



Flowmeters and Switches

flow direction: horizontal
or from top to bottom



measuring
•
monitoring
•
analysing

SMW/SMO



- Measuring range:
0.2 - 3 ... 10 - 120 l/min water
- Accuracy: $\pm 5\%$ of full scale
- p_{\max} : 350 bar; t_{\max} : 100 °C
- Connection:
G 1/4 ... G 1 female
1/4" NPT ... 3/4" NPT female
- Material: brass or stainless steel

S2



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Description

The KOBOLD flowmeters and switches models SMW-.. and SMO-.. operate in the same way as the flowmeter model SMV-... The extra advantage of universal mounting has been added, that is, the direction of flow can be horizontal (model SMW-..) as well as from top to bottom (model SMO-..). This is achieved with a return spring.

SMW and SMO versions

Six versions are available

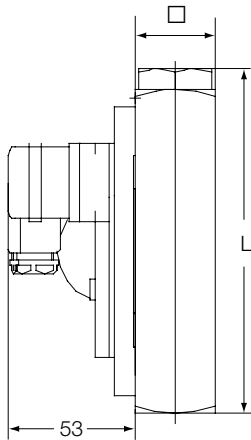
Direction of flow: horizontal

1. SMW-1... Flow switch
2. SMW-2... Flowmeter
3. SMW-3... Flowmeters and switches

Direction of flow: from top to bottom

4. SMO-1... Flow switch
5. SMO-2... Flowmeter
6. SMO-3... Flowmeters and switches

Dimensions [mm]



Model	Square [mm]	Thread G	L [mm]	Weight [kg]
SMx-..01	30 x 30	¼ (½*)	132 (136*)	1
SMx-..03	30 x 30	¼ (½)	132 (136)	1
SMx-..05	30 x 30	¼ (½)	132 (136)	1
SMx-..07	30 x 30	¼ (½)	132 (136)	1
SMO-..09	30 x 30	¼ (½)	132 (136)	1
SMW-..09	30 x 30	½	150	1
SMO-..11	30 x 30	¼ (½)	156 (150)	1.7
SMW-..11	40 x 40	¾ (1)	156 (150)	1.7
SMO-..13	30 x 30	½	150	1
SMW-..13	40 x 40	¾ (1)	156 (150)	1.7
SMO-..15	40 x 40	¾ (1)	156 (150)	1.7
SMO-..17	40 x 40	¾ (1)	156 (150)	1.7

Technical Details

- Housing: SMx-x1...: brass, Ms 58
SMx-x2...: stainless steel, 1.4301
- Connections: SMx-x1...: brass, Ms 58
SMx-x2...: stainless steel, 1.4301
- Float: SMx-x1...: brass, Ms 58
SMx-x2...: stainless steel, 1.4301
- Slotted nozzle: SMx-x1...: brass, Ms 58
SMx-x2...: stainless steel, 1.3955
- Seals: SMx-x1...: NBR
SMx-x2...: FPM
- Spring: stainless steel 1.4310
- Max. temperature: 100 °C
- Max. pressure: SMx-x1...: 250 bar
SMx-x2...: 350 bar
- Installation position: SMW: horizontal
SMO: vertical, flow from top
- Accuracy: ± 5% of full scale
- Reproducibility: ≤1%

Contacts for SMW-1.., SMW-3.. and SMO-1.., SMO-3..

- Electrical connection: 2 m cable (SMx-...F0...)
with all other types:
connector DIN EN 175301-803
- Electrical switching values:
 - N/O contact
max. 250V_{AC/DC}/1.5A/100W/100VA
 - changeover contact
max. 250V_{AC/DC}/1A/30W/60VA
 - N/O contact and
changeover contact (cCSAus)
max. 230V_{DC}/0.26A/60W,
60V_{DC}/1A/60W,
max. 240V_{AC}/0.42A/100W,
100V_{AC}/1A/100W
 - N/O contact (EX):
II 2G Ex mb IIC T6 Gb
II 2D Ex mb IIC T80°C Db IP67
max. 250V_{AC}/1.5A/100VA
- Ex-range: ATEX-zone 1 as »simple apparatus«
or with N/O contact Ex
- Protection: IP 65 (electr. contact)
IP 54 (side indicator)

Applications

- Lubrication circuits
- Paper-making machines
- Machine tools
- Glass-melting tanks
- Cooling circuits
- Welding machines
- Induction furnaces
- Pumps



Order Details

Flow switches with 1 contact, flow from top model: SMO-1... (Example: SMO-1101H R0 R08)

Measuring range l/min water	Pressure loss Δ P (bar)	Brass	Stainless steel	Contact	Connection female thread	
					..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
0.2...3	0.2	SMO-1101H...	SMO-1201H...	..R0.. = 1 N/O contact ..U0.. = 1 changeover contact ..F0.. = 1 Ex N/O contact ..C0.. = 1 N/O contact (cCSAus) ..D0.. = 1 changeover contact (cCSAus) ..RR.. = 2 N/O contact ..UU.. = 2 changeover contact ..CC.. = 2 N/O contact (cCSAus) ..DD.. = 2 changeover contact (cCSAus)	..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
1...4.5	0.2	SMO-1103H...	SMO-1203H...			
1...7.5	0.3	SMO-1105H...	SMO-1205H...			
1...14	0.4	SMO-1107H...	SMO-1207H...		..R15 = G ½ ..R20 = G ¾ ..R25 = G 1	..N15 = ½" NPT ..N20 = ¾" NPT
2...18	0.2	SMO-1109H...	SMO-1209H...			
7...25	0.4	SMO-1111H...	SMO-1211H...			
10...60	0.7	SMO-1113H...	SMO-1213H...			
10...90	0.5	SMO-1115H...	SMO-1215H...			
10...120	0.5	SMO-1117H...	SMO-1217H...			

Flowmeter, flow from top model: SMO-2... (Example: SMO-2107H 00 R08)

Measuring range l/min water	Pressure loss Δ P (bar)	Brass	Stainless steel	Contact	Connection female thread	
					..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
0.2...3	0.2	SMO-2101H...	SMO-2201H...	..00.. = without contact	..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
1...4.5	0.2	SMO-2103H...	SMO-2203H...			
1...7.5	0.3	SMO-2105H...	SMO-2205H...			
1...14	0.4	SMO-2107H...	SMO-2207H...		..R15 = G ½ ..R20 = G ¾ ..R25 = G 1	..N15 = ½" NPT ..N20 = ¾" NPT
2...18	0.2	SMO-2109H...	SMO-2209H...			
7...25	0.4	SMO-2111H...	SMO-2211H...			
10...60	0.7	SMO-2113H...	SMO-2213H...			
10...90	0.5	SMO-2115H...	SMO-2215H...			
10...120	0.5	SMO-2117H...	SMO-2217H...			

Flowmeters and switches with 1 contact, flow from top model: SMO-3... (Example: SMO-3101H R0 R08)

Measuring range l/min water	Pressure loss Δ P (bar)	Brass	Stainless steel	Contact	Connection female thread	
					..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
0.2...3	0.2	SMO-3101H...	SMO-3201H...	..R0.. = 1 N/O contact ..U0.. = 1 changeover contact ..F0.. = 1 Ex N/O contact ..C0.. = 1 N/O contact (cCSAus) ..D0.. = 1 changeover contact (cCSAus) ..RR.. = 2 N/O contact ..UU.. = 2 changeover contact ..CC.. = 2 N/O contact (cCSAus) ..DD.. = 2 changeover contact (cCSAus)	..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
1...4.5	0.2	SMO-3103H...	SMO-3203H...			
1...7.5	0.3	SMO-3105H...	SMO-3205H...			
1...14	0.4	SMO-3107H...	SMO-3207H...		..R15 = G ½ ..R20 = G ¾ ..R25 = G 1	..N15 = ½" NPT ..N20 = ¾" NPT
2...18	0.2	SMO-3109H...	SMO-3209H...			
7...25	0.4	SMO-3111H...	SMO-3211H...			
10...60	0.7	SMO-3113H...	SMO-3213H...			
10...90	0.5	SMO-3115H...	SMO-3215H...			
10...120	0.5	SMO-3117H...	SMO-3217H...			



Order Details

Flow switches with 1 contact, horizontal flow model: SMW-1... (Example: SMW-1101H LR0 R08)

Measuring range l/min water	Pressure loss ΔP (bar)	Brass	Stainless steel	Direction of flow	Contact	Connection female thread	
0.5...3.5	0.2	SMW-1101H...	SMW-1201H...	..L = from left ..R = from right	..R0.. = 1 N/O contact ..U0.. = 1 changeover contact ..F0.. = 1 Ex N/O contact ..C0.. = 1 N/O contact (cCSAus) ..D0.. = 1 changeover contact (cCSAus) ..RR.. = 2 N/O contact ..UU.. = 2 changeover contact ..CC.. = 2 N/O contact (cCSAus) ..DD.. = 2 changeover contact (cCSAus)	..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
2...9	0.4	SMW-1103H...	SMW-1203H...				
2.5...15	0.5	SMW-1105H...	SMW-1205H...				
3.5...24	0.3	SMW-1107H...	SMW-1207H...			..R15 = G ½ ..N15 = ½" NPT	..R20 = G ¾ ..R25 = G 1 ..N20 = ¾" NPT
10...60	0.7	SMW-1109H...	SMW-1209H...				
5...90	0.6	SMW-1111H...	SMW-1211H...				
10...120	0.6	SMW-1113H...	SMW-1213H...				

Flowmeter, horizontal flow model: SMW-2... (Example: SMW-2101H L00 R08)

Measuring range l/min water	Pressure loss ΔP (bar)	Brass	Stainless steel	Direction of flow	Contact	Connection female thread	
0.5...3.5	0.2	SMW-2101H...	SMW-2201H...	..L = from left ..R = from right	..00.. = without contact	..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
2...9	0.4	SMW-2103H...	SMW-2203H...				
2.5...15	0.5	SMW-2105H...	SMW-2205H...				
3.5...24	0.3	SMW-2107H...	SMW-2207H...			..R15 = G ½ ..N15 = ½" NPT	..R20 = G ¾ ..R25 = G 1 ..N20 = ¾" NPT
10...60	0.7	SMW-2109H...	SMW-2209H...				
5...90	0.6	SMW-2111H...	SMW-2211H...				
10...120	0.6	SMW-2113H...	SMW-2213H...				

Flowmeters and switches with 1 contact, horizontal flow model: SMW-3... (Example: SMW-3101H RR0 R08)

Measuring range l/min water	Pressure loss ΔP (bar)	Brass	Stainless steel	Direction of flow	Contact	Connection female thread	
0.5...3.5	0.2	SMW-3101H...	SMW-3201H...	..L = from left ..R = from right	..R0.. = 1 N/O contact ..U0.. = 1 changeover contact ..F0.. = 1 Ex N/O contact ..C0.. = 1 N/O contact (cCSAus) ..D0.. = 1 changeover contact (cCSAus) ..RR.. = 2 N/O contact ..UU.. = 2 changeover contact ..CC.. = 2 N/O contact (cCSAus) ..DD.. = 2 changeover contact (cCSAus)	..R08 = G ¼ ..R15 = G ½	..N08 = ¼" NPT ..N15 = ½" NPT
2...9	0.4	SMW-3103H...	SMW-3203H...				
2.5...15	0.5	SMW-3105H...	SMW-3205H...				
3.5...24	0.3	SMW-3107H...	SMW-3207H...			..R15 = G ½ ..N15 = ½" NPT	..R20 = G ¾ ..R25 = G 1 ..N20 = ¾" NPT
10...60	0.7	SMW-3109H...	SMW-3209H...				
5...90	0.6	SMW-3111H...	SMW-3211H...				
10...120	0.6	SMW-3113H...	SMW-3213H...				