

- **Direct measurement of mass flow or standard volume flow of compressed air**
 - independent of media pressure and temperature
- **Wide measuring range of 1:100**
 - factory-calibrated with air
- **Quick response time < 0.5 s**
- **Negligible pressure loss**
- **No moving parts**
 - no wear, maintenance-free
- **Defined, reproducible mounting position**
 - pipe components with 1"…3" threads
- **Compact device with signal output at the sensor head**

Applications

- **Measurement of compressed air consumption**
- **Leakage detection**
- **Optimization of compressed air systems**



**Direct mass flow measurement
Easy installation
Compact design**

Operating principle and system design

FMT200-D (Sensyflow D) is a compact system for mass flow or standard volume flow measurement of compressed air.

FMT200-D (Sensyflow D) operates according to the principle of a hot-film anemometer. This measuring method determines the air mass flow directly, without further need for pressure and temperature compensation. Additional measuring points for pressure and temperature nor a compensation computer are required.

FMT200-D (Sensyflow D) is installed in the appropriate pipe component in a well-defined and non-rotatable position as a part of the measuring line. The pipe components are equipped with standard male inch threads.

The transducer accommodates the sensor unit and the evaluation electronics. FMT200-D (Sensyflow D) supplies an output signal linear to the flow. The system is calibrated and immediately ready for use. Output parameters can be set via LKS (local communication interface) adapter (option). A standard power supply unit can be used for powering FMT200-D (Sensyflow D).

Technical data

Measuring ranges

Nominal size (inch)	Maximal upper range value		
	kg/h	Nm ³ /h ¹⁾	NI/min ²⁾
1"	165	125	2100
1½"	430	330	5500
2"	740	570	9500
3"	1775	1375	22800

Output

Analog output signal

0/4...20 mA, switchable

Load

< 750 Ω, electrically isolated

Characteristics

Measured error

< ± (1.8 % of measured value + 0.05 % of end value)

Repeatability

< ± 0.25 % of measured value

Response time

T₆₃ ≈ 500 ms

Influences

Temperature effect

< 0.05 %/K of measured value

Pressure effect

≤ 0.2 %/100 kPa (bar) of measured value

Pressure drop

< 1 kPa (10 mbar) at full scale
decreasing quadratically for smaller flow rates

¹⁾ can also be written as m³/h - q_n

²⁾ can also be written as l/min - q_n

Ambient conditions

Ambient temperature for transducer

-25...+70 °C

Degree of protection

IP 65

Measured medium conditions

Operating temperature

-25...+150 °C

Maximum operating pressure

Standard 16 × 10² kPa (= 16 bar)

Construction

Weight

dependent on nominal size

1"	1.5 kg
1,5"	3.0 kg
2"	5.5 kg
3"	9.5 kg

Material

Transducer	stainless steel, e. g. 1.4301
Pipe component	galvanized steel

Process connection

Male threads R 1"...3"

Power supply

Voltage

24 V AC/DC ± 25 %

Power consumption

< 15 W

Current consumption

< 600 mA, slow-blow fuse of at least 2 A recommended,
cable gland M20 x 1.5

Communication interface

LKS (Local communication interface) adapter

Accessories (optional)

- Power supply unit
- Display unit
- Totalizer with display (current-to-pulse converter)
- Power supply unit, display unit and totalizer installed in field housing

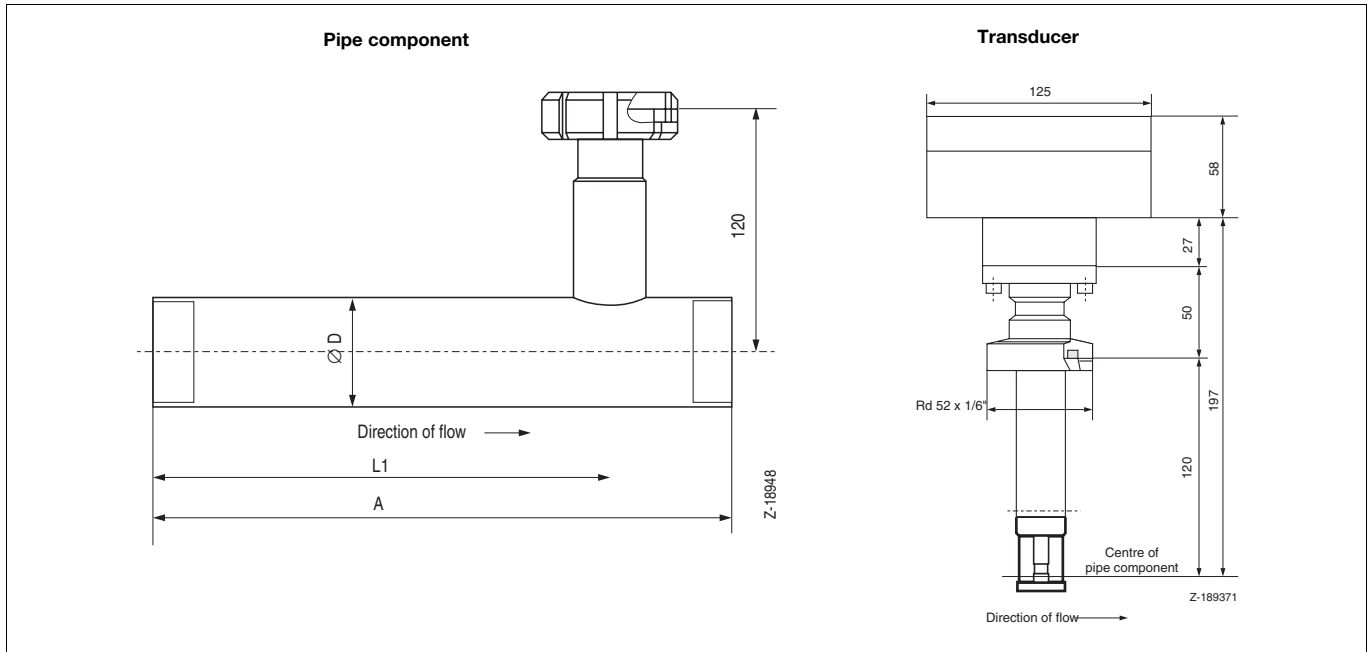
Configuration

The analog output of the FMT200-D (Sensyflow D) can be switched between 0...20 mA and 4...20 mA.

Additionally, there is the opportunity to define a measurement window in a way that a flow rate smaller than the calibrated one causes an output signal of 20 mA. The signal for error indication can be set to < 3.5 mA and > 22 mA.

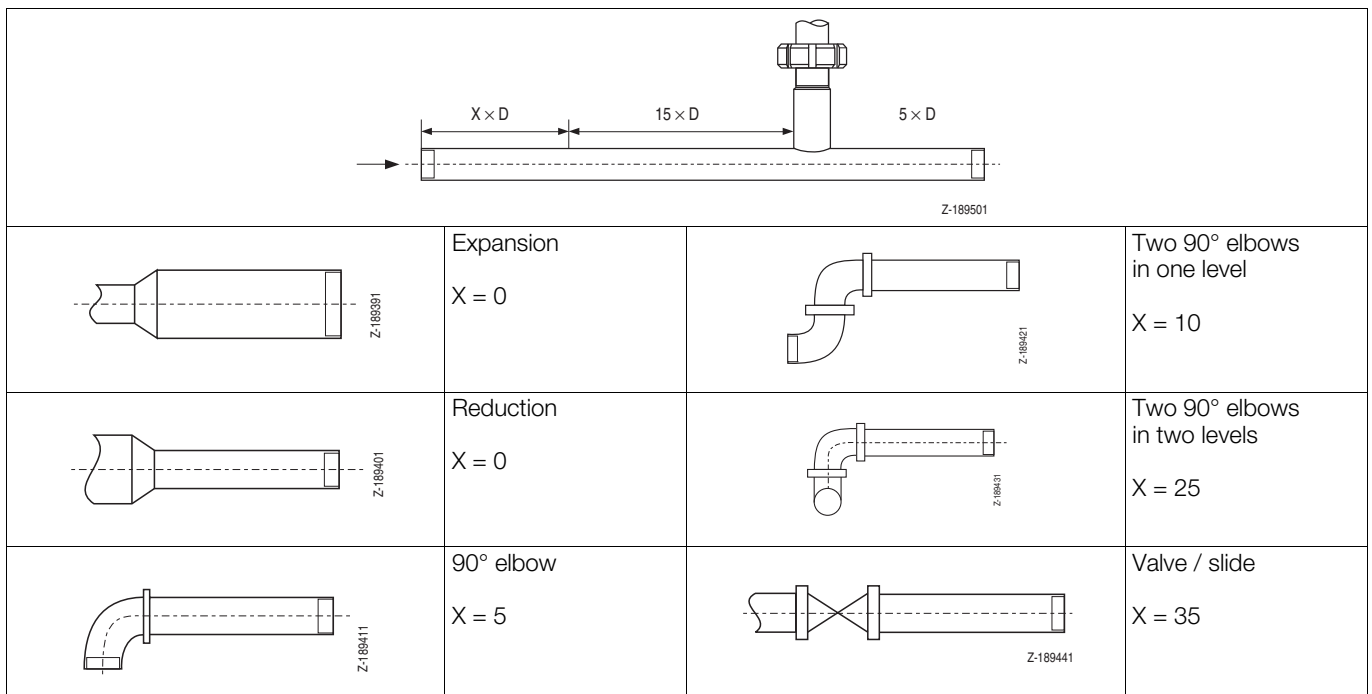
The device can be configured via the LKS (local communication interface) adapter by using a PC or laptop. You can select the output signal to be used and define the measuring range.

Dimensional drawings (dimensions in mm)



Nominal size	A	L1	Ø D	Thread
1"	550	410	27.3	R1": 33.7 × 1.2
1½"	820	615	41.9	R1½": 48.3 × 3.2
2"	1080	810	53.9	R2": 60.3 × 3.2
3"	1600	1200	79.9	R3": 88.9 × 4.5

Recommended steadying length for FMT200-D (Sensyflow D) acc. to DIN EN ISO 5167-1



Ordering information

	Catalog No.	Code		
Transducer FMT200-D	V14223-			
Standard calibration Operating pressure 1-10 bar abs., operating temperature 0...60 °C Upper range value see Data Sheet Unit according to Code Nos. 519 and 515 (see additional ordering information)	1)			
Special calibration According to Code-Nos. 512-515 and 519 (see additional ordering information)	2)			
Analog output 4...20 mA (alarm < 3.5 mA) 4...20 mA (alarm > 22 mA) 0...20 mA	1 2 3			
Pipe component 1" 1 1/2" 2" 3"	1 2 3 4			

Additional ordering information

	value	unit		
Flow unit	1)	515
Standard conditions	°C, mbar abs.	2)	519
Operating temperature	°C		512
Operating pressure	mbar abs.		513
Upper range value adjusted to		520

- 1) Possible units are: kg/h; kg/min; kg/s; m³/h -qn ; m³/min -qn ; m³/s -qn ; l/h -qn ; l/min -qn ; l/s -qn ; SCFM
2) Standard state for volume flow units: Please specify the conditions, e.g. 0 °C, 1013 mbar

Accessories

	Catalog No.		
Power supply unit housing for rail mounting 62.5 mm x 75 mm x 139 mm Input 230 V AC Output 24 V DC / 2.5 A	7962800		
LKS (Local communication interface) parameteriz. adapter incl. communic. Software	7962828		
3 1/2 digit LED, 24 V DC,	7957527		
3 1/2 digit LED, 230 V AC,	7957526		
Flow Totalizer FCU200-T (SensyCal T), Data Sheet 10/18-5.22 EN	V18022-5.....		
Power supply, display and totalizer completely mounted in IP 65 housing	call		

ABB has Sales & Customer Support expertise in over 100 countries worldwide.

www.abb.com

The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

Printed in the Fed. Rep. of Germany (11.04)

© ABB 2004



ABB Ltd.
Oldends Lane, Stonehouse
Gloucestershire, GL10 3TA
UK
Tel: +44(0)1453 826661
Fax: +44(0)1453 827856

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

ABB Inc.
3450 Harvester Road
Burlington Ontario L7N 3W5
Canada
Tel: +1 905 681 0565
Fax: +1 905 681 2810

ABB Automation Products GmbH
Borsigstr. 2
63755 Alzenau
Germany
Tel: +49 551 905-534
Fax: +49 551 905-555
CCC-support.deapr@de.abb.com