



## Float-Type Flow Meters and Switches for Liquids



measuring  
•  
monitoring  
•  
analysing



- Measuring range:  
0.25 - 1.25 to 10 - 130 L/min  
Water
- Accuracy:  $\pm 4\%$  f. s.
- $p_{\max}$  10 bar,  
 $t_{\max}$  100°C
- Connection:  
G 1/4... G 1 1/4 female
- Material:  
Brass or stainless steel



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**Model:**  
DSV



**Description**

The proven KOBOLD flow meters and switches model DSV are based on the principle of the well-known float-type flow meters except for the conventional tapering measuring tube.

These patented instruments are provided instead with a cylindrical flow tube with conical slots around the periphery.

This eliminates the usual problems of guiding the cylindrical float within a tapering measuring glass. The novel design including the provision of an appropriately dimensioned annular gap of constant width between the float and the flow tube has enabled the sensitivity to dirt to be considerably reduced.

The float contains a permanent magnet which actuates a bistable reed contact external to the flow circuit, that is, the flowing medium is hermetically separated from the electrical contact. In addition it is embedded in a height-adjustable switch housing thus ensuring that the contact is protected even in an aggressive atmosphere.

As the medium enters the instrument the float rises. Once its magnetic field reaches the contact tips of the reed switch the contact closes. As the flow increases the float rises further until it reaches its stop. This prevents the float from going beyond the contact range of the magnetic operating tube, that is, the contact remains closed thus ensuring bi-stable switching. The top edge of the float serves to indicate the flow on the measuring glass in L/min.

**Applications**

- Lubrication circuits
- Paper-making machines
- Machine tools
- Glass-melting tanks
- Cooling circuits
- Welding machines
- Induction furnaces
- Pumps
- Prevention of low water levels

**Technical Details**

Housing:	Aluminium anodized (not media-contacted)
Connections:	DSV-x1...: Brass Ms 58, nickel-plated DSV-x2...: Stainless steel 1.4301
Float:	See Order Details
Nozzle:	DSV-x1...: Brass Ms 58, nickel-plated DSV-x2...: Stainless steel: 1.3955
Measuring glass:	Duran 50 (borosilicate glass)
Seals:	DSV-x1...: NBR DSV-x2...: FPM
Max. temperature:	100°C (metal float) 70°C (PP (polypropylene) or PVDF float)
Max. pressure:	10 bar
Accuracy:	±4% f. s.
Installation position:	Vertical, flow in the upward direction
<b>Contacts:</b>	<b>for DSV-2..., DSV-3...</b>
Electrical connection:	Connector DIN 43 650
Electrical switching values:	N/O contact (CSA) max. 240 V <sub>AC</sub> / 100 VA / 1.5 A  Changeover contact (CSA) max. 240 V <sub>AC</sub> / 60 VA / 1 A  N/O contact (UL) 250 V <sub>AC</sub> - 0.4 A / 200 V <sub>DC</sub> - 0.25 A 50 V <sub>DC</sub> - 1 A  Changeover contact (UL) 250 V <sub>AC</sub> - 0.136 A / 30 V <sub>DC</sub> - 1 A
Protection:	IP 65



Order Details (Example DSV-2101H R0 R08)

Flow meter model: DSV-1...

Measuring range L/min water	Pressure loss Δ P [bar]	Float according to version		Brass	Stainless steel	Contact	Connection	
		Brass	St. steel					
0.25...1.25	0.04	PP	PVDF	DSV-1101H...	DSV-1201H...	...00...= without contacts	..R08=G 1/4	..N08=1/4 NPT
0.5...2.5	0.06	PP	PVDF	DSV-1102H...	DSV-1202H...		..R15=G 1/2	..N15=1/2 NPT
1...4.5	0.04	PP	PVDF	DSV-1103H...	DSV-1203H...		..R15=G 1/2	..N15=1/2 NPT
1...10	0.04	PP	PVDF	DSV-1104H...	DSV-1204H...		..R20=G 3/4	..N20=3/4 NPT
2...18	0.07	Brass, nickel-pl.	1.4301	DSV-1105H...	DSV-1205H...		..R20=G 3/4	..N20=3/4 NPT
2...25	0.08	PP	PVDF	DSV-1106H...	DSV-1206H...		..R25=G 1	..N25=1 NPT
2.5...50	0.14	Brass, nickel-pl.	1.4301	DSV-1107H...	DSV-1207H...		..R25=G 1	..N25=1 NPT
10...100	0.3	Brass, nickel-pl.	1.4301	DSV-1108H...	DSV-1208H...		..R25=G 1	..N25=1 NPT
10...130	0.4	PP	PVDF	DSV-1109H...	DSV-1209H...		..R32=G 1 1/4	..N32=1 1/4 NPT

Flow meters and switches with 1 contact model: DSV-2...

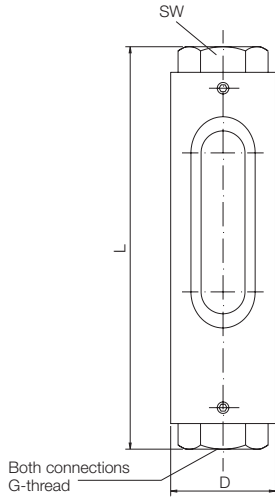
Measuring range L/min water	Pressure loss Δ P [bar]	Float according to version		Brass	Stainless steel	Contact	Connection	
		Brass	St. steel					
0.25...1.25	0.04	PP	PVDF	DSV-2101H...	DSV-2201H...	...R0...= 1 N/O contact ...U0...= 1 changeover contact ...C0...= 1 N/O contact (UL) ...D0...= 1 changeover contact (UL)	..R08=G 1/4	..N08=1/4 NPT
0.5...2.5	0.06	PP	PVDF	DSV-2102H...	DSV-2202H...		..R15=G 1/2	..N15=1/2 NPT
1...4.5	0.04	PP	PVDF	DSV-2103H...	DSV-2203H...		..R15=G 1/2	..N15=1/2 NPT
1...10	0.04	PP	PVDF	DSV-2104H...	DSV-2204H...		..R20=G 3/4	..N20=3/4 NPT
2...18	0.07	Brass, nickel-pl.	1.4301	DSV-2105H...	DSV-2205H...		..R20=G 3/4	..N20=3/4 NPT
2...25	0.08	PP	PVDF	DSV-2106H...	DSV-2206H...		..R25=G 1	..N25=1 NPT
2.5...50	0.14	Brass, nickel-pl.	1.4301	DSV-2107H...	DSV-2207H...		..R25=G 1	..N25=1 NPT
10...100	0.3	Brass, nickel-pl.	1.4301	DSV-2108H...	DSV-2208H...		..R25=G 1	..N25=1 NPT
10...130	0.4	PP	PVDF	DSV-2109H...	DSV-2209H...		..R32=G 1 1/4	..N32=1 1/4 NPT

Flow meters and switches with 2 contacts model: DSV-3...

Measuring range L/min water	Pressure loss Δ P [bar]	Float according to version		Brass	Stainless steel	Contact	Connection	
		Brass	St. steel					
0.25...1.25	0.04	PP	PVDF	DSV-3101H...	DSV-3201H...	...RR...= 2 N/O contacts ...UU...= 2 changeover contacts ...CC...= 2 N/O contacts (UL) ...DD...= 2 changeover contacts (UL)	..R08=G 1/4	..N08=1/4 NPT
0.5...2.5	0.06	PP	PVDF	DSV-3102H...	DSV-3202H...		..R15=G 1/2	..N15=1/2 NPT
1...4.5	0.04	PP	PVDF	DSV-3103H...	DSV-3203H...		..R15=G 1/2	..N15=1/2 NPT
1...10	0.04	PP	PVDF	DSV-3104H...	DSV-3204H...		..R20=G 3/4	..N20=3/4 NPT
2...18	0.07	Brass, nickel-pl.	1.4301	DSV-3105H...	DSV-3205H...		..R20=G 3/4	..N20=3/4 NPT
2...25	0.08	PP	PVDF	DSV-3106H...	DSV-3206H...		..R25=G 1	..N25=1 NPT
2.5...50	0.14	Brass, nickel-pl.	1.4301	DSV-3107H...	DSV-3207H...		..R25=G 1	..N25=1 NPT
10...100	0.3	Brass, nickel-pl.	1.4301	DSV-3108H...	DSV-3208H...		..R25=G 1	..N25=1 NPT
10...130	0.4	PP	PVDF	DSV-3109H...	DSV-3209H...		..R32=G 1 1/4	..N32=1 1/4 NPT

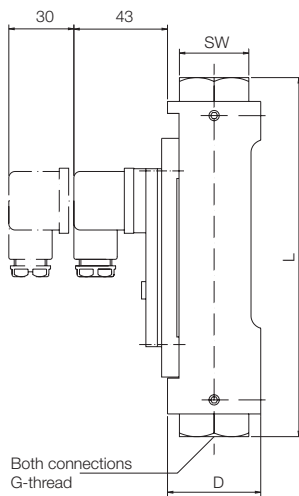
**Dimensions**

**Flow meter model DSV-1...**



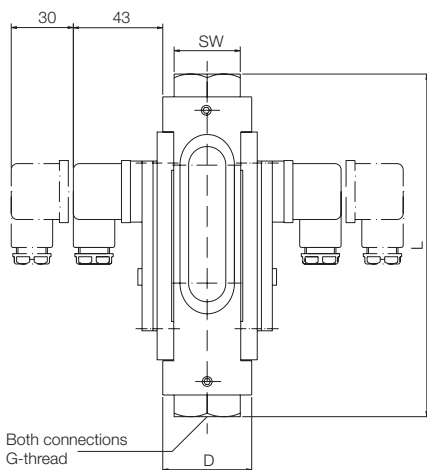
Model	SW	G	L [mm]	D [mm]	Weight approx. [kg]
DSV-..01H	32	1/4 (1/2)	161 (165)	43	0.75
DSV-..02H	32	1/4 (1/2)	161 (165)	43	0.75
DSV-..03H	32	1/4 (1/2)	161 (165)	43	0.75
DSV-..04H	32	1/2 (3/4)	165	43	0.75
DSV-..05H	32	1/2 (3/4)	165	43	0.75
DSV-..06H	41	3/4 (1)	165 (176)	48	1.0
DSV-..07H	41	3/4 (1)	165 (176)	48	1.0
DSV-..08H	41	1	204	48	1.2
DSV-..09H	46	1 1/4	222	55	1.5

**Flow meters and switches with 1 contact model DSV-2...**



Model	SW	G	L [mm]	D [mm]	Weight approx. [kg]
DSV-..01H	32	1/4 (1/2)	161 (165)	43	1.0
DSV-..02H	32	1/4 (1/2)	161 (165)	43	1.0
DSV-..03H	32	1/4 (1/2)	161 (165)	43	1.0
DSV-..04H	32	1/2 (3/4)	165	43	1.0
DSV-..05H	32	1/2 (3/4)	165	43	1.0
DSV-..06H	41	3/4 (1)	165 (176)	48	1.25
DSV-..07H	41	3/4 (1)	165 (176)	48	1.25
DSV-..08H	41	1	204	48	1.45
DSV-..09H	46	1 1/4	222	55	1.75

**Flow meters and switches with 2 contacts model DSV-3...**



Model	SW	G	L [mm]	D [mm]	Weight approx. [kg]
DSV-..01H	32	1/4 (1/2)	161 (165)	43	1.25
DSV-..02H	32	1/4 (1/2)	161 (165)	43	1.25
DSV-..03H	32	1/4 (1/2)	161 (165)	43	1.25
DSV-..04H	32	1/2 (3/4)	165	43	1.25
DSV-..05H	32	1/2 (3/4)	165	43	1.25
DSV-..06H	41	3/4 (1)	165 (176)	48	1.5
DSV-..07H	41	3/4 (1)	165 (176)	48	1.5
DSV-..08H	41	1	204	48	1.7
DSV-..09H	46	1 1/4	222	55	2.0