

T4/T7 Series NEMA 4X, 7/9 Temperature Switches

FEATURES

- Precision SPDT or DPDT snap-acting micro switch operation
- Single setpoint adjustable from 0-100% of range
- Fixed or limited adjustable deadband
- Internal set point locking screw (T4)
- Direct or remote reading thermal systems
- Choice of temperature ranges (from -40 °F to 750 °F)
- Explosion proof enclosure provides uncompromising protection
- Wide selection of switch elements

TYPICAL USES

- Offshore oil rigs
- Chemical and petrochemical plants
- Pulp and paper mills
- Power plants
- Steel mills
- Water and sewage treatment plants
- Pumps, compressors and turbines
- Boilers and burners
- Degreasers and evaporators
- Recovery systems
- Reverse osmosis systems and filters
- Food processing
- Ground support equipment
- Hydraulic and lubrication systems
- Heating and air conditioning
- Marine equipment
- Specialized OEM equipment

PERFORMANCE SPECIFICATIONS

Set Repeatability (Accuracy):	±1% of span
Switch Type:	SPDT or 2 SPDT acting as DPDT
Setpoint:	Single setpoint - factory set or field adjustable
Deadband:	Fixed or limited adjustable deadband
Enclosure Ratings:	T4-NEMA 4X, IP66 T7-NEMA 7 & 9, IP66
Enclosure Material:	Watertight: epoxy coated aluminum Explosion: epoxy coated aluminum, 316 SS (OPT.)
Pressure Connection Size:	Direct Mount: ½ NPT Male Remote Mount: N/A- (OPT.) ½ NPT male bushing (XBX)
Electrical Termination:	¾ NPT Female
Direct Mount:	Stem lengths from 2¾" to 24"
Remote Mount:	Capillary lengths from 5' to 25' (5 ft. increments)



T4 NEMA 4X
Direct Mount Temperature Switch

T7 NEMA 7 & 9,
Remote Mount Temperature Switch
(shown with optional XBX ½" male bushing)



KEY BENEFITS

- Highly reliable
- Designed for use in wide range of applications
- Easily configurable to meet your application requirements
- Hermetically sealed micro switches offer improved reliability and safety (UL Class I Div II approval)

Approvals:

Watertight: UL, CSA, CE /UKCA
Explosion: T7 series - UL, CSA, ATEX, IECEx, CE, UKCA

 
CLASS I DIV 1 GROUPS B, C, & D
CLASS II DIV 1 GROUPS E, F, & G

 Sira 02ATEX1391X IECEx
CSAE 21UKEX1056X CSA 14.0077X

II 2GD
Ex d IIC T6 Gb
Ex tb IIIC T85 °C Db
Ta = -20 °C to 60 °C

WETTED COMPONENTS

Direct Mount	Remote Mount
½ NPT: 316 SS	Bulb, capillary: 316 SS
Bulb: 316 SS	Spiral armor: 302 SS

Data Sheet

T4/T7 Series NEMA 4X, 7/9 Temperature Switches

ORDERING CODE	Example:	T4	20	T05	027	XNH	75/205F
Enclosure							
T4 - Watertight enclosure meets NEMA 3, 4, 4X, 13 and IP66 requirements		T4					
T7 - Explosion-proof enclosure NEMA 3, 4, 7 & 9, IP66							
Switch Elements, UL/CSA Listed (1 SPDT)							
20 - Narrow deadband ac, 15A, 125/250 Vac			20				
21 - Ammonia service, 5A, 125/250 Vac							
22 - Hermetically sealed, narrow deadband, 5A, 125/250 Vac							
23 - Heavy duty ac, 22A, 125/250 Vac							
24 - General purpose, 15A, 125/250/480 Vac							
25 - Heavy duty dc, 10A, 125 Vac or dc, 1/8 HP, 125 Vac or dc							
26 - Sealed environment proof, 15A, 125/250 Vac							
27 - High temperature 300 °F, 15A, 125/250 Vac							
28 - Manual reset trip on increasing, 15A, 125/250 Vac							
29 - Manual reset trip on decreasing, 15A, 125/250 Vac							
31 - Low level (gold) contacts, 15A, 125 Vac							
32 - Hermetically sealed switch, general purpose, 11A, 125/250 Vac 5A, 30 Vdc							
42 - Hermetically sealed switch, gold contacts, 1A, 125 Vac							
50 - Variable dead band, 15A, 125/250 Vac							
UL/CSA Listed Dual (2 SPDT acting as DPDT)							
61 - Dual narrow deadband, 15A, 125/250 Vac							
62 - Dual sealed environment proof, 15A, 125/250 Vac							
63 - Dual high temp. 300 °F, 15A, 125/250 Vac							
64 - Dual general purpose, 15A, 125/250/480 Vac, ½A, 125 Vdc, ¼A, 250 Vdc							
65 - Dual ammonia service, 5A, 125/250 Vac							
67 - Dual hermetically sealed switch, narrow dead band, 5A, 125/250 Vac							
68 - Dual hermetically sealed switch, general purpose, 11A, 125/250 Vac, 5A, 30 Vdc							
70 - Dual low level gold contacts, 1A, 125/250 Vac							
71 - Dual hermetically sealed switch gold contacts, 1A, 125/250 Vac							
Thermal System Selection							
Direct Mount							
TS - Rigid							
Remote Mount							
T05 - 5'				T05			
T10 - 10'							
T15 - 15'							
T20 - 20'							
T25 - 25'							
Bulb Length Selection							
Direct Mount Length							
	"S" Dimension	Thermowell "U" Dimension (ordered separately)					
027 -	2¾"	NA			027		
040 -	4"	2½"					
060 -	6"	4½"					
090 -	9"	7½"					
120 -	12"	10½"					
Remote Mount Bulb Length (Consult factory for custom or longer stem lengths)							
030 -	3"	2½"					
Options (If choosing an option(s) must include an "X") (for more options, see table 1 on page 3)							
NH - Tagging Stainless steel						X__	NH
Temperature Ranges (for all ranges, see table 2 on page 3)							
75/205 °F							75/205F

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TABLE 1 - OPTIONS

Code	Description	T4	T7	Notes
BX	½ Male NPT bushing	•	•	Remote mount only - seals capillary to thermowell
CH	Chained cover	•	•	
CN	ATEX Directive 94/9 EC		•	
FP	Fungus proof	•	•	
FS	Factory adjusted setpoint	•	•	
JK	Left conduit connection	•		Standard on T7. N/A with DPDT element on T4
JL	¾" to ½" reducing bushing	•	•	Conduit reducing bushing
JM	Metric electrical conduit connection M20 x 1.5	•	•	
LE	6 foot leads on the micro switch	•	•	
NH	Tagging Stainless steel	•	•	
NN	Paper tag	•	•	
PJ	Pilot light 24 VDC	•		
PK	Pilot lights	•		
PM	¾" sealed conduit connection with 16" lead wires	•	•	
RN	Range scale	•	•	
TM	2" pipe mounting bracket	•	•	
YW	316L Stainless steel Housing		•	
C4	Traceable calibration certificate	•	•	
C8	CSA approved		•	Standard on 400 Series
K3	Terminal blocks		•	Terminal blocks standard with 700 dual switches

TABLE 2 - STANDARD TEMPERATURE RANGE SELECTION
(For dual switch elements multiply by 1.6)

Nominal Range		Maximum Temperature	Approximate Deadband Switch Element in °F				
°F	°C	°F ⁽²⁾	20, 26, 27	21, 24, 37	50	22	32, 42
-40 to 60	-40 to 16	400	1.0-2.0	3.0-8.0	1.5-5.5	1.4-6.0	8.0-16.0
0 to 100	-20 to 40	400	1.5-3.0	5.0-12.0	2.2-8.5	1.5-7.5	9.0-20.0
75 to 205	20 to 95	400	1.5-3.5	8.0-16.0	2.5-12.0	2.0-9.0	10.0-24.0
150 to 260	65 to 125	400	1.5-3.0	5.0-12.0	2.2-8.5	2.0-9.0	10.0-24.0
235 to 375	110 to 190	500	1.5-3.5	5.0-12.0	2.5-8.5	2.0-9.0	10.0-24.0
350 to 525 ⁽¹⁾	175 to 275	700	2.0-4.5	8.0-16.0	3.2-12.0	2.5-10.0	15.0-34.0
500 to 750 ⁽²⁾	260 to 400	900	4.0-8.0	16.0-30.0	7.2-24.0	5.0-23.0	30.0-50.0

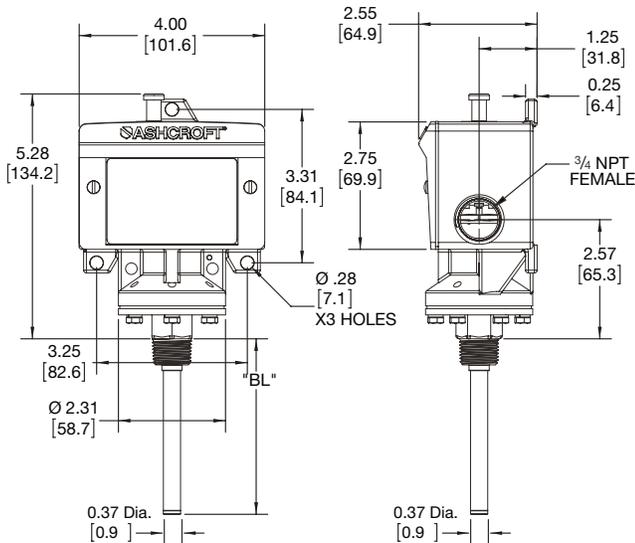
NOTES: (1) NA with 2¾" or 4" direct mount bulb length
(2) Available with remote mount systems only

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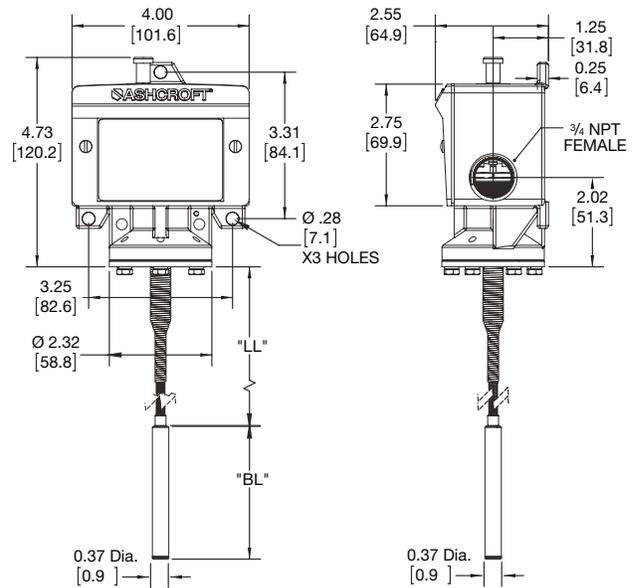
DIMENSIONS in [] are millimeters

For reference only, consult Ashcroft for specific dimensional drawings

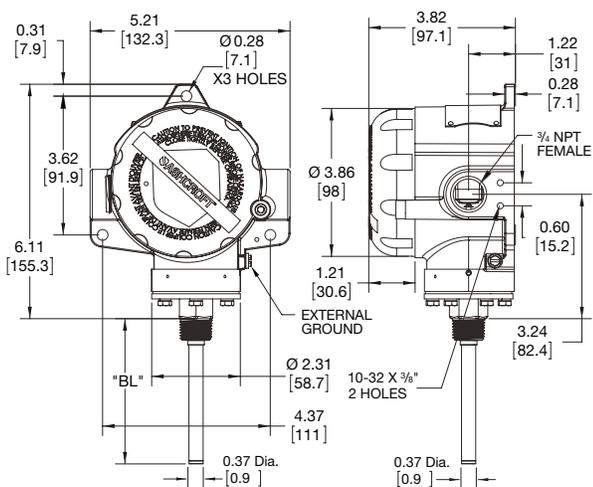
T4 Watertight enclosure Temperature switch - direct mount



T4 Watertight enclosure Temperature switch - remote mount



T7 Explosion proof enclosure Temperature switch - direct mount



T7 Explosion proof enclosure Temperature switch - remote mount

