



# SW-05

## Variable Area Flowmeter and Switch, Mounting Position Independent



## 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**

## 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.

## 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:

<b>Protection class /</b>	IP65 with plug, IP67 with cable connection or with device plug M12x1
<b>max. Pressure /</b>	10 bar
<b>Pressure drop /</b>	0.02 .. .0.8 bar
<b>max. Temp. /</b>	100°C (160°C optional)
<b>El. connection /</b>	device plug as per DIN 43650 A
<b>Accuracy /</b>	±5% of full scale value
<b>Ranges /</b>	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 <sup>(2)</sup>
Ex-NO <sup>(1)</sup>	250V, 2A, 60VA
Ex-change-over <sup>(1)</sup>	250V, 1A, 30VA <sup>(2)</sup>
Change-over PLC	250V, 1A, 60VA

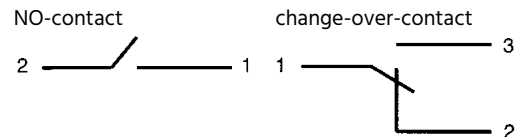
<sup>(1)</sup> ATEX II 2 G Ex mb IIC T6 Gb & ATEX II 2 D Ex tb IIIC T80°C Db  
(max. Ambient temp. 75°C)

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

<sup>(2)</sup> Minimum load 3VA

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

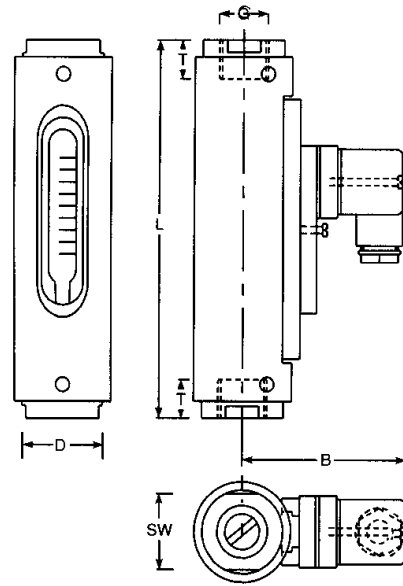
## El. Connection:





## Dimensions in mm:

Type	SW	D	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

