

# SwirlMaster FSS400

## Swirl flowmeter

Reliable measurement of liquids, gases and steam in volume, mass or energy units

Measurement made easy



### Key features and benefits

#### Compact, space saving installation

Shortest inlet and outlet pipe sections (3D / 1D) enable flexible use in installations such as a reducer or after elbows. This results in significant potential savings for new installations and retrofitting of measuring points in existing installations.

#### Measuring accuracy of $\pm 0.5$ % of reading in steam applications

The unique Swirl measuring principle provides highest accuracy of  $\pm 0.5$  % for liquids, gas and steam.

#### Pipeline reduction not necessary

The measuring ranges are ideally adjusted to typical flow velocities and enable costly pipe reducers / extensions to be omitted. The low pressure loss in comparison to the reducer vortex saves energy and investment costs.

#### ABB common look and feel

Cost savings through reduction of commissioning times and long employee familiarization periods by means of a standardized, cross-product line operating concept. The proven Easy Set-up function enables user-friendly and simple configuration of the measuring device.

Using TTG (Through-The-Glass) keypad technology, local parameterization can be performed directly when the housing is closed, even in potentially explosive atmospheres.

#### Automated zero point adjustment

Fast and easy commissioning, even when there is potential for interference, through zero point adjustment at the touch of a button.

There is no service requirement if significant vibrations occur.

#### Drift-free sensor for high long-term stability

The proven sensor design ensures maximum measuring accuracy over a long period of time so that recalibration can be largely avoided.

### Integrated online self-verification

The integrated, continuous online self-diagnosis allows the maintenance intervals to be extended during operation. The entire measuring system, from the transmitter to the Piezo sensor, is checked without removing the measuring device and without interrupting the process. This increases the operational security and availability of the system. Status messages are compliant with NAMUR recommendation NE107.

### Internal temperature compensation for reduction of external measuring components

The optional integrated Pt100 can replace external temperature sensors plus the associated installation requirements. These can be retrofitted without changing or converting the sensor.

### Reduction of investment by integrated flow computer functions

Internal mass and energy calculation for steam and condensate remove the need for expensive, separate measuring computers, parameterization and installation in many applications. External pressure, temperature, density or concentration signals can be directly received and processed to calculate any required compensation. This allows for the direct mass and energy calculation for steam and water according to IAPWS-IF97 and the natural gas calculation according to AGA/GERG standards.

### SensorMemory technology

The proven SensorMemory technology simplifies the replacement of components, as details of devices as well as application data are stored in the sensor and transmitter. It is not necessary to re-enter the data.

### Simplified spare parts management

By using standardized electronic components and Piezo sensors for VortexMaster and SwirlMaster in all nominal diameters and applications, storage costs can be significantly reduced. The Piezo sensor can simply be replaced without the need for recalibration.

### Up to four internal totalizers for highest transparency

Depending on the operation mode up to four internal totalizers are available for Volume, Standard-Volume, Mass and Energy.

### Global approvals for explosion protection

Approvals have been granted for all common requirements in this field.

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FSS430



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