ABB MEASUREMENT & ANALYTICS

SensyMaster
High quality and cost effective solution for precise and dynamic direct mass flow measurement for gases
SensyMaster
Maximum versatility

- **High-grade thermal sensor elements**
  - With superior long-term stability
  - Best accuracy and repeatability

- **SensorApplicationMemory**
  - Plug-and-play electronics replacement
  - Redundant data storage for maximum data security

- **Common ABB look and feel**
  - Through-the-glass operation without opening the housing
  - Commissioning in less than 10 minutes with the Easy Set-up functionality
  - Clear text error messages
  - Flexible choice of up to 5 I/O’s

- **ApplicationSelector**
  - Flexible meter use in up to 8 different applications
  - Selectable process gases from integrated data base
  - Selectable pipe diameters

- **VeriMass onboard verification and diagnostics**
  - Increased plant availability
  - Reduced maintenance
  - SensorCheck to verify the integrity of thermal sensor elements
SensyMaster
Key specifications at a glance

<table>
<thead>
<tr>
<th>Main features</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Integral mount and remote mount</td>
</tr>
<tr>
<td></td>
<td>• One or two compartment transmitter housing</td>
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<td></td>
<td>• Choice of pipe components to adapt to the process</td>
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<tr>
<td>Measuring dynamic</td>
<td>Up to 1:150</td>
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<tr>
<td>Pipe diameter</td>
<td>DN 25 to DN 3000 (1 in. to 118 in.)</td>
</tr>
<tr>
<td>High end accuracy level</td>
<td>Up to ± 0.6 % Qm;</td>
</tr>
<tr>
<td>with optional process gas</td>
<td>±- 0.05 % Qmax (air)</td>
</tr>
<tr>
<td>calibration</td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>0.2 % Qm</td>
</tr>
<tr>
<td>Response time</td>
<td>$T_{63} = 0.5 \text{ s}$</td>
</tr>
<tr>
<td>Power supply</td>
<td>24 V DC or 100 to 240 V AC</td>
</tr>
<tr>
<td>Medium temperature range</td>
<td>-25 to up to 300 °C (-13 to up to 572 °F)</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>Up to -50 to 70 °C (Up to -58 to 158 °F)</td>
</tr>
<tr>
<td>Communication</td>
<td>• Up to 3 current outputs (HART)</td>
</tr>
<tr>
<td></td>
<td>• Up to 3 digital outputs</td>
</tr>
<tr>
<td></td>
<td>• Up to 2 digital inputs</td>
</tr>
<tr>
<td></td>
<td>• Modbus via RS485</td>
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Please visit: www.abb.com/flow-selector

Product selection assistant
Comprehensive tool for selecting the most suitable technology for your application
SensyMaster
Measuring principle and its advantages

The measuring method of the SensyMaster flowmeter series is based on the hot-film anemometer principle.

They offer a high quality and cost effective solution for precise and dynamic direct mass flow measurements of gases in low and medium pressure conditions.

- **Direct mass flow measurement**
  No compensation of temperature and pressure required
- **Wide measuring range up to 1:150**
  Measuring down to virtually zero
- **Low pressure drop**
  No additional energy losses
- **Short response time**
  Close control of the process
- **Best accuracy**
  Efficient usage of precious gas
SensyMaster
Efficient high grade thermal sensor elements

Sensor element design

Platinum single chip thin film resistors on ceramic support structure for excellent long term stability.

- Thin sensor element → Small surface for dirt
- Small flow restriction → Low pressure loss
- Protection bars → Prevent damage of sensor elements
- Small sensor element mass → Quick response

Sensor element protection frame design

Conditions flow for
- Better thermal sensor element response and repeatability
- Self-cleaning effect of the sensor element for longer maintenance cycles

Mechanical protection to
- Prevent damage by particulate material
- Extend meter life time and maintenance cycles
SensyMaster
High performance transmitters

SensyMaster comes with a variety of transmitter series that are tailored for specific fields of application.

**FMT200 series – System integration flowmeter**
These transmitters are specifically designed to make system integration as easy as possible. It features a high speed Modbus RS485 output. Type FMT230 is ideally suited for all OEM standard applications. FMT250 adds high accuracy and functionality for advanced OEM applications.

**FMT400 series – Flowmeter for industrial applications**
The transmitter features ABB’s common operating concept with common menu structures and through-the-glass-operation without opening the housing. Up to five inputs and outputs can be selected flexible. Its sensor and application memory concept enables easy maintenance and utmost data security with plug-and-play electronic exchange. Type FMT430 is ideally suited for all industrial standard applications, FMT450 adds high accuracy and extended functionality for advanced industrial applications.

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Transmitters for integral mount design
01 FMT400 in dual-compartment housing
02 FMT400 in single-compartment housing
03 FMT200 in single-compartment housing

Transmitters for remote mount design
04 FMT400 in dual-compartment housing
05 FMT400 in single-compartment housing
SensyMaster
The whole measuring system at a glance

FMT200 series

FMT091 – Wafer design
DN 40 to DN 200

FMT092 – Partial measuring section
DN 25 to DN 100

FMT400 series

FMT094 – Weld-on adaptor
DN 100 and larger
Contact

ABB Limited
Measurement & Analytics
Oldends Lane
Stonehouse
Gloucestershire GL10 3TA, UK
Phone: +44 1453 826 661
Fax: +44 1453 829 671
E-Mail: instrumentation@gb.abb.com

ABB Inc.
Measurement & Analytics
125 E. County Line Road
Warminster, PA 18974, USA
Phone: +1 215 674 6000
Fax: +1 215 674 7183

ABB Engineering (Shanghai) Ltd.
Measurement & Analytics
No. 4528, Kangxin Highway, Pudong New District
Shanghai, 201319, P.R. China
Phone: +86(0) 21 61056666
Fax: +86(0) 21 61056677
E-Mail: china.instrumentation@cn.abb.com

ABB Automation Products GmbH
Measurement & Analytics
Dransfelder Str. 2
37079 Göttingen, Germany
Phone: +49 551 905 0
Fax: +49 551 905 777
E-Mail: vertrieb.messtechnik-produkte@de.abb.com

abb.com/measurement

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