



Industrial Thermal Switches/Immersion Thermostats

Thermal switches, also known as immersion thermostats, are thermally sensitive, bi-metallic switches housed in cases aka enclosures of:

- Rugged brass
- Stainless steel

Thermal switches are designed to be either:

- **Regulating thermostats:** cycling open and closed to maintain a temperature level
- **Over-temperature thermostats:** protect by limiting a temperature from exceeding a predetermined value

DECA Manufacturing owns Thermtrol's complete line of thermal switches and manufactures these devices at our plant in Ohio.

The switches are manufactured to either make or break an electrical circuit at a factory pre-set temperature and they reset automatically on cooling.



Features

- Factory pre-set fixed temperature
- Normally open or normally closed contact configurations
- Current rating: to 15 Amp@120 Vac, 10 Amp@250 Vac
- Available temperatures from 0°C to 177°C
- Controlling or limit functionality
- Brass or stainless steel construction
- Pressure ratings up to 7000 psi

Numbering System

Our thermal switches use a numbering code indicating:

- Switch code type and material
- Housing style
- Collar code
- Status
- Set temperature
- Termination options

Applications

- Food service equipment
- Mold platens
- Electric heaters
- Refrigerators and freezers
- Test pots & temperature control chamber
- Livestock warmers
- Agricultural equipment
- Environmental controls
- Vending machines
- Electric & gas ovens
- Automotive
- Hydraulics

Detailed numbering system chart is at the end of this document, on page 6. For more information and to start your next project, contact us today. Visit www.decamanufacturing.com or call: 419-884-0071.

1. REGULATING THERMOSTATS

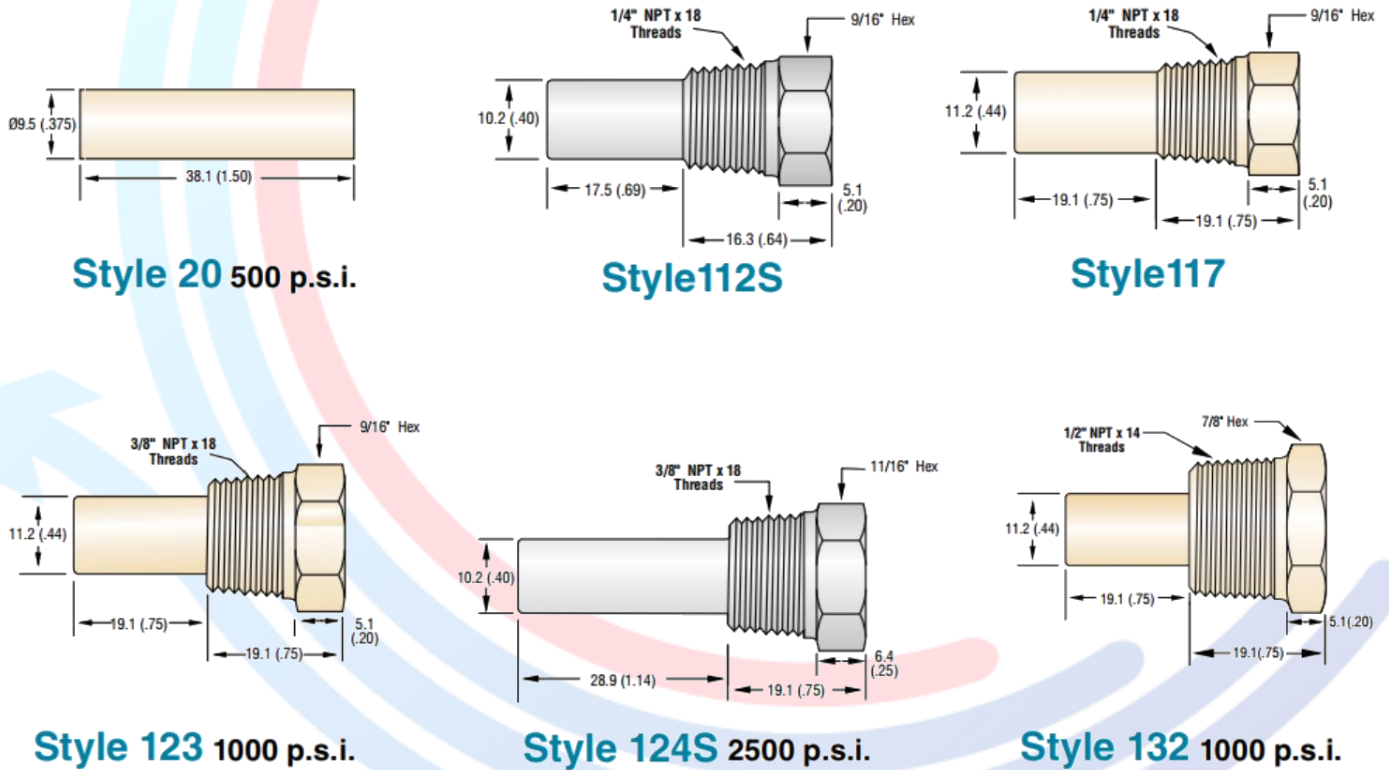
- Range: 10°C – 177°
- Standard set temperature tolerance: +/- 6°C
- Standard differential: no built-in differential

Switch Type Code	Contact Capacity	Contact Life
TCC (normally closed)	6.0Amps@120Vac	100,000 Cycles
	8.0Amps@12Vdc	5,000 Cycles
	4.0Amps@24Vdc	5,000 Cycles
TCC (normally open)	6.0Amps@120Vac	100,000 Cycles

Gold contact devices available for micro-current applications, contact us for additional information.

Regulating Thermostat Housing Styles

The following diagrams show standard housing styles; custom designs are available.



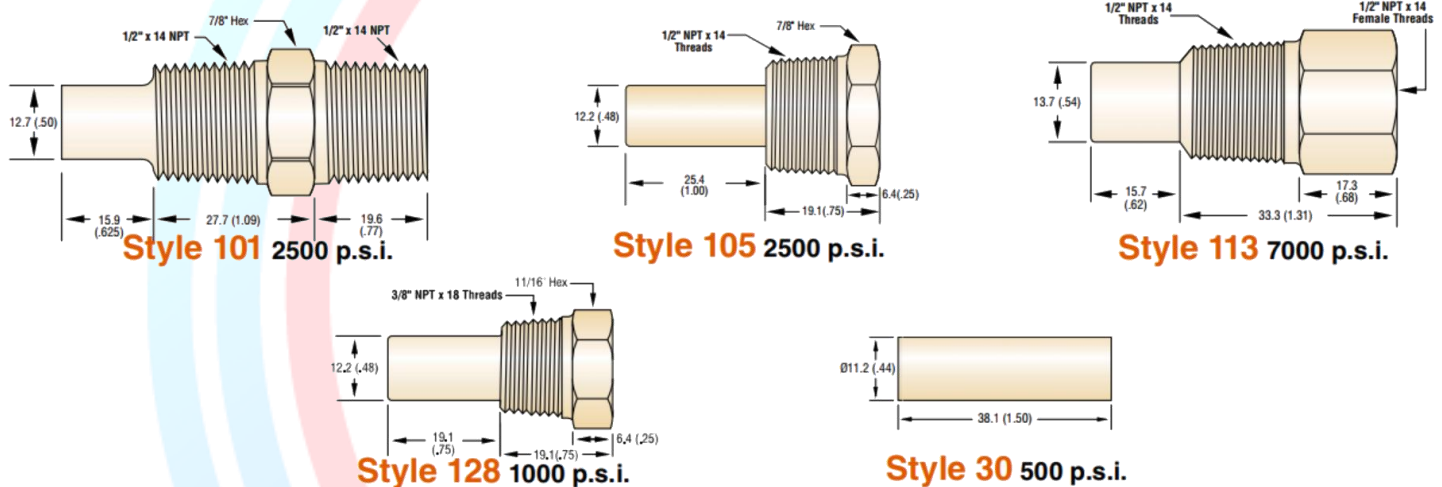
2. OVERTEMPERATURE THERMOSTATS

Standard Thermostats

- Available Temperature Range: 60°C to 170°C
- Standard Set Temperature Tolerance: $\pm 10^{\circ}\text{C}$
- Standard Differential: $25^{\circ}\text{C} \pm 15^{\circ}\text{C}$

Switch Type Code	Contact Capacity	Contact Life
TC (normally closed)	6.3Amps@120Vac/250Vac	6,000 Cycles
TCR (normally open)	3.0Amps@120Vac/250Vac	6,000 Cycles

Standard Housing Styles (Custom Designs Available)



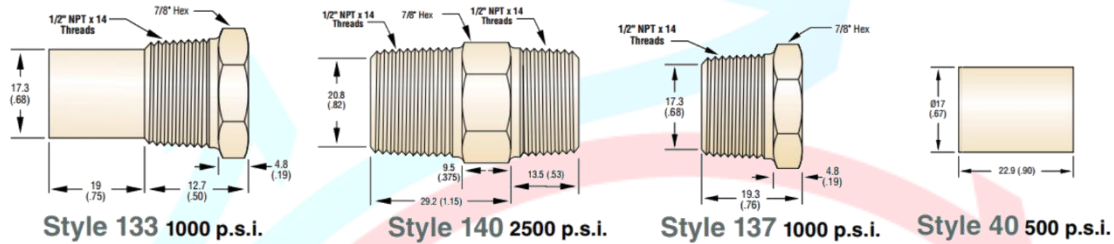
High Contact Capacity Thermostats

- Available temperature range: 5°C - 177°C
- Standard set temperature tolerance: $\pm 6^{\circ}\text{C}$
- Standard differential: $11^{\circ}\text{C} \pm 6^{\circ}\text{C}$

Switch Type Code	Contact Capacity	Contact Life
TCD (normally closed)	15.0Amps@120Vac, 10.0Amps@240Vac, 7.2Amps@277Vac	100,000 Cycles
	25.0Amps@12Vdc, 11.0Amps@24Vdc	50,000 Cycles
TCDR (normally open)	15.0Amps@120Vac, 10.0Amps@240Vac, 7.2Amps@277Vac	100,000 Cycles
	25.0Amps@12Vdc, 11.0Amps@24Vdc	50,000 Cycles

2. OVERTEMPERATURE THERMOSTATS (continued)

High Contact Capacity Thermostat Housing Styles (Custom Designs Available)

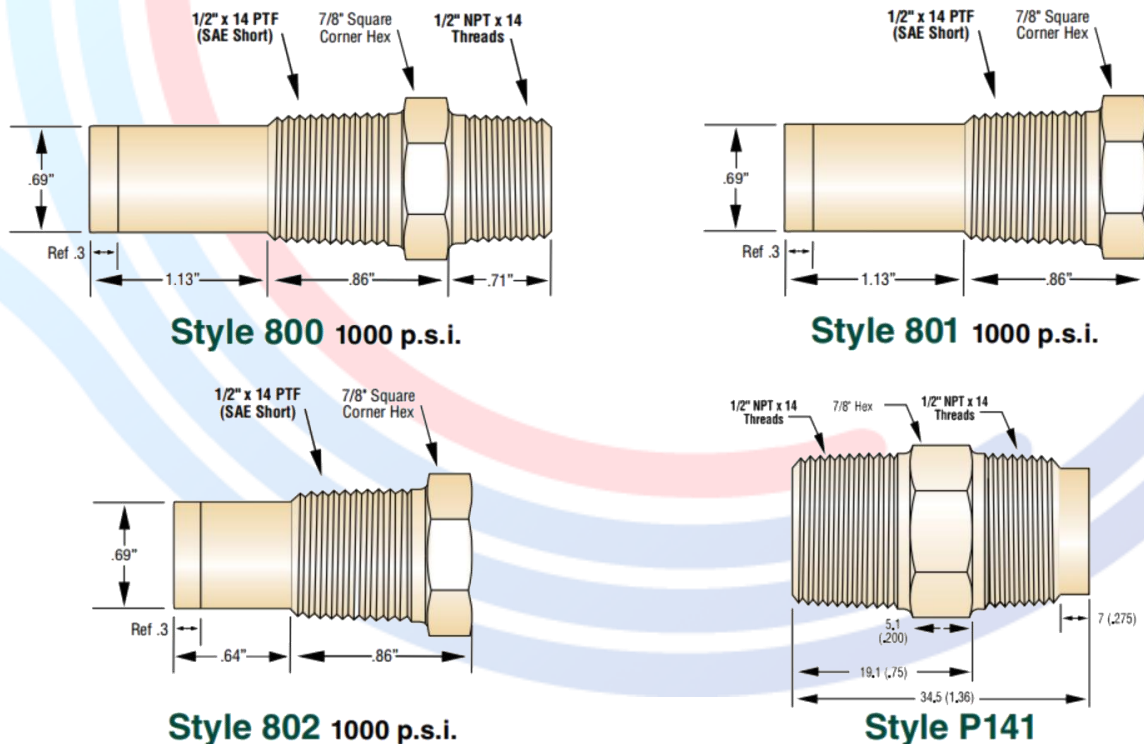


High Temperature, High Contact Capacity Thermostats

- Available temperature range: 180°C - 240°C
- Standard set temperature tolerance: +/- 10°C
- Standard differential: 25°C +/- 10°C

Switch Type Code	Contact Capacity	Contact Life
TCDH (normally closed)	15Amps@120Vac, 10 Amps @240Vac	100,000 Cycles
TCDH (normally open)	15Amps@120Vac, 10 Amps @240Vac	100,000 Cycles

High Temperature, High Contact Capacity Thermostat Housing Styles



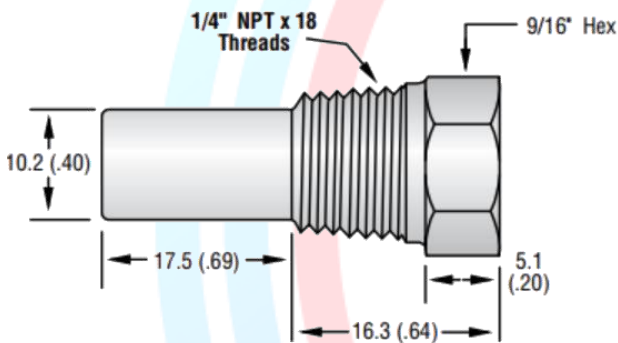
2. OVERTEMPERATURE THERMOSTATS (continued)

Miniature Thermostats

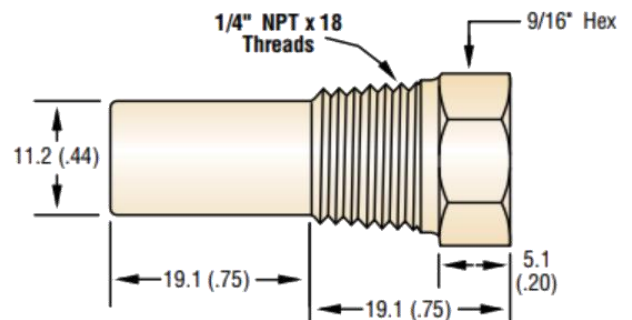
- Available temperature range: 45°C – 150°C
- Standard set temperature tolerance: +/- 10°C
- Standard differential: 30°C.
- Lower temperatures have smaller differential. Contact us for details.

Switch Type Code	Contact Capacity	Contact Life
TC (normally closed)	10Amps@125Vac, 7Amps@250Vac	10,000 Cycles
	6Amps@24Vdc	10,000 Cycles

Miniature Thermostat Housing Styles



Style 112S 2500 p.s.i.



Style 117 1000 p.s.i.

Industrial Thermal Switches/Immersion Thermostats

Numbering System				
TC	30	A	0	100°C

Regulating Thermostats	
Switch Code Type	
TCC	Normally Closed, Open on Rise
TCCR	Normally Open, Close on Rise
TCC/TCCR Housing Style Code	
20	Brass, Cartridge
117	Brass, 1/4" NPT
112S	Stainless #303, 1/4" NPT
123	Brass, 3/8" NPT
124S	Stainless #303, 3/8" NPT
132	Brass, 1/2" NPT

Standard Overtemperature Thermostats	
Switch Code Type	
TC	Normally Closed, Open on Rise
TCR	Normally Open, Close on Rise
TC/TCR Housing Style Code	
30	Brass, Cartridge
128	Brass, 3/8" NPT
105	Brass, 1/2" NPT
101	Brass, Dual 1/2" NPT
113	Brass, Dual 1/2" NPT

Overtemperature Thermostats / High Contact Capacity	
Switch Code Type	
TCD	Normally Closed, Open on Rise
TCDR	Normally Open, Close on Rise
TCD/TCDR Housing Style Code	
40	Brass, Cartridge
43	Brass, #10-32 Stud
135	Brass, 1/2" NPT (No extension)
133	Brass, 1/2" NPT
140	Brass, Dual 1/2" NPT

High Temperature High Contact Capacity	
Switch Code Type	
TCDH	Normally Closed, Open on Rise
TCDHR	Normally Open, Close on Rise
TCDH/TCDHR Housing Style Code	
800	Brass, Dual 1/2" PFT/NPT
801	Brass, Dual 1/2" PFT/NPT
802	Brass, 1/2" PTF Short
141	Brass, Dual NPT

Miniature Thermostats	
Switch Code Type	
TCM	Normally Closed, Open on Rise
TCM Housing Style Code	
117	Brass, 1/4" NPT
112S	Stainless #303 1/4" NPT

Collar Code	
1	Mylar Collar (for temp. settings below 135°C)
2	Nomex Collar (for temp. settings above 135°C)
0	No Collar

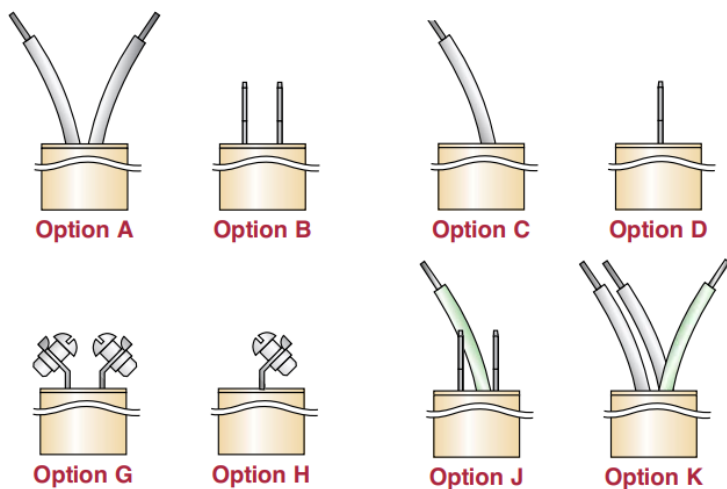
A collar is used as a component of the termination on all units except Stud Mount, Cartridge, and Style 113.

Set Temp. (°C)
Select from the range of 5°C to 230°C in 5°C increments

See pages 26, 27 and 28 for temperature availability by product.

Termination Options	
A	Dual Lead Wires
B	Dual 1/4" Male QC Terminals
C	Single Lead Wires (live housing)
D	Single 1/4" Male QC Terminals (live housing)
G	Dual 45° Screw Terminals
H	Single 45° Screw Terminals (live housing)
J	Dual 1/4" QC Terminals with Ground Lead
K	Dual #18 Gauge Leads with Ground Lead

Note: Termination Code A is the only option available for the Cartridge and Stud Mount Housings. All A, C, J, & K termination code thermostat samples will be produced with 6" long, #18 gauge, XLPE 125°C (UL3173) leads.



Note: With the exception of the Cartridge and Stud Mount Housings, all Housing Styles are available Nickel Plated. A suffix of "N" is added to the Housing Style Code to designate this. For example, 128N designates a Nickel Plated Style 128 Housing.