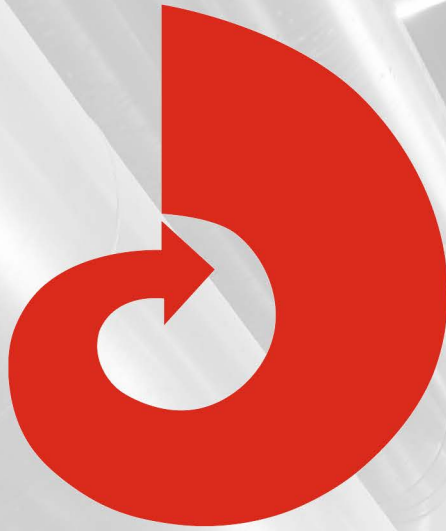


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Temperature: Temperature Probes & Thermowells, Temperature transmitters, Temperature Regulators & Temperature Displays

Level: Level Transmitters & Switches

Pressure: Pressure Gauges & Transmitters, Precision & High Pressure Regulators & I-P Converters, Volume boosters.

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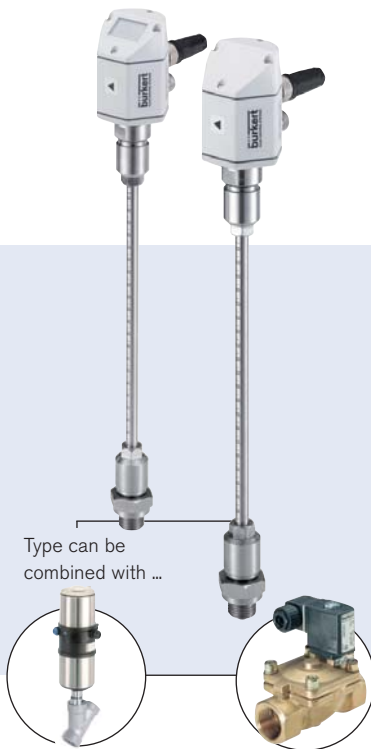
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Flowmeter for Gases and Installation in Existing Pipes



Type can be combined with ...

Type 8802-YG

Process control valve

Type 5281

Solenoid valve

Type 2875/Type 8611

Solenoid control valve with plugged PI controller

- Depth scale for accurate installation
- Usable in pipes from 1/2 " up to 12" (DN300)
- Easy installation under pressure
- Analogue output signal 4-20 mA
- Display as option

This flowmeter series is made for the measurement of especially large flow rates and use the calorimetric measuring principle. A heated sensor element is cooled down by the gas flow. This cooling effect which depends on the flow velocity and the gas characteristics serves as a flow indication, the kind of cooling directly depends on the flow velocity and the kind of gas. This kind of mass flow measurement is independent of pressure and temperature. The flowmeter can be used for monitoring air supplies, but also qualifies for the measurement of other gases, see technical data.

With display versions of type 8007 a wide range of functions can be set by capacitive buttons. Alternative features are available through service software via the USB connection. The type 8007 is available in three different versions, see page 2: Type 8007 Basic, type 8007 Extended and type 8007 Maximum.

Technical Data			
Full scale ranges (Q_{nom})¹⁾	up to 44030 Nm ³ /h (air), see page 2	Electrical connection	M12, see page 4
Operating gases	air, nitrogen, oxygen, natural gas, methane, argon	Power supply	24V DC
Max. operating pressure	50 bar	Voltage tolerance	±15%
Calibration gas	Air, zero point adjustment with operating gas	Power consumption	Max. 80 mA at 24 V DC
Gas temperature	-30 up to +110 °C	Output signal (actual value output) Max. load (current output)	4–20 mA < 500 Ω
Ambient temperature (Electronics)	-30 up to +80 °C	Protection class	IP65
Accuracy	±5% o.R. (air) ±5% FS (other gases)	Dimensions [mm]	See drawing on page 5
Span	1:10	Pulse output	1 pulse per m ³ (24V DC for 30 ms)
Body material	Stainless steel 1.4301	Options	-Other probe lengths -Oxygen conformity declaration -Cleaned, free of oil and fat -Display
Electronics housing material	Polycarbonate		
Sealing material	NBR, Simrit (for oxygen)		
Assembling screw	G1/2"		

¹⁾ At ref. conditions acc. to DIN 1343 (0 °C and 1013 mbara)

Flow Ranges (for Air) ²⁾acc. to DIN 1343: 0°C and 1013 mbara ³⁾

Type 8007							
Pipe [inches]	Inner diameter of pipe [mm]	DIN 1343 (0 °C, 1013 mbar(a))					
		Basic		Extended		Maximum	
		velocity	up to Nm ³ /h	velocity	up to Nm ³ /h	velocity	up to Nm ³ /h
1/2"	16.1	85.2 m/s	41	170.1 m/s	80	206 m/s	100
3/4"	21.7		81		160		195
1"	27.3		136		270		325
1 1/4"	36.0		257		485		590
1 1/2"	41.8		335		665		810
2"	53.1		550		1100		1330
2 1/2"	71.1		1005		2010		2435
3"	84.9		1440		2880		3485
4"	110.0		2430		4850		5875
5"	133.7		3595		7180		8690
6"	159.3		5110		10200		12355
8"	200.0		8075		16120		19520
10"	250.0	12635	25220	30540			
12"	300.0	18220	36360	44030			

Note: For other internal pipe diameters [mm] see instruction manual

²⁾ Flow ranges depend on the version of type 8007 (Basic, Extended, Maximum) and the internal pipe diameter. Type 8007 is adjustable to different internal diameters through the mechanical depth scale.

³⁾ Standard DIN 1945 (ISO 1217), at 20° C and 1000mbar = Standard DIN 1343, at 0°C and 1013 mbar, multiplied by coefficient 1.087.

The sensor can be installed in every given pipe size. The default sensor setting is for a 2" pipe (53.1 mm inner pipe diameter).

Every version is calibrated for a velocity range:

- Basic version up to 85.2 m/s
- Extended version up to 170.1 m/s
- Maximum version up to 206 m/s

The 20mA output is equivalent to this highest velocity, which is assigned to a maximum flow depending on pipe diameter.

1) Type 8007 without display:

The scaling of the 4-20mA output is done in the signal receiver, for example the PLC, according to the table of flow ranges.

2) Type 8007 with display:

For scaling of the 4-20mA output it is possible to adjust the specific pipe size (internal diameter) by the display and the buttons. Furthermore, you can choose your desired units of flow.

Flow Ranges for Other Gases

		Type 8007 Basic Max. velocity [m/s]	Type 8007 Extended Max. velocity [m/s]	Type 8007 Maximum Max. velocity [m/s]
Ref. to DIN 1945/ ISO 1217: 20°C and 1000mbar:				
Air		92.7	185.0	224.0
Ref. to DIN 1343: 0°C and 1013mbar:				
Air		85.2	170.1	206.0
Argon	Ar	144.9	289.2	350.2
Nitrogen	N ₂	82.4	164.5	199.2
Oxygen	O ₂	88.4	176.4	213.6
Natural gas, methane	NG	54.8	109.4	132.5

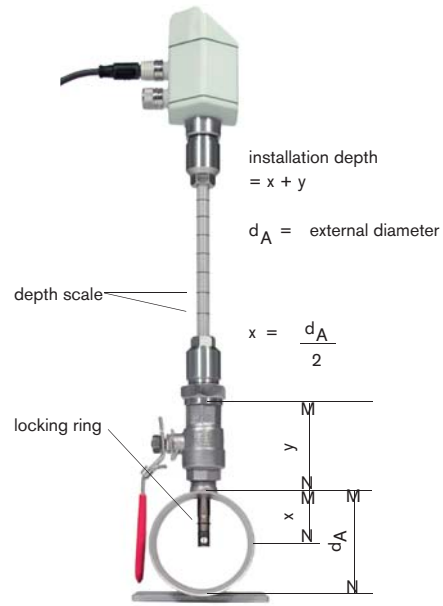
Item no. for a flowmeter calibrated on other gases like air and other flow ranges on request, see specification sheet on page 6.

Determining the Point of Installation

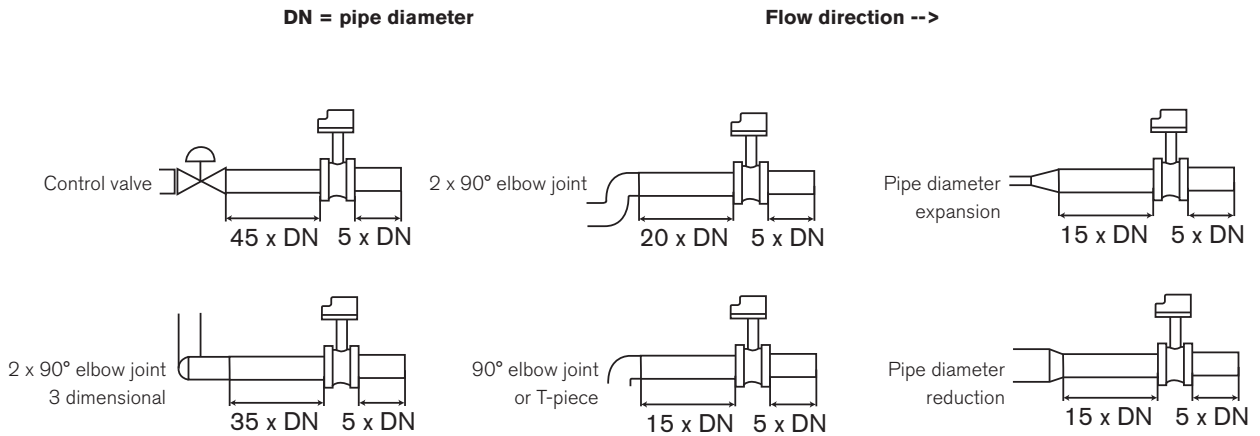
In order to get the accuracy specified in the data sheets, the sensor must be inserted in the centre of a straight pipe section with an undisturbed gas stream.

To obtain an undisturbed gas stream the sections in front of and behind the sensor must be straight, long enough and without any obstructions such as edges, seams, curves etc.

Careful attention must be paid to the design of the outlet section as obstructions can cause counter-flow turbulences as well as turbulences in the direction of the flow.



Installation



Ordering Chart

Item	Item no.
Type 8007 standard version (without display), Basic [85,2 m/s], probe length 220mm	770 216
Type 8007 with integrated display, Basic [85,2 m/s], probe length 220mm	772 123

Versions Extended and Maximum on request; probe lengths 120mm, 160mm, 300mm, 400mm on request.

Pin Assignment

M12 connector

Pin	Connector A (connection port)	Connection cable A	Connector B (pulse port)	Connection cable B
1	(SDI)	br	*	br
2	VB- Negative supply voltage 0V	wh	*	wh
3	VB+ Positive supply voltage 12-30V DC	bl	*	bl
4	I+ Current signal 4-20mA, actual flow value	sw	P Pulse	sw
5	*	gr	P Pulse	gr

* Do not connect with an electrical potential and/or ground.

M12 connector A

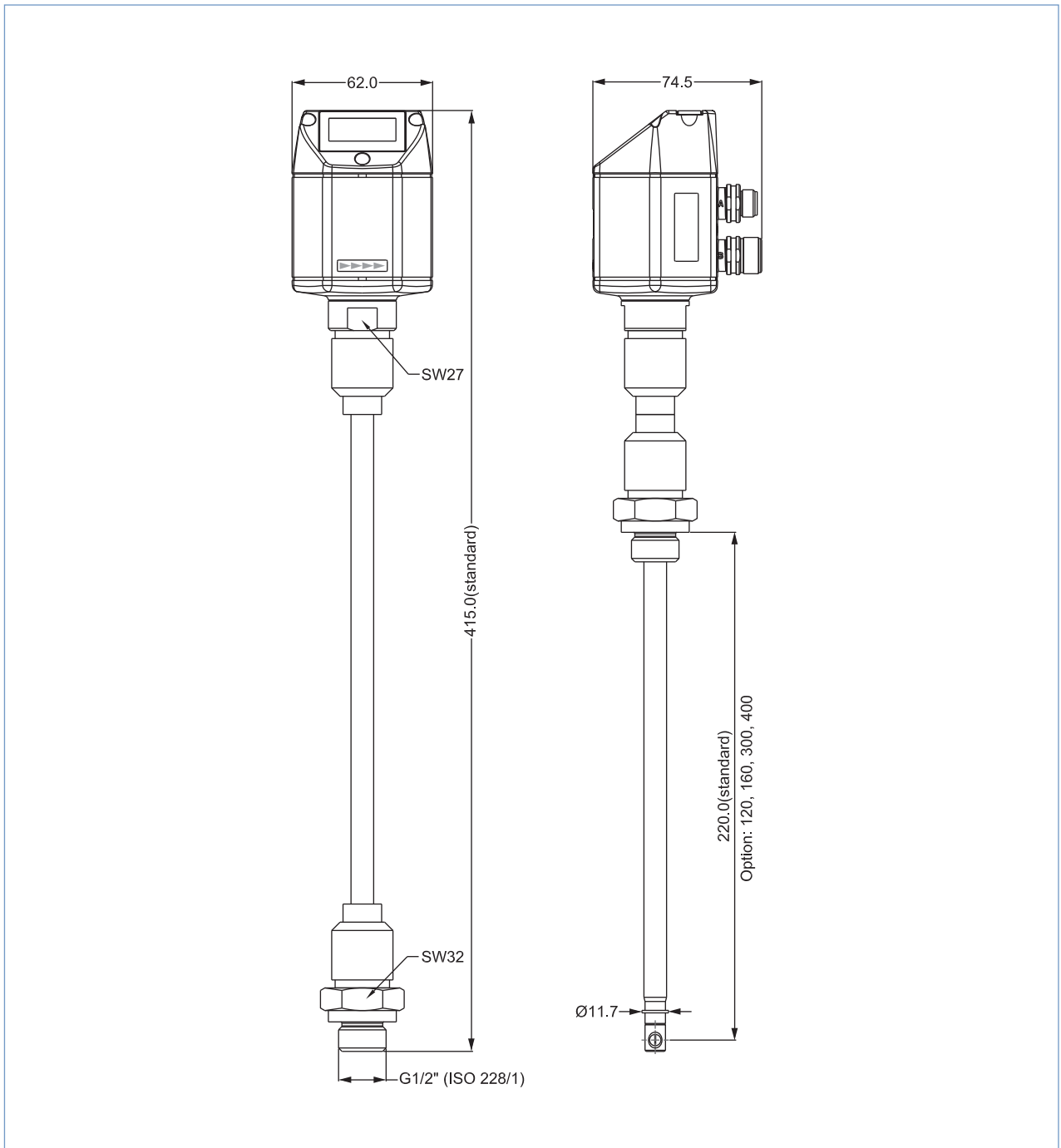
M12 connector B

Ordering Chart for Accessories

Article	Item no.
5m cable, with 5-pin M12 plug at one end, for connector A	770 217
5m cable, with 5-pin M12 plug at one end, for connector B (pulse)	770 796
10m cable, with 5-pin M12 plug at one end, for connector A	770 795
10m cable, with 5-pin M12 plug at one end, for connector B (pulse)	770 797
Communication software incl. accessories USB	772 122
Power supply with socket-outlet for appliances, 100-240V AC/ 24V DC	770 798
Power supply in housing for wall mounting, 100-240V AC/ 24V DC	770 799

Without ordering cables, the flowmeter comes with M12-connector for port A.

Dimensions [mm]



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In case of special application conditions,
please consult for advice.

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Note

You can fill out the fields directly in the PDF file before printing out the form.

Request for Quotation

Please complete and send to your nearest Bürkert sales centre*

Company	Contact person
Customer no.	Department
Address	Phone/Fax
Postcode/Town	E-mail

Quantity required delivery date

Operating Data

Gas: Air Argon Nitrogen Methane
 Oxygen Natural gas
 Other gas:

Max. flow rate: m³/h l/min Reference conditions: N: 0 °C, 1013 mbar(a)
(Add-on price for special flow range) S:20 °C, 1000 mbar(a)

Operating pressure: bar(g)
Ambient temperature: °C °F
Gas temperature: °C °F

Options: Free of oil and fat, without O₂ certificate
 Free of oil and fat, with O₂ certificate
 Integrated display
 Other probe length _____mm (see page 3, note ordering chart)

Comments / Sketch

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