



ABB MEASUREMENT & ANALYTICS

# SensyMaster

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



# SensyMaster

Key specifications at a glance

Main features	
Design	<ul style="list-style-type: none"><li>• Integral mount and remote mount</li><li>• One or two compartment transmitter housing</li><li>• Choice of pipe components to adapt to the process</li></ul>
Measuring dynamic	Up to 1:150
Pipe diameter	DN 25 to DN 3000 (1 in. to 118 in.)
High end accuracy level with optional process gas calibration	Up to $\pm 0.6\%$ Qm; $\pm 0.05\%$ Qmax (air)
Repeatability	0.2 % Qm
Response time	$T_{63} = 0.5$ s
Power supply	24 V DC or 100 to 240 V AC
Medium temperature range	-20 up to 300°C (-4 up to 572°F)
Ambient temperature range	-20 up to 70°C (-4 up to 158°F)
Communication	<ul style="list-style-type: none"><li>• Up to 3 current outputs (HART)</li><li>• Up to 3 digital outputs</li><li>• Up to 2 digital inputs</li><li>• Modbus via RS485</li><li>• Profibus DP</li></ul>
Approvals	<ul style="list-style-type: none"><li>• Hazardous Area according to ATEX/IECEx and cFMus</li><li>• DVGW</li></ul>



Please visit:  
[www.abb.com/flow-selector](http://www.abb.com/flow-selector)



## Product selection assistant

Comprehensive tool for selecting the most suitable technology for your application

# 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

*SensorApplicationMemory*

## Common ABB look and feel

- Through-the-glass operation without opening the housing
- Commissioning in less than 10 minutes with the
- Clear text error messages
- Flexible choice of up to 5 I/O's

*Easy Set-up*

## 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

## 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

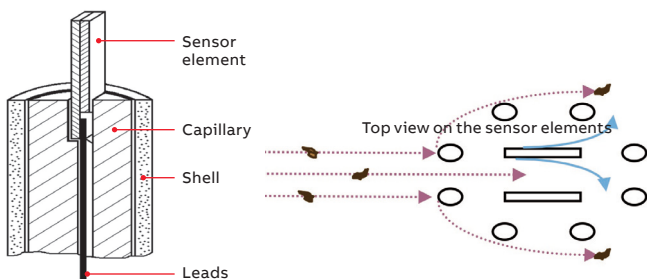


# SensyMaster

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

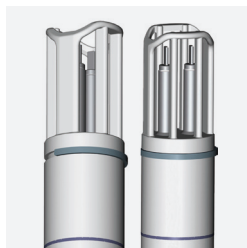
## Sensor element protection frame design

### 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.

### 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



01

02

03

04

05

# SensyMaster

The whole measuring system at a glance



**FMT200 series**

**FMT400 series**

**FMT091 – Wafer design  
DN 40 to DN 200**

**FMT094 – Weld-on adaptor  
DN 100 and larger**



**FMT092 – Partial measuring section DN 25 to DN 100**





# 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)**