Flow-Alert™ Flow Switches (Micro Switch)

For Liquids / Air and Other Compressed Gases

- Automatically signals alarm if flow is too high or too low
- Automatically opens or closes electrical circuits
- Triggers warning lights, buzzers and other devices
- Shuts down pumps and/or other equipment to protect your operation against permanent damage
- Available from ¼" to 1½" sizes in aluminum, brass and stainless
- Installs in any position
- Easier-to-read linear scale
- No flow straighteners or special piping requirements
- Relatively insensitive to shock and vibration
- Special scales available

SPECIFICATIONS:

MATERIALS:

2024 - T351 Anodized aluminum body, piston and cone
C360 Brass body, piston and cone
T303 Stainless body, 2024 - T351 Anodized aluminum piston and cone (Oil, PE, WBF, & Air Meters)
T303 Stainless body, C360 Brass piston and cone (Water meters)
T316 Stainless body, piston and cone

PETROLEUM (Oil) COMMON PARTS:

Spider Plate: T316 SS
Spring: T302 SS
Fasteners: T303 SS
Pressure Seals: Viton®
Lens: Polycarbonate
Retaining Ring: SAE 1070/1090 Carbon Steel
Retaining Spring: SAE 1070/1090 Carbon Steel
Indicator and Internal Magnet: PPS / Ceramic
Enclosure Seal: Silicone gasket
Scale Support: 6063 - T6 Aluminum

PHOSPHATE ESTER (PE) COMMON PARTS:

Spider Plate: T316 SS
Spring: T302 SS
Fasteners: T303 SS
Pressure Seals: EPR
Lens: Polycarbonate
Retaining Ring: SAE 1070/1090 Carbon Steel
Retaining Spring: SAE 1070/1090 Carbon Steel
Indicator and Internal Magnet: PPS / Ceramic
Enclosure Seal: Silicone gasket
Scale Support: 6063 - T6 Aluminum

WATER-BASED (WBF), WATER, AIR COMMON PARTS:

Spider Plate: T316 SS
Spring: T302 SS
Fasteners: T303 SS
Pressure Seals: Viton®
Lens: Polycarbonate
Retaining Ring: T316 SS
Retaining Spring: T316 SS
Indicator and Internal Magnet: PPS / Ceramic
Enclosure Seal: Silicone gasket
Scale Support: 6063 - T6 Aluminum

API OIL / AIR / CAUSTIC and CORROSIVE LIQUIDS and GASES:

Spider Plate: T316 SS
Spring: T316 SS
Fasteners: T316 SS
Pressure Seals: Viton®
Lens: Polycarbonate
Retaining Ring: T316 SS
Retaining Spring: T316 SS
Indicator and Internal Magnet: PPS / Ceramic
Enclosure Seal: Silicone gasket
Scale Support: 6063 - T6 Aluminum

THREADS: SAE J1926/1, **NPTF** ANSI B2.2, **BSPP** ISO1179

TEMPERATURE RANGE: -20 to +240 °F (-29 to +116 °C)

PRESSURE RATING:

Aluminum / Brass Operating:

Liquids - 3,500 psi/241 bar max. with a 3:1 safety factor.
Gases - 1,000 psi/69 bar max. with a 10:1 safety factor.
For High Cycle Applications: See page 7

Stainless Steel Operating:

Liquids - 6,000 psi/414 bar max. with a 3:1 safety factor.
Gases - 1,500 psi/103 bar max. with a 10:1 safety factor.
For High Cycle Applications: See page 7

ACCURACY: ±2% of full scale **REPEATABILITY:** ±1%

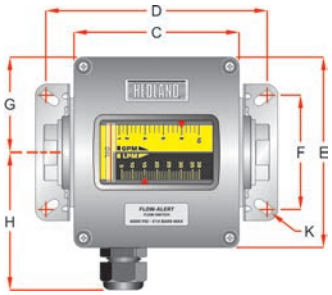
PRESSURE DROP REFERENCE TABLE:

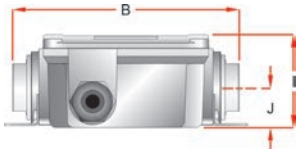
	FLUID TYPE							
	Oil	PE	WBF	Water	API Oil	Caustic & Corrosive Liquids	Air/Caustic & Corrosive Gases	Air
50% / 100% Pressure Drop	p. 10	p. 18	p. 26	p. 34	p. 38	p. 38	p. 40	p. 42
Pressure Drop Chart	p. 61	p. 62	p. 63	p. 64	p. 65	p. 64	p. 65	p. 66

Viton is a registered trademark of DuPont Dow Elastomers

Flow-Alert™ Flow Switches (Micro Switch)

For Liquids / Air and Other Compressed Gases





DIMENSIONS:

A	B	C	D	E	F	G	H	I	J	K
NOMINAL PORT SIZE	LENGTH in (mm)	LENGTH in (mm)	LENGTH in (mm)	WIDTH in (mm)	WIDTH in (mm)	WIDTH in (mm)	WIDTH in (mm)	DEPTH in (mm)	OFFSET in (mm)	HOLE DIA. in (mm)
¼ (SAE 6)	6.6 (168)	5.27 (134)	6.41 (163)	6.00 (152)	3.23 (82)	3.00 (76)	4.20 (107)	2.94 (75)	1.51 (38)	.31 (8)
½ (SAE 10)	6.6 (168)	5.27 (134)	6.41 (163)	6.00 (152)	3.23 (82)	3.00 (76)	4.20 (107)	2.94 (75)	1.51 (38)	.31 (8)
¾ (SAE 12)	7.2 (183)	5.27 (134)	7.04 (179)	6.00 (152)	3.60 (91)	3.00 (76)	4.20 (107)	2.94 (75)	1.27 (32)	.31 (8)
1 (SAE 16)	7.2 (183)	5.27 (134)	7.04 (179)	6.00 (152)	3.60 (91)	3.00 (76)	4.20 (107)	2.94 (75)	1.27 (32)	.31 (8)
1¼ (SAE 20)	12.2 (310)	10.68 (271)	11.65 (296)	7.63 (194)	4.84 (123)	3.82 (97)	5.02 (128)	4.50 (114)	2.20 (56)	.31 (8)
1½ (SAE 24)	12.2 (310)	10.68 (271)	11.65 (296)	7.63 (194)	4.84 (123)	3.82 (97)	5.02 (128)	4.50 (114)	2.20 (56)	.31 (8)

ENCLOSURE:

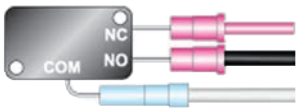
Material: Anodized and epoxy powder-coated aluminum with polycarbonate lens.
Seals: Silicone gasket between enclosure and lens.
Viton® O-rings between enclosure and flow meter body.
Connection: Pig-tail conductor (standard) with water-tight strain relief.
Other connections, including quick-disconnect, are available – consult factory for details.
Fastener: T303 SS
Rating: NEMA 12 & 13 (IP52/54)

ELECTRICAL CIRCUITRY:

Adjustable Flow-Alert™ signal: single (1) or double (2) switch, pre-wired single-pole, double-throw (SPDT) with high or low flow limit setting, adjustable over the entire flow measuring range. Other switches are available – consult factory for details.

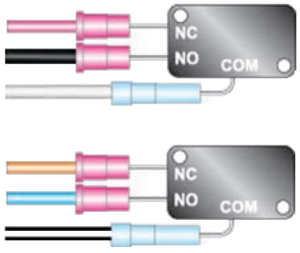
10A @ 250 VAC maximum, 0.5A @ 125 VDC maximum.

All Flow-Alert sizes (¼ to 1½ inch series) are offered in single (1) switch or double (2) switch models.
The single switch model is supplied with a 34" length of 4-wire #18 AWG jacketed cable.
The double switch model is supplied with an 18" length of 7-wire #16 AWG jacketed cable.
Optional 8 ft. cables are available – consult factory for details.



One (1) Switch 4-wire cable
Red: Normally Closed (NC)
Black: Normally Open (NO)
White: Common (COM)
Green: Ground

Two (2) Switch 7-wire cable
Switch #1
Red: Normally Closed (NC)
Black: Normally Open (NO)
White: Common (COM)
Switch #2
Orange: Normally Closed (NC)
Blue: Normally Open (NO)
White/Black: Common (COM)
Green: Ground



NOTE: Weights for all sizes can be found on page 79.

Flow-Alert™ Flow Switches (Reed Switch)

For Liquids / Air and Other Compressed Gases

- No mechanical linkage
- Automatically signals alarm if flow is too high or too low
- Available from ¼" to 1½" sizes in aluminum, brass and stainless
- Installs in any position
- Easier-to-read linear scale
- No flow straighteners or special piping requirements
- Relatively insensitive to shock and vibration
- Special scales available

SPECIFICATIONS:

MATERIALS:

2024 - T351 Anodized aluminum body, piston and cone
C360 Brass body, piston and cone
T303 Stainless body, 2024 - T351 Anodized aluminum piston and cone (Oil, PE, WBF, & Air meters)
T303 Stainless body, C360 Brass piston and cone (Water meters)
T316 Stainless body, piston and cone

PETROLEUM (Oil) COMMON PARTS:

Spider Plate: T316 SS **Retaining Ring:** SAE 1070/1090 Carbon Steel
Spring: T302 SS **Retaining Spring:** SAE 1070/1090 Carbon Steel
Fasteners: T303 SS **Indicator:** T400 Series Stainless
Pressure Seals: Viton® **Internal Magnet:** Teflon® Coated Alnico 8
Lens: Polycarbonate **Switch Carrier:** Aluminum
Enclosure Seal: Silicone gasket **Scale Support:** 6063 - T6 Aluminum

PHOSPHATE ESTER (PE) COMMON PARTS:

Spider Plate: T316 SS **Retaining Ring:** SAE 1070/1090 Carbon Steel
Spring: T302 SS **Retaining Spring:** SAE 1070/1090 Carbon Steel
Fasteners: T303 SS **Indicator:** T400 Series Stainless
Pressure Seals: EPR **Internal Magnet:** Teflon® Coated Alnico 8
Lens: Polycarbonate **Switch Carrier:** Aluminum
Enclosure Seal: Silicone gasket **Scale Support:** 6063 - T6 Aluminum

WATER-BASED (WBF), WATER, AIR COMMON PARTS:

Spider Plate: T316 SS **Retaining Ring:** T316 SS
Spring: T302 SS **Retaining Spring:** T316 SS
Fasteners: T303 SS **Indicator:** T400 Series Stainless
Pressure Seals: Viton® **Internal Magnet:** Teflon® Coated Alnico 8
Lens: Polycarbonate **Switch Carrier:** Aluminum
Enclosure Seal: Silicone gasket **Scale Support:** 6063 - T6 Aluminum

API OIL / AIR / CAUSTIC and CORROSIVE LIQUIDS and GASES:

Spider Plate: T316 SS **Retaining Ring:** T316 SS
Spring: T316 SS **Retaining Spring:** T316 SS
Fasteners: T316 SS **Indicator:** T400 Series Stainless
Pressure Seals: Viton® **Internal Magnet:** Teflon® Coated Alnico 8
Lens: Polycarbonate **Switch Carrier:** Aluminum
Enclosure Seal: Silicone gasket **Scale Support:** 6063 - T6 Aluminum

THREADS: SAE J1926/1, **NPTF** ANSI B2.2, **BSPP** ISO1179

TEMPERATURE RANGE: -20 to +240 °F (-20 to +116 °C)

PRESSURE RATING:

Aluminum / Brass Operating:

Liquids - 3,500 psi/241 bar max. with a 3:1 safety factor.
Gases - 1,000 psi/69 bar max. with a 10:1 safety factor.
For High Cycle Applications: See page 7

Stainless Steel Operating:

Liquids - 6,000 psi/414 bar max. with a 3:1 safety factor.
Gases - 1,500 psi/103 bar max. with a 10:1 safety factor.
For High Cycle Applications: See page 7

ACCURACY: ±2% of full scale, ±7% of full scale for 4.8" (122 mm) length ¼" meters

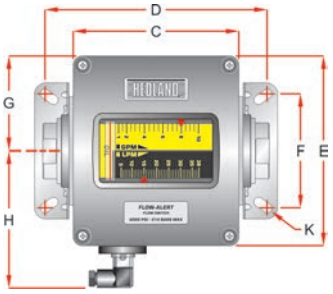
REPEATABILITY: ±1%

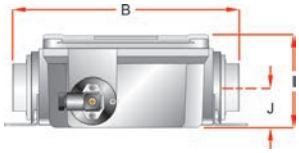
PRESSURE DROP REFERENCE TABLE:

	FLUID TYPE							
	Oil	PE	WBF	Water	API Oil	Caustic & Corrosive Liquids	Air/Caustic & Corrosive Gases	Air
50% / 100% Pressure Drop	p. 10	p. 18	p. 26	p. 34	p. 38	p. 38	p. 40	p. 42
Pressure Drop Chart	p. 61	p. 62	p. 63	p. 64	p. 65	p. 64	p. 65	p. 66

Flow-Alert™ Flow Switches (Reed Switch)

For Liquids / Air and Other Compressed Gases





DIMENSIONS:

A	B	C	D	E	F	G	H	I	J	K
NOMINAL PORT SIZE	LENGTH in (mm)	LENGTH in (mm)	LENGTH in (mm)	WIDTH in (mm)	WIDTH in (mm)	WIDTH in (mm)	WIDTH in (mm)	DEPTH in (mm)	OFFSET in (mm)	HOLE DIA. in (mm)
¼ (SAE 6)	6.6 (168)	5.27 (134)	6.41 (163)	6.00 (152)	3.23 (82)	3.00 (76)	4.20 (107)	2.94 (75)	1.51 (38)	.31 (8)
½ (SAE 10)	6.6 (168)	5.27 (134)	6.41 (163)	6.00 (152)	3.23 (82)	3.00 (76)	4.20 (107)	2.94 (75)	1.51 (38)	.31 (8)
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1¼ (SAE 20)	12.2 (310)	10.68 (271)	11.65 (296)	7.63 (194)	4.84 (123)	3.82 (97)	5.02 (128)	4.50 (114)	2.20 (56)	.31 (8)
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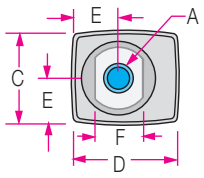
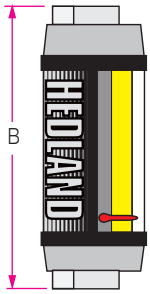
DIMENSIONS:

A	B	C	D	E	F
NOMINAL PORT SIZE	LENGTH in (mm)	WIDTH in (mm)	DEPTH in (mm)	OFFSET in (mm)	FLATS in (mm)
¼ (SAE 6)	4.8 (122)	1.68 (43)	1.90 (48)	.84 (21)	.88 (22)

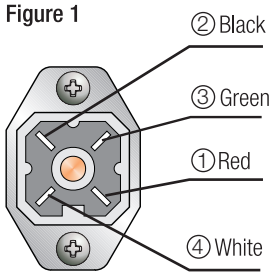




ENCLOSURE:

Material: Anodized and epoxy powder-coated aluminum with polycarbonate lens.
Seals: Silicone gasket between enclosure and lens.
Viton® O-rings between enclosure and flow meter body.
Connection: 4-pin (Protection Class IP65)
Fastener: T303 SS
Rating: NEMA 12 & 13 (IP 52/54)

Figure 1



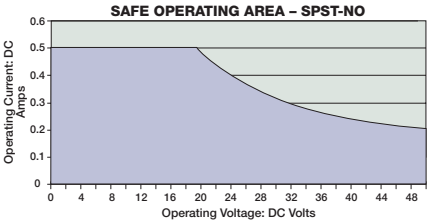
Electrical Circuitry:

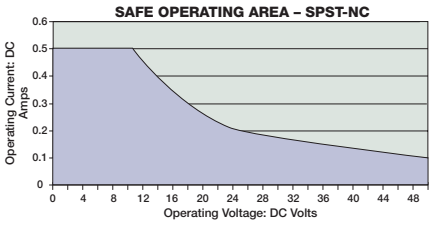
The flow switch is supplied with 15 feet of shielded, 4-wire #22 AWG PVC jacketed cable, color coded as follows: ① Red, ② Black for single (1) Reed Switch, and ③ Green, ④ White for double (2) Reed Switch.

ELECTRICAL SPECIFICATIONS:

Adjustable Flow-Alert™ signal: single (1) or double (2) reed switch, pre-wired single-pole, single-throw (SPST-NO) normally open; or single-pole, single-throw (SPST-NC) normally closed, with high or low flow limit setting, adjustable over the entire flow measuring range.

Contact Form	SPST-NO	SPST-NC
ELECTRICAL SPECIFICATIONS		
Contact Rating	10 Watts Max	5 Watts Max
Voltage, Switching	50 VDC Max	50 VDC Max
Current (resistive), Switching	0.500 A Max	0.500 A Max
OPERATING SPECIFICATIONS		
Contact Resistance, Initial	0.100 Ω Max	0.100 Ω Max
Operating Temperature	20 to +240 °F (-20 to +116 °C)	-20 to +240 °F (-20 to +116 °C)





NOTE: Weights for all sizes can be found on page 79.