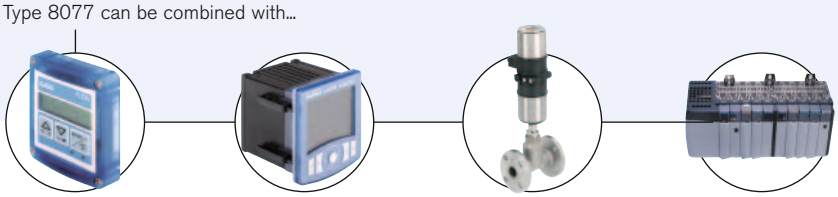
bürkert
FLUID CONTROL SYSTEMS

Positive displacement low flow sensor

- For highly viscous fluids
- Value indication, monitoring, transmitting, On/ Off control and batch control in combination with different transmitters

Type 8077 can be combined with...



Type 8025
Universal
flow transmitter

Type 8619
multiCELL
transmitter/controller

Type 2101 (8692)
Continuous
TopControl system

PLC

This positive displacement sensor is specially designed for measurement or batch control of highly viscous fluids like glue, honey or oil. It allows an easy connection to transmitters like type 8025 and 8619 for more functionality.

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.

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

General data	
Compatibility	with Type 8025 Universal transmitter/batch controller or Typ 8619 multiCELL transmitter/Controller (see corresponding data sheet)
Materials	
Electronic module	PP (20% glass fiber)
Tag plate	Aluminium
Wetted parts materials	
Body	Aluminium, stainless steel 316L (1.4401)
Rotor	Stainless steel 316L (1.4401)
Shaft	Stainless steel 316L (1.4401)
Seal	FEP/PTFE
Electrical connections	5-wire cable, 1 m length

Environment	
Ambient temperature	(operating and storage) -15...+60°C *(+5...+140°F)*
Relative humidity	≤ 85%, non condensated

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Complete device data	
Process connection	Thread 1/8"; 1/4" (G or NPT)
Measuring range	0.5...500 l/h *(0.13...132 gph)* (depends on the version)
Medium temperature max. Aluminium body Stainless steel body	 -20...+80°C *(-4...+176°F)* -20...+120°C *(-4...248°F)*
Medium pressure max.	Aluminium body: 55 bar *(798 PSI)* Stainless steel body: 55 bar *(798 PSI)* (550 bar *(7980 PSI)* on request)
Viscosity	1 Pa.s. max. (higher on request)
Max. particle size	75 µm - To prevent damage from dirt or foreign matter, we strongly recommend the installation of a 75 µm (200 mesh) strainer as close as possible to the inlet side of the meter.
Measurement deviation	±1% of Reading (if "standard" K-factor is used) ±0.5% of Reading (if "specific" K-factor is used, on label of the product)
Repeatability	≤ 0.03% of Reading

Electrical data	
Sensor type	Hall effect sensor or Reed contact
Current consumption	≤ 9 mA (Hall effect sensor)
Output frequency Hall effect sensor Reed contact	 Open collector, NPN, max. 25 mA, 4.5...24 V DC switching voltage 30 V DC, max. current, 0.5 A
Standard K-factor 0.5...100 l/h 15...500 l/h	 1000 pulses/l 400 pulses/l

Standards, directives and certifications	
Protection class	IP67, IP66, NEMA 6
Normen und Richtlinien CE Pressure	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) Complying with article 4, §1 of 2014/68/EU directive*(without CE mark)

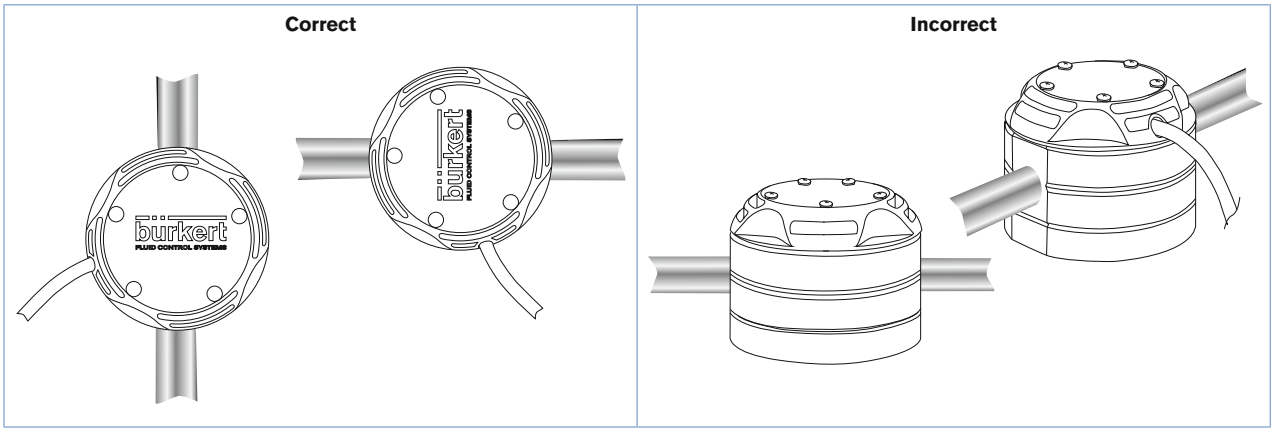
* For the 2014/68/EU pressure directive, the device can only be used under following conditions (depending on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, article 4, §1.c.i	DN ≤ 25
Fluid group 2, article 4, §1.c.i	DN ≤ 32 or PN*DN ≤ 1000
Fluid group 1, article 4, §1.c.ii	DN ≤ 25 or PN*DN ≤ 2000
Fluid group 2, article 4, §1.c.ii	DN ≤ 200 or PN ≤ 10 or PN*DN ≤ 5000

DTS 1000282310 EN Version: C Status: RL (released | freigegeben | validé) printed: 15.11.2016

Installation and operation

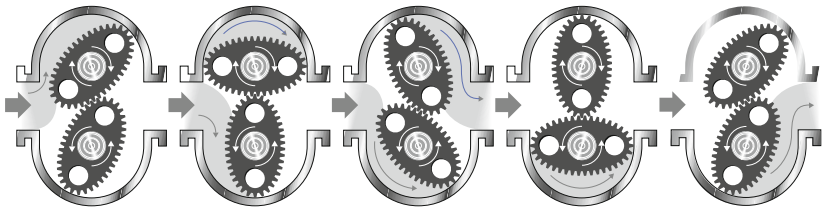
The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures below).



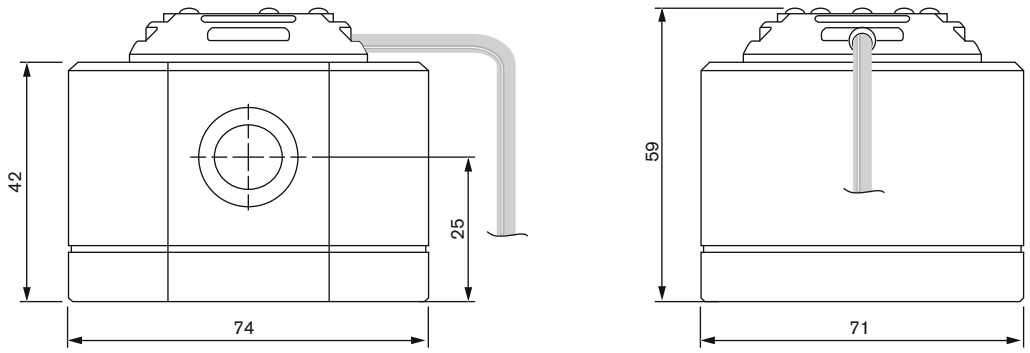
The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damages and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.

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]



DTS 1000282310 EN Version: C Status: RL (released | freigegeben | validé) printed: 15.11.2016

Ordering chart for flowmeter Type 8077

Process connection	Flow range > 5 mPa.s	Flow range < 5 mPa.s	Body material	Max. pressure	Rotor / shaft material	Seal	Item no.
G 1/8	0.5...100 l/h (0.13...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Aluminium	55 bar	Stainless steel	FEP/PTFE	567 202
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 203
NPT 1/8	0.5...100 l/h (0.53...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Aluminium	55 bar	Stainless steel	FEP/PTFE	567 204
			Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 205
G 1/4	0.5...100 l/h (0.13...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 206
	15...500 l/h (4.00...132 gph)	40...500 l/h (10.56...132 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 207
	15...500 l/h for high viscosity*		Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 208
NPT 1/4	0.5...100 l/h (0.53...26.4 gph)	2...100 l/h (0.53...26.4 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 209
	15...500 l/h (4.00...132 gph)	40...500 l/h (10.56...132 gph)	Stainless steel	55 bar	Stainless steel	FEP/PTFE	567 210
	15...500 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 0.5...100 l/h	567 766
Set of two rotors in stainless steel for measuring range 15...500 l/h	567 767
FEP/PTFE seal for measuring range 0.5...100 l/h	567 768
FEP/PTFE seal for measuring range 15...500 l/h	567 769
Set of plastic cap with hall sensor and Reed contact	567 770

DTS 1000282310 EN Version: C Status: RL (released | freigegeben | validé) printed: 15.11.2016