

# 10RS RADIANT ENERGY Series

## *Special Purpose Controls*



### ***Snap-Action Radiant Control***

The 10RS line of controls from Therm-O-Disc offers reliable sensing of radiant energy in hot surface ignition applications.

The unique snap-action bimetal design not only provides high-speed contact separation and time-proven reliability, but also enables the 10RS to maintain radiant sensitivity while compensating for ambient temperature changes.

A glass “window” is used to maximize the effect of radiant energy on the bimetal element without exposing the entire sensing package to high ignitor temperatures.

These features have made the Therm-O-Disc 10RS an integral component of gas ignition systems.

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

The 10RS features include:

- Glass “window” design maximizes effect of radiant energy without sensor overheating.
- Unique “U”-shaped actuator compensates for ambient temperature conditions.
- High-speed contact switching for exceptional life characteristics.

### ***Switch Action***

The 10RS is an automatic reset, single pole, single throw (SPST) switch that opens its electrical contacts when exposed to heat generated by radiant energy. This is accomplished with a “U”-shaped bimetal actuator which has one leg exposed to radiant energy while the other leg is shielded.

As radiant energy passing through the glass “window” heats the exposed bimetal leg, a temperature differential is created which causes the bimetal element to snap and open the contacts. As radiant energy dissipates, both actuator legs return to approximately the same temperature, allowing the contacts to automatically reclose.



## Typical Applications

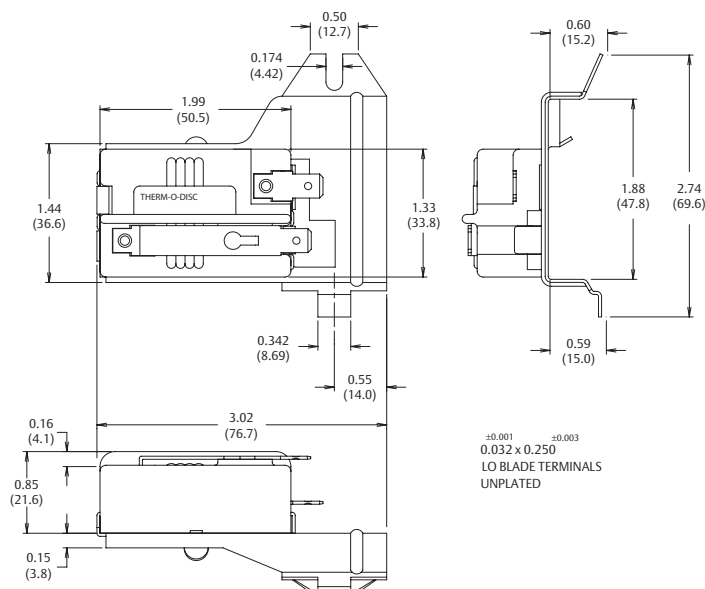
The type 10RS control is utilized in gas-fired appliances in conjunction with a hot surface ignitor. As red hot ignitor temperatures are achieved, the 10RS opens the circuit which signals the gas valve to open. Upon ignition, radiant energy from the gas flame keeps the 10RS open until the operating cycle is completed. Once the gas valve closes and the flame dissipates, the contacts reclose and the ignition cycle is complete.

## Calibration

The standard 10RS calibration calls for the contacts to open within 12 to 20 seconds after exposure to a radiant energy source.

Contact reclose occurs within 26 to 40 seconds after the radiant source dissipates.

Note: Calibration timing of the 10RS in the actual application is dependent upon the type of ignition system and position of the sensor relative to the radiant energy source.



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



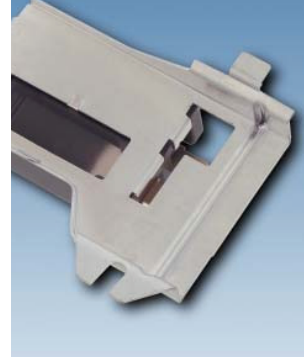
### ***Mounting Bracket***

The 10RS is available in two standard tab mounts. The brackets are fabricated from .032" (.81mm) aluminum and can easily be mounted with a sheet metal screw.



### ***Terminal Configurations***

The 10RS is furnished with .032" x .250" (.81mm x 6.35mm) brass quick connects in the horizontal position.



## General Electrical Ratings

The 10RS 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 Bimetal Temperature (°F)	Maximum Ambient Temperature (°F)	Cycles	Resistive Amperes	Volts AC	Agency Recognition
375	325	100,000	5.75	120	CSA
375	325	100,000	5.75	120	File 112672-0-000

NOTE: At thermostat end-of-life the contacts may remain permanently closed or open.  
For complete and current ratings, please contact our Sales Engineering Department.

### ***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.