

# TS

## Thermal Dispersion Switch

### Thermal Dispersion flow/level/ temperature switch sanitary K-TEK Products



#### 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 <b>Standard</b>
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 <b>Standard</b>
Operating Pressure	Full Vacuum to 500 psig / 34.5 bar <b>Standard</b>
Repeatability	Flow: 0.5% of maximum flow rating at Constant Conditions <b>Standard</b> Level: $\pm 1/8"$ ; Temperature: $\pm 1^\circ\text{C}$
Process Connection	1-1/2" Tri-Clamp Sanitary Fitting for Short Leg Tee Mounting
Insertion Length	Options: 2" Tri-Clamp, Flanges, Customer Specified Connections 1.8" / 45.7mm <b>Standard</b> Option: 1.2" / 30.5mm Insertion Length; Customer Specified Insertion Length

### Electronics

Housing	Powder Coated Aluminum <b>Standard</b> Optional: Dual Compartment Aluminum; Dual Compartment 316L SS
Operating Temperature	-50 to 140°F / -46 to 60°C Ambient <b>Standard</b> Option: Remote Mounting of Electronics Up to 2000 ft. / 609 meters
Power Input	90-132 VAC, 50/60 Hz, 5.5 watts max <b>Standard</b> Options: 24 VDC, 24 VAC, 208-240 VAC
Relay Output	DPDT 8 amps @ 250 VAC
Conduit Entry	3/4" FNPT <b>Standard</b>
Approvals	CL I, Div I, GP A,B,C,D; CL I, Div II, GP E,F,G; Div III, DIP, NEMA or Type 4X FM: T3A @ Ta = 60C CSA: T3C @ Ta = 60C (For A, A1 and S housing options) GOST Russia, GOST Kazakhstan: 1ExdIICT3
Shipping Weight	5 lbs standard

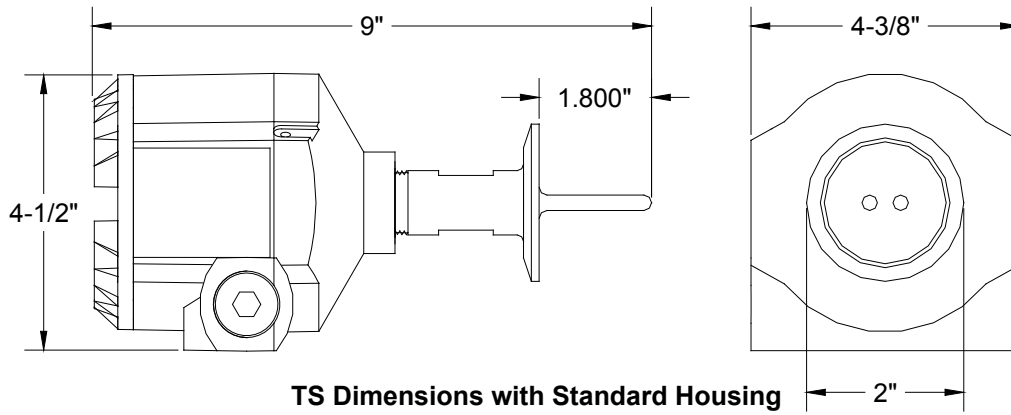


### ORDERING INFORMATION:

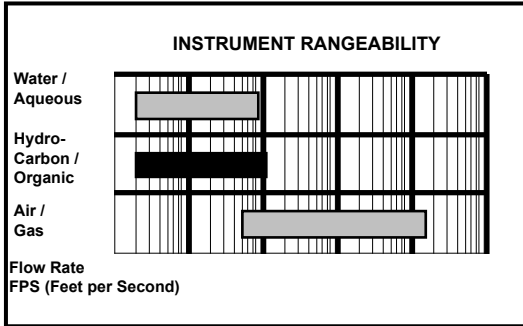
TS / a / b / c / d / e / f / g / h :

<b>/a Housing</b>			
A1	Single Compartment Aluminum Housing <b>Standard</b>		
A1W	Single Compartment Aluminum Housing with glass window cover		
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>/b Material Type</b>			
S6	316L Stainless Steel 240 Grit Mechanical Polish <b>Standard</b>		
EP	316L Stainless Steel 240 Grit and Electropolish		
<b>/c A) Process Connection</b>			
1005	1" / 1-1/2" Tri-Clamp <b>Standard</b>	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
<b>/d Insertion Length</b>			
1.8	1.8" / 45.7 mm Insertion Length <b>Standard</b>		
1.2	1.2" / 30.5 mm Insertion Length		
Length	Customer Specified Length in Inches or Millimeters (1.2" / 30.5 mm minimum)		
<b>/e Power Input</b>			
1	90-132 VAC <b>Standard</b>		
2	24 VDC or VAC (22.8 - 28.8 VDC; 20 VAC - 25 VAC)		
3	200-240 VAC		
<b>/f Process Temperature</b>			
H0	-50 to 350°F / -46 to 177°C <b>Standard</b>		
<b>/g Approvals</b>			
X	Not FM or CSA Approved		
FMX	Factory Mutual Research Corp. (FMRC) Explosion Proof <b>Standard</b>		
CSX	CSA Canadian Standard Association Explosion Proof		
GR	<b>GOST Russia</b>		
GK	<b>GOST Kazakhstan</b>		
<b>/h Options (leave blank if no options required)</b>			
DS	Dual Switch Point Electronics with Millivolt Output		
RJxxxx	Remote Electronics with PVC Cable (200°F / 93.3°C) Specify cable length "xxxx" ft. (Max. Length 2000 ft. / 609 m)		
RFxxxx	Remote Electronics with Teflon® (registered trademark of DuPont) Cable (350°F / 177°C) Specify cable length "xxxx" ft. (Max. Length 2000 ft. / 609 m)		
HS	5 Pin Hermetic Feed-through (not offered with Titanium)		





**TS Dimensions with Standard Housing**



**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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