

75TF Series Snap-Action Temperature Controls



Snap-Action Temperature Controls

The 75TF line of temperature controls combines automatic reset and single operation in one unique switch design. Two independent switch mechanisms, electrically in series, provide primary and secondary temperature sensing at electrical loads up to 6000 watts. The 5/8" (16mm) cycling disc is available in calibrations from 80°F to 300°F (27°C to 149°C) and differentials from 15°F to 50°F (8°C to 28°C) while the 3/4" (19mm) fuse disc is available in calibrations from 150°F to 350°F (66°C to 177°C).

A variety of terminal and mounting options are available for design flexibility. The 75TF is a viable alternative in applications where space prohibits two separate sensing devices.



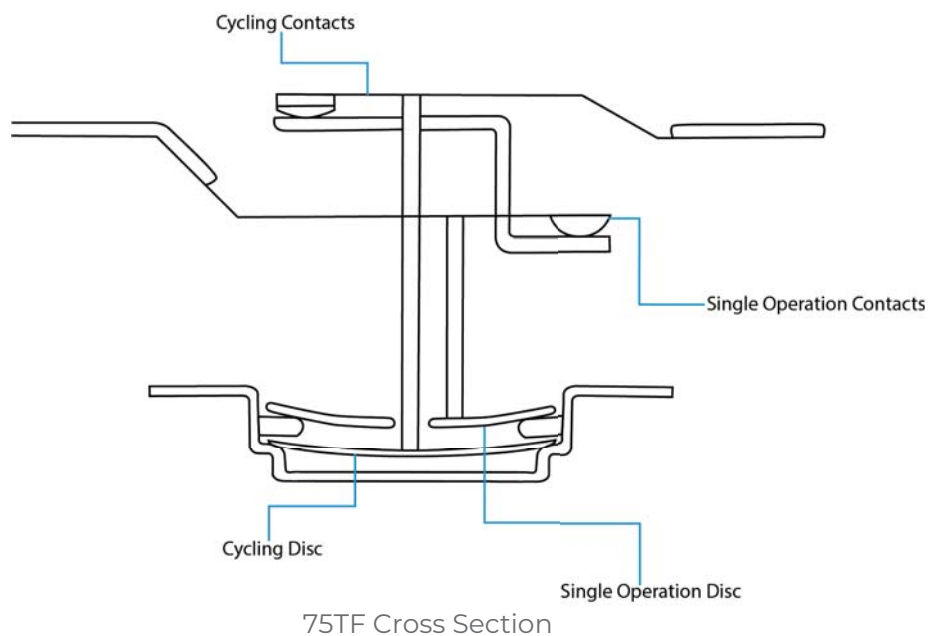
Features and Benefits

The 75TF series features include:

- Primary and secondary temperature sensing in the same location.
- Automatic reset SPST in series with the single operation SPST.
- Snap-action bimetal disc for high-speed contact separation.
- A wide variety of terminal and mounting options for design flexibility.
- Welded construction for integrity of current-carrying components.
- Available with an exposed or enclosed bimetal disc for either increased thermal response or protection from airborne contaminants.

Switch Actions and Typical Applications

The 75TF combines two single pole, single throw (SPST) circuits in series to provide cycling and “one-shot” temperature operation. The cycling disc and contacts are agency rated to 100,000 cycles. Utilizing a unique bridging contact system, the single operation switch opens the circuit at the specified back-up calibration in the event the cycling switch fails to operate, and will not reset in ambient temperatures above -31 °F (-35 °C). Typical applications include electric heat furnaces and electric dryers where approval agencies require the use of limit and back-up limit protection.



Mounting

The 75TF is available in either flanged airstream (see figure 1) or flangeless airstream (see figure 2) mounting configurations. Airstream mounting is typically used in applications where the temperature being sensed is contained within an enclosure such as an air duct or heater box. An optional surface mount configuration is available for applications where the temperature being sensed is the actual mounting surface. Exposed or enclosed bimetal disc versions may be specified with any of the mounting configurations.

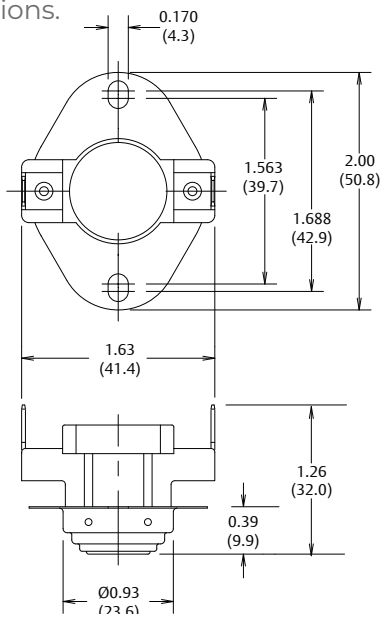


Figure 1

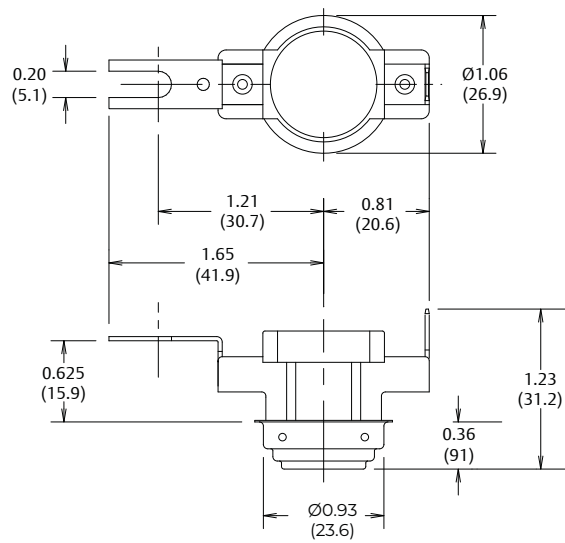


Figure 2

Dimensions are shown in inches and (millimeters). Dimensions are shown in inches and (millimeters).

Terminal Configurations

Standard terminations for the 75TF are .250" x .032" (6.35mm x .81mm) unplated brass blade terminals formed at 90 angular degrees. Terminal angles of 0 and 30 degrees can also be provided. Optional screw or fork terminals are available at additional cost.



General Electric Ratings

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.

Contact Switching	Pilot Duty VA	Resistive Amperes	Volts AC	Cycles of Operation	Agency Recognition
Automatic Reset	125	25	120-240	100,000	UL File MH5304
	125	21.7	277	100,000	
	125	12.5	480	100,000	
Single Operation	125	25	120-240	1	CSA File LR10281C
	125	21.7	277	1	
	125	12.5	480	1	

NOTE: At thermostat end-of-life, the contacts may remain permanently closed or open

Calibration Temperatures, Differentials and Standard Tolerance of the 75TF Series

Automatic Reset Calibration	Mean Differentials							
	15-19 °F 8.3-10.6 °C		20-29 °F 11.1-16 .1°C		30-39 °F 16.7-21.7 °C		40-50 °F 22.2-27.8 °C	
	Open	Close	Open	Close	Open	Close	Open	Close
80°-200°F	±5	±5	±5	±6	±5	±7	±5	±9
27°-93°C	±3	±3	±3	±3.5	±3	±4	±3	±5
201°-250°F	±5	±5	±5	±6	±5	±10	±6	±11
94°-121°C	±3	±3	±3	±3.5	±3	±5.5	±3.5	±6
251°-300°F	-	-	-	-	±6	±12	±7	±12
122°-149°C	-	-	-	-	±3.5	±6.5	±4	±6.5

Single Operation Calibration	Top Temperature Range	Tolerance	Reset Point
	150°-249°F	±8°F	-31°F
	66°-120°C	±4.4°C	-35°C
	250°-299°F	±10°F	-31°F
	121°-148°C	±5.5°C	-35°F
	300°-350°F	±15°F	-31°F
	149°-177°C	±8.3°C	-35°C

Note: Nominal fuse calibration must be minimum 20°F (-7°C) higher than the cycling disc nominal open temperature.

Part Numbering System

75TF

- 1- Flangeless airstream mount
- 2- Flanged airstream mount
- 3- Surface mount

- 1- Contacts open on temperature rise (normally closed)

- 4- Contacts will not reset above -31°F (-35°C)

Circuit Diagram

