

# 3NT | SERIES

## FIXED TEMPERATURE THERMOSTATS

### Introduction

Automatic reset thermostat designed to meet your specific application requirements. Its patented and tamper proof snap action bi-metal disc provides reliable and repeatable switch actuation. The 3NT is suitable for electrical loads ranging from dry circuits to 10A @ 240 VAC.

The core of the 3NT is the proven 1NT thermostat. Recognized by UL/CSA and KEMA/ENEC agencies, hundreds of millions of the 1NT device are in the field today used in a variety of HVAC, appliance, automotive and specialty applications.

Manufactured at ISO 9001 certified manufacturing sites, its dry seal allows direct integration of the thermostat into a wire harness eliminating the need for extra connections.



### Features

- Automatic reset
- Small and easy to mount
- Fast thermal response
- Innovative dry seal design - protects from moisture and dust
- Reliable 100K cycle life
- High temperature - to 275°F (135°C)

### Applications

- HVAC
- Commercial
- Dehumidifiers
- Freezers
- Heat pumps
- Ice makers
- Refrigerators
- Condensing or moist environments



### SPECIFICATIONS

| Electrical Ratings                              | Agency                                                                                                                 | Cycles<br>x1000     | Volts   | FLA     | LRA  | Amps<br>(resistive) | VA  |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------|---------|---------|------|---------------------|-----|
|                                                 |                                                                                                                        | UL<br>(USA, Canada) | 100     | 120 Vac | 5.8  | 34.8                | 10  |
|                                                 |                                                                                                                        | 100                 | 240 Vac | 2.9     | 17.4 | 10                  | 125 |
|                                                 |                                                                                                                        | 30                  | 120 Vac | 10.0    | 40.0 |                     |     |
|                                                 |                                                                                                                        | 30                  | 240 Vac | 10.0    | 40.0 |                     |     |
|                                                 |                                                                                                                        | 100                 | 30 Vdc  |         |      | 1                   |     |
|                                                 | ENEC (Europe)                                                                                                          | 30                  | 240 Vac |         |      | 16                  |     |
| <b>Operating Temperature</b>                    | -20 to 135°C (-4 to 275°F)                                                                                             |                     |         |         |      |                     |     |
| <b>Ambient Temperature</b>                      | -40°C to maximum wire lead insulation                                                                                  |                     |         |         |      |                     |     |
| <b>Temperature rating</b>                       | PVC - 105°C<br>XLP - 125°C<br>(Allow 15°C de-rating below wire insulation rating at maximum 10A current)               |                     |         |         |      |                     |     |
| <b>Minimum Nominal Temperature Differential</b> | 8°C (15°F)                                                                                                             |                     |         |         |      |                     |     |
| <b>Dielectric Strength</b>                      | 750 Vrms<br>1500 Vrms terminals to case                                                                                |                     |         |         |      |                     |     |
| <b>Standard Wire Leads</b>                      | 18 AWG (1/32" or 1/16" wall thickness in either 105°C PVC or 125°C XLPE)<br>16 AWG (1/32" wall thickness in 105°C PVC) |                     |         |         |      |                     |     |



## 3NT DRY SEAL DESIGN



**Important Notice:** The 3NT is not hermetically sealed, and should not be submerged in liquid. For such applications, please contact Sensata.



## STANDARD TEMPERATURES AND TOLERANCES

| Nominal Top Temperature   |                          | Nominal Differential |         | Open Temperature |      | Close Temperature |      |
|---------------------------|--------------------------|----------------------|---------|------------------|------|-------------------|------|
| °F                        | °C                       | °F                   | °C      | °F               | °C   | °F                | °C   |
| 32 to 80                  | 0 to 27                  | 20 - 29              | 11 - 16 | ±5.5             | ±3   | ±7.5              | ±4   |
|                           |                          | 30 - 38              | 17 - 21 | ±5.5             | ±3   | ±8.5              | ±4.5 |
|                           |                          | 39 - 60              | 22 - 33 | ±5.5             | ±3   | ±10               | ±5.5 |
| 81 to 167                 | 28 to 75                 | 20 - 23              | 11 - 13 | ±5.5             | ±3   | ±7.5              | ±4   |
|                           |                          | 24 - 29              | 14 - 16 | ±5.5             | ±3   | ±8.5              | ±4.5 |
|                           |                          | 30 - 59              | 17 - 33 | ±5.5             | ±3   | ±10               | ±5.5 |
| 168 to 199 <sup>(1)</sup> | 76 to 93 <sup>(1)</sup>  | 20 - 23              | 11 - 13 | ±5.5             | ±3   | ±7.5              | ±4   |
|                           |                          | 24 - 29              | 14 - 16 | ±5.5             | ±3   | ±8.5              | ±4.5 |
|                           |                          | 30 - 59              | 17 - 33 | ±5.5             | ±3   | ±9                | ±5   |
| 200 to 249 <sup>(1)</sup> | 94 to 121 <sup>(1)</sup> | 20 - 29              | 11 - 16 | ±6.5             | ±3.5 | ±8.5              | ±4.5 |
|                           |                          | 30 - 38              | 17 - 21 | ±6.5             | ±3.5 | ±10               | ±5.5 |
|                           |                          | 39 - 59              | 22 - 33 | ±6.5             | ±3.5 | ±12               | ±6.5 |
|                           |                          | 60 - 99              | 34 - 55 | ±10              | ±5.5 | ±20               | ±11  |
| 250 to 275                | 122 to 135               | 24 - 38              | 14 - 21 | ±7.5             | ±4   | ±10               | ±5.5 |
|                           |                          | 39 - 59              | 22 - 33 | ±7.5             | ±4   | ±14.5             | ±8   |
|                           |                          | 60 - 99              | 34 - 55 | ±10              | ±5.5 | ±20               | ±11  |

<sup>(1)</sup> Minimum bottom temperature of 50°C (122°F)



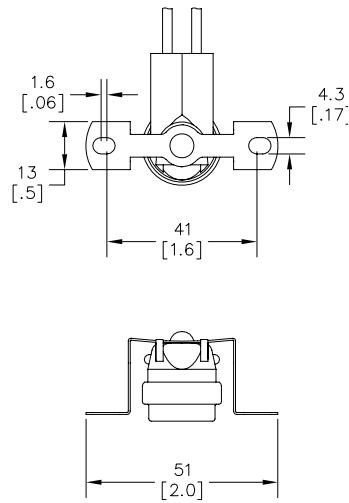
# TYPICAL PHYSICAL CHARACTERISTICS

Dimensions in mm (inches)

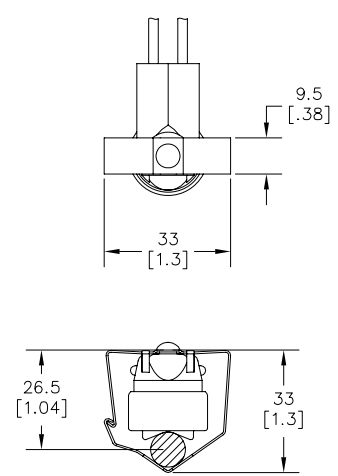
**Basic 3NT Dimensions**



**Surface Mount Clip**

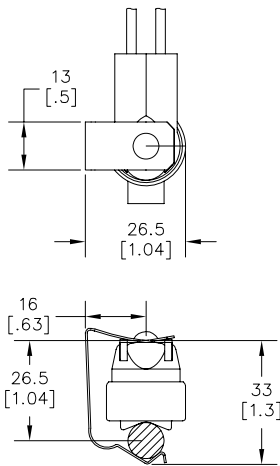


**Locking Tube Mount Clip (3/8 Inch Shown)**



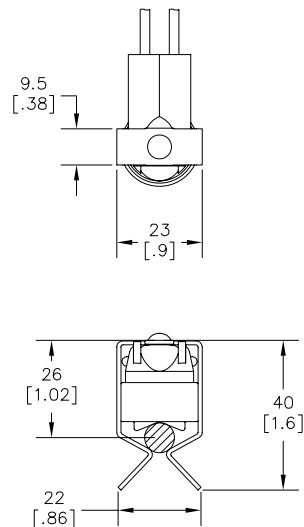
Additional Clips Available for [1/4], [5/16], [1/2], [5/8] t tubes

**Open Tube Mount Clip (3/8 Inch Shown at 90° CCW Rotation) 90° and 180° CW Rotations Available**



Additional Clips Available for [1/4], [5/16], [1/2], [5/8] tubes

**Snap Tube Mount Clip For 5/8 Inch and 1/2 Inch Tubes**



Additional Clips Available for [3/4], [7/8] tubes



## ORDERING OPTIONS

### Part Number

|                                |                              |           |          |          |             |
|--------------------------------|------------------------------|-----------|----------|----------|-------------|
|                                | <b>3NT</b>                   | <b>01</b> | <b>L</b> | <b>H</b> | <b>XXXX</b> |
| <b>Family</b>                  |                              |           |          |          |             |
| 3NT                            |                              |           |          |          |             |
| <b>Contact Material</b>        |                              |           |          |          |             |
| 01: Silver                     |                              |           |          |          |             |
| 11: Gold <12V or <100 mA       |                              |           |          |          |             |
| <b>Switch Opening Logic</b>    |                              |           |          |          |             |
| L: On Temp. Rise               |                              |           |          |          |             |
| F: On Temp. fall               |                              |           |          |          |             |
| <b>Dry Seal Construction</b>   |                              |           |          |          |             |
| H: High Temp. (Silicon rubber) |                              |           |          |          |             |
| N: No leads                    |                              |           |          |          |             |
| <b>ID Number</b>               |                              |           |          |          |             |
| -Temperature Code              | -Specifications              |           |          |          |             |
| -Wire Leads                    | -Terminals and Mounting Clip |           |          |          |             |

### Temperature Code

|                                     |          |           |          |           |
|-------------------------------------|----------|-----------|----------|-----------|
|                                     | <b>L</b> | <b>50</b> | <b>F</b> | <b>30</b> |
| <b>Operating Temperature</b>        |          |           |          |           |
| L: Limit                            |          |           |          |           |
| F: Fan                              |          |           |          |           |
| <b>Operating Temperature</b>        |          |           |          |           |
| Nominal Opening                     |          |           |          |           |
| Temperature                         |          |           |          |           |
| <b>Temp. Code</b>                   |          |           |          |           |
| C: Celsius                          |          |           |          |           |
| F: Fahrenheit                       |          |           |          |           |
| <b>Differential</b>                 |          |           |          |           |
| Difference between Nominal Open and |          |           |          |           |
| Nominal Close Temperature           |          |           |          |           |



## AGENCY APPROVALS & CERTIFICATIONS

|                            | <b>File/Report Number</b> | <b>Category</b>                     |
|----------------------------|---------------------------|-------------------------------------|
| UL (USA) <sup>(2)</sup>    | SA995                     | Category SDFY2                      |
| UL (CANADA) <sup>(2)</sup> | SA995                     | Category SDFY8                      |
| DEKRA (ENEC)               | 2014531.16                | EN60730-1, EN60730-2-9              |
| DEKRA (IECEX)              | 21862646400               | IEC60079-0, IEC60079-15<br>IEC60529 |

<sup>(2)</sup> Recognized to US and Canadian requirements by Underwriters Laboratories (UL873 and C22.2 No. 24)

### IMPORTANT NOTICE

These devices may not be used as service components, strictly for use by Original Equipment Manufacturer, not repair. **USERS ARE SOLELY RESPONSIBLE** for design application and function of the end use product. Users must evaluate the suitability of these devices to their application with respect to temperature settings, mechanical cycle life, electrical loading and environmental conditions. This product is not hermetically sealed, it should not be submerged in any liquid. This product is not rated as explosion proof and should not be applied in any application where flammable vapors, gases or dust may be present. End of life failure of this device may result in either open or closed circuit condition. Suitable "End of life" protection should be applied in series with this device per safety agency specifications.



## WARNINGS



### RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

**Failure to follow these instructions can result in serious injury, or equipment damage.**



### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARCH FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

**Failure to follow these instructions will result in death or serious injury**

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#### Как с нами связаться

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