

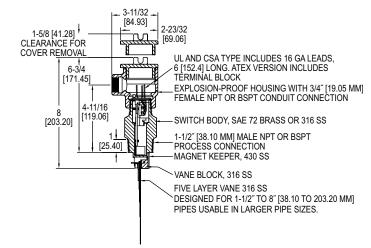






FLOTECT® VANE OPERATED FLOW SWITCH Field Adjustable — Dependable Protection Against Flow Variation or Stopping in Pipelines for Fluids, Gases and Flowing Solids







The Series V4 Flotect® Vane Operated Flow Switch is rugged and reliable, ideal for automatically protecting equipment and pipeline systems against damage from reduction or loss of flow. Time tested in thousands of pipeline installations and processing plants around the world this Series is Weatherproof, designed to meet NEMA 4 and Explosion-proof (listing included in specifications). This series can be used in pipes 1-1/2" (38.10 mm) and up.

BENEFITS/FEATURES

- · Superior performance with unique magnetically-actuated switching design
- · Increased product life due to free-swinging vane, which attracts a magnet within the solid metal switch body and actuates a snap switch by means of a simple lever arm with no bellows, springs, or seals to fail
- · Meets application requirements with durable leak-proof body machined from bar
- Save time and money on maintenance with electrical assembly that can be easily replaced without removing the unit from installation so that the process does not have to be shut down
- Quick installation with fitting that installs directly and easily into pipeline with a threadolet, tee, or flange (see application drawings)
 Meets the most demanding applications with high pressure rating of 1000 psig
- (69 bar) for the brass body and 2000 psig (138 bar) for the SS body
- Solves customer flow application needs with choice of custom vane calibrated specifically for your application, Model V4, or field adjustable multilayer vane, Model V4-2-U (see set point chart)

APPLICATIONS

- · Protects pumps, motors and other equipment against low or no flow
- · Controls sequential operation of pumps
- · Automatically starts auxiliary pumps and engines
- Stops liquid cooled engines, machines and processing when coolant flow is interrupted
- Shuts down burner when air flow through heating coil fails
- · Controls dampers according to flow

SPECIFICATIONS

Service: Gases or liquids compatible with wetted materials.

Wetted Materials: Vane: 316 SS; Body: Brass or 316 SS standard, Magnet keeper: 430 SS standard, 316 SS optional; Options: Other materials also available, consult factory (e.g. PVC, hastelloy, nickel, monel, titanium).

Temperature Limit: -4 to 275°F (-20 to 135°C) standard, MT high temperature option 400°F (205°C) [MT option not UL, CSA, ATEX or IECEx] ATEX and IECEx options, ambient temperature -4 to 163°F (-20 to 73°C); Process temperature -4 to 163°F (-20 to 73°C).

Pressure Limit: Brass body 1000 psig (69 bar), 316 SS body 2000 psig (138 bar), optional 5000 psig (345 bar) available with 316 SS body and SPDT switch only.

Enclosure Rating: Weatherproof and Explosion-proof. **Listed with UL and CSA for Class I, Groups C and D; Class II, Groups E, F, and G.

ATEX **(** € 2813 ⓑ II 2 G Ex db IIB T6 Gb -20°C≤Tamb≤73°C.

-20°C≤Process Temp≤73°C EU-Type Certificate No.: KEMA 03 ATEX

ATEX Standards: EN 60079-0:2012+A11:2013; EN 60079-1:2014. IECEx Certified: For Ex db IIB T6 Gb -20°C≤Tamb≤73°C. -20°C≤Process Temp≤73°C.

IECEx Certificate of Conformity: IECEx DEK 11.0071.

IECEx Standards: IEC 60079-0:2011; IEC 60079-1:2014.

Zone I. Also FM approved.

Switch Type: SPDT snap switch standard, DPDT snap switch optional. Electrical Rating: UL, FM, ATEX and IECEx models 10 A @ 125/250 VAC (V~). CSA models: 5 A @ 125/250 VAC (V~); 5 A res., 3 A ind. @ 30 VDC (V___). MV option: 1 A @125 VAC (V~); 1 A res., .5 A ind. @ 30 VDC (V---). MT option: 5 A @ 125/250 VAC (V~). [MT and MV option not UL, CSA, FM, ATEX or IECEx].

Electrical Connections: UL and CSA models: 16 AWG, 6" (152 mm) long. ATEX and IECEx unit: Terminal block. Conduit Connection: 3/4" female NPT or 19.05 mm standard or M25 with -BSPT option.

Process Connection: 1-1/2" male NPT or 1-1/2" male BSPT or 38.10 mm.

Mounting Orientation: Within 5° of vertical for proper operation. Units for horizontal installation (vertical pipe with up flow) available.

Set Point Adjustment: For universal vane: five vane combinations. Weight: 4 lb 8 oz (1.9 kg).

Compliance: ATEX, CE, CSA, FM, IECEx, UL**.

**No housing option (-NH) has no approvals

MODEL CHART								
Model	Description	Connection Type						
V4-2-U	Brass body, universal vane	NPT						
V4-SS-2-U	316 SS* body, universal vane	NPT						
V4-2-U-NH**	Brass body, universal vane, no housing	NPT						
V4	Brass body, custom vane	NPT						
V4-SS	316 SS* body, custom vane	NPT						
V4-NH**	Brass body, custom vane, no housing	NPT						
V4-2-U-BSPT	Brass body, universal vane	BSPT						
V4-SS-2-U-BSPT	316 SS* body, universal vane	BSPT						
V4-BSPT	Brass body, custom vane	BSPT						
V4-SS-BSPT	316 SS* body, custom vane	BSPT						

316 SS body with 430 SS magnet keeper.

**No housing option (-NH) has no approvals.

†When both values are supplied, note which is critical.

Note: Consult factory for price and availability of fittings for V4 installation. Thredolets, bushings, and tees are available in a variety of sizes and materials. Note: For custom vane models, please supply factory with following information: pipe size, flow direction (horizontal, up), mounting, pressure, temperature, specific gravity, flow rates (maximum normal, actuation/deactuation+), etc

OPTIONS					
To order					
add suffix:	Description				
-316	316 SS magnet keeper, option to replace standard 430 SS				
-AT	ATEX compliant construction				
-BSPT	Female BSPT process connection and M25 conduit connection				
-D	DPDT contacts				
-IEC	IECEx certified construction				
-MT	High temperature, option rated 400°F (204°C)*				
-MV	Gold plated contacts, options for dry circuits*				
-TRD	Decreasing flow time delay relay option with 2 SPDT contacts,				
	adjustable from 0-1 to 0-31 minutes*				
-TRI	Increasing flow time delay relay option with 2 SPDT contacts,				
	adjustable from 0-1 to 0-31 minutes*				
-V	Vertical up flow, option for upward flow in vertical pipe				
*See electrical rating in specification, no listings or approvals.					

USA: California Proposition 65

MARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.







FLOTECT® VANE OPERATED FLOW SWITCH Field Adjustable — Dependable Protection Against Flow Variation or Stopping in Pipelines for Fluids, Gases and Flowing Solids

V4 UNIVERSAL VANE FLOW CHARTS

Dwyer.

Values shown in both charts are nominal. If normal flows exceed actuation rates by less than 10%, custom vanes are recommended. Figures are based on standard vertical installation in a 1-1/2" threaded branch connection in a horizontal run of pipe.

APPROXIMATE ACTUATION/DEACTUATION FLOW RATES FOR COLD WATER; GPM (LPM)												
Vane Layers	1.5" Pipe	2" Pipe	3" Pipe	4" Pipe	6" Pipe	8" Pipe	10" Pipe	12" Pipe	14" Pipe	16" Pipe	18" Pipe	20" Pipe
1	7-3	15-8	45-22	95-40	210-120	375-175	600-300	900-450	1200-600	1400-800	2000-1000	2400-1200
	(26.67-11.67)	(56.7-30)	(167-83.3)	(367-150)	(800-450)	(1417-667)	(2267-1133)	(3400-1700)	(4550-2267)	(5300-3033)	(7567-3783)	(9083-4550)
1 and 2		7-4	23-14	50-35	130-90	230-150	450-250	650-350	900-500	1200-650	1450-800	1800-1000
		(26.7-15)	(86.7-53.3)	(190-132)	(500-333)	(867-567)	(1700-950)	(2467-1317)	(3400-1900)	(4550-2467)	(5483-3033)	(6817-3783)
1, 2 and 3			11-7	27-19	80-60	160-115	300-180	450-275	600-350	750-450	1000-600	1200-700
			(41.7-26.7)	(102-71.7)	(300-233)	(600-433)	(1133-683)	(1700-1033)	(2267-1317)	(2750-2083)	(3783-2267)	(4550-2650)
1, 2, 3 and 4				17-12	60-45	120-90	230-150	310-200	430-280	550-360	700-450	850-550
				(65-45)	(233-167)	(450-333)	(867-567)	(1167-750)	(1633-1067)	(2083-1367)	(2650-1700)	(3217-2083)
1, 2, 3, 4					40-30	80-65	135-100	200-140	290-200	360-250	460-325	575-400
and 5					(152-113)	(300-250)	(517-383)	(750-533)	(1100-750)	(1367-950)	(1733-1233)	(2183-1517)
Nata: Actuation rates are based an cold water at a propisite arguity of 1.0												

Note: Actuation rates are based on cold water at a specific gravity of 1.0.

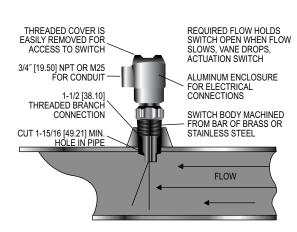
Note: For fluids of different specific gravity, actuation rates may be approximated by dividing the rate shown by the square root of the specific gravity.

APPROXIMATE ACTUATION/DEACTUATION FLOW RATES FOR COLD AIR; SCFM (LPS)												
Vane Layers	1.5" Pipe	2" Pipe	3" Pipe	4" Pipe	6" Pipe	8" Pipe	10" Pipe	12" Pipe	14" Pipe	16" Pipe	18" Pipe	20" Pipe
1	32-17	65-32	210-105	400-200	950-475	1550-850	2400-1300	3450-1900	4700-2600	6400-3500	8000-4400	10000-5500
	(15-8)	(30-20)	(100-50)	(190-90)	(450-220)	(730-400)	(1100-600)	(1600-900)	(2200-1200)	(3000-1700)	(3800-2100)	(4700-2600)
1 and 2		23-13	120-70	195-140	550-375	1100-700	1850-1200	2700-1750	3400-2200	4800-3100	6000-3900	7400-4800
		(10-6)	(60-30)	(90-70)	(260-180)	(520-330)	(870-570)	(1300-800)	(1600-1000)	(2300-1500)	(2800-1800)	(3500-2300)
1, 2 and 3			60-48	135-100	375-265	725-500	1200-850	1850-1300	2600-1800	3350-2350	4300-3000	5300-3700
			(30-20)	(60-50)	(180-130)	(340-240)	(570-400)	(870-610)	(1200-800)	(1600-1100)	(2000-1400)	(2500-1700)
1, 2, 3 and 4				65-50	260-200	500-400	875-700	1250-1000	1900-1500	2500-2000	3100-2500	3900-3100
				(30-20)	(120-90)	(240-190)	(410-330)	(590-470)	(900-710)	(1200-900)	(1500-1200)	(1800-1500)
1, 2, 3, 4					130-100	310-250	650-525	1000-800	1600-1250	2200-1750	2800-2250	3550-2850
and 5					(60-50)	(150-120)	(310-250)	(470-380)	(760-590)	(1040-830)	(1300-1100)	(1700-1300)
Nation Association was a superior and the standard conditions												

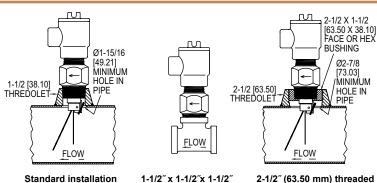
Note: Actuation rates are based on air at standard conditions.

Note: For gases at other pressures, temperatures, or specific gravities, consult factory for equivalent flow approximations

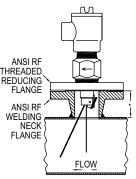
APPLICATION DRAWINGS FOR FLOTECT® AUTOMATIC FLOW SWITCHES



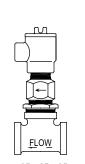
Threaded branch connection installation. May also be installed using tee, flange or coupling.



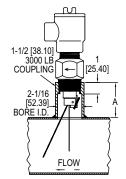
Standard installation 1-1/2" x 1-1/2"x 1-1/2" (38.10 x 38.10 x 38.10 mm) tee installation



Flange installation *Flange face to pipe O.D. specified by customer. Normally should not exceed 5" (172)



2" x 2" x 2 (50.80 x 50.80 x 50.80 mm) tee installation



branch connection

Not recommended, unless coupling is bored out to 2-1/16" (52.4) as shown

Pipe Size	Dim. A
2" (50.80 mm)	2-5/8 (66.7)
3" (76.20 mm)	
4" (101.60 mm)	2-7/16 (61.9)
	2" (50.80 mm)

USA: California Proposition 65

▲ WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.