



Series
TDFS

Thermal Dispersion Flow Switch

Non-Mechanical, Low Pressure Drop



The **Series TDFS** is a thermal flow switch that indicates whether the flow rate is above or below a user set flow rate with NO and NC NPN outputs. Setpoint is easily field set, just tap the included magnet on the setpoint target three times at the desired flow rate and it's done. Incorporated into the unit are two LED status indicators on opposite sides of the unit providing visual switch indication, green when the flow is above set point, red when the flow is below set point.

The TDFS uses an impulse thermal dispersion measurement technique to measure the flow rate where the probe is heated above the process temperature and then is allowed to cool down to the process temperature. Empty pipe is not a problem with the TDFS unlike some competitor units that will overheat. Thermal flow switches can offer better long term reliability and life expectancy than mechanical flow switches.

TDFS Advantages over Mechanical Flow Switches

- No paddles or vanes to break off into the flow
- No jams or material stopping the paddle movement
- No seals on movement assembly to wear or leak
- Low pressure drop, only needs to be 10% into the flow (e.g. 1/8" for 3/4" schedule 40 pipe)

TDFS-1-P-06, Thermal flow switch, 6' cable with cable gland*

*Consult factory for longer cable lengths

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), max. momentary surge: 500 psig (34.47 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: 0.5A fuse (resettable) reverse polarity protected.

Agency Approvals: CE, RoHS.