

# Explosion Proof Temperature Switches

## Series T1X, T2X, L1X

### Features

- ▶ Explosion-proof for hazardous locations
- ▶ High accuracy
- ▶ Remote, local or ambient sensing
- ▶ UL, CSA & ATEX approved
- ▶ NEMA 4, 7, 9 & IP66

### Applications

- ▶ Oil & gas
- ▶ Heat tracing
- ▶ Printing machinery
- ▶ Compressors
- ▶ Process equipment
- ▶ Machine tools and industrial equipment



L1X

T2X

### General Specifications\*

<b>Accuracy:</b> (Repeatability)	±1% of mid-60% of full range. At constant ambient +/- 0.5% of full scale. (Knob indication is reference only)
<b>Switch:</b> Single Setting:	One (1) single pole double throw (SPDT) circuit.
Dual Setting:	Two (2) independent single pole double throw (SPDT) circuits.
<b>Electrical Characteristics:</b>	All models incorporate Underwriters' Laboratories, Inc. and CSA listed single pole double throw snap-action switching elements. Switches may be wired normally open or normally closed.
<b>Wetted Parts:</b>	304 stainless steel
<b>Electrical Connection:</b>	Single: 3-pin terminal strip Dual: 6-pin terminal strip
<b>Electrical Ratings:</b>	AC value at 75% power factor —10 amps 125, 250 volts AC, 3 amps 480 volts AC. Automatically reset by snap-action of switch.
<b>Enclosure/Housing:</b>	Class I, Division 1 & 2 NEMA 4, 7, & 9 Tamper-proof external adjustment, enclosed terminal strip.

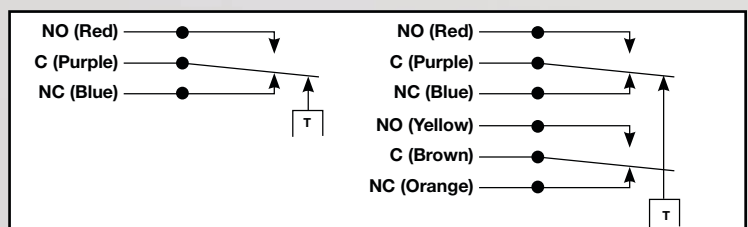
<b>Local Mount:</b>	Immersion length 2-1/16 inches
<b>Bulb &amp; Capillary:</b>	6 foot length standard.
<b>Approvals:</b>	Underwriters' Laboratories, Inc. and Canadian Standard Assoc. are listed under Temperature indicating and regulating equipment, for use in hazardous locations, Class I, Groups B, C and D; Class II, Groups E, F and G.
UL (standard):	File No. E58658, Guide No. XBDV
CSA (standard):	File No. LR34556, Guide 400-E-O.8. Class 4868.
ATEX (optional):	EX models are ATEX marked as follows: CE 0344, ISSeP 08 ATEX029X Ex II 2G D, Ex d IIC T6 Gb Ex tb IIIC T80°C Db IP66 -40°C ≤ Tamb ≤ +75°C
<b>Temperature Range:</b>	See product configurator
<b>Adjustment:</b>	Tamper resistant external adjustment. Turn knob clockwise to increase setpoint. (Knob indication is reference only)
<b>Standard Options/Modifications:</b>	For thermowells, split nuts and union connections, see accessory pages.
<b>Weight:</b>	Single - approximate 4.0 lbs. Dual - approximate 4.5 lbs.

\* See Product Configurator for additional options.

### Wiring Code

Lead	Circuit #1	Circuit #2
Normally Closed	Blue	Orange
Common	Purple	Brown
Normally Open	Red	Yellow

### Wiring Diagram



**L1X**

MIN. CLEARANCE REQ'D TO REMOVE COVER - 1"

3-13/16 (96,8)

1-5/8 (41,3)

1-3/16 (30,2)

ADJUSTMENT COVER (REMOVE TO ADJUST)

1/2 NPT CONDUIT CONNECTION

1-1/8 (28,6)

1-13/16 (46,0) (TYP.)

INTERNAL GROUND SCREW

5/16 DIA. (7,14) MOUNTING HOLE (TYPE)

4-1/4 DIA. (108)

1,0 HEX (25,4)

1-13/16 (TYPE) (46,0)

TERMINAL STRIP 3 CONTACTS #6-32 SCREWS

#10 SOCKET SET SCREW SECURES SWITCH IN WELL. SWITCH MAY BE ROTATED 360 IN WELL

3-7/8 (98,4)

3-1/8 (79,4)

2-1/4 (57,1)

13/16 (20,6)

3-17/32 (89,7)

2-25/32 (70,6)

2-1/64 (51,2)

9/16 (14,3)

9/16 (14,3)

**THERMOWELL UNIT**

**T1X**

MIN. CLEARANCE REQ'D TO REMOVE COVER - 1"

3-13/16 (96,8)

1-5/8 (41,3)

1-3/16 (30,2)

ADJUSTMENT COVER (REMOVE TO ADJUST)

1/2 NPT CONDUIT CONNECTION

1-1/8 (28,6)

1-13/16 (46,0) (TYP.)

INTERNAL GROUND SCREW

5/16 DIA. (7,14) MOUNTING HOLE (TYPE)

4-1/4 DIA. (108)

1,0 HEX (25,4)

1-13/16 (TYPE) (46,0)

TERMINAL STRIP 3 CONTACTS #6-32 SCREWS

9/16 (14,3)

2-15/16 (74,6)

3/8 DIA. (9,53)

4-1/16 (10,2)

3/16 (4,75)

3/32 DIA. (2,36)

**Ex UL SP**

Dimensions in inches (mm)

Example	H	T	1	X	-HH	251	S	-12	-A		
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H	Hermetically sealed limit switch option - Class I, Division II (requires AA, CC, or HH limit switch)
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T	Remote bulb & capillary
L	Local mount

1	Single setpoint (SPDT)
2 <sup>1</sup>	Dual setpoint (2 SPDT)

X	NEMA 4, 7, & 9 explosion proof enclosure (Standard)
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-H	10 amps @ 125/250 VAC; 3 amps @ 480 VAC (standard)
-B	10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.05 amps @ 125 VDC; 0.03 amps @ 250 VDC
-G <sup>3</sup>	10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.4 amps @ 125 VDC; MANUAL RESET (only available for T2X)
-J	10 amps @ 125/250 VAC; 3 amps @ 480 VAC (with elastomer boot)
-L	15 amps @ 125/250/480 VAC; 0.03 amps @ 125 VDC; 0.02 amps @ 250 VDC
-M	10 amps @ 125/250 VAC; 3 amp @ 480 VAC; 0.5 amps @ 125 VDC; 0.25 amps @ 250 VDC
-S	15 amps @ 125/250/480 VAC; 0.05 amps @ 125 VDC; adjustable differential <sup>4</sup>
-GH	1 amp @ 125VAC; gold contacts
-AA	Hermetically sealed; 4 amps @ 125/250 VAC
-CC	Hermetically sealed; 10 amps @ 125/250 VAC
-HH	Hermetically sealed; 5 amps @ 125/250 VAC

<i>Blank</i>	Copper sensor
S	304 stainless steel

<i>Blank</i>	6 foot capillary
-12	12 foot capillary
-25 <sup>s</sup>	25 foot stainless steel capillary

-RD <sup>3</sup>	Manual reset (must use when selecting "G" limit switch option) Only available on T2X
-EX	ATEX certification
-Sxxx	Factory pre-set (consult factory)

-WS	316 stainless steel thermowell (local mount only)
-W	Brass local mount Thermowell

Blank	Blank if not required
-A	302 stainless steel armor

### Remote sensor ranges

Range	Adjustable Range				Media Temperature Limit (Proof)				Differential (Approx.) <sup>2</sup>	
	Low	High	Low	High	Low	High	Low	High	°F	°C
154	-50°F	+150°F	-45°C	+66°C	-100°F	+200°F	-73°C	+93°C	1° to 2°	.5° to 1.1°
251	+50°F	+250°F	+10°C	+121°C	-100°F	+300°F	-73°C	+149°C	1° to 2°	.5° to 1.1°
351	+150°F	+350°F	+66°C	+177°C	-100°F	+400°F	-73°C	+205°C	1° to 2°	.5° to 1.1°
601	+300°F	+440°F	+149°C	+227°C	0°F	+650°F	-18°C	+343°C	2° to 4°	1.1° to 2.2°
603	+320°F	+600°F	+160°C	+316°C	0°F	+650°F	-18°C	+343°C	2° to 4°	1.1° to 2.2°

### Local mount sensor ranges

Range	Adjustable Range				Media Temperature Limit (Proof)				Differential (Approx.) <sup>2</sup>	
	Low	High	Low	High	Low	High	Low	High	°F	°C
201	-50°F	+75°F	-45°C	+24°C	-100°F	+250°F	-73°C	+121°C	1° to 3°	.5° to 1.6°
202	+15°F	+140°F	+9°C	+60°C	-100°F	+250°F	-73°C	+121°C	1° to 3°	.5° to 1.6°
203	+75°F	+200°F	+24°C	+93°C	-100°F	+250°F	-73°C	+121°C	1° to 3°	.5° to 1.6°
351	+100°F	+225°F	+38°C	+107°C	-100°F	+400°F	-73°C	+205°C	6° to 9°	3.3° to 5.0°
204	-50°F	+200°F	-45°C	+93°C	-100°F	+250°F	-73°C	+121°C	1° to 3°	.5° to 1.6°
354	+100°F	+350°F	+38°C	+177°C	-100°F	+400°F	-73°C	+205°C	6° to 9°	3.3° to 5.0°
454	+150°F	+450°F	+66°C	+232°C	0°F	+500°F	-18°C	+260°C	3° to 6°	1.6° to 3.3°

**Barksdale®**