



# THERMAL FLOW SWITCH

FLOW SWITCH FOR COOLING WATER, COOLANTS, & WATER BASED FLUIDS

## SERIES TS

### FEATURES:

- ★ No Moving Parts – Operates with or without Liquids Containing Particulate or Debris
- ★ Compact Durable Design – Stainless Steel Construction
- ★ Simple Fail Safe ON/OFF Solid State Switch – No adjustments
- ★ 1/2 Inch Male NPT Connection – mounts in Pipe Sizes From 1/4 to 2 Inches
- ★ Easy Installation – Mounts in Standard Pipe T
- ★ Low Cost – Ideal for End Users and O.E.M.

### GENERAL DESCRIPTION:

Sure Flow Products, LLC Series TS Thermal Flow Switch is a low cost maintenance free flow switch for critical cooling circuits and systems. The no moving part design incorporates a thermal sensor that detects flow by heat loss. The probe sensor is mounted in contact with the liquid. As liquid passes the heated probe sensor cools providing an immediately switch contact. The sensor continuously samples the temperature of the fluid with no affected by the changing ambient temperatures. Unlike mechanical flow switches that may hang up or stick showing flow when none is present, SFP Series TS Flow Switch will function with or without particulate and debris in the fluid. The compact size is available for use in pipe sizes up to 2 inches and flow from .9 fps.

#### Technical Data

Type	Series TS
Medium	Water Based Liquids

#### Sensor Data

Low Flow Set Point	.9 fps (.3 m/s)
Hi Temp Set Point	122° F (50° C) or 158° F (70° C)
Medium Temperature	-4° F (-20° C) to + 176° F (80° C)
Response Time	5 - 10 Seconds
Repeatability	<.5%
Hysteresis	Approximately 20% of setpoint value
Pressure	150 PSI (10 Bar)

#### Mechanical Data

Protection Class	NEMA6 (IP 67)
Housing Material	Stainless Steel 1.4301 (303)
Thread	1/2"-14 NPT (NPT) of G 1/2 A (BSP)
Connection	M12 male socket, with mating connector

#### Electrical Data

Operating Voltage	18 to 30 V DC
Switching Current	≤ 200 mA
Power Consumption	4 W max.
Initial Operation	After 15 seconds
Electrical Output	PNP n.o. (switch closed with flow)



### MODEL SELECTION:

**Example:** TS- N-.500 -F-PTB

**Series:** TS = Thermal Flow Switch

**Connection Type:** N = NPT (male)  
B = BSP (male)

**Process Connection Size (inches):**

.250 = 1/4    .375 = 3/8    .500 = 1/2    .750 = 3/4  
1.00 = 1    1.25 = 1-1/4    1.5 = 1-1/2    2.00 = 2

**Switch Options:** F = Flow (at .9fps) normally open contact

**T1** = Temperature at 50C normally closed contact

**T2** = Temperature at 70C normally closed contact

**EI1** = Elow (at .9tps) normally open contact, Temperature at 122F/50C normally closed contact

**FT2** = Flow (at .9fps) normally open contact, Temperature at 158F/70C normally closed contact

**Optional Pipe T Adaptors:** PTB = Brass  
PTS = Stainless Steel

Other materials available upon request. Connections are same as process connection type and size.

### CONNECTION DIAGRAM

