

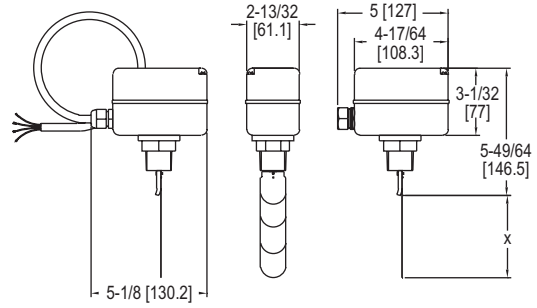


SERIES FS-2 | W. E. ANDERSON™ BY DWYER



# VANE FLOW SWITCH

Low Cost, Field Adjustable Set Point and Paddle



Shown with conduit connection option

The **SERIES FS-2** Vane Flow Switches offers an economical flow proving solution. The FS-2 paddles are adjustable to fit 1 to 8" size pipe.

**FEATURES/BENEFITS**

- Field adjustable set point adjustment screw allows for easy flow switch modification
- Custom application set points enabled by field adjustable vane layers
- Aluminum weatherproof housing permits outdoor installation

**APPLICATIONS**

- Boiler flow proving
- Hot water heaters
- Chillers
- Cooling lines
- Machinery
- Liquid transfer systems

**APPROXIMATE ACTUATION/DEACTUATION FLOW RATES FOR WATER; GPM (LPM)**

Pipe Size	Blade Vane Length in (mm) Dim. X	Minimum Setting		Maximum Setting	
		Actuate	Deactuate	Actuate	Deactuate
1"	1.34 (34)	4.0 (15.0)	1.8 (6.7)	8.8 (33.3)	6.6 (25.0)
1-1/4"	1.34 (34)	5.3 (20.0)	2.6 (10.0)	11.4 (43.3)	8.4 (31.7)
1-1/2"	2.24 (57)	7.0 (26.7)	4.0 (15.0)	14.5 (55.0)	11.4 (43.3)
2"	2.24 (57)	14.1 (53.3)	9.7 (36.7)	31.3 (118.3)	22.5 (85.0)
2-1/2"	3.46 (88)	18.5 (70.0)	15.4 (58.3)	35.2 (133.3)	30.8 (116.7)
3"	3.46 (88)	27.7 (105.0)	25.1 (95.0)	52.8 (200.0)	46.2 (175.0)
4"	3.46 (88)	59.4 (225.0)	52.8 (200.0)	123.3 (466.7)	114.5 (433.3)
5"	6.57 (167)	52.8 (200.0)	39.6 (150.0)	132.1 (500.0)	123.3 (466.7)
6"	6.57 (167)	75.7 (286.7)	52.8 (200.0)	154.1 (583.3)	140.9 (533.3)
8"	6.57 (167)	184.9 (700.0)	158.5 (600.0)	396.3 (1500.0)	374.2 (1416.7)

**SPECIFICATIONS**

**Service:** Compatible liquids.  
**Wetted Materials:** Bellow: Tin-bronze; Vane: SS; Body: Forged brass.  
**Temperature Limit:** 230°F (110°C).  
**Pressure Limit:** 145 psig (10 bar).  
**Enclosure Rating:** NEMA 4 (IP64).  
**Switch Type:** SPDT snap switch.  
**Electrical Rating:** 10 A res, 3 A ind @ 250 VAC.  
**Electrical Connection:** Cable gland with attached wire leads or optional conduit connection.

**Process Connection:** 1" male NPT or BSPT.  
**Mounting Orientation:** Switch must be installed vertically on horizontal pipe runs.  
**Set Point Adjustment:** Four vane combinations and an adjustment screw.  
**Enclosure:** Die-cast aluminum alloy.  
**Weight:** 28.22 oz (0.8 kg).  
**Agency Approvals:** CE.

**MODEL CHART**

Model	Description
FS-2	Paddle flow switch

**OPTIONS**

To order add suffix:	Description
-BSPT	Process connection
<b>Example:</b> FS-2-BSPT	
-CND	Conduit connection, 1" NPT female conduit connection with no wire leads.
<b>Example:</b> FS-2-CND	

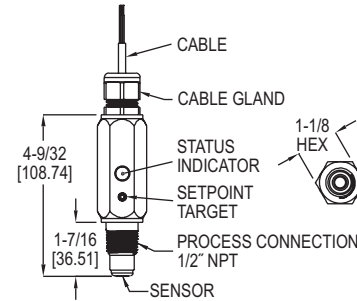
USA: California Proposition 65  
 ⚠WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

SERIES TDFS | W. E. ANDERSON™ BY DWYER



# THERMAL DISPERSION FLOW SWITCH

Non-Mechanical, Low Pressure Drop



The **SERIES TDFS** Thermal Flow Switch uses impulse thermal dispersion measurement technique to indicate whether the flow rate is above or below a user set flow rate. It provides NO and NC NPN outputs and two LED, one green and one red for high and low set point indication.

**FEATURES/BENEFITS**

- Better long term reliability and life expectancy than mechanical flow switches with no paddles or vanes to wear or break, no jams in the paddle movement, and no seals on movement assembly to wear or leak
- Not affected by empty pipe detection and avoids overheating by actively heating above the process temperature and then cooling down to process temperature
- Set point is easily field set by taping the included magnet on the set point target three times at the desired flow rate
- LED status indicators provide visual switch indication of set point
- Low pressure drop, only needs to be 10% into the flow (e.g. 1/8" for 3/4" schedule 40 pipe)

**APPLICATIONS**

- Boiler flow proving
- Hot water heaters
- Chillers
- Liquid transfer systems

**SPECIFICATIONS**

**Service:** Compatible water-based fluids.  
**Wetted Materials:** 316 SS, Polysulfone, and FKM.  
**Setpoint Range:** 0.5 to 10 ft/s (0.15 to 3.0 m/s).  
**Repeatability:** 0.07 ft/s +3% of setpoint.  
**Typical Deadband:** 0.1 ft/s +15% of setpoint.  
**Temperature Limits:** Process: 5 to 185°F (-15 to 85°C) (non-freezing); Ambient: 5 to 167°F (-15 to 75°C); Storage: -40 to 185°F (-40 to 85°C).  
**Pressure Limits:** 300 psig (20.67 bar).  
**Response Time:** Approximately 8 s.  
**Power Requirement:** 9 to 24 VDC.  
**Switching Current:** 400 mA, derate 5 mA/°C above 23°C.

**Current Consumption:** Average: 93 mA, Peak: 300 mA.  
**Electrical Connection:** 4 conductor 22 AWG, 6' (1.83 m) long with cable gland.  
**Process Connection:** 1/2" NPT male.  
**Enclosure Rating:** NEMA 4X (IP65).  
**Housing Materials:** 316 SS, 416 SS, polycarbonate, neoprene, and acrylated urethane.  
**Switch Type:** 1 NO NPN, 1 NC NPN.  
**Input Power and Protection:** 0.5A fuse (resettable) reverse polarity protected.  
**Switched Output Protection:** 0.5 A fuse (resettable) reverse polarity protected.  
**Agency Approvals:** CE.

**MODEL CHART**

Model	Description
TDFS-1-P-06	Thermal flow switch, 6' cable with cable gland
<b>Note:</b> Consult factory for longer cable lengths	

