DS01

Miniature Variable Area Flowmeter And 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 flowmeter and switch model DS01 works according to a modified variable area principle.
The float is guided in a cylindrical measuring glass by means of a spring. The flowing medium moves the float in the flow direction. The upper edge of the float shows the momentary flow via a burnt-in scale on the measuring glass.
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 flowmeter and switch model DS01 is used for measuring and monitoring the flow of low viscosity liquids and gases, i. e. in cooling cicuits 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.

PKP PROCESS INSTRUMENTS

PKP Process Instruments Inc.
10 Brent Drive · Hudson, MA 01749
+1-978-212-0006 · +1-978-568-0060
Email: info@pkp.eu · Internet: www.pkp.eu

PKP Prozessmesstechnik GmbH
Borsigstraße 24 · D-65205 Wiesbaden
+49 (0) 6122-7055-0 · +49 (0) 6122-7055-50
Email: info@pkp.de · Internet: www.pkp.de

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
0.2 -1.3 Nl/min ... 200 - 625 Nl/min
(at 14.7 psia / 1.013 bar abs. and 68 °F / 20 °C)

Materials:

brass or stainless steel

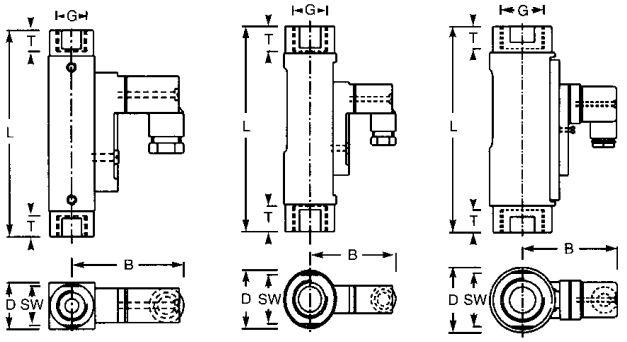
Contacts:

Contact function	DS01.1	DS01.2	DS01.3 / DS01.4 DS01.5
N/O	200V, 1A, 20VA	230 V, 3A, 60 VA	250 V, 3 A, 100 VA
SPDT	200 V, 1A, 20VA	250 V, 1.5A, 50 VA	250 V, 1.5 A, 50 VA
N/O*			250 V, 2A, 60VA
SPDT*			250 V, 1A, 30VA

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

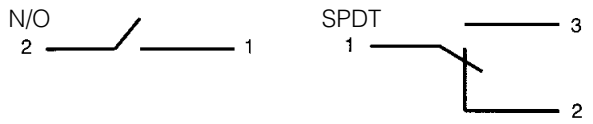
Dimensions:

Model	Mounting dimensions in inch / mm						Weight (lbs / g)
	SW	D	B	NPT / G	T	L	
DS01.1	0.67 / 17	0.79 / 20	1.93 / 49	1/4	0.39 / 10	3.54 / 90	0.31 / 140
DS01.2	1.06 / 27	1.26 / 32	2.09 / 53	1/2	0.55 / 14	4.89 / 114	0.66 / 300
DS01.3	1.61 / 41	1.97 / 50	3.03 / 77	3/4	0.67 / 17	5.47 / 139	1.98 / 900
DS01.4	1.61 / 41	1.97 / 50	3.03 / 77	1	0.67 / 17	6.22 / 158	1.98 / 900
DS01.5	1.61 / 41	1.97 / 50	3.03 / 77	1 1/4	0.67 / 17	6.54 / 166	2.03 / 920



DS01.1 **DS01.2** **DS01.3 / DS01.4**

Electrical connection



Technical Specifications:

max. pressure: DS01.1: 230 psi / 16 bar
DS01.2 / DS01.3 / DS01.4: 145 psi / 10 bar
pressure drop: DS01.1: 0.29-2.9 psi / 0.02-0.2 bar
DS01.2: 0.29-4.35 psi / 0.02-0.3 bar
DS01.3 / DS01.4: 0.29-5.8 psi / 0.02-0.4 bar
max. temperature: 212 °F / 100 °C (optionally 320 °F / 160 °C) for liquids, 194 °F / 90 °C for gases
materials: measuring glass: Duran 50
housing: anodized alumin
O-rings: Buna, (optionally: Viton,EPDM)
electr. connection: plug acc. to DIN 43650 (optionally: 1 m cable connection for DS01.1, N/O only)
accuracy: ± 10% f.s.
ananlog output: see model DSxx-A in section “accessory”

Ordering Code:

Order number: **DS01. | 1. | 1. | 1. | W13. | 1. | 1. | 0**

Miniature variable area flowmeter and switch

Connection:

1N = 1/4" NPTF	1 = G 1/4 female
2N = 1/2" NPTF	2 = G 1/2 female
3N = 3/4" NPTF	3 = G 3/4 female
4N = 1" NPTF	4 = G 1 female
5N = 1 1/4" NPTF	5 = G 11/4 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:

DS01.1 only:

Water:	WU101 = 0.08-0.95 GPH	W101 = 5-60 ml/min
	WU102 = 0.4-2.0 GPH	W102 = 20-140 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 = 0.1-0.5 GPM	W12 = 0.4-2 l/min
	WU13 = 0.13-0.8 GPM	W13 = 0.5-3 l/min
	WU15 = 0.25-1.3 GPM	W15 = 1.0-5 l/min
Air:	LU1001 = 0.4-2.75 SCFH	L1001 = 0.2 -1.3 Nl/min
	LU1002 = 1.05-4.25 SCFH	L1002 = 0.5-2.0 Nl/min
	LU1003 = 1.7-6.4 SCFH	L1003 = 0.8-3 Nl/min
	LU1005 = 3.5-10.5 SCFH	L1005 = 1.5-5.0 Nl/min
	LU1008 = 4.5-17.0 SCFH	L1008 = 2-8 Nl/min
	LU1012 = 6.5-25.0 SCFH	L1012 = 3-12 Nl/min
	LU1014 = 7.5-29.5 SCFH	L1014 = 3.5-14 Nl/min
	LU1020 = 12-42 SCFH	L1020 = 5.5-20 Nl/min
	LU1024 = 15-50 SCFH	L1024 = 7-24 Nl/min
	LU1035 = 21-74 SCFH	L1035 = 10-35 Nl/min
	LU1042 = 21-89 SCFH	L1042 = 10-42 Nl/min

DS01.2 only:

Water:	WU205a = 3.2–8.0 GPH	W205a = 0.2–0.5 l/min
	WU21a = 4,8–16 GPH	W21a = 0.3–1.0 l/min
	WU22a = 11-32 GPH	W22a = 0.7–2.0 l/min
	WU24a = 0.4–1.05 GPM	W24a = 1.6–4.0 l/min
	WU28a = 0.8–2.15 GPM	W28a = 3.0–8.0 l/min
	WU212 = 1.2–3.15 GPM	W212 = 4.5–12 /min
	WU215a = 1.6–4.0 GPM	W215a = 6.0–15 l/min
	WU220a = 2.1–5.3 GPM	W220a = 8.0–20 l/min
	WU224 = 2.5–6.3 GPM	W224 = 9.5–24 l/min
	WU228a = 3.2–7.4 GPM	W228a = 12–28 l/min
Air:	LU2012 = 6,5-25,0 SCFH	L2012 = 3-12 Nl/min
	LU2030 = 15-64 SCFH	L2030 = 7-30 Nl/min
	LU2040 = 25-85 SCFH	L2040 = 12-40 Nl/min
	LU2125 = 1.0-4.4 SCFM	L2125 = 28-125 Nl/min
	LU2200 = 1.8-7.0 SCFM	L2200 = 50-200 Nl/min
	LU2420 = 3.5-14.8 SCFM	L2420 = 100-420 Nl/min
	LU2480 = 4.2-17 SCFM	L2480 = 120-480 Nl/min

DS01.3, DS01.4 and DS01.5:

Water:	WU3030 = 2.1-8.0 GPM	W3030 = 8 - 30 l/min
	WU3045 = 4.0-12.0 GPM	W3045 = 15-45 l/min
	WU3090 = 8.0-24.0 GPM	W3090 = 30-90 l/min
Air:	LU30080 = 48-170 SCFH	L30080 = 22.5-80 Nl/min
	LU30130 = 105-275 SCFH	L30130 = 50-130 Nl/min
	LU30420 = 4.6-14.8 SCFM	L30420 = 130-420 Nl/min
	LU30625 = 7.0-22.0 SCFM	L30625 = 200-625 Nl/min

DS01.4 or DS01.5:

Water:	WU3150 = 16-40 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), DS01.3, DS01.4, DS01.5 only
3U = Ex-SPDT (EEx m II T6), DS01.3, DS01.4, DS01.5 only

Options:
0 = without
1 = please indicate

PKP Prozessmesstechnik GmbH
Borsigstraße 24 · D-65205 Wiesbaden
+49 (0) 6122-7055-0 · +49 (0) 6122-7055-50
Email: info@pkp.de · Internet: www.pkp.de

PKP Process Instruments Inc.
10 Brent Drive · Hudson, MA 01749
+1-978-212-0006 · +1-978-568-0060
Email: info@pkp.eu · Internet: www.pkp.eu