Distillation columns
- Cracker and coker units
- Gas processing

**Oil & Gas Exploration**
- Gas injection, gas lift & water injection
- Scrubbers and reboilers
- Produced water management
- Chemical injection

**Safe, Reliable, Versatile**

With its explosion proof housing, intrinsically safe inputs and stainless steel (SS316) corrosion resistant transducers, the FLUXUS® F/G831 series is perfectly suited for every demanding industrial application in and out of the oil field and the chemical industry.

The connection and electronic compartments of the FLUXUS® F/G831 series are hermetically sealed, so that the measurement system provides maximum operational reliability and safety, being ATEX/IECEx Zone 1 rated.

Not only is the FLUXUS® F/G831 versatile, safe and reliable, it is precise. With faster processing capabilities, the meter offers significantly improved accuracy and response time between measurement channels which results in better representation of flow profile and high accuracy. In addition, as with all other FLUXUS® meters, the FLUXUS® F/G831 comes with carefully matched and temperature compensated transducers (fully ANSI/ASME MFC 5M compliant) providing unmatched zero-point stability and precise bi-directional flow measurement over a wide range of conditions – extremely low to high flows.
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For Operation in Hazardous Environments

FLUXUS® F/G 831
Aluminium housing
Stainless steel housing

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G831 (gases) 0.01...35 m/s

Measurement uncertainty
Volumetric flow rate (measurement)
F831 (liquids) ±1 % of reading ± 0.005 m/s
G831 (gases) ±2 % of reading ± 0.005 m/s

Receiver
1/2

Explosion protection
Aluminium housing: ATEX/IECEx Zone 1, FM Class I/Div. 1
Stainless steel housing: ATEX/IECEx Zone 1

Power supply
100...230 V AC / 50...60 Hz
24...32 V DC

Outputs
4...20 mA passive [Ex ia] or active/passive
4...20 mA HART passive [Ex ia] or active/passive

Digital outputs
pulse/frequency/binary, [Ex ia] available

Inputs
PT100/PT1000, [Ex ia] available

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