

## TSTA SANITARY PRESSURE TRANSMITTER



Sanitary TSTA with M12 4-Pin

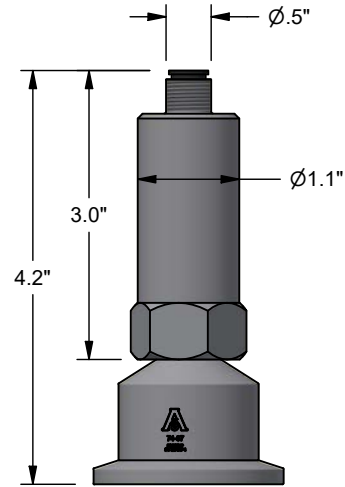


### FEATURES / BENEFITS

- 3-A, Tri-Clamp® Sanitary Connection
- 316 Stainless Wetted Parts
- Designed for "Clean-in-Place" (CIP) and "Sterilize-in-Place" (SIP)
- Media Temperatures up to 750°F
- ± 0.5% Accuracy (3/4" Tri-clamp® ±1.0%)
- Excellent Long-Term Stability

### SPECIFICATIONS

<b>Output Signal</b>	4-20mA, 2-Wire (Standard) 0-5V, 0-10V, (3-Wire) Additional Outputs Upon Request
<b>Measuring Principle</b>	High-stability Silicon Piezoresistive
<b>Pressure Ranges</b>	Vacuum, Compound, Pressure to 1,000psi
<b>Proof Pressure</b>	2 x Range, Up to a Maximum of the "Clamp" Pressure Rating
<b>Burst Pressure</b>	Determined By Customer's "Clamp" Pressure Rating Up to a Max of 2,000 psi
<b>Accuracy NLH at 77°F (BSL)</b>	±0.5% (3/4" Tri-Clamp® ±1.0%)
<b>Input</b>	11-28 VDC (4-20mA, 0-5V) 15-28 VDC (0-10V)
<b>Temperature Effect</b>	1.5" or 2" Tri-Clamp®: ±0.1% of Span/10°F (for Zero and Span) or ±0.02 psi/10°F (Greater of)  Note: 3/4" Tri-Clamp® Not Recommended for Temperature Variations. Effect is ≤ ±0.9 psi/10°F
<b>Weight</b>	Approximately ≤ 9.5 oz Tri-Clamp® Weight Additional.
<b>Environmental Rating</b>	IP65 (Hirschmann, M12) IP68 (Cable)



TSTA (1.5" Tri-Clamp®)

Note: Dimensions are nominal and may vary. Check with Reotemp sales if dimensions are critical. Other case styles available.

TRANSMITTERS

### Diaphragm Seal Suitability Guide

		Total Span* (in psi)									
		Tri-Clamp	2	3	5	10	15	30	60	100	150+
TSTA	3/4"	X	X	X	S	S	S	T	T		
	1.5"	X	X	T	T	T	T				
	2"	X	X	T	T						
	2.5"	X	X	T							
	3"	X	X								

\*Total span is additive of negative and positive pressures. Example: -15 /0 /30 psi = 45 psi total span

- Assembly will function correctly with minimal accuracy degradation.
- T Assembly will function correctly given stable process temperature.
- S Assembly is highly sensitive to orientation and temperature variance. Reotemp cannot guarantee a stated accuracy.
- X Assembly not offered.

Tri-Clamp® is a registered trademark of Alpha Laval Inc.

## TSTA SANITARY PRESSURE TRANSMITTER

**HOW TO ORDER:** Choose options to build a part number. For example: **TSTA1P181AB00TC15DWD-AG-PM**

MODEL	RANGE	ACCURACY	OUTPUT SIGNAL	ELECTRICAL CONNECTION
<b>TSTA1</b>	<b>P18</b>	<b>1</b>	<b>A</b>	<b>B00</b>
<b>TSTA1</b> = Sanitary Transmitter (Hirschmann DIN A, and Others)	See <i>Transmitter Technical Reference on pg. 240</i>	<b>1</b> = ±0.5% Accuracy (1.5" Thru 3" Tri-Clamp® ± 1.0%) <b>8</b> = ±1.0% Accuracy (3/4" Tri-Clamp®)	<b>A</b> = 4-20mA (2-Wire) (Standard) <b>B</b> = 0-5Vdc (3-Wire) <b>E</b> = 0-10Vdc (3-Wire)	<i>Hirschmann (DIN 43650 Form A)</i> <b>B00</b> = Hirschmann, Field Wireable <b>BPVC05</b> = Hirschmann w/ 5ft PVC Shielded Cable <b>BPVC10</b> = Hirschmann w/ 10ft PVC Shielded Cable <b>BPVC16</b> = Hirschmann w/ 16ft PVC Shielded Cable <b>BPVC33</b> = Hirschmann w/ 33ft PVC Shielded Cable <b>BPVC??</b> = Hirschmann (?? = ft. of PVC Cable)  <i>M12 x 1 (4-Pin)</i> <b>M00</b> = M12 x 1 (4-pin) <b>MPVC03</b> = M12 x 1 (4-pin) Female w/ 3ft PVC Shielded Cable <b>MPVC10</b> = M12 x 1 (4-pin) Female w/ 10ft PVC Shielded Cable <b>MPVC33</b> = M12 x 1 (4-pin) Female w/ 33ft PVC Shielded Cable <b>MPVC??</b> = M12 x 1 (4-pin) Female w/ ??ft PVC Shielded Cable  <i>Cable - PE</i> <b>CGPE01</b> = 1.6 ft PE Cable, Stripped <b>CGPE03</b> = 3 ft PE Cable, Stripped <b>CGPE06</b> = 6 ft PE Cable, Stripped <b>CGPE??</b> = Cable PE (Shielded, Screwed Cable Gland)
NOTE: Additional Electrical Connections Upon Request. Contact Factory.				

TRANSMITTERS

CONNECTION TYPE	TRI-CLAMP® SIZE	MOUNTING	FILL FLUID	OPTIONS
<b>TC</b>	<b>15</b>	<b>-DWD</b>	<b>-AG</b>	<b>-PM</b>
<b>TC</b> = Tri-Clamp <b>Cl</b> = I-Line	<b>75</b> = 3/4" Tri-Clamp <b>15</b> = 1.5" Tri-Clamp <b>20</b> = 2" Tri-Clamp <b>25</b> = 2.5" Tri-Clamp <b>30</b> = 3" Tri-Clamp	<b>-DWD</b> = Direct Mount, Welded <b>-RTR</b> = 6" Cooling Tower <b>-STW</b> = 3" Cooling Standoff <b>-W??</b> = PVC Coated SS Capillary, Welded Note: ?? = Length in feet (e.g. 05 = 5 feet)	<b>-AG</b> = Glycerin USP <b>-BN</b> = Neobee M20 <b>-AS</b> = Silicone DC200 <b>-BS</b> = Food-grade Silicone See 58 for Complete Fill Guide	<b>-TS</b> = Stainless Steel Tag (1-10 Characters) <b>-PM</b> = Positive Material Identification Certification <b>-MC</b> = M12 Mating Connector, Field Wireable

## TSTA SANITARY PRESSURE TRANSMITTER

### TRANSMITTER ONLY SPECIFICATIONS (NOT INCLUDING TRI-CLAMP/ I-LINE)

<b>Electrical Data</b>	Output / Supply voltage	4 - 20 mA: 11...28 VDC (24 VDC) 0 - 5 VDC: 11...28 VDC (24 VDC) 0 - 10 VDC: 15...28 VDC (24 VDC)
	Reverse Polarity Protection	Yes
<b>Environmental Conditions</b>	Media Temperature	-40°F to 257°F
	Storage Temperature	-40 to 176°F (Hirschmann DIN A, M12) -4 to 176°F (Cable Type - PE)
	Protection	IP65 (Hirschmann, M12), IP68 (Cable)
	Vibration	10g (55Hz ~ 2,000 Hz)
	Shock	100g / 11ms
<b>Mechanical Data</b>	Isolated Diaphragm (Wetted Part)	Stainless Steel 316L/ Other Alloys Available. Contact Factory
	Pressure Port (Wetted Part)	Stainless Steel 304/316L Other Alloys Available. Contact Factory
	Sealing	FKM
	Housing	Stainless Steel 304/316L
	Weight	≤ 9.5 oz

### ACCURACY

Pressure Type	Range	Accuracy
<b>Gauge</b>	0/50 INWC to 0/3 psi	±1.0% FS
	0/5 to 0/10,000 psi	±0.5% FS (3/4" Tri-Clamp® ±1.0% FS)
<b>Absolute A</b>	0/15 psia to 0/300 psia	±0.5% FS (3/4" Tri-Clamp® ±1.0%)
<b>Compound (Negative &amp; Positive Pressure)</b>	-14.7/0/14.7 to -14.7/0/500 psi	±0.5% FS (3/4" Tri-Clamp® ±1.0%)

**Test Conditions:**

Environment Temperature: 20°C ±5°C

Relative Humidity: 45% ~ 75%


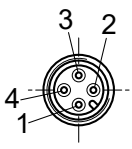

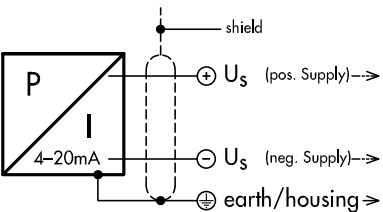
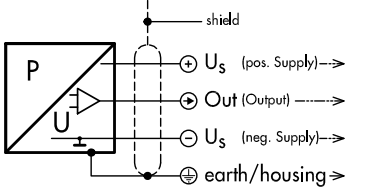
Note: Ranges Above 500psi are Sealed Gauge Transmitters with a Fixed Reference Pressure.

## TSTA SANITARY PRESSURE TRANSMITTER

### OUTPUT SIGNALS

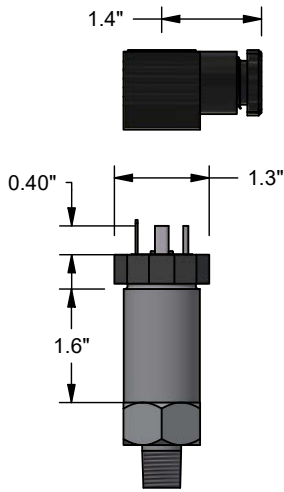
Output Signal	Power Supply	Output Format	Load Resistance
4mA ~ 20mA DC	11V ~ 28V DC	2-Wire	$\leq(U-11)/0.02(\Omega)$
0V ~ 5V DC		3-Wire	$\leq 10k(\Omega)$
0V ~ 10V DC	15V ~ 28V DC		

### TA Electrical Connection

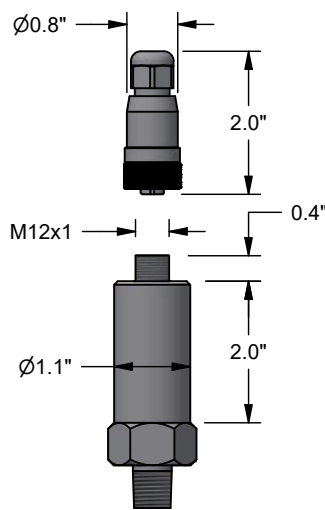
Protection / Electrical Connection			
	IP65	IP65	IP68
	Hirschmann DIN A	M12x1 4-pole	Cable Out 1/2" NPT Conduit
			
Output Signal	 4-20mA	1 2 4	(1) Brown  (3) Blue (4) Black  Red  Black Green/Yellow
	 0/5 VDC, 1/5 VDC, 1/6 VDC, 0/10VDC, 0.5-2.5 VDC Ratiometric, 0.5-4.5 VDC Ratiometric	1 2 3 4	(1) Brown (2) White (3) Blue (4) Black  Red White Black Green/Yellow

## TSTA SANITARY PRESSURE TRANSMITTER

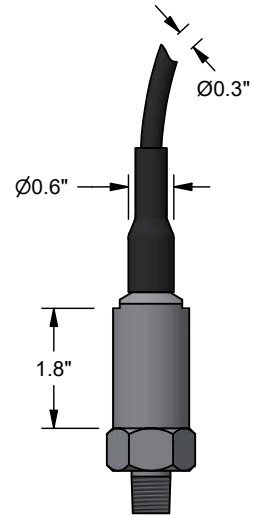
### TSTA Dimension



TSTA with Standard Hirschmann (DIN 43650 Form A)

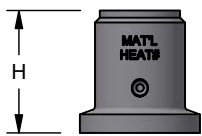


TSTA with M12 x 1 (4-Pin)



TSTA with Cable Out

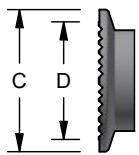
TRANSMITTERS



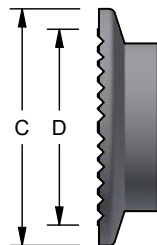
Tri-Clamp Type A



Tri-Clamp Type B



Tri-Clamp End Cap Type A



Tri-Clamp End Cap Type B

	Type A	Type B				
Process Connection	3/4"	1.5"	2"	2.5"	3"	4"
Outer Diameter (C)	1"	2"	2.5"	3.1"	3.6"	4.7"
Diaphragm (D)	0.65"	1.4"	1.9"	2.2"	2.5"	3.6"
Height (H)	1"	1.3"	1.3"	1.3"	1.3"	1.6"

\*DSTC75 ONLY

Note: Height is subject to change based on the adapter required to fit instrument to seal.

## TRANSMITTER TECHNICAL REFERENCE

SERIES		T90	TA	TSTA	TSA/ TSB	TSC	TSTP/ TSTDS	TSTC	TG1	TP/ TDS	TC	TE	TH1	THX	TL1
Code		VACUUM													
P01	-30 inHg/0 psi	✓	✓	✓	✓	✓			✓			✓	✓	✓	
P01R	-14.5/0 psi							✓			✓				
Code		COMPOUND RANGES													
P02	-30 inHg/15psi	✓	✓	✓	✓	✓			✓				✓	✓	
P03	-30 inHg/30 psi	✓	✓	✓	✓	✓			✓			✓	✓		
P04	-30 inHg/60 psi	✓	✓	✓	✓	✓			✓						
P05	-30 inHg/100 psi	✓	✓	✓	✓	✓			✓			✓			
P06	-30 inHg/150 psi	✓	✓	✓	✓	✓			✓					✓	
P07	-30 inHg/200 psi	✓	✓	✓								✓			
P08	-30 inHg/300 psi	✓	✓	✓	✓	✓			✓						
P02R	-14.5/0/15 psi							✓			✓				
P03R	-14.5/0/30 psi						✓	✓		✓	✓				
P04R	-14.5/0/60 psi						✓	✓		✓	✓				
P05R	-14.5/0/100 psi						✓	✓		✓	✓				
P06R	-14.5/0/150 psi						✓	✓		✓	✓				
P07R	-14.5/0/200 psi						✓	✓		✓	✓				
P08R	-14.5/0/300 psi						✓	✓		✓	✓				
Code		PRESSURE RANGES													
IN50	0/50 inH <sub>2</sub> O	✓	✓	✓				✓			✓		✓		✓
IN100	0/100 inH <sub>2</sub> O	✓	✓	✓				✓	✓		✓		✓		✓
IN200	0/200 inH <sub>2</sub> O	✓	✓	✓				✓			✓				✓
L11	0/55 INWC	✓	✓	✓		✓		✓			✓		✓		
L12	0/80 INWC	✓	✓	✓		✓		✓			✓		✓		
L13	0/140 INWC	✓	✓	✓		✓		✓	✓		✓		✓		
L14	0/280 INWC	✓	✓	✓	✓	✓		✓	✓		✓		✓		
P11	0/2 psi	✓	✓	✓		✓		✓			✓		✓	✓	✓
P12	0/3 psi	✓	✓	✓		✓							✓	✓	✓
P13	0/5 psi	✓	✓	✓	✓	✓		✓	✓		✓		✓	✓	✓
P14	0/10 psi	✓	✓	✓	✓	✓		✓	✓		✓		✓	✓	✓
P15	0/15 psi	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓
P16	0/30 psi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
P175	0/50psi	✓	✓	✓			✓	✓		✓	✓				
P17	0/60 psi	✓	✓	✓	✓	✓			✓			✓	✓	✓	✓
P18	0/100 psi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
P195	0/150 psi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
P20	0/200 psi	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
P21	0/300 psi	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
P26	0/500 psi	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
P23	0/600 psi	✓	✓	✓	✓	✓			✓				✓		
P27	0/750 psi	✓	✓	✓	✓	✓			✓			✓	✓	✓	✓
P25	0/1000 psi	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
P30	0/1500 psi	✓	✓						✓	✓			✓		
P31	0/2000 psi	✓	✓						✓	✓			✓		
P32	0/3000 psi	✓	✓						✓	✓			✓		
P34	0/5000 psi	✓	✓						✓	✓			✓	✓	
P35	0/6000 psi	✓	✓						✓				✓		
P28	0/7500 psi	✓	✓						✓	✓			✓	✓	
P37	0/10000 psi	✓	✓						✓				✓	✓	
P38	0/15000 psi								✓				✓	✓	
P39	0/20000 psi												✓		
P40	0/30000 psi												✓		
P41	0/40000 psi												✓		
P42	0/50000 psi												✓		
P43	0/60000 psi												✓		
Code		ABSOLUTE RANGES													
P15A	0/15 psia		✓	✓	✓				✓		✓				
P16A	0/30 psia		✓	✓	✓				✓		✓				
P17A	0/60 psia		✓	✓	✓				✓		✓				
P18A	0/100 psia		✓	✓	✓				✓		✓				
P19A	0/150 psia		✓	✓	✓				✓		✓				
P20A	0/200 psia		✓	✓	✓				✓		✓				

TRANSMITTERS

**Don't See the Range You Need?**  
Other ranges may be available, contact REOTEMP customer service for more information.

✓ Indicates that the option is available  
Note: Specifications are subject to change.