





## Positive displacement low flow sensor for continuous measurement and batch control

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

Type 8071 can be combined with...



**Type 8025**

Remote Universal flow transmitter



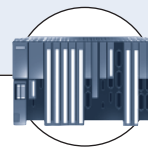
**Type 8025**

Dosing system Konti-Dos



**Type 2712 (8630)**

Continuous TopControl system



**PLC**

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

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

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

Complete device data	
<b>Process connection</b>	Thread 1/8"; 1/4" (G or NPT)
<b>Measuring range</b>	0.5 to 500 l/h (0.13 to 132 gph)
<b>Fluid temperature max.</b>	Aluminium or PPS body: 80 °C Stainless steel body: 120 °C
<b>Fluid pressure max.</b>	Aluminium or PPS body: 5 bar Stainless steel body: 10 bar or 55 bar (550 bar on request)
<b>Viscosity</b>	1000 cps. max. (higher on request)
<b>Max. particle size</b>	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.
<b>Accuracy</b>	≤ ± 1% of Reading
<b>Repeatability</b>	≤ 0.03% of Reading
Environment	
<b>Ambient temperature</b>	(operating and storage)
Aluminium or PPS body	+ 80 °C max.
Stainless steel body	+ 120 °C max.
Standards and approvals	
<b>Protection class</b>	IP54 (NEMA 13)

## Ordering chart for sensor Type 8071

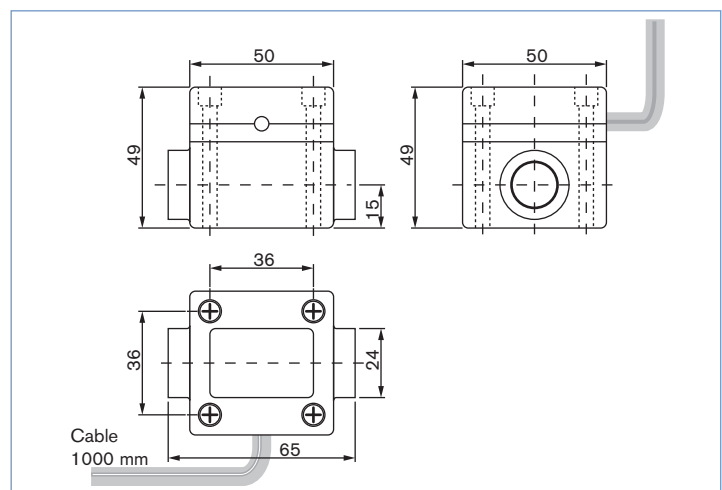
Process connection	Flow Range		Body material	Max. pressure	Rotor / shaft material	Gasket	Item no.			
	> 1 cps	< 1 cps								
G 1/8	0.5-50 l/h (0.13 to 13.2 gph)	5-50 l/h (1.32 to 13.2 gph)	Aluminium	5 bar	Stainless steel	FKM	552 818			
			Stainless steel	10 bar	Stainless steel	FKM	552 820			
				55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

\* &gt; 1000 cps

## Ordering chart for spare parts (to be ordered separately)

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

## Dimensions [mm]



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0804/6\_EU-en\_00891792



## Positive displacement low volume flowmeter for continuous measurement

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

Type 8077 can be combined with...



**Type 8025**

Universal flow transmitter



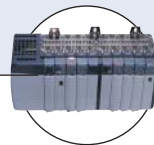
**Type 8619**

multiCELL transmitter/controller



**Type 2101 (8692)**

Continuous TopControl system



**PLC**

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

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

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

### General data

#### Compatibility

with Type 8025 Universal transmitter/batch controller or Typ 8619 multiCELL transmitter/Controller (see corresponding data sheet)

#### Materials

Electronic module	PP (20% glass fiber)
Tag plate	Aluminium
Wetted parts materials	
Body	Aluminium, stainless steel 316L (1.4401)
Rotor	Stainless steel 316L (1.4401)
Shaft	Stainless steel 316L (1.4401)
Seal	FEP/PTFE

#### Electrical connections

Cable gland, 5-wire cable, 1 m length

### Environment

#### Ambient temperature

(operating and storage)  
 -15...+60°C (+5...+140°F)

#### Relative humidity

≤ 85%, non condensated

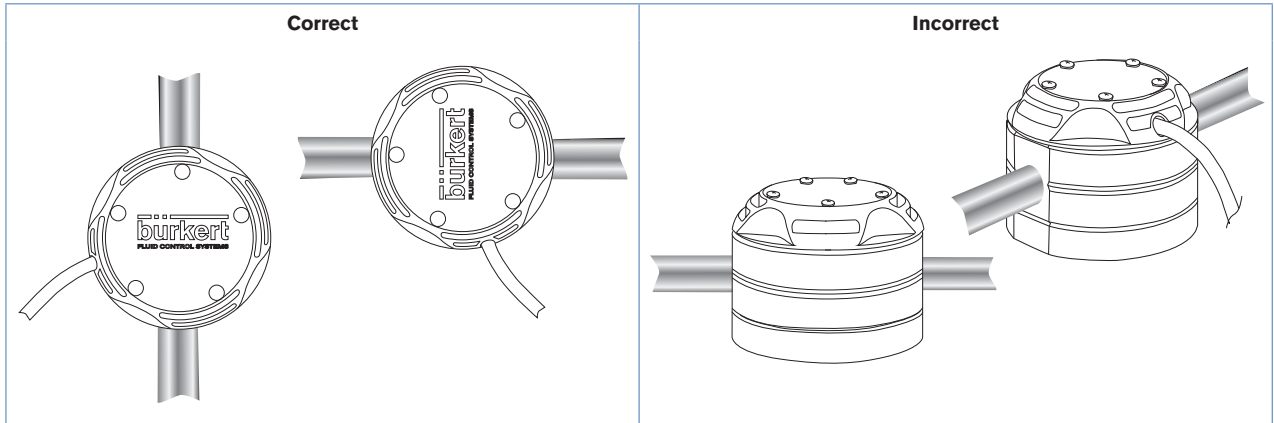
Complete device data	
<b>Process connection</b>	Thread 1/8"; 1/4" (G or NPT)
<b>Measuring range</b>	0.5...500 l/h (0.13...132 gph) (depends on the version)
<b>Medium temperature max.</b>	
Aluminium body	-20...+80°C (-4...+176°F)
Stainless steel body	-20...+120°C (-4...248°F)
<b>Medium pressure max.</b>	Aluminium body: 55 bar (798 PSI) Stainless steel body: 55 bar (798 PSI) (550 bar (7980 PSI) on request)
<b>Viscosity</b>	1 Pa.s. max. (higher on request)
<b>Max. particle size</b>	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.
<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
Electrical data	
<b>Sensor type</b>	Hall effect sensor or Reed contact
<b>Current consumption</b>	≤ 9 mA (Hall effect sensor)
<b>Output frequency</b>	
Hall effect sensor	Open collector, NPN, max. 25 mA, 4.5...24 V DC
Reed contact	switching voltage 30 V DC, max. current, 0.5 A
<b>Standard K-factor</b>	
0.5...100 l/h	1000 pulses/l
15...500 l/h	400 pulses/l
Standards, directives and approvals	
<b>Protection class</b>	IP67, IP66, NEMA 6
<b>Directives</b>	
EMC	EN 61326-1
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

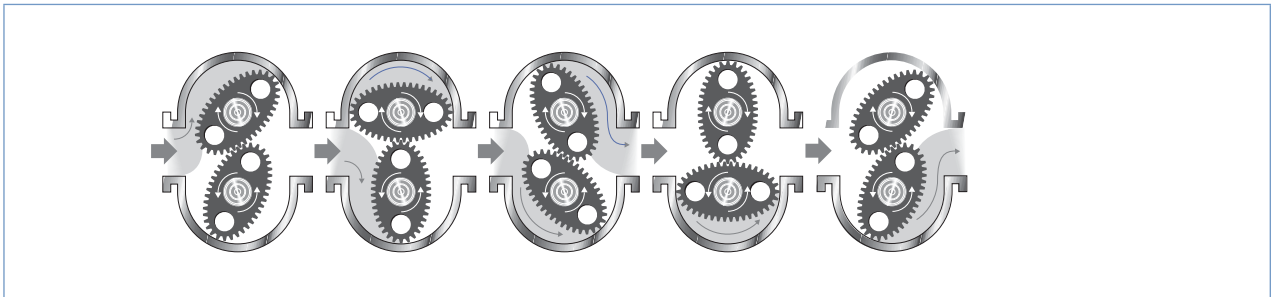
The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures below).



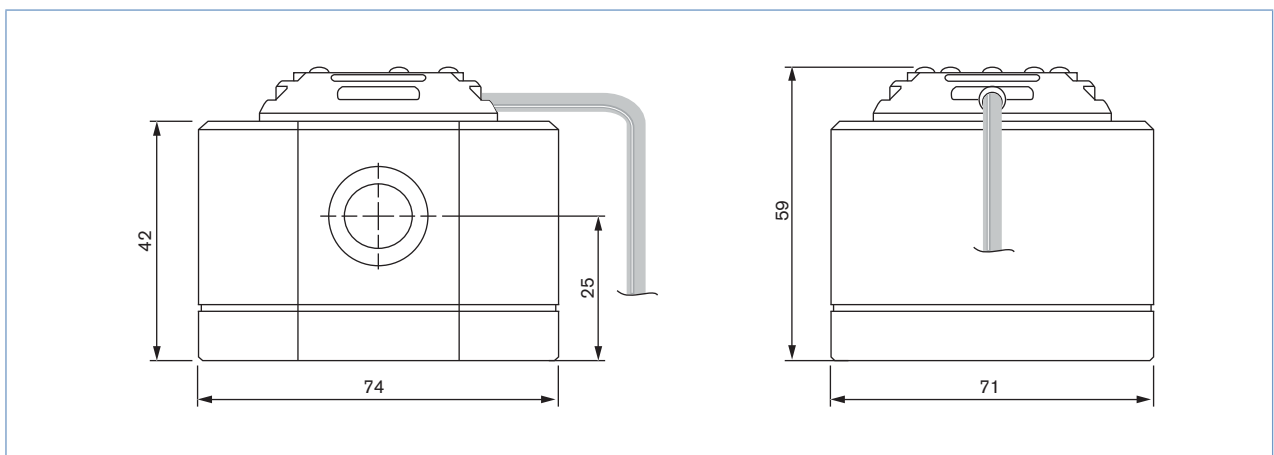
The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damages and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.

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 8077, or to improve the measurement deviation, a specific K factor is given with each device on its label.



## Dimensions [mm]



## Ordering chart for flowmeter Type 8077

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

\* &gt; 1 Pa.s.

## Ordering chart for accessories

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

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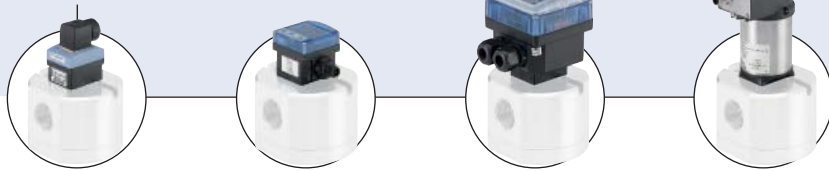
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## Positive displacement sensor fitting for continuous flow measurement



- 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**

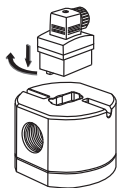
INLINE ELEMENT flow transmitter

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



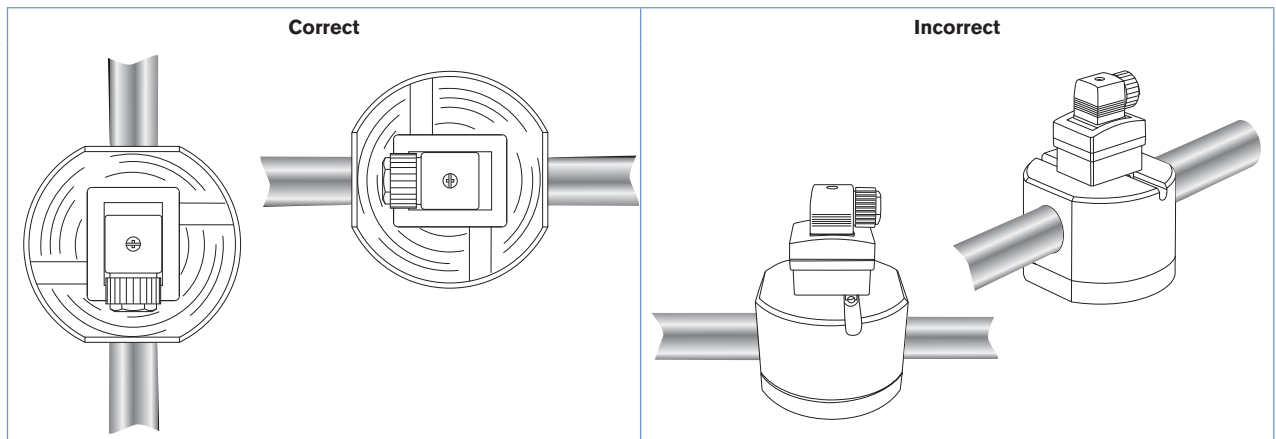
Environment	
Ambient temperature	0...+60°C (+32...+140°F) (operation and storage)
Standards, directives and approvals	
Directives Pressure	Complying with article 3 of §3 from 97/23/CE directive*. (without CE mark)

\* 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

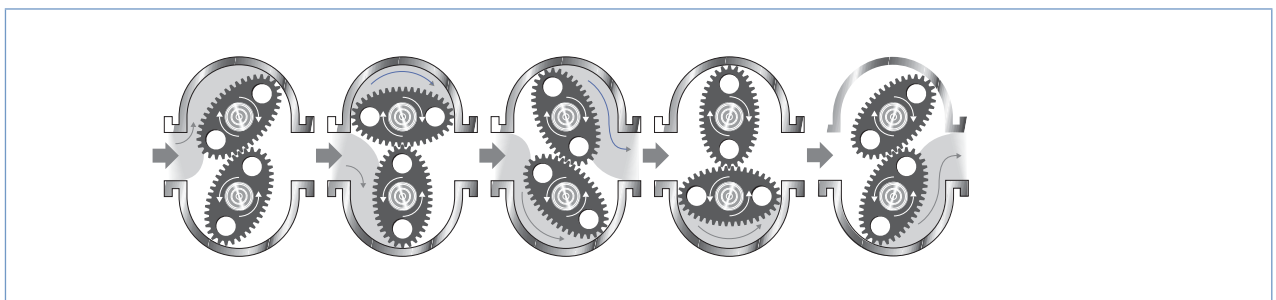
The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures below).



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.

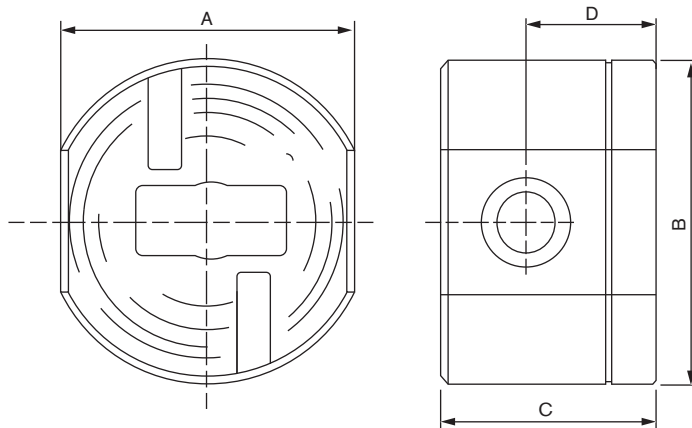
When fluid passes through the fitting, rotors turn. This rotation produces a measuring frequency in the associated hall sensor, which is proportional to the flow. The volume of the fluid being transferred in this way is exactly determined through the sensor geometry.

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.



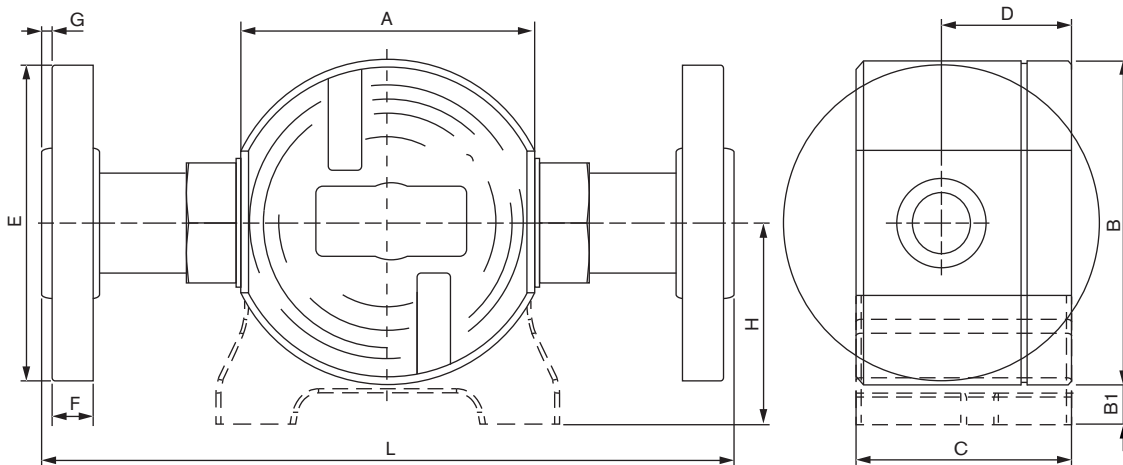
## Dimensions [mm]

## 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

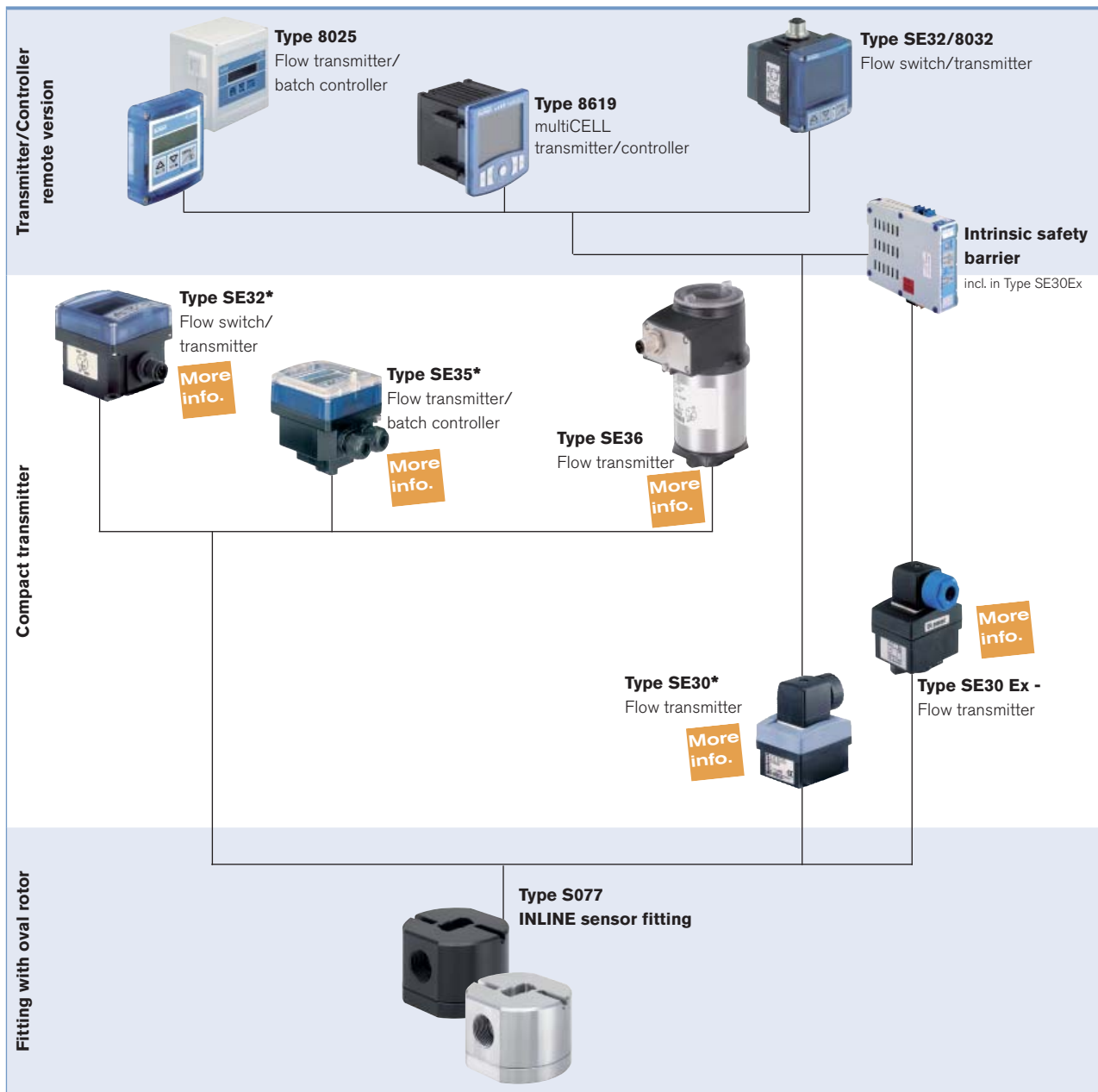
Orifice DN	Process connection	Flow Range		Body material	Rotor material	Seal	Item no.
		> 5 mPa.s	< 5 mPa.s				
15	G 1/2"	2...30 l/min	3...25 l/min	Aluminium	PPS	FKM	567 223
				Stainless steel	Stainless steel	FEP/PTFE	567 224
	NPT 1/2"	2...30 l/min	3...25 l/min	Aluminium	PPS	FKM	567 225
				Stainless 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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