

## NTC Thermistors, Steel Capped Sensors



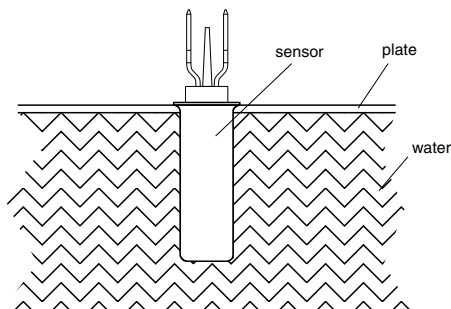
### QUICK REFERENCE DATA

| PARAMETER                                                                          | VALUE             | UNIT      |
|------------------------------------------------------------------------------------|-------------------|-----------|
| Resistance value at 25 °C                                                          | 12K               | $\Omega$  |
| Tolerance on $R_{25}$ -value                                                       | $\pm 4.0$         | %         |
| $B_{25/85}$ -value                                                                 | 3730              | K         |
| Tolerance on $B_{25/85}$ -value                                                    | $\pm 1.5$         | %         |
| Operating temperature range at zero dissipation                                    | -25 to +110       | °C        |
| Max. short term operation                                                          | 130               |           |
| Resistance value at 0 °C                                                           | $35\,875 \pm 7\%$ | $\Omega$  |
| Resistance value at 85 °C                                                          | $1475 \pm 3\%$    |           |
| Resistance value at 100 °C                                                         | $963 \pm 4.2\%$   |           |
| Maximum power dissipation at 55 °C                                                 | 250               | mW        |
| Dissipation factor in still air (for information only)                             | 7.5               | mW/K      |
| Dissipation factor in still water (for information only)                           | 18                |           |
| Thermal time constant in still air ( $\tau$ )                                      | 285               | s         |
| Response time <sup>(1)</sup>                                                       | 13 to 16          |           |
| Temperature gradient <sup>(2)</sup>                                                | $\leq 0.02$       | K/K       |
| Minimum dielectric withstanding voltage between terminals and capsule during       |                   | $V_{RMS}$ |
| 1 min                                                                              | 1500              |           |
| 10 s                                                                               | 1650              |           |
| Minimum insulation resistance between terminals and capsule at 100 V <sub>DC</sub> | 100M              | $\Omega$  |
| Weight                                                                             | $\approx 8$       | g         |

#### Notes

- <sup>(1)</sup> The response time is the time necessary to change 63.2 % of the total difference between the initial and the final body temperature, when subjected to a step function change in ambient temperature from 25 °C air to boiling water at 100 °C
- <sup>(2)</sup> The temperature gradient is the difference per degree Celsius between the true temperature of the liquid (water) and the temperature measured by the sensor

### METHOD OF APPLICATION



### FEATURES

- High mechanical strength
- FASTON connectors for easy connection
- Accuracy of  $\pm 1$  °C between 25 °C and 85 °C
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### APPLICATIONS

- Sensors for water temperature control in, for example:
  - Washing machines
  - Dish washers
  - Heat pumps
  - Electric boilers

### DESCRIPTION

These thermistors have a negative temperature coefficient. The device consists of a soldered ceramic chip which is mounted in a capsule of stainless steel SS304 and provided with two 6.3 mm tinned spade connectors.

### MOUNTING

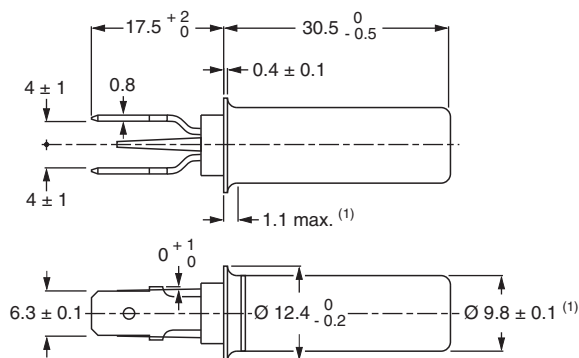
Connect to two FASTONS 6.3 x 0.8 (0.25" x 0.032") receptacle or equivalent and mounted with a watertight sealing.

### DESIGN-IN SUPPORT

For complete curve computation, visit: [www.vishay.com/thermistors/ntc-curve-list/](http://www.vishay.com/thermistors/ntc-curve-list/)

### DIMENSIONS in millimeters

Component outline



### ELECTRICAL DATA AND ORDERING

| $R_{25}$<br>( $\Omega$ ) | $R_{25}$ -TOL.<br>( $\pm$ %) | $B_{25/85}$<br>(K) | $B_{25/85}$ -TOL.<br>( $\pm$ %) | SAP MATERIAL AND ORDERING NUMBER |
|--------------------------|------------------------------|--------------------|---------------------------------|----------------------------------|
| 12 000                   | 4                            | 3730               | 1.5                             | NTCAIMME3C90042                  |



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