



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 NI/min
02 =	0,2 .. 3 l/min	4 .. 60 NI/min
03 =	0,3 .. 8 l/min	6 .. 160 NI/min
04 =	1 .. 12 l/min	20 .. 240 NI/min

SW-04.2 and SW-04.3:

05 =	2 .. 18 l/min	40 .. 360 NI/min
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SW-04.3 and SW-04.4:

06 =	3 .. 35 l/min	60 .. 700 NI/min
07 =	4 .. 50 l/min	

SW-04.4 only:

08 =	200 .. 1450 NI/min	
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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 NI/min to 200 .. 1450 NI/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

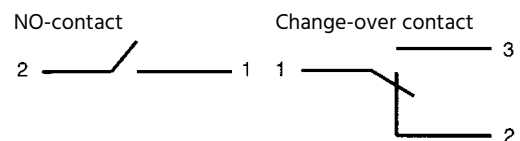
(1) ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db
(max. Ambient temperature 75°C)

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.

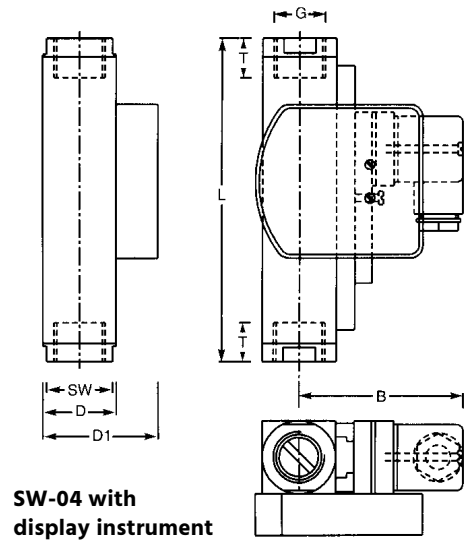
El. Connection:





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



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

