



**Surface Mounting  
Thermoswitch - 312 - 101/102**



## Features

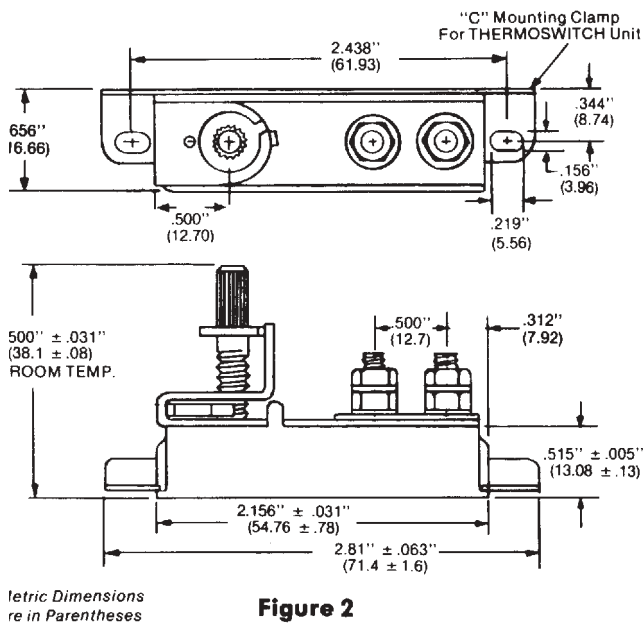
- Fully Adjustable
- Overlapping Ranges from 10°C to 315°C
- 1200 Watt resistive Load Rating at 120 VAC/240 VAC
- Narrow Temperature Differential
- UL Component Recognised
- CSA Certified
- Economical
- Compact Size

## Operating Manual

### General information

Series 30000 Surface mounting THERMOSWITCH Controllers operate on the principle of the different expansion of metals. A temperature increase causes the stainless steel outer case to expand at a greater rate than the internal bridge assembly. Because the case is in direct contact with the heated surface, a temperature change is sensed almost instantaneously. With an increase in temperature, the case expands. This result in a linear change of the internal bridge assembly causing the electrical contacts to open. A decrease in temperature closes the contacts. Field tried and tested . . .quality products in the ThermoSpeed tradition.

### Dimensions



## Principle of operation

Increase in temperature causes the case to expand, thereby lengthening the bridge strut and resulting in a downward motion of the non-expanding strut. A ceramic button (5) mounted on the non-expanding strut (4) normally holds the spring biased contact supporting members (3) in a closed position. The motion of the non-expanding struts permits the contacts to break when the required temperature is reached.

## Temperature adjustment

Temperature adjustment is made by rotation of the serrated adjusting screw (8) (fig.1). Rotating in a clockwise direction increases the temperature setting. A

stop tab (7) is provided to prevent turning the adjusting screw in excess of the THERMOSWITCH Unit temperature limits. Plastic knob, Modification 120 (1" diameter high) optional at extra cost.

### INSTALLATION INSTRUCTIONS

#### DESCRIPTION

The surface mounting THERMOSWITCH Unit (fig.1) consists of a stainless steel case (1) and cover welded together to form a rugged, temper proof one-piece unit. A low expansion nickel iron strut (4) is welded at each end of the bottom of the case.

#### CONSTANT TORQUE SPRING

All standard Surface Mounted THERMOSWITCH Units, used on devices requiring adjustable temperature range, are furnished with a constant torque spring. The spring is placed under the adjusting screw, resulting in a smoother screw adjustment and constant torque.

#### LOCKING SCREW (Modification 55)

When a Unit is to be temperature set by the customer, the THERMOSWITCH Unit will be fitted with a socket head screw in the adjustment head yoke, which when tightened provides a friction lock on the adjusting screw.

#### LOCKING SCREW AND TORQUE SPRING (Modification 55A)

When fixed adjustable temperature settings are desired, the THERMOSWITCH Unit will be fixed with a locking screw and torque spring.

Temperature setting on the Surface Mounting THERMOSWITCH Unit equipped with locking screw should be done in the following manner:

1. Adjust the THERMOSWITCH Unit to the approximate temperature setting.
2. Tighten the locking screw to secure high torque,

but not enough to jam the adjusting screw.  
 3. Make the final adjustment by forcibly rotating the adjusting screw.  
 4. Never make the final adjustment prior to tightening the locking screw, as the temperature setting will change.

**MOUNTING AND INSTALLATION**

A. Mounting Bracket,"C" clamp,(fig.2), is provided for ease in attachment to a flat surface for either side or bottom mounting. The mounting bracketalso serves to permit free expansion of the case if there is a differential expansion between the case and devise to witch is clamped.

B. In certain instances it is not feasible to use the clamp type mounting. In these cases a standard cross type mounting bracket can be provided. See Modification 62.

C. When mounting a Surface Mounting THERMOSWITCH Unit care should be taken to see that the surface it is mounted on is as flat, smooth and clean as possible. Flat surfaces provide better heat transfer and therefore better control.

D. When making electrical connections DO NOT apply more the 10"lbs.



Description	Approximate Temperature Range And Factory Setting Tolerance	Catalogue Number	Approx Deg.F Per Full Turn Of Adj Screw	Contact Operation On Temperature Rise	Material	Current Rating	Dielectric Strength (Leads to case)
Adjustable, low temperature type	10 to 150 °C ± 3°C or 3% of setting valve	312 -101	250	Opens	Stainless and cover bronze adjustable screw. Aluminium mounting clamps, optional. Note units shipped with "C" mounting clamp unless otherwise specified	120VAC 10Amps 240VAC 5 Amps Restive	1500 VAC (60 cycles per minute)
Adjustable, High Temperature Type	10 to 315°C ± 3% of setting value	312-102	575				

