

## Positive displacement sensor fitting for continuous flow measurement



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

Type S077 can be combined with...



**Type SE30**  
INLINE flow transmitter



**Type SE32**  
INLINE flow transmitter



**Type SE35**  
INLINE flow transmitter



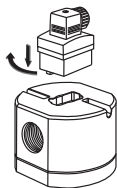
**Type SE36**  
INLINE ELEMENT flow transmitter

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

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

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

### The Bürkert Quarter-turn technology



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

<sup>1)</sup> or in accordance to the value of the used flanges

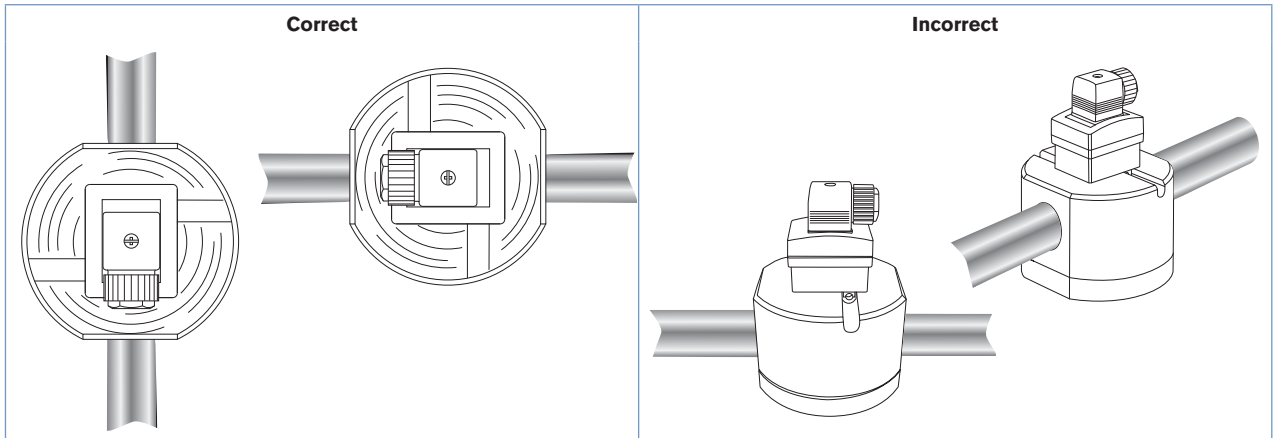
Environment	
Ambient temperature	0...+60°C (+32...+140°F) (operation and storage)
Standards, directives and approvals	
Directives Pressure	Complying with article 3 of §3 from 97/23/CE directive*. (without CE mark)

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

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

### Installation and operation

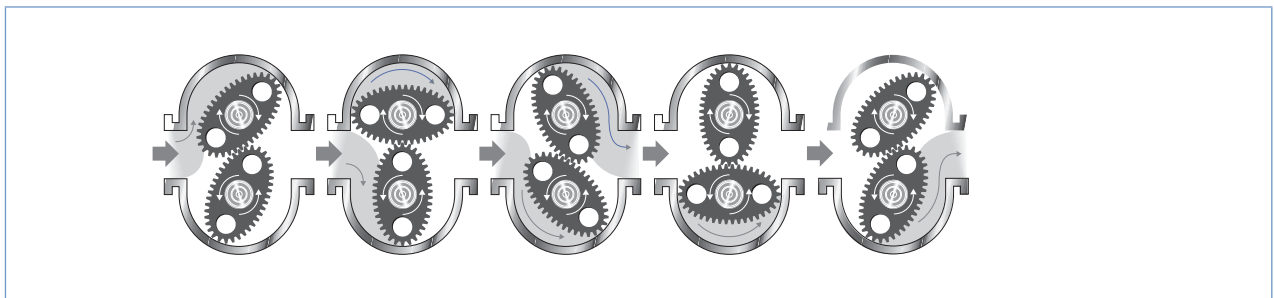
The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures below).



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

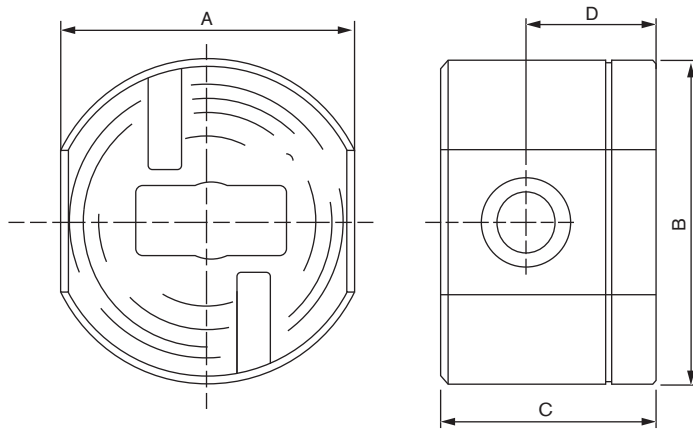
When fluid passes through the fitting, rotors turn. This rotation produces a measuring frequency in the associated hall sensor, which is proportional to the flow. The volume of the fluid being transferred in this way is exactly determined through the sensor geometry.

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



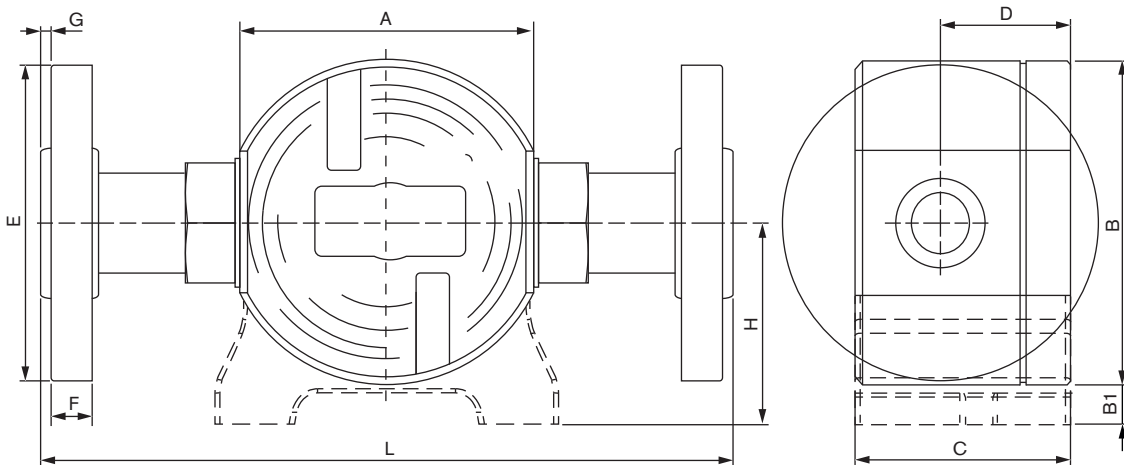
Dimensions [mm]

Threaded connection



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

Flanged connection



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

## Ordering chart for sensor fitting Type S077

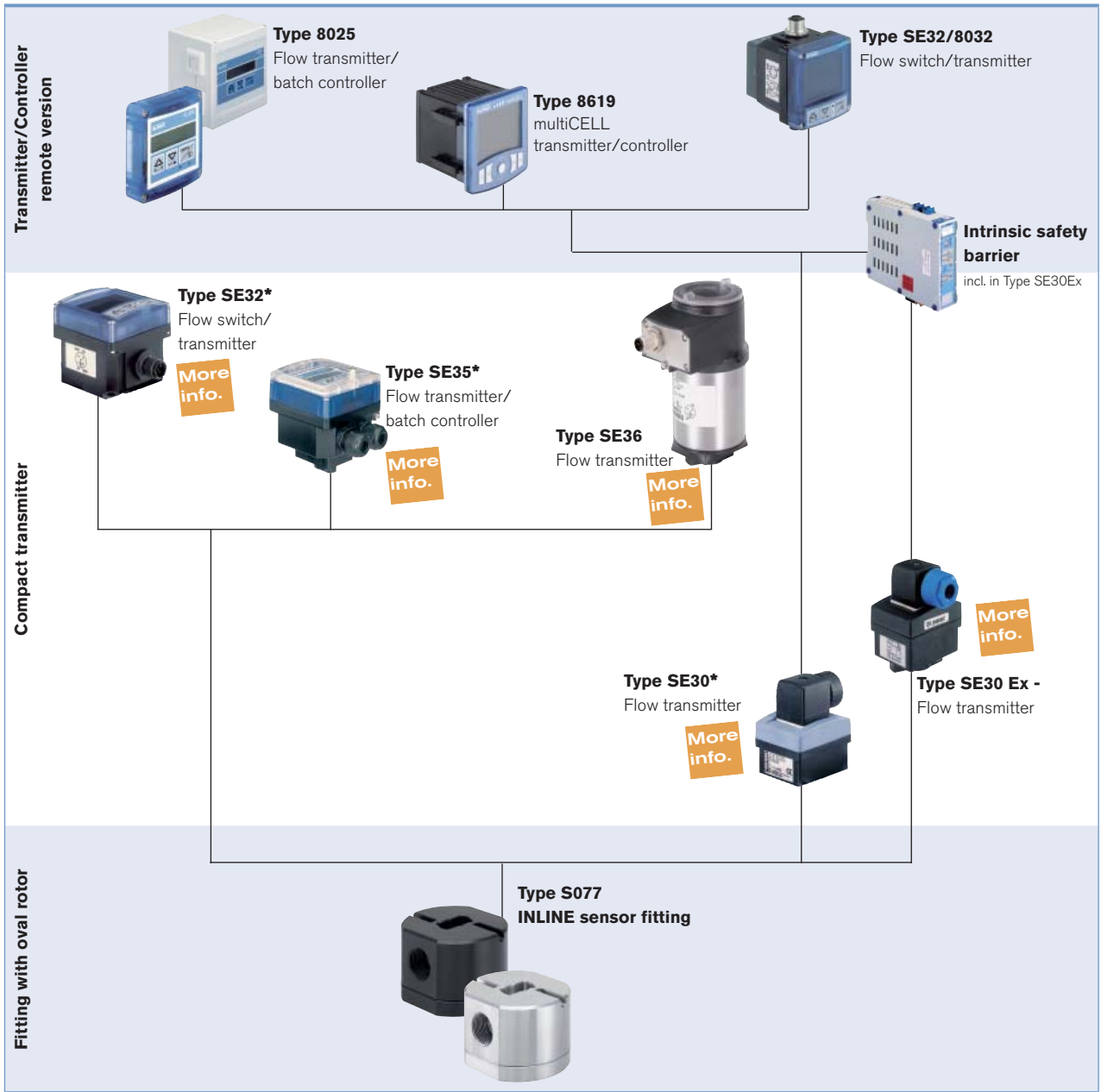
Orifice DN	Process connection	Flow Range		Body material	Rotor material	Seal	Item no.
		> 5 mPa.s	< 5 mPa.s				
15	G 1/2"	2...30 l/min	3...25 l/min	Aluminium	PPS	FKM	567 223
				Stainless steel	Stainless steel	FEP/PTFE	567 224
	NPT 1/2"	2...30 l/min	3...25 l/min	Aluminium	PPS	FKM	567 225
				Stainless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

## Ordering chart for spare parts for sensor fitting S077

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

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

Interconnection possibilities with other Bürkert products



\* Use only version with Hall transducer

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

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