



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



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.

Alarm

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 fi	tting + electronic module)
Pipe diameter	DN15 to DN50
Switching range	4.7 to 75.4 I/min (see selection table - on page 3)
Flow velocity max.	10 m/s
Medium temperature with sensor fitting in PVC PP, PVDF, brass, stainless steel	0 to 50°C (32 to 122°F) 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)

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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	\leq 80%, without condensation
Standards, directives and appro	vals
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	$DN \le 25$ only
Fluid group 2, §1.3.a	$DN \le 32$ or $DN > 32$ and $PN^*DN \le 1000$
Fluid group 1, §1.3.b	$PN*DN \le 2000$
Fluid group 2, §1.3.b	$DN \leq 200$

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 PDVF
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	Fluid velo	city (Wate	r) [m/s]	Flow rate					
fitting		min.	max.	Variation way	l/n	nin	m³/h			
	DN				min.	max.	min.	max.		
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		







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]



High of Electronic SE10 + Sensor fitting S010



True union connection - (solvent or fusion spigot)



Spigot connection - (solvent or fusion spigot)



DN	Р	True u in Plas	rue union connection n Plastic							Spigot in PVC	connecti	on	Spigot in PP or	connecti PVDF	on	
		L1	L2	L3			øD			øΑ	L	øD	L2	L	øD	L2
				DIN	ANSI*	JIS*	DIN	ANSI*	JIS*							
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															



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Dimensions [mm]





Ordering chart for flow switch Type 8010

Electronic module Type SE10 - for sensor fitting Type S010

Output	Electrical con- nection	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)

ion			Item no.								
nnect		7			Range 1	Range 2					
Port coi	Seal	Standar	DN15	DN20	DN25	DN32	DN40	DN32	DN40	DN50	
Brass - Tempe	erature	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	- Tem	perature max. 55°C, F	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 - Tempera	ature n	nax. 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 - Temperat	ure ma	ax. 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	ltem 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

M

E

Materials Stainless steel sensor holder

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

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 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	ltem 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]



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



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), $\dot{\text{IS}}$ designed for applications with conductivities as low as 5 µS/cm.

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



Tri-Clamp® is a registered Trademark of Alfa Laval Inc.

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



Type 2702 (1067) SideControl system

Type 8644 Valve islands





echnical data				
General data - S051 sensor bod	ly			
Compatibility	SE56 electronics (see corresponding datasheet)			
Materials Body Wetted parts (connection) Electrode	Stainless steel 304 (1.4301) Stainless steel 316L (1.4404) or 304 (1.4301) for full lining Stainless steel 316L			
Lining / Gasket	[Hastelloy C, Iitanium, Iantalum, Platinum-rhodium on request]* PTFE / FKM, EPDM or FFKM			
Electrical connection	2 cable glands (PG9)			
Complete system data 8051 (S0	51 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 Separate 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] -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 μ S/cm (or 20 μ S/cm with demineralized water)			
Environment - S051 sensor bod	У			
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 EMI / Safety	EN55011 (Group 1, Class B) IEC1000-4-2/3/4/5/6/11 / EN61010			
inder reference conditions: water temperatur	$e = 20^{\circ}$ C ambient temperature = 25°C test time > 60 s			

1) converter warm-up > 60', constant flow rate during the test, pressure = 500 mbar, liquid speed > 1m/s* on request





More info.

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)

you will co Examples for variations of complete full bore magflowmeter our website for this broduct where you can download the datasheet. Transmitter / batch controller Type SE56 SC-B With local display Without display (blind) With local display Compact version Compact version Remote version Magnetic sensor body Type S051 6 6 Separate version **Compact version** Fitting-Sensor 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 acces-

sories.



2 X DN

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.





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



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





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





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

escription	rifice [mm]	nocess	Flow rate range	[I /J]	ody aterial	letted parts aterial	ning aterial	em no.
ă	0	Ξŏ	min. 00.4 m/s	max. 010 m/s	άE	3 E	3 5	프
Compact version	03	G1/4" (ISO 228-1)	0 10	0 250	SS 304	SS 316L	PTFE	554 321
Ta al		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
	20	G1" (ISO 228-1)	0 500	0 12500	SS 304	SS 316L	PTFE	553 539
		NPT1"	0 500	0 12500	SS 304	SS 316L	PTFE	553 663
Separate version	03	G1/4" (ISO 228-1)	0 10	0 250	SS 304	SS 316L	PTFE	448 487
- with 10 m	06	G3/8" (ISO 228-1)	0 40	0 1000	SS 304	SS 316L	PTFE	448 488
(included)	10	G1/2" (ISO 228-1)	0 120	0 3000	SS 304	SS 316L	PTFE	448 489
	15	G3/4" (ISO 228-1)	0 240	0 6000	SS 304	SS 316L	PTFE	448 490
	20	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	ltem no.
With local display	90 - 265 V AC	2 transistors	Aluminium	6 cable glands	558 745
compact version			Stainless steel	6 cable glands	559 780
		2 transistors + 420 mA	Aluminium	6 cable glands	558 747
			Stainless steel	6 cable glands	558 306
With local display	90 - 265 V AC	2 transistors	Aluminium	6 cable glands	559 781
remote version			Stainless steel	6 cable glands	558 310
		2 transistors + 420 mA	Aluminium	6 cable glands	558 750
			Stainless steel	6 cable glands	558 308
Blind	20 - 30 V DC	Transistor	Stainless steel	2 cable glands	559 132
compact version		Transistor + 420 mA	Stainless steel	2 cable glands	559 133
		Transistor + Profibus DP	Stainless steel	2 cable glands	559 134
					000104

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



Note

Low-flow sensor body Type S051 - request for quotation

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

Please fill out and send to your nearest Bürk NOTE : Please take into account that the sensor body T	You can fill out the fields directly in the PDF file	
Company:	Contact person:	before printing
Customer No.:	Department:	Out
Address:	Tel. / Fax.:	
Postcode / Town:	E-mail:	

Full Bore Magflow set	nsor body S051			
	Quantity:		ſ	Desired delivery date:
Pipe diameter:	🗌 DN 03	DN 06 DN 10	DN 15	5 🗌 DN 20
Process fitting conn	ection:			
External thread	 □ ISO 228-1 □ NPT 	DIN 11851		
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 linin	g	
Electrodes ¹⁾	□ 316L (2 M.E.)*			
	Hastelloy (2 M.E. + 2 G.E.)	* 🗌 Tantalum (2 M.E. + 2 G.E.)*	* M.E	. = measuring electrode and G.E. = ground electrode
	☐ Titanium (2 M.E. + 2 G.E.)*	☐ Platinum (2 M.E. + 2 G.E.)*		
Sensor body version	: 🗌 Compact	Separate		

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.

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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



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	
Electrical data Sensor	Hall
Electrical data Sensor Current consumption	Hall ≤ 9 mA
Electrical data Sensor Current consumption Output frequency	Hall ≤ 9 mA Open collector, NPN,
Electrical data Sensor Current consumption Output frequency	Hall ≤ 9 mA Open collector, NPN, max. 25 mA, 4.5 to 24 V DC
Electrical data Sensor Current consumption Output frequency K-factor	Hall ≤ 9 mA Open collector, NPN, max. 25 mA, 4.5 to 24 V DC
Electrical data Sensor Current consumption Output frequency K-factor 0.5-50 l/h	Hall ≤ 9 mA Open collector, NPN, max. 25 mA, 4.5 to 24 V DC 1552 pulses/I
Electrical data Sensor Current consumption Output frequency K-factor 0.5-50 l/h 2-100 l/h	Hall ≤ 9 mA Open collector, NPN, max. 25 mA, 4.5 to 24 V DC 1552 pulses/I 1000 pulses/I
Electrical data Sensor Current consumption Output frequency K-factor 0.5-50 l/h 2-100 l/h 15-500 l/h	Hall ≤ 9 mA Open collector, NPN, max. 25 mA, 4.5 to 24 V DC 1552 pulses/l 1000 pulses/l 400 pulses/l

Complete device data	a
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	$75\mu m$ - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a $75\mu m$ (200 mesh) strainer as close as possible to the inlet side of the meter.
Accuracy	\leq ± 1% of Reading
Repeatability	\leq 0.03% of Reading
Environment	
Ambient temperature Aluminium or PPS body Stainless steel body	(operating and storage) + 80 °C max. + 120 °C max.
Standards and appro	vals
Protection class	IP54 (NEMA 13)

burkert

Ordering chart for sensor Type 8071

Process connection	> 1 cps	Yange < 1 cps	Body material	Max. pressure	Rotor / shaft material	Gasket	Item no.
G 1/8	0.5-50 l/h	5-50 l/h	Aluminium	5 bar	Stainless steel	FKM	552 818
	(0.13 to 13.2 gph)	(1.32 to 13.2 gph)	Stainless steel	10 bar	Stainless steel	FKM	552 820
				55 bar	Stainless steel	FKM	553 628
NPT 1/8	0.5-50 l/h	5-50 l/h	Aluminium	5 bar	Stainless steel	FKM	552 819
	(0.13 to 13.2 gph)	(1.32 to 13.2 gph)	Stainless steel	10 bar	Stainless steel	FKM	552 821
				55 bar	Stainless steel	FKM	553 629
Process connection	> 5 cps	Ge X 3 Sqps	Body material	Max. pressure	Rotor / shaft material	Gasket	ltem no.
G 1/4	2-100 l/h	12.5-100 l/h	PPS	5 bar	PPS / Hastalloy C	FKM	432 288
	(0.53 to 26.4 gph)	(3.3 to 26.4 gph)				EPDM	550 072
			Stainless steel	10 bar	Stainless steel	FKM	433 864
						EPDM	551 817
				55 bar	Stainless steel	FKM	550 146
	15-500 l/h	40-500 l/h	PPS	5 bar	PPS / Hastalloy C	FKM	430 856
	(4.00 to 132 gph)	(10.56 to 132 gph)				EPDM	434 364
			Stainless steel	10 bar	Stainless steel	FKM	437 518
						EPDM	553 651
				55 bar	Stainless steel	FKM	553 631
	15-500 l/h for	high viscosity*	Stainless steel	10 bar	Stainless steel	FKM	552 426
NPT 1/4	2-100 l/h	12.5-100 l/h	PPS	5 bar	PPS / Hastalloy C	FKM	448 654
	(0.53 to 26.4 gph)	(3.3 to 26.4 gph)	Stainless steel	10 bar	Stainless steel	FKM	448 656
				55 bar	Stainless steel	FKM	553 630
	15-500 l/h	40-500 l/h	PPS	5 bar	PPS / Hastalloy C	FKM	448 655
	(4.00 to 132 gph)	(10.56 to 132 gph)	Stainless steel	10 bar	Stainless steel	FKM	448 657
				55 bar	Stainless steel	FKM	553 632
	15-500 l/h for high viscosity*		Stainless steel	10 bar	Stainless steel	FKM	553 652

* > 1000 cps

Ordering chart for spare parts (to be ordered separately)

Dimensions [mm]

Specifi- cations	ltem 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



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Type 8039 can be combined with ...





Type 8801-YE On/Off System, angle-seat valve

Type 8611 Universal Controller eControl

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





Type 8644-P AirLINE Valve island with electronic I/O

Type 6014



Solenoid valve

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	PC, +20% glass fibre reinforced Polyester PA Brass / PVDF PVDF Ceramics (Al ₂ O ₃) / FKM
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	±1% of Reading ¹⁾ (at the teach flow rate value) ±3% of Reading ¹⁾ ±0.5% of FS.*
Repeatability	±0.4% of Reading ¹⁾

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 appro	ovals
Protection class	IP65 with connector plugged-in and tightened
Standard and directives EMC Low voltage Pressure Vibration	EN 50081-1, 50082-2 EN 61010-1 Complying with article 3 of §3 from 97/23/CE directive.* EN 60068-2-6 EN 60068-2-7

* 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	$DN \le 25$ 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



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 mesuring 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



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 $\mathsf{DN40}$





Dimensions 8039



DN	F	с	G1			L1
[mm]	[mm]	[mm]	[inch]	[inch]	[mm]	[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	F	С	G1			L1
[mm]	[mm]	[mm]	[inch]	[inch]	[mm]	[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	ltem 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	ltem no. DN 06* - 1/4"	ltem no. DN 06* - 1/25"	ltem no. DN 08* - 1/2"	ltem no. DN 15 - 1/2"	ltem no. DN 20 - 3/4"	ltem no. DN 25 - 1"	ltem no. DN 32 - 1 1/4"	ltem no. DN 40 - 1 1/2"	ltem 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	
5-pin M12 female connector moulded on cable (2 m, shielded)	
Cable plug EN 175301-803 with cable gland (Type 2508)	
Cable plug EN 175301-803 with NPT1/2 " reduction without cable gland (Type 2509)	
Sensor armatures in PVDF with paddle wheel, FKM seal, screws for DN15 (except DN15 v2 and DN20 v2) to DN50	
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



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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



INSERTION T-fitting

Type S020 Spigot







PLC

Type 8025 Universal transmitter/ batch controller (remote version)

Type 8802-GD TopControl System

Type 8644 Valve islands with electronic I/O

Technical data				
General data				
with fittings S020 (see corresp. datasheet)				
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)				
Ra < 0.8 µm (Clamp connection)				
2 cable glands M20 x 1.5				
0.5 to 1.5 mm ² 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)				

	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		

The electromagnetic flowmeter 8041 has been designed to measure flow rate of neutral and slightly aggressive fluids with a conductivity of more than 20 µS/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 bargraph.

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).



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⁾
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	\leq 220 mA (at 18 V DC)	
Output		
Signal current	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	
Frequency	0 240 Hz, duty cycle = $50\% \pm 1\%$; 100 mA max., protected against short-circuits and polarity reversals.	
Relay	Normally open or normally closed (depending on wiring), 3 A, 250 V AC	
4 20 mA output accuracy	±1%	
Alarm		
Full scale exceeding	22 mA and 256 Hz	
Fault signalling	22 mA and 0 Hz	
User parameter	Saved in EEPROM	
Standards, directives and approvals		
Protection class	IP65	
Standards and directives		

Protection class	IP65
Standards and directives	
EMC	EN 50081-1, EN 61000-6-2
Low voltage (LVD)	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
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	$DN \le 200 \text{ or}$ $PpN \le 10 \text{ or}$ $PN^*DN \le 5000$		





Pressure/Temperature diagram

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



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 $20 \ \mu$ S/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]



* 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]



DN	н				
	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.





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)



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)
- •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)



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)

Specifica- tions	ltem 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 \leq 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 sen- sor + 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		Type 5281 - Solenoid valve	3		Type 802 Universal batch con Wall-mour panel-mour	15 - transmitter/ itroller nted or unted
	4 20 mA	Relay	,		Frequ	ency	
	current output	outpu	ıt		outpu		
Type S020 Insertion fitt with clamp c (see corresp. d	Type 8041 - Electromagnetic flowmeter with clamp connection ing for flowmeter connection ata sheet)		Typ Elec with	e 8041 - tromagnetic flowme G2" connection	eter Type S Insertic vith G2 (see corr	i020 - In fitting for flowr ?" connection esp. data sheet)	neter
tion	hb	DN06 DN08	DN32 Short sensor	DN50 DN65	DN100	DN200	DN350 DN400

nection		T-fitting 🧄 🍌	(1)	Short se	nsor				
vith con		Welding socket				Short sen	sor	Long sensor	
wmeter v	G2 "	Fusion spigot				Short sensor		Long sensor	
s for flov		Screw-on						Long sensor	
0 fitting		Saddle 🦣				Long sen	sor		
able S02	du	T-fitting							
Avail	Cla	Welding socket 🤤							

 $^{\scriptscriptstyle (1)}$ DN06 and DN08 in stainless steel S020 only, 8041 with stainless steel sensor recommended

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

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

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Type 6223 Solenoid control valve Type 8801-YE Element On/Off system

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 µS/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



Type 8802-DD Classic Continuous system

Type 8644 Valve islands



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 electronic				
Pipe diameter	DN25DN200 [to DN2000]*			
Measuring range	00.72 m³/h to 01130 m³/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 deviation ¹⁾	± 0.2% of reading (SE56 standard; SE56 blind)			
see diagram, opposite	± 0.8% of reading (SE56 basic)			
Repeatability	± 0.1% (SE56 standard; SE56 blind)			
	± 0.2% (SE56 basic)			
Minimum conductivity	5 μ S/cm (or 20 μ S/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

8054/8055



More info.

Environment	
Ambient temperature with	
SE56 standard	-20+60°C (-4+140°F) (operating and storage)
SE56 basic	-10+50°C (14+122°F) (operating)
	-20+50°C (-4+122°F) (storage)
SE56 blind	-20+40°C (-4+104°F) (operating and storage)
Standard	
Stalluaru	
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	EN 61326-1,
Emission / Immunity	EN 55011 (Group 1, Class B) / IEC 1000-4-2/3/4/5/6/11
Safety	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)



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.

8054/8055



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	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





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



150

200

344

341

399

401

300

350

EN1092-1

EN1092-1

ANSI 150 RF

ANSI 150 RF

22

27.4

24

30.6

8 x 22

8 x 22.2

12 x 22

8 x 22.2

240

295

241.3

298.5

212

268

215.9

269.9

285

340

279.4

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	[mm] NO	Process connection	min 0.04 m/s	range [m ³ /h]	Body material	Number of electrodes	Electrode material	Material: Lining/Seal	ltem no.
Type S054	25	Wafer type	00.72	018	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 532
Compact version	32	Wafer type	01.16	029	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 435
	40	Wafer type	01.80	045	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 101
t-t	50	Wafer type	02.88	072	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 700
	65	Wafer type	04.80	0120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 436
	80	Wafer type	07.20	0180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 142
	100	Wafer type	011.20	0280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 342
	125	Wafer type	018.00	0450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 953
	150	Wafer type	025.60	0640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 954
	200	Wafer type	045.20	01130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	561 912
Type S055	25	EN1092-1	00.72	018	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 540
Compact version		ANSI 150 RF	00.72	018	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 353
	32	EN1092-1	01.16	029	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 541
por		ANSI 150 RF	01.16	029	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	560 047
loo loo	40	EN1092-1	01.80	045	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 542
		ANSI 150 RF	01.80	045	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	560 048
- 650	50	EN1092-1	02.88	072	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 485
		ANSI 150 RF	02.88	072	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 354
	65	EN1092-1	04.80	0120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 393
		ANSI 150 RF	04.80	0120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	558 785
	80	EN1092-1	07.20	0180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 394
		ANSI 150 RF	07.20	0180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 351
	100	EN1092-1	011.20	0280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	553 489
		ANSI 150 RF	011.20	0280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 352
	125	EN1092-1	018.00	0450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 318
		ANSI 150 RF	018.00	0450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 955
	150	EN1092-1	025.60	0640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	557 512
		ANSI 150 RF	025.60	0640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	561 426
	200	EN1092-1	045.20	01130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	554 217
		ANSI 150 RF	045.20	01130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	560 568

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Description	DN [mm]	Process connection	tion Flow min. 00.4 m/s	Lange max. 010 m/s	Body material	Number of electrodes	Electrode material	Material: Lining/Seal	ltem no.
Type S055	25	EN1092-1	00.72	018	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 492
Remote version		ANSI 150 RF	00.72	018	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 598
(included)	32	EN1092-1	01.16	029	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 493
		ANSI 150 RF	01.16	029	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 958
	40	EN1092-1	01.80	045	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 494
(Peller		ANSI 150 RF	01.80	045	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	559 599
	50	EN1092-1	02.88	072	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 495
o de		ANSI 150 RF	02.88	072	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 128
	65	EN1092-1	04.80	0120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 496
		ANSI 150 RF	04.80	0120	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 959
	80	EN1092-1	07.20	0180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 497
		ANSI 150 RF	07.20	0180	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 129
	100	EN1092-1	011.20	0280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	448 498
		ANSI 150 RF	011.20	0280	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	555 666
	125	EN1092-1	018.00	0450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	560 144
		ANSI 150 RF	018.00	0450	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	562 956
	150	EN1092-1	025.60	0640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	554 141
		ANSI 150 RF	025.60	0640	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	PP/FKM	561 952
	200	EN1092-1	045.20	01130	Carbon steel	3 (2 measure + 1 for ground)	SS 316L	Ebonite/-	559 753
		ANSI 150 RF	045.20	01130	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 (0, 0) to page .

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

Description	Power supply	Outputs	Body material	Electrical connection	ltem no.
Standard	90265 V AC	2 transistors	Aluminium	6 cable glands	558 745
compact version			Stainless steel	6 cable glands	559 780
with display		2 transistors + 420 mA	Aluminium	6 cable glands	558 747
			Stainless steel	6 cable glands	558 306
Standard	90265 V AC	2 transistors	Aluminium	6 cable glands	559 781
wall-mounting ver-			Stainless steel	6 cable glands	558 310
sion with display		2 transistors + 420 mA	Aluminium	6 cable glands	558 750
with diopidy			Stainless steel	6 cable glands	558 308
Basic	90265 V AC	2 transistors	Nylon	3 cable glands	562 439
compact version		2 transistors + 420 mA	Nylon	3 cable glands	562 440
with display	1863 V DC	2 transistors	Nylon	3 cable glands	562 443
		2 transistors + 420 mA	Nylon	3 cable glands	562 444
Basic	90265 V AC	2 transistors	Nylon	3 cable glands	562 441
compact version		2 transistors + 420 mA	Nylon	3 cable glands	562 442
without display	1863 V DC	2 transistors	Nylon	3 cable glands	562 445
		2 transistors + 420 mA	Nylon	3 cable glands	562 446
Blind	2030 V DC	up to 4 transistors	Stainless steel	2 cable glands	559 132
compact version		up to 4 transistors + 420 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 for connection between extension cable kit and electronics Type SE56*	4	562 851
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 for connection between extension cable kit and electronics Type SE56*	5	562 852
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

Electrical connection Electrode and coil cables length

8054/8055

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Note

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

Universal sensor fitting Type S054 or S055 - request for quotation

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 se	nsor body					
	Wafer v	ersion 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 in	ncluded)			
Cable length:	meter (for cable le	meter (for cable length > 20 m a preamplifier is included. Caution! Price increase)				

* 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 ightarrow

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Type 8075T can be combined with...

Type 8792

Continuous

SideControl

Type 2100 (8692) Control valve with TopControl

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.

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

Type 8644-P AirLINE Valve island with electronic I/O

-						
General data						
Compatibility	With sensor fittings S070 (see corresponding data sheet)					
Materials Housing, cover, lid, nut Front panel foil / Screws Cable glands Wetted parts materials Sensor fitting Rotor Shaft / Seal Display	PC Polyester / Stainless steel PA Aluminium, stainless steel (316F/1.4401) PPS, Aluminium, stainless steel (316F/1.4401) Stainless steel / FKM or FEP/PTFE 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 (concert	itting + oloctronic modulo)					
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 Stainless steel body	0 to 80°C (32°F to 176°F) 0 to 100°C (32°F to 212°F)					
Medium pressure max. DN15 DN25 DN40, DN50 / DN80 / DN100	55 bar (798 PSI) (threaded process connection) 55 bar (798 PSI) ¹⁾ 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

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	\leq 80%, without condensation	
Standards, directives and appre	ovals	
Protection class	IP65 with cable or screws plug mounted and tightened	
Standard and directives CE		
EMC	EN 61000-6-3, EN 61000-6-2	
Pressure (Sensor fitting S070, DN15 to	Complying with article 3 of chap. 3 from 97/23/CE di-	
DN100, in aluminium or stainless steel)	rective.* (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	$DN \le 32$, or $DN > 32$ and $PN^*DN \le 1000$
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Validation key (value or function)

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	Elever FLOW
 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 	To scroll-up the functions or increase a digit To scroll-down the functions or select a digit to be modified

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 μ m strainer as close as possible to the inlet side of the meter.

Ordering information for compact flowmeter Type 8075

A flowmeterType 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	ltem 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)

Specifica- tions	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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n case of special application conditions, please consult for advice.	Subject to alteration. © Christian Bürkert GmbH & Co. KG	1209/2_EU-en_00895132

Positive displacement low volume flowmeter for continuous measurement

FLUID CONTROL SYSTEMS

- 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

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 (inline) 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.

Continuous TopControl system

General data	
Compatibility	with Type 8025 Universal transmitter/batch controller or Typ 8619 multiCELL transmitter/Controller (see correspond- ing 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	\leq 85%, non condensated

8077

Complete device data	
Process connection	Thread 1/8"; 1/4" (G or NPT)
Measuring range	0.5500 I/h (0.13132 gph) (depends on the version)
Medium temperature max. Aluminium body Stainless steel body Medium pressure max.	-20+80°C (-4+176°F) -20+120°C (-4248°F) Aluminium body: 55 bar (798 PS)
	Stainless steel body: 55 bar (798 PSI) (550 bar (7980 PSI) on request)
Viscosity	1 Pa.s. max. (higher on request)
Max. particle size	$75 \ \mu m$ - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a $75 \ \mu m$ (200 mesh) strainer as close as possible to the inlet side of the meter.
Measurement deviation	$\pm1\%$ of Reading (if "standard" K-factor is used) $\pm0.5\%$ of Reading (if "specific" K-factor is used, on label of the product)
Repeatability	\leq 0.03% of Reading
Electrical data	
Sensor type	Hall effect sensor or Reed contact
Current consumption	\leq 9 mA (Hall effect sensor)
Output frequency Hall effect sensor	Open collector, NPN, max. 25 mA, 4.524 V DC
Reed contact	switching voltage 30 V DC, max. current, 0.5 A
Standard K-factor 0.5100 l/h 15500 l/h	1000 pulses/l 400 pulses/l
Standards, directives and appr	ovals
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 diam-

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eter and fluid).	
Type of fluid	Conditions
Fluid group 1, §1.3.a	Forbidden
Fluid group 2, §1.3.a	$DN \le 32$, or $DN > 32$ and $PN*DN \le 1000$
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]

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Ordering chart for flowmeter Type 8077

Process connection	> 5 mPa.s	s < 5 mPa.s	Body material	Max. pressure	Rotor / shaft material	Seal	Item no.
G 1/8	0.5100 l/h	2100 l/h	Aluminium	55 bar	Stainless steel	FEP/PTFE	567 202
	(0.1326.4 gph)	(0.5326.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 203
NPT 1/8	0.5100 l/h	2100 l/h	Aluminium	55 bar	Stainless steel	FEP/PTFE	567 204
	(0.5326.4 gph)	(0.5326.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 205
G 1/4	0.5100 l/h (0.1326.4 gph)	2100 l/h (0.5326.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 206
	15500 l/h (4.00132 gph)	40500 l/h (10.56132 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 207
	15500 l/h for	high viscosity*	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 208
NPT 1/4	0.5100 l/h	2100 l/h	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 209
	(0.5326.4 gph)	(0.5326.4 gph)					
	15500 l/h (4.00132 gph)	40500 l/h (10.56132 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 210
	15500 l/h for	[·] high viscosity*	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 0.5100 l/h	567 766
Set of two rotors in stainless steel for measuring range 15500 l/h	567 767
FEP/PTFE seal for measuring range 0.5100 l/h	567 768
FEP/PTFE seal for measuring range 15500 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

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

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.

Type 8619 multiCELL transmitter/controller

Type 8644 Valve islands

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)	DN15, DN25, ¾", 1", 1½", 2	DN40 and DN "	50	
Materials Wetted parts Measurement tube and Clamp Unwetted parts Transmitter and sensor housings Seal / Display Cable glands / Blind plugs M12 male connector and blind plug Pressure compensating element Name plate Surface finish Measurement tube (inner surface)	Stainless stee VMQ silicone Nickel plated I Nickel plated I Nickel plated I Metallized poly Ra < 0.8 µm (316L/1.4435 304/1.4301 / Float glass, s prass / Black P prass prass γester 30 μin.) or Ra <	BN2 tainless steel 3 OM 0.4 μm (15 μin.)	04/1.4301 (electropolish)
Display	2.4", monochr German, Engli	ome graphic (2 sh, French lanç	40 x 160 pixel) guages	
Electrical connection	2 cable glands M20 x 1.5 and 1 x 5-pin M12 male fixed connector		2 male fixed	
Recommended cable for	Cable with op	erating tempera	ature of min. 90	°C
Cable glands M12 female connector (not supplied)	514 mm diameter, shielded cable, 0.21.5 mm ² cross-section, 36.5 mm diameter, shielded cable, 0.75 mm ² cross-section			
Weight [approx kg]	DN15 / 3⁄4"	DN25 / 1"	DN40 / 11/2"	DN50 / 2"
	2.2	2.4	3.2	3.4

General technical data - continued		
Flow rate measurement ¹⁾		
Measuring range	07 m ³ /h to 090 m ³ /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	Max. conditions for sterilisation process:	
by the ambient operating temperature	up to +140°C (284°F) for 60 min.	
Liquid pressure max		
DN15, DN25, 3/4", 1", 11/2"	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	1235 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) 02 kHz, 535 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) 420 mA; 3.6 mA or 22 mA to indicate an error (only if 420 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
420 mA output uncertainty	±0.04 mA
420 mA output resolution	0.8 μΑ
Environment conditions	
Ambient temperature Operation / Storage	Depends on the liquid temperature (see drawing) -10+70°C (14+158°F) / -20+70°C (-4+158°F)
Relative humidity	< 85%, without condensation
Height above sea level	max. 2000 m

Standards,	directives	and approvals
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······································	
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 Approvals UL-Listed for US and Canada	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 UL61010-1 + CAN/CSA-C22.2 No.61010-1 (Pending)
Specific technical data of UL-lis	ted 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

Type of fluid	Conditions
Fluid group 1, §1.3.a	Forbidden
Fluid group 2, §1.3.a	$DN \le 32$, or $DN > 32$ and $PN^*DN \le 1000$
Fluid group 1, §1.3.b	$PN^*DN \le 2000$
Fluid group 2, §1.3.b	$DN \le 200 \text{ or}$ $PN \le 10 \text{ or}$ $PN^*DN \le 5000$

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
	(Blower	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
Transmitter		Blind plug	Black POM
Type SE98		Pressure compensating element	Nickel plated brass, with diaphragm in Acrylic-Copolymer, O-Ring in NBR
	Burroave	M12 male fixed connector (wired to büS) 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
Flow sensor Type S097		Process connection	for process connection acc. to DIN 32676 Series B
14-2-2.			Stainless steel 316L/1.4404 ASME BPE
			for process connection acc. to ASME BPE (DIN 32767 Series C)
		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 ist 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 diagramm 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/pi	pe 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)

Clam	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	ltem no.	
15	1.6 μm	0.8 μm	21.3x1.6 - Cl:50.5	1235 V DC	10 m³/h	2 cable glands M20 x 1.5	Yes		566 187	
	·	(30 μin.)	21.3x1.6 - Cl:34.0			+ 1 male fixed	Yes		566 235	
			21.3x1.6 - Cl:50.5			connector M12	No		566 191	
			21.3x1.6 - Cl:34.0				No		566 236	
		0.4 μm	21.3x1.6 - Cl:50.5	D:50.5 D:34.0			Yes		566 195	
		(15 μin.)	21.3x1.6 - Cl:34.0			Yes		566 237		
			21.3x1.6 - Cl:50.5	_			No	کر •	566 199	
			21.3x1.6 - Cl:34.0				No		566 238	
25	1.6 μm	0.8 μm	33.7x2.0 - Cl:50.5		25 m³/h	2 cable glands M20 x 1.5	Yes	28-04	566 188	
	(30 μin.)			+ 1 male fixed	No	2004	566 192			
		0.4 μm				connector M12	Yes		566 196	
		(15 µin.)					No	eHeng.	566 200	
40	1.6 μm	0.8 μm	48.3x2.0 - Cl:64.0		56 m³/h	2 cable glands M20 x 1.5	Yes		566 189	
		(30 µin.)				+ 1 male fixed	No	TYPE EL - CLASS I	566 193	
		0.4 μm				connector M12	Yes		566 197	
		(15 μin.)					No		566 201	
50	1.6 μm	0.8 μm	60.3x2.0 - Cl:77.5		90 m³/h	2 cable glands M20 x 1.5	Yes		566 190	
		(30 µin.)				+ 1 male fixed	No		566 194	
		0.4 μm				connector M12	Yes		566 198	
		(15 µin.)					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.
3/4	1.6 μm	0.8 µm	19.05x1.65 - Cl:25.0	1235 V DC	7 m³/h	2 cable glands M20 x 1.5	Yes		566 203
		(30 µin.)		+ 1 male fixed	+ 1 male fixed	No		566 207	
		0.4 μm		1235 V DC	7 m³/h	CONNECTOR MITZ	Yes		566 211
		(15 µin.)					No		566 215
1	1.6 μm	0.8 μm	25.4x1.65 - Cl:50.5	1235 V DC	14 m³/h	2 cable glands M20 x 1.5	Yes	<u>ک</u>	566 204
		(30 µin.)		θ μin.) + 1 male fixed	+ 1 male fixed	No		566 208	
		0.4 um		1235 V DC	14 m³/h	connector M12	Yes	28-04	566 212
		(15 μin.)					No		566 216
11/2	1.6 um	0.8 um	38.1x1.65 - Cl:50.5	1235 V DC	35 m³/h	2 cable glands M20 x 1.5	Yes		566 205
		(30 µin.)				+ 1 male fixed	No	енерс	566 209
		0.4 um		1235 V DC	35 m³/h	connector M12	Yes		566 213
		(15 μin.)					No	TYPE EL - CLASS I	566 217
2	1.6 um	0.8 µm	50.8x1.65 - Cl:64.0	1235 V DC	64 m³/h	2 cable glands M20 x 1.5	Yes		566 206
	µiii	(30 μin.)				+ 1 male fixed	No		566 210
		0.4 μm		1235 V DC	64 m³/h	connector M12	Yes		566 214
		(15 µin.)					No		566 218

Ordering chart for accessories for Type 8098

FLOWave		burkert				
itandard configuration – requ	lest for quotation	า		Note You can fill ou		
lease fill out and send to your ne	arest Bürkert office	* with your	inquiry or order	the fields unov in the PDF file before printin		
Company:		Contact pers	son:	out the form.		
Customer no.:		Department:				
Address:		Tel./Fax.:				
Postcode/town:		E-Mail:				
= mandatory fields to fill out	Quantity:		Required delivery date:			
Operating data						
Process medium						
ype of media	X Liquid					
	min.	max	Unit			
low rate (Q) ¹⁾				¹⁾ standard unit: Liquid Q = m³/h:		
emperature						
Absolute pressure						
/iscosity						
Density						
Jomments						
Certifications*						
Certifications*	803 722)					
Certifications*	803 722) (included in delivery)		EHEDG - TYP	E EL-CLASS I		
Certifications* Test report 2.2 acc. to EN-ISO 10204 (Item no. Inspection certificate 3.1 acc. to EN-ISO 10204 Certification of Conformity for the Surface Qualit	803 722) (included in delivery) y DIN4762-DIN4768-ISO/4287/	/1 (ltem no. 804 175)	EHEDG - TYP	E EL-CLASS I		
Certifications* Test report 2.2 acc. to EN-ISO 10204 (Item no. Inspection certificate 3.1 acc. to EN-ISO 10204 Certification of Conformity for the Surface Qualit Certification of Conformity for Pickling and Electri	803 722) (included in delivery) y DIN4762-DIN4768-ISO/4287/ opolishing Processes (Item no. 44	/1 (Item no. 804 175) 14 900)	EHEDG - TYP 3A - 28 04 Calibration cer	E EL-CLASS I		

If a certification which is lot 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.

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

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 ma-							
terials							
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
 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	$DN \leq$ 32, or DN > 32 and $PN^{\star}DN \leq$ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Complete device data	a
Pipe diameter Thread connection Flange connection	DN15 to DN100 ½"; 1"; 1½"; 2"; 3" (G or NPT) 25; 40; 50; 80 or 100 mm DIN PN16 flange 1"; 1½; 2"; 3" or 4" ANSI 150LB flange
Measuring range Viscosity > 5 cps Viscosity < 5 cps Medium tempera-	2 to 1200 l/min (0.26 to 320 gpm) 3 to 616 l/min (0.78 to 160 gpm) Aluminium body: 80°C (176°F)
ture max.	Stainless steel body: 120°C (248°F)
Medium pressure max. DN15 DN25 DN40/DN50 DN80 DN100	55 bar (798.05 PSI) (threaded process connection) 55 bar (798.05 PSI) ¹⁾ 18 bar (261.18 PSI) 12 bar (174.12 PSI) 10 bar (145.1 PSI)
Viscosity	1000 cps. max. (higher on request)
Max. particle size	$250 \ \mu\text{m}$ - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a $250 \ \mu\text{m}$ strainer as close as possible to the inlet side of the meter.
Accuracy	±0.5% of Reading
Repeatibility	±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 μ m 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.

Correct

Dimensions [mm]

Orifice	Α	В	В			
DN		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 Stainle	ss Steel	B Al.		С	D	E	F	G	н	1	к	L
		DIN	ANSI	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

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Ordering chart for sensor fitting Type S070

-	-						
Orifice DN	Process connectio	Flow	Kange	Body material	Rotor material	Seal	ltem no.
15	G 1/4"	2 - 30 l/min	3 - 25 l/min	Aluminium	PPS	FKM	443 985
10	G 72	2 00 // 1111	0 20 //////	Stainless steel	Stainless steel	FEP/PTEE	443 990
	NPT 1/2"	2 - 30 l/min	3 - 25 l/min	Aluminium	PPS	FKM	443 995
	111 1 /2	2 00 // /////	0 20 //////	Stainless steel	Stainless steel	FFP/PTFF	444 000
25	G 1"	6 - 120 l/min	10 - 100 l/min	Aluminium	PPS	FKM	443 986
	<u> </u>	0 120 81111		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
	Ũ			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 1½"	10 - 250 l/min	15 - 235 l/min	Aluminium	PPS	FKM	443 987
				Stainless steel	Stainless steel	FEP/PTFE	443 992
	NPT 11/2" 10 - 250 l/min	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 - 2	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
	NPT 2"	15 - 350 l/min	30 - 300 l/min	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	tem no.
- Rotor	[mm]	[inch]	PPS	550.933
Rotor	DIVIS	12	110	
			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

escription	Orifice Size		escription - Orifice Size Aaterials			еш по.
Õ	[mm]	[inch]	Σ	포		
O-ring	DN15	1/2" 1"	FEP/PTFE	550 929		
			FKM	550 930		
	DN25		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

Type SE30 INLINE flow transmitter **Type SE32** INLINE 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

FLUID CONTROL SYSTEMS

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

Type SE35 INLINE flow transmitter

Type SE36 INLINE ELEMENT flow transmitter

General data	
Compatibility	With transmitter SE30, SE32, SE35, SE36 with Hall sen-
	sor 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	DN15DN100
Thread connection	1/2"; 1"; 11/2"; 2"; 3" (G or NPT)
Flange connection	25; 40; 50; 80 or 100 mm DIN PN16 flange
	1"; 11/2; 2"; 3" or 4" ANSI 150LB flange
Measuring range	
Viscosity > 5 mPa.s	21200 l/min (0.53320 gpm)
Viscosity < 5 mPa.s	3616 l/min (0.78160 gpm)
Medium temperature max.	Aluminium body: -20+80°C (-4+176°F)
	Stainless steel body: -20+120°C (-4248°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 mm - To prevent damage from dirt or foreign matter, we
	strongly recommend the installation of a 250 mm 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

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

max. pressure, pipe diameter and fluid).				
Type of fluid	Conditions			
Fluid group 1, §1.3.a	Forbidden			
Fluid group 2, §1.3.a	$DN \le 32$, or $DN > 32$ and $PN*DN \le 1000$			
Fluid group 1, §1.3.b	$PN*DN \le 2000$			
Fluid group 2, §1.3.b	$DN \le 200$			

Installation and operation

Standards, directives and approvals

Environment

Directives

Pressure

Ambient temperature

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

Complying with article 3 of §3 from 97/23/CE directive*.

0...+60°C (+32...+140°F) (operation and storage)

(without CE mark)

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]

Flanged connection

Orifice	Α	В	B1	С	D	E		F		G		н	L			
DN													Stainle	ss steel	Alumini	ium
						DIN	ANSI	DIN	ANSI	DIN	ANSI		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

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Ordering chart for sensor fitting Type S077

Orifice DN	Process connection	≥ 5 mPa.s	ຍ ຍິຍິ ຮັບ < 5 mPa.s	Body material	Rotor material	Seal	Item no.
15	G 1/2"	230 l/min	325 l/min	Aluminium	PPS	FKM	567 223
				Stainless steel	Stainless steel	FEP/PTFE	567 224
	NPT 1/2"	230 l/min	325 l/min	Aluminium	PPS	FKM	567 225
				Stainless steel	Stainless steel	FEP/PTFE	567 226
25	G 1"	6120 l/min	10100 l/min	Aluminium	PPS	FKM	567 227
				Stainless steel	Stainless steel	FEP/PTFE	567 228
	NPT 1"	6120 l/min	10100 l/min	Aluminium	PPS	FKM	567 229
				Stainless steel	Stainless steel	FEP/PTFE	567 230
	25 mm DIN PN16 flange	6120 l/min	10100 l/min	Aluminium	PPS	FKM	567 231
				Stainless steel	Stainless steel	FEP/PTFE	567 232
	1" ANSI 150 LB flange	6120 l/min	10100 l/min	Aluminium	PPS	FKM	567 233
				Stainless steel	Stainless steel	FEP/PTFE	567 234
40	G 1½"	10250 l/min	15235 l/min	Aluminium	PPS	FKM	567 235
				Stainless steel	Stainless steel	FEP/PTFE	567 236
	NPT 11/2"	10250 l/min	15235 l/min	Aluminium	PPS	FKM	567 237
				Stainless steel	Stainless steel	FEP/PTFE	567 238
	40 mm DIN PN16 flange	10250 l/min	15235 l/min	Aluminium	PPS	FKM	567 239
				Stainless steel	Stainless steel	FEP/PTFE	567 240
	1 1/2" ANSI 150 LB flange	10250 l/min	15235 l/min	Aluminium	PPS	FKM	567 241
				Stainless steel	Stainless steel	FEP/PTFE	567 242
50	G 2"	15350 l/min	30300 l/min	Aluminium	PPS	FKM	567 243
	NPT 2"	15350 l/min	30300 l/min	Aluminium	PPS	FKM	567 244
	50 mm DIN PN16 flange	15350 l/min	30300 l/min	Aluminium	PPS	FKM	567 245
				Stainless steel	Stainless steel	FEP/PTFE	567 246
	2" ANSI 150 LB flange	15350 l/min	30300 l/min	Aluminium	PPS	FKM	567 247
				Stainless steel	Stainless steel	FEP/PTFE	567 248
80	G 3"	20733 l/min	66616 l/min	Aluminium	Aluminium	FKM	567 249
	NPT 3"	20733 l/min	66616 l/min	Aluminium	Aluminium	FKM	567 250
	80 mm DIN PN16 flange	20733 l/min	66616 l/min	Aluminium	Aluminium	FKM	567 251
	3" ANSI 150 LB flange	20733 l/min	66616 l/min	Aluminium	Aluminium	FKM	567 252
100	100 mm DIN PN16 flange	1201200 l/min		Aluminium	Aluminium	FKM	567 253
	4" ANSI 150 LB flange	1201200 l/min		Aluminium	Aluminium	FKM	567 254

Ordering chart for spare parts for sensor fitting S077

scription	Orifice Size		aterials	о́ц Е
ă	[mm]	[inch]	Ë	Ite
Rotor	DN15	1/2"	PPS	567 741
			Stainless steel	567 742
	DN25 DN40	1"	PPS	567 743
			Stainless steel	567 744
		1 1/2"	PPS	567 745
			Stainless steel	567 746
	DN50	2"	PPS	567 747
			Stainless steel	567 748

Description	Outlice Size [mm] [inch]		Materials	ltem no.
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

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

Type S051

- for low flow

Magnetic sensor fitting

Type S054 Magnetic sensor fitting - Wafer

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 μ S/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.

Type S055 Magnetic sensor fitting - Flange

Type S056 Magnetic sensor fitting - Hygienic

ical	data	(alastro	 CEEC	standard	 dianlow	•

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			

2411

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	\leq 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

SE56

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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⁾	±0.2% of reading (see diagram, on page 1)
Repeatability	±0.1% of reading
Galvanic isolation	All the input/outputs are galvanically iso- lated 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

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

Medium temperature, please see separate data sheets of the complete magflowmeter 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

Electrical data (continued)		
Accuracy 1)	±0.2% of reading (see diagram, on page 1)	
Repeatability	±0.1% of reading	
Galvanic isolation	All the input/outputs are galvanically iso- lated 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	\leq 85%, without condensation	
Height above sea level	-200 to 6000 m	
Standard		
Protection	Class I, IP67, category of installation II	
Standard EMC Emission	EN 61326-1 EN 55011 (Group1, Class B) IFC 1000-4-2/3/4/5/6/11	
Safety	EN 61010	

on request.

Technical d	lata (elect	ronics S	E56 basic)
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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 Char- acters, without back light
Parameterization	Through remote configuration tool kit (ac- cessories Item No. 559 374) or 3 keys inside
Electrical connection	3 cable glands PG11

Medium temperature, please see separate data sheets of the complete magflowmeter 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)	
Flow rate (volume) = $\pm 0.1\%$ of reading Out 4/20 mA = $\pm 0.12\%$ of reading Frequency out = $\pm 0.12\%$ of reading	
±0.8% of reading (see diagram, on page 1)	
±0.2% of reading	
All the input/outputs are galvanically iso- lated from power supply	
An EEPROM stores the measured values (in case of power failure)	
Bidirectional measure Diagnostic function Empty pipe detection Plug in (protected plug for connection to PC or hand terminal)	
0.4 10 m/s	
-10 to 50°C (14 to 122°F)	
-20 to 50°C (-4 to 122°F)	
\leq 85%, without condensation	
-200 to 6000 m	
Standard	
Class I, IP65, category of installation II	
EN 55011 (Group1, Class B) EN 61326-1, IEC 1000-4-2/3/4/5/6/11 EN 61010	

Dimensions [mm]



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Dimensions [mm]





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)



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	ltem no.
Standard com-	90 265 V AC	2 transistors	Aluminium	6 cable glands	558 745
pact version with			Stainless steel	6 cable glands	559 780
uispiay		2 transistors + 4 20 mA	Aluminium	6 cable glands	558 747
			Stainless steel	6 cable glands	558 306
Standard wall-	90 265 V AC	2 transistors	Aluminium	6 cable glands	559 781
mounting version with display			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	90 265 V AC	2 transistors	Nylon	3 cable glands	562 439
version with dis-		2 transistors + 4 20 mA	Nylon	3 cable glands	562 440
ріау	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	20 30 V DC	up to 4 transistors	Stainless steel	2 cable glands	559 132
version		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

Н

Please also use the "request for quotation" form on page 7 for ordering a customized electronics go to page .

Ordering chart - accessories

Description	ltem no.
Remote configuration tool kit	559 374



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Note

Electronics Type SE56 for magflowmeter - request for quotation

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

Electronics Type SE56 for magflow	You can fill out	
Please fill out and send to your nearest Bürkert NOTE : Please take into account that the electronics Type S	the fields directly in the PDF file before printing out the form.	
Company:	Contact person:	
Customer No.:	Department:	
Address:	Tel. / Fax.:	
Postcode / Town:	E-mail:	

Electronics SE56 standard with display				
	Quantity:	Des	ired 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 PROFIBU	IS 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	

Electronics SE56 blind, compact, in stainless steel, 20 30 V DC				
	Quantity:		Desired delivery date:	
Outputs	4 20 mA	RS 485	PROFIBUS DP	

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			

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

please consult for advice.



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