

# **THERMODISC<sup>®</sup>**

## **Product Catalog**



## 49T Series

### *Snap-Action Temperature Controls*



#### ***Snap-Action Temperature Controls***

The 49T line of controls from Therm-O-Disc offers proven 3/4" (19mm) bimetal disc reliability in a high temperature package. The ceramic design of the 49T control, along with the snap-action of the bimetal disc, provides exceptional life characteristics at calibrations up to 550°F (288°C) and override temperatures up to 625°F (329°C). The bimetal disc housing may be either enclosed for protection from contaminants or exposed for greater thermal sensitivity. To ensure electrical integrity, terminal connections are made with #8 terminal screws. The ability to handle electrical loads up to 25 amps at high temperatures has made the Therm-O-Disc 49T a popular choice with heating and major appliance manufacturers.

#### ***Features and Benefits***

The 49T series features include:

- Ceramic construction for high-temperature operation up to 550°F (288°C).
- Snap-action bimetal disc for high-speed contact separation.
- Available with an exposed or enclosed bimetal disc in either increased thermal response or protection from airborne contaminants.
- Welded construction for integrity of current-carrying components.

#### ***Switch Actions and Typical Applications***

The 49T is an automatic reset single pole, single throw (SPST) switch that can be built to either open or close its electrical contacts on temperature rise. Once the temperature in the application has returned to the specified reset calibration, the switch will automatically return to its original state.

Typical uses of the Therm-O-Disc 49T include limiting or regulating temperatures in appliances and heating systems. This reliable, economical switch also provides temperature control in a variety of commercial and industrial applications. Airstream or surface mounting flanges are available with the 49T and are interchangeable with the Therm-O-Disc 60T series of temperature controls.



## Mounting Brackets

**Airstream Mounting** – In this mounting configuration, the bimetal disc sensing element protrudes through the mounting surface where the temperature being sensed is contained within an enclosure (air duct, heater box, etc.), (see figure 1).

**Surface Mounting** – The surface mounting configuration positions the bimetal disc sensing element firmly against the mounting surface, thereby sensing the actual mounting surface temperature (see figure 2).

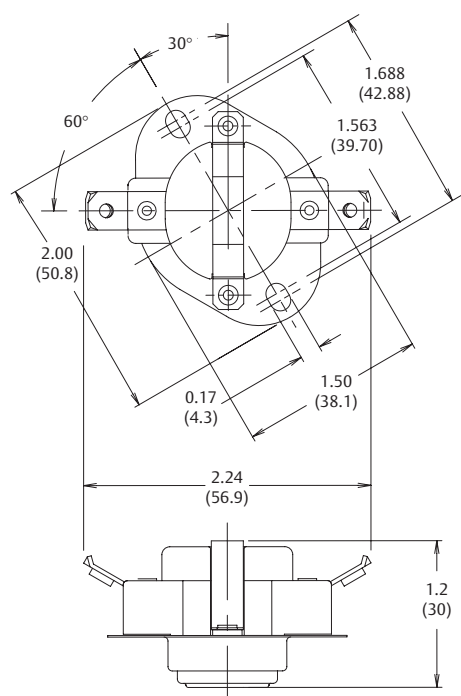


Figure 1

**Airstream Mounting**

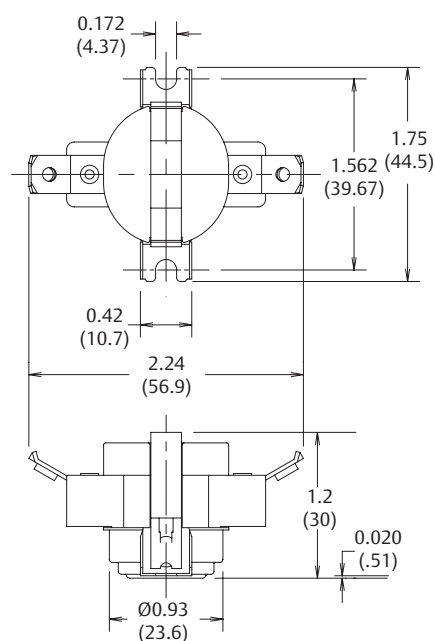


Figure 2

**Surface Mounting**

Dimensions are shown in inches and (millimeters).



## Custom Applications

Therm-O-Disc can provide custom configurations of the 49T series control to meet specific application requirements. Please consult a sales engineer for custom terminals, mounting brackets or temperature calibrations.

## General Electrical Ratings

The 49T series of controls has been rated by major agencies throughout the world. The agency ratings can be used as a guide when evaluating specific applications. However, the mechanical, electrical, thermal and environmental conditions to which a control may be exposed in an application may differ significantly from agency test conditions. Therefore, the user must not rely solely on agency ratings, but must perform adequate testing of the product to confirm that the control selected will operate as intended in the user's application.

Maximum Temperature	Cycles	Inductive Amperes		Pilot duty VA	Resistive Amperes	Volts AC	Agency Recognition
		FLA	LRA				
550°F (288°C)	30,000	10	60	—	—	120	UL File MH-5304
	30,000	5	30	—	—	240	
	100,000	—	—	125	—	120-240	
	100,000	—	—	—	25	250	CSA File LR19988
	100,000	—	—	—	15	277	

NOTE: These are consolidated UL/CSA ratings. At thermostat end-of-life, the contacts may remain closed or open. Please contact our Sales Engineering Department for specific agency ratings.



## Calibration Temperatures, Differentials and Standard Tolerances of the 49T Series

Highest Calibration Set Point Range (Open or Close)	Nominal Differentials (temperature difference between nominal open and close set point)											
	°F 20-29 °C 11.1-16.1		°F 30-39 °C 16.7-21.7		°F 40-49 °C 22.2-27.2		°F 50-59 °C 27.8-32.8		°F 60-69 °C 33.3-38.9		°F 70-79 °C 38.9-45.0	
	Open	Close	Open	Close	Open	Close	Open	Close	Open	Close	Open	Close
80°-200°F 26.7°-93.3°C	±5°F ±2.8°C	±6°F ±3.3°C	±5°F ±2.8°C	±7°F ±3.9°C	±6°F ±3.3°C	±8°F ±4.4°C	—	—	—	—	—	—
201°-250°F 93.9°-121.1°C	±6°F ±3.3°C	±7°F ±3.9°C	±6°F ±3.3°C	±8°F ±4.4°C	±7°F ±3.9°C	±9°F ±5.0°C	—	—	—	—	—	—
251°-300°F 121.7°-148.9°C	—	—	±7°F ±3.9°C	±10°F ±5.6°C	±8°F ±4.4°C	±15°F ±8.3°C	±8°F ±4.4°C	±15°F ±8.3°C	—	—	—	—
301°-350°F 149.4°-176.7°C	—	—	±8°F ±4.4°C	±15°F ±8.3°C	±9°F ±5.0°C	±20°F ±11.1°C	±9°F ±5.0°C	±20°F ±11.1°C	—	—	—	—
351°-400°F 177.2°-204.4°C	—	—	—	—	—	—	—	—	±10°F ±5.6°C	±20°F ±11.1°C	—	—
401°-450°F 205.0°-232.2°C	—	—	—	—	—	—	—	—	±15°F ±8.3°C	±20°F ±11.1°C	—	—
451°-500°F 232.8°-260.0°C	—	—	—	—	—	—	—	—	±20°F ±11.1°C	±25°F ±13.9°C	±20°F ±11.1°C	±25°F ±13.9°C
501°-550°F 260.6°-287.8°C	—	—	—	—	—	—	—	—	±25°F ±13.9°C	±30°F ±16.7°C	±25°F ±13.9°C	±30°F ±16.7°C

### Important Notice

Users must determine the suitability of the control for their application, including the level of reliability required, and are solely responsible for the function of the end-use product.

These controls contain exposed electrical components and are not intended to withstand exposure to water or other environmental contaminants which can compromise insulating components. Such exposure may result in insulation breakdown and accompanying localized electrical heating.

A control may remain permanently closed or open as a result of exposure to excessive mechanical, electrical, thermal or environmental conditions or at normal end-of-life. If failure of the control to operate could result in personal injury or property damage, the user should incorporate supplemental system control features to achieve the desired level of reliability and safety. For example, backup controls have been incorporated in a number of applications for this reason.

## 74T Series

### *Adjustable Temperature Controls*



### ***Adjustable Temperature Controls***

The 74T line of temperature controls features adjustable fan or limit operation in a versatile 3/4" (19mm) bimetal disc design. Available in calibrations from 110°F to 250°F (43°C to 121°C) and mean differentials from 20°F to 40°F (11°C to 22°C), the 74T allows adjustment of the operating temperature within an approximate 40°F (22°C) thermal range. The snap-action of the temperature sensing bimetal disc provides high-speed contact separation for exceptional life characteristics at electrical loads up to 25 amps at 240VAC. Airstream or surface mounting flanges are available with the 74T.

### ***Features and Benefits***

The 74T series features include:

- Adjustable operating temperatures for maximum design or service flexibility.
- Snap-action bimetal disc for high-speed contact separation.
- Welded construction for integrity or current-carrying components.
- Available with an exposed or enclosed bimetal disc for either increased thermal response or protection from airborne contaminants.

### ***Switch Action and Typical Applications***

The 74T is an automatic reset single pole, single throw (SPST) switch that can be built to either open or close its electrical contacts on temperature rise. The desired calibration can be adjusted within the thermal range of the pointer set positions. Once the application temperature cools to the specified reset differential, the contacts automatically return to their original state.

Typical applications include fan controls for heating products and regulating controls for appliances. The ability to adjust calibrations also makes the 74T an excellent choice for service or field replacement applications.

### ***Mounting Brackets***

The 74T is available in either airstream (*see figure 1*) or surface (*see figure 2*) mount configurations. Exposed or enclosed bimetal disc versions may be specified with any of the mounting configurations.