

Inline Wheel Flow Switch



- Economic integration in pipe systems without any additional piping
- Magnetic measuring principle
- Mechanical adjustment of setpoint

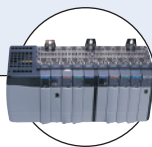
Type 8010 can be combined with...



Valve



Alarm



PLC

The INLINE flow sensor/switch Type 8010 is specially designed for use in pure and water resembling fluids, free from air bubbles and magnetizable particles, to monitor minimum/maximum values of flow.

The sensor/switch is made up of a sensor fitting (Type S010) and an electronic module (Type SE10), quickly and easily connected together by a Quarter-Turn.

The 8010, which is uni-directional, should be mounted in respect of the arrow that indicates the flow direction. The device indicates the presence of a flow in the pipe by switching the Reed contact contained in the electronic module. The switching points min./max. for rising and falling velocities can be set with a screw within a defined range.

The SE10 electronic module is available in two version:

- Normally open (NO): The flow switches on the contact.
- Normally closed (NC): The flow switches off the contact.

These S010 sensor fittings are available in two versions:

- with a short blade «Range1» fitted for the fittings DN15 to DN40.
- with a long blade „Range2» fitted for the fittings DN32 to DN50.

General data

Compatibility	With sensor fittings S010 INLINE (see ordering chart)
Sensor element	Blade with magnet, Reed contact
Materials	
Housing, cover	PC, +20% glass fibre reinforced
Setting screw	Plated brass
Cable plug	PA
Materials wetted parts	
Fitting, sensor holder	Brass (CuZn39Pb2), stainless steel (316L - 1.4404), PVC, PP, PVDF
Blade	PVDF
Axis / Seal	Stainless steel (316L) / FKM (EPDM on request)
Electrical connection	Cable plug: EN 175301-803 (provided)
Connection cable	0.14 to 0.5 mm ² cross section; max. 100 m length

Complete device data (sensor fitting + electronic module)

Pipe diameter	DN15 to DN50
Switching range	4.7 to 75.4 l/min (see selection table - on page 3)
Flow velocity max.	10 m/s
Medium temperature with sensor fitting in PVC	0 to 50°C (32 to 122°F)
PP, PVDF, brass, stainless steel	0 to 55°C (32 to 131°F)
Medium pressure max.	PN10 (with plastic sensor fitting) - PN16 (with metal sensor fitting) see pressure/temperature chart, next page
Viscosity / Pollution	100 cSt. max. / max. 1% (particle size max.: 0.5 mm)

По вопросам продаж и поддержки обращайтесь:

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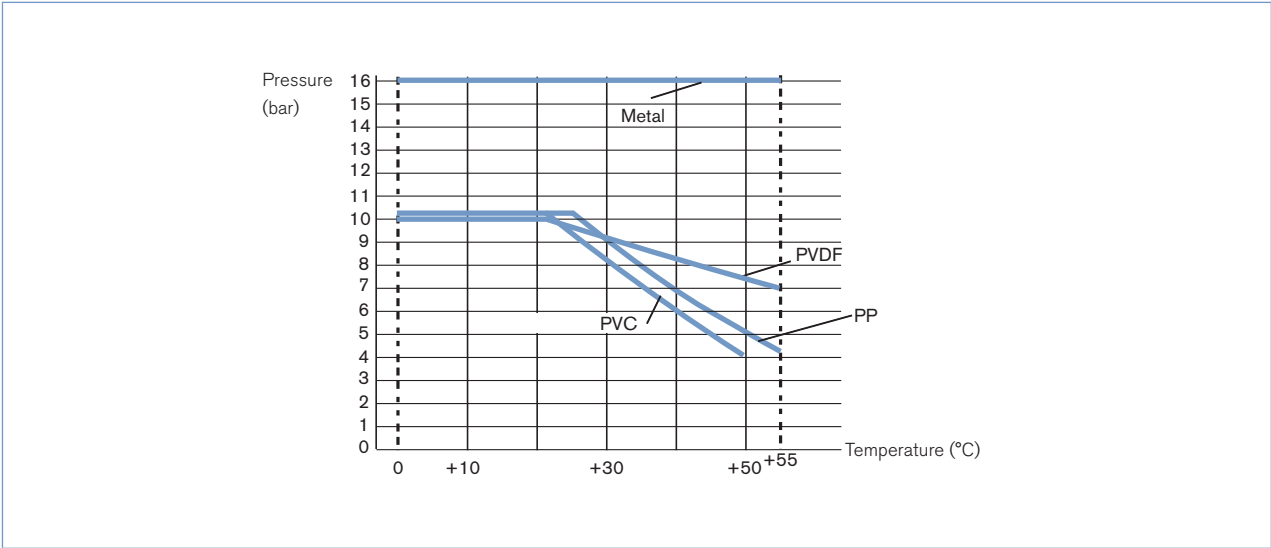
сайт: burkert.pro-solution.ru | эл. почта: btk@pro-solution.ru
телефон: 8 800 511 88 70

Electrical data	
Operating voltage	Without
Outputs	
Reed Contact	Potential free, forme A, switch off or switch on
Switching voltage	150 V DC/250 V AC max.
Switching Current	0.8 A max.
Switching power	50 W max., 50 VA
Carrying current	2.5 A
Environment	
Ambient temperature	0 to +55°C (32 to 131°F) (operating and storage)
Relative humidity	≤ 80%, without condensation
Standards, directives and approvals	
Protection class	IP65 with connector plugged-in and tightened
Standards, directives	
Pressure	Complying with article 3 of §3 from 97/23/CE directive.*
Vibration	EN 60068-2-6
Shock	EN 60068-2-27

* For the 97/23/CE pressure directive, the device can only be used under following conditions (depend on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, §1.3.a	DN ≤ 25 only
Fluid group 2, §1.3.a	DN ≤ 32 or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Pressure / temperature chart



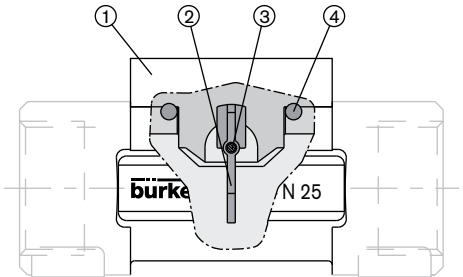
Design, inner materials and principle of operation



The S010 INLINE sensor fitting is made up of a blade with a magnet. The SE10 module contains a rocker arm with a magnet on each end. When liquid flows through the pipe, the blade rotates and, by magnetic adherence, actuates the rocker arm.

⚠ The arrows on the S010 INLINE and on the SE10 must correspond to the flow direction. With this rotation, the upper magnet switches the Reed contact opening or closing the circuit. The switching points can be set with a screw within a defined range

No.	Description	Materials
1	Sensor holder	Brass, stainless steel, PVC, PP or PVDF
2	Blade	PVDF
3	Axis	Stainless steel
4	O-Ring	FKM or EPDM

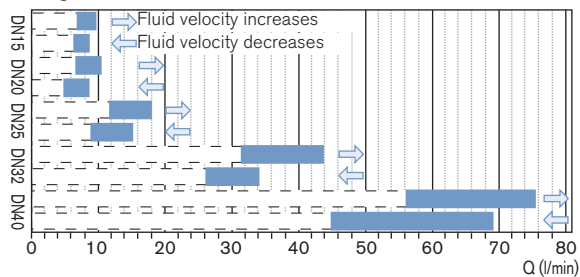


Switching threshold and sensor fitting DN selection chart

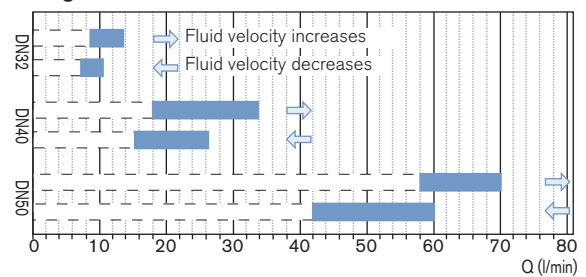
The type of blade (Range 1 or 2) and the sensor fitting DN define the flow range on which the switching thresholds can be adjusted. The table below shows the switching end values depending on the selected model of type 8010

Range	Sensor fitting DN	Fluid velocity (Water) [m/s]			Flow rate			
		min.	max.	Variation way	l/min		m³/h	
1	15	0.65	0.90	increasing	6.9	9.5	0.41	0.57
		0.60	0.80	decreasing	6.4	8.5	0.38	0.51
	20	0.35	0.55	increasing	6.6	10.4	0.40	0.62
		0.25	0.45	decreasing	4.7	8.5	0.28	0.51
	25	0.40	0.60	increasing	11.8	17.7	0.71	1.06
		0.30	0.50	decreasing	8.8	14.7	0.53	0.88
	32	0.65	0.90	increasing	31.4	43.4	1.88	2.61
		0.55	0.70	decreasing	26.5	33.8	1.59	2.03
	40	0.75	1.00	increasing	56.5	75.4	3.39	4.52
		0.60	0.90	decreasing	45.2	67.9	2.71	4.07
2	32	0.18	0.28	increasing	8.5	13.5	0.51	0.81
		0.15	0.22	decreasing	7.0	10.5	0.42	0.63
	40	0.25	0.45	increasing	18.8	33.9	1.13	2.04
		0.20	0.35	decreasing	15.1	26.4	0.90	1.58
	50	0.49	0.59	increasing	58.0	70.0	3.48	4.20
		0.36	0.51	decreasing	42.0	60.0	2.52	3.60

Range 1



Range 2

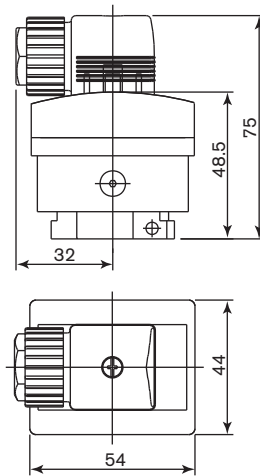


Attention!

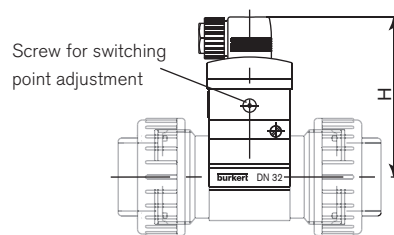
The sensor fitting with nominal diameters of 32 and 40 mm are designed for two different switching range (1 and 2) in relation with flow velocity and equivalent flow values. For all other sizes, there is only one switching range (1 or 2).

Dimensions [mm]

Electronic module SE10

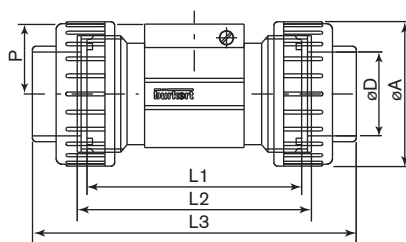


High of Electronic SE10 + Sensor fitting S010

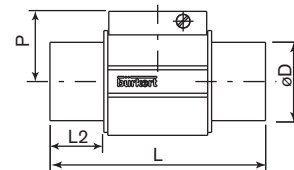


DN	H
15	100
20	97
25	97
32	101
40	105
50	111

True union connection - (solvent or fusion spigot)



Spigot connection - (solvent or fusion spigot)



DN	P	True union connection in Plastic									Spigot connection in PVC			Spigot connection in PP or PVDF		
		L1	L2	L3	ANSI*	JIS*	øD	ANSI*	JIS*	øA	L	ø D	L2	L	ø D	L2
15	34.5	90	96	128	130.0	129.0	20	21.3	18.4	43	90	20	16.5	85	20	14
20	32.0	100	106	144	145.6	145.0	25	26.7	26.45	53	100	25	20.0	92	25	16
25	32.2	110	116	160	161.4	161.0	32	33.4	32.55	60	110	32	23.0	95	32	18
32	35.8	110	116	168	170.0	169.0	40	42.2	38.60	44	110	40	27.5	100	40	20
40	39.6	120	127	188	190.2	190.0	50	48.3	48.70	83	120	50	30.0	106	50	23
50	45.7	130	136	212	213.6	213.0	63	60.3	60.80	103	130	63	37.0	110	63	27

* only for PVC

Dimensions [mm]

Internal thread connection External thread connection Weld ends connection										
DN	P	Internal thread connection in stainless steel or brass			External thread connection in stainless steel			Weld ends connection in stainless steel		
		L	L1	D	L	L1	D	L	ø D	e
15	34.5	85	16.0 17.0 15.0	G 1/2 NPT 1/2 Rc 1/2	84	11.5	G 3/4	84	21.3	1.6
20	32.0	95	17.0 18.3 16.3	G 3/4 NPT 3/4 Rc 3/4	94	13.5	G 1	94	26.9	1.6
25	32.2	105	23.5 18.0 18.0	G 1 NPT 1 Rc 1	104	14.0	G 1 1/4	104	33.7	2.0
32	35.8	120	23.5 21.0 21.0	G 1 1/4 NPT 1 1/4 Rc 1 1/4	119	18.0	G 1 1/2	119	42.4	2.0
40	39.6	130	23.5 20.0 19.0	G 1 1/2 NPT 1 1/2 Rc 1 1/2	129	19.0	M55 x 2	129	48.3	2.0
50	45.7	150	27.5 24.0 24.0	G 2 NPT 2 Rc 2	149	20.0	M64 x 2	149	60.3	2.6

Clamp connection Flange connection										
DN	P	Clamp connection - ISO4200 in stainless steel		Flange connection in stainless steel						
		L	ø D	Standard	L	I	J	M	K	N
15	34.5	130	34.0	DIN ANSI JIS	130 130 152	23,5	4x14.0 4x15.8 4x15.0	95.0 89.0 95.0	65.0 60.3 70.0	45.0 34.9 51.0
20	32.0	150	50.5	DIN ANSI JIS	150 150 178	28,5	4x14.0 4x15.8 4x15.0	105.0 99.0 100.0	75.0 69.8 75.0	58.0 42.9 56.0
25	32.2	160	50.5	DIN ANSI JIS	160 160 216	28,5	4x14.0 4x15.8 4x19.0	115.0 108.0 125.0	85.0 79.4 90.0	68.0 50.8 67.0
32	35.8	180	50.5	DIN ANSI JIS	180 180 229	31,0	4x18.0 4x15.8 4x19.0	140.0 117.0 135.0	100.0 88.9 100.0	78.0 63.5 76.0
40	39.6	200	64.0	DIN ANSI JIS	200 200 241	36,0	4x18.0 4x15.8 4x19.0	150.0 127.0 140.0	110.0 98.4 105.0	88.0 73.0 81.0
50	45.7	230	77.5	DIN ANSI JIS	230 230 267	41,0	4x18.0 4x19.0 4x19.0	165.0 152.0 155.0	125.0 120.6 120.0	102.0 92.1 96.0

Ordering chart for flow switch Type 8010

Electronic module Type SE10 - for sensor fitting Type S010

Output	Electrical connection	Item no.
Reed contact, NO	Cable plug EN 175301-803	438 087
Reed contact, NC	Cable plug EN 175301-803	438 088

Note: A complete device Type 8010 consists of a sensor fitting Type S010 and an electronic module Type SE10. Please order the two required units separately.

Sensor fitting Type S010 (to be ordered separately)

Port connection	Seal	Standard	Item no.							
			Range 1					Range 2		
			DN15	DN20	DN25	DN32	DN40	DN32	DN40	DN50
Brass - Temperature max. 55°C, PN16										
Internal thread	FKM	G	438 163	438 164	438 165	438 166	438 167	438 169	438 170	438 171
		NPT	438 172	438 173	438 174	438 175	438 176	438 178	438 179	438 180
		Rc (ISO7)	438 181	438 182	438 183	438 184	438 185	438 187	438 188	438 189
Stainless steel - Temperature max. 55°C, PN16										
Internal thread	FKM	G	438 199	438 200	438 201	438 202	438 203	438 205	438 206	438 207
		NPT	438 208	438 209	438 210	438 211	438 212	438 214	438 215	438 216
		Rc (ISO7)	438 217	438 218	438 219	438 220	438 221	438 223	438 224	438 225
External thread	FKM	G	438 226	438 227	*	*	*	*	*	*
Weld ends	FKM	EN ISO 1127 / ISO 4200	438 235	*	438 237	*	*	*	*	438 243
PVC - Temperature max. 50°C, PN10										
True union	FKM	DIN 8063	438 091	438 092	438 093	438 094	438 095	438 097	438 098	438 099
		ASTM D 1785/76	438 109	438 110	438 111	438 112	438 113	438 115	438 116	438 117
		JIS K	438 118	438 119	438 120	*	438 122	*	438 125	438 126
Spigot	FKM	DIN 8063	438 100	*	438 102	438 103	438 104	*	*	*
PP - Temperature max. 55°C, PN10										
True union	FKM	DIN 8063	438 127	438 128	438 129	*	438 131	438 133	*	*
Spigot	FKM	DIN 8063	*	*	438 138	*	438 140	*	*	438 144

*

 Further versions on request
**Port connection**

External thread G
Weld ends EN ISO 1127/ISO 4200
Clamp ISO (for pipe EN ISO 1127/ISO 4200)
Flange EN1092-1, ANSI B16-5-1988, JIS 10K
True union DIN 8063, JIS 10K
Spigot DIN 8063

**Materials**

PVDF - Temperature max. 55°C, PN10

Ordering chart accessories / spare parts (to be ordered separately)

Description	Item no.
O-ring set	
FKM - for metal sensor fitting, DN15 to DN50	426 340
EPDM - for metal sensor fitting, DN15 to DN50	426 341
FKM - for plastic sensor fitting, DN15	431 555
FKM - for plastic sensor fitting, DN20	431 556
FKM - for plastic sensor fitting, DN25	431 557
FKM - for plastic sensor fitting, DN32	431 558
FKM - for plastic sensor fitting, DN40	431 559
FKM - for plastic sensor fitting, DN50	431 560
EPDM - for plastic sensor fitting, DN15	431 561
EPDM - for plastic sensor fitting, DN20	431 562
EPDM - for plastic sensor fitting, DN25	431 563
EPDM - for plastic sensor fitting, DN32	431 564
EPDM - for plastic sensor fitting, DN40	431 565
EPDM - for plastic sensor fitting, DN50	431 566
Sensor holder	
Brass with short blade "range 1", seal (FKM), screws for DN15 to DN40	561 761
Brass with long blade "range 2", seal (FKM), screws for DN32 to DN50	560 906


Further versions on request

Materials

Stainless steel sensor holder

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

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Flow transmitter/ pulse divider



- Microprocessor-controlled electronics
- 2-wire (4-20 mA) / 3-wire (NPN/PNP) - operation
- Pluggable to flow sensor 8020, 8030 or 8070
- Removable display unit

Type 8022 can be combined with...



Type 8020



Type 8030



Type 8070

The electronic module Type 8022 operates either as a flow transmitter (only with sensors pulse "Low Power" version Type 8020, 8030, 8070) or as a pulse divider (with all versions of sensors of Type 8020, 8030, 8070). The module operates the output of the sensors, displays the flow value and converts it to the signal output in mA or pulse.

In operation as a flow transmitter, the frequency signal of the sensor is converted in a 4 - 20 mA signal (2-wire operation).

In operation as a pulse divider, the input frequency is converted into an adjustable output frequency.

The use of the display unit allows the switching between the two modes.

Technical data

Power supply	12 - 30 V DC
Voltage tolerance	±10 %
Residual ripple	< 5 %
Power consumption	< 200 mW
Ambient temperature	-10 to 60°C
Frequency input	1 - 600 Hz
4 - 20 mA output	Accuracy ±1.5% of full scale max. loop impedance: 1000 Ω at 30 V DC ; 700 Ω at 24 V DC; 100 Ω at 12 V DC
NPN/PNP output	Accuracy ±1% of measured value 1 - 600 Hz, "open collector", max. 50 mA
Electrical connection	Terminal strip 4 pins or male M12 connector
Protection	IP65
Housing material	Polyamide / PC

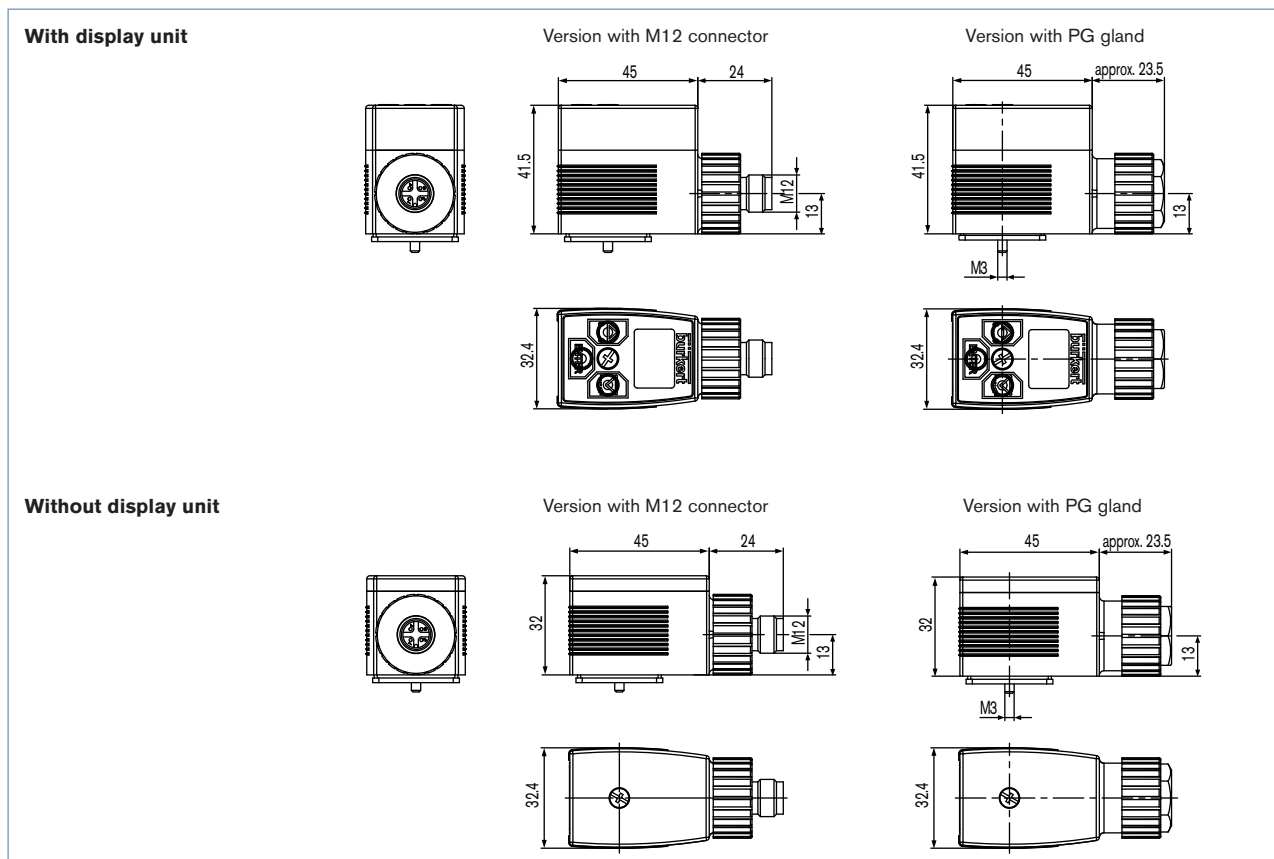
Functions of the flow transmitter / pulse divider Type 8022

- Microprocessor-controlled electronics
- Transmitter operation: conversion of the input frequency into a 4 - 20 mA signal (2-wire operation)
- Scalable 4 - 20 mA signal
- Pulse divider operation: Transforms the input to an adjustable output frequency (3-wire operation)
- Displays the flow in a selectable unit
- Removable display unit (is only required to configure or to display)

Ordering chart basic units and accessories

Version	Item no.
Flow transmitter / pulse divider Type 8022 without display unit, PG connection	215 644
Flow transmitter / pulse divider Type 8022 with display unit, PG connection	215 645
Flow transmitter / pulse divider Type 8022 without display unit, male M12 connector	215 646
Flow transmitter / pulse divider Type 8022 with display unit, male M12 connector	215 647
Display unit for Type 8022	562 876
Cover set (for operating without display unit)	670 549
Right-angle female M12 connector, 4 pins	784 301
Straight female M12 connector, 4 pins, with 5 m cable	918 038

Dimensions [mm]



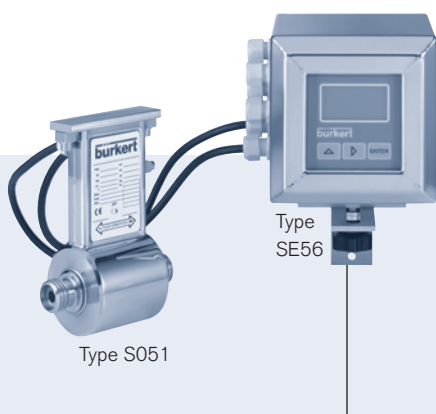
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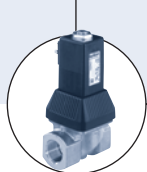
In case of special application conditions,
please consult for advice.

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Type 8051 can be combined with...



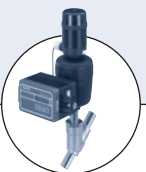
Type 6223

Solenoid control valve



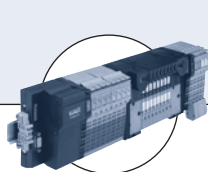
Type 2731 (8630)

TopControl system



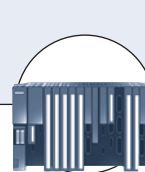
Type 2702 (1067)

SideControl system

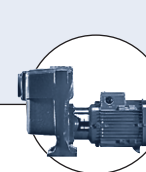


Type 8644

Valve islands



PLC



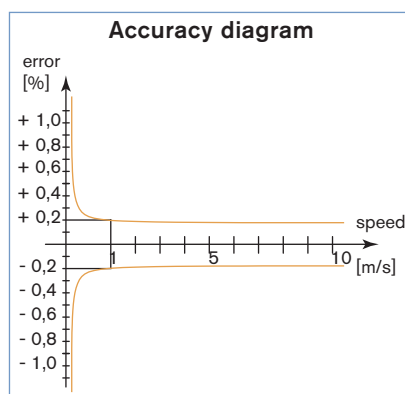
Pumps

Full Bore Magflowmeter for Low-flow measurement

- Combination of magflowsensor body S051 and transmitter / batch controller SE56
- Continuous measurement or Batch Control
- Clean in place (CIP)
- Low-flow measurements down to 3 l/h

The complete full bore magflowmeter Type 8051, which consists of a magnetic sensor body Type S051 connected to a flow transmitter / batch controller Type SE56 (blind in compact version or with display in compact or separate version), is designed for applications with conductivities as low as 5 $\mu\text{S}/\text{cm}$.

Combined with a valve as the actuating element, the complete full bore magflowmeter Type 8051 can control high-precision dosing and filling operations.



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Technical data

General data - S051 sensor body

Compatibility	SE56 electronics (see corresponding datasheet)
Materials	
Body	Stainless steel 304 (1.4301)
Wetted parts (connection)	Stainless steel 316L (1.4404) or 304 (1.4301) for full lining
Electrode	Stainless steel 316L
	[Hastelloy C, Titanium, Tantalum, Platinum-rhodium on request]*
Lining / Gasket	PTFE / FKM, EPDM or FFKM
Electrical connection	2 cable glands (PG9)

Complete system data 8051 (S051 sensor + SE56 electronics)

Pipe diameter	DN 03 up to DN 20
Measuring range	0 ... 10 l/h up to 0 ... 12 500 l/h
Process connection	Thread ISO 228-1, NPT (DIN 11851, SMS 1145, Tri-Clamp® ISO 2852 or BS 4825, Flanges DIN 2501, ANSI on request)
Medium temperature	
Compact version	-20 up to 100°C (with display version)
	-20 up to 100°C (with blind version) [up to 130°C for max. 1 hour]
Separate version	-20 up to 150°C
Medium pressure max.	PN 16 (PN40, on request)
Vacuum resistance	200 mbar absolute at 100°C
Accuracy ¹⁾	± 0.2% of reading (see diagram, opposite)
Repeatability	< 0.1%
Minimum conductivity	5 $\mu\text{S}/\text{cm}$ (or 20 $\mu\text{S}/\text{cm}$ with demineralized water)

Environment - S051 sensor body

Ambient temperature	-20 up to: 60°C (with display version) or 40°C (with blind version)
Standard - S051 sensor body	
Protection class	IP67 (Compact version); IP68 (Separate version)
Standard	EN55011 (Group 1, Class B)
EMI / Safety	IEC1000-4-2/3/4/5/6/11 / EN61010

¹⁾ under reference conditions: water temperature = 20°C, ambient temperature = 25°C, test time > 60 s., converter warm-up > 60', constant flow rate during the test, pressure = 500 mbar, liquid speed > 1 m/s
 * on request

Ordering information for complete full bore magflowmeter Type 8051

A complete full bore magflowmeter Type 8051 consists of a sensor body S051 and an electronic transmitter / batch controller SE56. The transmitter / batch controller is only delivered in combination with the sensor body as a part of a complete magflowmeter. The following information is necessary for the selection of a complete full bore magflowmeter:

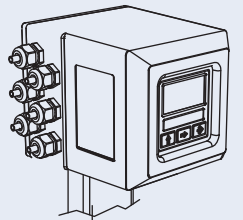
- **item no** of the sensor body **Type S051** (see Ordering Chart)
- **item no** of the transmitter / batch controller **Type SE56** (see separate datasheet or Ordering chart on page 5)

More info.

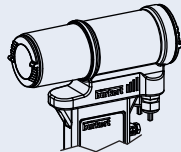
For more technical information about this product, click on this box... you will come to our website for this product where you can download the datasheet.

Examples for variations of complete full bore magflowmeter

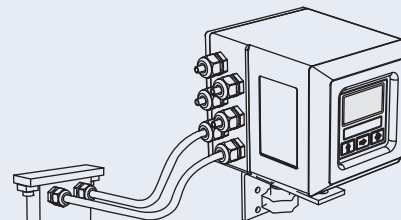
Transmitter / batch controller Type SE56



With local display
Compact version

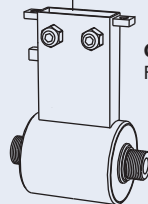


Without display (blind)
Compact version

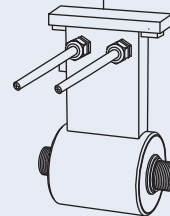


With local display
Remote version

Magnetic sensor body Type S051



Compact version
Fitting-Sensor



Separate version
Fitting-Sensor

Design and operating principle

The sensor body Type S051 consists of a stainless steel pipe section internally lined with insulating material. Two electrodes mounted opposite to each other on the internal surface of the tube generate an electrical signal. The coils generating the magnetic field are placed outside the pipe.

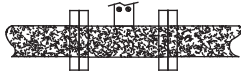
The signal generated by the sensor body S051 must be amplified and processed by an electronic transmitter / batch controller (SE56) which outputs an electrical signal proportional to the fluid flow rate, and powers the coils generating the magnetic field.

Faraday's induction law is the basis for this magnetic flow measurement.

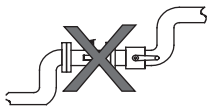
Installation



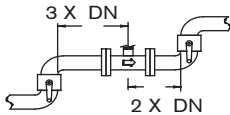
Avoid the functioning with the pipe partially empty.



During the functioning the pipe must be completely full.

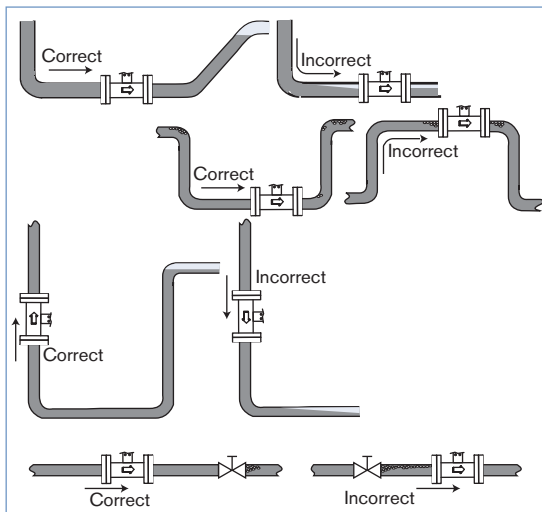


Avoid the installation near curves or hydraulic accessories.



Observe the upstream and downstream distances.

The flow rate sensor body can be installed into either horizontal or vertical pipes. Mount the S051 sensor body in these correct ways to obtain an accurate flow measurement.



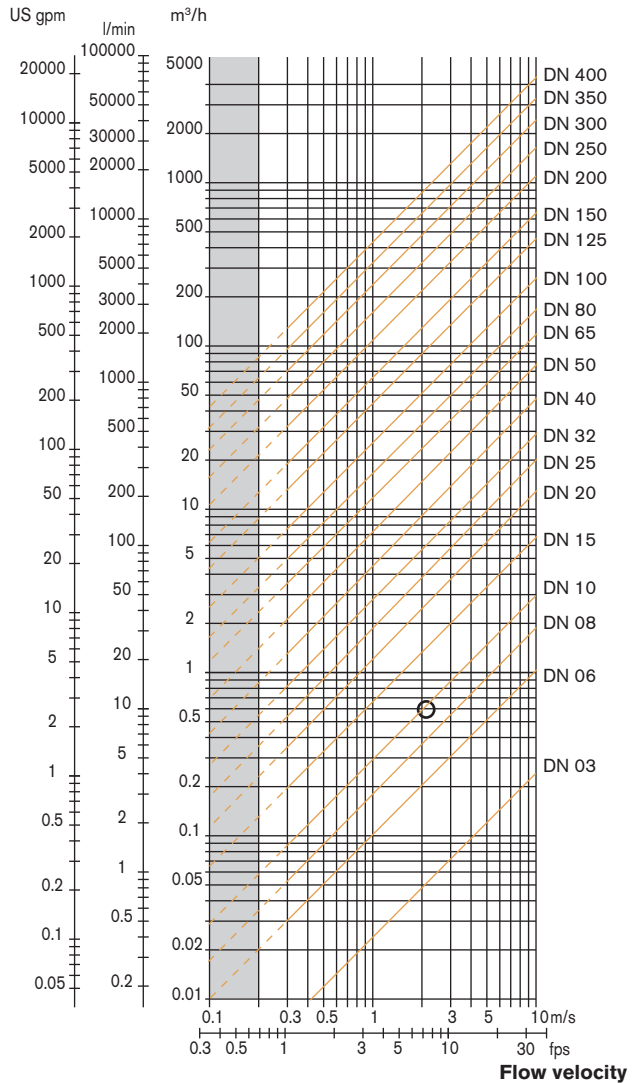
The suitable pipe size is selected using the diagram Flow / Velocity / DN, upside.
The flow sensor body is not designed for gas flow measurement.

Selection of fitting / pipe size

Example:

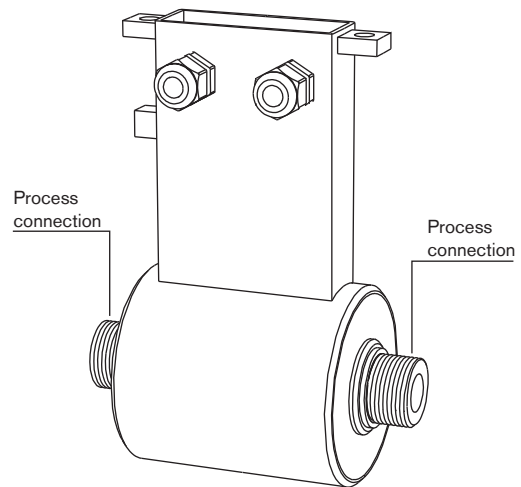
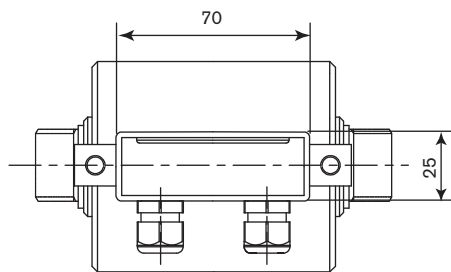
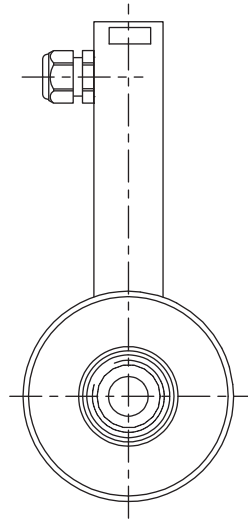
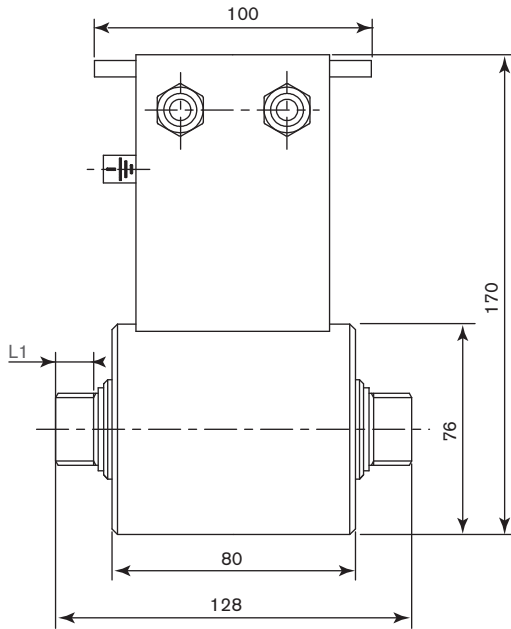
- Specification of nominal flow: 10 l/min
- Ideal flow velocity: 2...3 m/s
- For these specifications, the diagram indicates a pipe size of DN10

Flow rate



Dimensions [mm] of Type S051 standard sensor body (without full lining)

NOTE: Dimensions of SE56 flowtransmitter, see corresponding datasheet.



DN [mm]	Thread [inch]	L1 [mm]
03	G or NPT 1/4"	16.4
06	G or NPT 3/8"	16.4
10	G or NPT 1/2"	17.4
15	G or NPT 3/4"	20.0
20	G or NPT 1"	20.0

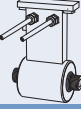
Ordering charts for Low-flow magflowmeter 8051

A complete magflowmeter Type 8051 consists of:

- a full bore sensor body Type S051
- a flow transmitter / batch controller Type SE56

Please order the relevant sensor body and the flow transmitter / batch controller separately!

Full bore Sensor body Type S051

Description	Orifice [mm]	Process connection	Flow rate range [l/h]		Body material	Wetted parts material	Lining material	Item no.
			min. 0...0.4 m/s	max. 0...10 m/s				
 Compact version	03	G1/4" (ISO 228-1)	0 ... 10	0 ... 250	SS 304	SS 316L	PTFE	554 321
		NPT1/4"	0 ... 10	0 ... 250	SS 304	SS 316L	PTFE	554 213
	06	G3/8" (ISO 228-1)	0 ... 40	0 ... 1000	SS 304	SS 316L	PTFE	553 065
		NPT3/8"	0 ... 40	0 ... 1000	SS 304	SS 316L	PTFE	555 892
	10	G1/2" (ISO 228-1)	0 ... 120	0 ... 3000	SS 304	SS 316L	PTFE	553 374
		NPT1/2"	0 ... 120	0 ... 3000	SS 304	SS 316L	PTFE	555 111
	15	G3/4" (ISO 228-1)	0 ... 240	0 ... 6000	SS 304	SS 316L	PTFE	553 481
		NPT3/4"	0 ... 240	0 ... 6000	SS 304	SS 316L	PTFE	557 659
 Separate version - with 10 m cable (included)	03	G1/4" (ISO 228-1)	0 ... 10	0 ... 250	SS 304	SS 316L	PTFE	553 539
		NPT1"	0 ... 500	0 ... 12500	SS 304	SS 316L	PTFE	553 663
	06	G3/8" (ISO 228-1)	0 ... 40	0 ... 1000	SS 304	SS 316L	PTFE	448 487
		G1/2" (ISO 228-1)	0 ... 120	0 ... 3000	SS 304	SS 316L	PTFE	448 488
	10	G1/2" (ISO 228-1)	0 ... 120	0 ... 3000	SS 304	SS 316L	PTFE	448 489
		G3/4" (ISO 228-1)	0 ... 240	0 ... 6000	SS 304	SS 316L	PTFE	448 490
	15	G3/4" (ISO 228-1)	0 ... 240	0 ... 6000	SS 304	SS 316L	PTFE	448 491
		G1" (ISO 228-1)	0 ... 500	0 ... 12500	SS 304	SS 316L	PTFE	448 491

Flow transmitter Type SE56 (for more data, refer to datasheet Type SE56)

Description	Power supply	Outputs	Body material	Electrical connection	Item no.
With local display compact version	90 - 265 V AC	2 transistors	Aluminium	6 cable glands	558 745
			Stainless steel	6 cable glands	559 780
		2 transistors + 4...20 mA	Aluminium	6 cable glands	558 747
			Stainless steel	6 cable glands	558 306
With local display remote version	90 - 265 V AC	2 transistors	Aluminium	6 cable glands	559 781
			Stainless steel	6 cable glands	558 310
		2 transistors + 4...20 mA	Aluminium	6 cable glands	558 750
			Stainless steel	6 cable glands	558 308
Blind compact version	20 - 30 V DC	Transistor	Stainless steel	2 cable glands	559 132
		Transistor + 4...20 mA	Stainless steel	2 cable glands	559 133
		Transistor + Profibus DP	Stainless steel	2 cable glands	559 134

Further versions on request

Please also use the "request for quotation" form on page 6 for ordering a customized Low-flow sensor body. [go to page](#)

Ordering chart for spare parts/accessories for sensor body Type S051

Description	Item no.
Electrodes cable for connection between Low-flow sensor body and electronics Type SE56*, Poliolefina insulation, 10 m long	448 518
Coils cable for connection between Low-flow sensor body and electronics Type SE56*, 10 m long	448 519

* see corresponding datasheet

Low-flow sensor body Type S051 - request for quotation

Note

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

Please fill out and send to your nearest Bürkert facility* with your inquiry or order.

NOTE : Please take into account that the sensor body Type S051 must be associated with the electronic Type SE56.

Company:	Contact person:
Customer No.:	Department:
Address:	Tel. / Fax.:
Postcode / Town:	E-mail:

Full Bore Magflow sensor body S051

Quantity: Desired delivery date:

■ **Pipe diameter:** ☐ DN 03 ☐ DN 06 ☐ DN 10 ☐ DN 15 ☐ DN 20

■ **Process fitting connection:**

External thread ☐ ISO 228-1 ☐ DIN 11851

☐ NPT ☐ SMS 1145

Tri-Clamp® ☐ ISO 2852 ☐ BS 4825

Flange ☐ DIN 2501 ☐ ANSI

■ **Pressure:** ☐ PN16 ☐ PN40

■ **Materials:**

Seal ☐ FKM ☐ EPDM ☐ FFKM

Wetted parts ☐ 316L ☐ 304 and PTFE full lining

Electrodes ¹⁾ ☐ 316L (2 M.E.)*
☐ Hastelloy (2 M.E. + 2 G.E.)* ☐ Tantalum (2 M.E. + 2 G.E.)*
☐ Titanium (2 M.E. + 2 G.E.)* ☐ Platinum (2 M.E. + 2 G.E.)*

* M.E. = measuring electrode and G.E. = ground electrode

■ **Sensor body version:** ☐ Compact ☐ Separate

reset form

¹⁾ If the pipe is in plastic then it is advised to choose 3 electrodes, if it is in metal then 2 electrodes are enough.

*To find your nearest Bürkert facility, click on the orange box →

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

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0801/1_EU-en_00895027



Positive displacement low flow sensor for continuous measurement and batch control

- For highly viscous fluids
- Electronics for indication, monitoring, transmitting, On/Off control and batch control

Type 8071 can be combined with...



Type 8025

Remote Universal
flow transmitter



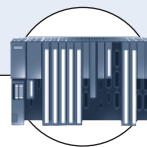
Type 8025

Dosing system
Konti-Dos



Type 2712 (8630)

Continuous
TopControl system



PLC

This positive displacement sensor is specially designed for measurement or batch control of highly viscous fluids like glue, honey or oil. This sensor can be easily connected to the universal transmitter Type 8025 or the batch controller Type 8025.

The design of this low flow sensor is based on the oval rotor principle. This has proven to be a reliable and highly accurate volumetric method of measuring flow. Exceptional repeatability and high accuracy over a wide range of viscosities and flowrates are features of that design. The low pressure drop and high pressure rating make it suitable for both gravity and pump (in-line) applications.

General data	
Compatibility	with Type 8025 Universal transmitter or batch controller (see corresp. data sheet)
Materials wetted parts	
Body	Aluminium, PPS, stainless steel (316F)
Rotor	PPS, stainless steel (316F)
Shaft	Hastalloy C, stainless steel (316F)
Seal	FKM - EPDM
Electrical connection	3-wire cable, 1 m length
Electrical data	
Sensor	Hall
Current consumption	≤ 9 mA
Output frequency	Open collector, NPN, max. 25 mA, 4.5 to 24 V DC
K-factor	
0.5-50 l/h	1552 pulses/l
2-100 l/h	1000 pulses/l
15-500 l/h	400 pulses/l

Complete device data	
Process connection	Thread 1/8"; 1/4" (G or NPT)
Measuring range	0.5 to 500 l/h (0.13 to 132 gph)
Fluid temperature max.	Aluminium or PPS body: 80 °C Stainless steel body: 120 °C
Fluid pressure max.	Aluminium or PPS body: 5 bar Stainless steel body: 10 bar or 55 bar (550 bar on request)
Viscosity	1000 cps. max. (higher on request)
Max. particle size	75 µm - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a 75 µm (200 mesh) strainer as close as possible to the inlet side of the meter.
Accuracy	≤ ± 1% of Reading
Repeatability	≤ 0.03% of Reading
Environment	
Ambient temperature	(operating and storage)
Aluminium or PPS body	+ 80 °C max.
Stainless steel body	+ 120 °C max.
Standards and approvals	
Protection class	IP54 (NEMA 13)

Ordering chart for sensor Type 8071

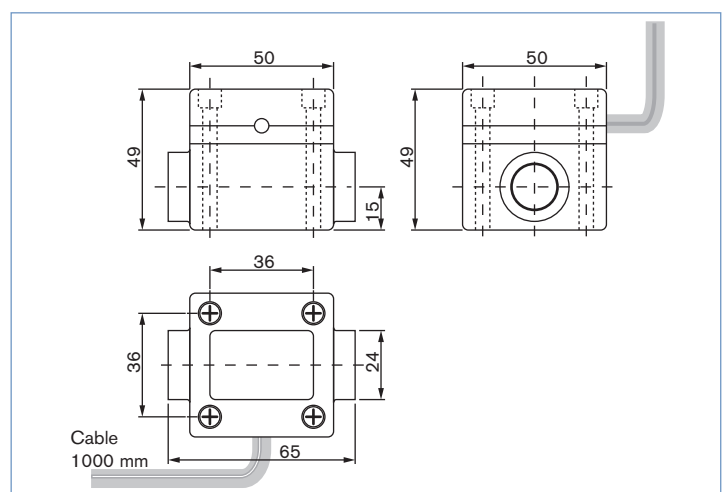
Process connection	Flow Range		Body material	Max. pressure	Rotor / shaft material	Gasket	Item no.
	> 1 cps	< 1 cps					
G 1/8	0.5-50 l/h (0.13 to 13.2 gph)	5-50 l/h (1.32 to 13.2 gph)	Aluminium	5 bar	Stainless steel	FKM	552 818
			Stainless steel	10 bar	Stainless steel	FKM	552 820
				55 bar	Stainless steel	FKM	553 628
NPT 1/8	0.5-50 l/h (0.13 to 13.2 gph)	5-50 l/h (1.32 to 13.2 gph)	Aluminium	5 bar	Stainless steel	FKM	552 819
			Stainless steel	10 bar	Stainless steel	FKM	552 821
				55 bar	Stainless steel	FKM	553 629
Process connection	Flow Range		Body material	Max. pressure	Rotor / shaft material	Gasket	Item no.
	> 5 cps	< 5 cps					
G 1/4	2-100 l/h (0.53 to 26.4 gph)	12.5-100 l/h (3.3 to 26.4 gph)	PPS	5 bar	PPS / Hastalloy C	FKM	432 288
			Stainless steel	10 bar	Stainless steel	FKM	550 072
				55 bar	Stainless steel	FKM	433 864
					EPDM	551 817	
	15-500 l/h (4.00 to 132 gph)	40-500 l/h (10.56 to 132 gph)	PPS	5 bar	PPS / Hastalloy C	FKM	550 146
			Stainless steel	10 bar	Stainless steel	FKM	430 856
				55 bar	Stainless steel	EPDM	434 364
					FKM	437 518	
			Stainless steel	10 bar	Stainless steel	EPDM	553 651
15-500 l/h for high viscosity*		Stainless steel	10 bar	Stainless steel	FKM	553 631	
NPT 1/4	2-100 l/h (0.53 to 26.4 gph)	12.5-100 l/h (3.3 to 26.4 gph)	PPS	5 bar	PPS / Hastalloy C	FKM	552 426
			Stainless steel	10 bar	Stainless steel	FKM	448 654
				55 bar	Stainless steel	FKM	448 656
	15-500 l/h (4.00 to 132 gph)	40-500 l/h (10.56 to 132 gph)	PPS	5 bar	Stainless steel	FKM	553 630
			Stainless steel	10 bar	PPS / Hastalloy C	FKM	448 655
				55 bar	Stainless steel	FKM	448 657
	15-500 l/h for high viscosity*		Stainless steel	10 bar	Stainless steel	FKM	553 632

* > 1000 cps

Ordering chart for spare parts (to be ordered separately)

Specifi- cations	Item no.
Set of two rotors for the measuring range	
In stainless steel for 0.5 -50 l/h	560 180
In stainless steel for 2-100 l/h	550 919
In stainless steel for 15-500 l/h	550 920
In PPS for 2-100 l/h	550 921
In PPS for 15-500 l/h	550 922
FKM gasket	550 923
EPDM gasket	550 924
PTFE gasket	550 959
Set of stainless steel cap with hall sensor	553 653
Set of PPS cap with hall sensor	553 654

Dimensions [mm]



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In case of special application conditions,
please consult for advice.We reserve the right to make technical changes without notice.
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Type 8039 can be combined with...



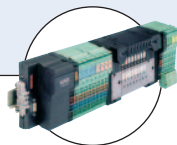
Type 8801-YE

On/Off System,
angle-seat valve



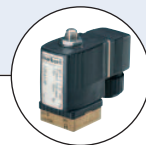
Type 8611

Universal Controller
eControl



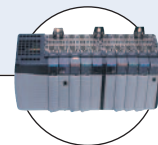
Type 8644-P AirLINE

Valve island with
electronic I/O



Type 6014

Solenoid valve



PLC

This flowmeter with an extra-large display is specially designed to switch a valve and to establish a monitoring system or an On/Off control loop.

Switching points can be programmed with the 3-key keypad under the display and the connection to the process in the piping is done with standard fittings.

The version with a frequency output makes it possible to transmit the paddle wheel rotation speed (2 pulses/paddle wheel rotation) directly to a PLC.

Paddle wheel flowmeter with optical principle for On/Off control

- Indication, monitoring, transmitting and On/Off control in one device.
- Configurable outputs (transistor or relay)
- Optical measurement principle:
 - Insensitive to magnetic fields
 - Flow sense detection
 - Insensitive to ferromagnetic particles in the fluid

General data

Compatibility	With fittings S039
Materials	Housing, cover Front panel folio Cable plug Wetted parts materials Fitting / Holder Paddle wheel Axis and bearing / Seal
Electrical connection	Cable plug: EN 175301-803 (provided) Free positionable male fixed connector M12-5 pin for female 5-pin M12 cable plug (not provided)
Connection cable	0.14 up to 0.5 mm ² cross-section; max. 100 m length

Complete device data (fitting + electronic module)

Pipe diameter	DN06 to DN50
Measuring range	0.3 to 10 m/s
Sensor element	Paddle wheel without magnet
Medium temperature	-15 to 100°C (5 to 212°F)
Fluid pressure max.	PN10 (145.1 PSI) at 20°C (at 68°F)
Viscosity / Pollution	300 cSt. max. / max. 1% (size of particles 0.5 mm max.)
Measurement error	Teach-In Standard K-factor
Linearity	±0.5% of FS.*
Repeatability	±0.4% of Reading ¹⁾

* FS. = Full scale (10 m/s)

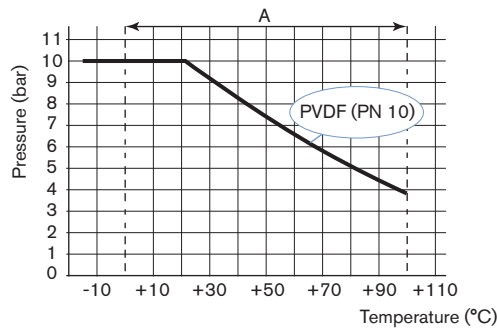
1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20°C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

Electrical data	
Operating voltage (V+)	12 - 30 V DC, filtered and regulated
Current consumption	≤ 80 mA (without load)
Reversed polarity of DC	Protected
Threshold programming mode	window or hysteresis
Output	
Transistor for threshold (configurable)	Transistor NPN and/or PNP, open collector, 5 - 30 V DC, max. 700 mA, protect against short circuit.
Relay (configurable)	3A/250 V AC or 3A/30 V DC
Frequency	Transistor NPN, open collector, 5 - 30 V DC, max. 700 mA
Environment	
Ambient temperature	0 to +60°C (operating and storage)
Relative humidity	≤ 80%, without condensation
Standards, directives and approvals	
Protection class	IP65 with connector plugged-in and tightened
Standard and directives	
EMC	EN 50081-1, 50082-2
Low voltage	EN 61010-1
Pressure	Complying with article 3 of §3 from 97/23/CE directive.*
Vibration	EN 60068-2-6
Shock	EN 60068-2-27

* For the 97/23/CE pressure directive, the device can only be used under following conditions (depend on max. pressure, pipe diameter and fluid).

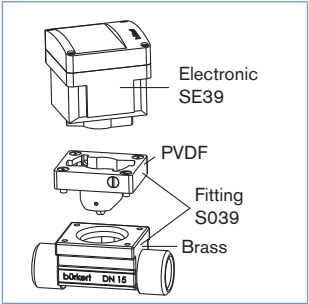
Type of fluid	Conditions
Fluid group 1, §1.3.a	DN ≤ 25 only
Fluid group 2, §1.3.a	PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Pressure/temperature diagram



A: Application range for complete device (fitting + electronic module)

Design and principle of operation



The flowmeter 8039 is built up with an electronic module and a measurement paddle wheel associated to a fitting. This connection is made by means of screws.

When liquid flows through the pipe, the paddle wheel is set in rotation, generating a measuring signal (pulses) which frequency is proportional to the flow velocity. A conversion coefficient (K factor, available in the instruction manual of the fitting), specific to each pipe (size and material) enables the conversion of this frequency into flow rate.

The output signal is provided via cable plug according to EN 175301-803 and/or a free positionable male M12-5 pin fixed connector.

Display and operation

The device can be calibrated by means of the K-factor, or via the TEACH-IN function. Customized adjustments, such as engineering units, output, filter, bargraph are carried out on site.

The operation is specified according to three levels:

■ Indication in operating mode / Display

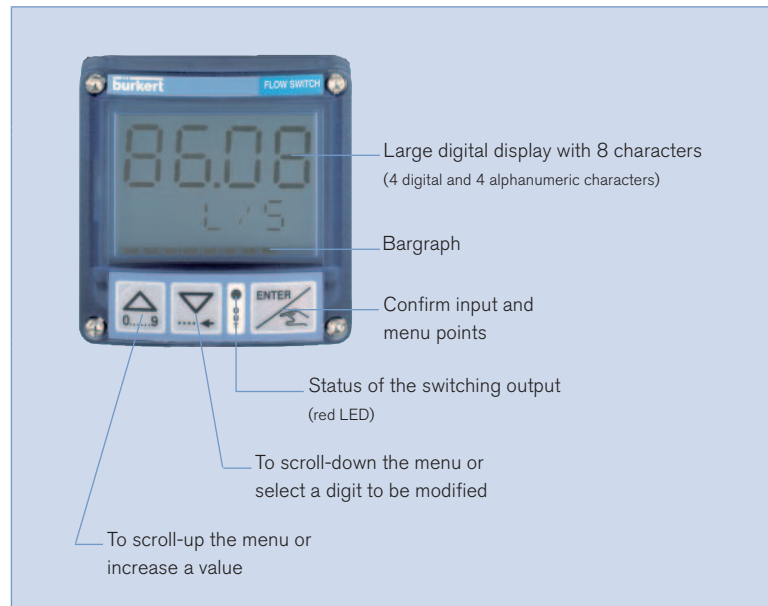
- measured flow
- high threshold value
- low threshold value

■ Parameter definition

- engineering units (International measuring units)
- K-factor / TEACH-IN function
- selection of switching mode¹⁾ (window, hysteresis)
- selection of threshold value¹⁾
- filter
- 10-segment bargraph (select min. and max. value)

■ Test

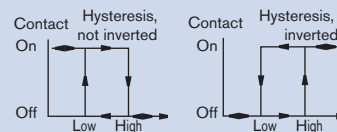
- switching threshold test with flow simulation (dry-run test operation)



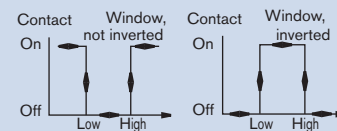
¹⁾ 8039 with standard On/Off output

- 2 switching modes for the output, either hysteresis or window, inverted or not
- Parameterizable delay before switching
- Possible outputs depending on the version: relay, transistor NPN, transistor PNP, frequency

Hysteresis operation



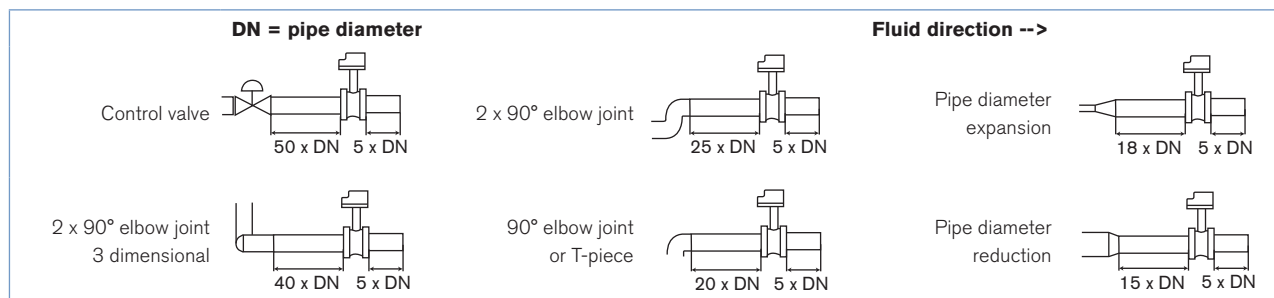
Window operation



Installation

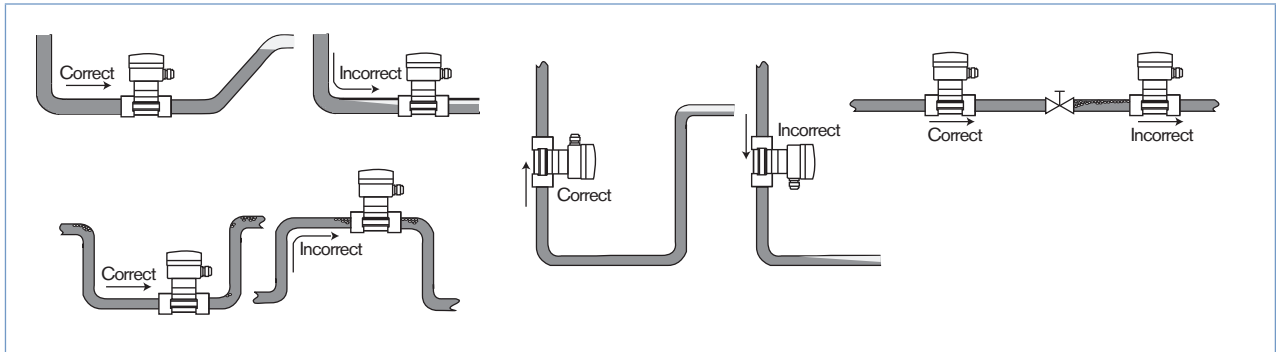
Minimum straight upstream and downstream distances must be observed. According to the pipe design, necessary distances can be bigger or use a flow conditioner to obtain the best accuracy. For more information, please refer to EN ISO 5167-1.

EN ISO 5167-1 prescribes the straight inlet and outlet distances that must be complied with when installing fittings in pipe lines in order to achieve calm flow conditions. The most important layouts that could lead to turbulence in the flow are shown below, together with the associated prescribed minimum inlet and outlet distances. These ensure calm, problem-free measurement conditions at the measurement point.



Installation (continued)

The device can be installed into either horizontal or vertical pipes.



Pressure and temperature ratings must be respected according to the selected fitting material.

The suitable pipe size is selected using the diagram Flow/Velocity/DN.

The measuring device is not designed for gas flow measurement.

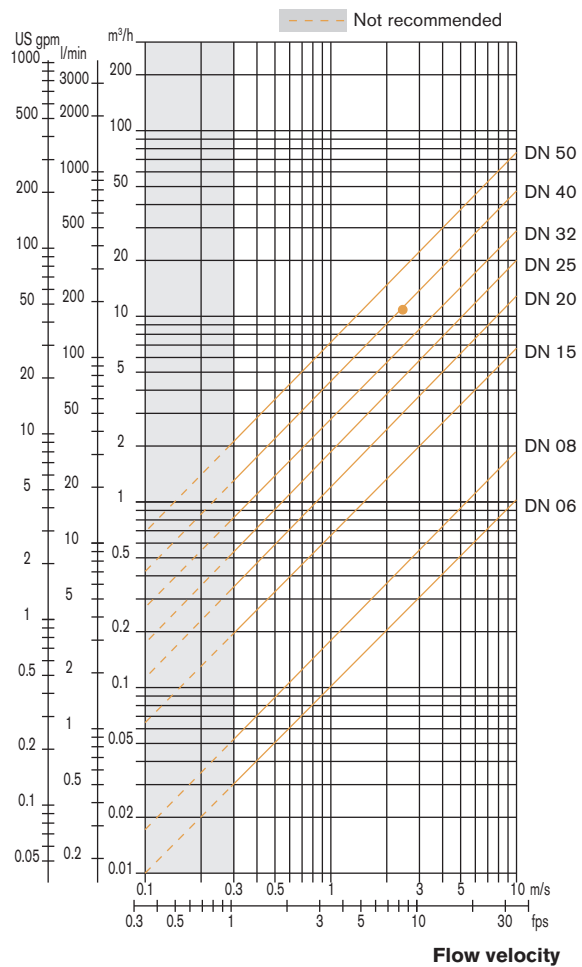
Diagram Flow/Velocity/DN

Example:

- Flow: 10 m³/h
- Ideal flow velocity: 2...3 m/s

For these specifications, the diagram indicates a pipe size of DN40

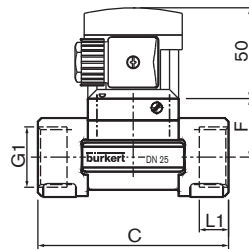
Flow rate of fluid



Dimensions 8039

8039 with internal thread connection

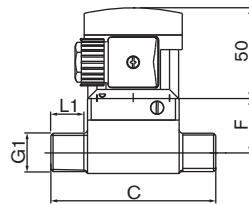
G, NPT



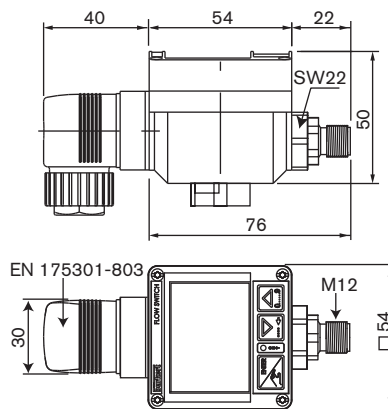
DN [mm]	F [mm]	C [mm]	[inch]	G1 [inch]	[mm]	L1 [mm]
15	34.5	84.0	G 1/2	NPT 1/2		16.0
20	32.0	94.0	G 3/4	NPT 3/4		17.0
25	32.2	104.0	G 1	NPT 1		23.5
32	35.8	119.0	G 1 1/4	NPT 1 1/4		23.5
40	39.6	129.0	G 1 1/2	NPT 1 1/2		23.5
50	45.7	150.0	G 2	NPT 2		27.5

8039 with external thread connection

G, NPT or metric



DN [mm]	F [mm]	C [mm]	[inch]	G1 [inch]	[mm]	L1 [mm]
06	29.7	90.0	G 1/4	G 1/2		14.0
08	29.7	90.0	G 1/2	NPT 1/2	M16x1.5	14.0



Ordering chart for flowmeter 8039

The flowmeter Type 8039 is built-up of an electronic module Type SE39 + an INLINE fitting Type S039.

Note: Please order the two required units separately. If a cable connector (M12) is needed please order that too

Electronic module Type SE39 - for fitting Type S039

Voltage supply	Output	Electrical connection	Item no.
12 - 30 V DC	NPN	Cable plug EN 175301-803	440 378
	PNP	Cable plug EN 175301-803	440 379
	NPN and PNP	Free positionable male fixed connector 5-pin M12	440 377
	Relay	Free positionable male fixed connector 5-pin M12 and cable plug EN 175301-803	440 382
	Relay and frequency	Free positionable male fixed connector 5-pin M12 and cable plug EN 175301-803	447 806

Ordering chart for flowmeter 8039 (continued)



Two versions of the fitting in DN15 and DN20 exist, having different K factors. Only version 2, identified by the "v2" marking, is available from March 2012.

The "v2" marking can be found on the side of the DN15 or DN20 fitting in metal



Fitting Type S039- Brass housing & PVDF paddle wheel holder (to be ordered separately)

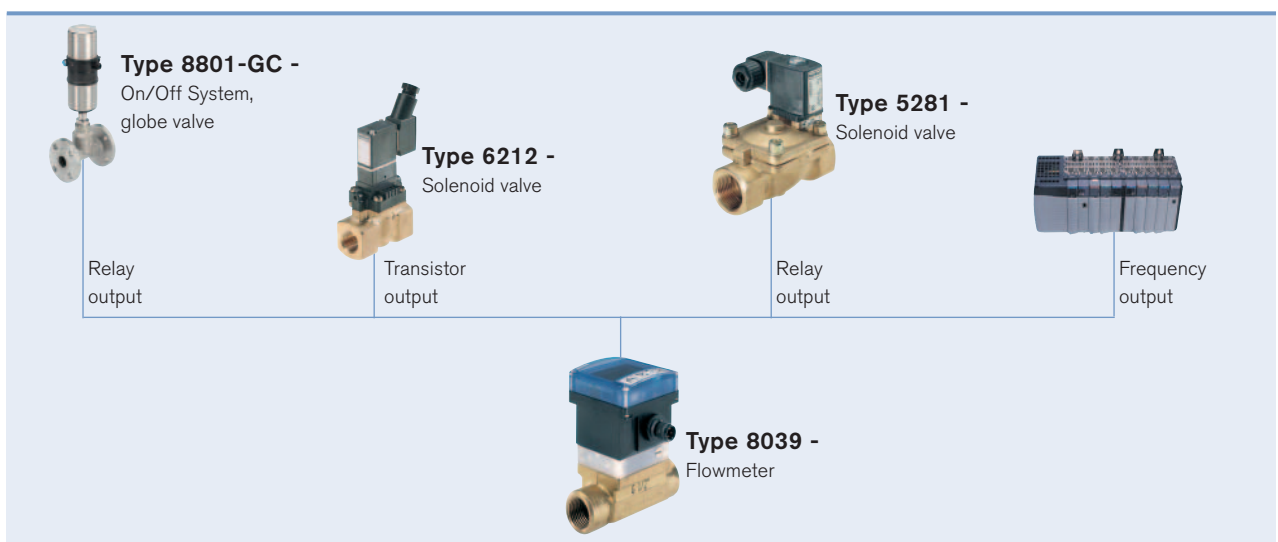
Description	Item no. DN 06* - 1/4"	Item no. DN 06* - 1/25"	Item no. DN 08* - 1/2"	Item no. DN 15 - 1/2"	Item no. DN 20 - 3/4"	Item no. DN 25 - 1"	Item no. DN 32 - 1 1/4"	Item no. DN 40 - 1 1/2"	Item no. DN 50 - 2"
G-port connection	552 558	552 525	444 670	440 645	440 646	440 647	440 648	440 649	440 650
NPT-port connection	-	-	444 671	444 672	444 673	444 674	444 675	444 676	444 677
M-port connection	16 x 1.5 552 414	-	-	-	-	-	-	-	-

* Only version with external thread

Ordering chart - accessories for fitting S039 (to be ordered separately)

Specifica- tions	Item no.
5-pin M12 female cable connector with plastic threaded locking ring	917 116
5-pin M12 female connector moulded on cable (2 m, shielded)	438 680
Cable plug EN 175301-803 with cable gland (Type 2508)	438 811
Cable plug EN 175301-803 with NPT1/2 " reduction without cable gland (Type 2509)	162 673
Sensor armatures in PVDF with paddle wheel, FKM seal, screws for DN15 (except DN15 v2 and DN20 v2) to DN50	444 657
Sensor armatures in PVDF with paddle wheel, FKM seal, screws for DN06, DN08, DN15 v2 and DN20 v2	559 602

Interconnection possibilities with the 8039



To find your nearest Bürkert office, click on the orange box →



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

Subject to alteration.
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Electromagnetic Flowmeter



- Sensor without moving parts
- Working as a flowmeter and/or as an On/Off controller
- Application adjusted calibration by Teach-In
- Clean in place (CIP)
- FDA approved material

Type 8041 can be combined with...



Type S020
INSERTION
T-fitting



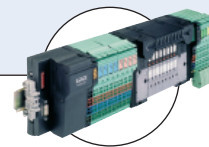
Type S020
Spigot



Type 8025
Universal transmitter/
batch controller (remote version)



Type 8802-GD
TopControl System



Type 8644
Valve islands with
electronic I/O



PLC

The electromagnetic flowmeter 8041 has been designed to measure flow rate of neutral and slightly aggressive fluids with a conductivity of more than 20 $\mu\text{S}/\text{cm}$ in DN06 to DN400 pipes.

It is fitted with a 4... 20 mA output, a pulse output and a relay output. The different parameters can be programmed by means of 5 switches, a push-button and a 10 LED bar-graph.

The flowmeter is a magmeter made up of an electronic module and a sensor which armature material is PVDF or stainless steel. It is available:

- with G2" connection for the version with a PVDF sensor
- with G2" or clamp connection for the version with a stainless steel sensor.

The version with a stainless steel sensor can be used in applications with higher pressures (PN16) and higher temperatures (150°C).

Technical data

General data

Compatibility

with fittings S020 (see corresp. datasheet)

Materials

Housing, cover, nut
PVDF sensor version
Stainless steel sensor version
Screws / Seal / Cable glands
Wetted parts materials
Sensor holder
Electrodes
Seals

PC (glass fibre reinforced for housing)
PPA (glass fibre reinforced)
Stainless steel / NBR / PA with neoprene seal

PVDF or Stainless steel 1.4404/316L
Stainless steel 1.4404/316L
G2" connection: FKM (FDA approved), [EPDM (KTW approved)]
Clamp connection: EPDM or FEP (to be ordered separately)
Stainless steel 1.4404/316L
PEEK (FDA approved)

Earth ring (PVDF sensor version)
Electrode holder (St. Steel sensor version)

Surface finishing quality

Ra < 0.8 μm (Clamp connection)

Electrical connections

2 cable glands M20 x 1.5

Recommended cable

0.5 to 1.5 mm² cross-section, shielded cable,
6... 12 mm diameter (if only one cable is used per cable gland) or
4 mm diameter (if two cables are used per cable gland with using the
supplied multi-way seal)

Environment

Ambient temperature

-10 to +60°C (14 to 140°F) (operating)
-20 to +60°C (-4 to 140°F) (storage)

Relative humidity

< 80%, without condensation

Height above sea level

Max. 2000 m

Complete device data (Fitting S020 + flowmeter)	
Pipe diameter G2" connection Clamp connection	DN06 to DN400 DN32 to DN100
Measuring range	0.2 to 10 m/s
Sensor element	Electrodes
Fluid temperature PVDF sensor version Stainless steel sensor version	see Pressure/Temperature diagram 0 to 80°C (32 to 176°F) (depends on fitting) -15 to 150°C (5 to 302°F) (depends on fitting)
Fluid pressure max. PVDF sensor version Stainless steel sensor version	see pressure/temperature diagram PN10 (145.1 PSI) PN10 (145.1 PSI) (with plastic fitting) - PN16 (232.16 PSI) (with metal fitting)
Conductivity	min. 20 µS/cm
Accuracy Teach-In Standard K-factor	±0.5% of Reading ¹⁾ (at the teach flow rate value) ±3.5% of Reading ¹⁾
Linearity	±0.5% of F.S. ¹⁾
Repeatability	±0.25% of Reading ¹⁾

¹⁾ Under reference conditions i.e. measuring fluid=water, ambient and water temperature = 20°C (68°F), applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

* F.S.= Full scale (10 m/s)

Electrical data	
Power supply	18 - 36 V DC filtered and regulated (3 wires)
Reversed polarity of DC	protected
Current consumption	≤ 220 mA (at 18 V DC)
Output Signal current Frequency Relay	4... 20 mA (sink or source by wiring), 100 ms refresh time; max. loop impedance: 1100 Ω at 36 V DC; 330 Ω at 18 V DC 0... 240 Hz, duty cycle = 50%±1%; 100 mA max., protected against short-circuits and polarity reversals. Normally open or normally closed (depending on wiring), 3 A, 250 V AC
4... 20 mA output accuracy	±1%
Alarm Full scale exceeding Fault signalling	22 mA and 256 Hz 22 mA and 0 Hz
User parameter	Saved in EEPROM

Standards, directives and approvals	
Protection class	IP65
Standards and directives EMC Low voltage (LVD) Pressure Vibration Shock	EN 50081-1, EN 61000-6-2 EN 61010-1 Complying with article 3 of §3 from 97/23/CE directive.* EN 60068-2-6 EN 60068-2-27
Approval	FDA

* For the 97/23/CE pressure directive, the device can only be used under following conditions (dependent on max. pressure, pipe diameter and fluid).

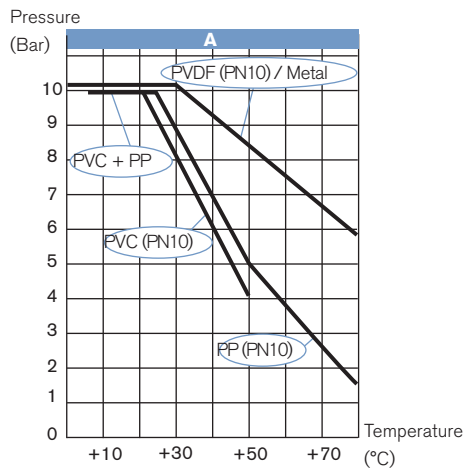
Type of fluid	Conditions
Fluid group 1, §1.3.a	Forbidden
Fluid group 2, §1.3.a	DN ≤ 32, or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200 or PpN ≤ 10 or PN*DN ≤ 5000

Pressure/Temperature diagram

Please be aware of the fluid pressure/temperature dependence according to the respective fitting+flowmeter material as shown in the diagrams.

8041 with a PVDF sensor

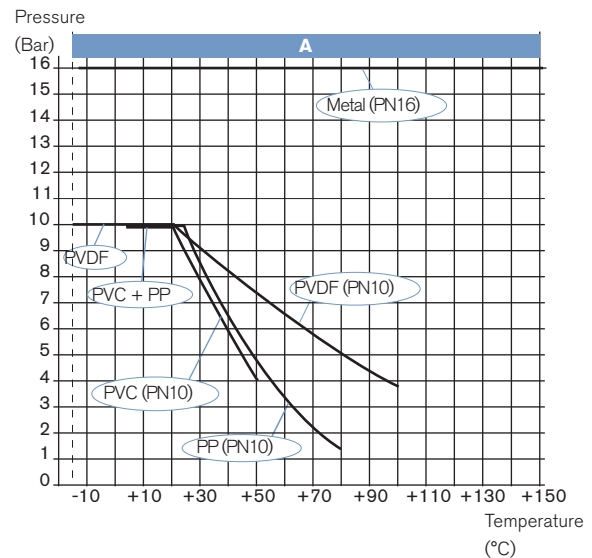
(depending on the fitting material)



A: Application range for complete device (fitting + flowmeter)

8041 with a stainless steel sensor

(depending on the fitting material)



Main features and programming

Using as a flowmeter

- Programming of the full scale
 - selection of a predefined measuring range: 0 to 2, to 5 or to 10 m/s
 - selection by Teach-In: with the actual max. flow velocity of the application
- 4... 20 mA current output
- 0... 240 Hz frequency output
- Relay output: switching mode either window or hysteresis, on low or high switching threshold
- Relay Time delay before switching
- Filter
- Alarm:
 - for full scale exceeding with 22 mA and 256 Hz
 - for fault signalling with 22 mA and 0 Hz

Using as an ON/OFF control

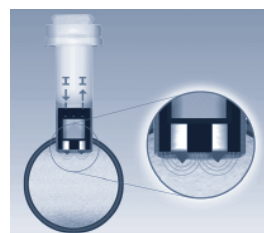
- Flow detection with switching thresholds, defined as a percentage of max. flow rate.
- Adjustment of the full scale of the device accordingly to the customer process full scale.

Possible applications

Flow control of conductive fluids, contaminated or not:

- ▶ Waste water treatment
- ▶ Flow control of drinking water (FDA approval)
- ▶ Laundries: measurement and control of the water consumption
- ▶ Swimming pools: pump protection and flow control
- ▶ Food-processing industry: monitoring of the cleaning cycles (FDA approval)
- ▶ Irrigation

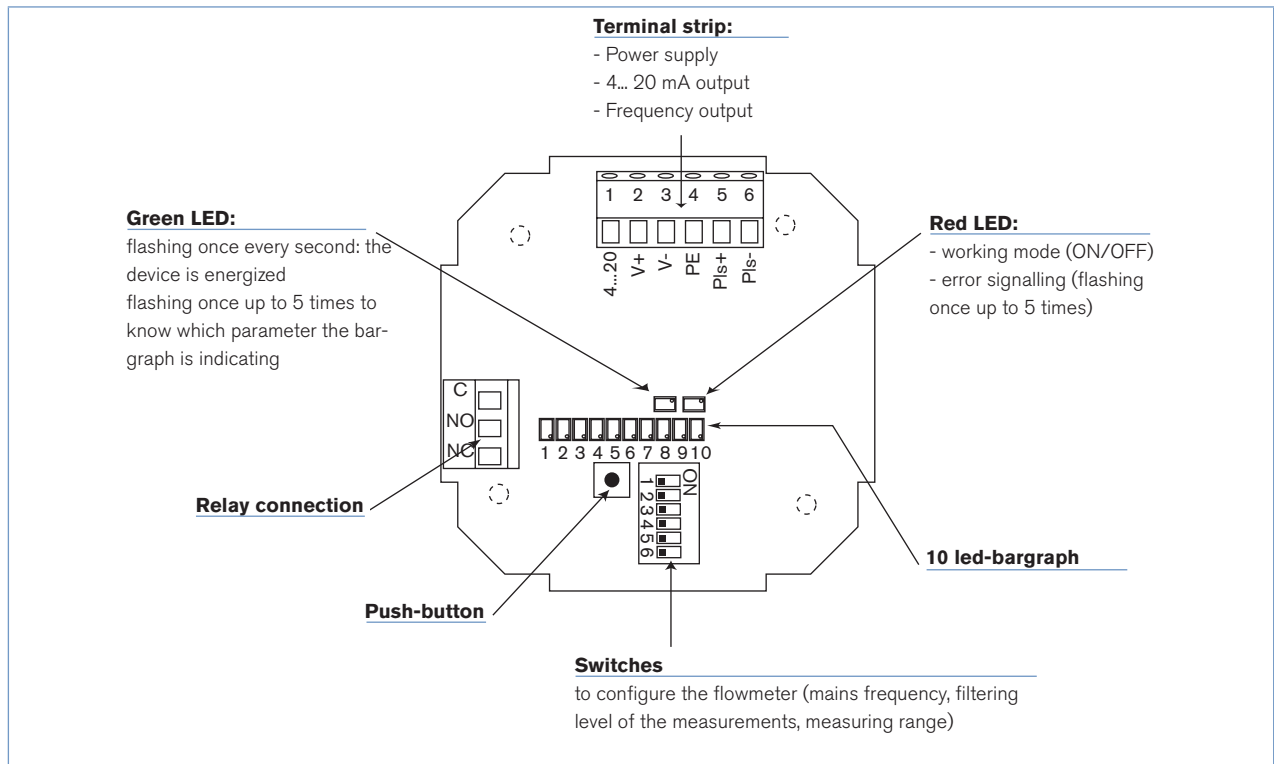
Design



The E-shaped magnetic system inside the sensor induces a magnetic field into the fluid, which is perpendicular to the direction of flow. Two electrodes are in galvanic contact with the liquid.

Based on the Faraday law a voltage can be measured between these electrodes once a liquid (min. conductivity of 20 $\mu\text{S}/\text{cm}$) flows along the pipe. This voltage is proportional to the flow velocity. Using the K-factor for the individual pipe diameter the speed of flow is converted into volume per time.

Display on PCB

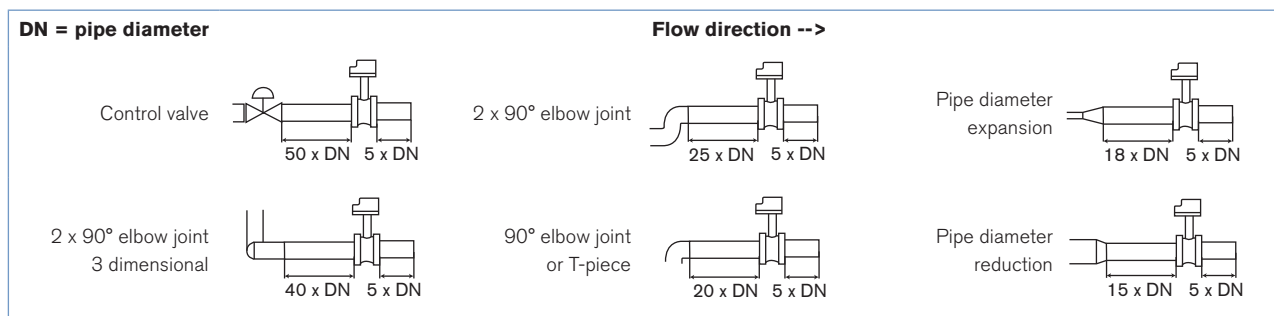


Installation

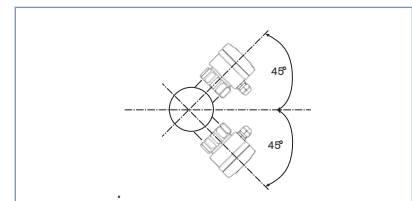
The 8041 flowmeter can easily be installed into any Bürkert INSERTION fitting system (S020) by just fixing the main nut.

Minimum straight upstream and downstream distances must be observed. According to the pipe's design, necessary distances can be bigger or use a flow conditioner to obtain the best accuracy. For more information, please refer to EN ISO 5167-1.

EN ISO 5167-1 prescribes the straight inlet and outlet distances that must be complied with when installing fittings in pipe lines in order to achieve calm flow conditions. The most important layouts that could lead to turbulence in the flow are shown below, together with the associated prescribed minimum inlet and outlet distances. These ensure calm, problem-free measurement conditions at the measurement point.

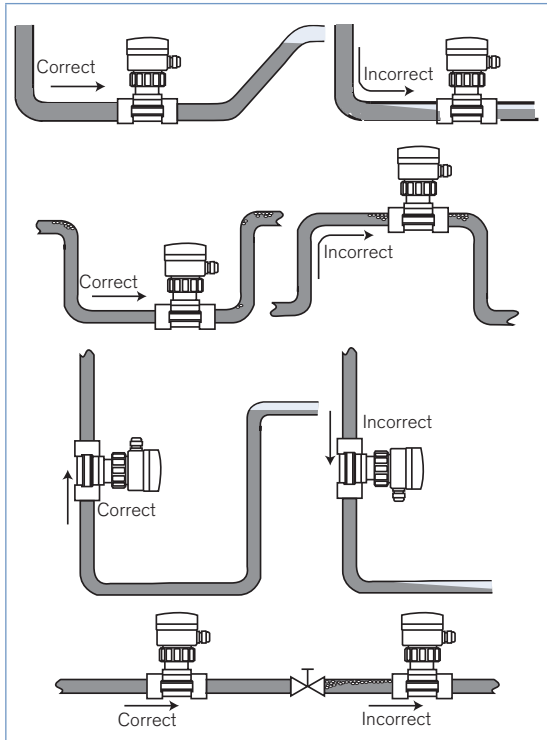


It is advisable to mount the flowmeter at a 45° angle to the horizontal centre of the pipe to avoid having deposits on the electrodes and false measurements due to air bubbles



Installation (continued)

The device can be installed into either horizontal or vertical pipes. Mount the 8041 in the following correct ways to obtain an accurate flow measurement.



Pressure and temperature ratings must be in accordance to the selected fitting material. The suitable pipe size is selected using the diagram Flow/Velocity/DN.

The flowmeter is not designed for gas or steam flow measurement.

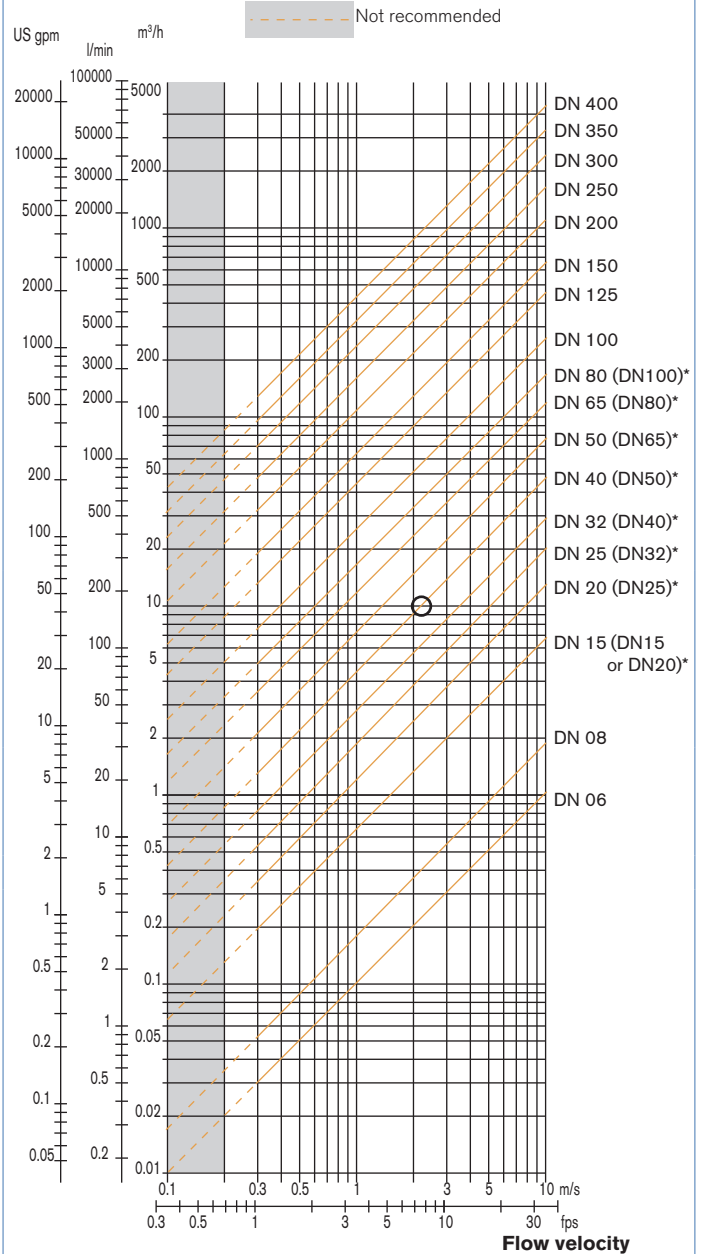
Diagram Flow/Velocity/DN

Example:

- Flow: 10 m³/h
- Ideal flow velocity: 2... 3 m/s

For these specifications, the diagram indicates a pipe size of DN40 [or DN50 for (*) mentioned fittings]

Flow rate of fluid



* for following fittings with process connection:

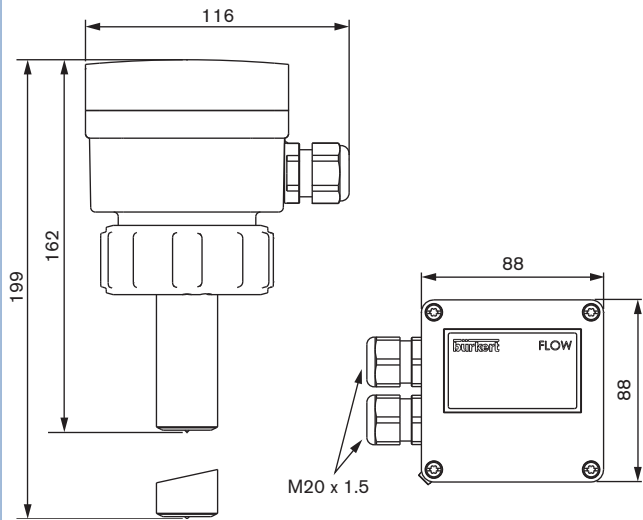
external thread acc. to SMS 1145

weld end acc. to SMS 3008, BS 4825/ASME BPE or DIN 11850 Series 2

Clamp acc. to SMS 3017/ISO 2852, BS 4825/ASME BPE or DIN 32676

Dimensions [mm]

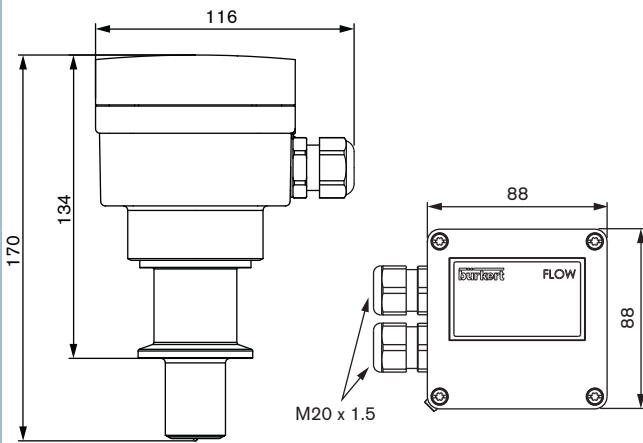
G2" connection version



DN	H			
	T-Fitting	Saddle	Plastic spigot	Metal spigot
06	163			
08	163			
15	168			
20	166			
25	166			
32	169			
40	173			169
50	179	204		174
65	179	203	187	180
80		207	193	185
100		212	200	195
110		208		
125		215	235	206
150		225	242	217
180		249		
200		261	263	238
250			281	298
300			293	317
350			306	329
400			321	

Note: The length of the sensor finger depends on the fitting used.
See data sheet Type S020 or available fitting DN diagram on page 9.

Clamp connection version



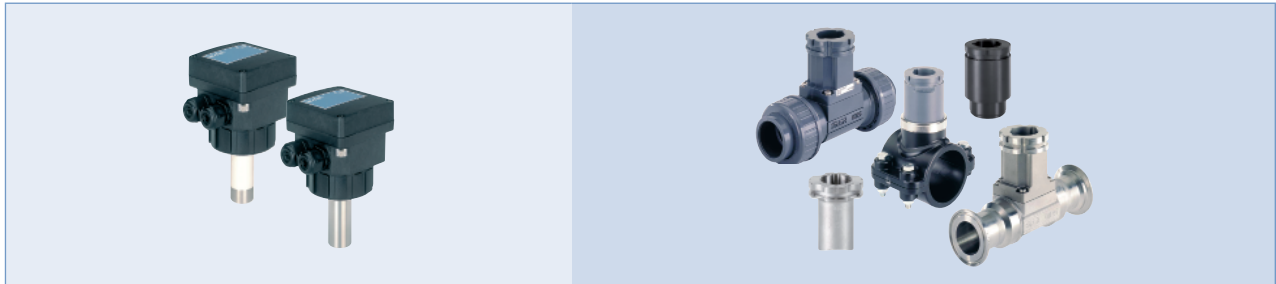
DN	H
32	181
40	186
50	191
65	199
80	205
100	211

Ordering information and chart for flowmeter Type 8041

• G2" connection to use with S020 Fitting for flowmeter with G2" connection.

A complete flowmeter Type 8041 with G2" connection consists of a flowmeter Type 8041 (with G2" connection) and a Bürkert fitting Type S020
The following information is necessary for the selection of a complete device:

- **Item no.** of the desired flowmeter **Type 8041** (see ordering chart, below)
- **Item no.** of the selected fitting **Type S020** for flowmeter with G2" connection (see separate data sheet) [More info.](#)



Voltage supply	Output	Relay	Housing material	Seals	Sensor version	Electrical connection	Item no.
18 - 36 V DC	4... 20 mA, frequency	1	PC	FKM	short, PVDF	2 cable glands	558 064
					long, PVDF	2 cable glands	558 065
			PPA	FKM	short, stainless steel (FDA)	2 cable glands	552 779
					long, stainless steel (FDA)	2 cable glands	552 780

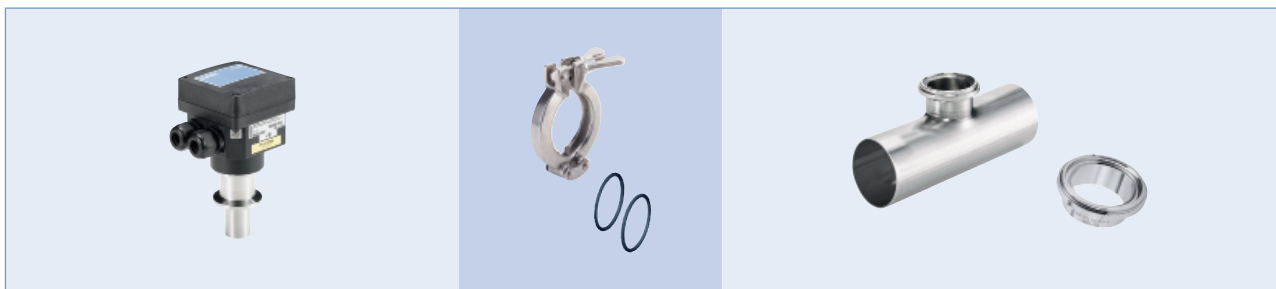
Note: 1 EPDM seal contained in the kit 551775, 1 relay connection kit 552 812 are supplied with each flowmeter.

• Clamp connection to use with S020 Fitting for flowmeter with clamp connection.

A complete flowmeter Type 8041 with clamp connection consists of a flowmeter Type 8041 (with clamp connection), a Bürkert fitting Type S020, a clamp collar and a fitting/flowmeter seal

The following information is necessary for the selection of a complete device:

- **Item no.** of the desired flowmeter **Type 8041** (see ordering chart, below)
- **Item no.** of the selected fitting **Type S020** for flowmeter with clamp connection (see separate data sheet) [More info.](#)
- **Item no.** of the selected fitting/flowmeter seal - EPDM or FEP (see ordering chart, p. 8)
- **Item no.** of the clamp collar (see ordering chart, p. 8)



Voltage supply	Output	Relay	Housing material	Fitting/flowmeter seals*	Sensor version	Electrical connection	Item no.
18 - 36 V DC	4... 20 mA, frequency	1	PPA	EPDM or FEP	Clamp, stainless steel (FDA)	2 cable glands	564 688

Note: 1 Kit 565384 and 1 relay connection kit 552 812 are supplied with each flowmeter.

* Has to be ordered separately

Ordering chart - accessories for flowmeter Type 8041 (has to be ordered separately)

Specifications	Item no.
Set with 2 cable glands M20 x 1.5 + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5 + 2 multiway seals 2 x 6 mm	449 755
Set with 2 reductions M20 x 1.5 /NPT1/2" + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5	551 782
Relay connection kit with 1 screw terminal strip + 1 protection cap + 1 rilsan + 1 mounting instruction sheet	552 812
3 points calibration certificate (device combined with a S020 fitting, only for DN ≤ 200)	550 676
FDA - Approval (only stainless steel sensor version)	803 724
For G2" connection version	
Set with 1 stopper for unused cable gland M20 x 1.5 + 1 multiway seal 2 x 6 mm for cable gland + 1 green FKM seal for the sensor + 1 mounting instruction sheet	558 102
Snap ring	619 205
PC union nut	619 204
PPA union nut	440 229
Set with 1 green FKM and 1 black EPDM seal	552 111
For clamp connection version	
Set with 1 stopper for unused cable gland M20 x 1.5 + 1 multiway seal 2 x 6 mm for cable gland	565 384
1 EPDM fitting/flowmeter seal	730 837
1 FEP fitting/flowmeter seal	730 839
Clamp collar	731 164

Ordering chart for remote electronics Type 8025 which can be connected to the 8041

Version	Description	Voltage supply	Output	Relays	Sensor version	Electrical connection	Item no.
Panel	8025 "Universal" , 2 totalizers	18-30 V DC	4... 20 mA, pulse	None	8041	Terminal strip	419 538
				2	8041	Terminal strip	419 537
	8025 "Batch" , 2 totalizers, 1 flowrate	18-30 V DC	-	2	8041	Terminal strip	419 536
Wall	8025 "Universal" , 2 totalizers	18-30 V DC	4... 20 mA, pulse	None	8041	3 cable glands	419 541
				2	8041	3 cable glands	419 540
		115-230 V AC	4... 20 mA, pulse	None	8041	3 cable glands	419 544
	8025 "Batch" , 2 totalizers, 1 flowrate	18-30 V DC	-	2	8041	5 cable glands	433 740

Interconnection possibilities with other Bürkert devices

Type 8802-DD -
Process control valve

4... 20 mA
current output

Type 5281 -
Solenoid valve

Relay
output

Type 8025 -
Universal transmitter/
batch controller
Wall-mounted or
panel-mounted

Frequency
output

Type 8041 -
Electromagnetic flowmeter
with clamp connection

Type 8041 -
Electromagnetic flowmeter
with G2" connection

Type S020 -
Insertion fitting for flowmeter
with clamp connection
(see corresp. data sheet)

Type S020 -
Insertion fitting for flowmeter
with G2" connection
(see corresp. data sheet)

		DN06	DN08	DN32	DN50	DN65	DN100	DN200	DN350	DN400
Available S020 fittings for flowmeter with connection	G2"	(1) Short sensor								
	T-fitting									
	Welding socket					Short sensor		Long sensor		
	Fusion spigot					Short sensor		Long sensor		
	Screw-on							Long sensor		
	Saddle					Long sensor				
Clamp	T-fitting									
	Welding socket									

⁽¹⁾ DN06 and DN08 in stainless steel S020 only, 8041 with stainless steel sensor recommended

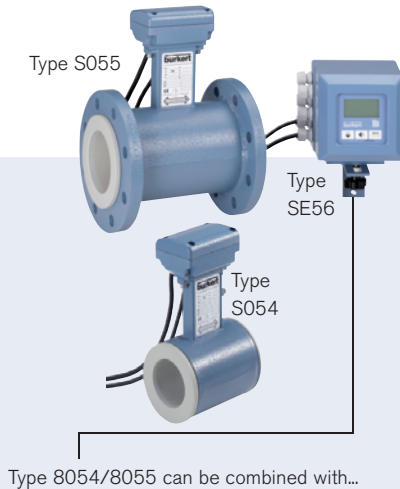
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In case of special application conditions,
please consult for advice.

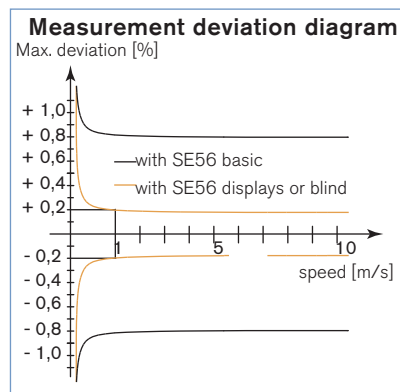
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The complete full bore magmeter Type 8054/8055, which consists of a magnetic sensor fitting Type S054 or S055 connected to an electronics Type SE56 (blind in compact version or with display in compact or remote version), is designed for applications with liquids with a minimum conductivity of 5 $\mu\text{S}/\text{cm}$.

Combined with a valve as the actuating element, the complete magflowmeter Type 8054/8055 can control high-precision dosing operations and flow measurements in potable water treatment and waste water treatment.



Full bore magmeter

- Combination of magflowsensor fitting S054 or S055 and electronics SE56
- Continuous measurement or Batch Control
- Version without (S054) or with (S055) flanges
- For water treatment and general purpose applications

General data - S054/S055 sensor fitting

Compatibility	SE56 electronics (see corresponding data sheet)
Materials	
Body	Carbon steel painted [or stainless steel 304 or 316]*
Electrodes (3 in standard)	Stainless steel 316L [or Hastelloy C, Titanium, Tantalum, Platinum-rhodium]*
Lining	PP (max. 16 bar), ebonite [or PTFE]*
Seal	FKM or EPDM* (with PP lining) [or without gasket (with Ebonite or PTFE lining)]
Electrical connection	2 cable glands PG9
Data complete flowmeter 8054/8055 - (S054/S055 sensor fitting + SE56 electronics)	
Pipe diameter	DN25...DN200 [to DN2000]*
Measuring range	0...0.72 m ³ /h to 0...1130 m ³ /h
Process connection	S054: wafer - S055: Flange EN1092-1, ANSI B16-5, [JIS]*
Medium temperature	see medium temperature chart on page 3 go to page
Medium pressure max.	PN16 (232 PSI) (with PP lining) or [up to PN64 (928 PSI) (with Ebonite or PTFE lining)]*
Vacuum resistance	200 mbar (2.9 PSI) absolute at 100°C (212°F)
Measurement deviation¹⁾ see diagram, opposite	± 0.2% of reading (SE56 standard; SE56 blind) ± 0.8% of reading (SE56 basic)
Repeatability	± 0.1% (SE56 standard; SE56 blind) ± 0.2% (SE56 basic)
Minimum conductivity	5 $\mu\text{S}/\text{cm}$ (or 20 $\mu\text{S}/\text{cm}$ with demineralized water)

* on request

¹⁾ under reference conditions: water temperature = 20°C, ambient temperature = 25°C, constant flow rate during the test, liquid speed > 1 m/s

Environment	
Ambient temperature with SE56 standard SE56 basic	-20...+60°C (-4...+140°F) (operating and storage)
	-10...+50°C (14...+122°F) (operating)
SE56 blind	-20...+50°C (-4...+122°F) (storage)
	-20...+40°C (-4...+104°F) (operating and storage)
Standard	
Protection class	IP65 and IP67 (compact version, SE56 standard or SE56 blind); IP65 (remote version, SE56 standard) IP68 (remote version and junction box filled with resin, SE56 standard); IP65 (compact version, SE56 basic)
Standard EMC Emission / Immunity Safety	EN 61326-1, EN 55011 (Group 1, Class B) / IEC 1000-4-2/3/4/5/6/11 EN 61010

Ordering information for complete flowmeter Type 8054/8055

A complete flowmeter Type 8054 respectively 8055 consists of a sensor fitting S054 or S055 and an electronics SE56.

The following information is necessary for the selection of a complete flowmeter:

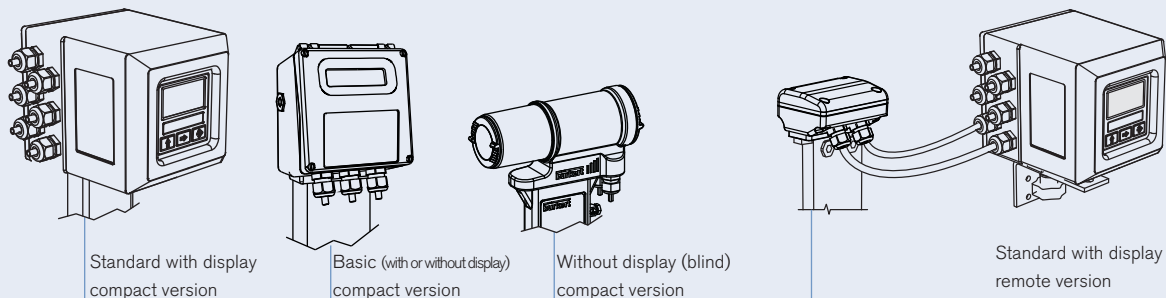
- **item no.** of the sensor fitting **Type S054 or S055** (see Ordering Chart on page 6)
- **item no.** of the electronics **Type SE56** (see corresponding data sheet or Ordering chart on page 7)

More info.

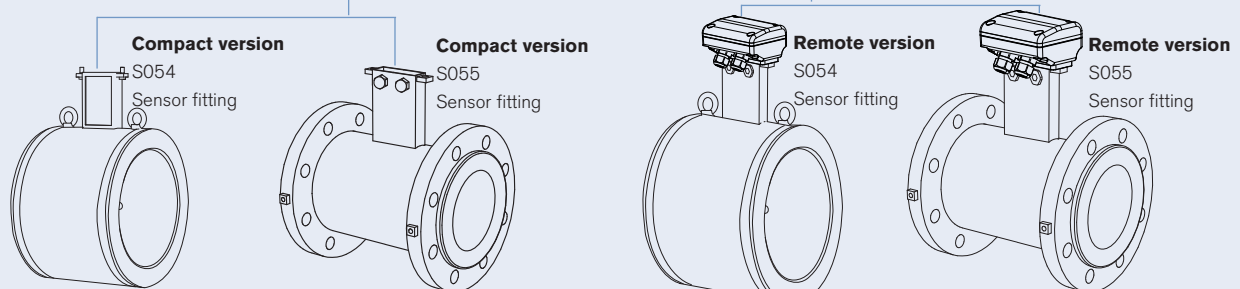
For more technical information about this product, click on this box... you will come to our website for this product where you can download the datasheet.

Examples for variations of complete flowmeter (electronics + sensor fitting)

Electronics Type SE56



Sensor fitting Type S054 or S055



Design and operating principle

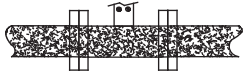
The sensor fitting Type S054 or S055 consists of a stainless steel pipe section internally lined with insulating material. Two electrodes mounted opposite to each other on the internal surface of the tube generate an electrical signal. The coils generating the magnetic field are placed outside the pipe. The signal generated by the sensor fitting S054 or S055 must be amplified and processed by an electronics (SE56) which outputs an electrical signal proportional to the fluid flow velocity respectively to the flow rate.

Faraday's induction law is the basis for this magnetic flow measurement.

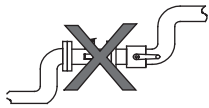
Installation



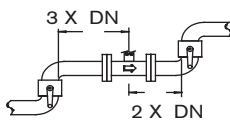
Avoid the functioning with the pipe partially filled.



During flowmeter operation the pipe must be completely full.

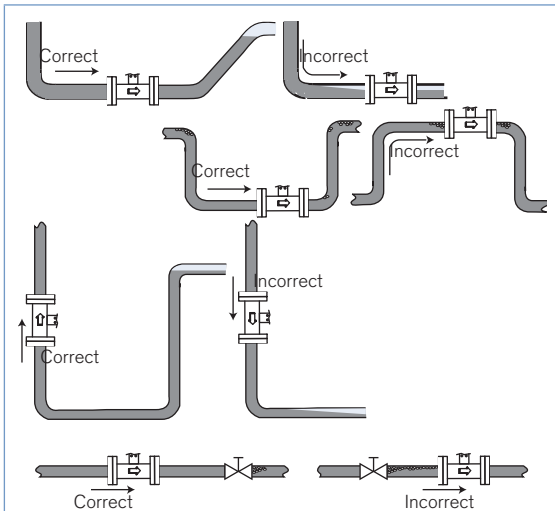


Avoid the installation near curves or hydraulic accessories.



Observe the upstream and downstream distances.

The sensor fitting can be installed into either horizontal or vertical pipes. Mount the sensor fitting in the below as correct indicated ways to obtain an accurate flow measurement.



The suitable pipe size is selected using the diagram Flow/Velocity/DN (see diagram to the right).

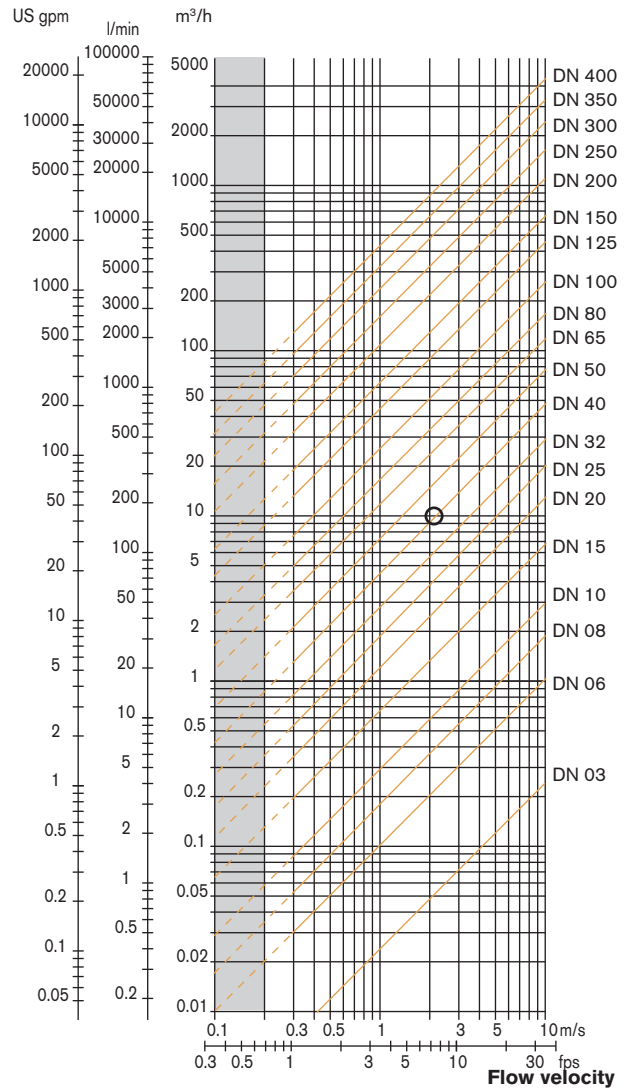
The flow sensor fitting is not designed for gas flow measurement.

Flow/Velocity/DN diagram

Example:

- Flow: 10 m³/h
- Ideal flow velocity: 2...3 m/s
- For these specifications, the diagram indicates a pipe size of DN40

Flow rate



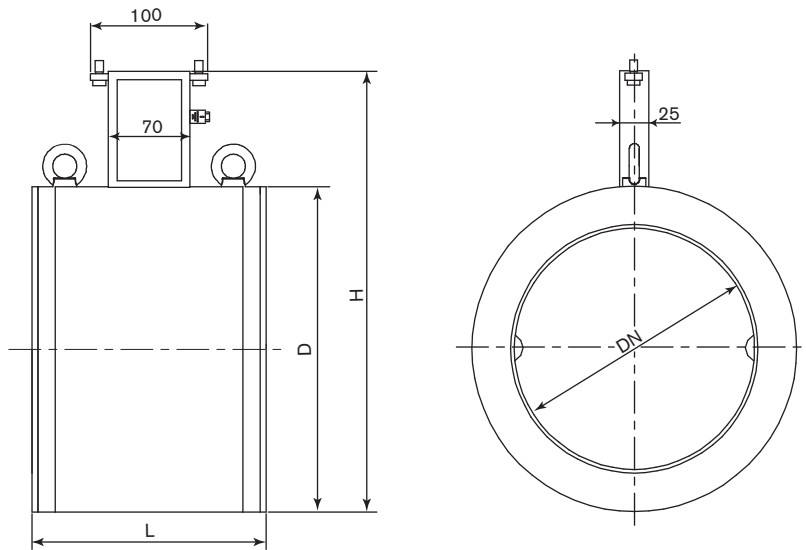
Medium temperature chart

		SE56 standard compact 	SE56 standard remote 	SE56 basic compact 	SE56 blind compact 
	S054 or S055 Sensor fitting (with PP lining)	0...+60°C (32 ... +140°F)	0...+60°C (32 ... +140°F)	0...+60°C (32... +140°F)	0...+60°C (32... +140°F)
	S054 or S055 Sensor fitting (with PTFE lining)	-20...+100°C (-4...+212°F)	-20...+130°C (-4...+266°F)	-10...+100°C (14...+212°F)	-20...+100°C (-4...+212°F)

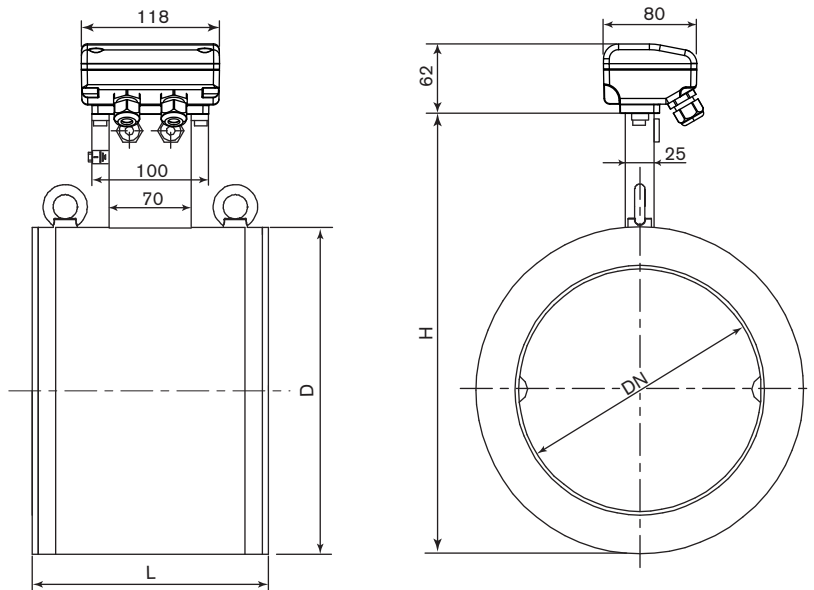
Dimensions [mm] of Type S054 sensor fitting - wafer version

NOTE: Dimensions of SE56 electronics, see corresponding data sheet.

Compact version



Remote version, with junction box



S054 compact or remote

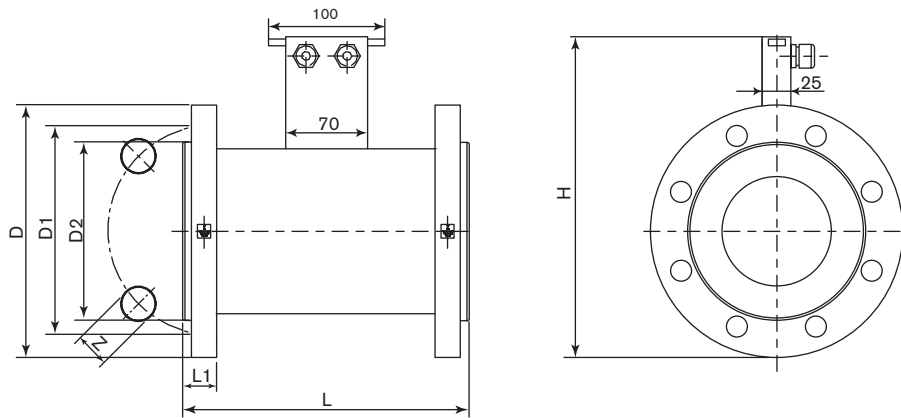
DN	L*	H	D
25	100	147	56
32	100	153	62
40	100	161	70
50	100	177	86
65	150	199	108
80	150	209	118
100	150	235	144
125	180	263	172
150	180	291	200
200	200	362	271

* tolerance +0 mm
-3 mm

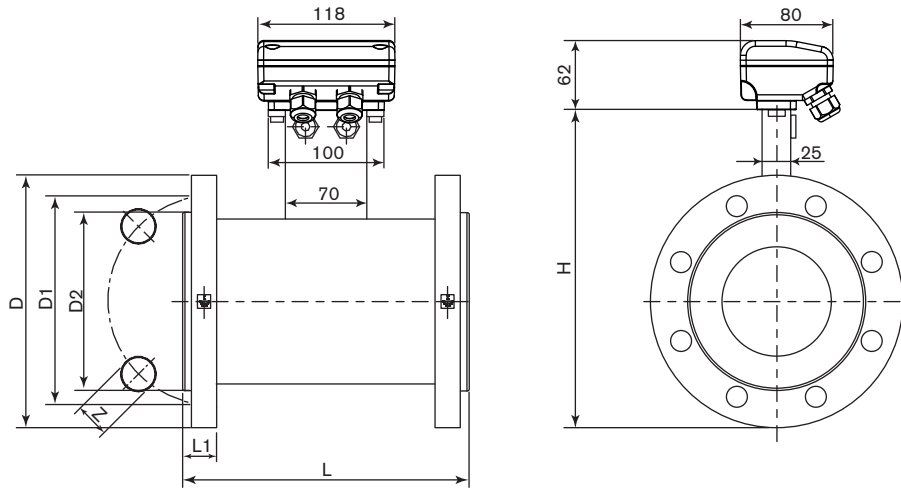
Dimensions [mm] of Type S055 sensor fitting - flanges version

NOTE: Dimensions of SE56 electronics, see corresponding data sheet.

Compact version



Remote version, with junction box



S055 compact or remote, with flanges PN16

DN	H	L	Standard	L1	Z	D2	D1	D
25	185	200	EN1092-1	18	4 x 14	68	85	115
	182		ANSI 150 RF	16.3	4 x 15.9	50.8	79.4	107.9
32	203	200	EN1092-1	18	4 x 18	78	100	140
	192		ANSI 150 RF	17.9	4 x 15.9	63.5	88.9	117.5
40	213	200	EN1092-1	18	4 x 18	88	110	150
	202		ANSI 150 RF	19.5	4 x 15.9	73	98.4	127
50	228	200	EN1092-1	18	4 x 18	102	125	165
	222		ANSI 150 RF	21.1	4 x 19	92.1	120.7	152.4
65	248	200	EN1092-1	18	4 x 18	122	145	185
	245		ANSI 150 RF	24.3	4 x 19	104.8	139.7	177.8
80	263	200	EN1092-1	20	8 x 18	138	160	200
	258		ANSI 150 RF	25.9	4 x 19	127	152.4	190.5
100	283	250	EN1092-1	20	8 x 18	158	180	220
	287		ANSI 150 RF	25.9	8 x 19	157.2	190.5	228.6
125	313	250	EN1092-1	22	8 x 18	188	210	250
	315		ANSI 150 RF	25.9	8 x 22.2	185.7	215.9	254
150	344	300	EN1092-1	22	8 x 22	212	240	285
	341		ANSI 150 RF	27.4	8 x 22.2	215.9	241.3	279.4
200	399	350	EN1092-1	24	12 x 22	268	295	340
	401		ANSI 150 RF	30.6	8 x 22.2	269.9	298.5	342.9

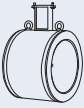
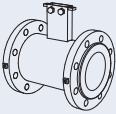
Ordering chart for sanitary flowmeter 8054/8055

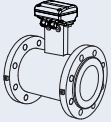
A complete flowmeter Type 8054/8055 consists of:

- a sensor fitting, wafer version Type S054 or flanges version Type S055
- an electronics Type SE56

Please order the relevant sensor fitting and the electronics separately!

Sensor fitting Type S054 or S055

Description	DN [mm]	Process connection	Flow rate range [m³/h]		Body material	Number of electrodes	Electrode material	Material: Lining/Seal	Item no.
			min. 0.04 m/s	max. 0.10 m/s					
Type S054 Compact version 	25	Wafer type	0...0.72	0...18	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 532
	32	Wafer type	0...1.16	0...29	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 435
	40	Wafer type	0...1.80	0...45	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 101
	50	Wafer type	0...2.88	0...72	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 700
	65	Wafer type	0...4.80	0...120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 436
	80	Wafer type	0...7.20	0...180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 142
	100	Wafer type	0...11.20	0...280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 342
	125	Wafer type	0...18.00	0...450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 953
	150	Wafer type	0...25.60	0...640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 954
	200	Wafer type	0...45.20	0...1130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	561 912
Type S055 Compact version 	25	EN1092-1	0...0.72	0...18	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 540
		ANSI 150 RF	0...0.72	0...18	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 353
	32	EN1092-1	0...1.16	0...29	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 541
		ANSI 150 RF	0...1.16	0...29	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	560 047
	40	EN1092-1	0...1.80	0...45	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 542
		ANSI 150 RF	0...1.80	0...45	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	560 048
	50	EN1092-1	0...2.88	0...72	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 485
		ANSI 150 RF	0...2.88	0...72	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 354
	65	EN1092-1	0...4.80	0...120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 393
		ANSI 150 RF	0...4.80	0...120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	558 785
	80	EN1092-1	0...7.20	0...180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 394
		ANSI 150 RF	0...7.20	0...180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 351
	100	EN1092-1	0...11.20	0...280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 489
		ANSI 150 RF	0...11.20	0...280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 352
	125	EN1092-1	0...18.00	0...450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 318
		ANSI 150 RF	0...18.00	0...450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 955
	150	EN1092-1	0...25.60	0...640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	557 512
		ANSI 150 RF	0...25.60	0...640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	561 426
	200	EN1092-1	0...45.20	0...1130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	554 217
		ANSI 150 RF	0...45.20	0...1130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	560 568

Description	DN [mm]	Process connection	Flow rate range [m³/h]		Body material	Number of electrodes	Electrode material	Material: Lining/Seal	Item no.
			min. 0...0.4 m/s	max 0...10 m/s					
Type S055 Remote version with 10 m cable (included) 	25	EN1092-1	0...0.72	0...18	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 492
		ANSI 150 RF	0...0.72	0...18	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 598
	32	EN1092-1	0...1.16	0...29	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 493
		ANSI 150 RF	0...1.16	0...29	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 958
	40	EN1092-1	0...1.80	0...45	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 494
		ANSI 150 RF	0...1.80	0...45	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 599
	50	EN1092-1	0...2.88	0...72	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 495
		ANSI 150 RF	0...2.88	0...72	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 128
	65	EN1092-1	0...4.80	0...120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 496
		ANSI 150 RF	0...4.80	0...120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 959
	80	EN1092-1	0...7.20	0...180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 497
		ANSI 150 RF	0...7.20	0...180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 129
	100	EN1092-1	0...11.20	0...280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 498
		ANSI 150 RF	0...11.20	0...280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	555 666
	125	EN1092-1	0...18.00	0...450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	560 144
		ANSI 150 RF	0...18.00	0...450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 956
	150	EN1092-1	0...25.60	0...640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 141
		ANSI 150 RF	0...25.60	0...640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	561 952
	200	EN1092-1	0...45.20	0...1130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	559 753
		ANSI 150 RF	0...45.20	0...1130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	562 135



Further versions on request

Remote sensor fitting version Type S054

Please also use the "request for quotation" form on page 9 for ordering a customized sensor fitting [go to page](#).

Electronics Type SE56 (for more data, refer to data sheet Type SE56)

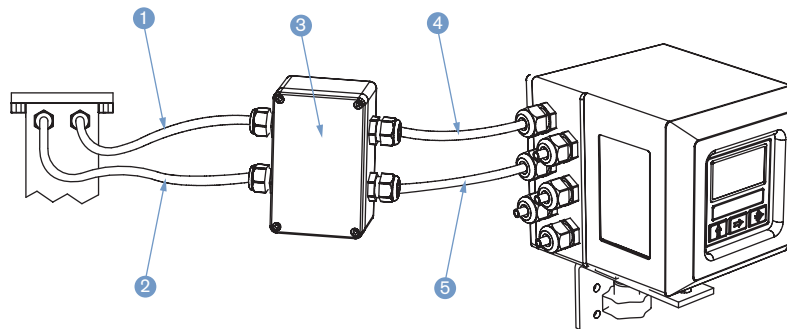
Description	Power supply	Outputs	Body material	Electrical connection	Item no.
Standard compact version with display	90...265 V AC	2 transistors	Aluminium	6 cable glands	558 745
			Stainless steel	6 cable glands	559 780
		2 transistors + 4...20 mA	Aluminium	6 cable glands	558 747
			Stainless steel	6 cable glands	558 306
Standard wall-mounting version with display	90...265 V AC	2 transistors	Aluminium	6 cable glands	559 781
			Stainless steel	6 cable glands	558 310
		2 transistors + 4...20 mA	Aluminium	6 cable glands	558 750
			Stainless steel	6 cable glands	558 308
Basic compact version with display	90...265 V AC	2 transistors	Nylon	3 cable glands	562 439
		2 transistors + 4...20 mA	Nylon	3 cable glands	562 440
	18...63 V DC	2 transistors	Nylon	3 cable glands	562 443
		2 transistors + 4...20 mA	Nylon	3 cable glands	562 444
Basic compact version without display	90...265 V AC	2 transistors	Nylon	3 cable glands	562 441
		2 transistors + 4...20 mA	Nylon	3 cable glands	562 442
	18...63 V DC	2 transistors	Nylon	3 cable glands	562 445
		2 transistors + 4...20 mA	Nylon	3 cable glands	562 446
Blind compact version	20...30 V DC	up to 4 transistors	Stainless steel	2 cable glands	559 132
		up to 4 transistors + 4...20 mA	Stainless steel	2 cable glands	559 133
		up to 4 transistors + PROFIBUS DP	Stainless steel	2 cable glands	559 134

Ordering chart for spare parts/accessories for sensor fitting Type S054 or S055

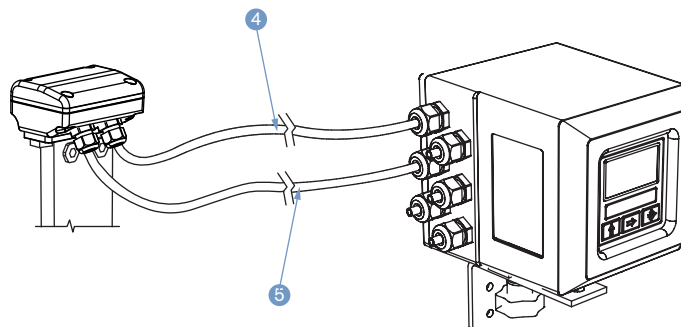
Description	Purpose	No. on drawing	Item no.
Electrode cable, 10 m long	for connection between sensor fitting Type S054/S055, S051 or S056 without junction box and electronics Type SE56*	1	448 518
	for connection between sensor fitting Type S054/S055, S051 or S056 with junction box and electronics Type SE56* or	4	562 851
	for connection between extension cable kit and electronics Type SE56*		
Coil cable, 10 m long	for connection between sensor fitting Type S054/S055, S051 or S056 without junction box and electronics Type SE56*	2	448 519
	for connection between sensor fitting Type S054/S055, S051 or S056 with junction box and electronics Type SE56* or	5	562 852
	for connection between extension cable kit and electronics Type SE56*		
Extension cable kit	including a connecting box and resin	3	562 853

* (see corresponding data sheet)

Sensor fitting Type S054/S055 without junction box



Sensor fitting Type S054/S055 with junction box



i Further versions on request



Electrical connection
Electrode and coil cables length

Universal sensor fitting Type S054 or S055 - request for quotation

Note

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

Please fill out and send to your nearest Bürkert facility* with your inquiry or order.

**NOTE:**

Please take into account that the sensor fitting Type S054 or S055 must be associated with one of the electronics Type SE56.

If only the sensor fitting is ordered, please indicate on your order the version (standard, blind or basic) or better the item no. of the electronics Type SE56 with which it will be associated

Company:	Contact person:
Customer No.:	Department:
Address:	Tel. / Fax.:
Postcode / Town:	E-mail:

Full Bore Magflow sensor body

Wafer version S054: ☐

Flanged version S055: ☐

Quantity:

Desired delivery date:

■ **Pipe diameter:** ☐ DN25 ☐ DN32 ☐ DN40 ☐ DN50
☐ DN65 ☐ DN80 ☐ DN100 ☐ DN > 100 DN value*

■ **Process connection:** ☐ EN1092-1 ☐ ANSI 150 ☐ ANSI 300 ☐ JIS 10 K

■ **Pressure:** ☐ PN10 ☐ PN16 ☐ PN25 ☐ PN40 ☐ PN64

■ **Number of electrodes and lining material:** ☐ 3 and PP (PN16) ☐ 3 and PTFE (PN40) ☐ 3 and Ebonite (PN40 and more)

■ **Materials:**

Body	☐ Carbon steel	☐ Stainless steel 304	☐ Stainless steel 316L
Seal	☐ FKM	☐ EPDM	
Electrodes	☐ 316L	☐ Hastelloy	☐ Tantalum
	☐ Titanium	☐ Platinum	

■ **Flowmeter version:** ☐ Compact ☐ Remote (10 m cable included)

■ **Cable length:** meter (for cable length > 20 m a preamplifier is included. Caution! Price increase)

reset form

* from DN200...DN2000: Ebonite or PTFE Lining material (if PTFE not selected then Ebonite in standard)

Electronics SE56

When you click on the orange box "More info.", you will come to our website for the resp. product where you can download the data sheet, and then you can fill out the SE56 request for quotation form.

To find your nearest Bürkert office, click on the orange box →



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

Subject to alteration.
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1511/7_EU-en_00895029

Positive displacement flowmeter



- Flow rate, 2 totalized volumes shown on display
- Automatic calibration: Teach-In
- Simulation: all output signals provided without the need for real flow

Type 8075T can be combined with...



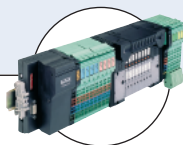
Type 2100 (8692)

Control valve with
TopControl



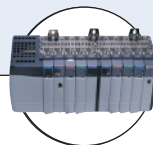
Type 8792

Continuous
SideControl



Type 8644-P AirLINE

Valve island with
electronic I/O



PLC

This positive displacement flowmeter with display is designed for use in slightly viscous fluid like glue, honey or oil and specially to switch a valve and to establish a monitoring system or an On/Off control loop.

The flowmeter is made of a compact sensor fitting (S070) and an electronic module (SE35) quickly and easily connected together by a Quarter-Turn.

General data

Compatibility	With sensor fittings S070 (see corresponding data sheet)
Materials	PC Polyester / Stainless steel PA
Housing, cover, lid, nut	PC
Front panel foil / Screws	Polyester / Stainless steel
Cable glands	PA
Wetted parts materials	
Sensor fitting	Aluminium, stainless steel (316F/1.4401)
Rotor	PPS, Aluminium, stainless steel (316F/1.4401)
Shaft / Seal	Stainless steel / FKM or FEP/PTFE
Display	15x60 mm, 8-digit LCD, alphanumeric, 15 segments, 9 mm high
Electrical connections	Cable glands M20x1.5
Voltage supply cable	max. 50 m, shielded, 1.5 mm ² max. cross-section

Complete device data (sensor fitting + electronic module)

Pipe diameter	DN15 to DN100
Measuring range	2 to 1200 l/min (0.26 to 320 gpm) for viscosity > 5 mPa.s 3 to 616 l/min (0.78 to 320 gpm) for viscosity < 5 mPa.s
Medium temperature	
Aluminium body	0 to 80°C (32°F to 176°F)
Stainless steel body	0 to 100°C (32°F to 212°F)
Medium pressure max.	
DN15	55 bar (798 PSI) (threaded process connection)
DN25	55 bar (798 PSI) ¹⁾
DN40, DN50 / DN80 / DN100	18 bar (261 PSI) / 12 bar (174 PSI) / 10 bar (145 PSI)
Viscosity	1 Pa.s max. (higher on request)
Accuracy	± 0.5% of Reading
Programming mode	Threshold, window or hysteresis
Repeatability	≤ 0.03% of Reading

¹⁾ or in accordance to the value of the used flanges

8075 Transmitter INLINE

bürkert

Electrical data	
Operating voltage	115/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Current consumption with sensor (without consumption of pulse output)	≤ 25 mA
Output	
Signal current	4... 20 mA (2-wire) max. loop impedance : 800 Ω
Pulse	Polarized, potential free, 5... 36 V DC; 100 mA, protected, line drop at 100 mA: 2.5 V DC
Technical specifications 115/230 V AC	
Voltage supply available inside the device	27 V DC regulated - max. current: 125 mA integrated protection: fuse 125 mA temporised power: 3 VA
Environment	
Height above the sea	max. 2000 m
Ambient temperature	0 to + 60°C (32°F to 140°F) (operating and storage)
Relative humidity	≤ 80%, without condensation
Standards, directives and approvals	
Protection class	IP65 with cable or screws plug mounted and tightened
Standard and directives 	
EMC	EN 61000-6-3, EN 61000-6-2
Pressure (Sensor fitting S070, DN15 to DN100, in aluminium or stainless steel)	Complying with article 3 of chap. 3 from 97/23/CE directive.* (without CE mark)
Security	EN 61010-1
Vibration	EN 60068-2-6
Shock	EN 60068-2-27

* For the 97/23/CE pressure directive, the device can only be used under following conditions (dependent on max. pressure, pipe diameter and fluid).

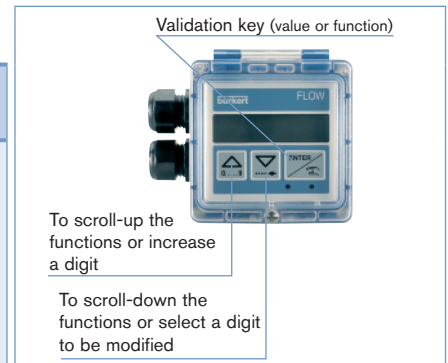
Type of fluid	Conditions
Fluid group 1, §1.3.a	Forbidden
Fluid group 2, §1.3.a	DN ≤ 32, or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Operation and display

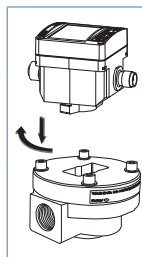
The device can be calibrated by means of the K-factor, or via the Teach-In function. User adjustments such as measuring range, engineering units, pulse output and filter are carried out on site.

The operation is specified according to three levels:

Indication in operating mode/display	Parameter definition	Test
- flow rate - output current - main totalizer - daily totalizer with reset function	- language - engineering units - K-factor / Teach-In function - measuring range 4... 20 mA - pulse output - filter - reset main totalizer	- alteration of basic adjustment (offset, span) - frequency test of sensor - flow simulation



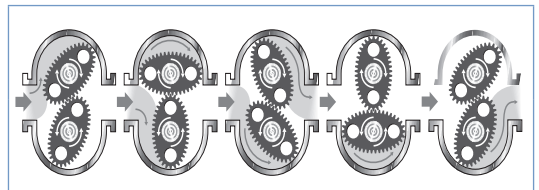
Design and principle of operation



The 8075 flowmeter is built up with an SE35 electronic module associated to a sensor fitting S070 with integrated measurement oval rotor. The connection is made by means of a Quarter-Turn. The output signals are provided via two cable glands.

If liquid flows through the pipe the rotor turns. This rotation produces a measuring signal in the transducer. The frequency is proportional to the flow of the fluid.

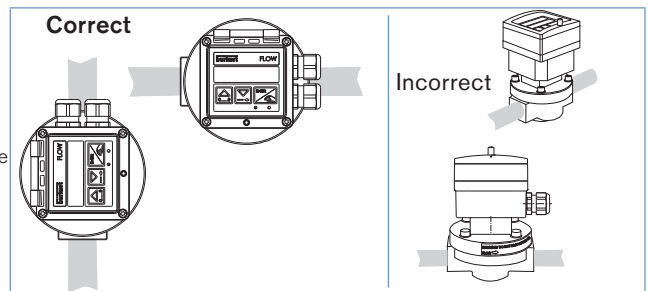
A conversion coefficient (K factor, available in the instruction manual of the sensor fitting S070), specific to each pipe (size and material) enables the conversion of this frequency into a flow rate.



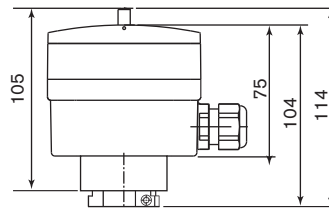
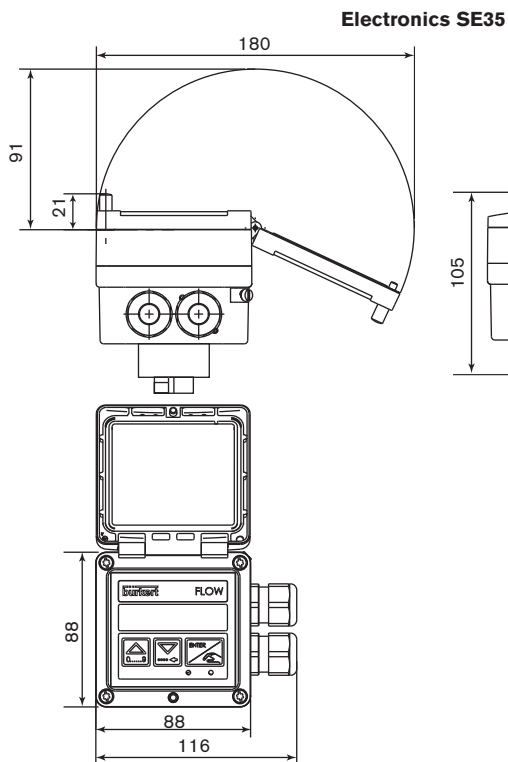
Installation

The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures to the right) and **the flow of the fluid is in the direction of the arrow marked on the body**.

The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damages and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.



Dimensions [mm]



DN	H
15	140
25	155
40	172
50	190
80	230
100	231

DN15	DN25	DN40	DN50	DN80
Threaded connection				
DN25	DN40	DN50	DN80	DN100
Flanged connection				

Ordering information for compact flowmeter Type 8075

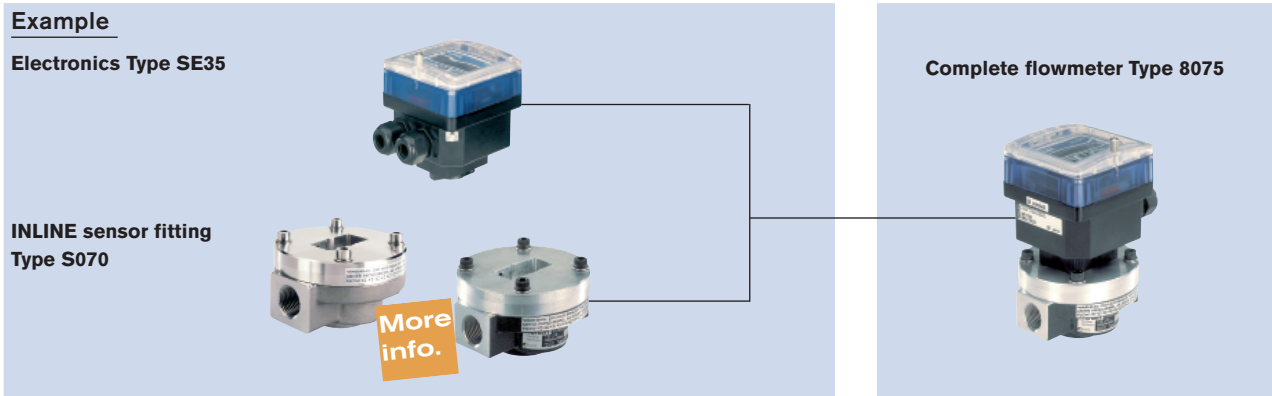
A flowmeter Type 8075 consists of an electronics Type SE35 and a Bürkert INLINE sensor fitting Type S070

The following information is necessary for the selection of a complete device:

- **Item no.** of the desired electronics **Type SE35** (see Ordering chart, below)
- **Item no.** of the selected INLINE sensor fitting **Type S070** (see separate data sheet- has to be ordered separately)

You have to order two components.

When you click on the orange box "More info." below, you will come to our website for the resp. product where you can download the data sheet.



Ordering chart for electronics Type SE35

Specifications	Operating voltage	Output	Sensor version	Electrical connection	Item no.
Standard output signal flowmeter, 2 totalizers	115/230 V AC	4... 20 mA (2-wire)+ pulse	Hall	2 cable glands	423 922

Ordering chart - accessories for flowmeter Type 8075 (has to be ordered separately)

Specifications	Item no.
Set with 2 cable glands M20 x 1.5 + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5 + 2 multiway seals 2 x 6 mm	449 755
Set with 2 reductions M20 x 1.5 /NPT1/2" + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5	551 782
Set with 1 stopper for unused cable gland M20 x 1.5 + 1 multiway seal 2 x 6 mm for cable gland + 1 black EPDM seal for the sensor + 1 mounting instruction sheet	551 775

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

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1209/2_EU-en_00895132



Positive displacement low volume flowmeter for continuous measurement

- For highly viscous fluids
- Available for indication, monitoring, transmitting, On/Off control together with 8025 or 8619 and/or batch control together with 8025

Type 8077 can be combined with...



Type 8025

Universal
flow transmitter



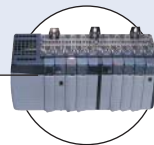
Type 8619

multiCELL
transmitter/controller



Type 2101 (8692)

Continuous
TopControl system



PLC

This positive displacement flowmeter is specially designed for measurement or batch control (if combined with 8025/8619) of highly viscous fluids like glue, honey or oil.

The design of this low flowmeter is based on the oval rotor principle. This has proven to be a reliable and highly accurate volumetric method of measuring flow. Exceptional repeatability and high accuracy over a wide range of viscosities and flowrates are features of that design. The low pressure drop and high pressure rating make it suitable for both gravity and pump (in-line) applications.

All 8077 devices provide Open Collector NPN frequency output and frequency output on Reed contact via 1 meter 5-wire cable with open ends.

General data

Compatibility	with Type 8025 Universal transmitter/batch controller or Typ 8619 multiCELL transmitter/Controller (see corresponding data sheet)
Materials	
Electronic module	PP (20% glass fiber)
Tag plate	Aluminium
Wetted parts materials	
Body	Aluminium, stainless steel 316L (1.4401)
Rotor	Stainless steel 316L (1.4401)
Shaft	Stainless steel 316L (1.4401)
Seal	FEP/PTFE
Electrical connections	Cable gland, 5-wire cable, 1 m length
Environment	
Ambient temperature	(operating and storage) -15...+60°C (+5...+140°F)
Relative humidity	≤ 85%, non condensated

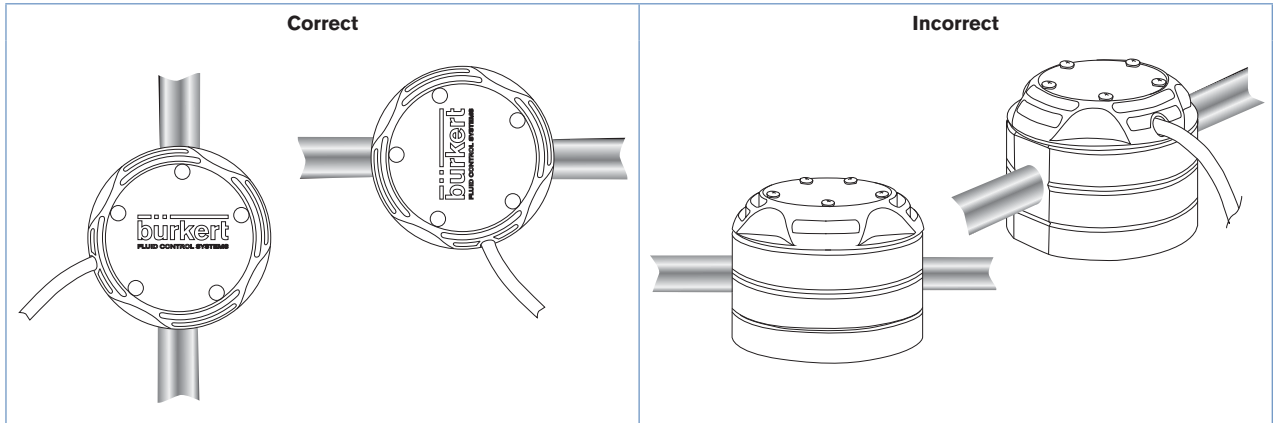
Complete device data	
Process connection	Thread 1/8"; 1/4" (G or NPT)
Measuring range	0.5...500 l/h (0.13...132 gph) (depends on the version)
Medium temperature max. Aluminium body Stainless steel body	-20...+80°C (-4...+176°F) -20...+120°C (-4...248°F)
Medium pressure max.	Aluminium body: 55 bar (798 PSI) Stainless steel body: 55 bar (798 PSI) (550 bar (7980 PSI) on request)
Viscosity	1 Pa.s. max. (higher on request)
Max. particle size	75 µm - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a 75 µm (200 mesh) strainer as close as possible to the inlet side of the meter.
Measurement deviation	±1% of Reading (if "standard" K-factor is used) ±0.5% of Reading (if "specific" K-factor is used, on label of the product)
Repeatability	≤ 0.03% of Reading
Electrical data	
Sensor type	Hall effect sensor or Reed contact
Current consumption	≤ 9 mA (Hall effect sensor)
Output frequency Hall effect sensor Reed contact	Open collector, NPN, max. 25 mA, 4.5...24 V DC switching voltage 30 V DC, max. current, 0.5 A
Standard K-factor 0.5...100 l/h 15...500 l/h	1000 pulses/l 400 pulses/l
Standards, directives and approvals	
Protection class	IP67, IP66, NEMA 6
Directives EMC Pressure	EN 61326-1 Complying with article 3 of §3 from 97/23/CE directive*. (without CE mark)

* For the 97/23/CE pressure directive, the device can only be used under following conditions (dependent on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, §1.3.a	Forbidden
Fluid group 2, §1.3.a	DN ≤ 32, or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Installation and operation

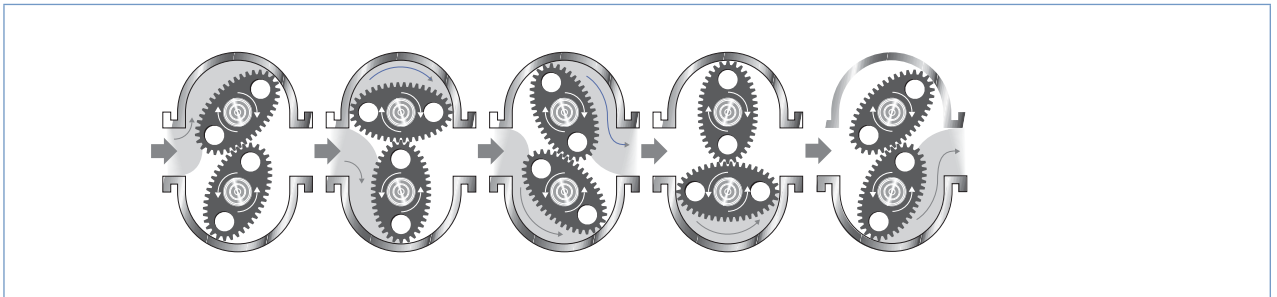
The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures below).



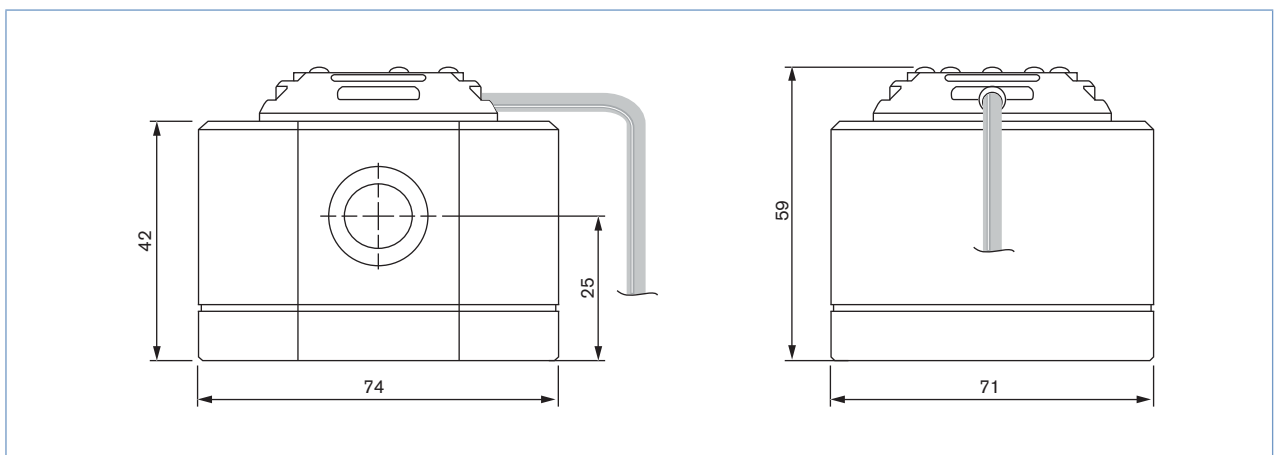
The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damages and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.

When fluid passes through the fitting, rotors turn. This rotation produces a measuring frequency in the associated hall sensor, which is proportional to the flow. The volume of the fluid being transferred in this way is exactly determined through the sensor geometry.

A conversion coefficient, specific to each meter size, enables the conversion of this frequency into a flow rate. The standard K factor depending on the meter size is available in the instruction manual of the sensor fitting 8077, or to improve the measurement deviation, a specific K factor is given with each device on its label.



Dimensions [mm]



Ordering chart for flowmeter Type 8077

Process connection	Flow range		Body material	Max. pressure	Rotor / shaft material	Seal	Item no.
	> 5 mPa.s	< 5 mPa.s					
G 1/8	0.5...100 l/h (0.13...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Aluminium	55 bar	Stainless steel	FEP/PTFE	567 202
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 203
NPT 1/8	0.5...100 l/h (0.53...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Aluminium	55 bar	Stainless steel	FEP/PTFE	567 204
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 205
G 1/4	0.5...100 l/h (0.13...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 206
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 207
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 208
NPT 1/4	0.5...100 l/h (0.53...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 209
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 210
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 211

* > 1 Pa.s.

Ordering chart for accessories

Description	Item no.
Set of two rotors in stainless steel for measuring range 0.5...100 l/h	567 766
Set of two rotors in stainless steel for measuring range 15...500 l/h	567 767
FEP/PTFE seal for measuring range 0.5...100 l/h	567 768
FEP/PTFE seal for measuring range 15...500 l/h	567 769
Set of plastic cap with hall sensor and Reed contact	567 770

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1602/0_EU-en_00895303

powered by
EDIP



FLOWave SAW-Flowmeter

- No parts in the measurement tube
- Conform to hygienic requirements
- Ideal for low conductivity or non conductive liquids
- Digital communication
- Compact, low weight and energy-efficient

Type 8098 can be combined with...



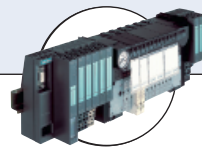
Type 8802-DF
ELEMENT
Continuous system



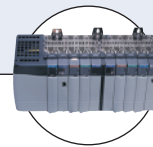
Type 8802-GD
ELEMENT
Continuous system



Type 8619
multiCELL
transmitter/controller



Type 8644
Valve islands



PLC

The flowmeter Type 8098 is a product of the FLOWave range. It uses the SAW (Surface Acoustic Waves) technology and is at first designed for the use in applications requiring that all hygienic conditions are fulfilled.

This is achieved by using:

- the accepted stainless steel materials
- a tube free of any inner parts
- the ideal outer design (e.g. without any fixing components like screws)

The main use focus is on hygienic applications and for the measurement or monitoring of water similar liquids.

As an example low conductivity or non conductive water is a very preferred area of usage as FLOWave flow measurement is independent from conductivity.

FLOWave offers a range of features, including advantages by flexibility, cleanability (e.g. CIP and SIP), compact size, light weight, easy installation and handling, and is compliant with numerous standards.

General technical data

Type of fluids	Water similar homogeneous liquids, free of air and free of gas bubbles. Non emulsified liquids, no gas, no steam. Viscosity ≤ 2 mPa.s Non dangerous fluids complying with article 3 of §3 from 97/23/CE directive (see * on page 3)			
Clamp/Pipe size acc. to	▪ DIN 32676 Series B ▪ ASME BPE (DIN 32676 Series C)			
Materials				
Wetted parts	Stainless steel 316L/1.4435 BN2			
Unwetted parts				
Measurement tube and Clamp	Stainless steel 304/1.4301			
Seal / Display	VMQ silicone / Float glass, stainless steel 304/1.4301			
Cable glands / Blind plugs	Nickel plated brass / Black POM			
M12 male connector and blind plug	Nickel plated brass			
Pressure compensating element	Nickel plated brass			
Name plate	Metallized polyester			
Surface finish				
Measurement tube (inner surface)	Ra < 0.8 μm (30 $\mu\text{in.}$) or Ra < 0.4 μm (15 $\mu\text{in.}$) (electropolish)			
Meas. tube (outer surface), housing	Ra < 1.6 μm			
Display	2.4", monochrome graphic (240 x 160 pixel) German, English, French languages			
Electrical connection	2 cable glands M20 x 1.5 and 1 x 5-pin M12 male fixed connector			
Recommended cable for	Cable with operating temperature of min. 90°C			
Cable glands	5...14 mm diameter, shielded cable, 0.2...1.5 mm ² cross-section,			
M12 female connector (not supplied)	3...6.5 mm diameter, shielded cable, 0.75 mm ² cross-section			
Weight [approx. - kg]	DN15 / 3/4"	DN25 / 1"	DN40 / 1 1/2"	DN50 / 2"
	2.2	2.4	3.2	3.4

General technical data - continued	
Flow rate measurement¹⁾	
Measuring range	0...7 m³/h to 0...90 m³/h (see ordering chart on pages 8)
Measurement deviation ²⁾	
from 10% of F.S.* up to F.S.*	±0.4% of the measured value
from 1% of F.S.* up to 10% F.S.*	±0.08% of F.S.*
Repeatability	
from 10% of F.S.* up to F.S.*	±0.2% of the measured value
from 1% of F.S.* up to 10% F.S.*	±0.04% of F.S.*
Refresh rate	240 ms
Temperature measurement	
Measuring range	-20...+140°C (-4...+284°F)
Measurement deviation ²⁾ for temperatures	
< 100°C	±1°C (1.8°F)
between 100°C and 140°C	±1.5%
Maximum temperature gradient	10°C/s (18°F/s)
Liquid temperature	-20...+110°C (-4...+230°F)
The maximum liquid temperature can be restricted by the ambient operating temperature	Max. conditions for sterilisation process: up to +140°C (284°F) for 60 min.
Liquid pressure max	
DN15, DN25, ¾", 1", 1½"	PN25 (363 PSI)
DN40, DN50, 2"	PN16 (290 PSI)

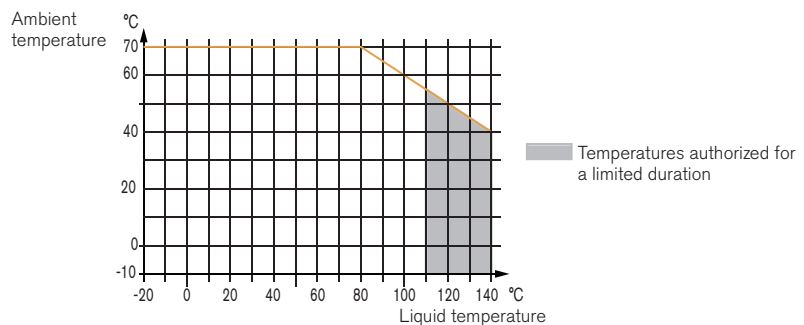
¹⁾ Under reference conditions i.e. measuring fluid=water, ambient and water temperature = 23°C (73.4°F), applying the minimum inlet (40 x DN) and outlet (1 x DN) straight pipe lengths, matched inside pipe dimensions.

²⁾ = "measurement bias" as defined in the standard JCGM 200:2012

* F.S.= of Full scale (see ordering chart on page 8)

Electrical data	
Operating voltage	12...35 V DC filtered and regulated, limited energy source (according to UL 61010-1, paragraph 9.4) Tolerance: ±10%
Reversed polarity of DC	Protected
Power consumption	Max. 5 W (without any consumption of output)
Digital outputs	
Transistor	Overload information (through diagnostic software function) Type: NPN or PNP (wiring dependent), open collector, galvanically isolated Operating modes: pulse (by default), On/Off, PFM, Threshold, Frequency (user configurable) 0...2 kHz, 5...35 V DC, 700 mA max., Max. pulse duration : 65 ms; Protected against polarity reversals of DC and short-circuits
Analogue output	
Current	Open loop detection (through diagnostic software function) 4...20 mA; 3.6 mA or 22 mA to indicate an error (only if 4...20 mA scale selected); galvanically isolated max. loop impedance: 1300 Ω at 35 V DC, 1000 Ω at 30 V DC, 700 Ω at 24 V DC, 450 Ω at 18 V DC
4...20 mA output uncertainty	±0.04 mA
4...20 mA output resolution	0.8 µA
Environment conditions	
Ambient temperature	Depends on the liquid temperature (see drawing)
Operation / Storage	-10...+70°C (14...+158°F) / -20...+70°C (-4...+158°F)
Relative humidity	< 85%, without condensation
Height above sea level	max. 2000 m

Ambient and liquid temperatures



Standards, directives and approvals	
Protection class acc. to EN 60529	IP65 and IP67, NEMA250 4X, if the product is wired and if the cable glands are tightened and the covers are screwed tight. Unused cable glands must be sealed with the stopper gaskets provided (mounted at the delivery of the product). Unused M12 male fixed connector must be protected with the screwed plug.
Standard and directives  EMC Pressure Vibration / Shock	EN 61000-6-2, EN 61000-6-3 Complying with article 3 of §3 from 97/23/CE directive.* EN 60068-2-6 / EN 60068-2-27
Certificate	EHEDG (Type EL - CLASS I) (Pending) 3A (28-04) Inspection certificate 3.1; Certification of compliance ASME BPE; on request: Test report 2.2 for surface finish
Approvals UL-Listed for US and Canada  (pending)	UL61010-1 + CAN/CSA-C22.2 No.61010-1 (Pending)
Specific technical data of UL-listed products for US and Canada	
Intended for an inner pollution	Pollution degree 2, according to EN61010-1
Installation category	Category II, according to UL61010-1

* For the 97/23/CE pressure directive, the device can only be used under following conditions (dependent on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, §1.3.a	Forbidden
Fluid group 2, §1.3.a	DN ≤ 32, or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200 or PN ≤ 10 or PN*DN ≤ 5000

Design and materials view

The **FLOWave** flowmeter **Type 8098** consists of a flow sensor Type S097 and a transmitter Type SE98.

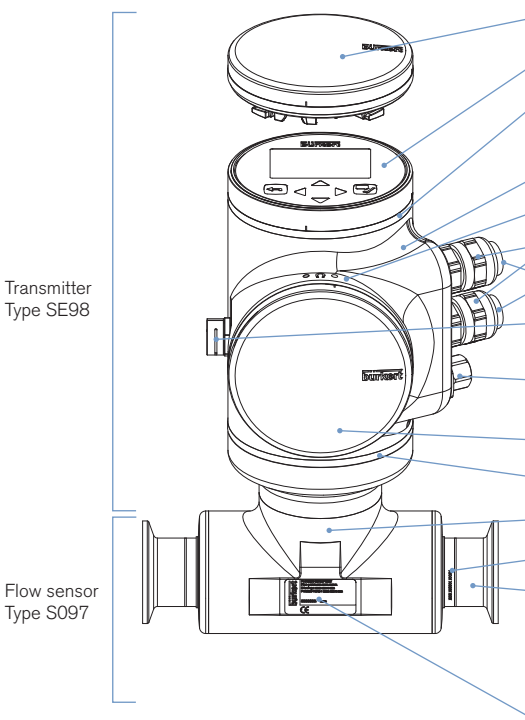
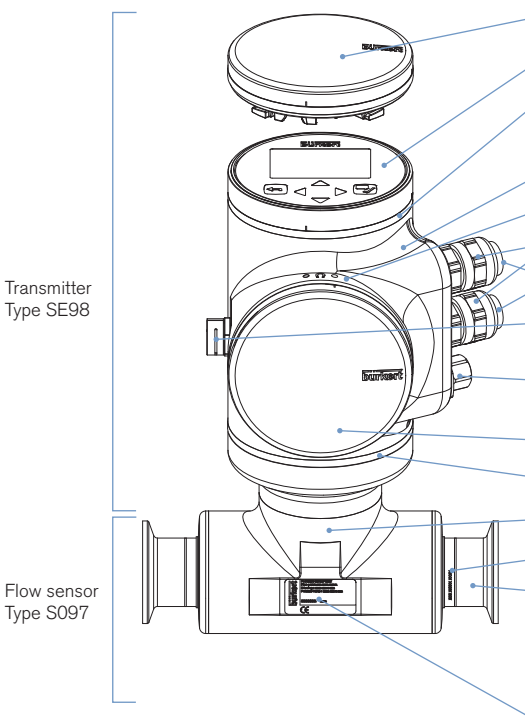
The flow sensor includes the measurement tube equipped with the interdigital transducers, the sensor housing and the clamp process connections in accordance to the standards ISO, ASME BPE.

At present the sensor size ranges from DN15 to DN50 or from 3/4" to 2" covering a process pressure up to PN40.

The flowmeter is available as a compact device without or with display. The display with high resolution includes a capacitive working keypad for all user's interactive actions guided by a user friendly menu system.

The output signals include one analogue output (AO, 4... 20 mA) and one digital output (DO); while a third output signal can be switched between AO and DO through parameterization. Electrical connection is done on push-in connectors via two cable glands and/or one M12 connector.

The detailed parts and materials are displayed in the following picture:

FLOWave Type 8098		Description	Material
	Blind cover or		Stainless steel 304/1.4301
	Display module		Float glass, Stainless steel 304/1.4301
	Multi-colour LED behind seal (used for e.g. indicating the status of the product, based on the NAMUR NE 107 standard)		VMQ silicone
	Transmitter housing		Stainless steel 304/1.4301
	Seal		VMQ silicone
	Cable glands		Nickel plated brass
	Blind plug		Black POM
	Pressure compensating element		Nickel plated brass, with diaphragm in Acrylic-Copolymer, O-Ring in NBR
	M12 male fixed connector (wired to bus) with screwed plug		Nickel plated brass
	Blind cover		Stainless steel 304/1.4301
	Seal		VMQ silicone
	Sensor housing		Stainless steel 304/1.4301
	Sensor measurement tube		- Stainless steel 316L/1.4435 BN2 for process connection acc. to DIN 32676 Series B - Stainless steel 316L/1.4404 ASME BPE for process connection acc. to ASME BPE (DIN 32767 Series C)
	Process connection		
	Name plate		Metallized polyester

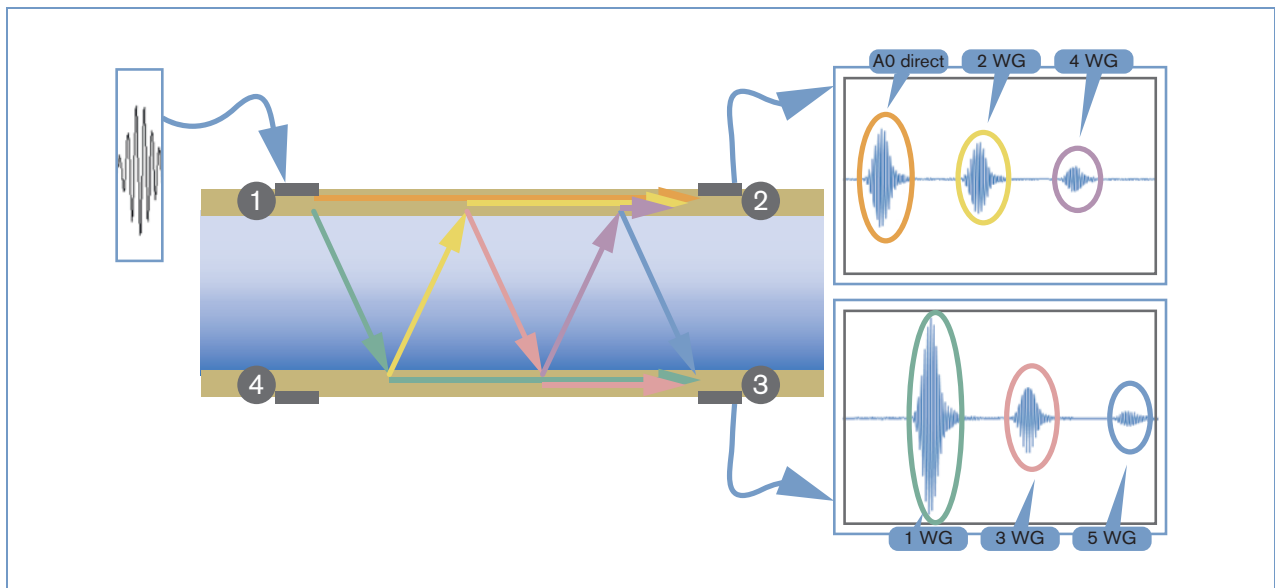
Operating principle

The technology used is based on SAW (Surface Acoustic Waves). The kind of wave propagation is similar to what happens when it comes to earthquakes in the nature.

In the case of FLOWave it is a miniaturized signal and not running on the surface of the earth but on a measurement tube. FLOWave uses so called interdigital transducers which are placed on flattened areas of the tube surface. There are at least 4 of them. Each one acts as emitter as well as receiver. Two of them (no. 1 and 4) are emitting in the forward flow direction, the others (no. 2 and 3) in the backward flow direction. The propagation time is measured from emitter to receiver. The difference between the wave propagation times in the forward and backward directions is proportional to the volume flow.

The high performance measurement is based on:

- Each emitter creates multiple receiving signals at two other receivers
- The results are obtained by gathering the signals of waves transmitted through the liquids once, twice, three or even four times back and forth. Several measurements can be performed based on the collected information. Many properties of the liquid can be derived, including its velocity and information about the presence of gas bubbles or solid parts.



This figure indicates the receiving signals for just interdigital transducer 1 acting as emitter. The emitter excitation produces the SAW with a frequency of more than 1 MHz.

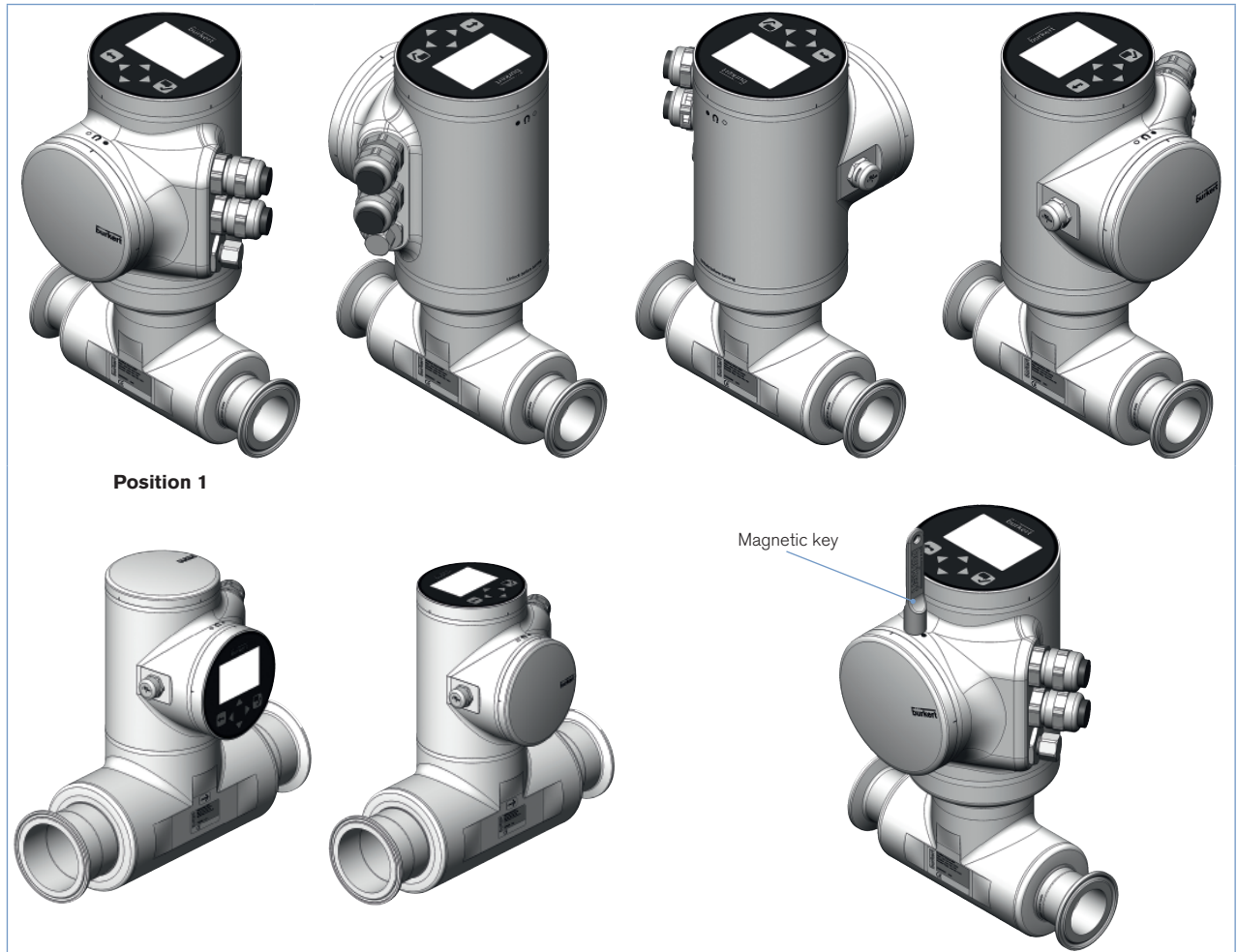
There are two effects appearing:

- A wave propagates along the surface of the tube (see orange line).
- A wave couples into the liquid (see green line) and propagates towards the other side of the tube under a certain angle. This angle depends mainly on the propagation speed on the surface and in the liquid, respectively.
- Upon reaching the opposite side of the tube, two effects take place
 - A wave couples into the tube and propagates (see green line) to receiver 3
 - A wave couples out to the liquid (see yellow line) and propagates again to the opposite side of the tube.

These effects get repeated at each reflection, resulting in all the different colour-coded signals indicated in the figure.

Installation

The product is delivered as described in position 1 in the below picture. The position of the transmitter SE98 can be changed in 90° steps. As well the position of the display module and the blind cover can be changed in steps of 90° in the position on top as well as on the front. For safety reasons display module and blind cover on the top or on the front are locked. The unlocking of the display module and the blind cover can be done with a magnet. A magnetic key is delivered for this purpose with each device.



Minimum straight inlet and outlet distances must be observed. According to the pipe design, necessary distances can be bigger or use a flow conditioner to obtain the best results. The most important layouts that could lead to turbulence in the flow are shown below, together with the associated prescribed minimum inlet and outlet distances determined according to the standard ISO 9104.1991.

Installation (continued)

The device can be installed into either horizontal or vertical pipes. But an installation on a vertical pipe will be better to prevent air or gas bubbles inside the measurement area.

For proper operation always ensure a totally filled measurement tube.

Conformity to 3A and EHEDG requires to have an angle of minimum 3° against horizontal to ensure full drainability however this not a needed demand from FLOWave.

The suitable pipe size can be selected using the diagram Flow rate/Velocity/DN (see diagram on the right).

The flowmeter is not designed for gas or steam flow measurement.

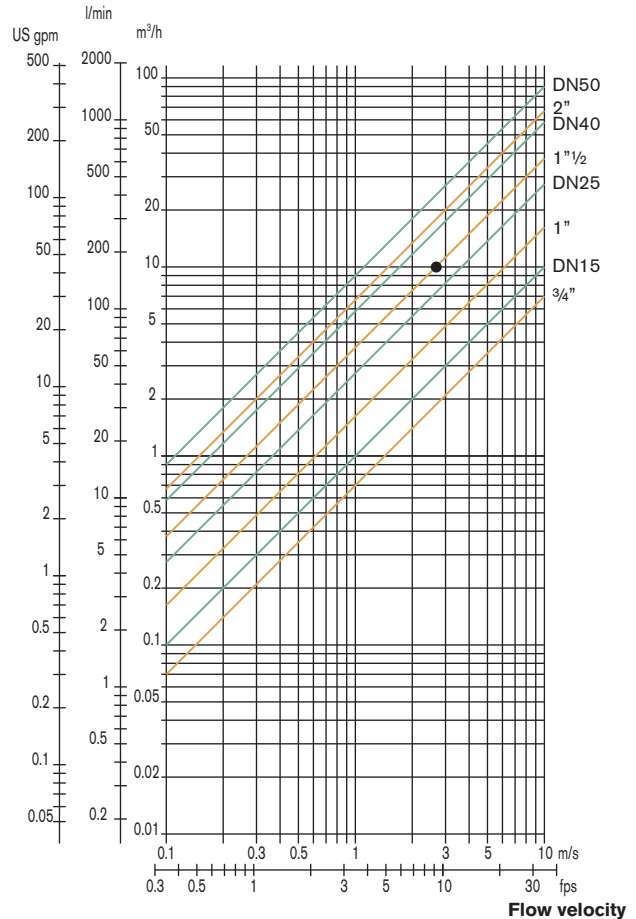
Diagram Flow rate/Velocity/DN

Example:

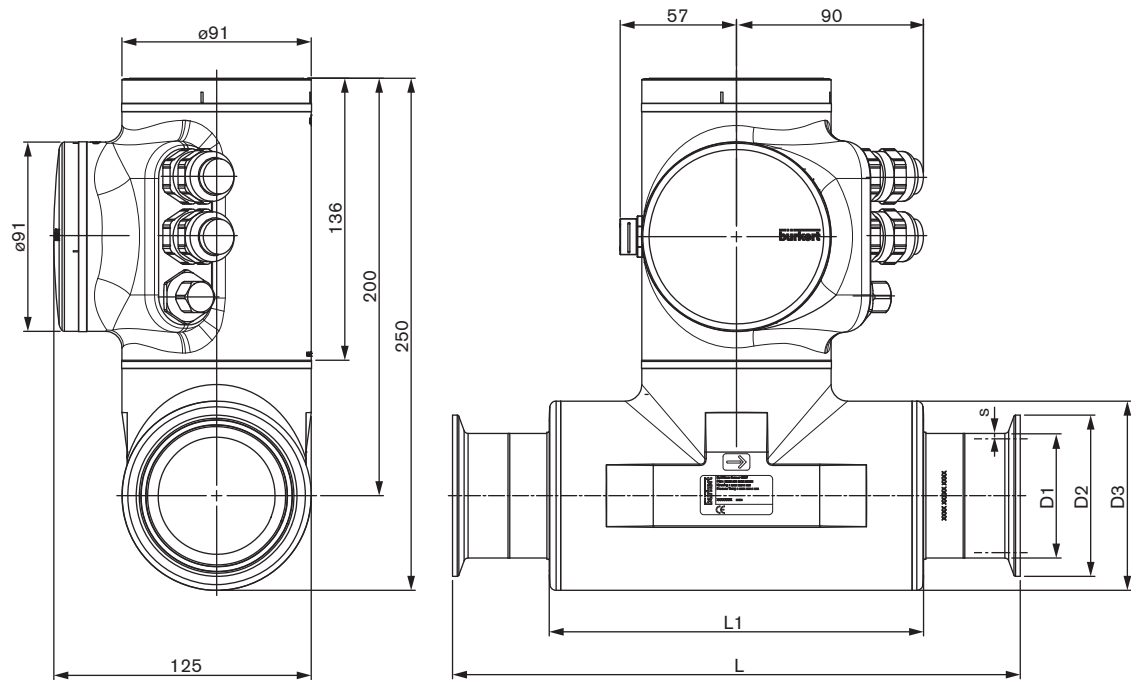
- Flow rate: 10 m³/h
- Ideal flow velocity: 1...3 m/s

For these specifications, the diagram indicates a pipe size of DN40

Flow rate of liquid



Dimensions [mm]



Clamp/pipe size		Standard		D1	s	D2	D3	L1	L
[mm]	[inch]	Clamp	Process pipe						
15	-	DIN 32676 series B	DIN 11866 series B	21.3	1.6	50.5 34	60.3	105	168
-	3/4	ASME BPE (DIN 32676 Series C)	DIN 11866 series C (ASME BPE)	19.05	1.65	25	60.3	105	143
25	-	DIN 32676 series B	DIN 11866 series B	33.7	2.0	50.5	60.3	120	175
-	1	ASME BPE (DIN 32676 Series C)	DIN 11866 series C (ASME BPE)	25.4	1.65	50.5	60.3	105	143
40	-	DIN 32676 series B	DIN 11866 series B	48.3	2.0	64	91	180	273
-	1 1/2	ASME BPE (DIN 32676 Series C)	DIN 11866 series C (ASME BPE)	38.1	1.65	50.5	91	180	273
50	-	DIN 32676 series B	DIN 11866 series B	60.3	2.0	77.5	91	180	273
-	2	ASME BPE (DIN 32676 Series C)	DIN 11866 series C (ASME BPE)	50.8	1.65	64	91	180	273

Ordering chart for FLOWave flowmeter Type 8098

NOTE:

To parameter a device without display please use the USB-büS-Interface Type 8920 (has to be ordered separately - see accessories on page 9)

Clamp acc. to DIN 32676 series B (ISO 1127) process connection for pipe acc. to DIN 11866 series B (ISO 1127)

Clamp/pipe size [mm]	Measurement tube (outer surface), housing	Measurement tube (inner surface)	Clamp Dimensions D1xS, D3	Operating voltage	Maximal flow rate	Electrical connection	Display	Approvals	Item no.	
15	1.6 µm	0.8 µm (30 µin.)	21.3x1.6 - Cl:50.5 21.3x1.6 - Cl:34.0 21.3x1.6 - Cl:50.5 21.3x1.6 - Cl:34.0 21.3x1.6 - Cl:50.5 21.3x1.6 - Cl:34.0 21.3x1.6 - Cl:50.5 21.3x1.6 - Cl:34.0	12...35 V DC	10 m³/h	2 cable glands M20 x 1.5 + 1 male fixed connector M12	Yes		566 187	
							Yes		566 235	
							No		566 191	
							No		566 236	
		0.4 µm (15 µin.)					Yes		566 195	
							Yes		566 237	
							No		566 199	
							No		566 238	
25	1.6 µm	0.8 µm (30 µin.)			33.7x2.0 - Cl:50.5	25 m³/h	2 cable glands M20 x 1.5 + 1 male fixed connector M12		Yes	566 188
									No	566 192
		0.4 µm (15 µin.)							Yes	566 196
									No	566 200
40	1.6 µm	0.8 µm (30 µin.)			48.3x2.0 - Cl:64.0	56 m³/h	2 cable glands M20 x 1.5 + 1 male fixed connector M12		Yes	566 189
									No	566 193
		0.4 µm (15 µin.)							Yes	566 197
									No	566 201
50	1.6 µm	0.8 µm (30 µin.)			60.3x2.0 - Cl:77.5	90 m³/h	2 cable glands M20 x 1.5 + 1 male fixed connector M12		Yes	566 190
									No	566 194
		0.4 µm (15 µin.)							Yes	566 198
									No	566 202

Clamp acc. to ASME BPE (DIN 32676 series C) process connection for pipe acc. to DIN 11866 series C (ASME BPE)

Clamp/pipe size [inch]	Measurement tube (outer surface), housing	Measurement tube (inner surface)	Clamp Dimensions D1xS, D3	Operating voltage	Maximal flow rate	Electrical connection	Display	Approvals	Item no.
¾	1.6 µm	0.8 µm (30 µin.)	19.05x1.65 - Cl:25.0	12...35 V DC	7 m³/h	2 cable glands M20 x 1.5 + 1 male fixed connector M12	Yes		566 203
		0.4 µm (15 µin.)		12...35 V DC	7 m³/h		No		566 207
							Yes		566 211
		No		566 215					
1	1.6 µm	0.8 µm (30 µin.)	25.4x1.65 - Cl:50.5	12...35 V DC	14 m³/h	2 cable glands M20 x 1.5 + 1 male fixed connector M12	Yes		566 204
		0.4 µm (15 µin.)		12...35 V DC	14 m³/h		No		566 208
							Yes		566 212
		No		566 216					
1½	1.6 µm	0.8 µm (30 µin.)	38.1x1.65 - Cl:50.5	12...35 V DC	35 m³/h	2 cable glands M20 x 1.5 + 1 male fixed connector M12	Yes		566 205
		0.4 µm (15 µin.)		12...35 V DC	35 m³/h		No		566 209
							Yes		566 213
		No		566 217					
2	1.6 µm	0.8 µm (30 µin.)	50.8x1.65 - Cl:64.0	12...35 V DC	64 m³/h	2 cable glands M20 x 1.5 + 1 male fixed connector M12	Yes		566 206
		0.4 µm (15 µin.)		12...35 V DC	64 m³/h		No		566 210
							Yes		566 214
		No		566 218					

Ordering chart for accessories for Type 8098

Description		Item no.
	USB-büs-Interface Type 8920 (see drawing below)	772 426
	Unlocking magnetic key	690 309
	5-pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917 116
	5-pin M12 female straight cable plug moulded on cable (2 m, shielded)	438 680

USB-büs-Interface Type 8920



Standard configuration – request for quotation

Note

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

▶ Please fill out and send to your nearest Bürkert office* with your inquiry or order

Company:	Contact person:
Customer no.:	Department:
Address:	Tel./Fax.:
Postcode/town:	E-Mail:

☐ = mandatory fields to fill out

Quantity:

Required delivery date:

Operating data

☐ Process medium			
☐ Type of media	☒ Liquid		
	min.	max.	Unit
☐ Flow rate (Q) ¹⁾			
☐ Temperature			
☐ Absolute pressure			
☐ Viscosity			
☐ Density			

¹⁾ standard unit:
Liquid Q = m³/h;

Comments

Certifications*

☐ Test report 2.2 acc. to EN-ISO 10204 (Item no. 803 722)	☐ EHEDG - TYPE EL-CLASS I
☐ Inspection certificate 3.1 acc. to EN-ISO 10204 (included in delivery)	☐ 3A - 28 04
☐ Certification of Conformity for the Surface Quality DIN4762-DIN4768-ISO/4287/1 (Item no. 804 175)	☐ Calibration certificate (included in delivery)
☐ Certification of Conformity for Pickling and Electropolishing Processes (Item no. 444 900)	
☐ Certification of compliance ASME BPE (included in delivery)	

* If a certification which is not included in delivery with the FLOWave is requested, please order it separately. If you want to order one or more later, please contact your Bürkert office.

Reset Form

To find your nearest Bürkert office, click on the orange box →



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

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1510/1_EU-en_00895282



Positive displacement sensor fitting for continuous flow measurement

- DN15 to DN100
- INLINE Quarter-Turn technology
- Electronics available for indication, monitoring, transmitting, On/Off control and batch control

Type S070 can be combined for...



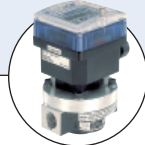
Type 8070

Positive displacement flowmeter



Type 8072

Positive displacement flowmeter



Type 8075

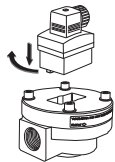
Positive displacement flowmeter



Type 8076

Positive displacement flowmeter

This positive displacement sensor fitting is specially designed for flow measurement and/or batch control of highly viscous fluids like glue, honey or oil.



This measuring element must be associated to an electronic module SE30, SE32, SE35, SE36 with hall sensor principle only, quickly and easily connected together by a Quarter-Turn.

The design of this fitting is based on the oval rotor principle. This has proven to be a reliable and highly accurate volumetric method of measuring flow. Exceptional repeatability and high accuracy over a wide range of viscosities and flowrates are features of that design. The low pressure drop and high pressure rating make it suitable for both gravity and pump (in-line) applications.

General data	
Compatibility	With electronic SE30, SE32, SE35, SE36 with Hall sensor principle (see separate data sheet)
Wetted parts materials	
Body	Aluminium, stainless steel (316F)
Rotor	PPS, aluminium, stainless steel (316F)
Shaft	Stainless steel (316F)
Seal	FKM or FEP/PTFE encapsulated
Environment	
Ambient temperature	0 to 60°C (32 to 140°F) (operation and storage)
Standards, directives and approvals	
Protection class	IP66 (NEMA 6)
Directives	
Pressure	Complying with article 3 of §3 from 97/23/CE directive*. (without CE mark)

* For the 97/23/CE pressure directive, the device can only be used under following conditions (dependent on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, §1.3.a	Forbidden
Fluid group 2, §1.3.a	DN ≤ 32, or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

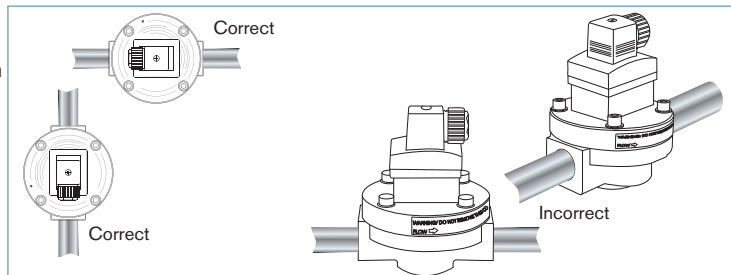
Complete device data	
Pipe diameter	DN15 to DN100
Thread connection	1/2"; 1"; 1 1/2"; 2"; 3" (G or NPT)
Flange connection	25; 40; 50; 80 or 100 mm DIN PN16 flange 1"; 1 1/2"; 2"; 3" or 4" ANSI 150LB flange
Measuring range	
Viscosity > 5 cps	2 to 1200 l/min (0.26 to 320 gpm)
Viscosity < 5 cps	3 to 616 l/min (0.78 to 160 gpm)
Medium temperature max.	Aluminium body: 80°C (176°F) Stainless steel body: 120°C (248°F)
Medium pressure max.	
DN15	55 bar (798.05 PSI) (threaded process connection)
DN25	55 bar (798.05 PSI) ¹⁾
DN40/DN50	18 bar (261.18 PSI)
DN80	12 bar (174.12 PSI)
DN100	10 bar (145.1 PSI)
Viscosity	1000 cps. max. (higher on request)
Max. particle size	250 µm - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.
Accuracy	±0.5% of Reading
Repeatability	±0.03% of Reading

¹⁾ or in accordance to the value of the used flanges

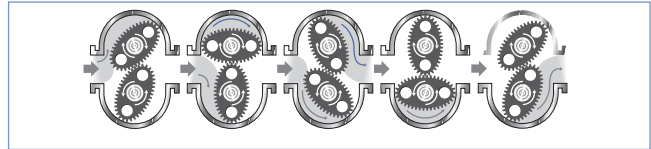
Installation and operation

The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures to the right) and **the flow of the fluid is in the direction of the arrow marked on the body**.

The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damages and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.

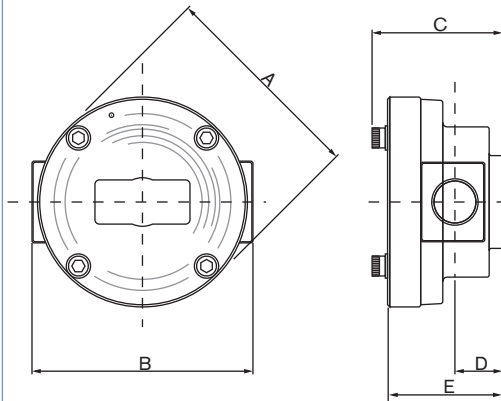


When fluid passes through the fitting, rotors turn. This rotation produces a measuring frequency in the associated hall sensor, which is proportional to the flow.



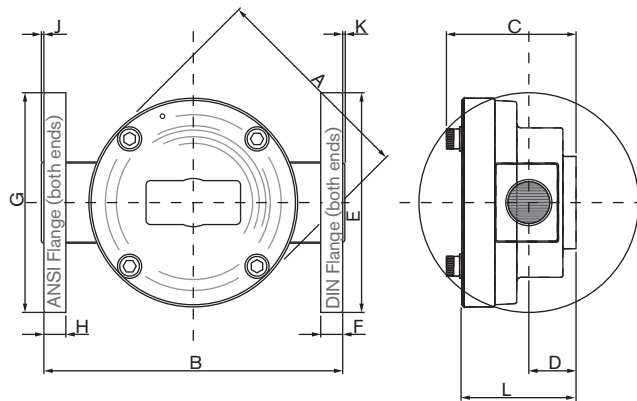
Dimensions [mm]

Threaded connection



Orifice DN	A	B		C	D	E
		Stainless steel	Aluminium			
15	96	100	100	61	20	55
25	112	143	133	91	35	85
40	144	124	124	120	45	112
50	178	210	210	150	55	140
80	220	260	302	212	77	202

Flanged connection



Orifice DN	A	B		B		C	D	E	F	G	H	J	K	L
		Stainless Steel DIN	ANSI	Al. DIN	ANSI									
25	112	291	294	281	284	91	35	115	16	108	16.0	1.6	1.6	85
40	144	262	270	262	270	120	45	150	16	127	17.5	1.6	1.6	112
50	178	264	264	264	264	150	55	165	18	152	19.0	1.6	1.6	140
80	220	344	348	436	436	212	77	200	22	191	22.5	1.6	1.6	202
100	291	382	390	578	578	230	108	220	22	229	22.5	1.6	1.6	234

Ordering chart for sensor fitting Type S070

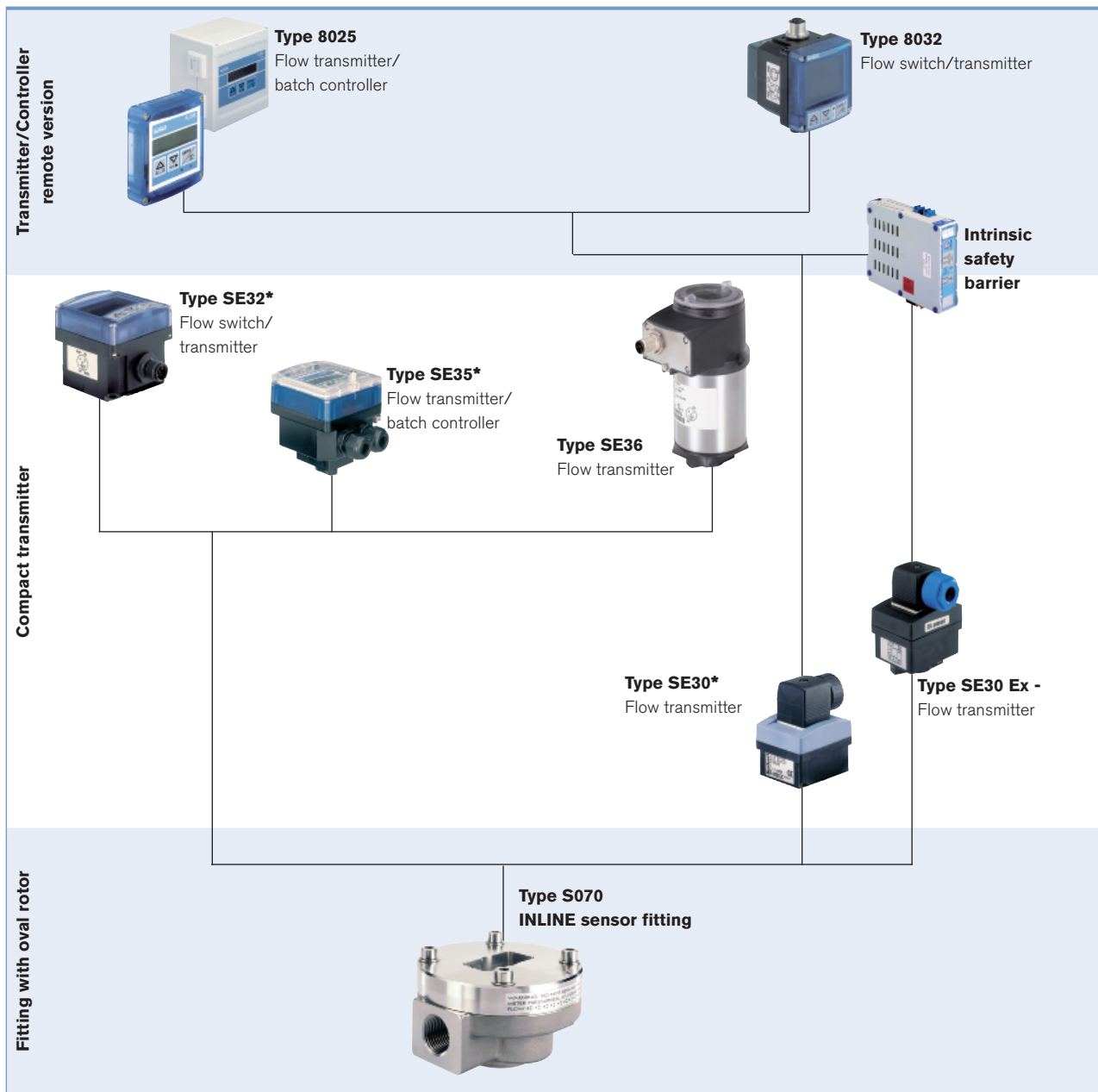
Orifice DN	Process connection	Flow Range		Body material	Rotor material	Seal	Item no.
		> 5 cps	< 5 cps				
15	G 1/2"	2 - 30 l/min	3 - 25 l/min	Aluminium	PPS	FKM	443 985
				Stainless steel	Stainless steel	FEP/PTFE	443 990
	NPT 1/2"	2 - 30 l/min	3 - 25 l/min	Aluminium	PPS	FKM	443 995
				Stainless steel	Stainless steel	FEP/PTFE	444 000
25	G 1"	6 - 120 l/min	10 - 100 l/min	Aluminium	PPS	FKM	443 986
				Stainless steel	Stainless steel	FEP/PTFE	443 991
	NPT 1"	6 - 120 l/min	10 - 100 l/min	Aluminium	PPS	FKM	443 996
				Stainless steel	Stainless steel	FEP/PTFE	444 001
	25 mm DIN PN16 flange	6 - 120 l/min	10 - 100 l/min	Aluminium	PPS	FKM	553 637
				Stainless steel	Stainless steel	FEP/PTFE	553 634
	1" ANSI 150 LB flange	6 - 120 l/min	10 - 100 l/min	Aluminium	PPS	FKM	553 636
				Stainless steel	Stainless steel	FEP/PTFE	553 633
40	G 1 1/2"	10 - 250 l/min	15 - 235 l/min	Aluminium	PPS	FKM	443 987
				Stainless steel	Stainless steel	FEP/PTFE	443 992
	NPT 1 1/2"	10 - 250 l/min	15 - 235 l/min	Aluminium	PPS	FKM	443 997
				Stainless steel	Stainless steel	FEP/PTFE	444 002
	40 mm DIN PN16 flange	10 - 250 l/min	15 - 235 l/min	Aluminium	PPS	FKM	443 988
				Stainless steel	Stainless steel	FEP/PTFE	443 993
	1 1/2" ANSI 150 LB flange	10 - 250 l/min	15 - 235 l/min	Aluminium	PPS	FKM	443 998
				Stainless steel	Stainless steel	FEP/PTFE	444 003
50	G 2"	15 - 350 l/min	30 - 300 l/min	Aluminium	PPS	FKM	553 640
				Aluminium	PPS	FKM	553 641
	50 mm DIN PN16 flange	15 - 350 l/min	30 - 300 l/min	Aluminium	PPS	FKM	443 989
				Stainless steel	Stainless steel	FEP/PTFE	443 994
	2" ANSI 150 LB flange	15 - 350 l/min	30 - 300 l/min	Aluminium	PPS	FKM	443 999
				Stainless steel	Stainless steel	FEP/PTFE	444 004
80	G 3"	20 - 733 l/min	66 - 616 l/min	Aluminium	Aluminium	FKM	553 642
	NPT 3"	20 - 733 l/min	66 - 616 l/min	Aluminium	Aluminium	FKM	553 643
	80 mm DIN PN16 flange	20 - 733 l/min	66 - 616 l/min	Aluminium	Aluminium	FKM	553 645
	3" ANSI 150 LB flange	20 - 733 l/min	66 - 616 l/min	Aluminium	Aluminium	FKM	553 644
100	100 mm DIN PN16 flange	120 - 1200 l/min	---	Aluminium	Aluminium	FKM	553 647
	4" ANSI 150 LB flange	120 - 1200 l/min	---	Aluminium	Aluminium	FKM	553 646

Ordering chart for spare parts for sensor fitting S070

Description	Orifice Size		Materials	Item no.
	[mm]	[inch]		
Rotor	DN15	1/2"	PPS	550 933
			Stainless steel	550 934
	DN25	1"	PPS	550 937
			Stainless steel	550 938
	DN40	1 1/2"	PPS	550 941
			Stainless steel	550 942
	DN50	2"	PPS	550 945
			Stainless steel	550 946

Description	Orifice Size		Materials	Item no.
	[mm]	[inch]		
O-ring	DN15	1/2"	FEP/PTFE	550 929
			FKM	550 930
	DN25	1"	FEP/PTFE	550 935
			FKM	550 936
	DN40	1 1/2"	FEP/PTFE	550 939
			FKM	550 940
	DN50	2"	FEP/PTFE	550 943
			FKM	550 944

Interconnection possibilities with other Bürkert products



* Use only version with Hall transducer

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

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1209/7_EU-en_00891837



Positive displacement sensor fitting for continuous flow measurement

- DN15...DN100
- INLINE Quarter-Turn technology
- Electronics available for indication, monitoring, transmitting, On/Off control and batch control

Type S077 can be combined with...



Type SE30
 INLINE
 flow transmitter



Type SE32
 INLINE
 flow transmitter



Type SE35
 INLINE
 flow transmitter



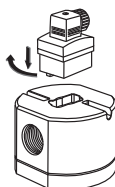
Type SE36
 INLINE ELEMENT
 flow transmitter

This positive displacement sensor fitting is specially designed for flow measurement and/or batch control of highly viscous fluids like glue, honey or oil.

This measuring element must be associated to a transmitter SE30, SE32, SE35, SE36 with hall sensor principle only, quickly and easily connected together by a Quarter-Turn.

The design of this fitting is based on the oval rotor principle. This has proven to be a reliable and highly accurate volumetric method of measuring flow. Exceptional repeatability and high accuracy over a wide range of viscosities and flowrates are features of that design. The low pressure drop and high pressure rating make it suitable for both gravity and pump (inline) applications

The Bürkert Quarter-turn technology



General data	
Compatibility	With transmitter SE30, SE32, SE35, SE36 with Hall sensor principle (see separate data sheet)
Wetted parts materials	
Body	Aluminium, stainless steel 316L (1.4401)
Rotor	PPS, aluminium, stainless steel 316L (1.4401)
Shaft	Stainless steel 316L (1.4401)
Seal	FKM or FEP/PTFE encapsulated
Complete device data	
Pipe diameter	DN15...DN100
Thread connection	1/2"; 1"; 1 1/2"; 2"; 3" (G or NPT)
Flange connection	25; 40; 50; 80 or 100 mm DIN PN16 flange 1"; 1 1/2"; 2"; 3" or 4" ANSI 150LB flange
Measuring range	
Viscosity > 5 mPa.s	2...1200 l/min (0.53...320 gpm)
Viscosity < 5 mPa.s	3...616 l/min (0.78...160 gpm)
Medium temperature max.	Aluminium body: -20...+80°C (-4...+176°F) Stainless steel body: -20...+120°C (-4...+248°F)
Medium pressure max.	
DN15	55 bar (798.05 PSI) (threaded process connection)
DN25	55 bar (798.05 PSI) ¹⁾
DN40 or DN50	18 bar (261.18 PSI)
DN80 / DN100	12 bar (174.12 PSI) / 10 bar (145.1 PSI)
Viscosity	1 Pa.s max. (higher on request)
Max. particles size	250 µm - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.
Measurement deviation	±1% of Reading (if "standard" K-factor is used) ±0.5% of Reading (if "specific" K-factor is used, on label of the product)
Repeatability	±0.03% of Reading

¹⁾ or in accordance to the value of the used flanges

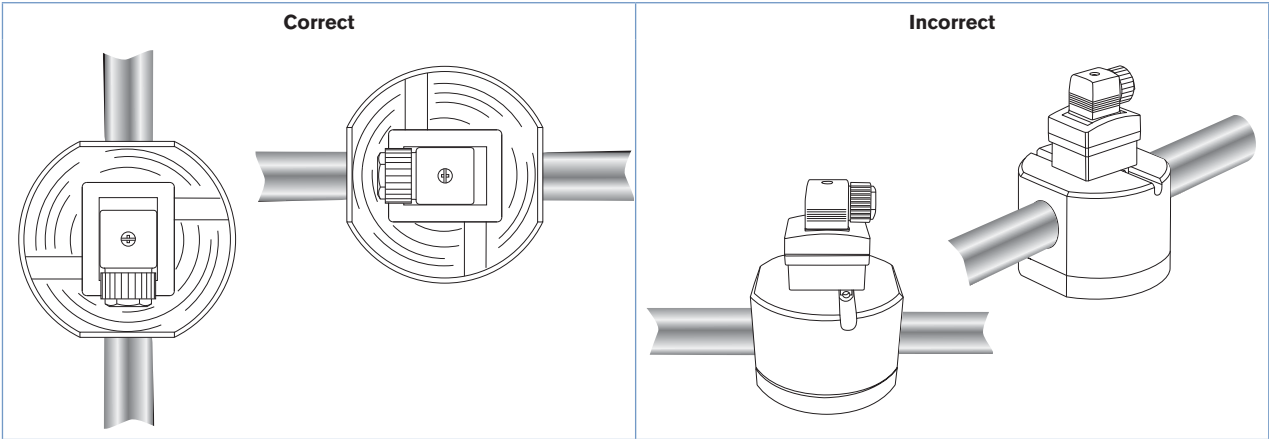
Environment	
Ambient temperature	0...+60°C (+32...+140°F) (operation and storage)
Standards, directives and approvals	
Directives	
Pressure	Complying with article 3 of §3 from 97/23/CE directive*. (without CE mark)

* For the 97/23/CE pressure directive, the device can only be used under following conditions (dependent on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, §1.3.a	Forbidden
Fluid group 2, §1.3.a	DN ≤ 32, or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Installation and operation

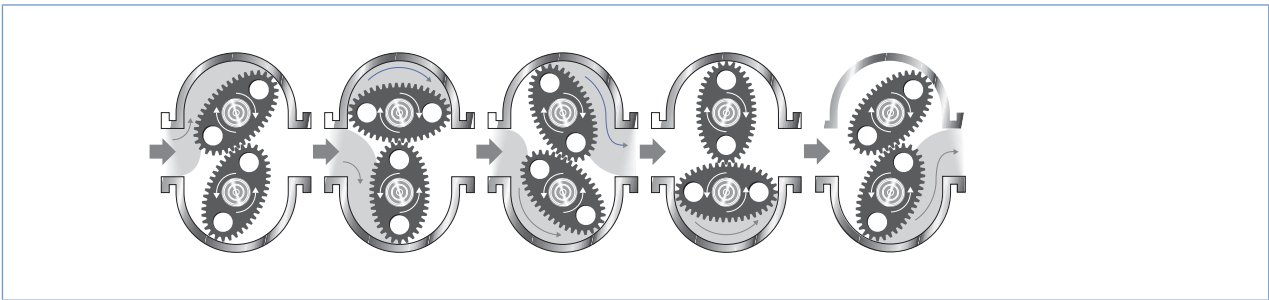
The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures below).



The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damages and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.

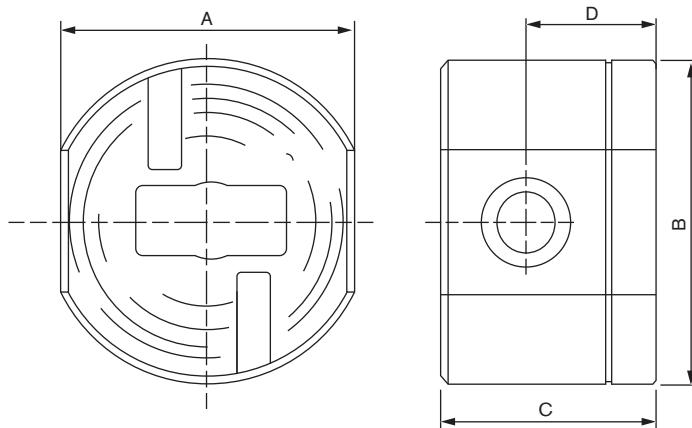
When fluid passes through the fitting, rotors turn. This rotation produces a measuring frequency in the associated hall sensor, which is proportional to the flow. The volume of the fluid being transferred in this way is exactly determined through the sensor geometry.

A conversion coefficient, specific to each meter size, enables the conversion of this frequency into a flow rate. The standard K factor depending on the meter size is available in the instruction manual of the sensor fitting S077, or to improve the measurement deviation, a specific K factor is given with each device on its label.



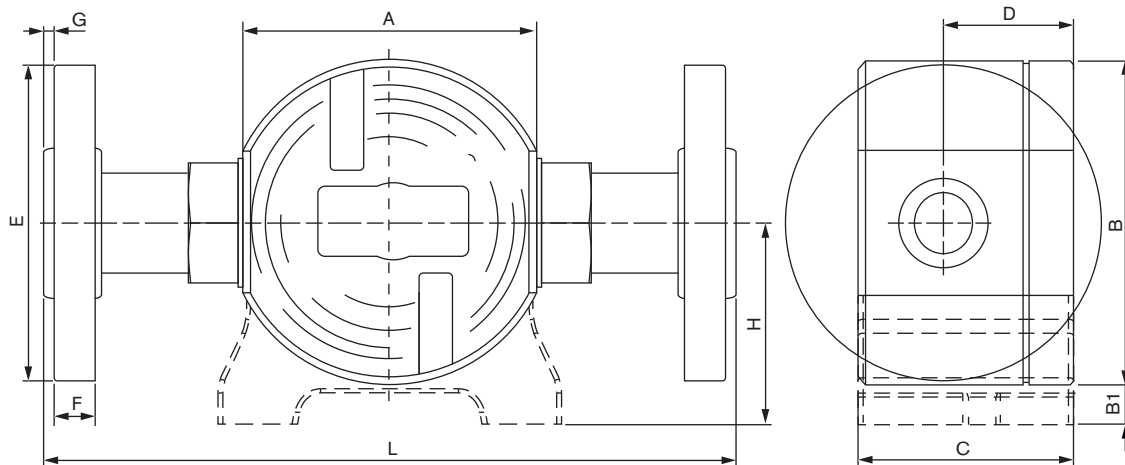
Dimensions [mm]

Threaded connection



Orifice DN	A		B	C	D
	St.	Alu			
15	81	81	87	49	28
25	100	100	112	75	45
40	120	120	137	103	61
50	140	140	163	124	72
80	260	302	220	180	80

Flanged connection



Orifice DN	A	B	B1	C	D	E		F		G		H	L			
						DIN	ANSI	DIN	ANSI	DIN	ANSI		Stainless steel		Aluminium	
													DIN	ANSI	DIN	ANSI
25	100	112	-	75	45	115	108	16.0	12.7	2	2	-	240	240	240	240
40	120	137	-	103	61	150	125	16.0	15.9	3	2	-	240	240	240	240
50	140	163	-	124	72	165	152	18.0	17.5	3	2	-	264	264	264	264
80	-	226	28	180	78	200	191	20.0	27.4	3	1.6	141	344	348	435	435
100	-	291	42	226	108	220	229	30.0	28.4	0	1.6	191	-	-	583	583

Ordering chart for sensor fitting Type S077

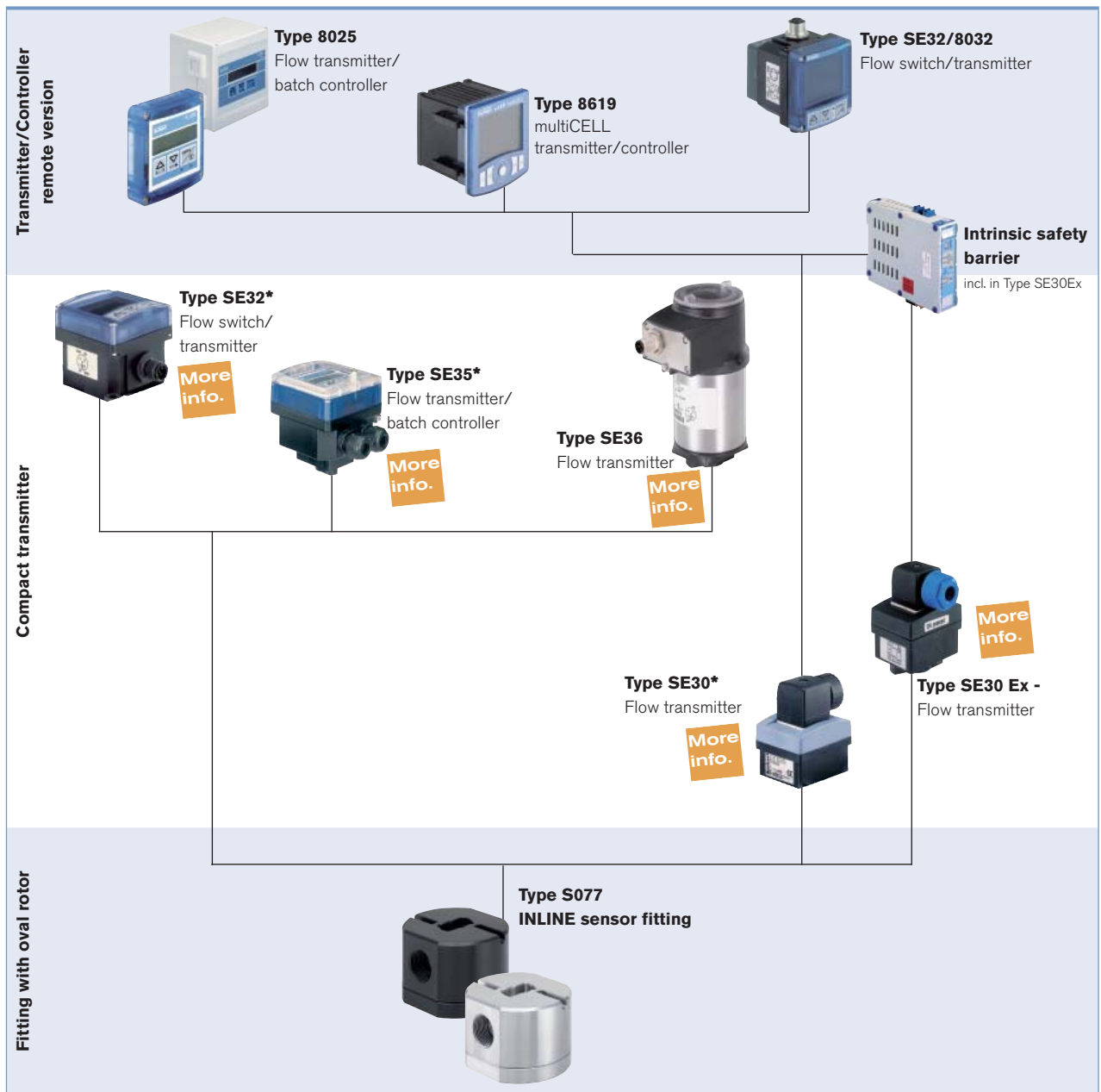
Orifice DN	Process connection	Flow Range		Body material	Rotor material	Seal	Item no.
		> 5 mPa.s	< 5 mPa.s				
15	G 1/2"	2...30 l/min	3...25 l/min	Aluminium	PPS	FKM	567 223
				Stainless steel	Stainless steel	FEP/PTFE	567 224
	NPT 1/2"	2...30 l/min	3...25 l/min	Aluminium	PPS	FKM	567 225
				Stainless steel	Stainless steel	FEP/PTFE	567 226
25	G 1"	6...120 l/min	10...100 l/min	Aluminium	PPS	FKM	567 227
				Stainless steel	Stainless steel	FEP/PTFE	567 228
	NPT 1"	6...120 l/min	10...100 l/min	Aluminium	PPS	FKM	567 229
				Stainless steel	Stainless steel	FEP/PTFE	567 230
	25 mm DIN PN16 flange	6...120 l/min	10...100 l/min	Aluminium	PPS	FKM	567 231
				Stainless steel	Stainless steel	FEP/PTFE	567 232
	1" ANSI 150 LB flange	6...120 l/min	10...100 l/min	Aluminium	PPS	FKM	567 233
				Stainless steel	Stainless steel	FEP/PTFE	567 234
40	G 1 1/2"	10...250 l/min	15...235 l/min	Aluminium	PPS	FKM	567 235
				Stainless steel	Stainless steel	FEP/PTFE	567 236
	NPT 1 1/2"	10...250 l/min	15...235 l/min	Aluminium	PPS	FKM	567 237
				Stainless steel	Stainless steel	FEP/PTFE	567 238
	40 mm DIN PN16 flange	10...250 l/min	15...235 l/min	Aluminium	PPS	FKM	567 239
				Stainless steel	Stainless steel	FEP/PTFE	567 240
	1 1/2" ANSI 150 LB flange	10...250 l/min	15...235 l/min	Aluminium	PPS	FKM	567 241
				Stainless steel	Stainless steel	FEP/PTFE	567 242
50	G 2"	15...350 l/min	30...300 l/min	Aluminium	PPS	FKM	567 243
				Aluminium	PPS	FKM	567 244
	50 mm DIN PN16 flange	15...350 l/min	30...300 l/min	Aluminium	PPS	FKM	567 245
				Stainless steel	Stainless steel	FEP/PTFE	567 246
	2" ANSI 150 LB flange	15...350 l/min	30...300 l/min	Aluminium	PPS	FKM	567 247
				Stainless steel	Stainless steel	FEP/PTFE	567 248
80	G 3"	20...733 l/min	66...616 l/min	Aluminium	Aluminium	FKM	567 249
	NPT 3"	20...733 l/min	66...616 l/min	Aluminium	Aluminium	FKM	567 250
	80 mm DIN PN16 flange	20...733 l/min	66...616 l/min	Aluminium	Aluminium	FKM	567 251
	3" ANSI 150 LB flange	20...733 l/min	66...616 l/min	Aluminium	Aluminium	FKM	567 252
	100 mm DIN PN16 flange	120...1200 l/min	---	Aluminium	Aluminium	FKM	567 253
100	4" ANSI 150 LB flange	120...1200 l/min	---	Aluminium	Aluminium	FKM	567 254

Ordering chart for spare parts for sensor fitting S077

Description	Orifice Size		Materials	Item no.
	[mm]	[inch]		
Rotor	DN15	1/2"	PPS	567 741
			Stainless steel	567 742
	DN25	1"	PPS	567 743
			Stainless steel	567 744
	DN40	1 1/2"	PPS	567 745
			Stainless steel	567 746
	DN50	2"	PPS	567 747
			Stainless steel	567 748

Description	Orifice Size		Materials	Item no.
	[mm]	[inch]		
O-ring	DN15	1/2"	FEP/PTFE	567 754
			FKM	567 755
	DN25	1"	FEP/PTFE	567 756
			FKM	567 757
	DN40	1 1/2"	FEP/PTFE	567 758
			FKM	567 759
	DN50	2"	FEP/PTFE	567 760
			FKM	567 761

Interconnection possibilities with other Bürkert products



* Use only version with Hall transducer

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

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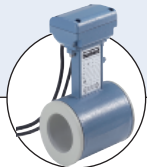
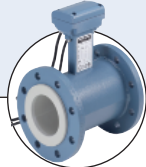

 SE56 standard
 with display,
 Housing in
 stainless steel


SE56 basic



SE56 blind

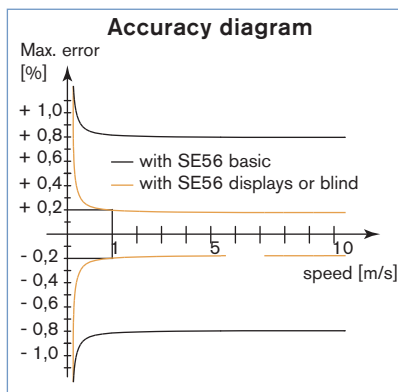
Type SE56 must be combined with...

**Type S051**
 Magnetic sensor fitting
 - for low flow
**Type S054**
 Magnetic sensor fitting
 - Wafer
**Type S055**
 Magnetic sensor fitting
 - Flange
**Type S056**
 Magnetic sensor fitting
 - Hygienic

The electronics Type SE56 (blind in compact version or with display in compact or remote version) connected to the magnetic flow sensor fitting Type S051, S054, S055 or S056 is designed for applications with liquids with a minimum conductivity of 5 $\mu\text{S}/\text{cm}$.

The device can be parameterize either with 3 keypads (version with display) or by computer via a serial interface.

As standard, the equipment is supplied with one or two transistor outputs and one digital input. As options, other features are available: such as high frequency output, current output, data logger 2 MB, PROFIBUS DP, HART.



Electronics for electromagnetic flowmeters

- Must be equipped with sensor fitting S051, S054, S055 or S056
- Continuous measurement or batch control
- High accuracy
- Data logger, PROFIBUS DP, HART available

Technical data (electronics SE56 standard with display)



Compatibility	S051, S054, S055, S056 sensor fitting (see separate data sheet 8051, 8054/8055, 8056)
Housing materials	Die casting aluminium or stainless steel 304 electro-polish
Display	Graphic display 8 lines x 16 Characters, 128 x 64 pixels with back light
Keyboard	3 membrane keys
Electrical connection	6 cable glands PG11



Medium temperature, please see separate data sheets of the complete magflowmeter 8051, 8054/8055, 8056

Environment

Ambient temperature	
Operating and storage	-20 to +60°C (-4 to 140°F)
Relative humidity	≤ 85%, without condensation
Height above sea level	-200 to 6000 m

Standard

Protection	Class I, IP67, category of installation II
Standard	
EMC	EN 61326-1
Emission	EN 55011 (Group1, Class B)
Immunity	IEC 1000-4-2/3/4/5/6/11
Safety	EN 61010

Technical data (electronics SE56 standard with display) - continued

Electrical data	
Power supply	90... 265 V AC - 44 Hz to 66 Hz
Power consumption	max. 25 VA
Cable length	max. 20 m (distance between sensor fitting and electronics)
Input circuit	1 digital, selectable function
Outputs	
Transistor	2 outputs, selectable open collector as pulse/frequency (1250 Hz, 100 mA, 40 V DC) or alarm (adjustable usage)
Current	1 output, 4... 20 mA - RL = 1000 Ω (+ a second output)*
Serial interface*	RS 485, RS232, PROFIBUS DP or HART
Datalogger*	2 MB, 32 values + 64 alarm events
Velocity range	0.4... 10 m/s

* on request.

Electrical data (continued)	
Measurements tolerance	Flow rate (volume) = $\pm 0.05\%$ of reading Out 4/20 mA = $\pm 0.08\%$ of reading Frequency out = $\pm 0.08\%$ of reading
Accuracy ¹⁾	$\pm 0.2\%$ of reading (see diagram, on page 1)
Repeatability	$\pm 0.1\%$ of reading
Galvanic isolation	All the input/outputs are galvanically isolated from power supply
Data storage	An EEPROM stores the measured values (in case of power failure)
Special functions	Bidirectional measure Dual measurement range Diagnostic function Empty pipe detection Remote configuration (for connection to PC or hand terminal through remote configuration tool kit) Batch function

¹⁾ under reference conditions: water temperature = 20°C, ambient temperature = 25°C, constant flow rate during the test, liquid speed > 1 m/s

Technical data (electronics SE56 blind)



General data	
Compatibility	S051, S054, S055, S056 sensor fitting (see separate data sheet 8051, 8054/8055, 8056)
Materials	
Housing	Stainless steel
Cover	PPS
Seal	EPDM
Display	None
Parameterization	Through remote configuration tool kit (accessories Item No. 559 374)
Electrical connection	2 cable glands PG9



Medium temperature, please see separate data sheets of the complete magflow-meter 8051, 8054/8055, 8056

Electrical data	
Power supply	20... 30 V DC
Power consumption	max. 10 W
Input	1 digital, selectable function
Outputs	
Transistor	2 outputs, selectable open collector as pulse/frequency (1250 Hz, 100 mA, 40 V DC) or alarm (adjustable usage)
Current	1 output, 4... 20 mA - RL = 800 Ω passive
Serial interface*	RS 485 or PROFIBUS DP

* on request.

Electrical data (continued)	
Accuracy ¹⁾	$\pm 0.2\%$ of reading (see diagram, on page 1)
Repeatability	$\pm 0.1\%$ of reading
Galvanic isolation	All the input/outputs are galvanically isolated from power supply
Data storage	An EEPROM stores the measured values (in case of power failure)
Special functions	Bidirectional measure Diagnostic function Empty pipe detection Remote configuration (for connection to PC or hand terminal) Batch function
Velocity range	0.4... 10 m/s

Environment	
Ambient temperature Operating and storage	-20 to 40°C (-4 to 104°F)
Relative humidity	≤ 85%, without condensation
Height above sea level	-200 to 6000 m

Standard	
Protection	Class I, IP67, category of installation II
Standard	
EMC	EN 61326-1
Emission	EN 55011 (Group1, Class B)
Immunity	IEC 1000-4-2/3/4/5/6/11
Safety	EN 61010

Technical data (electronics SE56 basic)



General data

Compatibility	S051, S054, S055, S056 sensor fitting (see corresponding data sheet)
Materials Housing	PA6 with glass fibre
Display	Alphanumeric display 2 lines x 16 Characters, without back light
Parameterization	Through remote configuration tool kit (accessories Item No. 559 374) or 3 keys inside
Electrical connection	3 cable glands PG11



Medium temperature, please see separate data sheets of the complete magflow-meter 8051, 8054/8055, 8056

Electrical data

Power supply	90... 265 V AC or 12... 60 V DC
Power consumption	max. 6 W
Input	1 digital, selectable function
Outputs Transistor	2 outputs, selectable open collector as pulse/frequency (1250 Hz, 100 mA, 40 V DC) or alarm (adjustable usage)
Current	1 output, 4... 20 mA - RL = 800 Ω passive
Serial interface*	RS 485

* on request.

Electrical data (continued)

Measurements tolerance	Flow rate (volume) = $\pm 0.1\%$ of reading Out 4/20 mA = $\pm 0.12\%$ of reading Frequency out = $\pm 0.12\%$ of reading
Accuracy	$\pm 0.8\%$ of reading (see diagram, on page 1)
Repeatability	$\pm 0.2\%$ of reading
Galvanic isolation	All the input/outputs are galvanically isolated from power supply
Data storage	An EEPROM stores the measured values (in case of power failure)
Special function	Bidirectional measure Diagnostic function Empty pipe detection Plug in (protected plug for connection to PC or hand terminal)
Velocity range	0.4... 10 m/s

Environment

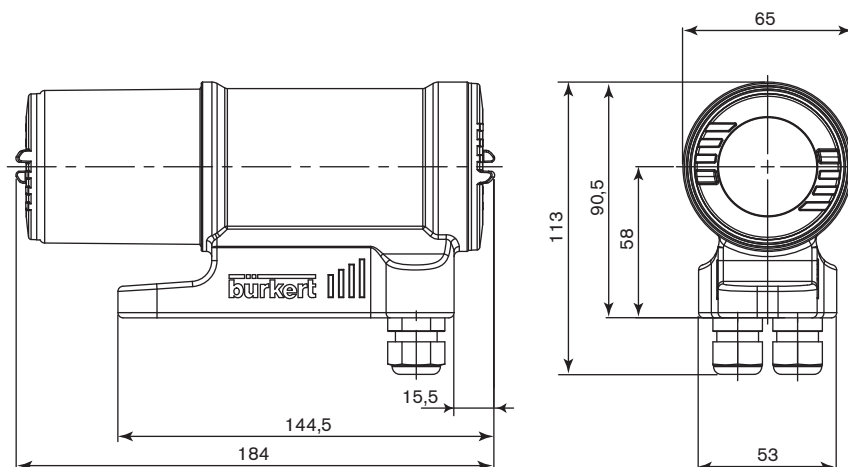
Ambient temperature Operating	-10 to 50°C (14 to 122°F)
Storage	-20 to 50°C (-4 to 122°F)
Relative humidity	$\leq 85\%$, without condensation
Height above sea level	-200 to 6000 m

Standard

Protection	Class I, IP65, category of installation II
Standard EMI Safety	EN 55011 (Group1, Class B) EN 61326-1, IEC 1000-4-2/3/4/5/6/11 EN 61010

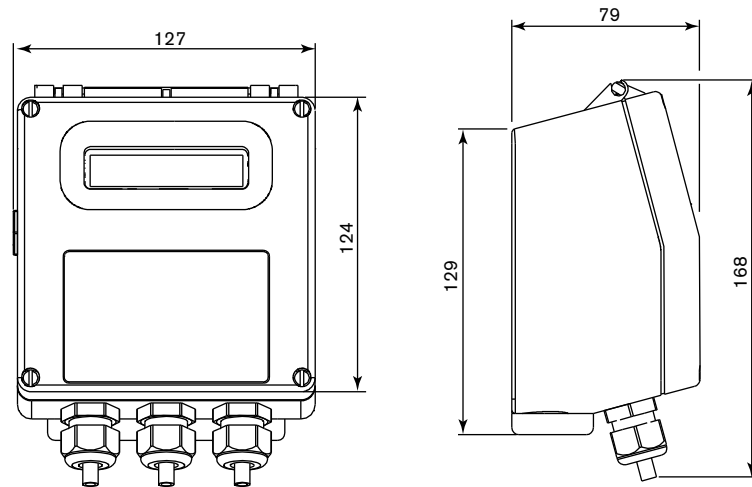
Dimensions [mm]

Electronics SE56 blind

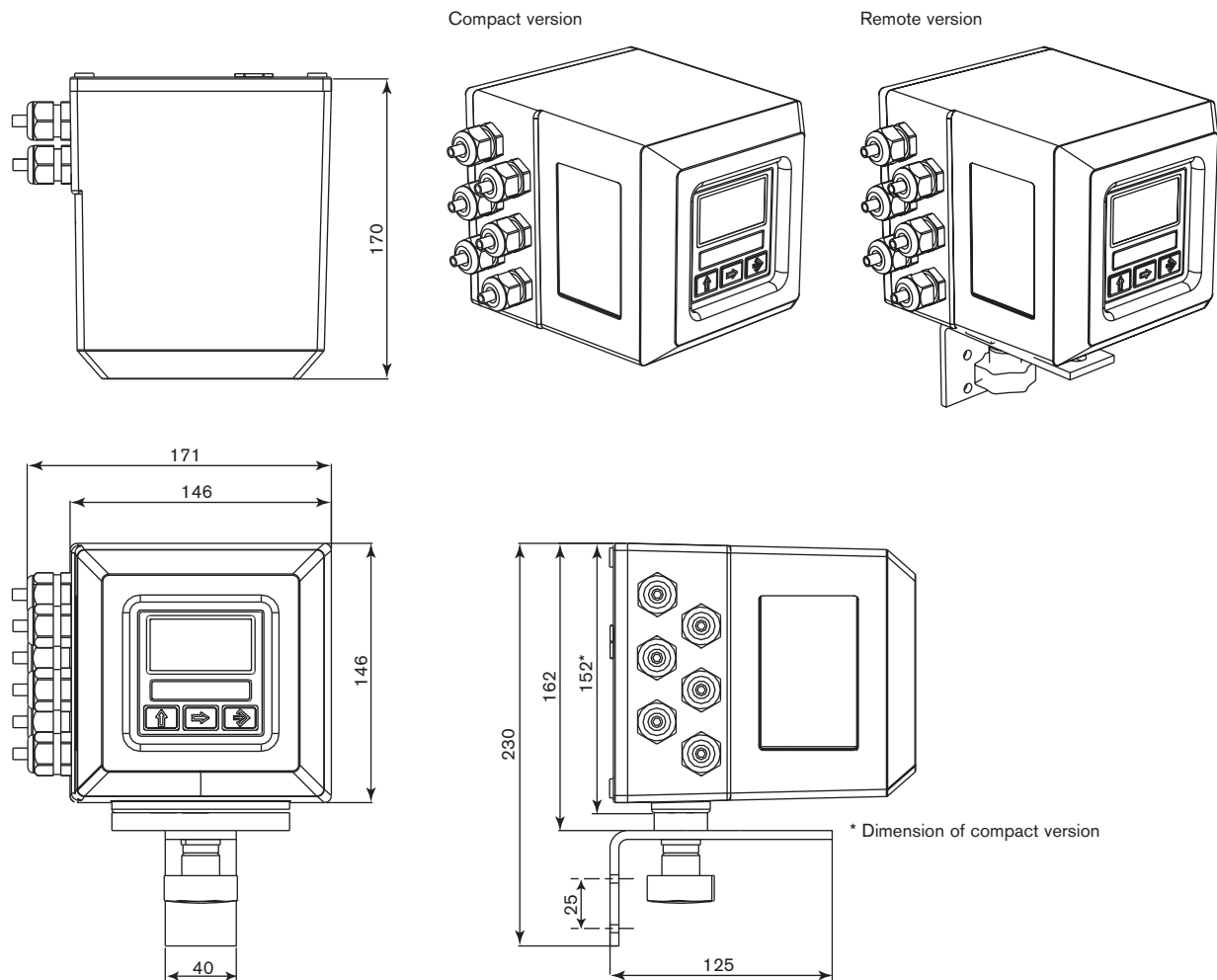


Dimensions [mm]

Electronics SE56 Basic



Electronics SE56 standard with display

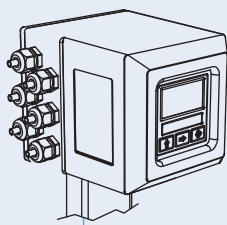


Ordering information for complete full bore magflowmeter Type 8051, 8054/8055 or 8056

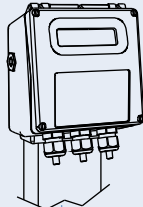
A complete full bore magflowmeter consists of a sensor fitting and an electronics SE56.

Examples for variations of complete full bore magflowmeter (electronics + sensor fitting)

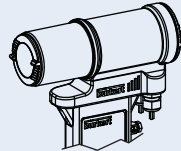
Electronics Type SE56



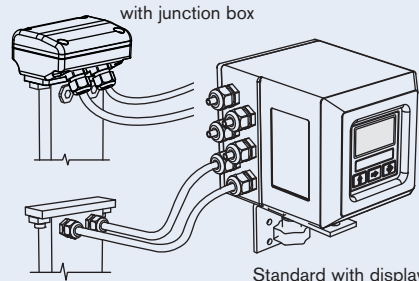
Standard with display
compact version



Basic (with or without display)
compact version



Without display (blind)
compact version

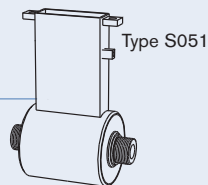


Standard with display
remote version

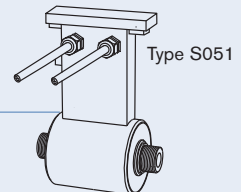
Magflowmeter Type 8051

More info.

For more technical information about this product, click on this box... you will come to our website for this product where you can download the datasheet.



Compact version
sensor fitting

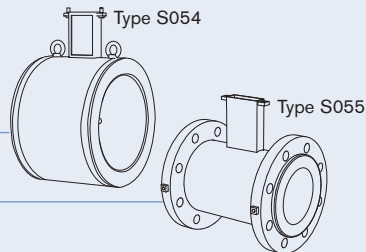


Remote version
sensor fitting

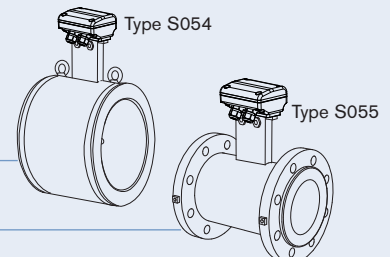
Magflowmeter Type 8054/8055

More info.

For more technical information about this product, click on this box... you will come to our website for this product where you can download the datasheet.



Compact version
sensor fitting

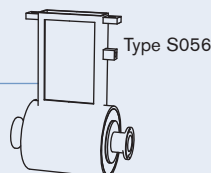


Remote version
sensor fitting

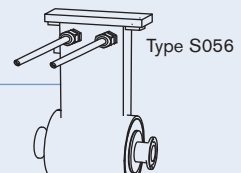
Magflowmeter Type 8056

More info.

For more technical information about this product, click on this box... you will come to our website for this product where you can download the datasheet.



Compact version
sensor fitting



Remote version
sensor fitting

The following information is necessary for the selection of a complete full bore magflowmeter:

- **item no.** of the sensor fitting **Type S051, Type S054/Type S055 or Type S056** (see separate data sheets of the complete magflowmeter 8051, 8054/8055, 8056)
- **item no.** of the electronics **Type SE56** (Ordering chart on page 6)

Ordering chart for electronics Type SE56 for magflowmeter

Description	Power supply	Output	Body material	Electrical connection	Item no.
Standard compact version with display	90... 265 V AC	2 transistors	Aluminium	6 cable glands	558 745
			Stainless steel	6 cable glands	559 780
		2 transistors + 4... 20 mA	Aluminium	6 cable glands	558 747
			Stainless steel	6 cable glands	558 306
Standard wall-mounting version with display	90... 265 V AC	2 transistors	Aluminium	6 cable glands	559 781
			Stainless steel	6 cable glands	558 310
		2 transistors + 4... 20 mA	Aluminium	6 cable glands	558 750
			Stainless steel	6 cable glands	558 308
Basic compact version with display	90... 265 V AC	2 transistors	Nylon	3 cable glands	562 439
		2 transistors + 4... 20 mA	Nylon	3 cable glands	562 440
	12... 60 V DC	2 transistors	Nylon	3 cable glands	562 443
		2 transistors + 4... 20 mA	Nylon	3 cable glands	562 444
Basic compact version without display	90... 265 V AC	2 transistors	Nylon	3 cable glands	562 441
		2 transistors + 4... 20 mA	Nylon	3 cable glands	562 442
	12... 60 V DC	2 transistors	Nylon	3 cable glands	562 445
		2 transistors + 4... 20 mA	Nylon	3 cable glands	562 446
Blind compact version	20... 30 V DC	up to 4 transistors	Stainless steel	2 cable glands	559 132
		up to 4 transistors + 4... 20 mA	Stainless steel	2 cable glands	559 133
		up to 4 transistors + PROFIBUS DP	Stainless steel	2 cable glands	559 134



Further versions on request

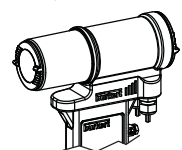
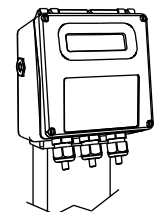
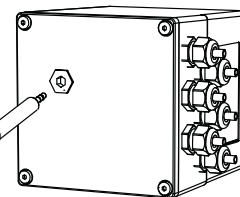
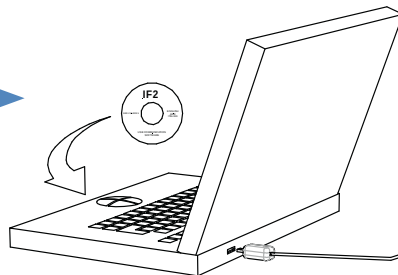
Please also use the "request for quotation" form on page 7 for ordering a customized electronics [go to page](#).

Ordering chart - accessories

Description	Item no.
Remote configuration tool kit	559 374

Configuration accessories

Remote configuration tool kit



Electronics Type SE56 for magflowmeter - request for quotation

Note

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

Please fill out and send to your nearest Bürkert facility* with your inquiry or order.

NOTE : Please take into account that the electronics Type SE56 must be associated with a sensor fitting Type S051, S054, S055 or S056.

Company:	Contact person:
Customer No.:	Department:
Address:	Tel. / Fax.:
Postcode / Town:	E-mail:

Electronics SE56 standard with display

Quantity: Desired delivery date:

■ Mounting version

☐ Compact☐ Wall-mounting☐ Panel-mounting (body only in plastic)

■ Body material

☐ Aluminium☐ Stainless steel

■ Power supply

☐ 90... 265 V AC☐ 18... 63 V DC / 15... 45 V AC☐ 10... 35 V DC

■ Outputs

☐ 4... 20 mA☐ RS 485☐ PROFIBUS DP☐ 2 transistors☐ 2 transistors + 4... 20 mA☐ 2 transistors (one of them: 10 KHz)☐ 2 transistors + 1 x RS 232☐ 2 transistors + 4... 20 mA + 1 x RS 232☐ Data Logger 2 MB☐ HART Protocol☐ 2 Relays 60 V AC☐ 2 Relays 250 V AC

reset form - Standard version

Electronics SE56 blind, compact, in stainless steel, 20... 30 V DC

Quantity: Desired delivery date:

■ Outputs

☐ 4... 20 mA☐ RS 485☐ PROFIBUS DP

reset form - Blind version

Electronics SE56 basic, compact, in plastic

Quantity: Desired delivery date:

■ Display

☐ With☐ Without

■ Power supply

☐ 90... 265 V AC☐ 12... 60 V DC/18... 45 V AC

■ Outputs

☐ 4... 20 mA☐ RS 485

reset form - Basic version

Reset form

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