Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

Float-Type Flow Meters and Switches

for Liquids

measuring • monitoring • analysing

DSV

- Measuring range:
  0.25 - 1.25 ... 10 - 130 L/min
  water
- Accuracy:
  ± 4 % of full scale
- p_{max}: 10 bar; t_{max}: 100 °C
- Connection:
  G ¼ ... G 1 ¼ female,
  ¼ ... 1 ¼ NPT female
- Material:
  brass or stainless steel

KOBOLD companies worldwide:

ARGENTINA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHILE, CHINA, COLUMBIA, CZECHIA, DOMINICAN REPUBLIC, EGYPT, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, NETHERLANDS, PERU, POLAND, ROMANIA, SINGAPORE, SOUTH KOREA, SPAIN, SWITZER-LAND, TAIWAN, THAILAND, TUNISIA, USA, VIETNAM

KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
Head Office:
+49(0)6192 299-0
+49(0)6192 23398
info.de@kobold.com
www.kobold.com

1/08-2012

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 measuring tube, that is, the flowing medium is hermetically separated from the electrical contact. In addition it is embedded in a heightadjustable 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 connects. 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 connected thus ensuring bistable 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 or PVDF float)
Max. pressure:	10 bar
Accuracy:	±4 % of full scale
Installation position:	vertical, flow in the upward direction

Contacts for DSV-2..., DSV-3...

Electrical connection:	connector DIN EN 175301-803
Electrical switching values:	N/O contact max. 250 $V_{AC/DC}$ / 1,5 A / 100 W / 100 VA
	changeover contact max. 250 $V_{AC/DC}$ / 1 A / 30 W / 60 VA
	N/O contact and changeover contact (cCSAus) max. 230 V_{DC} / 0,26 A / 60 W, 60 V_{DC} / 1 A / 60 W, max. 240 V_{AC} / 0,42 A / 100 W, 100 V_{AC} / 1 A / 100 W
Ex-range:	ATEX-zone 1 as »simple apparatus«
Protection:	IP 65

1/08-2012

Order Details

Flow meter model: DSV-1... (Example: **DSV-1101H 00 R08**)

Measuring range L/min water	Pressure loss Δ P (bar)	Float according to version Brass	Float according to version St. steel	Brass	Stainless steel	Contact	Connection female thread	
0.25 ... 1.25	0.04	PP	PVDF	**DSV-1101H...**	**DSV-1201H...**	**..00..** = without contacts	**..R08** = G ¼ **..R15** = G ½	**..N08** = ¼ NPT **..N15** = ½ NPT
0.5 ... 2.5	0.06	PP	PVDF	**DSV-1102H...**	**DSV-1202H...**			
1 ... 4.5	0.04	PP	PVDF	**DSV-1103H...**	**DSV-1203H...**			
1 ... 10	0.04	PP	PVDF	**DSV-1104H...**	**DSV-1204H...**		**..R15** = G ½ **..R20** = G ¾	**..N15** = ½ NPT **..N20** = ¾ NPT
2 ... 18	0.07	brass, nickel-pl.	1.4301	**DSV-1105H...**	**DSV-1205H...**			
2 ... 25	0.08	PP	PVDF	**DSV-1106H...**	**DSV-1206H...**		**..R20** = G ¾ **..R25** = G 1	**..N20** = ¾ NPT **..N25** = 1 NPT
2.5 ... 50	0.14	brass, nickel-pl.	1.4301	**DSV-1107H...**	**DSV-1207H...**			
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 ¼	**..N32** = 1 ¼ NPT

Flow meters and switches with 1 contact model: DSV-2... (Example: **DSV-2101H R0 R08**)

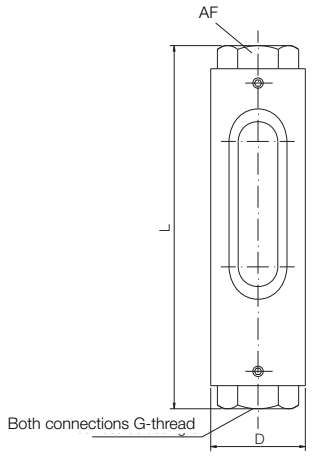
Measuring range L/min water	Pressure loss Δ P (bar)	Float according to version Brass	Float according to version St. steel	Brass	Stainless steel	Contact	Connection female thread	
0.25 ... 1.25	0.04	PP	PVDF	**DSV-2101H...**	**DSV-2201H...**	**..R0..** = 1 N/O contact **..U0..** = 1 changeover contact **..C0..** = 1 N/O contact (cCSAus) **..D0..** = 1 changeover contact (cCSAus)	**..R08** = G ¼ **..R15** = G ½	**..N08** = ¼ NPT **..N15** = ½ NPT
0.5 ... 2.5	0.06	PP	PVDF	**DSV-2102H...**	**DSV-2202H...**			
1 ... 4.5	0.04	PP	PVDF	**DSV-2103H...**	**DSV-2203H...**			
1 ... 10	0.04	PP	PVDF	**DSV-2104H...**	**DSV-2204H...**		**..R15** = G ½ **..R20** = G ¾	**..N15** = ½ NPT **..N20** = ¾ NPT
2 ... 18	0.07	brass, nickel-pl.	1.4301	**DSV-2105H...**	**DSV-2205H...**			
2 ... 25	0.08	PP	PVDF	**DSV-2106H...**	**DSV-2206H...**		**..R20** = G ¾ **..R25** = G 1	**..N20** = ¾ NPT **..N25** = 1 NPT
2.5 ... 50	0.14	brass, nickel-pl.	1.4301	**DSV-2107H...**	**DSV-2207H...**			
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 ¼	**..N32** = 1 ¼ NPT

Flow meters and switches with 2 contacts model: DSV-3... (Example: **DSV-3101H RR R08**)

Measuring range L/min water	Pressure loss Δ P (bar)	Float according to version Brass	Float according to version St. steel	Brass	Stainless steel	Contact	Connection female thread	
0.25 ... 1.25	0.04	PP	PVDF	**DSV-3101H...**	**DSV-3201H...**	**..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
0.5 ... 2.5	0.06	PP	PVDF	**DSV-3102H...**	**DSV-3202H...**			
1 ... 4.5	0.04	PP	PVDF	**DSV-3103H...**	**DSV-3203H...**			
1 ... 10	0.04	PP	PVDF	**DSV-3104H...**	**DSV-3204H...**		**..R15** = G ½ **..R20** = G ¾	**..N15** = ½ NPT **..N20** = ¾ NPT
2 ... 18	0.07	brass, nickel-pl.	1.4301	**DSV-3105H...**	**DSV-3205H...**			
2 ... 25	0.08	PP	PVDF	**DSV-3106H...**	**DSV-3206H...**		**..R20** = G ¾ **..R25** = G 1	**..N20** = ¾ NPT **..N25** = 1 NPT
2.5 ... 50	0.14	brass, nickel-pl.	1.4301	**DSV-3107H...**	**DSV-3207H...**			
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 ¼	**..N32** = 1 ¼ NPT

Device versions and Dimensions

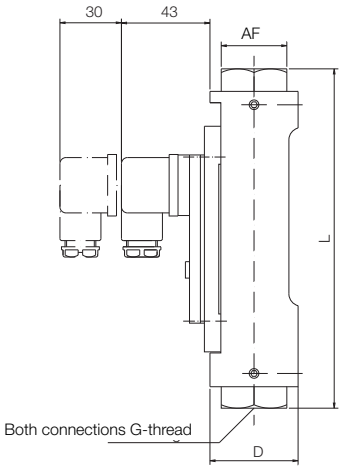
1. Flow meter model: DSV-1...



Model	AF [mm]	Thread G	L [mm]	D [mm]	Weight approx. [kg]
DSV-..01H	32	¼ (½*)	161 (165*)	43	0.75
DSV-..02H	32	¼ (½)	161 (165*)	43	0.75
DSV-..03H	32	¼ (½)	161 (165*)	43	0.75
DSV-..04H	32	½ (¾)	165	43	0.75
DSV-..05H	32	½ (¾)	165	43	0.75
DSV-..06H	41	¾ (1)	165 (176)	48	1.0
DSV-..07H	41	¾ (1)	165 (176)	48	1.0
DSV-..08H	41	1	204	48	1.2
DSV-..09H	46	1 ¼	222	55	1.5

* with NPT-thread

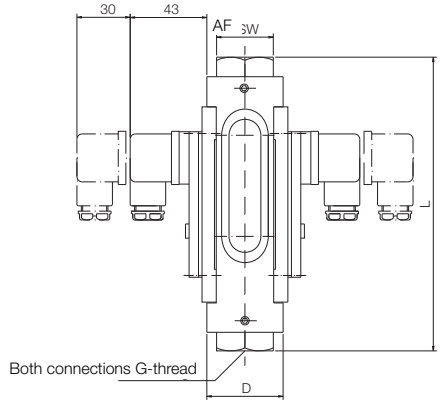
2. Flow meters and switches with 1 contact model: DSV-2...



Model	AF [mm]	Thread G	L [mm]	D [mm]	Weight approx. [kg]
DSV-..01H	32	¼ (½*)	161 (165*)	43	1.0
DSV-..02H	32	¼ (½)	161 (165*)	43	1.0
DSV-..03H	32	¼ (½)	161 (165*)	43	1.0
DSV-..04H	32	½ (¾)	165	43	1.0
DSV-..05H	32	½ (¾)	165	43	1.0
DSV-..06H	41	¾ (1)	165 (176)	48	1.25
DSV-..07H	41	¾ (1)	165 (176)	48	1.25
DSV-..08H	41	1	204	48	1.45
DSV-..09H	46	1 ¼	222	55	1.75

* with NPT-thread

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



Model	AF [mm]	Thread G	L [mm]	D [mm]	Weight approx. [kg]
DSV-..01H	32	¼ (½*)	161 (165*)	43	1.25
DSV-..02H	32	¼ (½)	161 (165*)	43	1.25
DSV-..03H	32	¼ (½)	161 (165*)	43	1.25
DSV-..04H	32	½ (¾)	165	43	1.25
DSV-..05H	32	½ (¾)	165	43	1.25
DSV-..06H	41	¾ (1)	165 (176)	48	1.5
DSV-..07H	41	¾ (1)	165 (176)	48	1.5
DSV-..08H	41	1	204	48	1.7
DSV-..09H	46	1 ¼	222	55	2.0

* with NPT-thread

1/08- 2012