



# TEMPERATURE SWITCHES T-SERIES



- **GAS/VAPOUR FILLED THERMAL SYSTEM**
- **WIDE RANGE OF MEASUREMENT FROM (-)15°C TO (+)400°C.**
- **DIRECT AND REMOTE MOUNTING**
- **ROBUST AND PRECISE DEVICE**

**T-Series Temperature Switches** are designed for use in arduous industrial environment. The gas/vapour filled thermal system in combination with diaphragm sealed piston actuator offers stable measurement of temperature.

Actuation mechanism ensures precise switching of desired setpoints. Wide options of microswitches are available to handle different electrical ratings. T-Series Temperature Switches are available with rigid stem for direct mounting or with flexible armoured capillary for remote mounting. Adjustable sliding compression gland allows easy installation and adjustment of immersion length.

Standard applications include Heat Exchangers, Evaporators, Heat Throwing, Pumps, Compressors, Furnace, Blowers, Air Dryers and so on.

## GENERAL SPECIFICATION

Ranges	(-)15°C to 400°C Various split up ranges.
Deadband	Fixed or Narrow adjustable deadband
No. of Microswitches	1 or 2 SPDT (Form C)
Repeatability	± 1% FSR
Sensor Type	Vapour / Gas filled thermal system (316 SS Diaphragm)
Sensor Mounting	Remote or Direct
Bulb Dimension	
Remote	316 SS, 9.5 mm dia, 76 mm long Std. 12 mm dia optional. Length depends on range
Direct	316 SS, 9.5 mm dia; for Stem length refer table C.
Process Connection	Through 3/8" NPTM sliding Gland
Electrical Connection	Type 400 : 3/4" NPTF Std. 1/2" NPTF optional Type 700 : 1/2" NPTF Std.

**WEATHERPROOF TEMPERATURE SWITCH – T4**



**FLAMEPROOF TEMPERATURE SWITCH – T7**



## ORDERING MATRIX

<b>A</b>	<b>ENCLOSURE</b>
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Code	Description
T4	Temperature Switch in Type 400 weatherproof to meet IP:66 as per IS:13947 (Part I) 1993.
T7	Temperature Switch in Type 700 flameproof enclosure to meet to gas Gr.IIA, IIB & IIC as per IS:2148:2004.

*Ambient operating limit (-)30 to 65°C for all switches*

## ORDERING MATRIX Contd.,

### B SWITCH TYPE

Code		Type	Electrical Rating	
1 SPDT	2 SPDT		AC	DC
20	61	Low Differential	15A 125 / 250V / 480V	N.R.
24	64	General Purpose	15A 125 / 250 / 480V	0.4A 125V; 0.2A 250V; 6A 30V (R)
26	62	Sealed Environment Proof	5A 125 / 250V	3A(R) / 2A(I) 24V
31	70	Gold Plated Contacts	1A 125V	0.5A(R) / 0.25A(I) 24V
32S	68S	Hermetically Sealed Inert Gas filled Silver alloy contact	5A125 / 250V	5A(R) / 3A(I) 24V
42S	71S	Hermetically Sealed Inert Gas filled Gold alloy contact	N.R.	1A(R) / 0.5A(I) 24V
50	N.A.	Variable Deadband (Narrow band)	15A 125 / 250V	N.A.

**N.R.** – Not Recommended;    **N.A.** – Not Available;    (R) – Resistive Load    (I) – Inductive Load

### C THERMAL SYSTEMS AND ADJUSTABLE RANGES

Thermal Systems Type				Adjustable Ranges	
Direct		Remote		Range (in °C)	Max. Working Temperature (in °C)
Code	Stem Length (in mm)	Code	Capillary Length (in Mtrs.)		
TS 027	70	TS 05030	1.5	(-) 15 to 40	205
TS 040	102	TS 10030	3.0	25 to 95	205
TS 060	152	TS 15030	4.5	65 to 125	205
TS 090	229	TS 20030	6.0	70 to 170	260
TS 120	305	TS 25030	7.5	110 to 190	260
<b>Direct :</b> 9.5 mm dia 316 SS rigid stem				175 to 275	370
<b>Remote :</b> 76 (L) × 9.5 ø mm dia 316 SS Bulb with 316 SS Capillary & 304 SS armour				260 to 400	480

### D OPTIONS/ACCESSORIES

Code	Description	Code	Description
<b>XJL</b>	1/2" NPT Aluminium Cable Entry adaptor for weatherproof enclosure only	<b>XCJ</b>	Nickel Plated Brass Explosionproof Gr.IIA / IIB / IIC Cable gland
<b>XJM</b>	1/2" NPT 304 SS Cable Entry adaptor for weatherproof enclosure only	<b>XCL</b>	304 SS Explosionproof Gr.IIA/IIB/IIC Cable gland
<b>XTM</b>	2" Pipe Mounting Brackets with bolts & Nuts	<b>XPC</b>	Plug in Connector 7 or 9 PIN
<b>XNH</b>	304 SS Tag Plate	<b>XTW</b>	Thermowell
<b>XCG</b>	Nickel Plated Brass Weatherproof Cable gland	<b>XIS</b>	Range Indicating Scale
<b>XCI</b>	304 SS Weatherproof Cable gland	<b>XCC</b>	Temperature Switch with Copper Bulb & Capillary with 304 SS Armouring

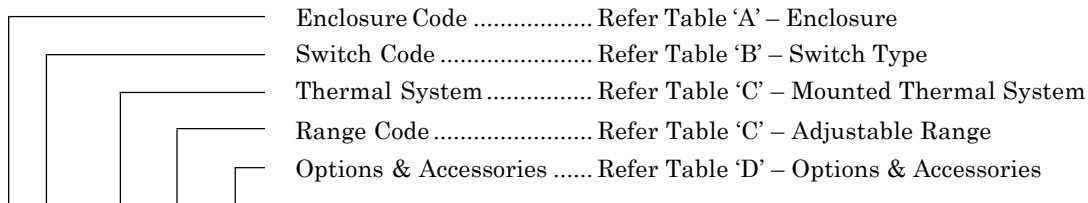
## Temperature Switches Deadband Chart for T4 / T7 Switches

Range Code	Range (in °C)	Microswitches									
		1 SPDT				2 SPDT				1 SPDT	
		20	26	24, 31	32,42	61	62	64, 70	68,71	50 (Adj. Diff.)	
		Maximum Deadband								Min	Max.
R1	(-) 15 to 40	2	5	7	11	3	7	11	17	2	5
R2	25 to 95	2	6	9	13	3	9	14	20	5	7
R3	65 to 125	2	5	7	13	3	9	11	20	2	5
R4	70 to 170	2	5	7	13	3	9	11	20	2	5
R5	110 to 190	2	5	7	13	3	9	11	20	2	5
R6	175 to 275	2.5	8	9	19	4	12	14	28	2	7
R7	260 to 400	5	14	17	28	7	20	27	45	4	14

**Notes :** Deadbands are in degree centigrades. Setpoint and reset points must fall within the adjustable range.

## ORDERING

**How to order :** Select the desired features in the form shown below to arrive at Model Number :

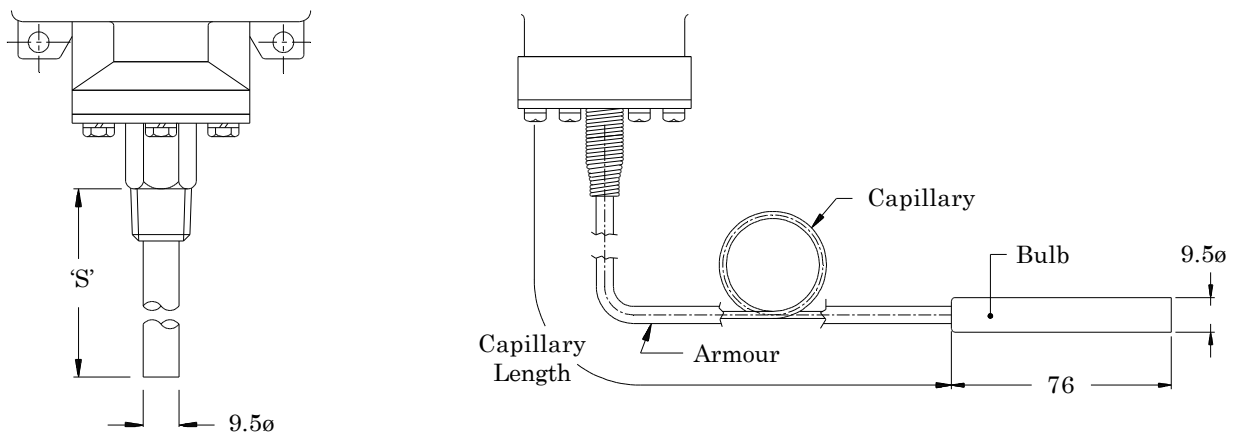


**T4 20 TS027 R2 XNH**

**Example :** T4 20 TS027 R1 XNH

- T4** Type 400 Weatherproof Enclosure
- 20** SPDT 15A 250V AC
- TS027** 70 mm Direct Mount Thermal System
- R2** 25 to 95°C
- XNH** SS Tag Plate

## Thermal System Arrangement



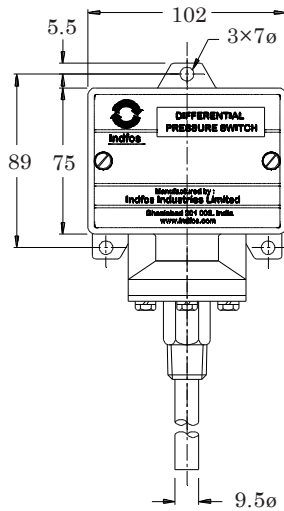
Code	S = Stem Length (in mm)
TS 027	70
TS 040	102
TS 060	152
TS 090	229
TS 120	305

Code	Capillary Length (in Mtrs.)
TS 05030	1.5
TS 10030	3.0
TS 15030	4.5
TS 20030	6.0
TS 25030	7.5

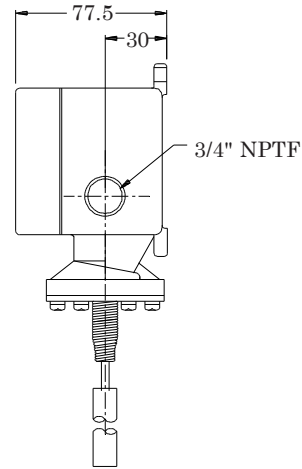
# MOUNTING DIMENSIONS

## Type 400 — Weatherproof Enclosure

**Direct Mount**

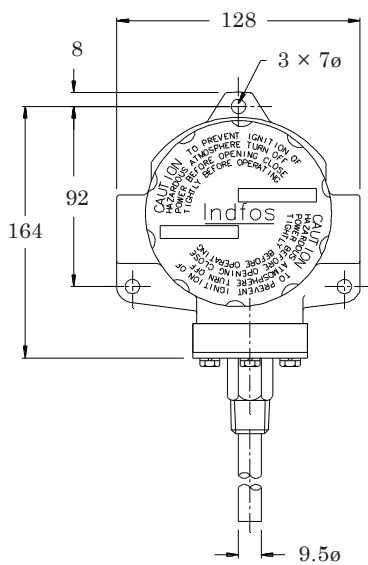


**Remote Mount**

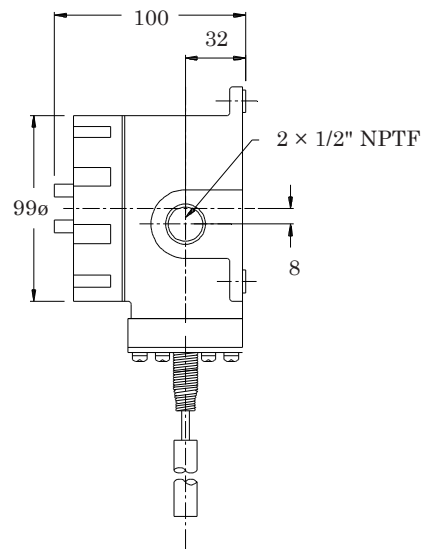


## Type 700 — Flameproof Enclosure

**Direct Mount**



**Remote Mount**



All dimensions are in mm

This is not a contractual document. Prior notification of changes in specifications is impracticable due to continuous improvement



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