SwirlMaster
The new generation of swirl flowmeters
SwirlMaster
FSS430/FSS450
Reliable and versatile

Drift-free sensor for high long-term stability

The robust and versatile SwirlMaster enables the reliable measurement of liquids, gases and steam in units of volume, mass and energy.

• Digital signal processing for volume measurement and volume totalizing with analog and digital outputs
• Mass/energy flow or standard flow measurement without additional flow computer
• Plug-in display unit for simple parameterization
• Integrated 4 to 20 mA and/or HART input for external pressure, temperature, density or concentration input
• Global approvals for explosion protection
• Shortest up- and downstream sections for compact, space saving installation
• Significantly lower pressure loss than Vortex flowmeters with a reduced bore
# SwirlMaster FSS430/FSS450
Measurement made easy

<table>
<thead>
<tr>
<th>The most important data at a glance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracies for liquids</td>
</tr>
<tr>
<td>Accuracies for gases and steam</td>
</tr>
<tr>
<td>Process connection</td>
</tr>
<tr>
<td>Meter sizes</td>
</tr>
<tr>
<td>Media temperature</td>
</tr>
<tr>
<td>Media viscosity</td>
</tr>
<tr>
<td>Upstream and downstream pipe runs</td>
</tr>
<tr>
<td>Upstream section</td>
</tr>
<tr>
<td>Downstream section</td>
</tr>
<tr>
<td>Ex approvals</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Output</td>
</tr>
<tr>
<td>Input signals from external sensors</td>
</tr>
</tbody>
</table>
SwirlMaster
FSS430/FSS450
Easy to operate

Fast and reliable commissioning

**Intuitive user interface**
- Common operating concept across the measurement portfolio including Easy Set-up function for comfortable and easy configuration
- Intuitive operation through the glass via capacitive keys with plain-text operating menus
- Integrated online self-verification without process interruption or meter removal
- Status messages according to NAMUR NE107
- SensorMemory technology enabling plug and play electronics replacement for maximum data security
- Automated zero point adjustment for easy commissioning
SwirlMaster
FSS430/FSS450
Shortest inlet sections

Lowest inlet- and outlet section requirements enable many applications

**Immune to turbulence**
Depending on the integration within the process:
- Pipeline reduction not necessary
- No additional flow straightener needed
- After elbow and/or reduction only 3 diameters inlet section and 1 diameter outlet section needed
- After control valve only 5 diameters inlet section needed
SwirlMaster
FSS430/FSS450
Excellent performance

Broad range of applications due to the latest transmitter technology and a proven sensor

**Latest transmitter technology**
- Wide flow range up to 50:1 flow turn down
- Highest accuracy in liquid, gas and steam measurement
- Shortest response time (200 ms)
- Special operation modes for hot water/condensate and steam gross or net energy flow in accordance with IAPWS-IF97
- Gas engine for natural gas measurement according to AGA/GERG standards
- Integrated vibration compensation
- SIL2-certified in accordance with IEC 61508
**SwirlMaster**

**FSS430/FSS450**

**Flow computer functions**

Extensive flow calculations for standard volume, mass or energy units

**With integrated flow computer**
- Integrated interfaces, analog or HART, for the connection of external instruments such as: pressure, temperature, density or gas analysis
- Internal calculation and output of standard volume, mass or energy flows

**SwirlMaster FSS430**
The standard device with optional digital outputs and, graphical display for your application. Available in an integral mount design or in a separate version with up to 30 m cable length. Optionally with an integrated temperature sensor.

**SwirlMaster FSS450**
The SwirlMaster transmitter with integrated temperature sensor additionally offers analog input for your mass or energy flow monitoring. The built-in calculation of mass and/or energy for steam and hot water in accordance with the IAPWS-IF97 standard replaces complex installations and separate flow computers in many applications.
Contact

ABB Limited
Measurement & Analytics
Howard Road, St. Neots
Cambridgeshire, PE19 8EU, UK
Phone: +44 (0) 870 600 6122
Fax: +44 (0)1480 213 339
E-Mail: enquires.mp.uk@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