Sensata

Technologies



WORLD CLASS **PFRFORMANCF**

The 1NT has been designed to be applied for use in many HVAC and appliance products as either a regulating or overtemperature safety switch.

The 1NT uses Klixon[®] technology and is available in several mounting options.

Sensata Technologies has been a leading global supplier of pressure sensors and switches for over 50 years.

KLIXON | 1NT SERIES **Fixed Temperature Thermostats**

Key Features

- ISO9001: 2000 certification
- Factory inspected for continuity and contact resistance
- · Global sales and technical support
- Ambient temperature rating from -40°C to 240°C (-40°F to 464°F)
- 1NT base provides:
 - Low cost
 - High temperature capability
 - Clean processing
 - High impact strength
 - Low static generation
- Bi-metal disc is factory pre-set to achieve: - Operation at requested temperatures

 - Tamperproof settings

Applications

- Microwave ovens
- Sandwich makers
- Rice cookers
- Hair dryers
- Fan heaters

- Product innovations include:
 - Solid metal-to-metal terminal construction
 - Current free spring
 - One piece transfer mechanism
- Switch actions:
 - Automatic reset: Available with both normally open and normally closed switch logic
 - Manual reset: Mechanical reset device
 - Trip free manual reset: UL M2 class rating that resists consumer tampering
 - One shot: meets agency requirements for single operation device
- Vacuum cleaners
- Gas / electric furnaces
- Espresso machines
- Tea makers
- Automotive / truck



Klixon® is a registered trademark of Sensata Technologies, Inc.

All dimensions mm (in.)

Available Constructions



Numbering System



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1NT Series Electrical Ratings

The 1NT series of thermostats has been recognized by safety agencies, including UL, Canadian–UL and KEMA. Agency ratings are presented below as a general guide. However, the temperature settings, mechanical, electrical, thermal and environmental conditions of the specific application may differ significantly from agency test conditions. Therefore, the user must not rely solely on the agency ratings presented here, but must perform its own testing of the product to confirm that the thermostat selected will operate as intended over the useful design life of the user's applications.

UL and C–UL

| Туре | Max. | Temp. | Cycles | Flantsian | Doting | |
|------------------|------|-------|----------|--------------------|-----------------------------|--|
| | °C | °F | (X 1000) | Electrica | i naung | |
| NT01, 02 | 204 | 400 | 100 | 120 Vac | 0 - 9 amps 10 - 17 amps* | |
| | | | | 240 Vac | 0 - 5 amps 6 - 17 amps* | |
| | | | | 277 Vac | 7.2 amps | |
| 1NT08, 15, 08E** | 204 | 400 | 1 + 5 | 240 Vac | 25 amps | |
| 1NT09, 10 | 204 | 400 | 1-Shot | 240 Vac 277 Vac | 25 amps 7.2 amps | |
| 1NT11, 20 | 204 | 400 | 100 | 125 VA 30 Vdc | 1 amp | |
| 1NT12, 19 | 204 | 400 | 1 + 5 | 125 VA | | |
| 1NT01E, 02E** | 204 | 400 | 100 | 120 Vac | 10 amps | |

* UL rated at these current levels at specific open/close temperatures. When applying to these electrical levels, nominal open/close temperatures must be considered to determine if the thermostat selected will operate as intended in the user's application. Please consult a Sensata Engineer for additional clarification.

** "E" means exposed disc.

Standard Temperatures, Tolerances and Differential

Automatic Reset Thermostats

| Nomin | al Top | Min. B | ottom | n e Differential | | Standard Tolerances | | | |
|------------------------------|--------------------------------|-----------|------------|--|--|------------------------------|-------------------------------|-------------------------------|---------------------------------|
| Tempe | erature | Tempe | rature | | | Open | | Close | |
| °C | ۴ | °C | °F | °C | °F | °C | ۴ | °C | °F |
| 18 to 27 | 65 to 80 | -33 | -26 | 11 to 16 17 to 21 22 to 33 | 20 to 29 30 to 38 39 to 59 | ±3.0 ±3.0 ±3.0 | ±5.5 ±5.5 ±5.5 | ±4.0 ±4.5 ±5.5 | ±7.5 ±8.5 ±10.0 |
| 28 to 80 and *81 to 93 | 81 to 176 and 177 to 199 | -33 50 | -26 122 | 11 to 13 14 to 16 17 to 33 | 20 to 23 24 to 29 30 to 59 | ±3.0 ±3.0 ±3.0 | ±5.5 ±5.5 ±5.5 | ±4.0 ±4.5 ±5.0 | ±7.5 ±8.5 ±9.0 |
| *94 to 121 | *200 to 249 | 50 | 122 | 11 to 16 17 to 21 22 to 33 34 to 55 | 20 to 29 30 to 38 39 to 59 60 to 99 | ±3.5 ±3.5 ±3.5 ±5.5 | ±6.5 ±6.5 ±6.5 ±10.0 | ±4.5 ±5.5 ±6.5 ±10.0 | ±8.5 ±10.0 ±12.0 ±20.0 |
| 122 to 149 | 250 to 300 | 50 | 122 | 14 to 21 21 to 33 34 to 55 | 24 to 38 39 to 59 60 to 99 | ±4.0 ±4.0 ±5.5 | ±7.5 ±7.5 ±10.0 | ±5.5 ±8.0 ±11.0 | ±10.0 ±14.5 ±20.0 |
| 150 to 177 | 301 to 399 | 50 | 122 | 22 to 33 34 to 44 45 to 55 | 39 to 59 60 to 79 80 to 99 | ±5.0 ±5.5 ±5.5 | ±9.0 ±10.0 ±10.0 | ±9.0 ±11.0 ±11.0 | ±16.5 ±20.0 ±20.0 |
| 178-204** | 351 to 399 | 50 | 122 | 22 to 33* 34 to 44 45 to 55 | 39 to 59 60 to 79 80 to 99 | ±5.0 ±5.5 ±5.5 | ±9.0 ±10.0 ±10.0 | ±9.0 ±10.0 ±10.0 | ±16.5 ±20.0 ±20.0 |

* Not valid for Fan Devices

** Top Temp for Fan Devices cannot exceed 380°F (193°C)

| KEMA | |
|------|--|
| | |

| Туре | Max. Temp. | Cycles (X 1000) | Electrical | | |
|-----------|------------|---------------------------------|---|--|--|
| | °C | (unless otherwise specified) | (Rating)* | | |
| 1NT01, 02 | 204 | 100 | 240 Vac 0 - 5 amps (1.66)A 6 - 13.5 amps (1.66)A** | | |
| | | 30 30 | 240 Vac 16(5)A 400 Vac 4(1)A | | |
| 1NT02TL | 204 | 1 cycle | 240 Vac 16(5)A | | |
| 1NT08 | 204 | 10 10 | 240 Vac 16(5)A 400 Vac 4(1)A | | |
| 1NT09 | 204 | 1 cycle | 240 Vac 16(5)A | | |
| 1NT11 | 204 | 100 | 30 Vdc1A | | |
| 1NT15 | 204 | 10 | 240 Vac 16(5)A | | |
| 1NT20 | 204 | 100 | 30 Vdc1A | | |

* Parenthesis indicate inductive load ratings.

** KEMA rated at these current levels at specific open/close temperatures. When applying to these electrical levels, nominal open/close temperatures must be considered to determine if the thermostat selected will operate as intended in the user's application. Please consult a Sensata Engineer for additional clarification.

Manual Reset and One-Shot Thermostats

| Nomin Tempe | al Top rature | Open Tolerances | | |
|----------------|------------------|--------------------|-------|--|
| °C | °F | °C | °F | |
| <60 | <140 | ±4.0 | ±7.5 | |
| 61 TO 160 | 141 to 320 | ±5.0 | ±9.0 | |
| 161 TO 204 | 321 to 399 | ±6.0 | ±11.0 | |



THERMOPLASTIC BASE

Accessories and Options Cup Styles



All dimensions mm (in.)

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Accessories and Options (cont.)



*10A Max. on all terminals 0.51 (.020) thick All dimensions mm (in.)

Agency Region Type UL/C-UL KEMA METI N. America Europe Japan 1NT01, 02 1NT08 . . . 1NT09, 10 • • • 1NT11, 12, 19, 20 • • • 1NT15 • . . 1NT01E, 02E . **Reference Numbers** File: E9977 KEMA cert # Category: XAPX2 EN2014531.16 XAPX8

1NT Series Agency Listings

Important Notice

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. These devices are not environmentally sealed and have exposed electrical components. They are not intended for use in applications where exposure to condensed or dripping liquids, immersion in liquid, or exposure to other environmental contaminants may occur. In such cases, use of environmentally sealed devices such as the 3NT is recommended. Excessive mechanical cycling, high electrical loading or exposure to liquids or environmental contaminants as noted above can compromise electrical insulating properties of the device. Such conditions may result in insulation breakdown and accompanying localized electrical heating. The device may remain permanently closed or open as a result of these conditions, as well as at normal end-of-life.

Sample Order Placement

To enable Sensata Technologies to serve you in a quicker, more efficient manner, please be prepared to provide the following information when requesting samples:

- Detailed application description
 Estimated yearly usage.
 Opening and closing temperatures
 Max. temperature tolerances allowable
 Switch type
 Mounting style desired
 Terminal orientation and material
 Electrical load

Other conditions which are likely to affect the 1NT operation should also be described. These include:

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- Maximum temperature exposure
- Location with respect to heat source
 Temperature transfer medium (air, metal surface, etc)
 Possible contamination sources (lint, chemical fumes, liquid, condensation, humidity, etc.)
- When ordering thermocouple samples, specify whether J, K, or T type and the lead length desired. Standard wire size is 30 Ga..

Thermostat Handling Tips

- Exposed disc devices should be kept free of dust and particulates, liquid and condensation. The face of the disc should never be snapped.
- 2. Mounting screws and drivers for use with smaller integral cups and flanges should be sized to provide adequate clearance to the thermostat body.
- 3. The installation force applied to the cup face should not exceed 66.7N (15 lbs.)
- The maximum reset force on the manual reset and trip free button is 22.2N (5 lbs.).

Marketing / Sales Offices

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Brazil

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Sensata **Technologies**

The World Depends on Sensors and Controls

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