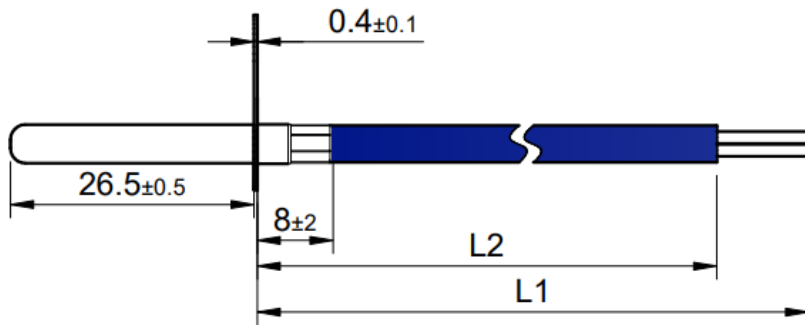


## DESCRIPTION

NTC Thermistor assembled with PTFE insulated 24AWG multistrand, NPC black/white colour, encapsulated with the connector at the end terminal(if required).



## SPECIFICATIONS

SL NO	PARAMETER	VALUE	UNIT
1	Resistance at 25°C	5-100	KΩ
2	Resistance Tolerance	1-5	%
3	Beta Value	3350-4060	K
4	Beta Tolerance	1, 2	%
5	Insulation Resistance	100	MΩ
6	Isolation Strength (500V DC)	1500	Vac
7	Response Time	8	Sec
9	Storage Temperature	-30 to 85	°C
10	Operating temperature	-30 to +250	°C

## FEATURES

- High Stability & reliability
- Rugged construction
- Flame Resistant and Retardant
- High measuring accuracy
- Easy to install

## APPLICATIONS

- Industrial applications
- EV Battery Pack Temperature Sensing
- BMS
- Automobile sector

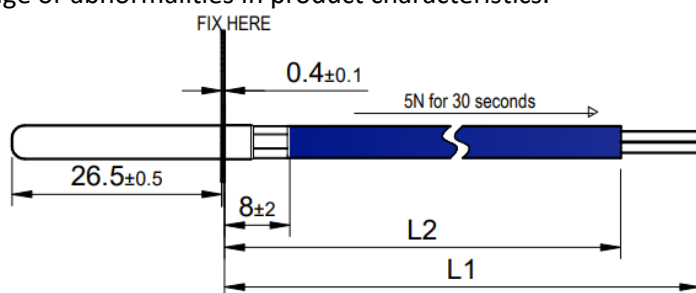
## RELIABILITY SPECIFICATION

Description	Test Conditions	Characteristics Drift
<b>Dry Heat Test</b>	Elements are placed in a oven of temp. at $240^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 1000 (+48, -0)hr. After test the elements are stored in room temperature for one hour.	$\Delta R$ after test are less than $\pm 3\%$ . $\Delta B$ after test are less than $\pm 2\%$ .
<b>Cold Test</b>	Elements are placed in an oil bath of temperature at $-30^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 1000 (+48, -0)hr. After test the elements are stored in room temperature for one hour.	$\Delta R$ after test are less than $\pm 3\%$ . $\Delta B$ after test are less than $\pm 2\%$ .
<b>Thermal Shock Test</b>	$-30^{\circ}\text{C}$ (Air Chamber, 3 minute) $\rightarrow$ RT(Air, under 1min) $\rightarrow$ $200^{\circ}\text{C}$ (Air Chamber, 3 minute) for 5000 cycle. After test the elements are stored in room temperature for one hour.	$\Delta R$ after test are less than $\pm 3\%$ . $\Delta B$ after test are less than $\pm 2\%$ .
<b>Damp Heat Test</b>	Elements are placed in a chamber of temp. at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and 85%RH for 500 (+48, -0)hr. After test the elements are stored in room temperature for one hour.	$\Delta R$ after test are less than $\pm 3\%$ . $\Delta B$ after test are less than $\pm 2\%$ .

## Mechanical Test

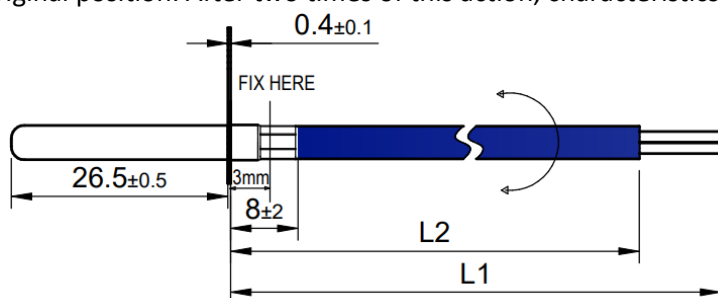
## 1. Terminal tensile strength test

Load tensile stress of 5N to axial direction slowly and keep it for  $30 \pm 5$  sec. After the test characteristics, there should not be any physical damage or abnormalities in product characteristics.



## 2. Terminal bending test

Lead wire will be fixed at 3mm from its probe end. Apply load of 29.4N to lead wire so that it makes 90 degree. Then put it back to original position. After two times of this action, characteristics, appearance of sensor shall not change.



## SOLDERING (\*)

1. Soldering Temperature:  $320^{\circ}\text{C}$  Max.
2. Soldering Duration: 6.0 Second Max.
3. Preheat Temperature:  $160^{\circ}\text{C}$  for 3.0 Sec.

(\*instruction to customer)

## PART LIST

Ordering Part Number	R <sub>25</sub>		B25/100	
	kΩ	± %	K	±%
TNAM-2011X-XXXRXBXL1XXXL2XXX CXX/SXX	5K	1.3	3497	1, 2
TNAM-2011X-XXXRXBXL1XXXL2XXX CXX/SXX	10K	1, 2	3497	1, 2
TNAM-2011X-XXXRXBXL1XXXL2XXX CXX/SXX	20K	1, 2	3995	1, 2
TNAM-2011X-XXXRXBXL1XXXL2XXX CXX/SXX	30K	1, 2	3977	1, 2
TNAM-2011X-XXXRXBXL1XXXL2XXX CXX/SXX	49.8K	4.3	4000	1, 2
TNAM-2011X-XXXRXBXL1XXXL2XXX CXX/SXX	100K	1, 2, 4	4060	1, 2

## PART NUMBER SYSTEM

T	N	A	M	- 2011X	XXX	RX	BXX	L1XXX	L2XXX	CXX/ SXX	
THERMOSEN	NTC	ASSEMBLY	METAL HOUSING	SERIES CODE	RESISTANCE VALUE	RESISTANCE TOLERANCE	BETA VALUE	WIRE LENGTH (eg: 101 for 100mm (10x10 <sup>3</sup> ), 102 for 1000mm (10x10 <sup>3</sup> ))	SLEEVE LENGTH (eg: 101 for 100mm (10x10 <sup>3</sup> ), 102 for 1000mm (10x10 <sup>3</sup> ))	CONNECTOR TYPE	TERMINAL STRIP LENGTH

## RT CHART

Please refer to our website <https://www.thermosen.com/rt> for respective RT charts.

## CUSTOM DESIGN &amp; SUPPORT

- Other resistance curve & tolerance are available on request
- End wire stripped and Tinned or with connector assembly.
- Part can be supplied with customised connectors

## PACKING

- Bulk layer packing
- 100 in poly bag
- Custom packing solution will be provided.

**Consult Thermosen Technologies Pvt. Ltd. for custom product requirement**

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