
FLOW
2025
PROFI MESS GMBH
FLOW SWITCHES

SP-01

Vane operated Flowswitch

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.

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

Ver. and Operating ranges:

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

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

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

DN	Connect. (G")	Hysteresis	OFF at (l/min)(1)	max. (l/min)(1)	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 (m^3/h)(1)	OFF at (m^3/h)(1)	max. (m^3/h)(1)	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

(1) setpoints valid for water at 20°C, horizontal pipe, tolerance ±15%

(2) at media temperature 20°, only 2.5 bar at media ntemperature 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
El. connection /	plug acc. to DIN EN 175301-803-A incl. junction Box

Ordering Codes:

Order number	SP-01.	1.	3.	25.	0.	0

SP-01 Vane Operating Flowswitch

Version /
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

Material /
1 = brass (not SP-01.2)
2 = stainless steel (not SP-01.2, SP-01.3)
3 = PVC (SP-01.2 only)

Interior diameter /
SP-01.1 only
08 = 1/4"
SP-01.1 and SP-01.3
10 = 3/8"
SP-01.1, SP-01.2, SP-01.3
15 = 1/2"
20 = 3/4"
25 = 1"
32 = 1 1/4"
40 = 1 1/2"
50 = 2"
SP-01.4
00 = all diameters from 2" to 6" acc. to the tables

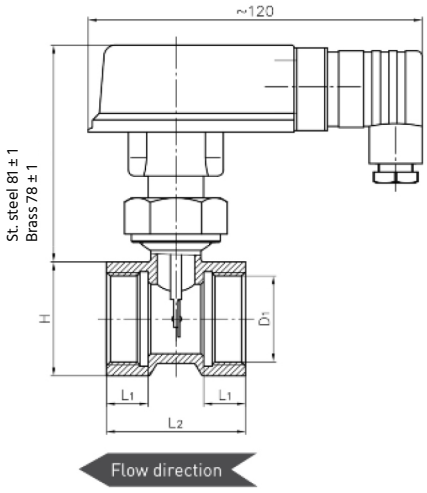
Factory-set setpoint /
0 = none
1 = on request

Options /
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)

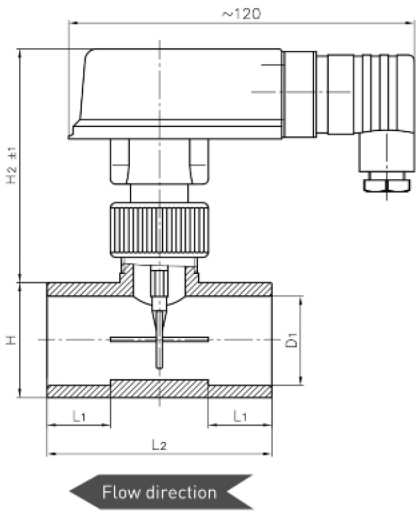
address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

SP-01.1



SP-01.2



Dimensions SP-01.1 [mm]

	Brass			St. Steel		
Thread D1	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]

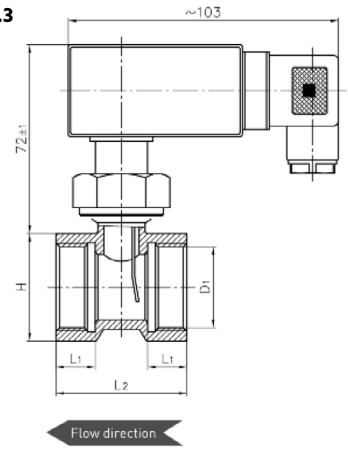
Diameter	D1	L1	L2	H1	H2
DN15	20	16	54	28	84
DN20	25	19	66	34	86
DN25	32	22	78	40	86
DN32	40	26	98	50	104
DN40	50	31	118	62	103
DN50	63	38	144	77	101

Wetted parts SP-01.2

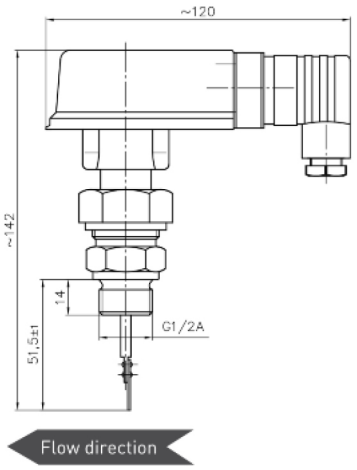
Element	
Body, Vane	PPE + PS Noryl™ 30% reinforced with fibre glass
T-piece	PVC
Axis*	St. steel 1.4571
Magnet	Hard ferrite
Gasket	EPDM

* DN25, 40 and 50 only

SP-01.3



SP-01.4



Dimensions SP-01.3 [mm]

Brass			
Thread 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-01.3

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

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

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

SP-03

Low-Cost Vane Operated Flowswitch with Cable Connection

Description:

The SP-03 series of vane operated flowswitches operates according to the proven dynamic pressure principle. If the flowing medium strikes the pressure plate at the lower end of the pendulum, the pendulum system is moved. This action is supported by a pretensioned leaf spring. Therefore it can be operated without friction. A permanent magnet attached to the upper end of the pendulum system operates a reed contact which is sealed against the flow medium. Different setpoints can be achieved by shifting the reed contact situated outside the medium.

Application:

The SP-03 device type has proven itself to be a simple, reliable and cost-effective solution for monitoring setpoints in low-viscosity liquids. Normally, the setpoint is adjusted during the process. However, on request fixed setpoints can be pre-set at factory for rising or falling flows.

Features

/ With T-piece or screw-in thread
/ For pipe sizes of 3/8“ up to 6“
/ T-pieces from brass, st. steel or PVC
/ Cost effective
/ Independent of pressure
/ Low pressure drop
/ Stainless steel pendulum system
/ Simple exchangeability of the entire pendulum system

Technical Specifications:

max. Pressure / SP-03.[1-3, 6-8]: 25 bar
SP-03.[4-5]: 2.5 bar

max. Media temp. / SP-03.[1-3, 6-8]: +100°C
+110°C on request
SP-03.[4-5]: +60°C

max. Ambient temp. / SP-03.[1-3, 6-8]: +70°C
SP-03.[4-5]: +60°C

Materials (wetted) /

- Housing: brass, brass nickel-plated, or st. steel 1.4571
- T-piece: brass, brass nickel-plated, st. steel 1.4571 or PVC
- Vane: st. steel 1.4410
- Magnet: ferrite OX 300
- Sealing: Viton ®
- Swivel nut: brass / brass nickel-plated (non-wetted part)

Electrical Specifications:

Electrical connection / 1.5 m cable PVC

Reed contact / NC- / NO-contact selectable

Switching load / 230 V; 1,5 A; 80 W; 90 VA max.

Switching hysteresis / approx. 5 %

Protection class / IP 65

Versions & Operating ranges:

SP-03.[1-5]: With T-piece made of brass, stainless steel or PVC

Nominal diameter	Connection	Switch-on at (l/min)(1)	Switch-off at (l/min)(1)	max. Flow (l/min)(1)
DN10	3/8	2.7. . .4.5	1.7. . .3.5	40
DN15	1/2	4.5. . .6.5	3.0. . .5.5	45
DN20	3/4	8.5. . .12.0	6.6. . .11.0	80
DN25	1	13.0. . .20.0	11.0. . .19.0	130
DN32	1 1/4	17.0. . .26.0	15.0. . .25.0	160
DN40	1 1/2	28.0. . .45.0	27.0. . .43.0	300
DN50	2	45.0. . .58.0	43.0. . .56.0	500

SP-03.[6-8]: With G 1/2" screw-in thread, brass or stainless steel

Nominal diameter		Switch-on at (l/min)(1)	Switch-off at (l/min)(1)	$Q_{max.}$ (l/min)(1)
DN50	2"	44.0. . .65.0	40.0. . .60.0	500
DN65	2 1/2"	78.0. . .115.0	70.0. . .105.0	750
DN80	3"	120.0. . .175.0	110.0. . .165.0	1400
DN100	4"	190.0. . .285.0	175.0. . .265.0	2500
DN125	5"	310.0. . .450.0	280.0. . .420.0	2900
DN150	6"	440.0. . .655.0	410.0. . .600.0	3300

(1) Switching ranges are applicable for water 20°C, horizontal pipe.

Ordering Codes:

Order number	SP-03.	1.	25.	0

SP-03 Vane Operated Flowswitch

Version /
1 = with T-piece made of brass
2 = with T-piece made of brass nickel-plated
3 = with T-piece made of stainless steel
4 = with T-piece made of PVC (thread)
5 = with T-piece made of PVC (adhesive sleeve)
6 = with G 1/2" screw-in thread (without T-piece), brass
7 = with G 1/2" screw-in thread (w/o T-piece), brass nickel-plated
8 = with G 1/2" screw-in thread (w/o T-piece), stainless steel

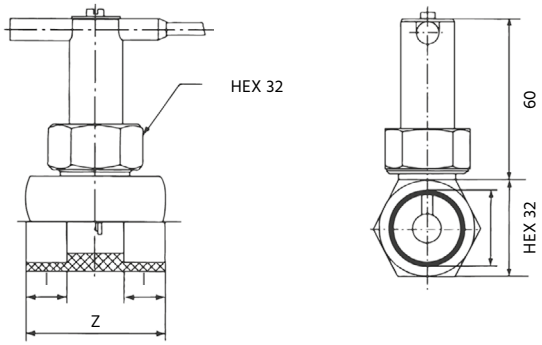
Nominal diameter /
SP-03. [1-5].x
10 = 3/8"
15 = 1/2"
20 = 3/4"
25 = 1"
32 = 1 1/4"
40 = 1 1/2"
50 = 2"
SP-03. [6-8].x
00 = all nominal diameters of 2" up to 6" as per table (screw-in thread)

Options /
0 = none
1 = please specify in detailed text

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

SP-03.[1-2]: With T-piece made of brass or brass nickel-plated

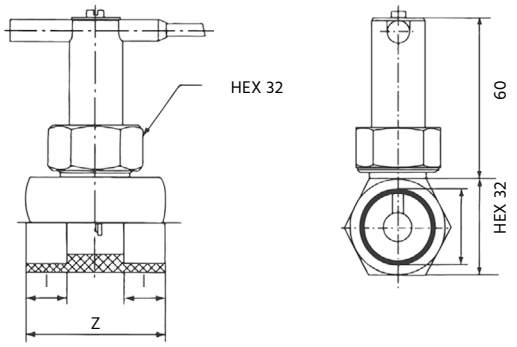


ND	Connection	HEX	Z (mm)	l (mm)
DN10	R 3/8"	30	50	11
DN15	R½"	30	50	11
DN20	R 3/4"	30	50	11
DN25	R1"	37	50	15
DN32	R1 ¼"	46	50	15
DN40	R1 ½"	52	50	15
DN50	R 2"	-	120	15

SP-03.1: Material combination
- Body housing - brass
- Contact housing - brass
- T-piece - brass
- Pendulum system - stainless steel
- Swivel nut - brass

SP-03.2: Material combination
- Body housing - brass nickel-plated
- Contact housing - brass
- T-piece - brass nickel-plated
- Pendulum system - stainless steel
- Swivel nut - brass nickel-plated

SP-03.3: With T-piece made of stainless steel

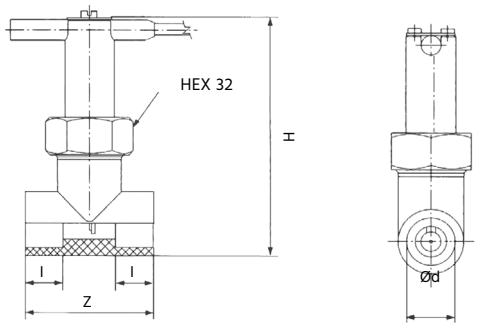


ND	Connection	HEX	Z (mm)	l (mm)
DN10	R 3/8"	30	50	11
DN15	R½"	30	50	11
DN20	R 3/4"	30	50	11
DN25	R1"	-	80	15
DN32	R1 ¼"	-	95	15
DN40	R1 ½"	-	115	15
DN50	R 2"	-	120	15

SP-03.3: Material combination
- Body housing - stainless steel
- Contact housing - brass
- T-piece - stainless steel
- Pendulum system - stainless steel
- Swivel nut - brass nickel-plated

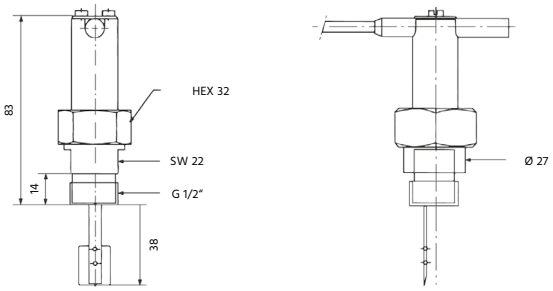
SP-03.[4-5]: Material combination
- Body housing - stainless steel
- Contact housing - brass
- T-piece - PVC
- Pendulum system - stainless steel
- Swivel nut - brass nickel-plated

SP-03.[4-5]: With T-piece made of PVC



ND	Connection	H (mm)	Z (mm)	l (mm)
DN10	R 3/8“	99	54	16
DN15	R½“	99	54	16
DN20	R 3/4“	109	66	19
DN25	R1“	113	79	22
DN32	R1 ¼“	126	96	26
DN40	R1 ½“	132	116	31
DN50	R 2“	149	143	38

SP-03.[6-8]: With G 1/2“ screw-in thread (without T-piece)



SP-03.6: Material combination
- Body housing - brass
- Contact housing - brass
- Pendulum system - stainless steel
- Swivel nut - brass

SP-03.7: Material combination
- Body housing - brass nickel-plated
- Contact housing - brass
- Pendulum system - stainless steel
- Swivel nut - brass nickel-plated

SP-03.8: Material combination
- Body housing - stainless steel
- Contact housing - brass
- Pendulum system - stainless steel
- Swivel nut - brass nickel-plated

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

DP-10N

Vane operated Flowswitch

Features

/ Proven technology

/ Easy to install

/ Low pressure drop

/ Brass and stainless steel

/ Good repeatability

Description:

The DP-10N series of flowswitches transmits the movement of the vane mounted in the pipe which is proportional to the flow over a spring-supported rocker mechanically to a high-performance micro-switch. The setpoint can be modified by customizing the spring tension. The 3 standard vanes can be deployed for a nominal diameter range of 1“ to 3“. A fourth vane can be customized for larger nominal diameters or for reducing the switching values by shortening it to a desired length. In addition, the DP-10N can be supplied designed for a reduced adjustment range so that it can be deployed also for minimum switching values.

Application:

The DP-10N vane switches are used wherever fluid or air flows need to be reliably monitored. The switches are used for monitoring minimum as well as maximum flow. Typical areas of application include monitoring of coolant and lubricating circulation, protection against dry-runs in pumps or safeguard against defects. The DP-10N is designed as robust device to allow its use across the entire industry.

Technical Specifications:

max. Pressure /
DP-10N.1.1: 8 bar
DP-10N.1.2: 5 bar
DP-10N.2.1: 13 bar
DP-10N.2.2: 5 bar

max. Media temp. /
DP-10N.1/2.x: -20. . .+120°C
DP-10N.3.1: -20. . .+80°C

max. Ambient temp. /
DP-10N.1/2.x: -20. . .+85°C
DP-10N.3.1: -40. . .+80°C

Materials / see Table 1.2

Mounting position / any, vane to the top not recommended, mounting position affects setpoint

Process connection /
DP-10N.1/2.x: R1"-male,
DP-10N.3.1: flange 89 x 63.5 mm

Media /
DP-10N.1/2.x: water (lubricants and aggressive Media on request)
DP-10N.3.1: air and gases

Range of adjustment / see Table 1.1

Tolerance / ± 15% of FS

Weight /
DP-10N.1/2.x:
brass: 0.95 kg,
st. steel: 1.1 kg

DP-10N.3.1: 0.5 kg

Table 1.2 - Materials:

Type	DP-10N.1.x	DP-10N.2.x
cap	ABS	ABS
housing	brass CW614N	st. steel 1.4571
vane	st. steel 1.4571	st. steel 1.4571
bellow	tombac	st. steel 1.4571

Type	DP-10N.3.x
cap	ABS
vane	st. steel 1.4571
vane bracket	brass
mounting plate	zinc-plated steel

Electrical Specifications:

Electrical output / micro-switch, change-over contact, 250 VAC, 15 A (8 A inductive)

Cable gland /
DP-10N.1/2.x: M16 x 1,5
DP-10N.3.1: PG11

Protection class / IP65 with protective conductor conn.

Adjustment: untighten screws and remove cap, use screw to set to demanded setpoint, remount cap.

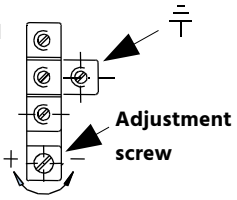


Table 1.1 - Adjustable range

DP-10N.1.x and DP-10N.2.x:

Pipe Ø DN	Qmax. in m³/h	Adjustable range in m³/h	Adjustable range reduced in m³/h	Vane
25	3.6	0.55. . .2.0	0.19. . .1.0	1
32	6.0	0.82. . .2.8	0.24. . .1.4	1
40	9.0	1.1. . .4.0	0.5. . .1.9	1
50	15	2.1. . .7.3	0.9. . .3.6	1, 2*
65	24	2.8. . .9.8	1.2. . .4.9	1, 2*
80	36	4.0. . .13.8	2.1. . .7.4	1, 2, 3*
100	60	10.4. . .32.0 7.0. . .21.7	4.9. . .17.1 3.3. . .11.6	1, 2, 3* 1, 2, 3, 4*
125	90	20.8. . .63.5 10.7. . .33.3	9.7. . .34.0 5.0. . .17.5	1, 2, 3* 1, 2, 3, 4*
150	120	29.2. . .89.1 13.1. . .39.9	13.6. . .47.6 6.1. . .21.4	1, 2, 3* 1, 2, 3, 4*
200	240	72.6. . .165.7 38.6. . .90.8	25.7. . .90.1 21.7. . .55.3	1, 2, 3* 1, 2, 3, 4*

Adjustable range is indicated for horizontally decreasing flow (medium water),
*have to be installed together.

DP-10N.3.1

min. cut-out value (m/s)	max. cut-out value (m/s)	min. cut-in value (m/s)	max. cut-in value (m/s)
1.0	8.0	2.5	9.2

Ordering Codes:

Order number	DP-10N.	1.	1

DP-10N Vane operated Flowswitch

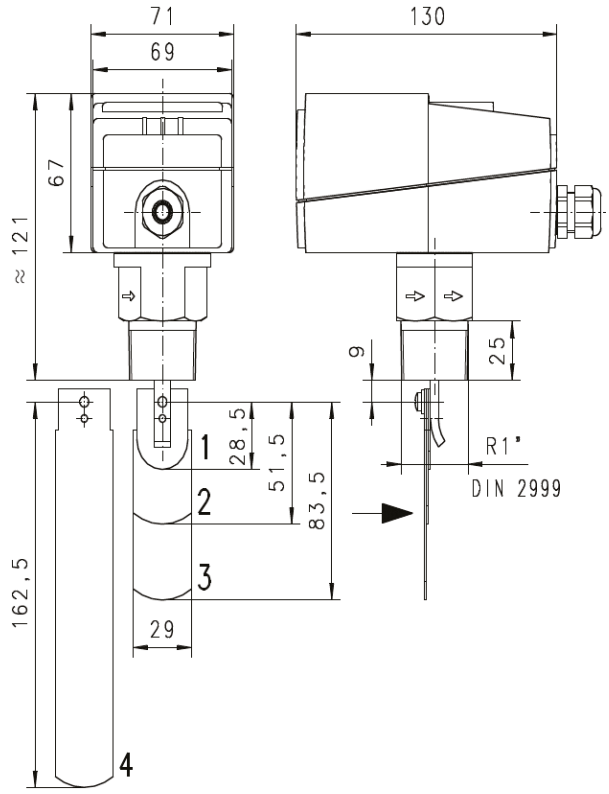
Version /
1 = for fluids (brass housing, stainless steel vane, cap ABS)
2 = for fluids (stainless steel housing, stainless steel vane, cap ABS)
3 = for air

Adjustment range /
1 = standard
2 = reduced (only for DP-10N.1 and DP-10N.2)

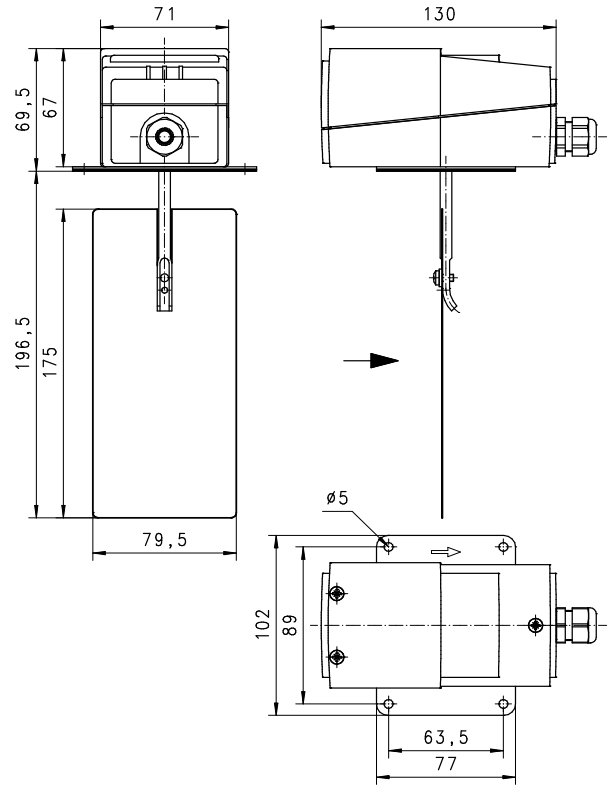
address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

Type: DP-10N.1.x and DP-10N.2.x:



Type: DP-10N.3.1



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

DP-10LC

Vane operated Flowswitch

Features

/ Proven technology

/ Easy to install

/ Low pressure drop

/ Brass and stainless steel

/ Good repeatability

/ Low cost

/ For water or air

Description:

The DP-10LC series of flowswitches transmits the movement of the vane mounted in the pipe which is proportional to the flow over a spring-supported rocker mechanically to a high-performance micro-switch. The setpoint can be modified by customizing the spring tension. The 3 standard vanes can be deployed for a nominal diameter range of 1“ to 3“. A fourth vane can be customized for larger nominal diameters or for reducing the switching values by shortening it to a desired length. In addition, the DP-10LC can be supplied designed for a reduced adjustment range so that it can be deployed also for minimum switching values.

Application:

The DP-10LC vane switches are used wherever fluid or air flows need to be reliably monitored. The switches are used for monitoring minimum as well as maximum flow. Typical areas of application include monitoring of coolant and lubricating circulation, protection against dry-runs in pumps or safeguard against defects. The DP-10LC is designed as robust device to allow its use across the entire industry.

Technical Specifications:

max. Pressure / DP-10LC.1/3.x: 11 bar
DP-10LC.2.x: 30 bar

max. Media temp. / DP-10LC.1/2.x: -40. . .+120°C
DP-10LC.3.1: -10 . .+85°C

max. Ambient temp. / DP-10LC.1/2.x: -40. . .+85°C
DP-10LC.3.1: -10 . .+85°C

Materials / see table 1.2

Mounting position / any, vane to the top not recommended, mounting position affects setpoint

Process connection / DP-10LC.1/2.x: R1"-male
DP-10LC.3.1: flange 89 x 63,5 mm

Media / DP-10LC.1/2.x: water
DP-10LC.3.1: air

Range of adjustment / see table 1.1

Weight / DP-10LC.x.x: 0,95 kg

Table 1.1 - Adjustable range

DP-10LC.1.x and DP-10LC.2.x:

Pipe Ø DN	Qmax. in m³/h	Adjustable range in m³/h	Adjustable range reduced in m³/h	Vane
25	3,6	0,6. . .2,0	0,2. . .1,0	1
32	6,0	0,8. . .2,8	0,25. . .1,4	1
40	9,0	1,1. . .3,7	0,5. . .1,6	1
50	15	2,2. . .5,7	0,9. . .3,6	1, 2*
65	24	2,7. . .6,5	1,2. . .4,9	1, 2*
80	36	4,3. . .10,7	2,1. . .7,4	1, 2, 3*
100	60	11,4. . .27,7 6,1. . .17,3	4,9. . .17,1 3,3. . .11,6	1, 2, 3* 1, 2, 3, 4*
125	90	22,9. . .53,3 9,3. . .25,2	9,7. . .34,0 5,0. . .17,5	1, 2, 3* 1, 2, 3, 4*
150	120	35,9. . .81,7 12,3. . .30,6	13,6. . .47,6 6,1. . .21,4	1, 2, 3* 1, 2, 3, 4*
200	240	72,6. . .165,7 38,6. . .90,8	25,7. . .90,1 21,7. . .55,3	1, 2, 3* 1, 2, 3, 4*

Adjustable range is indicated for horizontally decreasing flow (medium water), *have to be installed together.

DP-10LC.3.1

min. cut-out value (m/s)	max. cut-out value (m/s)	min. cut-in value (m/s)	max. cut-in value (m/s)
1.0	8.0	2.5	9.2

If the switchpoint is above 5 m/s the paddle has to be cut off at the marking.
The lowest switch-off value will then increase to 2,5 m/s flow velocity.
Switch range for air at 1 bar abs. & 20°C m/s.

Table 1.2 - Materials:

Type	DP-10LC.1.x	DP-10LC.2.x
Device body	Brass	Stainless steel AISI 316L
Housing	ABS-lower part (VO) with polycarbonate cover	ABS-lower part (VO) with polycarbonate cover
Vane	Stainless steel AISI 316L	Stainless steel AISI 316L

Type	DP-10LC.3.1
Hausing	ABS-lower part (VO) with polycarbonate cover
Vane	Stainless steel 1.4571
Mounting plate	Brass

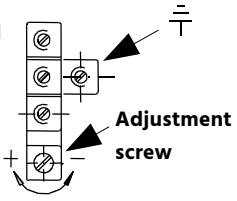
Electrical Specifications:

Electrical output / micro-switch, change-over contact, 250 VAC, 15 A (8 A inductive)

Cable gland / DP-10LC.x.x: M20 x 1,5

Protection class / IP65 with protective conductor conn.

Adjustment: untighten screws and remove cap, use screw to set to demanded setpoint, remount cap.



Ordering Codes:

Order number **DP-10LC. 1. 1**

DP-10LC Vane operated Flowswitch

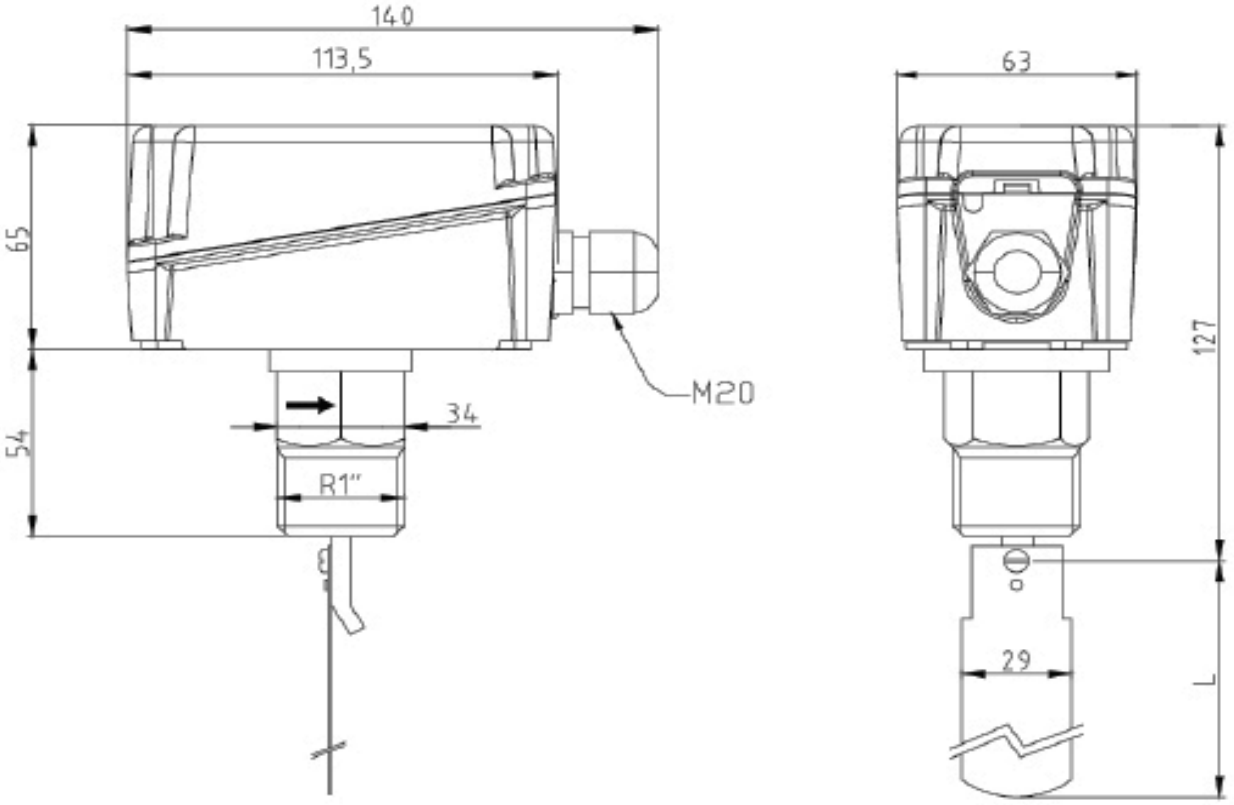
Version /
1 = brass
2 = stainless steel
3 = air

Adjustment range /
1 = standard
2 = reduced (only for DP-10LC.1 and DP-10LC.2)

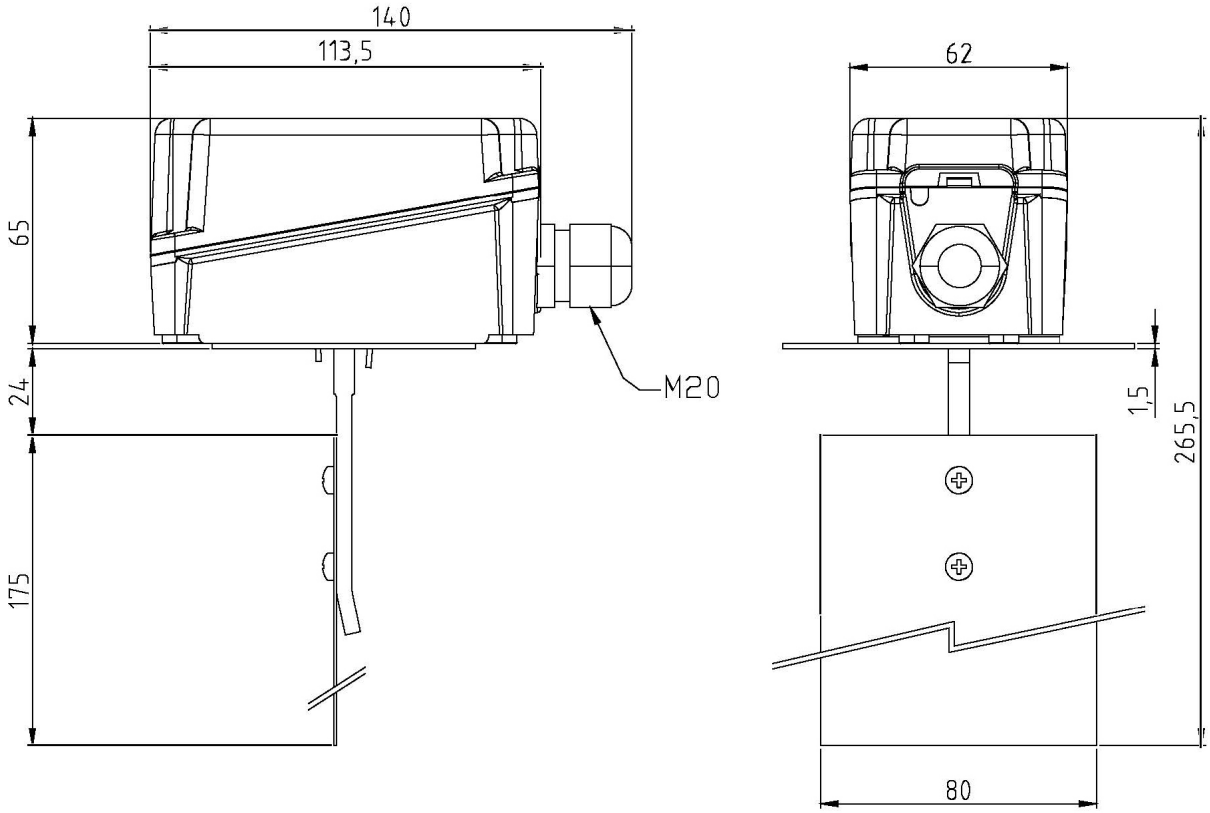
address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

Type: DP-10LC.1.x and DP-10LC.2.x:



Type: DP-10LC.3.1



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

DP-20/30

Vane operated Flowswitch

Description:

The DP-20 model is unique due to its simple but reliable design. An external magnet actuates a switch that is fully protected within a leak-proof housing. The body and the vane are manufactured of chemically resistant polyphenylene sulphide. The vane which can be shortened has well-sculpted divisions for pipes of DN 25 to DN 150.

The DP-30 model is smaller and more compact than the DP-20 and it is available in brass or stainless steel versions on account of which the switch can be deployed for pressure levels up to 138 bar. A unique switch setting enables a quick change-over of the contact function. By releasing two screws and subsequently shifting the shedded reed contact either of the NC-contact or the NO-contact functions can be selected. The vane has a shortening pattern that indicates at which point it must be separated for the 6 pipe nominal diameters of 1/2" to 2".

The DP-20 as well as the DP-30 indicate the correct flow direction of the medium over an indexing arrow on the body side.

Features

/ Easy to assemble

/ Cost-effective

/ Reliable

/ Excellent strength

/ For fluids and air

Application:

Vane switches offer a simple and cost-effective method of monitoring the flow of a medium. The vane moved by dynamic pressure switches an electrical contact magnetically when the flow exceeds or falls a certain value. This type of monitoring flow is successfully used in the entire industry wherever the media being monitored do not indicate any significant levels of pollution or too high speeds of flow.

DP-20 Vane Operated Flowswitch made from Plastic

Technical Specifications:

Wetted materials /	
Vane and body:	PPS
Pin and spring:	316 SS or Inconel®
Magnet:	Ceramic 8
max. Pressure /	10 bar
max. Media-temp. /	+100°C
Process connection /	1" NPT-male
Weight /	130 g
Installation /	with arrow in direction of flow
Mounting position /	Actuation/deactuation flow rates are based on horizontal pipe position and are nominal values. The device can not be used vertically.

Electrical Specifications:

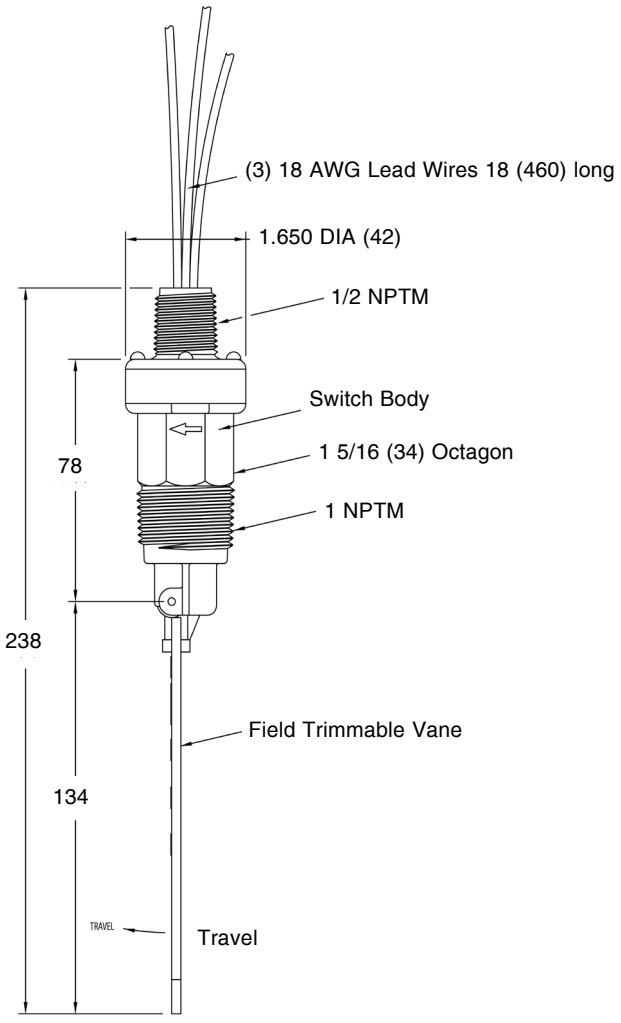
Contact /	
Standard	max. 5 A at 250 VAC resistive max. 3 A at 30 VDC inductive
Gold:	max. 1 A at 125 VAC resistive max. 0.5 A at 30 VDC conductive
Function /	single-pole change-over contact, optionally gold-plated
Connection /	three 18-AWG wires, 460 mm long

Flow range:

Pipe size	Flow range for cold water in l/min on-off	Flow range for air in l/min on-off
1"	40.9-34.6	1105-923
1 ¼"	37.2-31.4	1062-912
1 ½"	32.4-25.7	945-757
2"	41.2-33.4	1218-1042
3"	48.8-33.5	1493-1100
4"	79.7-52.2	2482-1802
6"	170.2-124.7	4775-3890

values measured on horizontal pipe

Dimensions in mm:



Ordering Codes:

Order Number	DP-20.	1.	2

DP-20 Vane Operated Flowswitch

Electrical connection /
1 = cable
2 = IP65 clamp-on housing

Contacts /
1 = standard
2 = gold

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

DP-30 Vane Operated Flowswitch made from Metal

Technical Specifications:

Wetted materials /	
Vane:	301 SS
Body:	Brass or 303 SS
Pin and magnet:	Keramik 8
max. Pressure /	Brass: 69 bar, Stainless steel: 138 bar
max. Media-temp. /	+93°C
Weight /	160 g
Process connection /	½" male NPT or ½" male BSPT
Installation /	with arrow in direction of flow
Mounting position /	any, values values based on horizontal pipe position, in the same way as for the DP-20

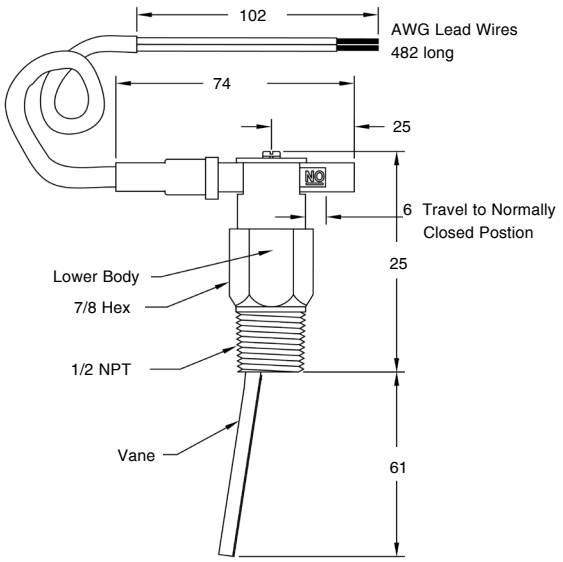
Electrical Specifications:

Contact /	max. 0.5 A/ 120 VAC or 1.5A/ 24VDC
Function /	NC-contact or NO-contact, hermetically sealed in PP
Electrical connection /	Two 18-AWG wires, 483 mm long
Protection class /	IP66

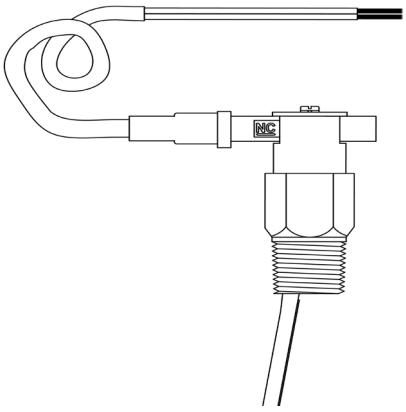
Flow range:

Pipe size	Flow range for cold water in l/min on-off, normally open	Flow range for cold water in l/min on-off, normally closed	Flow range for air in l/min on-off, normally open	Flow range for air in l/min on-off, normally closed
½"	9.8 - 8.7	9.8 - 9.5	291.7-250	288-260
¾"	11.7 - 10.2	11.7 - 10.6	368.3-328	365-328
1"	18.2 - 17	18.2 - 16.7	543.3-498	535-498
1 ¼"	23.5 - 21.2	23.1 - 21.2	701.7-628	693-637
1 ½"	31 - 29.1	31 - 29.1	946.7-883	935-867
2"	36 - 34.4	36 - 34.1	1422-1370	1422-1352

Dimensions in mm:



Normally open position



Normally closed position

Ordering Codes:

Order Number	DP-30.	1.	2

DP-30 Vane Operated Flowswitch

Material /
1 = brass
2 = stainless steel

Process connection /
1 = 1/2 male NPT
2 = 1/2 male BSPT

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

DP-40

Vane operated Flowswitch for heavy-duty applications

Features

/ Leak proof body

/ Free-Swinging vane

/ Electrical unit can be replaced

/ Thread, tee or flange installation

/ Field adjustable multilayer vane

/ Up to 1000 or 2000 psig

/ 5000 psig on special request

/ Weatherproof NEMA4

/ ATEX or IECEx

Description:

The DP-40 Flow Switch is rugged and reliable, ideal for automatically protecting equipment and pipeline systems against damage from reduction or loss of flow. A unique magnetically actuated switching design gives superior performance. There are no bellows, springs, or seals to fail. Instead, a free swinging vane attracts a magnet within the solid metal switch body, actuating a snap switch by means of a simple lever arm. Time tested in thousands of pipeline installations and processing plants around the world this series is weatherproof, designed to meet NEMA 4 and explosion-proof (listing included in specifications). The DP-40 can be used in pipes 1 ½″ and up.

Application:

/ Protects pumps, motors and other equipment against low or no flow
/ Controls sequential operation of pumps
/ Automatically starts auxiliary pumps and engines
/ Stops liquid cooled engines, machines and processing when coolant flow is interrupted
/ Shuts down burner when air flow through heating coil fails
/ Controls dampers according to flow

Technical Specifications

Media /	Gases or liquids compatible with wetted materials.
max. Pressure /	Brass body 1000 psig (69 bar), 316 SS body 2000 psig (138 bar), optional 5000 psig (345 bar) available with 316 SS body and SPDT switch only.
max. Media.-temp. /	-4. . .+275°F (-20. . .+135°C) standard, MT high temperature option +400°F (+205°C) [MT option not UL, CSA, ATEX or IECEx]
max. Ambeint-temp. /	-4. . .+163°F (-20. . .+73°C)
Wetted materials /	
Vane:	316 SS
Body:	Brass or 316 SS standard
Magnet keeper:	430 SS standard, 316 SS optional
Options:	Other materials are also available on request.
Protection class /	Weatherproof and Explosion-proof. **Listed with UL and CSA for Class I, Groups C and D; Class II, Groups E, F, and G.
ATEX-Certificate No. /	KEMA 03 ATEX 2383
ATEX-Certified /	ATEX CE 2813 Ex II 2 G Ex db IIB T6 Gb -20°C ≤ Tamb ≤ 73°C, -20°C ≤ Process Temps ≤ 73°C
ATEX Standards /	EN60079-0: 2012+A11: 2013 EN 60079-1: 2014
IECEx-Certificate No. /	IECEx DEK 11.0071
IECEx-Certified /	Ex db IIB T6 Gb -20°C ≤ Tamb ≤ 73°C -20°C ≤ Process Temp ≤ 73°C
IECE-Standards /	IEC 60079-0: IEC 60079-0: 2011 IEC 60079-1: 60079-1: 2014

Electrical Specifications:

Switch type /	SPDT snap switch standard, DPDT snap switch optional.
Electrical rating /	
UL, FM, ATEX and IECEx models:	10A @ 125/250 VAC (V~)
CSA models:	5 A @ 125/250 VAC (V~) 5 A res., 3 A ind. @ 30 VDC (V)
MV option:	1 A @125 VAC (V~); 1 A res. 5 A ind. @ 30 VDC (V)
MT option:	5 A @ 125/250 VAC (V~)

[MT and MV option without UL, CSA, FM, ATEX or IECEx]

Electrical connections /	
UL and CSA models:	16 AWG, 6″ (152 mm) long
ATEX and IECEx unit:	Terminal block
Conduit connection:	¾″ female NPT or M25 (BSPT)
Process connection:	1½″ NPT-male, BSPT
Mounting orientation:	Within 5° of vertical for proper operation. Units for horizontal installation (vertical pipe with up flow) available.
Set point adjustment /	
For universal vane:	five vane combinations
Weight:	4 lb 8 oz (1.9 kg)
Agency approvals:	ATEX, CE, CSA, FM, IECEx, UL**

**No housing option (-NH) has no approvals

Ordering Codes:

Order Number	DP-40.	1.	2.	D

DP-40 Vane operated flow switch, for heavy-duty applications

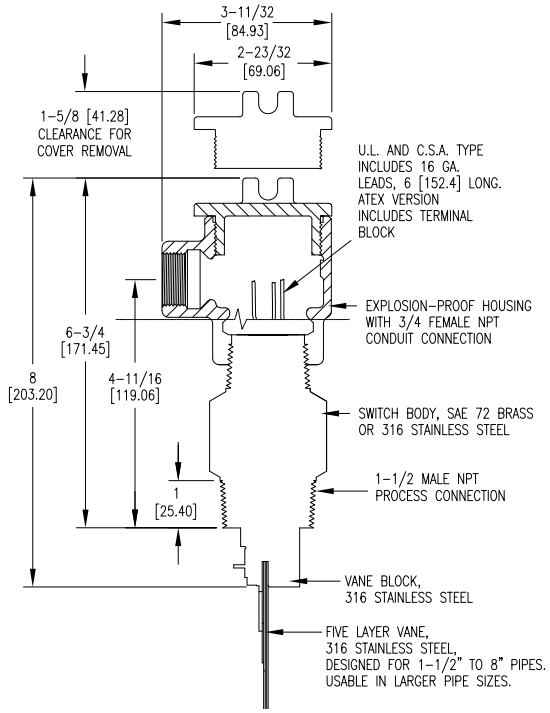
Housing /
1 = brass body
2 = 316 SS body

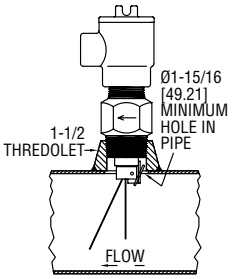
Process connection /
1 = 1½″ NPTM
2 = 1½″ BSPT

Options /
D = DPDT contacts
MV = gold plated contacts*
MT = high temperature, option rated 400°F (204°C)*
TRI = increasing flow time delay relay option with 2 SPDT contacts, adjustable from 0-1 to 0-31 minutes*
TRD = decreasing flow time delay relay option with 2 SPDT contacts, adjustable from 0-1 to 0-31 minutes*
316 = 316 SS magnet keeper
V = vertical up flow, option for upward flow in vertical pipe
AT = ATEX compliant construction
IEC = IECEx certified construction

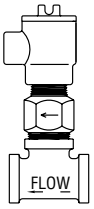
address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

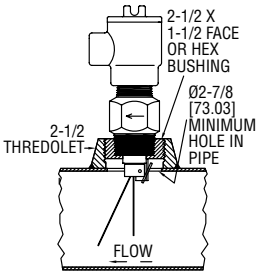




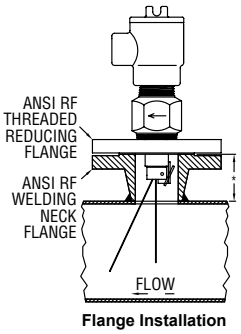
Standard Installation



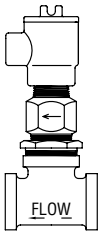
1-1/2˝ x 1-1/2˝x 1-1/2˝ Tee Installation



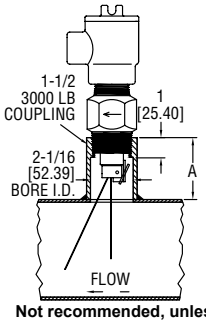
2-1/2˝ Threaded Branch Connection



Flange Installation
*Flange face to pipe O.D. specified by customer. Normally should not exceed 5˝ (172)



2˝ x 2˝ x 2˝ Tee Installation



Not recommended, unless coupling is bored out to 2-1/16˝ (52.4) as shown

Pipe Size	Dim. A
2˝	2-5/8 (66.7)
3˝	2-1/2 (63.5)
4˝	2-7/16 (61.9)

Approximate Actuation/Deactuation Flow Rates for Cold Water; GPM (LPM)

Vane Layers	1.5" Pipe	2" Pipe	3" Pipe	4" Pipe	6" Pipe	8" Rohr	10" Pipe	12" Pipe	14" Pipe	16" Pipe	18" Pipe	20" Pipe
1	7-3 (26.67-11.67)	15-8 (56.7-30)	45-22 (167-83.3)	95-40 (367-150)	210-120 (800-450)	375-175 (1417-667)	600-300 (2267-1133)	900-450 (3400-1700)	1200-600 (4550-2267)	1400-800 (5300-3033)	2000-1000 (7567-3783)	2400-1200 (9083-4550)
1 & 2		7-4 (26.7-15)	23-14 (86.7-53.3)	50-35 (190-132)	130-90 (500-333)	230-150 (867-567)	450-250 (1700-950)	650-350 (2467-1317)	900-500 (3400-1900)	1200-650 (4550-2467)	1450-800 (5483-3033)	1800-1000 (6817-3783)
1,2 & 3			11-7 (41.7-26.7)	27-19 (102-71.7)	80-60 (300-233)	160-115 (600-433)	300-180 (1133-683)	450-275 (1700-1033)	600-350 (2267-1317)	750-450 (2750-2083)	1000-600 (3783-2267)	1200-700 (4550-2650)
1,2,3 & 4				17-12 (65-45)	60-45 (233-167)	120-90 (450-333)	230-150 (867-567)	310-200 (1167-750)	430-280 (1633-1067)	550-360 (2083-1367)	700-450 (2650-1700)	850-550 (3217-2083)
1,2,3,4 & 5					40-30 (152-113)	80-65 (300-250)	135-100 (517-383)	200-140 (750-533)	290-200 (1100-750)	360-250 (1367-950)	460-325 (1733-1233)	575-400 (2183-1517)

Actuation rates are based on cold water at a specific gravity of 1.0.

For fluids of different specific gravity, actuation rates may be approximated by dividing the rate shown by the square root of the specific gravity.

Approximate Actuation/Deactuation Flow Rates for Cold Air; SCFM (LPS)

Vane Layers	1.5" Pipe	2" Pipe	3" Pipe	4" Pipe	6" Pipe	8" Pipe	10" Pipe	12" Pipe	14" Pipe	16" Pipe	18" Pipe	20" Pipe
1	32-17 (15-8)	65-32 (30-20)	210-105 (100-50)	400-200 (190-90)	950-475 (450-220)	1550-850 (730-400)	2400-1300 (1100-600)	3450-1900 (1600-900)	4700-2600 (2200-1200)	6400-3500 (3000-1700)	8000-4400 (3800-2100)	10000-5500 (4700-2600)
1 & 2		23-13 (10-6)	120-70 (60-30)	195-140 (90-70)	550-375 (260-180)	1100-700 (520-330)	1850-1200 (870-570)	2700-1750 (1300-800)	3400-2200 (1600-1000)	4800-3100 (2300-1500)	6000-3900 (2800-1800)	7400-4800 (3500-2300)
1,2 & 3			60-48 (30-20)	135-100 (60-50)	375-265 (180-130)	725-500 (340-240)	1200-850 (570-400)	1850-1300 (870-610)	2600-1800 (1200-800)	3350-2350 (1600-1100)	4300-3000 (2000-1400)	5300-3700 (2500-1700)
1,2,3 & 4				65-50 (30-20)	260-200 (120-90)	500-400 (240-190)	875-700 (410-330)	1250-1000 (590-470)	1900-1500 (900-710)	2500-2000 (1200-900)	3100-2500 (1500-1200)	3900-3100 (1800-1500)
1,2,3,4 & 5					130-100 (60-50)	310-250 (150-120)	650-525 (310-250)	1000-800 (470-380)	1600-1250 (760-590)	2200-1750 (1040-830)	2800-2250 (1300-1100)	3550-2850 (1700-1300)

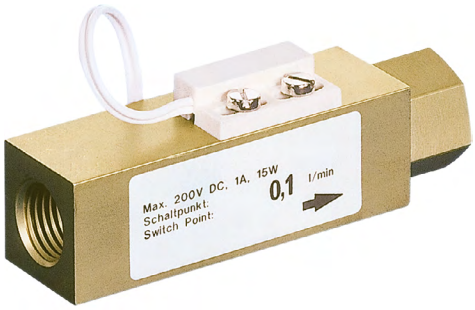
Actuation rates are based on air at standard conditions.

For gases at other pressures, temperatures, or specific gravities, consult factory for equivalent flow approximations.

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

DK-01

Low-Cost Piston Type Flow Switch for Low Flow Volumes with Cable Connection



Features

/ For low-viscosity fluids

/ Fixed factory-set setpoint (between 0.1 and 2.5 l/min)

/ Compact construction

/ Easy to install

/ Cost effective

/ Mounting in any position

/ Reed contact output

Description:

The DK-01 series of compact piston type flowswitches operates according to a modified variable area principle and is used for monitoring the flow of low-viscosity fluids. In this method, a piston equipped with a built-in permanent magnet, is held in a defined position by a spring. Depending on the rate of flow, the medium slides the piston against the strength of the spring. If the flow exceeds or drops below of the present set-point, the reed switch outside the medium is activated without contact via the permanent magnet.

Application:

The DK-01 series is used for monitoring the flow of low-viscosity fluids in pipes. They offer a reliable solution for ensuring the minimum flow rate and thereby protecting high-quality systems and installations from damage. For applications with contaminated media or media with ferritic components, we recommend the use of strainers (for example the FT-01, a strainer with or without magnetic separator in the section accessories) of our catalogue.

Typical applications are:

/ Coolant circulation systems

/ Lubricant circulation systems

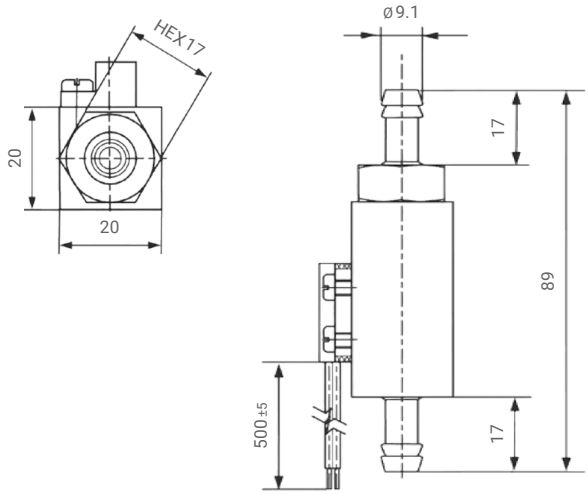
/ Water circulation systems

Technical Specifications:

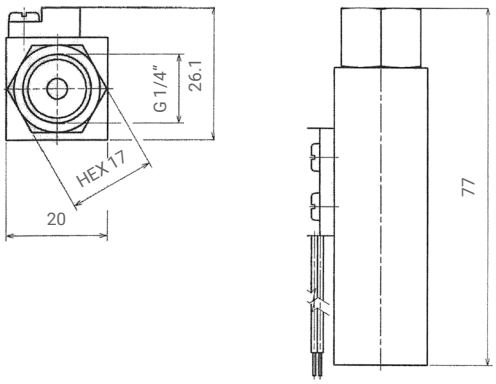
Set-point range /	0.1. . .2.5 l/min
Switching hysteresis /	ca. 0.1 l/min
max. Pressure /	25 bar, higher on request
max. Media temp. /	+100°C
max. Ambient temp. /	+70°C
Process connection /	R 1/4"-female thread or hose nozzle for 8 mm flexible tube, other on request
Mounting position /	any
Materials (wetted parts) /	
Body housing:	brass or stainless steel, other on request
Piston:	POM
Spring:	stainless steel 1.4410
Magnet:	hard ferrite OX 300

Dimensions in mm:

Piston type flowswitch with 8 mm hose nozzle at both sides



Piston type flowswitch with R 1/4" female thread at both sides



Electrical Specifications:

Electrical connection /	stranded wire 2-core, 0.5m cable
Contact /	reed contact, NO-contact
max. Switching voltage /	200 V
max. Switching current /	1 A
max. Switching load /	15 W

Handling:

/ It must be ensured, that the values given for voltage, current, and power are not exceeded.

/ When switched on, a load must be connected in series.

/ The electrical details apply to resistive loads. Capacitive, inductive and lamp loads must be operated using a protective circuit.

/ An inflow section of 10 times and an outflow section of 5 times of the nominal pipe diameter is recommended. Therefore our „BE-01 - Inflow and Outflow Sections for Flowmeters" may be used.

Ordering Codes:

Order number	**DK-01.**	**4.**	**1.**	**S[1][,][2].**	**0**

DK-01 Piston-Type Flowswitch

Process connection /
1 = inlet G 1/4"-female thread, outlet G 1/4"-female thread
2 = inlet G 1/4"-female thread, outlet hose nozzle 8 mm
3 = inlet hose nozzle 8 mm, outlet R 1/4"-female thread
4 = inlet hose nozzle 8 mm, outlet hose nozzle 8 mm
9 = customer-specific

Material housing /
1 = brass
2 = stainless steel

Switching point (please specify) /
S [ ][.][ ] = 0.1. . .2.5 l/min - for increasing flow (1)
F [ ][.][ ] = 0.1. . .2.5 l/min - for decreasing flow (1)

Options /
0 = none
9 = please specify in detailed text

(1) Set-point ranges are applicable for water 20°C, vertical mounting position. Upward flow direction. Example:
Preset set-point at 1.2 l/min for increasing flow » S [1][.][2]

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

SW-01

Miniature Variable Area Flowmeter and Switch

Features

/ Small dimensions for assembly

/ Brass and stainless steel versions

/ Scales for water and air

/ Mounting in any position

/ Highly accurate switching

/ Very low switching hysteresis

Description:

The SW-01 series of flowmeters and switches operates according to a modified variable area principle. Using a spring, the float is introduced into a cylindrical sight glass. The flowing medium moves the float in the direction of flow and the upper edge of the float indicates the flowing volume on the scale mounted on the sight glass. A reed contact is situated outside the device. This reed contact is infused in a stepless adjustable housing and thus protected from external influences. When the float reaches along with its integrated magnet the position of the reed contact, the contact blades get closed. If the volume of flow is higher the float continues to move (maximum up to the stopper that prevents overriding of the operating range). This ensures a bistable switching action at any time.

Application:

The SW-01 series of variable area flowmeters and switches is intended for measuring and monitoring low-viscosity fluid or gaseous media, for example, in cooling systems for welding machines, laser and pipe installations, pump monitoring, compressors and so on. In actual application, a switching hysteresis of only 0.5-1.5 mm float stroke has been achieved by careful selection of the reed contacts being used.

Ordering Codes:

Order number	SW-01.	1.	1.	1.	06.	1.	1.	1.	0

SW-01 Miniature Variable Area Flowmeter and Switch

Process connection /

1 = female thread G 1/4″
2 = female thread G 1/2″
3 = female thread G 3/4″
4 = female thread G 1″

Material /

1 = brass, spring stainless steel 1.4571
2 = stainless steel 1.4571

Scale /

1 = for water (20°C)
2 = for air (at 1.013 bar abs., 20°C)

Operating ranges / deactuation flow rates

	Water	Air
SW-01.1 only:		
00 =		0.2. . .1.3 Nl/min
01 =	5. . . 60 ml/min	0.5. . .2 Nl/min
02 =	25. . .130 ml/min	
02a =	60. . .300 ml/min	
03 =	0.1. . .0.6 l/min	0.8. . .3 Nl/min
04 =	0.2. . .1.2 l/min	1.5. . .5 Nl/min
05 =	0.4. . .2.0 l/min	2. . .8 Nl/min
06 =	0.5. . .3.0 l/min	3. . .12 Nl/min
07 =	1.0. . .5.0 l/min	3.5. . .14 Nl/min
08 =		5.5. . .20 Nl/min
09 =		7. . .24 Nl/min
10 =		10. . .35 Nl/min
10a =		10. . .42 Nl/min
SW-01.2 only:		
11c =	0.2. . .0.5 l/min	3. . .12 Nl/min
12c =	0.3. . .1.0 l/min	7. . .30 Nl/min
13c =	0.7. . .2.0 l/min	12. . .40 Nl/min
13d =		20. . .80 Nl/min
14c =	1.6. . .4.0 l/min	28. . .125 Nl/min
14a =		50. . .200 Nl/min
15c =	3.0. . .8.0 l/min	100. . .420 Nl/min
16c =	4.5. . .12.0 l/min	200. . .500 Nl/min
16d =	6.0. . .15.0 l/min	
17c =	8.0. . .20.0 l/min	
17d =	9.5. . .24.0 l/min	
17e =	12.0. . .28.0 l/min	
SW-01.3 or SW-01.4:		
18a =	8. . .30 l/min	
19 =	15. . .45 l/min	22.5. . .80 Nl/min
20 =	30. . .90 l/min	50. . .130 Nl/min
21 =		130. . .420 Nl/min
22 =		200. . .625 Nl/min
SW-01.4 only:		
21 =	60. . .150 l/min	

Number of contacts /

0 = none
1 = 1 contact
2 = 2 contacts

Contact functions /

0 = no contacts
1 = NO-contact
2 = change-over contact
3 = Ex m-change-over contact with 2 m infused cable
SW-01.3 and SW-01.4 only
4 = Ex m-NO-contact 2 m infused cable, SW-01.3 and SW-01.4 only
5 = change-over contact for PLC (not for SW-01.1)
6 = Ex ib-NO contact, SW-01.1 and SW-01.2 only
7 = Ex ib-change-over, SW-01.1 and SW-01.2 only

Electrical connection /

0 = none, if no contacts
1 = plug conn. DIN43650, counter plug incl.
2 = plug M12x1, counter plug incl. (-20. . .+85°C)
3 = 1 m infused cable (2 m for EX), (not for Ex ib-change-over contact)

Special issues /

0 = none
1 = please specify in detailed text

Technical Specifications:

Operating ranges /

H_2O: 5. . .60 ml/min to 60. . .150 l/min

air: 0.2. . .1.3 Nl/min to 200. . .625 Nl/min
(with refer. to 1.013 bar abs., 20°C)

Materials / brass- and stainless steel versions

Protection class / IP65 with plug DIN43650,
IP67 with cable connection or
plug M12x1, (ranges 18a-22, else IP65)

max. Pressure / SW-01.1 / SW-01.2: 16 bar
SW-01.3 / SW-01.4: 10 bar

Pressure drop / SW-01.1: 0.02. . .0.2 bar
SW-01.2: 0.02. . .0.3 bar
SW-01.3 / SW-01.4: 0.02. . .0.4 bar

max. Temp. / 100°C (160° optional)

El. Connection / plug as per DIN 43650 C

Accuracy / ± 10% of full scale value

Setpoint adjustment /

The contact opens respectively changes, when the upcoming flow falls below the adjusted setpoint.

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Wetted parts:

Element	brass version	st. steel version
Window	Duran® 50	Duran® 50
Spring	st. steel 1.4571	st. steel 1.4571
Seals	NBR (optional FKM, EPDM)	NBR (optional FKM, EPDM)
Magnet	hard ferrite	hard ferrite
Other parts	brass nickel-plated	st. steel 1.4571

Dry parts:

Element	brass version	st. steel version
shell	aluminium, anodized	aluminium, anodized

Contacts (max. V):

Element	SW-01.1	SW-01.2	SW-01.3 / SW-01.4
NO-contact	150V, 1A, 20VA	230V, 3A, 60VA	250V, 3A, 100VA
Change-over	200V, 1A, 20VA (3)	250V, 1.5A, 50VA (2),(3)	250V, 1.5A, 50VA (2)
Ex m-NO (1)			250V, 2A, 60VA
Ex m-CO (1)			250V, 1A, 30VA
Change-over SPS		250V, 1A, 60VA	250V, 1A, 60VA
NO M12x1	125 V, 1A, 20VA	125 V, 3 A, 60VA	250V, 3A, 100VA
Change-over M12x1	125 V, 1A, 20VA	125 V, 1.5 A, 50VA (2)	250V, 1.5A, 50VA (2)
Ex ib-NO	see Table		
Ex ib-CO	see Table		

(1) ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db - (max. Amb.temp. 75°C)
ATEX II 2 G Ex mb IIC T5 Gb & ATEX II 2 D Ex tb IIIC T100°C Db - (max. Amb.temp. 90°C)

(2) Minimum load 3VA

(3) Only with plug connection

EX ib NO contact and change-over contact

Gas			Dust		
Ui	Ii	Pi	Ui	Ii	Pi
< 12.1 V	1.0 A	3.0 W	< 12.1 V	0.25 A	0.75 W
< 20 V	0.309 A	1.55 W	< 20 V	0.25 A	0.75 W
< 25 V	0.158 A	0.99 W	< 25 V	0.25 A	0.75 W
< 30 V	0.101 A	0.76 W	< 30 V	0.25 A	0.75 W

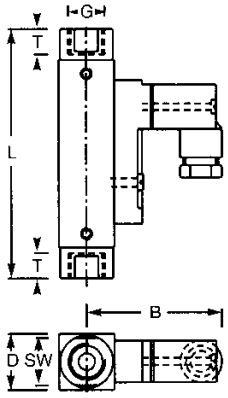
The switching units have to be connected only to intrinsically safe circuits.

Li = 0; Ci = 0
protection class with plug DIN 43650 C or plug M12: IP65
protection class with 1 m infused cable: IP67
marking: II 2G Ex ib IIC and II 2D Ex ib IIIC
operating temperature -5°C < TService < +45°C

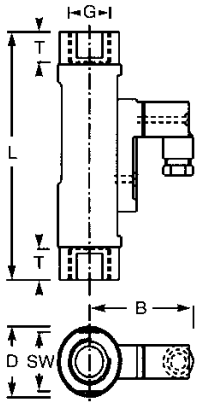
Dimensions in mm:

Type	SW	D	B	G	T	L	weight
SW-01.1	17	20	49	1/4"	10	90	140 g
SW-01.2	27	32	53	1/2"	14	114	300 g
SW-01.3	41	50	77	3/4"	18	139	850 g
SW-01.4	41	50	77	1"	18	158	900 g

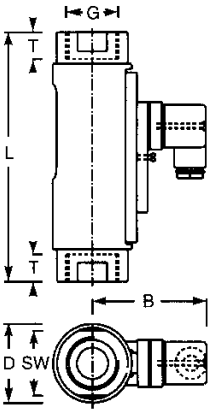
SW-01.1



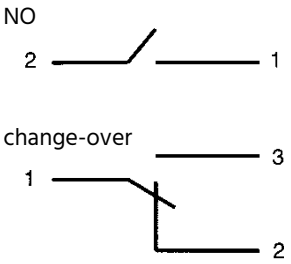
SW-01.2



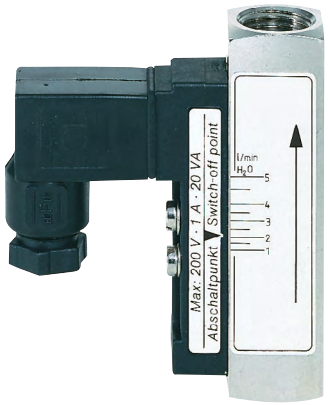
SW-01.3/ SW-01.4



Electrical connection



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com



SW-02

Miniature Variable Area Flowswitch

Features

/ Small dimensions for assembly

/ Brass and stainless steel versions

/ Scales for water and air

/ Mounting in any position

/ Highly accurate switching

/ Very low switching hysteresis

Description:

The SW-02 series of flowswitches operates according to a modified variable area principle. Using a spring, the float is introduced into a cylindrical hole. The flowing medium moves the float in the direction of flow and the upper edge of the float corresponds to the scale mounted on the body of the SW-02. A reed contact is situated outside the device. This reed contact is infused in a stepless adjustable housing and thus protected from external influences. When the float reaches along with its integrated magnet the position of the reed contact, the contact blades get closed. If the volume of flow is higher the float continues to move (maximum up to the stopper that prevents overriding of the operating range). This ensures a bistable switching action at any time.

Application:

The SW-02 series of variable area flowmeters and switches is intended for measuring and monitoring low-viscosity fluid or gaseous media, for example, in cooling systems for welding machines, laser and pipe installations, pump monitoring, compressors, high-pressure cleaners and so on. In actual application, a switching hysteresis of only 0.5. . .1.5 mm float stroke has been achieved by careful selection of the reed contacts being used.

Ordering Codes:

Order number	SW-02.	1.	1.	1.	06.	1.	1.	1.	0

SW-02 Miniature Variable Area Flowswitch

Process connection /
1 = female thread G 1/4″
2 = female thread G 1/2″
3 = female thread G 3/4″
4 = female thread G 1″

Material /
1 = brass, spring stainless steel 1.4571
2 = fully stainless steel 1.4571

Scale /
1 = for water (20°C)
2 = for air (at 1.013 bar absolute, 20°C)

Operating ranges / deactuation flow rates

	Water	Air
SW-02.1 only:		
01 =	5. . .60 ml/min	0.6. . .2.2 Nl/min
02 =	40. . .130 ml/min	
03 =	0.1. . .0.6 l/min	1.7. . .6 Nl/min
04 =	0.2. . .1.2 l/min	2.5. . .8 Nl/min
05 =	0.4. . .2.0 l/min	3. . .12 Nl/min
06 =	0.5. . .3.0 l/min	3. . .22 Nl/min
07 =	1.0. . .5.0 l/min	7. . .24 Nl/min
08 =		12. . .34 Nl/min
09 =		16. . .56 Nl/min
10 =		20. . .80 Nl/min
SW-02.2 only:		
11 =	0.02. . .0.2 l/min	2.5. . .10 Nl/min
12 =	0.2. . .0.6 l/min	5.5. . .20 Nl/min
13 =	0.4. . .1.8 l/min	8. . .30 Nl/min
14 =	0.8. . .3.2 l/min	10. . .35 Nl/min
14b =		45. . .90 Nl/min
15 =	2. . .7 l/min	55. . .220 Nl/min
16 =	3. . .13 l/min	65. . .240 Nl/min
17 =	4. . .20 l/min	80. . .300 Nl/min
18 =	8. . .30 l/min	140. . .525 Nl/min
SW-02.3 or SW-02.4:		
18a =	10. . .30 l/min	
19 =	15. . .45 l/min	60. . .180 Nl/min
19a =	20. . .60 l/min	
20 =	30. . .90 l/min	100. . .300 Nl/min
21* =	60. . .150 l/min	200. . .650 Nl/min

Number of contacts /
1 = 1 contact
2 = 2 contacts

Contact function /
1 = NO-contact
2 = change-over contact
3 = Ex m-change-over contact, SW-02.2, SW-02.3 a. SW-02.4 only (always with 2m infused cable)
4 = Ex m-NO-contact, SW-02.2, SW-02.3 and SW-02.4 only (always with 2m infused cable)
5 = change-over contact for PLC (not SW-02.1)
6 = Ex ib-NO-contact, SW-02.1 and SW-02.2 only
7 = Ex ib-change-over-contact, SW-02.1 and SW-02.2 only

Electrical connection /
1 = plug DIN43650, counter plug incl.
2 = plug M12x1, counter plug incl. (-20. . .+85°C)
3 = 1 m infused cable (2 m for Ex), (not for Ex ib-change-over-contact)

Special issues /
0 = none

*** operating range 21 for water only as SW-02.4 with G1″-female threads**

Technical Specifications:

Operating ranges /

H_2O: 5. . .60 ml/min to 60. . .150 l/min

Air: 0,6. . .2,2 Nl/min to 200. . .650 Nl/min (reference to 1,013 bar abs., 20°C)

Materials / brass and st. steel versions

Protection class / IP65 with plug DIN43650, IP67 with cable connection or plug M12 x 1, (ranges 18a-21, else IP65)

max. Pressure / brass: 1/4“ and 1/2“ 300 bar, 3/4“ and 1“ 250 bar; st. steel: 1/4“ and 1/2“ 350 bar, 3/4“ and 1“ 300 bar

Pressure drop / SW-02.1: 0.02. . .0.2 bar
SW-02.2: 0.02. . .0.3 bar
SW-02.3: 0.02. . .0.4 bar
SW-02.4: 0.02. . .0.4 bar

max. Temp. / water 100°C (optional 160°C)
air 120°C (optional 160°C)

El. connection / plug as per DIN 43650

Accuracy / ± 10% of full scale value

Setpoint adjustment /

The contact opens respectively changes, when the upcoming flow falls below the adjusted setpoint.

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Wetted Parts:

Element	brass version	st. steel version
Spring	st. steel 1.4571	st. steel 1.4571
Seals (1)	NBR (optional FKM, EPDM)	FKM (optional NBR, EPDM)
Magnet	hard ferrite	hard ferrite
Other parts	brass nickel-plated	st. steel 1.4571

(1) connection reductions only (SW-02.3)

Contacts (max. V):

Element	SW-02.1	SW-02.2	SW-02.3 / SW-02.4
NO-contact	200V, 1A, 20VA	230V, 3A, 60VA	250V, 3A, 100VA
Change-over	150V, 1A, 20VA (3)	250V, 1.5A, 50VA (2),(3)	250V, 1.5A, 50VA (2)
Ex m-NO (1)		250V, 2A, 60VA	250V, 2A, 60VA
Ex m-CO (1)		250V, 1A, 30VA	250V, 1A, 30VA (2)
Change-over SPS		250V, 1A, 60VA (3)	250V, 1A, 60VA
NO M12x1	125 V, 1A, 20VA	125 V, 3 A, 60VA	250V, 3A, 100VA
Change-over M12x1	125 V, 1A, 20VA	125 V, 1.5 A, 50VA (2)	250V, 1.5A, 50VA (2)
Ex ib-NO	see Table		
Ex ib-CO	see Table		

(1) ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db - (max. Amb.temp. 75°C)
ATEX II 2 G Ex mb IIC T5 Gb & ATEX II 2 D Ex tb IIIC T100°C Db - (max. Amb.temp. 90°C)

(2) Minimum load 3VA

(3) Only with plug connection

EX ib NO and Change-over

Gas			Dust		
Ui	Ii	Pi	Ui	Ii	Pi
< 12.1 V	1.0 A	3.0 W	< 12.1 V	0.25 A	0.75 W
< 20 V	0.309 A	1.55 W	< 20 V	0.25 A	0.75 W
< 25 V	0.158 A	0.99 W	< 25 V	0.25 A	0.75 W
< 30 V	0.101 A	0.76 W	< 30 V	0.25 A	0.75 W

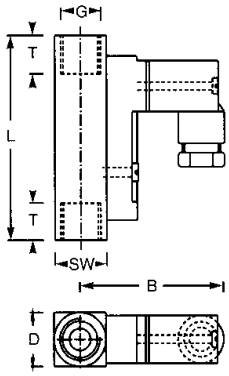
The switching units have to be connected only to intrinsically safe circuits.

Li = 0; Ci = 0
protection class with plug DIN 43650 C or plug M12: IP65
protection class with 1 m infused cable: IP67
marking: II 2G Ex ib IIC and II 2D Ex ib IIIC
operating temperature -5°C < TService < +45°C

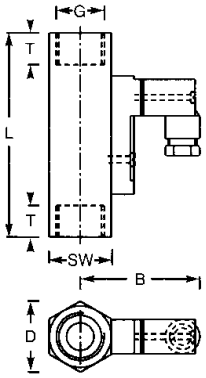
Dimensions in mm:

Type	SW	D	B	G	T	L	Weight
SW-02.1	18	18	48	1/4"	10	70	140 g
SW-02.2	27	31	52	1/2"	14	90	350 g
SW-02.3.1	34	47	79	3/4"	15	152	1240 g
SW-02.3.2	34	40	78	3/4"	15	152	1320 g
SW-02.4.1	41	47	79	1"	17	130	1030 g
SW-02.4.2	41	40	78	1"	17	130	1130 g

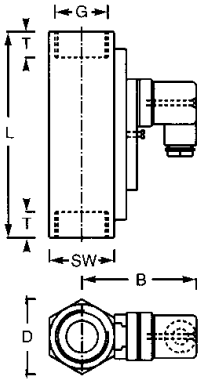
SW-02.1



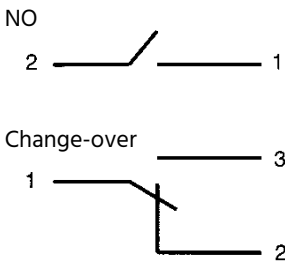
SW-02.2



SW-02.3 / SW-02.4



Electrical connection



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

SW-03

Variable Area Flowmeter and Switch

Features

/ Compact design

/ Brass and stainless steel versions

/ Scales for water and air

/ Highly accurate switching

/ Very low switching hysteresis

/ Non-abrasive burnt-in scale on sight glass

Description:

The SW-03 series of flowmeters and switches operates according to a modified variable area principle. The float is introduced into a cylindrical slit nozzle. The flowing medium moves the float in the direction of flow and the upper edge of the float indicates the flowing volume on the scale mounted on the sight glass. A reed contact is situated outside the device. This reed contact is infused in a stepless adjustable housing and thus protected from external influences. When the float reaches along with its integrated magnet the position of the reed contact, the contact blades get closed. If the volume of flow is higher the float continues to move maximum up to the stopper that prevents overriding of the operating range. This ensures a bistable switching action at any time.

Application:

The SW-03 series of variable area flowmeters and switches is intended for measuring and monitoring low-viscosity fluid or gaseous media, for example, in cooling systems for welding machines, laser and pipe installations, pump monitoring, compressors and so on.

Ordering Codes:

Order number	SW-03.	1.	1.	1.	06.	1.	1.	1.	0

SW-03 Variable Area Flowmeter and Switch

Process connection /
1 = female thread G 1/4″
2 = female thread G 1/2″
3 = female thread G 3/4″
4 = female thread G 1″

Material /
1 = brass
2 = stainless steel 1.4571

Scale /
1 = for water (20°C)
2 = for air (at 1.013 bar abs., 20°C)

Operating ranges / deactuation flow rates

	Water	Air
SW-03.1 and SW-03.2:		
01 =	0.1. . .1.6 l/min	3. . .30 Nl/min
02 =	0.2. . .3 l/min	6. . .60 Nl/min
03 =	0.3. . .8 l/min	6. . .160 Nl/min
04 =	1. . .12 l/min	20. . .220 Nl/min
SW-03.2 and SW-03.3:		
05 =	2. . .18 l/min	40. . .360 Nl/min
SW-03.3 and SW-03.4:		
06 =	3. . .35 l/min	60. . .700 Nl/min
07 =	4. . .50 l/min	60. . .825 Nl/min
SW-03.4 only:		
08 =		200. . .1600 Nl/min

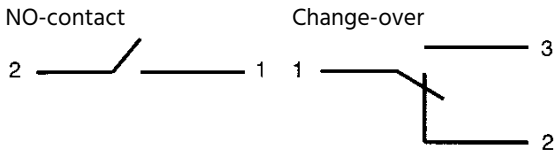
Number of contacts /
0 = none
1 = 1 contact
2 = 2 contacts

Contact function /
0 = no contacts
1 = NO-contact
2 = change-over contact
3 = Ex-change-over contact, (always with 2m infused cable)
4 = Ex-NO-contact, (always with 2m infused cable)
5 = change-over contact for PLC

Electrical connection /
0 = none, if no contacts
1 = plug DIN43650 shape A, counter plug incl.
2 = plug M12x1, counter plug incl. (-20. . .+85°C)
3 = 1 m infused cable (2 m for Ex)

Special issues /
0 = none
1 = please specify in detailed text

El. Connection:



Technical Specifications:

Protection class / IP65 with plug
IP67 with cable connection
or with device plug M12x1

max. Pressure / 10 bar

Pressure drop / 0.01. . .0.2 bar

max. Temp. / Water 100°C (160°C optional)
Air 80°C

El. Connection / device plug as per DIN 43650 A

Accuracy / Water ±5% of full scale value
Air ±10% of full scale value

Op. ranges / Water: 0.1. . .1.5 l/min up to 4. . .50 l/min
Air:
3. . .30 Nl/min up to 200. . .1600 Nl/min
(with reference to 1.013 bar abs., 20°C

Wetted parts:

Element	brass version	st. steel version
Window	Duran® 50	Duran® 50
Float	brass nickel-plated Air: POM	st. steel 1.4571 Air: POM
Seals	NBR (optional FKM, EPDM)	FKM (optional NBR, EPDM)
Other parts	brass nickel-plated	st. steel 1.4571

Dry parts:

Element	brass version	st. steel version
Shell	aluminium, anodized	aluminium, anodized

Contacts (max. V):

Contact function	
NO-contact, NO M12x1	250V, 3A, 100VA
Change-over, CO M12x1	250V, 1,5A, 50VA (2)
Ex m-NO (1)	250V, 2A, 60VA
Ex m-CO (1)	250V, 1A, 30VA (2)
Change-over PLC	250V, 1A, 60VA

(1) ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db
(max. Ambient temperature 75°C)
ATEX II 2 G Ex mb IIC T5 Gb & ATEX II 2 D Ex tb IIIC T100°C Db
(max. Ambient temperature 90°C)

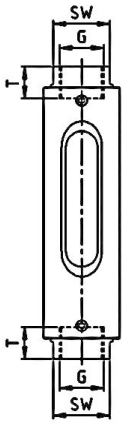
(2) Minimum load 3VA

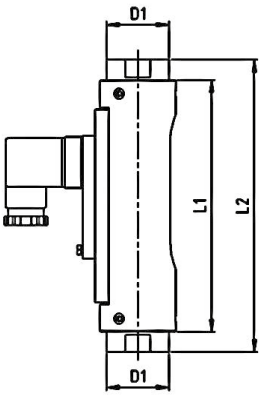
The contact opens respectively changes, when the upcoming flow falls below the adjusted setpoint.

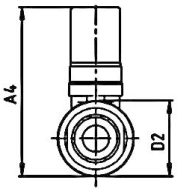
address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

Type	SW	L1	L2	G	T	D1	D2	A4	Weight
SW-03.1.x.x.x	32	121	132	1/4"	10	35	43	96	800 g
SW-03.2.x.x.x	32	121	135	1/2"	14	35	43	96	800 g
SW-03.2.x.x.05	32	143	161	1/2"	14	35	43	96	800 g
SW-03.3.x.x.05	32	143	166	3/4"	15	35	43	96	960 g
SW-03.3.x.x.06/07	41	143	163	3/4"	15	45	50	104	1450 g
SW-03.4.x.x.06/07	41	143	181	1"	17	45	50	104	1450 g
SW-03.4.x.2.08	41	159	205	1"	17	45	50	104	1450 g







address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

SW-04

Variable Area Flowmeter and Switch

Features

/ Compact design

/ Brass and stainless steel versions

/ Scales for water and air

/ Highly accurate switching

/ Very low switching hysteresis

/ Robust design without glass measuring tube

/ Suitable for high operating pressures

Description:

The SW-04 series of flowmeters and switches operates according to a modified variable area principle The float is introduced into a cylindrical slit nozzle. The flowing medium moves the float in the direction of flow. An externally mounted indicator instrument is magnetically coupled with the float and indicates the flowing volume on the scale mounted on a scale. A reed contact is situated outside the device. This reed contact is infused in a stepless adjustable housing and thus protected from external influences. When the float reaches along with its integrated magnet the position of the reed contact, the contact blades get closed. If the volume of flow is higher the float continues to move maximum up to the stopper that prevents overriding of the operating range. This ensures a bistable switching action at any time.

Application:

The SW-04 series of variable area flowmeters and switches is intended for measuring and monitoring low-viscosity fluid or gaseous media, for example, in cooling systems for welding machines, laser and pipe installations, pump monitoring, compressors, pump circulation, high pressure installations and so on.

Ordering Codes:

Order number	SW-04.	1.	1.	1.	06.	1.	1.	1.	1.	0

SW-04 Variable Area Flowmeter and Switch

Process connection /
1 = female thread G 1/4″
2 = female thread G 1/2″
3 = female thread G 3/4″
4 = female thread G 1″

Material /
1 = brass
2 = fully stainless steel 1.4571

Scale /
1 = for water (20°C)
2 = for air (at 1.013 bar absolute, 20°C)

Operating ranges / deactuation flow rates

SW-04.1 and SW-04.2:	Water	Air
01 =	0,1. . .1,5 l/min	1. . .28 Nl/min
02 =	0,2. . .3 l/min	4. . .60 Nl/min
03 =	0,3. . .8 l/min	6. . .160 Nl/min
04 =	1. . .12 l/min	20. . .240 Nl/min
SW-04.2 and SW-04.3:		
05 =	2. . .18 l/min	40. . .360 Nl/min
SW-04.3 and SW-04.4:		
06 =	3. . .35 l/min	60. . .700 Nl/min
07 =	4. . .50 l/min	
SW-04.4 only:		
08 =		200. . .1450 Nl/min

Flow display /
0 = only switch, no flow display
1 = flowmeter and switch with display instrument

Number of contacts /
0 = no contacts (for devices with display only)
1 = 1 contact
2 = 2 contacts

Contact function /
0 = no contacts (for devices with display only)
1 = NO-contact
2 = change-over contact
3 = Ex-change-over contact (always with 2m infused cable)
4 = Ex-NO-contact (always with 2m infused cable)
5 = change-over contact for PLC

Electrical connection /
0 = none, if no contacts
1 = plug DIN43650 shape A, counter plug incl.
2 = plug M12x1, counter plug incl. (-20°C...+85°C)
3 = 1 m infused cable (2 m for Ex)

Special issues /
0= none
1= please specify in detailed text

Technical Specifications:

Protection class /	IP65 with plug IP67 with cable connection or with device plug M12x1
max. Pressure /	brass version: 200 bar st. steel version: 300 bar
Pressure drop /	0,02. . .0,2 bar water 0,02. . .0,4 bar air
max. Temp. /	water 100°C (160°C optional) air 80°C
El. connection /	device plug as per DIN 43650 A
Accuracy /	water ±5% of full scale air ±10% of full scale
Measuring ranges /	**Water:** 0,1. . .1,5 l/min to 4. . .50 l/min **Air:** 1. . .28 Nl/min to 200. . .1450 Nl/min (for 1,013 bar abs., 20°C)

Contacts (max. V):

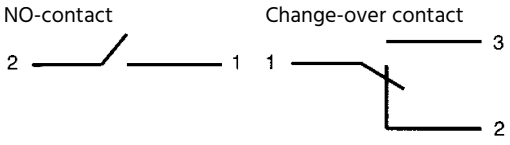
Contacts	
NO-contact, NO-contact M12x1	250V, 3A, 100VA
Change-over contact, COC M12x1	250V, 1,5A, 50VA (2)
Ex-NO-contact (1)	250V, 2A, 60VA
Ex-COC (1)	250V, 1A, 30VA (2)
Change-over contact PLC	250V, 1A, 60VA

(1) ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db (max. Ambient temperature 75°C)
ATEX II 2 G Ex mb IIC T5 Gb & ATEX II 2 D Ex tb IIIC T100°C Db (max. Ambient temperature 90°C)

(2) minimum load 3VA

The contact opens respectively changes, when the upcoming flow falls below the adjusted setpoint.

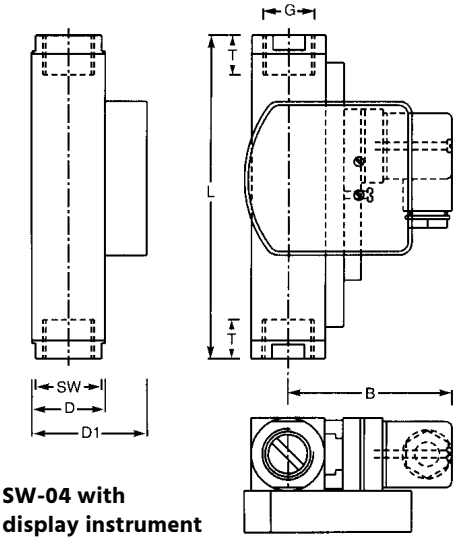
El. Connection:



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

Type	SW	D	D1	B	G	T	L	weight	with Display
SW-04.1.x.x.x	27	30	47	71	1/4"	14	131	800 g	850 g
SW-04.2.x.x.x	27	30	47	71	1/2"	19	131	800 g	850 g
SW-04.2.x.x.05	27	30	47	71	1/2"	19	146	850 g	900 g
SW-04.3.x.x.05	32	35	47	71	3/4"	17	174	960 g	1010 g
SW-04.3.x.1.06	34	40	57	76	3/4"	18	152	1450 g	1500 g
SW-04.4.x.1.06	40	40	57	76	1"	19	156	1450 g	1500 g
SW-04.3.x.2.06	34	40	57	76	3/4"	18	152	1350 g	1400 g
SW-04.4.x.2.06	40	40	57	76	1"	19	156	1050 g	1100 g
SW-04.3.x.1.07	34	40	57	76	3/4"	18	152	1450 g	1500 g
SW-04.4.x.1.07	40	40	57	76	1"	19	156	1450 g	1500 g
SW-04.4.x.2.08	50	50	67	81	1"	20	200	2750 g	2800 g



SW-04 with display instrument

Wetted parts:

Element	brass version	st. steel version
Float	brass nickel-plated/POM	St. steel 1.4571/POM
Seals	NBR (optional FKM, EPDM)	FKM (optional NBR, EPDM)
Thread rings (SW-04.4)	brass	st. steel 1.4571
Centering washer	brass nickel-plated	st. steel 1.4571
Other parts	brass nickel-plated	st. steel 1.4571
Display instrument	macrolon	macrolon

Dry parts:

Element	brass version	st. steel version
shell	aluminium, anodized	aluminium, anodized

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

SW-05

Variable Area Flowmeter and Switch, Mounting Position Independent

Description:

The SW-05 series of flowmeters and switches operates according to a modified variable area principle. Using a spring, the float is introduced into a cylindrical slit nozzle. The flowing medium moves the float in the direction of flow and the upper edge of the float indicates the flowing volume on the scale mounted on the sight glass. A reed contact is situated outside the device. This reed contact is infused in a stepless adjustable housing and thus protected from external influences. When the float reaches along with its integrated magnet the position of the reed contact, the contact blades get closed. If the volume of flow is higher the float continues to move maximum up to the stopper that prevents overriding of the operating range. This ensures a bistable switching action at any time.

Features

/ Any mounting position, no need of recalibration
/ Compact design
/ Brass and stainless steel versions
/ Highly accurate switching
/ Very low switching hysteresis
/ Non-abrasive burnt-in scale on sight glass

Application:

The spring action and magnetic float ensure absolute functional safety. Due to the spring mounted inside that presses the float in the opposite direction of flow into its initial position, the device can be deployed in any mounting position. No readjustment is required as the artificially matured spring is under pretension. The SW-05 series of variable area flowmeters and switches is intended for measuring and monitoring low-viscosity fluid, for example, in cooling systems for welding machines, laser and pipe installations, pump monitoring, compressors and so on.

Ordering Codes:

Order number	SW-05.	1.	1.	1.	06.	1.	1.	1.	0

SW-05 Variable Area Flowmeter and Switch

Connection /
1 = female thread G 1/4"
2 = female thread G 1/2"
3 = female thread G 3/4"
4 = female thread G 1"
5 = female thread G 1 1/4"

Material /
1 = brass, spring made of stainless steel 1.4571
2 = fully stainless steel 1.4571

Scale /
1 = for water (20°C)

Operating ranges / deactuation flow rates
SW-05.1 and SW-05.2:
01 = 0.2. . .4 l/min
02 = 0.5. . .6 l/min
03 = 0.5. . .8 l/min
04 = 0.5. . .14 l/min
SW-05.2 only:
04A = 2. . .22 l/min
05 = 1. . .28 l/min
SW-05.3 only:
06 = 1. . .45 l/min
SW-05.3 and SW-05.4:
07 = 2. . .80 l/min
07A = 6. . .90 l/min
SW-05.4 only:
08 = 6. . .110 l/min
SW-05.5 only:
09 = 15. . .150 l/min
10A = 50. . .220 l/min
11A = 50. . .250 l/min

Number of contacts /
0 = no contacts
1 = 1 contact
2 = 2 contacts

Contact function /
0 = none
1 = NO-contact
2 = change-over contact
3 = Ex-change-over contact (always with 2 m infused cable)
4 = Ex-NO-contact (always with 2 m infused cable)
5 = change-over contact for PLC

Electrical connection /
0 = none, if no contacts
1 = plug DIN43650 shape A, counter plug incl.
2 = plug M12x1, counter plug incl. (-20°C...+85°C)
3 = 1 m infused cable (2 m for EX)

Special issues /
0 = none
1 = please specify in detailed text

Technical Specifications:

Protection class /	IP65 with plug, IP67 with cable connection or with device plug M12x1
max. Pressure /	10 bar
Pressure drop /	0.02. . .0.8 bar
max. Temp. /	100°C (160°C optional)
El. connection /	device plug as per DIN 43650 A
Accuracy /	±5% of full scale value
Ranges /	0,2. . .4 l/min to 50. . .250 l/min water

Contacts (max. V):

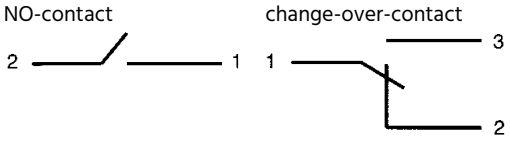
Contact function	
NO, NO M12x1	250V, 3A, 100VA
Change-over, change-over M12x1	250V, 1,5A, 50VA [2]
Ex-NO [1]	250V, 2A, 60VA
Ex-change-over [1]	250V, 1A, 30VA [2]
Change-over PLC	250V, 1A, 60VA

[1] ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db (max. Ambient temp. 75°C)
ATEX II 2 G Ex mb IIC T5 Gb & ATEX II 2 D Ex tb IIIC T100°C Db (max. Ambient temp. 90°C)

[2] Minimum load 3VA

The contact opens respectively changes, when the upcoming flow falls below the adjusted setpoint.

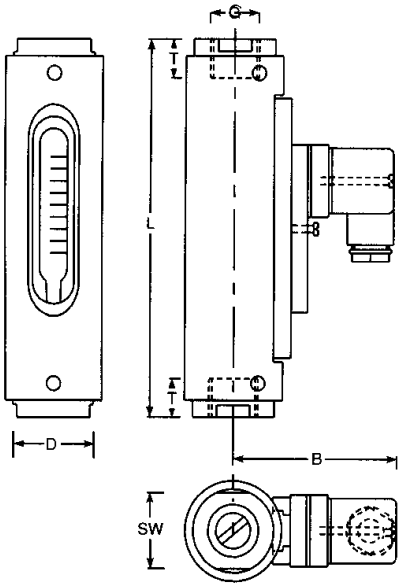
El. Connection:



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

Type	SW	D	B	G	T	L	weight
SW-05.1.x.x.x	32	43	73	1/4"	14	132	625 g
SW-05.2.x.x.x	32	43	73	1/2"	15	135	625 g
SW-05.2.x.x.04A/05	32	43	73	1/2"	15	135	650 g
SW-05.3.x.x.06	32	43	73	3/4"	18	167	850 g
SW-05.3.x.1.07	41	50	76	3/4"	18	164	1000 g
SW-05.4.x.1.07A/08	41	50	76	1"	19	184	1000 g
SW-05.4.x.1.09	50	55	79	1 1/4"	21	216	1300 g
SW-05.5.x.1.10A	55	60	81	1 1/4"	21	210	1700 g
SW-05.5.x.1.11A	50	55	79	1 1/4"	21	222	1400 g



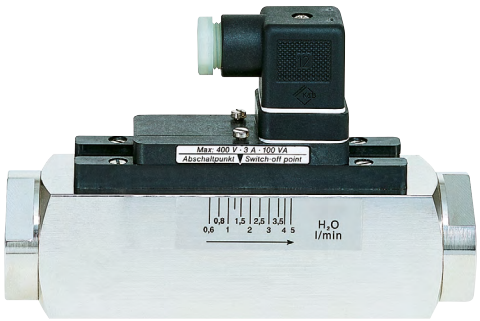
Wetted parts:

Element	brass version	st. steel version
Outer housing	aluminium, anodized	aluminium, anodized
Window	Duran® 50	Duran® 50
Spring	st. steel 1.4571	st. steel 1.4571
Seals	NBR (optional FKM, EPDM)	FKM (optional NBR, EPDM)
Other parts	brass nickel-plated	st. steel 1.4571

Dry parts:

Element	brass version	st. steel version
shell	aluminium, anodized	aluminium, anodized

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com



SW-06

Variable Area Flowmeter and Switch, Mounting Position Independent, High Pressure Type

Features

/ Any mounting position, no need of recalibration
/ Compact design
/ Brass and stainless steel versions
/ Highly accurate switching
/ Very low switching hysteresis
/ Robust design without sight glass
/ Suitable for high operating pressures

Description:

The SW-06 series of flowmeters and switches operates according to a modified variable area principle. The float is introduced into a cylindrical slit nozzle. The flowing medium moves the float in the direction of flow. An externally mounted indicator instrument is magnetically coupled with the float and indicates the flowing volume on the scale mounted on a scale. A reed contact is situated outside the device. This reed contact is infused in a stepless adjustable housing and thus protected from external influences. When the float reaches along with its integrated magnet the position of the reed contact, the contact blades get closed. If the volume of flow is higher the float continues to move maximum up to the stopper that prevents overriding of the operating range. This ensures a bistable switching action at any time.

Application:

The spring action and magnetic float ensure absolute functional safety. Due to the spring mounted inside that presses the float in the opposite direction of flow into its initial position, the device can be deployed in any mounting position. No readjustment is required as the artificially matured spring is under pretension. The SW-06 series of variable area flowmeters and switches is intended for measuring and monitoring low-viscosity fluids, for example, in cooling systems for welding machines, laser and pipe installations, pump monitoring, compressors etc.

Ordering Codes:

Order number	SW-06.	1.	1.	1.	06.	1.	1.	1.	1.	0

SW-06 Variable Area Flowmeter and Switch

Process connection /
1 = female thread G 1/4″
2 = female thread G 1/2″
3 = female thread G 3/4″
4 = female thread G 1″
5 = female thread G 1 1/4″
6 = female thread G 1 1/2″

Material /
1 = brass, spring made of stainless steel 1.4571
2 = fully stainless steel 1.4571

Scale /
1 = for water (20°C)

Operating ranges / deactuation flow rates

SW-06.1 and SW-06.2:
01 = 0.2. . .4 l/min
03 = 0.6. . .5 l/min
04 = 0.5. . .8 l/min
05 = 1. . .14 l/min
06 = 1. . .28 l/min

SW-06.2 and SW-06.3:
07 = 2. . .40 l/min
08 = 4. . .55 l/min

SW-06.3 and SW-06.4:
09 = 1. . .70 l/min
10 = 8. . .90 l/min
11 = 5. . .110 l/min

SW-06.5 only:
12 = 10. . .150 l/min

SW-06.5 and SW-06.6:
13a = 35. . .220 l/min
14 = 35. . .250 l/min

Flow indicator /
0 = switch only, no flow indicator
1 = flowmeter and switch, with display instrument

Number of contacts /
0 = no contacts (for devices with indicator only)
1 = 1 contact
2 = 2 contacts

Contact function /
0 = no contacts (for devices with indicator only)
1 = NO-contact
2 = change-over contact
3 = Ex-change-over contact (always with 2 m infused cable)
4 = Ex-NO-contact (always with 2 m infused cable)
5 = change-over contact for PLC

Electrical connection /
0 = none, if no contacts
1 = plug DIN43650 shape A, counter plug incl.
2 = plug M12x1, counter plug incl. (-20°C...+85°C)
3 = 1 m infused cable (2 m for Ex)

Special issues/
0 = none
1 = please specify in detailed text

Attention: Please specify mounting position and direction of flow in detailed text.

Technical Specifications:

Protection class /	IP65 with plug, IP67 with cable connection or with device plug M12x1
max. Pressure /	Brass version: 200 bar Stainless steel version: 300 bar
Pressure drop /	0.02. . .0.8 bar
max. Temp. /	100°C (160°C optional)
El. Connection /	device plug as per DIN 43650 A
Accuracy /	±5% of full scale value

Contacts (max. V):

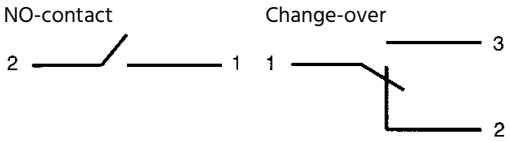
Contact function	
NO-contact	250V, 3A, 100VA
Change-over, CO M12x1	250V, 1.5A, 50VA (2)
Ex-NO (1)	250V, 2A, 60VA
Ex-Change-over (1)	250V, 1A, 30VA (2)
Change over PLC	250V, 1A, 60VA

(1) ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db (max. Ambient temperature 75°C)
ATEX II 2 G Ex mb IIC T5 Gb & ATEX II 2 D Ex tb IIIC T100°C Db (max. Ambient temperature 90°C)

(2) Minimum load 3VA

The contact opens respectively changes, when the upcoming flow falls below the adjusted setpoint.

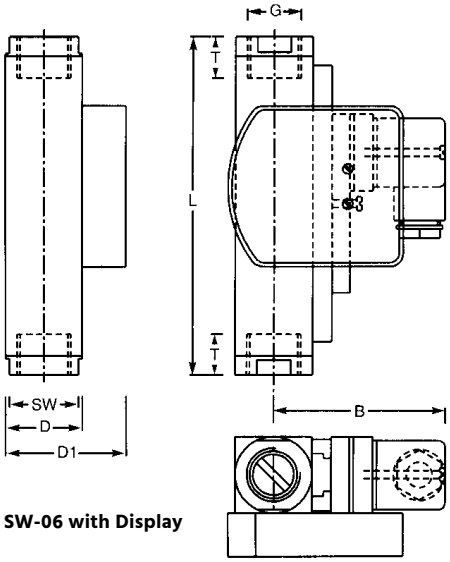
El. Connection:



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

Type	SW	D	D1	B	G	T	L	Weight	with Display
SW-06.1.x.x.x	27	30	47	71	1/4"	14	131	850 g	900 g
SW-06.2.x.x.01-06	27	30	47	71	1/2"	14	131	850 g	900 g
SW-06.2.x.x.07/08	27	30	47	71	1/2"	14	146	900 g	950 g
SW-06.3.x.x.07/08	32	35	47	71	3/4"	16	174	900 g	950 g
SW-06.3.x.x.09-11	34	40	57	76	3/4"	18	152	1400 g	1450 g
SW-06.4.x.x.09-11	40	40	57	76	1"	19	156	1100 g	1150 g
SW-06.5.x.x.12	50	50	57	76	1 1/4"	21	200	2750 g	2800 g
SW-06.5.x.x.13a-14	50	50	67	81	1 1/4"	21	200	3000 g	3050 g
SW-06.6.x.x.13a-14	60	60	77	82	1 1/4"	24	200	3800 g	3850 g



SW-06 with Display

Wetted Parts:

Element	brass version	st. steel version
Outer housing	aluminium enodized	aluminium enodized
Spring	st. steel 1.4571	st. steel 1.4571
Seals	NBR (optional FKM, EPDM)	FKM (optional NBR, EPDM)
Other parts	brass nickel-plated	st. steel 1.4571
Thread rings (SW-06.4.x. . .SW-06.6.x)	brass	st. steel 1.4571
Centering washer (op. ranges 09. . .11)	brass nickel-plated	st. steel 1.4571
Display	macrolon	macrolon

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

SW-07

Variable Area Flowmeter and Switch

Features

/ For viscous media from 30 cSt up to 600 cSt
/ Any mounting position, no need of recalibration
/ Compact design
/ Brass and stainless steel versions
/ Highly accurate switching
/ Very low switching hysteresis
/ Non-abrasive burnt-in scale on glass

Description:

The SW-07 series of flowmeters and switches operates according to a modified variable area principle. Using a spring, the float is introduced into a cylindrical slit nozzle. The flowing medium moves the float in the direction of flow and the upper edge of the float indicates the flowing volume on the scale mounted on the sight glass. A reed contact is situated outside the device. This reed contact is infused in a stepless adjustable housing and thus protected from external influences. When the float reaches along with its integrated magnet the position of the reed contact, the contact blades get closed. If the volume of flow is higher the float continues to move maximum up to the stopper that prevents overriding of the connecting range. This ensures a bistable switching action at any time.

Application:

The spring action and magnetic float ensure absolute functional safety. Due to the spring mounted inside that presses the float in the opposite direction of flow into its initial position, the device can be deployed in any mounting position. No readjustment is required as the artificially matured spring is under pretension. The strong pretension of the spring in combination with an aperture in the float limit the effect of the medium's viscosity fluctuations to a minimum in comparison with other normal float flowmeters. The SW-07 series of variable area flowmeters and switches is intended for measuring and monitoring viscous fluids, for example, in centrally controlled lubrication systems, oil circulation lubrication systems, transformer oils and so on.

Ordering Codes:

Order number	SW-07.	1.	1.	1.	06.	1.	1.	1.	0

SW-07 Variable Area Flowmeter and Switch

Process connection /
1 = female thread G 1/4"
2 = female thread G 1/2"
3 = female thread G 3/4"
4 = female thread G 1"

Material /
1 = brass, spring made of stainless steel 1.4571
2 = fully stainless steel 1.4571

Scale /
1 = for viscous media from 30 cSt up to 600 cSt

Operating ranges / deactuation flow rates*

SW-07.2 only (small design):

03	=	0.5. . .1.7 l/min	
03a	=	0.8. . .2.5 l/min	
04	=	1.3. . .4 l/min	
05	=	2.5. . .8 l/min	

SW-07.1 to SW-07.4:

06a	=	0.1. . .0.8 l/min	(only up to 400 cSt)
07	=	0.5. . .1.5 l/min	
08	=	1. . .4 l/min	
09	=	2. . .8 l/min	(not 1/4")
10	=	3. . .10 l/min	(not 1/4")
11	=	5. . .15 l/min	(not 1/4")
12	=	8. . .24 l/min	(not 1/4")
13	=	10. . .30 l/min	(not 1/4" or 1/2")
14	=	15. . .45 l/min	(not 1/4" or 1/2")
15	=	20. . .60 l/min	(not 1/4" or 1/2")
16	=	30. . .90 l/min	(not 1/4" or 1/2")

Number of contacts /
0 = no contacts
1 = 1 contact
2 = 2 contacts

Contact function /
0 = no contacts
1 = NO-contact
2 = change-over contact
3 = Ex m-change-over contact, operating ranges 06a-16 (always with 2 m infused cable)
4 = Ex m-NO-contact, operating ranges 06a-16 (always with 2 m infused cable)
5 = change-over contact for PLC
6 = Ex ib-NO contact, operating ranges 03. . .05 only
7 = Ex ib-change-over, operating ranges 03. . .05 only

Electrical connection /
0 = none, if no contacts
1 = plug conn. DIN43650 shape A, counter plug incl.
2 = plug M12x1, counter plug incl. (-20. . .+85°C)
3 = 1 m fused cable (2 m for Ex), (not for Ex ib-change-over contact)

Special issues /
0 = none
1 = please specify in detailed text

*setpoints are valid for fluids with a specific weight of 0.9 kg/dm³

Technical Specifications:

Protection class /	IP65 with plug DIN43650, IP67 with cable connection or plug M12x1 (SW-07.3 and SW-07.4, else IP65)
max. Pressure /	16 bar operating ranges 03. . .05 10 bar operating ranges 06a. . .16
Pressure drop /	0.02. . .0.2 bar ranges 03. . .05 0.02. . .0.4 bar ranges 06a. . .16
max. Temp. /	120°C (160°C optional)
El. Connection /	device plug as per DIN 43650
Accuracy /	±10% of full scale value
Ranges /	0.1. . .0.8 l/min to 30. . .90 l/min for fluids with viscosity between 30. . .600 cSt

Contacts (max. V):

Contact function	
NO-contact ranges 03-05	230V, 3A, 60VA
NO-contact ranges 06a-16	250V, 3A, 100VA (1, 2)
CO-contact	250V, 1.5A, 50VA
Ex m-NO-contact ranges 06a-16	250V, 2A, 60VA (1, 2)
Ex m-CO-contact ranges 06a-16	250V, 1A, 30VA (1, 2)
CO-contact PLC	250V, 1A, 60VA (3)
NO-contact M12x1 ranges 03-05	125 V, 3A, 60VA
CO-contact M12x1 ranges 03-05	125 V, 1.5A, 50VA
NO-contact M12x1 ranges 06a-16	250 V, 3A, 100VA (1, 2)
CO-contact M12x1 ranges 06a-16	250 V, 1.5A, 50VA (1, 2)

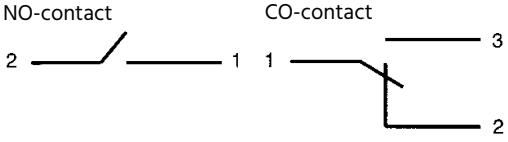
(1) ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db (max. Ambient temp. 75°C)
ATEX II 2 G Ex mb IIC T5 Gb & ATEX II 2 D Ex tb IIIC T100°C Db (max. Ambient temp. 90°C)

(2) Minimum load 3VA

(3) ranges 03-05 only with plug connection

The contact opens respectively changes, when the upcoming flow falls below the adjusted setpoint.

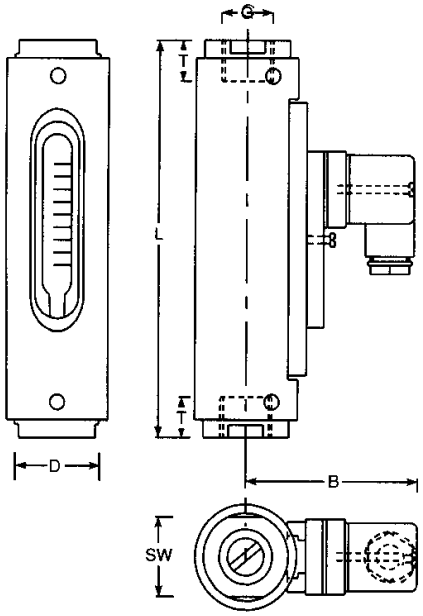
Electrical Connection:



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

Type	SW	D	B	G	T	L	Weight
SW-07.1.x.x.x	41	45	74	1/4"	10	144.5	850 g
SW-07.2.x.x.03-05	27	30	54	1/2"	14	114	300 g
SW-07.2.x.x.06a-12	41	45	74	1/2"	14	144.5	850 g
SW-07.3.x.x.x	41	45	74	3/4"	15	138.5	850 g
SW-07.4.x.x.x	41	45	74	1"	17	158.5	850 g



Wetted parts:

Element	brass version	st. steel version
Magnets	hard ferrite	hard ferrite
Window	Duran® 50	Duran® 50
Spring	st. steel 1.4571	st. steel 1.4571
Seals	FKM (optional NBR, EPDM)	FKM (optional NBR, EPDM)
Other parts	brass nickel-plated	st. steel 1.4571

Dry parts:

Element	brass version	st. steel version
shell	aluminium, anodized	aluminium, anodized

EX ib NO contact and change-over contact

Gas			Dust		
Ui	Ii	Pi	Ui	Ii	Pi
< 12.1 V	1.0 A	3.0 W	< 12.1 V	0.25 A	0.75 W
< 20 V	0.309 A	1.55 W	< 20 V	0.25 A	0.75 W
< 25 V	0.158 A	0.99 W	< 25 V	0.25 A	0.75 W
< 30 V	0.101 A	0.76 W	< 30 V	0.25 A	0.75 W

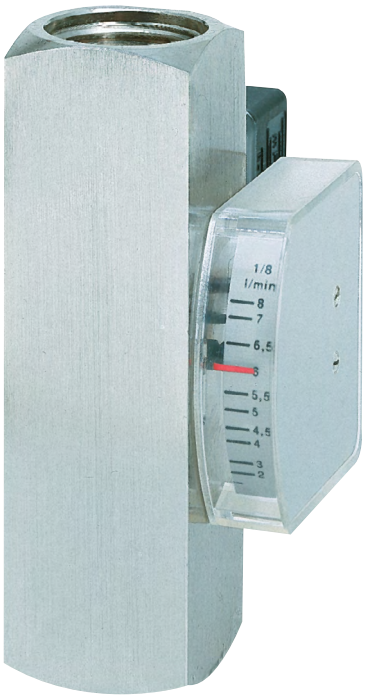
The switching units have to be connected only to intrinsically safe circuits.

Li = 0; Ci = 0
protection class with plug DIN 43650 C or plug M12: IP65
protection class with 1 m infused cable: IP67
marking: II 2G Ex ib IIC and II 2D Ex ib IIIC
operating temperature -5°C < TService < +45°C

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

SW-08

Viscosity-Compensated Variable Area Flowmeter, independent of Mounting Position, High-Pressure Version



Features

/ For viscous media from 30 cSt up to 600 cSt
/ Any mounting position, no need of recalibration
/ Compact design
/ Brass and stainless steel versions
/ Highly accurate switching
/ Very low switching hysteresis
/ Robust design without sight glass
/ Suitable for high operating pressures

Description:

The SW-08 series of flowmeters and switches operates according to a modified variable area principle. The float is introduced into a cylindrical slit nozzle. The flowing medium moves the float in the direction of flow. An externally mounted indicator instrument is magnetically coupled with the float and indicates the flowing volume on a scale. A reed contact is situated outside the device. This reed contact is infused in a stepless adjustable housing and thus protected from external influences. When the float reaches along with its integrated magnet the position of the reed contact, the contact blades get closed. If the volume of flow is higher the float continues to move maximum up to the stopper that prevents overriding of the connecting range. This ensures a bistable switching action at any time.

Application:

The spring action and magnetic float ensure absolute functional safety. Due to the spring mounted inside that presses the float in the opposite direction of flow into its initial position, the device can be deployed in any mounting position. No readjustment is required as the artificially matured spring is under pretension. The strong pretension of the spring in combination with an aperture in the float limit the effect of the medium's viscosity fluctuations to a minimum in comparison with other normal float flowmeters. The SW-08 series of variable area flowmeters and switches is intended for measuring and monitoring viscous fluids, for example, in centrally controlled lubrication systems, oil circulation lubrication systems, transformer oils and so on.

Ordering Codes:

Order number	SW-08.	1.	1.	1.	06.	1.	1.	1.	1.	0

SW-08 Variable Area Flowmeter and Switch

Process connection /
1 = female thread G 1/4″
2 = female thread G 1/2″
3 = female thread G 3/4″
4 = female thread G 1″

Material /
1 = brass, spring stainless steel 1.4571
2 = stainless steel 1.4571

Scale /
1 = for viscous media from 30 cSt up to 600 cSt

Operating ranges / deactuation flow rates*
SW-08.2 only:
03 = 0.5. . .1.6 l/min (1/4" with adapter)
04 = 0.8. . .3 l/min
05 = 2. . .7 l/min
SW-08.4 only:
07 = 0.5. . .1.5 l/min (1/4", 1/2", 3/4" with adapter)
08 = 1. . .4 l/min (1/4", 1/2", 3/4" with adapter)
09 = 2. . .8 l/min (1/2" and 3/4" with adapter)
10 = 3. . .10 l/min (1/2" and 3/4" with adapter)
11 = 5. . .15 l/min (1/2" and 3/4" with adapter)
11a = 1. . .20 l/min (1/2" and 3/4" with adapter)
12 = 8. . .24 l/min (1/2" and 3/4" with adapter)
13 = 10. . .30 l/min (3/4" with adapter)
13a = 4. . .40 l/min (1/2" and 3/4" with adapter)
14 = 15. . .45 l/min (3/4" with adapter)
14a = 5. . .50 l/min (3/4" with adapter)
14b = 8. . .60 l/min (3/4" with adapter)
15 = 20. . .60 l/min (3/4" with adapter)
15a = 12. . .70 l/min
15b = 15. . .80 l/min
16 = 30. . .90 l/min
17 = 35. . .110 l/min
99 = Special operating range

Flow indicator /
0 = switch only, no flow indicator
1 = flowmeter and switch, with indicator

Number of contacts /
0 = none (for devices with indicator only)
1 = 1 contact
2 = 2 contacts

Contact function /
0 = no contacts (for devices with display only)
1 = NO-contact
2 = change-over contact
3 = Ex m-change-over contact (always with 2m infused cable)
4 = Ex m-NO-contact (always with 2m infused cable)
5 = change-over contact for PLC
6 = Ex ib-NO-contact, ranges 03. . .05 only
7 = Ex ib-change-over-contact, ranges 03. . .05 only

Electrical connection /
0 = none, if no contacts
1 = plug DIN43650, counter plug incl.
2 = plug M12x1, counter plug incl. (-20. . .+85°C)
3 = 1 m infused cable (2 m for Ex),(not for Ex ib-change-over-contact)

Special issues /
0 = none
1 = please specify in detailed text

*setpoints are valid for fluids with a specific weight of 0.9 kg/dm³

Technical Specifications:

Protection class / IP65: plug conn. DIN 43650
IP67 with cable connection or plug connection M12x1
(SW-08.3 and SW-08.4, else IP65)

max. Pressure / **Brass version:**
300 bar operating ranges 03. . .05,
250 bar operating ranges 07. . .17

Stainless steel version:
350 bar operating ranges 03. . .05,
300 bar operating ranges 07. . .17

Pressure drop / 0.02. . .0.2 bar op. ranges 03. . .05
0.02. . .0.4 bar op. ranges 07. . .17

max. Temp. / 120°C (160°C optional)

El. connection / device plug as per DIN 43650

Accuracy / ±10% of full scale value

Ranges / 0.5. . .1.5 l/min to 35. . .110 l/min
with viscosity from 30. . .600 cSt

Contacts (max. V):

Element	SW-08.x.x.x.03-05	SW-08.x.x.x.07-17
NO-contact	230V, 3A, 60VA	250V, 3A, 100VA
Change-over	250V, 1.5A, 50VA (2) (3)	250V, 1.5A, 50VA (2)
Ex m-NO (1)	250V, 2A, 60VA	250V, 2A, 60VA
Ex m-CO (1)	250V, 1A, 30VA	250V, 1A, 30VA (2)
Change-over SPS	250V, 1A, 60VA (3)	250V, 1A, 60VA
NO M12x1	125 V, 3 A, 60VA	250V, 3A, 100VA
Change-over M12x1	250V, 1.5A, 50VA (2)	250V, 1.5A, 50VA (2)

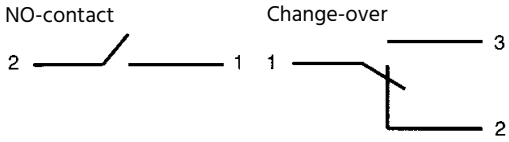
(1) ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db (max. Amb.temp. 75°C)
ATEX II 2 G Ex mb IIC T5 Gb & ATEX II 2 D Ex tb IIIC T100°C Db (max. Amb.temp. 90°C)

(2) Minimum load 3VA

(3) ranges 03-05 with plug connection only

The contact opens respectively changes, when the upcoming flow falls below the adjusted setpoint.

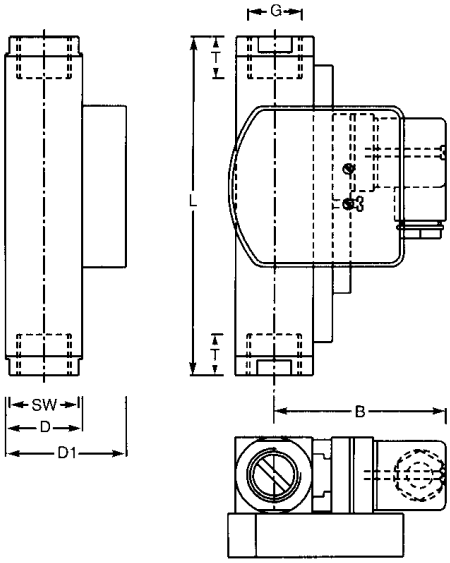
El. Connection:



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Dimensions in mm:

Type	SW	D	D1	B	G	T	L	weight	with display
SW-08.1.x.x.03.0	24	27,5	47	52	1/4"	10	98	400 g	620 g
SW-08.2.x.x.03-05.0	27	31	47	52	1/2"	14	90	350 g	570 g
SW-08.1.x.x.07-08.x	34	40	57	73	1/4"	10	152	1500 g	1590 g
SW-08.2.x.x.07-12.x	34	40	57	73	1/2"	14	152	1425 g	1515 g
SW-08.3.x.x.07-15.x	34	40	57	73	3/4"	15	152	1340 g	1430 g
SW-08.4.x.x.07-17.x	40	40	57	73	1"	17	130	1160 g	1250 g



Wetted parts:

Element	brass version	st. steel version
Window	brass nickel-plated	st. steel 1.4571
Spring	st. steel 1.4571	st. steel 1.4571
Seals	FKM (optional NBR, EPDM)	FKM (optional NBR, EPDM)
Other parts	brass	st. steel 1.4571
Magnet	hard ferrite	hard ferrite
Display instrument (non-wetted)	macrolon	macrolon

EX ib NO and Change-over

Gas			Dust		
Ui	Ii	Pi	Ui	Ii	Pi
< 12.1 V	1.0 A	3.0 W	< 12.1 V	0.25 A	0.75 W
< 20 V	0.309 A	1.55 W	< 20 V	0.25 A	0.75 W
< 25 V	0.158 A	0.99 W	< 25 V	0.25 A	0.75 W
< 30 V	0.101 A	0.76 W	< 30 V	0.25 A	0.75 W

The switching units have to be connected only to intrinsically safe circuits.

Li = 0; Ci = 0
protection class with plug DIN 43650 C or plug M12: IP65
protection class with 1 m infused cable: IP67
marking: II 2G Ex ib IIC and II 2D Ex ib IIIC
operating temperature -5°C < TService < +45°C

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

ST-01

Analogue Transmitter for Variable Area Flowmeters from the SW series

Features

/ Additional analogue signal

/ Easy solution

/ Economic

Description:

The analogue transmitter ST-01 will be simply installed on the outside of a VA flowmeter. A hall-effect sensor detects the magnetic floaters position inside the measuring device and sends out an analog signal of 4. . .20 mA or 0. . .10 V. The signal can then be used by most common devices. The transmitter is installed and configured on new flowmeters from factory. It is available for any VA flowmeter of the SW-series (SW-01 to SW-08).

Application:

The ST-01 Signal can be used e.g. for alarm functions. Its main task, however, is to forward the current flow value with the signal.

Technical Specifications:

Accuracy /	± 1 % of full scale [1]
Operating temp. /	-20. . .70 °C
Storage temp. /	-20. . .80 °C
Repeatability /	tbd.
Housing /	aluminium, blue anodized (optional 1.4571)

[1] The actual accuracy depends on the flow sensor used. On request the accuracy of the flow sensor used can be significantly increased by a customized calibration.

Electrical Specifications:

Analog output /	4. . .20 mA or 0. . .10 V
Power supply /	24 VDC (19. . .30 VDC)
Power consumption /	< 1 W
Current output /	max. load 600 Ω
Power output /	max. current 10 mA
Connection /	round plug M12x1, 5-wire
Protection class /	IP 65 & IP 67

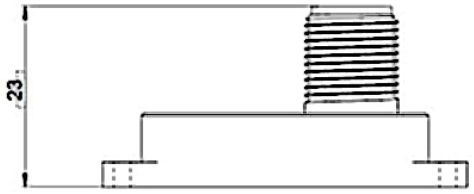
Connections:

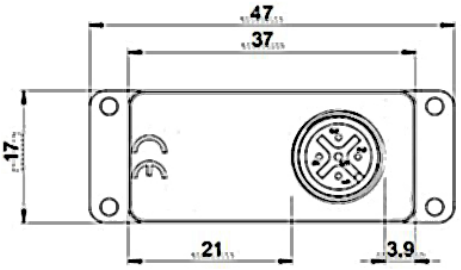
Attention: Pin 5 must not be electrically connected! We strongly recommend use of a four core cable.

Ordering Codes:

Order number	**ST-01**
ST-01 Analog transmitter	

Dimensions in mm:





address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

DT-03

Calorimetric Flow Sensor in Compact Design with Optional Analogue Output

Features

/ No moving parts

/ Optionally with temperature output

/ Switch or transmitter

/ Mounting in T pieces of 3/8“ to 2“

/ Wetted stainless steel

Description:

The sensor system of the DT-03 series flow sensor is based on the calorimetric principle. A heated measuring resistance is mounted into a stainless steel sleeve in such a manner that the fluid carries the heat proportional to the inflow velocity. The heat output that must be fed to the sensor in order to maintain the resistance temperature constant is, therefore, a measure for the volume of flow. A second PT100 measuring resistance is located inside the sleeve within the flow to measure the temperature of the media. This will rule out temperature changes in the streaming fluid being interpreted erroneously as change of flow. The electronic components in the DT-03 receive information from the sensor about the flow and the temperature and convert them into a PNP or NPN switching output, a 0. . .10 V DC or 4. . .20 mA analogue output or an impulse output. At the 4-pole output plug of the DT-03 an analogue output and a switching output (on request as impulse output) are tapped that can be freely assigned ex factory to the parameters of volume and temperature.

Application:

The flow sensors of the DT-03 series are the logical consequence of Profimess‘ proven DT-01 and DT-02. Due to the new method of outputting flow and temperature also as analogue or impulse output and combining both the parameters, the application spectrum of the calorimetric technology has experienced a vast expansion in the technology of fluid measurement. The DT-03 sensors are used wherever flow and temperature of fluid media need to be tapped in narrow spaces and wherever it would be advantageous, due to the type of fluid, to use entirely stainless steel switches for the wetted parts without any moving components. In order to ensure maximum error sensitivity of the sensor, the DT-03 should be mounted for direction of flow from bottom to top as this will facilitate optimum ventilation even in extremely low flow speeds.

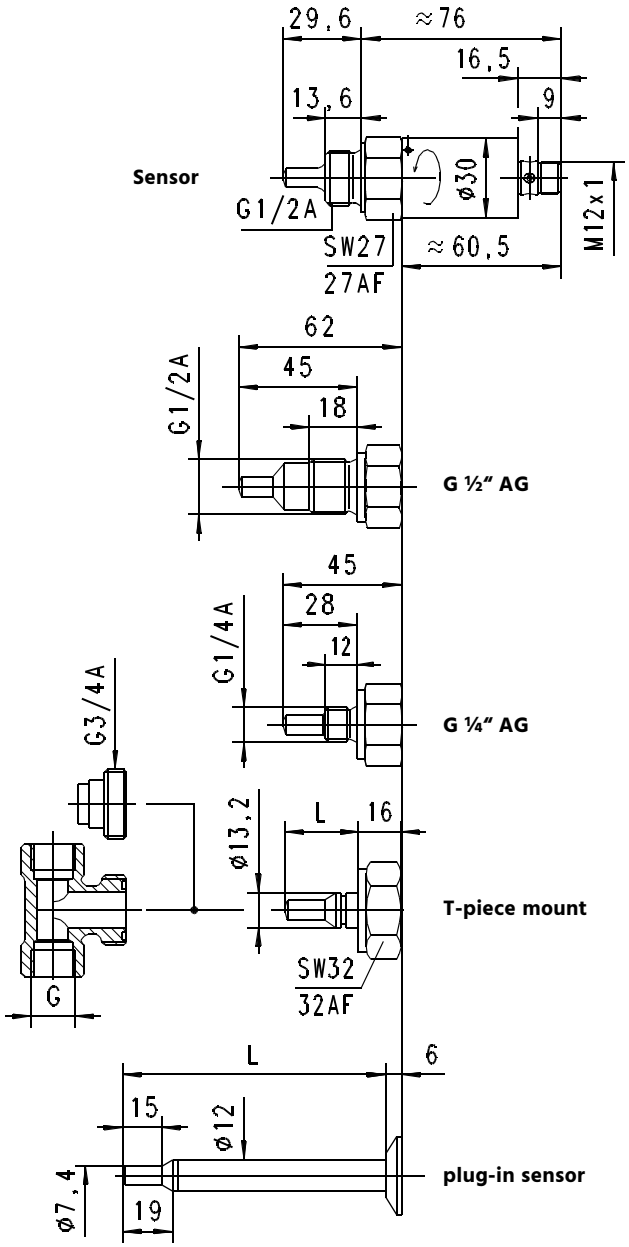
Technical Specifications:

Operating range velocity /	water 2. . .150 cm/s or 3. . .300 cm/s, oil on request
Accuracy /	± 10% set point value (tested on water with 10xD in inflow and outflow in rising tube)
Reproducibility /	± 1%
Switching hysteresis /	flow 4% set point, temp. approx. 2°C
Temperature gradient /	max. 4°C/s or rather 4 Kelvin/s
Op. range temp. /	0. . .70°C, 0. . .120°C with gooseneck
Storage temperature /	-20. . .+80°C
Materials /	wetted st. steel 1.4571, others 1.4305
Operating pressure /	max. 100 bar, 200 bar on request (if necessary, consider pressure level of T-piece)
Operating temp. /	0. . .70°C (electronics)
Weight /	approx. 200 g (standard version)
Assembly /	staved cross points to inflow
Programming the setpoints /	by means of magnet supplied along, the magnet is brought between 0.5 and 2 seconds to the marking on the label. The excrescent measuring value is stored as limit value, the LED changes to O.K. status. Longer or shorter magnetizing times than 0.5 or 2 seconds are ineffective (protection against external magnetic fields)

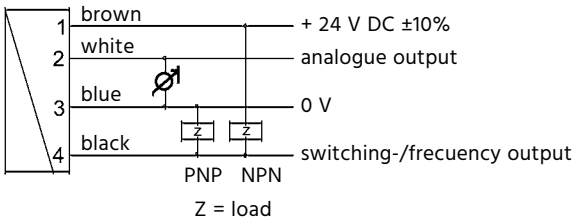
Electrical Specifications:

Power supply /	24 VDC ± 10%
Power consumption /	max. 100 mA
Connection /	round pin connector M12 x 1, 4-pole
Switching output /	Transistor output Push Pull, line short circuit and reverse polarity protected
Switching current /	max. 100 mA
As frequency output /	max. 2000 Hz
Analogue output /	4. . .20 mA max. load 500 Ohm or 0. . .10 VDC
Display /	yellow LED (ON = o.k., OFF = Alarm)
Setting /	through magnet
Protection class /	IP67

Dimensions in mm:



Electrical Connection:



Please use shielded cable, signal lines < 30m and power supply lines < 10m.

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Ordering Codes:

Order number	DT-03.	1.	1.	1.	1.	1.	3.	2.	2.	5

DT-03 Calorimetric Flowmeters and Switch

Connection size /
1 = G¼"-male
2 = G½"-male
3 = attachable sensor Ø 12 mm
4 = T-piece connector Ø 13,2 mm

Wetted material /
1 = stainless steel 1.4571

Sensor length /
0 = T-piece assembly (please specify nominal diameter of 3/8" to 2" and material in detailed text)
1 = 28 mm (G¼")
2 = 29.6 mm (G½")
3 = 45 mm (G½")
4 = plug-in sensor 50 mm
5 = plug-in sensor 70 mm
6 = plug-in sensor 100 mm
7 = plug-in sensor 150 mm
8 = plug-in sensor 200 mm

Analogue output /
0 = no analogue output
1 = current 4. . .20 mA
2 = voltage 0. . .10 VDC

Assignment for analogue output /
0 = no analogue output
1 = flow
2 = temperature

Switching output /
0 = no switching output
3 = PushPull (PNP and NPN)

Assignment for switching output /
0 = no switching output
1 = flow
2 = temperature

Switching signal /
0 = no switching output
1 = MIN switch
2 = MAX switch
3 = Frequency output

Options (multiple naming such as 3/5/6 possible) /
1 = special operating range for flow (max. 3 m/s)
2 = special operating range for temperature (max. 120°C, standard 70°C, min. -20°C, st. 0°C)
3 = Switch on delay from Alarm to O.K.
4 = Switch off delay from O.K. to Alarm
5 = Power-On-Delay (delay after switching on until the switching output becomes active)
6 = inverted switching output
7 = special hysteresis (standard 4% of full scale value)
8 = counter plug, M12x1, 4-pole

Please specify operating range full scale value, output frequency for impulse output and the setpoint in detailed text.

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

DT-06

Calorimetric Air Flow Switch

Features

/ Titanium sensor surface

/ No moving parts

/ Simple assembly

/ DC- and AC version available

/ Protection class IP 65

/ Relay output

/ LED function display

/ Cost-effective

Description:

Electronic flow switches operate on the basis of the calorimetric prinziple. They use the physical effect that a flowing medium absorbs heat and conducts it away. The sensor tip contains two temperature-dependent resistors as well as a heat source. The heat source generates a local temperature rise in the medium which is detected by one of the PTCs. When the medium flows, energy is conducted away from the heat source, i.e. it is cooled. The resulting temperatue change is an indication of flow. To avoid a falsification of the result of the measurement by change of the medium temperature, a second PTC is used for temperature compensation. The difference in resistance of both PTCs is used for a temperature compensated statement by the electronic evaluation system „Medium flows“ or „medium does not flow“ as compared with a predefined set-point or limiting value.

Application:

The DT-06 series is intended for cost-effectively detecting and signalling of changing air flow within specified limits, it can be mainly used for monitoring air conditioners as well as ventilation systems. Typical applications are Function control of blowers and fans, Filter condition monitoring, Flap position monitoring for air distribution

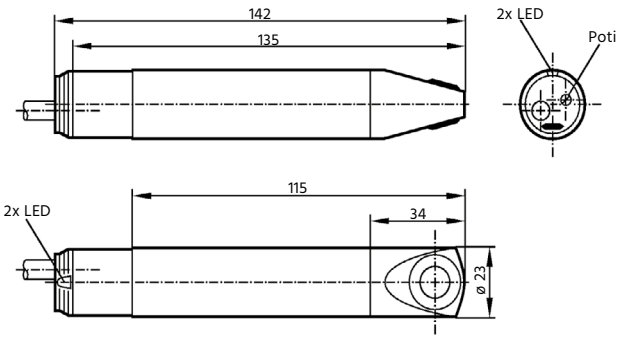
Technical Specifications:

Operating range /	100. . .1000 cm/s
Greatest sensitivity /	100. . .400 cm/s
Switch point adjustment /	potentiometer
Power-on delay time /	60 s
Response time /	3. . .60 s
max. Temperature Media /	-10. . .+50°C
Gradient temperature /	max. 5 k/min
max. Ambient temp. /	-10. . .+50°C
max. rel. Air humidity /	90%
max. Pressure /	1 bar
Process connection /	Ø 23 mm
Housing /	PBT (Pocan)
Sensor surface /	Titan
Immersion size /	min. 32 mm to max. 120 mm
Up- and Down- stream dimensions /	min. 5 x D in- and 3 x D outflow
Accessories /	mounting clamp (included)

Electrical Specifications

Supply voltage /	
DT-06.1.x.x.x.x:	80. . .250 V AC / 90. . .250 V DC
DT-06.2.x.x.x.x:	24 V AC ± 10%
DT-06.3.x.x.x.x:	24 V DC ± 25%
Overload protection /	no
El. connection /	
DT-06.1.x.x.x.x:	2m PVC-cable, 4 x 0,5 mm²
DT-06.1.x.x.x.x:	2m PUR-cable, 4 x 0,5 mm²
DT-06.1.x.x.x.x:	2m PUR (PVC)-cable, 4 x 0,5 mm²
Protection class /	IP 65
Contact function /	relay is energized during flow
Switching load /	3 A at 30 V DC / 250 V AC
Function display /	LED 1x red, 1x green
Short-circuit proof /	no
Overload protection /	no

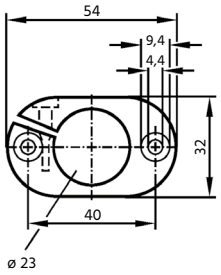
Dimensions Sensor in mm:



Ordering Codes:

Order number	**DT-06.**	**1**
DT-06 Calorimetric Air Flow Switch		
Supply voltage / 1 = 80. . .250 V AC / 90. . .250 V DC 2 = 24 V AC ± 10% 3 = 24 V DC ± 25%		

Mounting Clamp in mm:



address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com