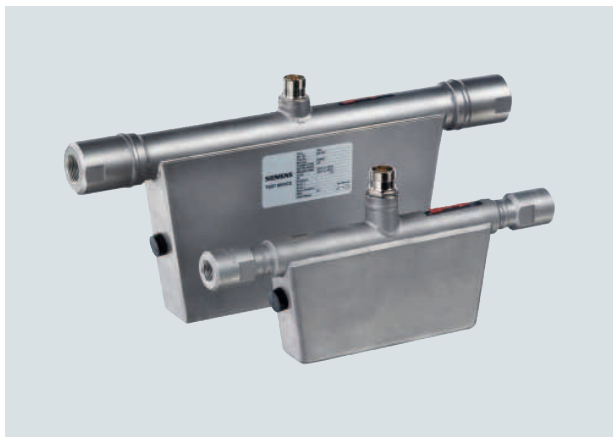


# Flow Measurement

## SITRANS F C

### Flow sensor SITRANS FCS200

#### Overview



SITRANS FCS200 (DN10, DN 15 and DN 25) is a Coriolis sensor specialized for accurate mass flow measurement of gases.

The sensor offers superior performance in terms of flow accuracy and turn down ratio. The ultra compact sensor design makes installation, replacement and commissioning very straightforward and easy.

#### Benefits

- High accuracy gas measurement
- Approved for use in hazardous area
- Self-draining in both horizontal and vertical orientation
- Pt1000 temperature measurement for optimum accuracy
- SENSORPROM enabling true "plug & play"
- Rigid enclosure design reducing influence from pipeline vibration and thermal stress
- High-pressure measurement up to 350 bar (5076 psi)
- Ultra compact sensor design with space-saving split flow

#### Application

SITRANS FCS200 is designed for measurement of gases and is suitable for use in the oil and gas industry:

- Filling of gas bottles
- CNG dispensers
- Metering of general gas applications

#### Design

SITRANS FCS200 is available in DN 10, DN 15 and DN 25.

The sensor consists of 2 parallel measuring pipes, welded directly onto a flow splitter at each end of the sensor to eliminate a direct coupling to the process connectors and significantly reduce effects from external vibrations. The flow-splitters are welded directly onto a rigid sensor housing which acts as a mechanical low pass filter.

The wetted parts of SITRANS FCS200 are available in Hastelloy C22, while the enclosure is made of stainless steel mat no. 1.4301 (AISI 304) with a grade of encapsulation of IP67.

The black rupture disc of one side of the DN 10 and both sides of the DN 15 and DN 25 is designed to prevent the enclosure from overpressure.

#### Function

The flow measuring principle is based on the Coriolis effect. See "System information SITRANS F C".

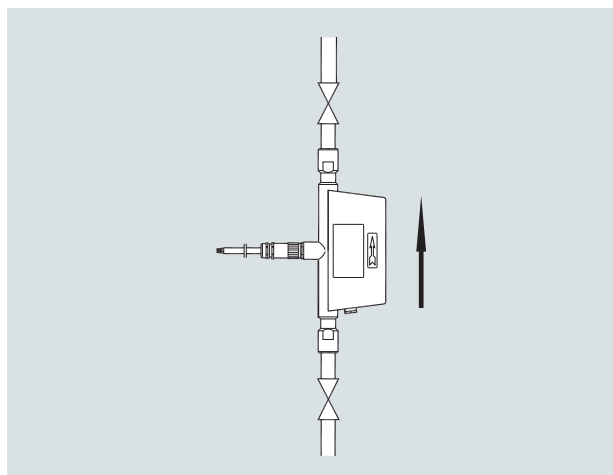
#### Integration

The complete flowmeter consists of the sensor (SITRANS FCS200) and a transmitter SITRANS F C MASS 6000 or SIFLOW FC070. All communication options are available for MASS 6000.

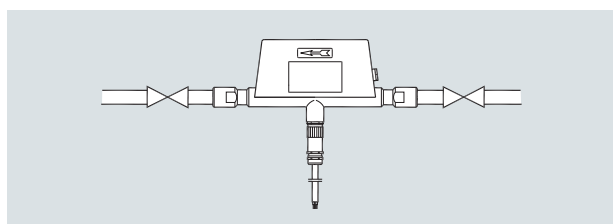
The sensor is shipped with a SENSORPROM memory unit containing all information about calibration data, device identity and factory pre-programming of transmitter settings.

#### Installation guidelines

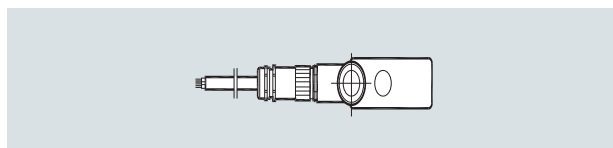
Siemens Flow Instruments recommends installing the sensor in one of the following ways:



Vertical orientation with an upwards flow



Horizontal installation, tubes up



Horizontal installation, tubes sideways

# Flow Measurement SITRANS F C

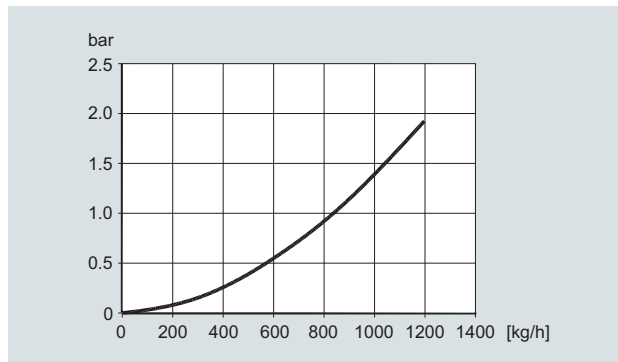
## Flow sensor SITRANS FCS200

### Technical specifications

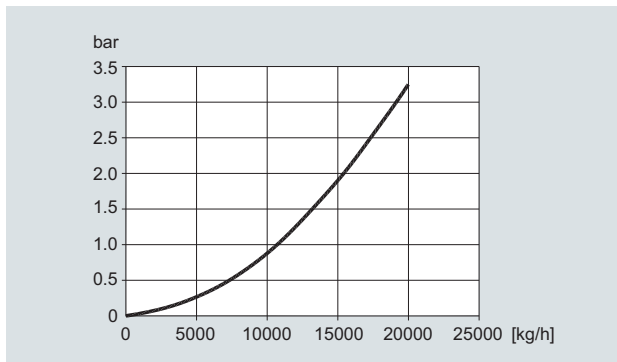
Sensor size	DN 10	DN 15	DN 25
<b>Mass Flow</b>			
Accuracy [% of rate]		± 0.5	
Repeatability [% of rate]		± 0.25	
Max. zero point error [kg/h (lbs/h)]	0.25 (0.55)	1.2 (2.65)	3.0 (6.6)
Measuring range [kg/min (lbs/min)]	0 ... 42 (0 ... 92.6)	0 ... 200 (0 ... 440.9)	0 ... 500 (0 ... 1102.3)
Process temperature	-40 ... +1+25 °C (-40 ... +257 °F)		
Ambient temperature	-40 ... +60 °C (-40 ... +140 °F)		
Temperature error	0.5 °C (0.9 °F)		
Pressure [bar (psi)]	350 (5076)	350 (5076)	214 (3104)
Enclosure grade	IP66/IP67 (EN 60529)		
<b>Material</b>			
Measuring pipe and splitter	Hastelloy C22		
Enclosure and connection (flanges)	1.4404/1.4571 (304)		
Connection thread	VCO ¾ ... 1" NPT ¼ ... 1½"		
Ex approval	II 1/2 G Ex ia IIC T5-T4		
Weight approx.	2.8 kg (6.2 lb)	6.0 kg (13.2 lb)	11 kg (24.2 lb)

### Characteristic curves

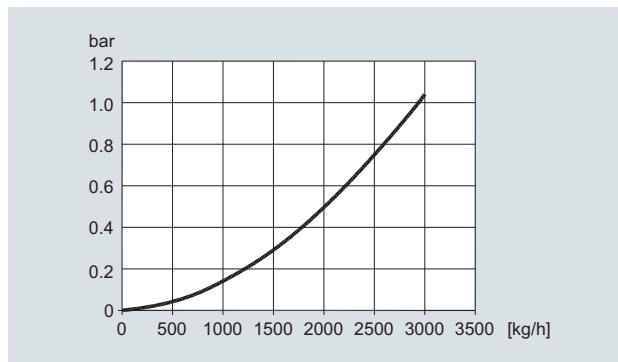
DN 10



DN 25



DN 15



The pressure drop as a function of capacity for CNG with a pressure of 200 bar (2900 psi) and an ambient temperature of 20°C (68°F).

# Flow Measurement

## SITRANS F C

### Flow sensor SITRANS FCS200

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Selection and Ordering data	Order No.
<b>SITRANS F C Flow sensors</b>	
<b>SITRANS FCS200 sensor, without heating jacket</b>	<b>7 ME 4 5 0 0 -</b> ■ ■ ■ ■ ■ - ■ ■ ■ ■ ■
<b>Sensor size and material</b>	
DN 10, Hastelloy C-22	<b>2 D</b>
DN 15, Hastelloy C-22	<b>2 E</b>
DN 25, SS mat. no. 1.4571	<b>1 F</b>
<b>Pressure</b>	
PN 200	<b>K</b>
PN 350 (DN 10 and DN 15)	<b>N</b>
<b>Process connection/flange</b>	
½"/VCO	<b>7 1</b>
¾"/VCO	<b>7 2</b>
1"/VCO	<b>7 3</b>
¼"/NPT pipe thread	<b>8 1</b>
½"/NPT pipe thread	<b>8 2</b>
¾"/NPT pipe thread	<b>8 3</b>
1"/NPT pipe thread	<b>8 4</b>
1½"/NPT pipe thread	<b>8 5</b>
<b>Configuration</b>	
Standard	<b>1</b>
<b>Transmitter</b>	
None	<b>A</b>
<b>Cable</b>	
No cable	<b>A</b>
<b>Calibration</b>	
Standard calibration	<b>1</b>

Selection and Ordering data	Order code
<b>Additional information</b>	
Please add "-Z" to Order No. and specify Order code(s) and plain text.	
Pressure testing certificate PED: 97/23/EC	<b>C11</b>
Material certificate EN 10204-3.1	<b>C12</b>
Welding certificate to EN 287	<b>C13</b>
Factory certificate according to EN 10204 2.2	<b>C14</b>
Factory certificate according to EN 10204 2.1	<b>C15</b>
Tag name plate, stainless steel	<b>Y17</b>

### Spare parts

Description	Order No.
<b>Multiple plug for cable mounting</b>	<b>FDK-083H5056</b>
<b>Cable with multiple plug</b>	
5 m (16.4 ft)	<b>FDK-083H3015</b>
Standard blue cable between MASS 6000 and MASS 2100, 5 x 2 x 0.34 mm <sup>2</sup> twisted and screened in pairs.	10 m (32.8 ft) <b>FDK-083H3016</b>
Temperature range -20 °C ... +110 °C (-4 °F ... +230 °F)	25 m (82 ft) <b>FDK-083H3017</b>
	50 m (164 ft) <b>FDK-083H3018</b>
	75 m (246 ft) <b>FDK-083H3054</b>
	150 m (492 ft) <b>FDK-083H3055</b>
<b>2 kB SENSORPROM unit</b> (Sensor Serial No. and Order No. must be specified by ordering)	<b>FDK-083H4410</b>
<b>Bracket</b>	<b>A5E02590427</b>

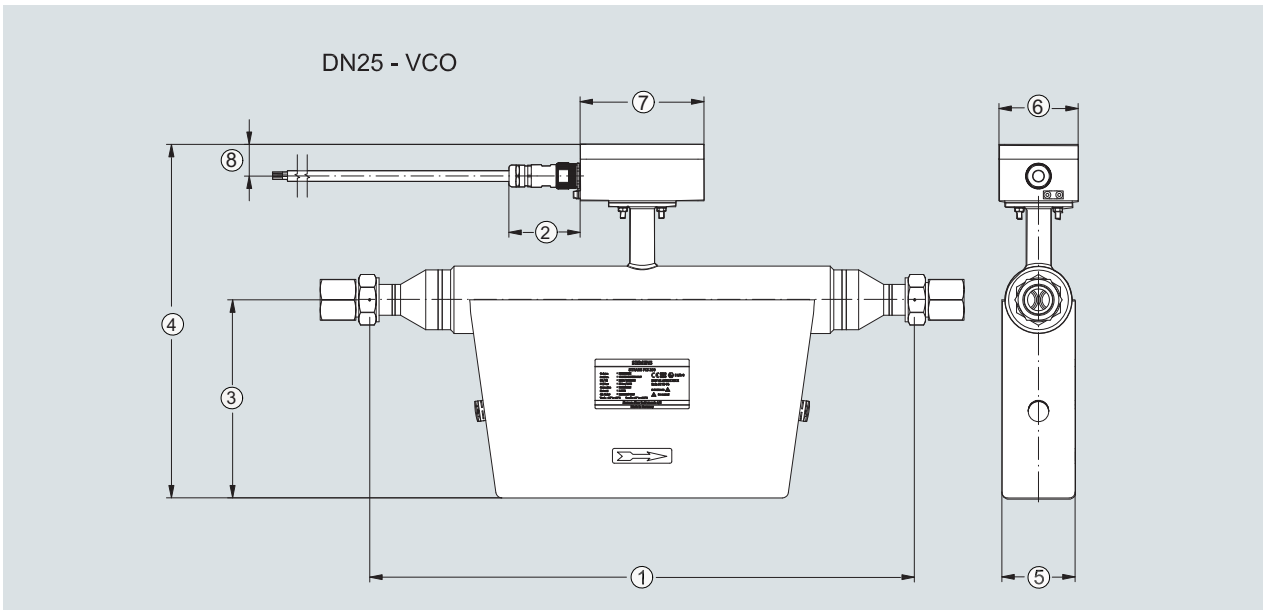
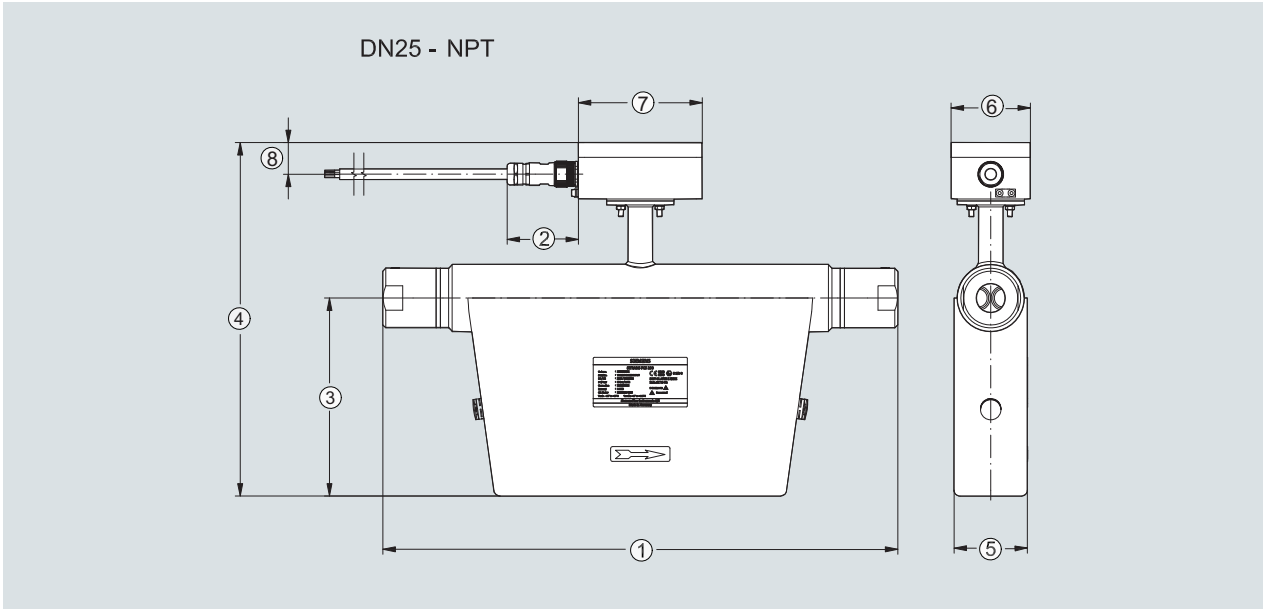


# Flow Measurement SITRANS F C

## Flow sensor SITRANS FCS200

SITRANS FCS200, DN 25

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SITRANS FCS200, DN 25, dimensions in mm (inch)

Position	DN 25 with NPT connection mm (inch)	DN 25 with VCO connection mm (inch)
(1)	520 (20.47)	550 (21.65)
(2)	72 (2.84)	72 (2.84)
(3)	200 (7.87)	200 (7.87)
(4)	357 (14.77)	357 (14.77)
(5)	74 (2.91)	74 (2.91)
(6)	80 (3.15)	80 (3.15)
(7)	125 (4.92)	125 (4.92)
(8)	32 (1.26)	32 (1.26)