



THERMAL DISPERSION FLOW / LEVEL / TEMPERATURE SWITCH SANITARY

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Model TS

FEATURES

- For Liquids or Small Granular Solids
- One Switch for Gas or Liquid Flow, Liquid Level, Interface Level or Temperature
- No Moving Parts
- Designed to 3A Standards
- 316L Stainless Steel All Welded Construction Standard
- Explosion Proof
- Temperature Range -50 to 350°F / -46 to 177°C Standard
- Pressure to 500 psig / 34.5 bar Standard

OPTIONS:

- Electropolished Wetted Parts
- Extended Sensor
- Remote Mounting
- Ceramic Glass to Metal Feedthrough Provides Secondary Pressure Boundry



SPECIFICATIONS

Sensor

Materials of Construction	316L Stainless Steel 240 Grit Polish Standard
Response Time	No Flow to Flow: From 3 Seconds; Flow to No Flow: From 8 Seconds Level: $\pm 1/8"$; Temperature from 1 Second
Operating Temperature	-50 to 350°F / -46 to 177°C Standard
Operating Pressure	Full Vacuum to 500 psig / 34.5 bar Standard
Repeatability	Flow: 0.5% of maximum flow rating at Constant Conditions Standard Level: $\pm 1/8"$; Temperature: $\pm 1^\circ\text{C}$
Process Connection	1-1/2" Tri-Clamp Sanitary Fitting for Short Leg Tee Mounting Options: 2" Tri-Clamp, Flanges, Customer Specified Connections
Insertion Length	1.8" / 45.7mm Standard Option: 1.2" / 30.5mm Insertion Length; Customer Specified Insertion Length

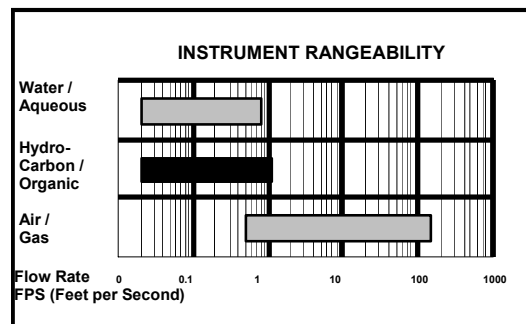
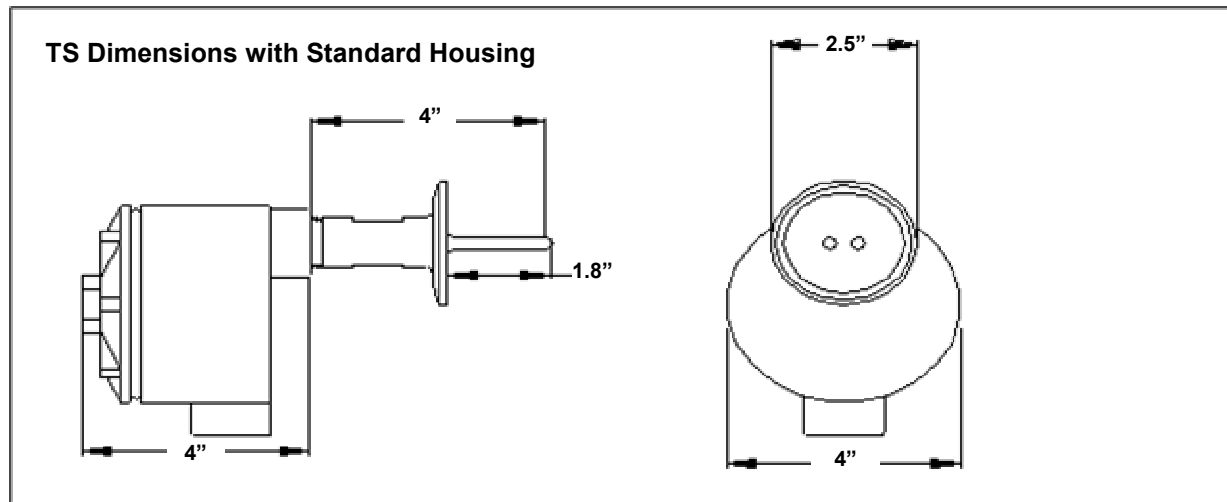
Electronics

Housing	Powder Coated Aluminum Standard Optional: Dual Compartment Aluminum; Dual Compartment 316L SS
Operating Temperature	-50 to 140°F/-46 to 60°C Ambient Standard Option: Remote Mounting of Electronics Up to 2000 ft. / 609 meters
Power Input	90-132 VAC, 50/60 Hz, 5.5 watts max Standard Options: 24 VDC, 24 VAC, 208-240 VAC
Relay Output	DPDT 8 amps @ 250 VAC
Conduit Entry	3/4" FNPT Standard
Approvals	FM (Dual Compartment): XP / I / 1 / ABCD; DIP / II,III / 1 / EFG / T3A @ 60°C; Type 4X FM (Single Compartment): XP / I / 1 / CD; DIP / II,III / 1 / EFG / T3A @ 60°C; Type 4X CSA (Dual Compartment): Class I / ABCD; Class II / EFG; Class III; T3C @ 60°C; NEMA 4X CSA (Single Compartment): Class I / CD; Class II / EFG; Class III; T3C @ 60°C; NEMA 4X
Shipping Weight	5 lbs standard

ORDERING INFORMATION:

TS / a / b / c / d / e / f / g / h :

- /a Housing**
 - /A1 Single Compartment Aluminum Housing **Standard**
 - /A Dual Compartment Aluminum Housing
 - /AW Dual Compartment Aluminum Housing with Glass Viewing Window
 - /S Dual Compartment 316L Stainless Steel Housing
 - /SW Dual Compartment 316L Stainless Steel Housing with Glass Viewing Window
- /b Material Type**
 - /S6 316L Stainless Steel 240 Grit Mechanical Polish **Standard**
 - /EP 316L Stainless Steel 240 Grit and Electropolish
- /c A) Process Connection**
 - /1005 1" / 1-1/2" Tri-Clamp **Standard** **500 psig @ 70°F / 34 bar @ 21°C** **300 psig @ 250°F / 20 bar @ 121°C**
 - /2005 2" Tri-Clamp **450 psig @ 70°F / 31 bar @ 21°C** **300 psig @ 250°F / 20 bar @ 121°C**
- /d Insertion Length**
 - /1.8 1.8" / 45.7 mm Insertion Length **Standard**
 - /1.2 1.2" / 30.5 mm Insertion Length
 - /length Customer Specified Length in Inches or Millimeters (1.2" / 30.5 mm minimum)
- /e Power Input**
 - /1 90-132 VAC **Standard**
 - /2 24 VDC or VAC (22.8 - 28.8 VDC; 20 VAC - 25 VAC)
 - /3 200-240 VAC
- /f Process Temperature**
 - /H0 -50 to 350°F / -46 to 177°C **Standard**
- /g Approvals**
 - /FMX Factory Mutual Research Corp. (FMRC) Explosion Proof **Standard**
 - /CSX CSA Canadian Standard Association Explosion Proof
 - /CEX Cenelec Eex d IIC (**Pending**)
 - /X Not FMRC or Cenelec Approved
- /h Options (leave blank if no options required)**
 - /DS Dual Switch Point Electronics with Millivolt Output
 - /RJxxxx Remote Electronics with PVC Cable (200°F / 93.3°C) Specify cable length "xxxx"
 - /RFxxxx Remote Electronics with Teflon Cable (350°F / 177°C) Specify cable length "xxxx"
 - /HS Hermetically Sealed Probe (probe hermetically sealed at connection to enclosure)



		VOLUMETRIC (GPM OR CFM) TO VELOCITY (FPS) Conversion Chart							
LINE SIZE		1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"
Liquid Multiplier		5.65	3.08	1.68	1.06	0.602	0.371	0.215	0.158
Gas Multiplier		42.19	23.06	12.57	7.909	4.5	2.776	1.61	1.18
Line Size		2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Liquid Multiplier		0.0956	0.067	0.0434	0.0325	0.0252	0.016	0.0111	0.006
Gas Multiplier		0.7161	0.519	0.3248	0.2427	0.1884	0.12	0.083	0.048
Line Size		10"	12"	14"	16"	18"	20"	24"	
Liquid Multiplier		0.00407	0.00287	0.00237	0.001815	0.001434	0.001154	0.000798	
Gas Multiplier		0.0304	0.0209	0.0177	0.0136	0.0107	0.00863	0.00597	

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