Electronic Temperature Switches

TX Series



TM Series



Ameritrol, Inc.
Instruments and Controls

Features

- No Moving Parts
- 316L Stainless Steel Sensor
- Temperatures to 900F
- Pressures to 10,000 PSIG
- Field Programmable for Increase or Decrease in Temperature

- Wide Temperature Range
 - Threaded, Flanged, Sanitary Probes
 - Exotic Alloys for Corrosion Resistance
 - Reliable and Cost Effective

• Explosion Proof Enclosures



TX Thermowell Type Sensor



Optional Remote Electronics



TX Sanitary Thermowell



TX Sanitary Direct Immersion



Optional TX Flanged Thermowell

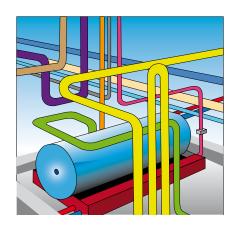


TM Extended Direct Immersion

Operation

The TX and TM series of temperature switches offer a completely electronic instrument to detect the increase or decrease of temperature. These switches are used in industrial applications including pipelines and tanks. The RTD sensor provides an extremely reliable and repeatable device at a very cost effective price.

A relay output is standard with options for dual separately adjustable set-points. Remote mounted electronics are available for process temperatures to 900F.



Applications

- High/Low Temperature Alarm in Pipelines
- High/Low Temperature Alarm in Tanks
- Heater Burn-Out Protection
- Control Heat Tracing on Pipes
- Temperature Alarm in HVAC Systems
- Dual Switch Point for 2 Independent Set-Points
- Optional Sanitary compatibility available

TM Series Specifications

Sensor Head

Material of 316L Stainless Steel Standard

Construction:

-50 to +350F (-46 to +177C) Standard Operating

Temperature:

Vacuum to 4000 PSIG (275 Bar) Operating Pressure: Option to 10,000 PSIG (689 Bar)

Response Time: From 3 Seconds

Repeatability: +/- 1 Degree Fahrenheit

1/2" MNPT, 3/4" MNPT, 1" MNPT **Process**

Connection:

Probe Length: See Part Number Specification

Electronics

Housing: Powder Coated General Purpose

Temperature: -50 to +150 F (-46 to +65 C)120 VAC, 50/60 Hz, 4 Watts; Power Input:

Options: 24 VDC/VAC, 240VAC

Relay Output: SPDT 2 Amps Resistive Standard

Electrical

1" FNPT Connection:

Shipping

Weight: 4 lbs

TX Series Specifications

Sensor Head

Material of 316L Stainless Steel Standard

Construction: Optional Exotic Alloys

-50 to +350F (-46 to +177C) Standard Operating Option -100 to +900F (-73 to +482C) Temperature:

Option -200 to +500F (-129 to +260C)

Operating Vacuum to 4000 PSIG (275 Bar) Pressure: Option to 10,000 PSIG (689 Bar)

Response Time: From 3 Seconds

Repeatability: +/- 1 Degree Fahrenheit

1/2" MNPT, 3/4" MNPT, 1" MNPT **Process** Connection: Option Flanged, other MNPT Threads

See Part Number Specification

See Part Number Specification Probe Length:

Electronics

Housing: Powder Coated Explosion Proof,

Nema 4X, UL/CSÂ Rated to Class 1, Div. 1 & 2, Group B,C,D; Class II, Div.

1 & 2, Group E,F,G; Class III. Option FM and Cenelec/ATEX

Temperature: -50 to +150F (-46 to +65C)

120 VAC, 50/60 Hz, 4 Watts; Options: 12 VDC, 24 VDC/VAC, 240VAC Power Input:

SPDT 3 Amps Resistive Standard Relay Output:

See page 4 for options

Electrical

Connection: 1" FNPT

Shipping

Weight: 5 lbs

PART NUMBER ORDER/ENTRY SPECIFICATION

Sanitary Process Connection

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	TX-] - [
	IMMERSION S CONNECTION																											
	1/2", 3/4" Tri- clamp Cap	0	7	7	5]		INS	ERTIO	N LE	NGT	TH		\neg	Γ	ADDI'	TION	IAL T	ГЕМ	1PF	ERATURE TRANSMIT	TTER ①						
	1", 1 ½" Tri- clamp Cap	1	0	0	5			(Direct Immersion Only) • 1.8" STANDARD X								MEASURED TEMPERATURE RANGE T T												
	2" Tri- clamp Cap	2	0	0	5	İ																						
	3" Tri- clamp Cap	3	0	0	5			• 1.0	" OPTI	ONAI		Т	1 .	0	Ī	• FAF	IREN	IHEI	T (F	(i)	OR CELSIUS (C)							
	4" Tri- clamp Cap	4	0	0	5				ECIAL -				\top	П	SENSOR HEAD MATERIAL													
			Ť		T	•		LE	NGTH	IN IN	CHE	S		Ц	Ţ	• 316L	STA	INLI	ESS	ST	TEEL .	X						
							POWER INPUT									HOUSINGS												
	OWELL TYPE						• 117 VAC (90-132VAC) X						-	• UL/CSA APPROVED XP/NEMA 4X X														
	(SPRING LOADED) PROCESS CONNECTION						, , ,				В	ļ.	• FM A	APPR	OVE	ED 2	XP/	NEMA 4X	P									
								• 24 VDC or VAC (+/- 10%) D • CENELEC/A					C/AT	EX	EX APPROVED Q													
	1", 1 ½" Tri- clamp Cap													Е	-	STAI	NLES	SS ST	ГЕЕ	L I	ГАG	Т						
	1.63" Insertion Length	1	0	0	A	1		PROCESS TEMPERATURE																				
	2.5" Insertion Length				В				F TO +					X														
	1	0	0	С				OF TO					F		Note: Only one of these options can be													
	4.5" Insertion Length 1 0 0 C 7.5" Insertion Length 1 0 0 D					• -100F TO + 900F G								selected.														
	10.5" Insertion Length	1	0	0	Е				CAL EL					X														
		Т	ή.	+	┰	I		REMOTE ELECTRONICS R								Evample: TV 1005 D												
	2" Tri- clamp Cap								• CABLE TYPE PVC (200F) H							Example: TX-1005-D TX Series direct immersion temperature												
	1.63" Insertion Length	2	0		A	Ī		• CABLE TEFLON (500F) I								switch with 1", 1 ½" tri-clamp style sanitar												
	2.5" Insertion Length	⊢	-	÷	-				ABLE L			T.		Щ							ction, 1.8" insertion							
	4.5" Insertion Length								AY OU			_	24 VDC or VAC power input, -50 to +350F															
	7.5" Insertion Length	2 0 0 C					• SPDT 3 AMP RESISTIVE X													e, single switch po								
	10.5" Insertion Length	2	0	0	Е	l		• SPDT 10 AMP RESISTIVE J • DPDT 3 AMP RESISTIVE K								SPDT 3 amp contact rating, 316L stainless												
											K	steel sensor, UL/CSA APPROVED XP (Explosion Proof)/NEMA 4X housing.																
	3" Tri- clamp Cap							• DPDT 10 AMP RESISTIVE L					L	1	probr	011 1	1001	.), 1	121	THE HOUSING.								
	1.63" Insertion Length	3	0	0	A	1		DUA	AL SWI	ТСН	POI	NTS	<u> </u>															
	2.5" Insertion Length	3	0	0	В	ļ			DT 3 Al					M	I	Exan	nple:	TX	-20	00E	B-FRH10M							
	4.5" Insertion Length	3	0	0	С	ł		• SP	DT 10 A	AMP F	RESI	STIV	Έ	N							ture switch thermo							
	7.5" Insertion Length	3	0	0	D	ĺ										- 1					mp style sanitray							
	10.5" Insertion Length	3	0	0	Е	İ													-		5" insertion length put, -200 to +500F	*						
	4" Tri- clamp Cap					J									t	temp adjus	eratı tabl	ire, i	ren al s	not swi	te electronics, sepa itch points with SP	arately PDT 3						
	1.63" Insertion Length	4	0	0	A]										-				_	, 316L stainless ste							
	2.5" Insertion Length	4	0	0	В]															ROVED XP (Expl housing.	osion						
	4.5" Insertion Length	4	0	0	С	Ī									,	1001	L <i>J</i> / INI	_1 √1 /	17.	2 x . I	nousing.							
	7.5" Insertion Length	4	0	0	D]																						
	10.5" Insertion Length	4	0	0	Е																							

PART NUMBER ORDER/ENTRY SPECIFICATION

Thermowell Process Connection

OPTIONS - NO ENTRY REQUIRED FOR BOXES WITH X

TX	🗀						- [
PROCESS CONNECTION THREADED								POWER INI	PUT		ADDITIONAL TEMPERATURE TRANSMITTE	ER ①
THREADED								• 117 VAC (9	0-132VAC)	X	• MEASURED TEMPERATURE RANGE	
1" Insertion Length (U)							ı	• 12 VDC (+3	-	В	T T -	
1/2" MNPT 316 Stainless	s 0	5	0	0	S	Α			VAC (+/- 10%)	D	• FAHRENHEIT (F) OR CELSIUS (C)	一
1 ¼" Insertion Length (U)							• 200-240 VA		Е	HOUSINGS	
3/4" MNPT 316 Stainless	0	7	5	0	S	A		PROCESS T	EMPERATURE		• UL/CSA APPROVED EXPLOSION PROOF	X
1" MNPT	1	0	0	0	S	Α		• -50F TO +3	50F	X	• FM APPROVED EXPLOSION PROOF	P
2.5" Insertion Length (U)							• -200F TO +	500F	F	CENELEC/ATEX APPROVED	Q
½" MNPT 316 Stainless		5	0	0	S	В		• -100F TO +	900F	G	STAINLESS STEEL TAG	T
3/4" MNPT 316 Stainless	0	7	5	0	S	В		LOCAL ELI	CCTRONICS	X		
1" MNPT 316 Stainless	1	0	0	0	S	В		REMOTE E	LECTRONICS	R	Note: Only one of these options can be seld	ected
4.5" Insertion Length (U)							CABLE TY	PE PVC (200F)	Н		
½" MNPT 316 Stainless		5	0	0	S	C			FLON (500F)	I	Example 1: TX-0750SA-D	_
3/4" MNPT 316 Stainless 0 7			5	0	S	С		• CABLE LE		\dagger	TX Series temperature switch with 3/4" MNPT thermowell process connection, 316L stainless	
1" MNPT 316 Stainless	0	0	S	С		RELAY OUT			steel sensor, 1 ¹ / ₄ " insertion length, 24 VDC or			
7.5" Insertion Length (U)								• SPDT 3 AM	P RESISTIVE	X	VAC power input, -50 to +350F process temp	era-
½" MNPT 316 Stainless 0 5				0	S	D		• SPDT 10 A	MP RESISTIVE	J	ture, single switch point with SPDT 3 amp corating.	ontac
³ / ₄ " MNPT 316 Stainless	-	7	5	0	S	D		• DPDT 3 AM	IP RESISTIVE [©]	K	rating.	
1" MNPT 316 Stainless	1	0	0	0	S	D			MP RESISTIVE [©]	L		
10.5" Insertion Length (U)						\top			CH POINTS O		Example 2: TX-2011SD-GRI10TT0-800F	
½" MNPT 316 Stainless 0 5				0	s	Ė		• SPDT 3 AM	P RESISTIVE	М	TX Series temperature switch with 2" 150# raised face 316 stainless steel flanged thermo	
³ / ₄ " MNPT 316 Stainless 0 7			5	0	S	Е			MP RESISTIVE	N	process connection, 7 ½" insertion length, 12	
1" MNPT 316 Stainless	0	7	5	0	S	Е		51 51 1071	VII RESISTIVE	1 *,	VAC power input, -100 to +900F process tem	npera
PROCESS CONNECTION FLANGED							NSER LENG	RTION TH			ture, remote electronics, 10' Teflon cable, sing switch point with SPDT 3 amp contact rating additional temperature transmitter with 0-800 range.	,
FLANGED						A	1 ¼" U	U Length				
1" Flange	1	0				В		U Length				
1 ½" Flange	1	5				С		U Length				
2" Flange	2	0				D		U Length				
3" Flange	3	0		,		Е		U Length				
150# Ratir			1			F G		U Length U Length				
300# Ratir			2			G	10 72	U Lengui				
600# Ratir			3									
900# Ratin			4	1								
Flat F	2											
<u></u>	Steel		S									
	arbon S				C							
N			M									

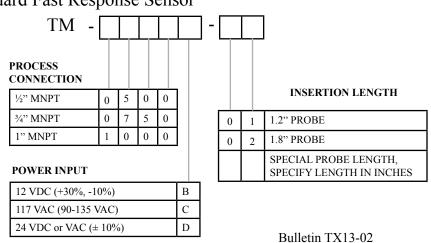
PART NUMBER/ ORDER ENTRY SPECIFICATION

TX Series Direct Immersion Explosion Proof Temperature Switch
Standard Fast Response Sensor

OPTIONS - NO ENTRY REQUIRED FOR BOXES WITH X

		TX	[-] - [Ι]					
DD O CEGG	1/27]	MNPT		0	5	0		1	 	NSFD	TIO	NIF	NCT	1			i i	ГАТ	DITI	ONAI	TE	MDI	FD A	THE	E TD A	NEMIT	TED	<u> </u>
PROCESS CONNECTION		MNPT		0	7	5	0	1	• 1.8" STANDARD X						• MEASURED TEMPERATURE TRANSMITTER ○													
THREADED	<u> </u>	INPT		1	0	0	0		\vdash	• 1.2" OPTIONAL 1 . 2						T T -												
	1-1/4	" MNPT		1	2	5	0	1	-	• SPECIAL - SPECIFY						П	• FAHRENHEIT (F) OR CELSIUS (C)											
	1-1/2	" MNPT		1	5	0	0	1	LENGTH IN INCHES					SENSOR HEAD MATERIAL														
	2" N	2" MNPT				0 0 0 PO					POWER INPUT						ļ	· · · · · · · · · · · · · · · · · · ·										Х
					1	Т Т	1	,	Ŀ	• 117 VAC (90-132VAC) X					X	[• HASTELLOY C-276					-	D					
									Ŀ	12 VI	OC (+	30%,	, -10%)		В	_	• N	1ONE	L/AI	LLO	Y 40	00				Α	М
									Ŀ	24 VI	OC or	VAC	(+/- 1	0%)		D		• TITANIUM							Т			
PROCESS	1" F	LANGE	T	1	0	1			• 200-240 VAC E							Е		• (ARPE	ENTE	R 20) / A	LLC	Y 20)		Α	P
CONNECTION	1-1/4'	' FLANGE	\dashv	1	2				PROCESS TEMPERATURE							• OTHER ALLOYS												
FLANGED	1-1/2'		1	5				• -50F TO +350F X							CONSULT MANUFACTURER													
		LANGE	_	2	0				ŀ	• -200F TO +500F F								HOUSINGS										
	3" F	LANGE	_	3	0				ŀ	• -100F TO + 900F G						G		• UL/CSA APPROVED EXPLOSION PROOF										
	4" F		4	0					LOCAL ELECTRONICS X						X	Ì	• FM APPROVED EXPLOSION PROOF P											
	6" F	\rightarrow	6	0					REMOTE ELECTRONICS I					R		• CENELEC/ATEX APPROVED Q												
			_	L	1	1			CAB	ABLE TYPE PVC (200F) H					Н	l	STAINLESS STEEL TAG T											
			2	┧╽		• CABLE TEFLON (500F)							Ι	ĺ														
	-	600# RATING	RATING RATING				1		CABLE LENGTH FT.							Note: Only one of these options can be												
				3	1		RELAY OUTPUTS					l	selected.															
	ì			5	1		• SPDT 3 AMP RESISTIVE X							X	Example: TX-1000-D													
	L	RAISED	0# RATING RAISED FACE 310					1	ŀ	SPDT	10 A	MP I	RESIS	TIVE	;	J								swi	tch wi	th 1"	ΜN	РΤ
		RAISED		_		-	2	ł	ŀ	DPD'	Γ3 Al	MP R	ESIST	IVE	1	K	l	process connection, 1.8" insertion length,										
	FLAT FA	CE 3	161	LSS		3	l	ŀ	• DPDT 10 AMP RESISTIVE L						L	Ì	24 VDC or VAC power input, -50 to +350F											
		FLAT FACE CS					l	Ī	DUAL SWITCH POINTS ©							İ	process temperature, single switch point with											
		SPECIAL					5		ŀ	• SPDT 3 AMP RESISTIVE M					İ	SPDT 3 amp contact rating, 316L stainless steel sensor.												
							1	ı	-	SPDT	10 A	MP I	RESIS	TIVE	;	N		Sie	71 SCII	301.								
ΓM Series	Dit	ect Imme	ersi	٥r	ı T	er.	nne	erati	∟ ıır	2 S1	wite	-h					ı											

TM Series Direct Immersion Temperature Switch General Purpose Enclosure (NEMA 1) Standard Fast Response Sensor



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