



# SP-01

## Vane operated Flowswitch



## Features

/ With or without T-piece,

for pipe sizes of 1/4" to 6"

/ Brass, stainless steel and PVC  
designs with T-piece

/ Low pressure drop

/ Reed contact or  
micro-switch versions

## Description:

The SP-01 series of flowswitches operates according to the proven principle of a displaced vane. The flowing medium strikes the baffle disc mounted at the end of a pendulum. The resulting dynamic pressure deflects the pendulum. Subsequently, a permanent magnet mounted at the other end of the pendulum switches an adjustable reed contact. Different setpoints can be achieved by shifting the reed contact situated outside the medium.

## Application:

The SP-01 series of vane flowswitch is suited for monitoring setpoints in low-viscosity fluids. Normally, the setpoint is adjusted during the process. As an option a version of the SP-01 flowswitch is available, that can be applied to explosion-proof areas. These units do not need any certification, because they are, according to the realised estimation of the risk of ignition, no ignition source and therefore not part of the ATEX directive. These switches are always equipped with a blue connection cable of 1.5 m length.



# Ver. and Operating ranges:

## SP-01.1: with brass or stainless steel T-piece and REED contact

DN	Connect. (G")	ON at (l/min) <sup>(1)</sup>	OFF at (l/min) <sup>(1)</sup>	max. (l/min) <sup>(1)</sup>	max. Pressure	Temp.
8	1/4	2,1..2,7	1,8..2,4	45	25 bar	-25..+110°C
10	3/8	2,5..3,2	2,2..2,9	60	25 bar	-25..+110°C
15	1/2	3,4..4,2	3,0..3,8	67	25 bar	-25..+110°C
20	3/4	7,0..9,1	6,4..8,2	120	25 bar	-25..+110°C
25	1	13,5..17	12..15,5	195	25 bar	-25..+110°C
32	1 1/4	15,5..20,5	14,5..19	240	25 bar	-25..+110°C
40	1 1/2	26,5..34,5	25,5..32,5	400	25 bar	-25..+110°C
50	2	39,5..51	39..50	400	25 bar	-25..+110°C

## SP-01.2: with PVC T-piece, REED contact and adhesive sleeve

DN	Connect.	ON at (l/min) <sup>(1)</sup>	OFF at (l/min) <sup>(1)</sup>	max. (l/min) <sup>(1)</sup>	max. Pressure	Temp.
15	DN15	5,1..6,9	4,9..6,5	50	10 <sup>(2)</sup> bar	0..+60°C
20	DN20	9,4..12,3	9,1..11,9	100	10 <sup>(2)</sup> bar	0..+60°C
25	DN25	10,7..15,2	10,4..14,8	100	10 <sup>(2)</sup> bar	0..+60°C
32	DN32	17,0..22,6	16,8..22,5	150	10 <sup>(2)</sup> bar	0..+60°C
40	DN40	21,8..30,1	21,6..29,9	200	10 <sup>(2)</sup> bar	0..+60°C
50	DN50	29,0..39,9	28,6..39,9	260	10 <sup>(2)</sup> bar	0..+60°C

## SP-01.3: with brass T-piece and micro-switch

DN	Connect. (G")	Hysteresis	OFF at (l/min) <sup>(1)</sup>	max. (l/min) <sup>(1)</sup>	max. Pressure	Temp.
10	3/8 female	10..30%	4,0..5,0	10	25 bar	-20..+110°C
15	1/2 female	10..30%	5,0..6,0	20	25 bar	-20..+110°C
20	3/4 female	10..30%	8,0..10,0	40	25 bar	-20..+110°C
25	1 female	10..30%	17,0..20,0	60	25 bar	-20..+110°C
32	1 1/4 fem.	10..30%	24,0..28,0	80	25 bar	-20..+110°C
40	1 1/2 fem.	10..30%	43,0..50,0	100	25 bar	-20..+110°C
50	2 female	10..30%	69,0..83,0	150	25 bar	-20..+110°C

## SP-01.4: no T-piece, thread 1/2", ins. length 51 mm, REED contact

DN	On at (m³/h) <sup>(1)</sup>	OFF at (m³/h) <sup>(1)</sup>	max. (m³/h) <sup>(1)</sup>	max. Pressure	max. Temp.
50	1,9..2,7	1,8..2,6	30	25 bar	-25..+110°C
80	5,0..8,0	4,9..7,9	80	25 bar	-25..+110°C
100	8,3..12,5	8,2..12,4	150	25 bar	-25..+110°C
150	17,5..25,0	17,4..24,9	200	25 bar	-25..+110°C

<sup>(1)</sup> setpoints valid for water at 20°C, horizontal pipe, tolerance ±15%  
<sup>(2)</sup> at media temperature 20°, only 2.5 bar at media temperature 60°C

# Technical Specifications:

**Ambient temperature /**  
 SP-01.1: -25..+80°C  
 SP-01.2: 0..+60°C  
 SP-01.3: -20..+70°C  
 SP-01.4: -25..+80°C

**Reed switch (SP-01.1, SP-01.2, SP-01.4) /**  
 switching function:  
 NC / NO at increasing flow rate  
 switching load:  
 230VAC/48VDC, 1A, 20W / 26VA

**Micro switch (SP-01.3) /**  
 switching function: change-over  
 switching load: 250VAC, 5A, 1250VA

**Type of protection /**  
 IP65 acc. to EN 60529

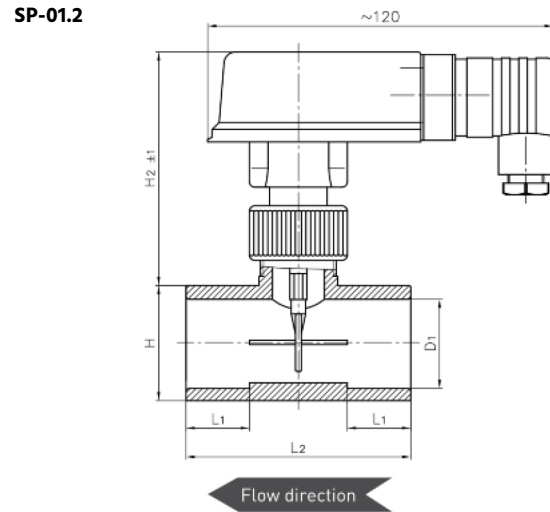
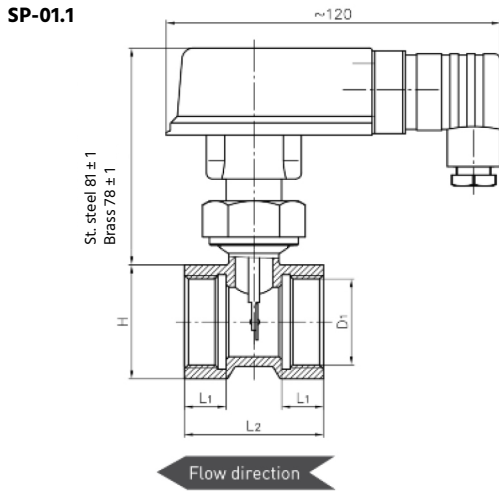
**Protection class /**  
 Class II acc. to EN 60730-1

**EI. connection /**  
 plug acc. to DIN EN 175301-803-A  
 incl. junction Box

# Ordering Codes:

<b>Order number</b>	<b>SP-01.</b>	<b>1.</b>	<b>3.</b>	<b>25.</b>	<b>0.</b>	<b>0</b>
<b>SP-01 Vane Operating Flowswitch</b>						
<b>Version /</b>						
1 = with T-piece, brass or stainless steel, REED contact						
2 = with PVC T-piece (conn. are adhesive sleeves)						
3 = with brass T-piece and microsw. (not as Ex-version)						
4 = with 1/2" thread, brass or stainless steel, insertion length 51 mm						
<b>Material /</b>						
1 = brass (not SP-01.2)						
2 = stainless steel (not SP-01.2, SP-01.3)						
3 = PVC (SP-01.2 only)						
<b>Interior diameter /</b>						
<b>SP-01.1 only</b>						
08 = 1/4"						
<b>SP-01.1 and SP-01.3</b>						
10 = 3/8"						
<b>SP-01.1, SP-01.2, SP-01.3</b>						
15 = 1/2"						
20 = 3/4"						
25 = 1"						
32 = 1 1/4"						
40 = 1 1/2"						
50 = 2"						
<b>SP-01.4</b>						
00 = all diameters from 2" to 6" acc. to the tables						
<b>Factory-set setpoint /</b>						
0 = none						
1 = on request						
<b>Options /</b>						
0 = none						
1 = plug with optical indicators for flow and supply voltage (2 LED)						
2 = plug M12 x 1, 4 pin acc. IEC 947-5-2						
3 = version for applications in EX-areas, max. media temperature 100°C (only with blue connecting cable)						

# Dimensions in mm:



### Dimensions SP-01.1 [mm]

Thread D1	Brass			St. Steel		
	L1	L2	H	L1	L2	H
G 1/4"	11	50	27	11	50	27
G 3/8"	11	50	27	11	50	27
G 1/2"	11	50	27	11	50	27
G 3/4"	15	50	32	15	50	32
G 1"	15	50	41	15	50	41
G1 1/4"	15	50	48	15	50	46
G1 1/2"	15	50	55	15	50	55
G 2"	22	64	70	15	50	70

### Wetted parts SP-01.1

Element	Brass	St. Steel
Body, Vane	Brass CW614N	St. steel 1.4571
T-piece	Brass CW617N	St. steel 1.4571
Bushing	PPE + PS Noryl™ 30% reinforced with fibre glass	PVDF
Rivet	Brass CW508L	St. steel 1.4303
Axis	St. steel 1.4571	St. steel 1.4571
Magnet	Hard ferrite	Hard ferrite
Gasket	NBR	NBR

### Dimensions SP-01.2 [mm]

Diameter	D1	L1	L2	H1	H2
DN15	20	16	54	28	84
DN20	25	19	66	34	86
DN25	32	22	78	40	86
DN32	40	26	98	50	104
DN40	50	31	118	62	103
DN50	63	38	144	77	101

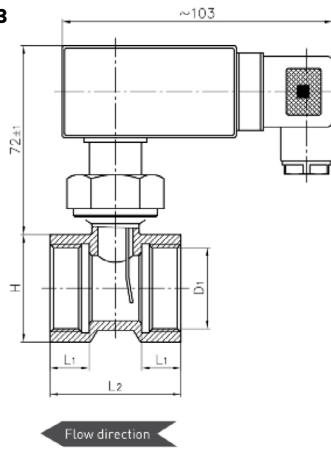
### Wetted parts SP-01.2

Element	
Body, Vane	PPE + PS Noryl™ 30% reinforced with fibre glass
T-piece	PVC
Axis*	St. steel 1.4571
Magnet	Hard ferrite
Gasket	EPDM

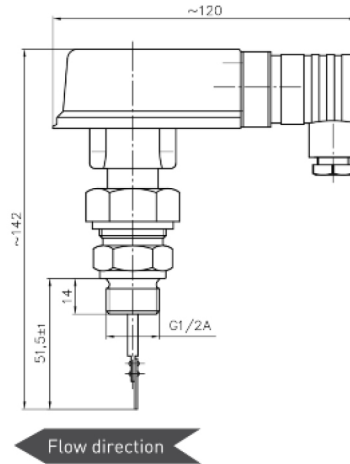
\* DN25, 40 and 50 only



**SP-01.3**



**SP-01.4**



**Dimensions SP-01.3 [mm]**

Thread	Brass			
	D1	L1	L2	H
G 3/8"	11	50	27	
G 1/2"	11	50	27	
G 3/4"	15	50	32	
G 1"	15	50	41	
G1 1/4"	15	50	48	
G1 1/2"	15	50	55	
G 2"	22	64	70	

**Wetted parts SP-01.4**

Element	Brass	St. steel
Body, Vane	Brass CW614N	St. steel 1.4571
Process connection	Brass CW614N	St. steel 1.4571
Bushing	PPE + PS Noryl™ 30% reinforced with fibre glass	PVDF
Rivet	Brass CW508L	St. steel 1.4303
Axis	St. steel 1.4571	St. steel 1.4571
Magnet	Hard ferrite	Hard ferrite
Gasket	NBR	NBR

**Wetted parts SP-01.3**

Element	
Body	Brass CW614N nickel coated
T-piece	Brass CW617N
Vane	St. steel 1.4310, 1.4301
Magnet	Hard ferrite
Gasket	NBR