

DS02

Miniature Variable Area Flow Switch

- small mounting dimensions
- materials brass or stainless steel
- scales for water and air
- universal mounting position
- high switching accuracy
- very small switch hysteresis



Description:

The flow switch model DS02 works according to a modified variable area principle. The float is guided in a cylindrical measuring tube by means of a spring. The flowing medium moves the float in the flow direction. A Reed contact is mounted outside the meter in a sealed housing. When the float reaches the position of the Reed contact the switch will close. With higher flows the float moves further upward until it reaches a built-in float stop, still keeping the switch closed. This ensures a bistable switch function at any time. The Reed contact is adjustable over the full switching range of the meter.

Application:

The variable area flow switch model DS02 is used for monitoring the flow of low viscosity liquids and gases, i.e. in cooling circuits of welding machines and laser systems, for pump monitoring, compressors and many other applications.

Switching hysteresis:

By careful selection of the Reed contacts the switching hysteresis could be reduced to only 0.02" - 0.06" / 0.5 - 1.5 mm float movement.

Measuring Ranges:

Water: 0.08 - 0.95 GPH ... 16 - 40 GPM
 5 - 60 ml/min ... 60-150 l/min
 Air: 0.4 - 2.75 SCFH ... 7.0 - 22.0 SCFM
 0.6 -2.2 NI/min ... 200 -650 NI/min
 (at 14.7 psia / 1.013 bar abs. and 68 °F / 20 °C)

Materials:

brass or stainless steel

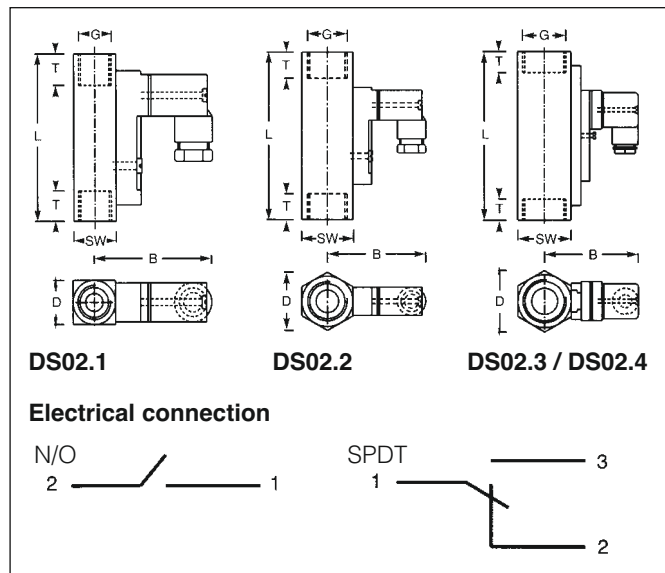
Contacts:

Contact function	DS02.1	DS02.2	DS02.3 / DS02.4
N/O	200 V, 1A, 20 VA	230 V, 3A, 60 VA	250 V, 3A, 100 VA
SPDT	200 V, 1A, 20 VA	250 V, 1.5A, 50 VA	250 V, 1.5A, 50 VA
N/O*			250 V, 2A, 60 VA
Ex-SPDT*			250 V, 1A, 30 VA

* according to ATEX 100a Ex II 2 G, EEx m II T6

Dimensions:

Model	Mounting dimensions in inch / mm						Weight (lbs / g)
	SW	D	B	NPT / G	T	L	
DS02.1	0.67 / 17	0.67 / 17	1.85 / 47	1/4	0.39 / 10	2.56 / 65	0.31 / 140
DS02.2	1.06 / 27	1.22 / 31	2.05 / 52	1/2	0.55 / 14	3.53 / 90	0.77 / 350
DS02.3	1.61 / 41	1.85 / 47	2.99 / 76	3/4	0.83 / 21	5.98 / 152	2.43/1100
DS02.4	1.61 / 41	1.85 / 47	2.99 / 76	1	0.67 / 17	5.12 / 130	2.65/1200



Technical Specifications:

max. pressure: DS02.1/2 4350 psi / 300 bar (brass),
 5000 psi / 350 bar (stainless steel)
 DS02.3/4 3600 psi / 250 bar (brass),
 4350 psi / 300 bar (stainless steel)

pressure drop: DS02.1: 0.29-2.9 psi / 0.02-0.2 bar
 DS02.2: 0.29-4.35 psi / 0.02-0.3 bar
 DS02.3/4: 0.29-5.8 psi / 0.02-0.8 bar

max. temperature: 212 °F / 100 °C (optionally 320 °F / 160 °C)
 for liquids, 194 °F / 90 °C for gases

materials:
 brass version: housing: nickel plated brass
 st. steel version: stainless steel: 316 Ti / 1.4571

electr. connection: plug acc. to DIN 43650
 (optionally: 1m cable connection
 for DS02.1, N/O only)

accuracy: ± 10% f.s.

analog output: see model DSxx-A in section "accessory"

Ordering Code:

Order number: **DS02. 1. 1. 1. W13 1. 1. 0**

Miniature variable area flow switch

Connection:

1 = G 1/4 female
 2N = 1/2" NPTF
 2 = G 1/2 female
 3N = 3/4" NPTF
 3 = G 3/4 female
 4 = G 1 female

Material:

1 = brass, spring of st. steel 304 / 1.4310
 2 = all stainless steel 316 Ti / 1.4571

Scale:

1 = for water
 2 = for air (14.7 psia / 1.013 bar abs. and 68 °F / 20 °C)

Measuring ranges:

DS02.1 only:

Water: WU101 = 0.08-0.95 GPH W101 = 5-60 ml/min
 WU102 = 0.65-2.05 GPH W102 = 40-130 ml/min
 WU106 = 1.6-9.5 GPH W106 = 0.1-0.6 l/min
 WU11 = 3-19 GPH W11 = 0.2-1.2 l/min
 WU12 = 6.5-41.5 GPH W12 = 0.4-2 l/min
 WU13 = 8.0-48.0 GPH W13 = 0.5-3 l/min
 WU15 = 16.0-80.0 GPH W15 = 1.0-5 l/min
Air: LU1002 = 1.30-4.70 SCFH L1002 = 0.6-2.2 NI/min
 LU1006 = 3.50-12.70 SCFH L1006 = 1.7-6.0 NI/min
 LU1008 = 5.3-17.0 SCFH L1008 = 2.5-8.0 NI/min
 LU1012 = 6.5-25.5 SCFH L1012 = 3-12 NI/min
 LU1022 = 6.0-47.0 SCFH L1022 = 3-22 NI/min
 LU1024 = 15.0-51.0 SCFH L1024 = 7-24 NI/min
 LU1034 = 25.0-72.0 SCFH L1034 = 12-34 NI/min
 LU1056 = 34-119 SCFH L1056 = 16-56 NI/min
 LU1080 = 42-170 SCFH L1080 = 20-80 NI/min

DS02.2 only:

Water: WU202 = 0.30-3.35 GPH W202 = 0.02-0.2 l/min
 WU206 = 3.20-9.50 GPH W206 = 0.2-0.6 l/min
 WU21 = 6.5-28.5 GPH W21 = 0.4-1.8 l/min
 WU23 = 13.0-51.0 GPH W23 = 0.8-3.2 l/min
 WU27 = 32.0-111 GPH W27 = 2-7 l/min
 WU213 = 48.0-205 GPH W213 = 3-13 l/min
 WU220 = 65.0-315 GPH W220 = 4-20 l/min
 WU230 = 130-480 GPH W230 = 8-30 l/min
Air: LLU2010 = 5.5-21.0 SCFH L2010 = 2.5-10 NI/min
 LU2020 = 12.0-42.0 SCFH L2020 = 5.5-20 NI/min
 LU2030 = 17.0-64.0 SCFH L2030 = 8-30 NI/min
 LU2035 = 21.0-74.0 SCFH L2035 = 10-35 NI/min
 LU2090 = 50.0-190 SCFH L2090 = 24-90 NI/min
 LU2220 = 115-465 SCFH L2220 = 55-220 NI/min
 LU2240 = 140-510 SCFH L2240 = 65-240 NI/min
 LU2300 = 170-640 SCFH L2300 = 80-300 NI/min
 LU2525 = 5.00-18.50 SCFM L2525 = 140-525 NI/min

DS02.3 or DS02.4:

Water: WU3030 = 160-480 GPH W3030 = 11-30 l/min
 WU3045 = 240-710 GPH W3045 = 15-45 l/min
 WU3060 = 320-950 GPH W3060 = 20-60 l/min
 WU3090 = 8.00-24.0 GPM W3090 = 30-90 l/min
Air: LU30180 = 125-380 SCFH L30180 = 60-180 NI/min
 LU30300 = 210-635 SCFH L30300 = 100-300 NI/min
 LU30650 = 7.00-23.0 SCFM L30650 = 200-650 NI/min

DS02.4 only:

Water: WU3150 = 16.0-40.0 GPM W3150 = 60-150 l/min

No. of contacts:

1 = 1 contact
 2 = 2 contacts

Contact function:

1 = N/O
 2 = SPDT
 3S = Ex-N/O (EEx m II T6), DS02.3, DS02.4 only
 3U = Ex-SPDT (EEx m II T6), DS02.3, DS02.4 only

Options:

0 = without
 1 = please indicate