

Miniature Temperature and Temp/Level Switches



Whitman
Controls
Corporation



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Custom
Temperature
Switches



Custom
Temp/Level
Switches



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T150

Adjustable Miniature Temperature Switch

FEATURES

- Miniature size.
- Reliable performance with repeatability of $\pm 2\%$ of sensor capacity.
- Will withstand over temperatures without affecting set point or life of switch.
- External setting scale with full range adjustment.
- External lock screw for easy adjustment of set point.
- Narrow reset point range.
- Resistant to vibration.
- Direct mount offers thermal isolation between electrical switch and sensor.
- Capillary models not influenced by ambient temperatures.
- The limit filled, saturated vapor sensor is in direct contact with the temperature sensing outer shell producing fast response and accurate temperature control.

GENERAL SPECIFICATIONS

Temperature Range

- 45 degrees F to +510 degrees F.

Temperature Sensor

Limit filled, saturated vapor sensor.

Ambient Temperature Limits

Switch Body - 65 degrees F to +225 degrees F.

Cycling

Not to exceed 20 CPM:

Set Point Option

Field Adjustment Only.

Construction Materials

Wetted parts-temperature sensor. 316 stainless steel.

Non- Wetted Parts

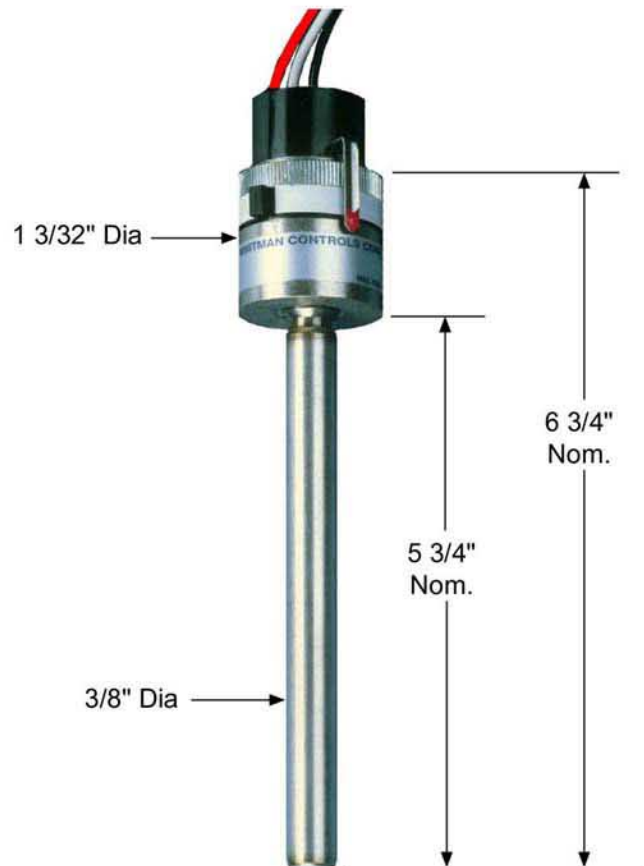
Body-303 stainless steel.
 Lock ring-zinc alloy, chromate finish.
 Switch housing-zinc alloy, chromate finish.
 Caps & accessories-black valox and brass terminals.
 Indicator-303 stainless steel. Indicator Ring-black nylon.

Wire Interface

2 or 3 wire pigtail, furnished in 12" length standard,
 #20 AWG insulated with polyvinyl chloride 300 volts.
 Color code: Black - Common, White - N.O., Red - N.C.

Max System Temp - 800 degrees F.

Max System Pressure - 1000 PSI @ 800 degrees F.



TEMPERATURE RANGE CODE

CODE TEMP RANGE	ADJUSTABLE SET POINT RANGE F	REPEATABILITY F	MAXIMUM TEMPERATURE* F
1	-45 TO +20	+/-1.3	200
2	-15 TO +65	+/-1.6	250
3	+25 TO +95	+/-1.4	300
4	+80 TO +160	+/-1.6	350
5	+130 TO +220	+/-1.8	450
6	+180 TO +260	+/-1.6	500
7	+240 TO +350	+/-2.2	600
8	+345 TO +450	+/-2.1	700
9	+390 TO +510	+/-2.4	800

* Maximum temperature is the temperature the sensing bulb may be subjected to without causing changes in the operating characteristics of the switch.

T150

Set Point Adjustments Construction of Part Number

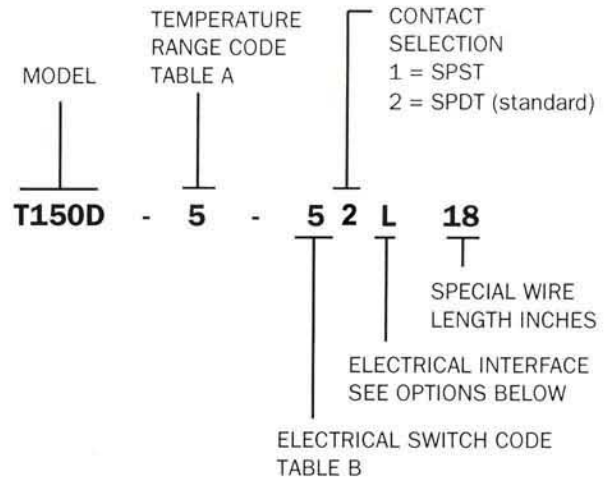
RESET POINT

The reset point is the point at which the electrical switch snaps to the original position after the initial actuation, and will be approximately 3 degrees F.

SET POINT ADJUSTMENT

All switches are easy to adjust. First, loosen the knurled locking ring. Now, set the sliding gauge pointer to the desired temperature point. Tighten the locking ring and the temperature switch is locked and ready to use.

CONSTRUCTION OF PART NUMBER



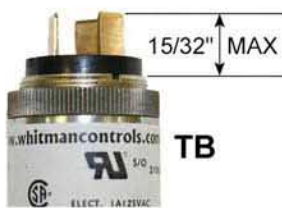
Electrical Switch Selection Interface Options

ELECTRICAL SWITCH SELECTION

TABLE B				
SWITCH CODE	VOLTS AC/DC	AMP RESISTIVE	AMP INDUCTIVE	CONTACT MATERIAL
1	115/28	1/1	1/.5	GOLD
5	250/28	5/5	5/3	SILVER

For dry circuitry, i.e. 5VDC-50mA or less, use gold contact switch (Code 1). Above switches are SPDT, but may be used as SPST.

OPTIONAL ELECTRICAL INTERFACES



2 or 3 Standard
1/4" Quick Connect
Terminals



2 or 3 #6-32
Pan Head Screw
Terminals



2 or 3 Hook-up
Wires Standard
20 AWG PVC

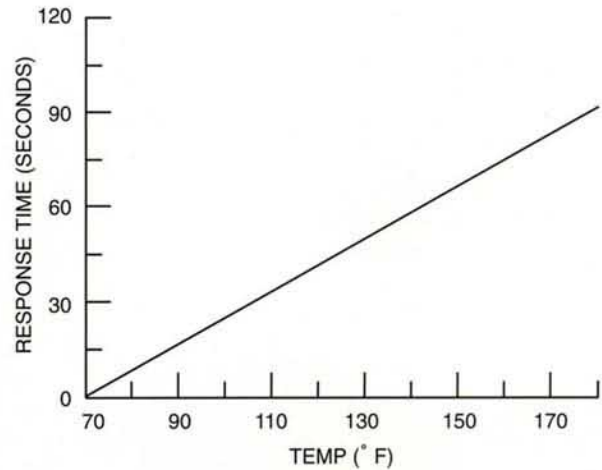
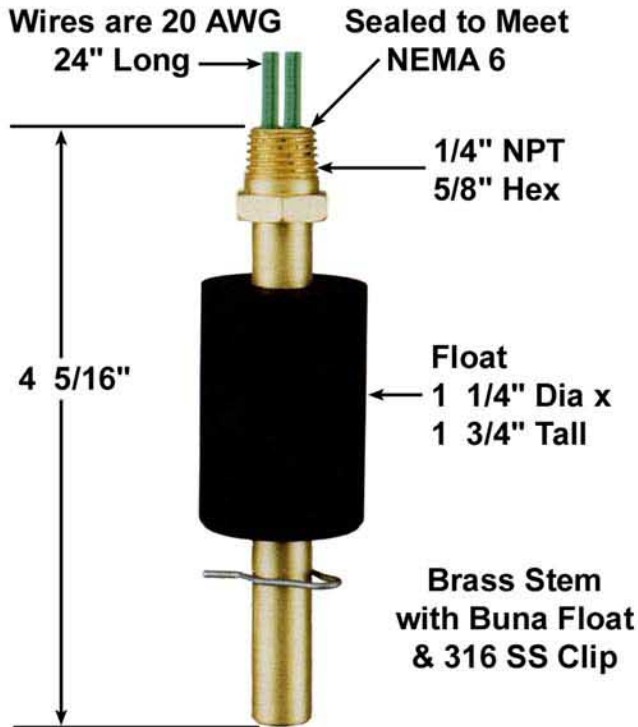
Color Code:
Black = Common
White = N.O.
Red = N.C.

Optional 144-027
Bored Through
Fitting / Adaptor
Ordered Separately



L10 Series

Temperature/Level Vertical Mount Brass

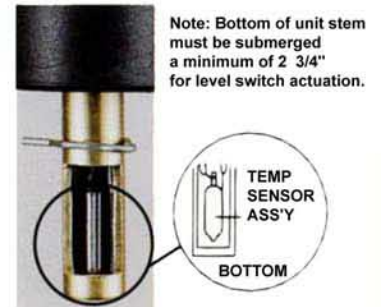
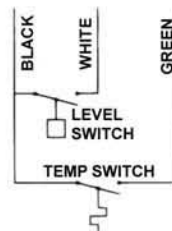


Response time curve of properly immersed temperature/level sensor.

- Response time is about 1° F/second.
- Tests conducted in exacal EX-250HT oil bath.
- Media is Dow Corning 200-50 cS silicone oil.
- Response rates vary by media and conditions.



WIRING SCHEMATIC *



*Consult factory for additional wiring types.

General Specifications:

Operating Temp: -40°F to +180°F in Water
-40°F to +225°F in Oil

Temp Settings: +100°F to +225°F
in 25°F increments, Specials Available

Repeatability: ± 5°F

Wetted Material: Brass, Buna & 316 SS

Fitting: 1/4" NPT Male

Electrical Ratings:

Level Switch: 50 Volt Amps, 1/4 A at 150 VAC

Temp Switch: 8 Amps at 12 VDC
2.6 Amps at 120 VAC

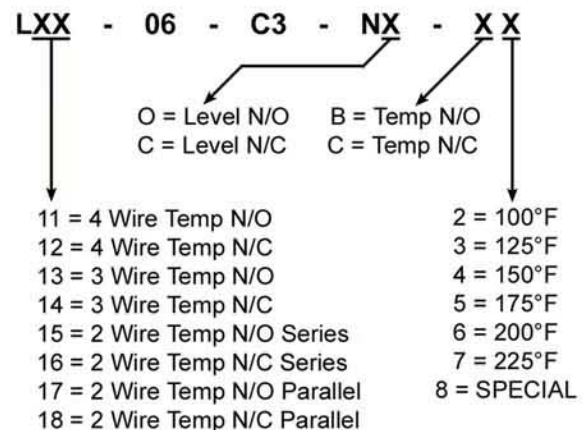
Minimum Media Specific Gravity: 0.75

Crush Pressure: 160 psig

Lead Wires: 20 AWG 24" PVC

Patent Pending Thermally Conductive Potting
Enhances Response Time to Temp Changes.

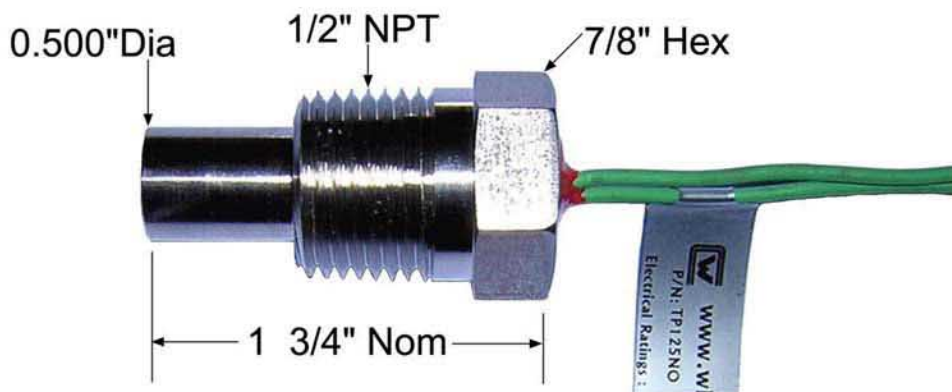
PART NUMBER CONSTRUCTION:



Caution: Customer media and environment must be compatible with construction materials as outlined above.

TP Series

ECONOMICAL STAINLESS STEEL TEMPERATURE SWITCH



Temperature Ratings:

Units are available from 50°F to 250°F in 25°F increments as standard. The standard accuracy is $\pm 5^\circ\text{F}$. Other temperatures are available on request. Maximum system temperature is 275°F.

Electrical Ratings:

6 Amps at 120 VAC
4 Amps at 240 VAC
8 Amps at 12 VDC
4 Amps at 24 VDC

Pressure Rating:

1,000 PSIG

Construction Materials:

Wetted Parts: 316L Stainless Steel machined one piece construction.

Non-wetted Parts:

Wires: 36", 20 AWG, **Green**, crosslinked, irradiated polyethylene.

Epoxy Potting: **Red**. Sealed to meet **NEMA 6**.

General Specifications:

A Creep Action Thermostat / Thermal Protector Switch

with almost no differential between opening and closing temperatures.

The TP Series is available in either in **Normally Closed to Open** on increasing temperature or **Normally Open to Close** on increasing temperature. Temperatures are preset and **NOT Field Adjustable**.

Part Number Construction: TP - XXX - NX

Customer Temp in °F
i.e. 075 or 225

NO = Normally Open
NC = Normally Closed

CE



3-Year Million Cycle Limited Warranty

The proven quality and reliability of Whitman Controls Corporation products is backed by our 3 year / one million cycle warranty - whichever comes first. Our complete warranty statement is available on request.

**All Product Manufactured by
Whitman Controls Corporation
is RoHS Compliant and
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