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ABB MEASUREMENT & ANALYTICS

# VortexMaster

The new generation of  
vortex flowmeters



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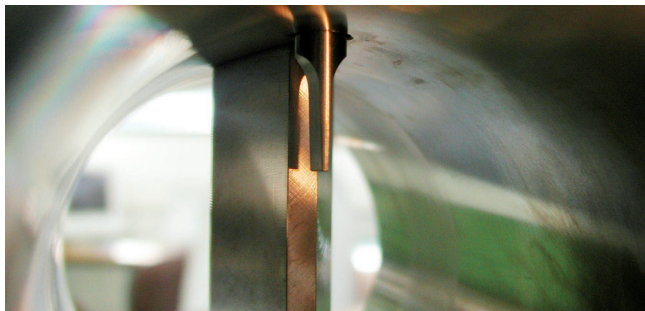
# VortexMaster FSV430/FSV450

## Reliable and versatile

Maintenance-free, high-tech vortex flowmeter for your process

The robust VortexMaster flowmeters provide reliable measurements of liquid, gas and steam and are available in flange-mount and wafer-type designs.

- 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
- Up to 4 internal totalizers for highest transparency depending on the operation mode
- SensorMemory for easy replacement of components or entire transmitters for remote devices
- Removable display unit for simple parameterization
- Integrated 4 to 20 mA and/or HART input for external pressure, temperature, density or concentration information
- Available with 4 to 20 mA output with HART 7, Modbus RTU, Profibus PA or FOUNDATION Fieldbus communication
- Global approvals for explosion protection



# VortexMaster

## FSS430/FSS450

### Measurement made easy

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#### The most important data at a glance

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Accuracies for liquids	± 0.65 % of rate
Accuracies for gases and steam	± 0.9 % of rate
Process connection/meter sizes	
Flange design	DN 15 to DN 300 (1/2 in. to 12 in.)
Wafer type design	DN 25 to DN 150 (1 in. to 6 in.) (DIN type 65 mm installation length)
Media temperature	-55 to 280 °C / -55 to 350 °C (-67 to 536 °F / -67 to 662 °F)
Media viscosity	max. 7.5 cP
Upstream and downstream pipe runs (typical value after narrowing)	
Upstream section	15 x DN
Downstream section	5 x DN
Transmitter housing	Aluminum, optional stainless steel 316
Ex approvals	IECEX, ATEX, NEPSI, EAC Zone 0/1/2/ 20/21, cFMus Class 1 Div 1/Zone 0/1 cFMus Class 1 Div. 1, Zone 0/1
Communication	HART 7, Modbus RTU-RS485, Profibus PA or FOUNDATION Fieldbus
Output	4 to 20 mA, binary output for pulses, frequency up to 10 kHz or contact output
Input signals from field	Pressure, temperature, density

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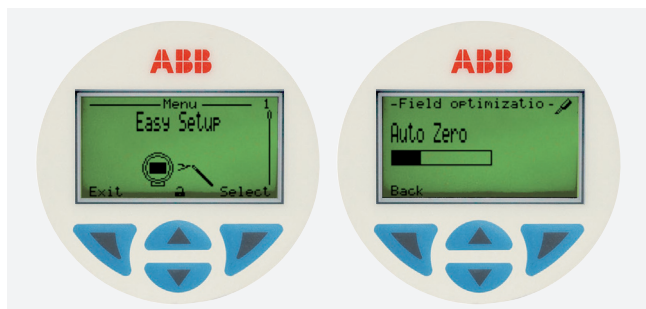
# VortexMaster FSV430/FSV450

## Measurement made easy

Modern high-tech transmitter

### 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
- Advanced filters for noisy applications



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# VortexMaster FSV430/FSV450

## More than just flow

Volume-, mass- or energy measurement,  
the right meter for every application

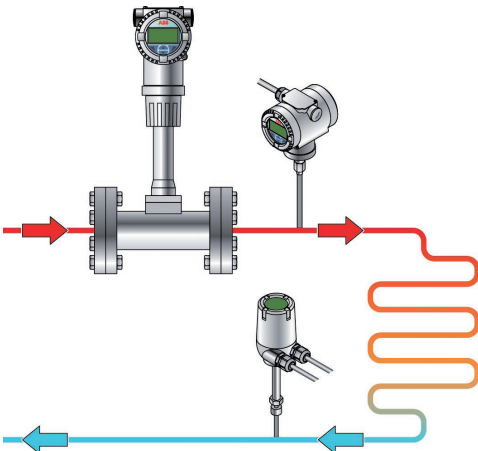
### VortexMaster FSV430

The standard device with optional digital outputs, graphical display and excellent vibration immunity for your application. Available with integral or remote transmitter with up to 30 m (98 ft.) cable length. An integrated temperature sensor can be added as an option.

### VortexMaster FSV450

The advanced vortex transmitter with integrated temperature sensor additionally offers an 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.

VortexMaster for steam measurement with condensate backflow



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# VortexMaster FSV430/FSV450

## For your applications

The vortex flowmeter for your versatile measurements

- Modern and fast digital signal processing with excellent vibration compensation and meter diagnostics for reliable flow 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



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# VortexMaster FSV430/FSV450

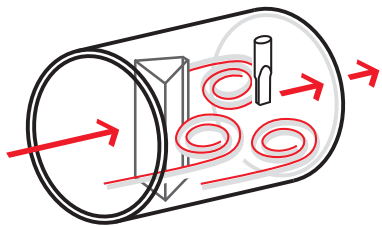
## No maintenance

With no moving parts, VortexMaster is wear-free and an ideal replacement for mechanical flowmeters

The device features a long life and high long-term stability due to the proven design with a separate sensor unit behind the fixed bluff body. The VortexMaster is an ideal alternative to orifices or mechanical flowmeters because of the high measuring dynamics, high level of accuracy and insensitivity to deposits. The DIN wafer type version with 65 mm installation length is ideal for the replacement of compact orifices.

### Your advantages

- Drift-free sensor design for maximum accuracy and long-term stability
- Simple, cost-saving installation
- Sensor replacement possible without recalibration





# Contact

## **ABB Measurement & Analytics**

For your local ABB contact, visit:

**[www.abb.com/contacts](http://www.abb.com/contacts)**

For more product information, visit:

**[www.abb.com/flow](http://www.abb.com/flow)**