Gas flow measuring devices
Ultrasonic gas flow meter, FLOWSIC600

FLOWSIC600 2-path
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The measuring device FLOWSIC600 is an ultrasonic gas flow meter for high performance requirements. The FLOWSIC600 2path type with its two measuring paths is the ideal solution for non-custody transfer applications like process monitoring or internal billing. The compact design with concealed cabling provides a robust, trouble-free and low-maintenance system. The sealed ultrasonic transducers are suitable for applications with dry, wet or corrosive gases. Due to the direct path layout, the signals are not reflected inside the device and thus not influenced by contamination. This results in long-term stability and accuracy of the system. Adjustable impulse outputs or Modbus connections allow the use of installed flow computers.

At a glance
• Direct 2-path layout without reflection of signals
• Bidirectional measurement without pressure loss
• Hermetically sealed ultrasonic transducers made of titanium
• Wide measuring range up to 1:130
• Fully automated, intelligent self-diagnosis
• Integrated logbooks and data logs
• Simple operation and extensive diagnosis via operation software MEPAFLOW600 CBM

Your benefits
• Long-term stable and reliable measurement
• Minimal sensitivity to pressure regulator noise and contamination
• Low maintenance requirements due to intelligent self diagnosis (condition based maintenance, CBM)
• Easy-to-use software which supports all diagnostic features
• Low risk of hardware damage from overload
• Transducers can be replaced under operating pressure
• No mechanical wear

Fields of application
• Non-custody transfer applications in gas industry
• Gas flow metering of natural gas and process gases like N2, O2, H2, CO2, Cl2, ethylene, etc.
• For gases with high content of H2S like sour gas or biogas
• Cryogenic gas applications down to -194 °C

Note
The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.
### Technical data

<table>
<thead>
<tr>
<th>Measurement principle:</th>
<th>Ultrasonic transit time difference measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured values:</td>
<td>Gas velocity&lt;br&gt;Gas volume&lt;br&gt;Sound velocity&lt;br&gt;Volumetric flow</td>
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<tr>
<td>Max. number of measurands:</td>
<td>2</td>
</tr>
<tr>
<td>Measuring ranges:</td>
<td>Gas flow rate: 0 ... 6 m³/h / 0 ... 100,000 m³/h</td>
</tr>
<tr>
<td>Comment:</td>
<td>Measuring ranges depend on nominal pipe size</td>
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<tr>
<td>Process temperature:</td>
<td>-194 ... +280 °C&lt;br&gt;on request&lt;br&gt;-40 ... +180 °C</td>
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<tr>
<td>Process pressure:</td>
<td>0 ... 250 bar (g)&lt;br&gt;0 ... 450 bar (g)&lt;br&gt;on request</td>
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<tr>
<td>Nominal pipe size:</td>
<td>2 ... 48 &quot;&lt;br&gt;(DN 50 ... DN 1200)</td>
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<tr>
<td>Ambient temperature:</td>
<td>-40 ... +60 °C</td>
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<td>Conformities:</td>
<td>AGA-Report No. 9&lt;br&gt;API 21.1&lt;br&gt;OIML D11&lt;br&gt;OIML R137-1</td>
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<tr>
<td>Remark:</td>
<td>Pattern approval: MID, PTB, NMi, Measurement Canada, GOST ...</td>
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<td>Ex-approvals IECEx:</td>
<td>EX Gb/Ga Ex d e ib [ia Ga] IIA T4 Gb&lt;br&gt;EX Gb/Ga Ex d e ib [ia Ga] IIC T4 Gb&lt;br&gt;IIEEx Gb/Ga Ex d e ib [ia Ga] IIC T4 Gb</td>
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<td>Ex-approvals ATEX:</td>
<td>II 1/2G Ex de ib [ia] IIA T4&lt;br&gt;II 1/2G Ex de ib [ia] IIC T4</td>
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<td>Ex-approvals USA/Canada:</td>
<td>Class I, Division 1, Groups B, C, D T4; Class I, Division 2, Groups A, B, C, D T4&lt;br&gt;Class I, Division 1, Groups D T4; Class I, Division 2, Groups D T4</td>
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<td>Electrical safety:</td>
<td>CE</td>
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<tr>
<td>Enclosure rating:</td>
<td>IP 67</td>
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<tr>
<td>Analog outputs:</td>
<td>1 output:&lt;br&gt;4 ... 20 mA, 250 Ω&lt;br&gt;active/passive, electrically isolated</td>
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<tr>
<td>Digital outputs:</td>
<td>3 outputs:&lt;br&gt;30 V, 100 mA&lt;br&gt;passive, electrically isolated</td>
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<tr>
<td>Interfaces:</td>
<td>RS-485</td>
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<tr>
<td>Bus protocol:</td>
<td>HART&lt;br&gt;Modbus ASCII&lt;br&gt;Modbus RTU</td>
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<tr>
<td>Operation:</td>
<td>Via meter display and software MEPAFLOW600</td>
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<tr>
<td>Device version:</td>
<td>2-path version</td>
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</table>
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