



Float-Type Flow Meters and Switches for Liquids



measuring
•
monitoring
•
analysing



- Measuring range:
0.25 - 1.25 to 10 - 130 L/min
water
- Accuracy: $\pm 4\%$ of F. S.
- p_{\max} 10 bar,
 t_{\max} 100°C
- Connection:
G 1/4 ... G 1 1/4 female
1/4 ... 1 1/4 NPT female
- Material:
brass or stainless steel



KOBOLD companies worldwide:

ARGENTINA, AUSTRIA, BELGIUM, CANADA, CHILE, CHINA, CZECHIA,
FRANCE, GERMANY, GREAT BRITAIN, INDIA, INDONESIA, ITALY,
MALAYSIA, MEXICO, NETHERLANDS, POLAND, SINGAPORE, SLOVAKIA,
SPAIN, SWITZERLAND, THAILAND, USA, VENEZUELA, VIETNAM

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

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 measuring tube, 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 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 (polypropylene or PVDF float) |
| Max. pressure: | 10 bar |
| Accuracy: | ±4% f. s. |
| Installation position: | vertical, flow in the upward direction |
| Contacts: | for DSV-2..., DSV-3... |
| Electrical connection: | connector DIN 43 650 |
| Electrical switching values: | N/O contact (CSA) max. 240 V _{AC} / 100 VA / 1.5 A changeover contact (CSA) max. 240 V _{AC} / 60 VA / 1 A N/O contact (UL) 250 V _{AC} - 0.4 A / 200 V _{DC} - 0.25 A 50 V _{DC} - 1 A changeover contact (UL) 250 V _{AC} - 0.136 A / 30 V _{DC} - 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... | | ..R32 = G 1 1/4 | ..N32 = 1 1/4 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...

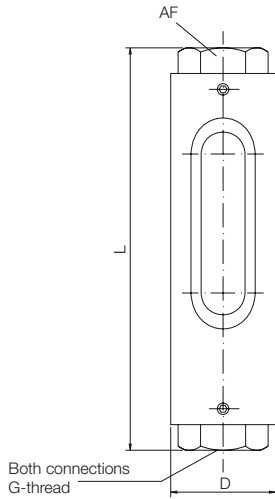
| Measuring range L/min water | Pressure loss Δ P [bar] | Float according to version | | Brass | Stainless steel | Contact | Connection | |
|-----------------------------|-------------------------|----------------------------|-----------|--------------|-----------------|--|-----------------|-------------------|
| | | 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... | | ..R32 = G 1 1/4 | ..N32 = 1 1/4 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... | | ..R32 = G 1 1/4 | ..N32 = 1 1/4 NPT |
| 10...130 | 0.4 | PP | PVDF | DSV-3109H... | DSV-3209H... | | ..R32 = G 1 1/4 | ..N32 = 1 1/4 NPT |

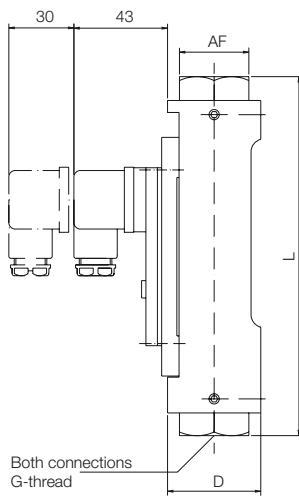
Dimensions

Flow meter model DSV-1...



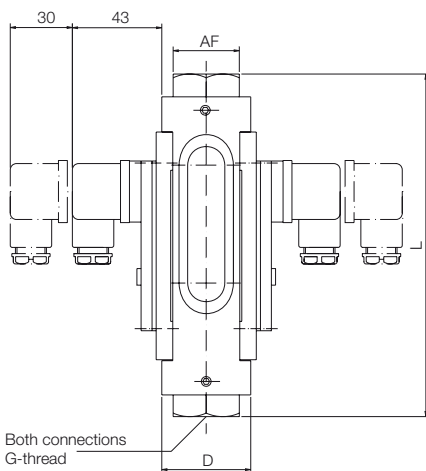
| Model | AF [mm] | G | L [mm] | D [mm] | Weight approx. [kg] |
|-----------|---------|-----------|-----------|--------|---------------------|
| DSV-..01H | 32 | 1/4 (1/2) | 161 (165) | 43 | 0.75 |
| DSV-..02H | 32 | 1/4 (1/2) | 161 (165) | 43 | 0.75 |
| DSV-..03H | 32 | 1/4 (1/2) | 161 (165) | 43 | 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 | AF [mm] | 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 | AF [mm] | 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 |