



Sensing Temperature the way you need!

NTC Thermistor Assemblies , RTD , Temperature Sensors ,
Cable Harnesses , Thermocouples



THERMOSEN

Temperature Sensors

✓ Reliability ✓ Consistency ✓ Affordability ✓ Compliances

Thermosen Technologies Pvt Ltd is an IATF certified company manufacturing a wide range of Temperature sensors with in-house capability of custom design & development of NTC Thermistor, RTD sensor assemblies Thermocouple sensors, Thermal switch assemblies, which include different type of temperature sensor assemblies. Also, Thermosen provides Wire Harness Solutions for Automotive, Home appliance, HVAC, Power Electronics, Industrial automation, medical and space Industries.



THERMALLY
Protected -

Vision and Mission

Thermosen have a clear vision to become a global leader in Temperature sensing domain.

Our Mission is to build long term relationship with customer by pursuing business through innovation and advance Technology

उपरोक्त केंद्र
के अंतर्गत
वैज्ञानिकों के
समूहों में कार्य करने वाले
विशेषज्ञों के
समूहों के
केन्द्र



Government of India
Department of Space
U.R. RAO SATELLITE CENTRE
Post Box No - 1195, HAL, Airport Road
Venkateswara Hills, Bangalore - 560 017, India
Telephone
Fax

URSC-CQACD-QC-001

10th January, 2024

Certificate of Qualification

This is to certify that U.R. Rao Satellite Centre, Bengaluru has qualified NTC Thermistors 10K Ω (Part Number -TNT-10116-L151) manufactured by Thermosen Technologies Pvt. Ltd, Bengaluru for usage in ISRO Space Programme.

The qualification tests were performed in accordance with GSFC S311-P18.

The Certificate of Qualification is valid upto January 2026.

(Sandhya V Kamat)
Group Director, CQCG

(Shanmuga Sundaram N)
Deputy Director, SRQA



Thermosen Technologies Pvt Ltd.

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NTC Thermistors (*non-insulated*)

TNT series



Technical Specifications:

Resistance: 1k, 2k, 2.25k, 3k, 4.7k, 5k, 10k, 12k, 15k, 20k, 30k, 47k, 50k, 95k, 100k, 150k, 200k with tolerance from ± 0.25 to 5%.

Beta Value: 3380-4500 with tolerance from ± 0.25 to 5%

Operating Temp Range: -40 to 125°C

Wire: Non-insulated Nickel-Plated Copper insulated Leaded wire, from 0.2mm to 0.6mm

Response Time: upto 5 Seconds

Applications:

PCB for power Electronics

Small appliance in consumer Electronics

Industrial equipments

Automotive sector

NTC Thermistors (*insulated*)

TNBTE, TNAE-A series



Technical Specifications:

Resistance: 1k, 2k, 2.25k, 3k, 4.7k, 5k, 10k, 12k, 15k, 20k, 30k, 47k, 50k, 95k, 100k, 150k, 200k with tolerance from ± 0.25 to 5%.

Beta Value: 3380-4500 with tolerance from ± 1 to 5%

Operating Temp Range: -40 to 105°C, -40 to 125°C, -40 to 150°C

Wire: PVC, XLPE, Teflon insulated wire ranging from 20 to 30AWG.

Response Time: Upto 5 Seconds

Applications:

HVAC Applications

Power Electronics

Battery Temperature (BMS)

Heating/Cooling devices



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NTC LUG Assemblies

TAR, TANR, TANRD, TANRM, TANRH, TANRF, TANRAI,
TANRAK, TANRAI, TANRAT Series



Technical Specifications:

Resistance: 1k, 2k, 2.25k, 3k, 4.7k, 5k, 10k, 12k, 15k, 20k, 30k, 47k, 50k, 95k, 100k, 150k, 200k with tolerance from ± 1 to 5%.

Beta Value: 3380-4500 with tolerance from ± 1 to 5%

Operating Temp Range: -40 to 105°C, -40 to 125°C, -40 to 150°C, -40 to 250°C

Wire: PVC, XLPE, Teflon insulated, Braided, Non-braided wire ranging from 20 to 30AWG.

Response Time: Upto 5 Seconds

Applications:

Consumer Appliances
Battery temperature monitoring
Power Electronics
Automotive Harness

NTC Moulded Sensor Assemblies:

TNAP Series



Technical Specifications:

Resistance: 1k, 2k, 2.25k, 3k, 4.7k, 5k, 10k, 12k, 15k, 20k, 30k, 47k, 50k, 95k, 100k, 150k, 200k with tolerance from ± 1 to 5%.

Beta Value: 3380-4500 with tolerance from ± 1 to 5%

Operating Temp Range: -40 to 150°C

Wire: PVC, XLPE, Teflon insulated wire ranging from 20 to 30AWG.

Response Time: 5-20 Seconds

Applications :

Refrigeration Appliances
Cold Storage
Cooling Devices



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NTC Metal Housing Assemblies

TNAM, TANMC Series



Technical Specifications:

Resistance: 1k, 2k, 2.25k, 3k, 4.7k, 5k, 10k, 12k, 15k, 20k, 30k, 47k, 50k, 95k, 100k, 150k, 200k with tolerance from ± 1 to 5%.

Beta Value: 3380-4500 with tolerance from ± 1 to 5%

Operating Temp Range: -40 to 105°C, -40 to 125°C, -40 to 150°C

Wire: PVC, XLPE, Teflon insulated wire ranging from 20 to 30AWG.

Response Time: Upto 5 Seconds

Applications:

Automotive Sector

Power Electronics

BMS

Motor Windings

HVAC

Boiler Appliances

NTC Radial Glass Thermistor Assemblies:

TNAS Series



Technical Specifications:

Resistance: 3.359K, 5K, 49K with tolerance from ± 1 to 5%

Beta Value: 3497, 4000 with tolerance from ± 1 to 5%

Operating Temp Range: -30 to 200°C

Wire: 0.3mm dumet wire with Teflon Sleeve

Response Time: Upto 5 Seconds

Applications:

BMS

Motor Winding

Boiler Appliances

HVAC Applications



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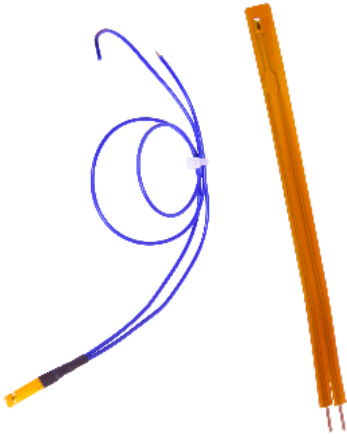


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NTC Film Thermistor Assemblies: TNA-F Series



Technical Specifications:

Resistance: 10K with tolerance 1%

Beta Value: 3435K with Tolerance 1%

Operating Temp Range: -30 to 120°C

Wire: 22 AWG UL1569 Wire

Response Time: Upto 5 Seconds

Applications:

BMS

Motor Winding

Boiler Appliances

HVAC Applications

NTC Special Housing assemblies: TNAC/TNAS Series



Technical Specifications:

Resistance: 1k, 2k, 2.25k, 3k, 4.7k, 5k, 10k, 12k, 15k, 20k, 30k, 47k, 50k, 95k, 100k, 150k, 200k with tolerance from ± 1 to 5%. with tolerance from ± 1 to 5%

Beta Value: 3380-4500 with tolerance from ± 1 to 5%

Operating Temp Range: :-40 to 105°C, -40 to 125°C, -40 to 150°C, -40 to 200°C

Wire: PVC, PFA, XLPE, Teflon insulated wire ranging from 20 to 30AWG.

Response Time: 5-20 seconds.

Applications:

Temperature sensing in Batteries

Induction Cooktops

Washing Machines

Industrial Appliances



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IC Sensor Assembly: TDA-M Series



Technical Specifications:

Resistance: 1k, 2k, 2.25k, 3k, 4.7k, 5k, 10k, 12k, 15k, 20k, 30k, 47k, 50k, 95k, 100k, 150k, 200k with tolerance from ± 1 to 5%.

Beta Value: 3380-4500 with tolerance from ± 1 to 5%

Operating Temp Range: -40 to 105°C, -40 to 125°C, -40 to 150°C

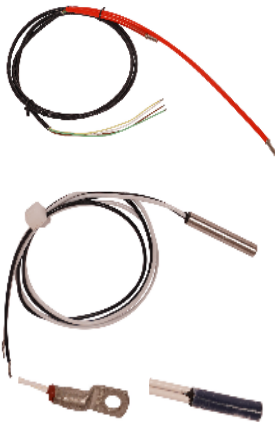
Wire: PVC, XLPE, Teflon insulated wire ranging from 20AWG to 30 AWG.

Response Time: 20 Seconds

Applications:

Power Electronics
Industrial Appliances

RTD Sensor assemblies: TRAM Series



Technical Specifications:

Resistance: 100 and 1000 Ohm with tolerance from ± 1 to 10%

Temperature Coefficient: 3850 ppm/K

Grade: Class A/Class B

Operating Temp Range: -40 to 300°C

Wire: PVC, XLPE, Teflon insulated wire ranging from 20 to 30AWG.

Response Time: 8 Seconds

Applications:

Automotive Sector
Power Electronics
BMS
Motor Windings
Consumer Electronics



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Product Reliability Testing Service

At Thermosen, we have inhouse lab setup to conduct different environmental, electrical and mechanical test. We can offer different tests including: Thermal cycle, Thermal Shock, humidity, cold storage, high temperature storage, Vibration, Salt spray etc. Our test services helps our clients for NPD initiatives, validating components & regulatory compliance

We can also offer end to end test consultancy to meet product compliance standards like- UL, AIS, MIL or space grade qualification.

Trading Products

Thermosen also offers products to meet the kitting requirement including:

- RTD Transmitters (PT100/PT1000) with 4-20mA or Voltage output. Also available with USB Interface
- Humidity sensor SS probe and PCB Module
- Slot RTD: Simplex/Duplex/Triplex with custom dimensions using Platinum/Copper wire wound. Available from PT50 to Pt1000
- DISC NTC: Temperature compensating NTC, a cost effective solution to protect electronic boards from over current. Available in standards 5D15, 5D25, 10D9, 10D15, 20D9 and more
- Sensors: Applications demanding measurement & control using sensor/transducer for Level, Pressure, Proximity, Speed, Temperature etc with Resistive/ capacitive or IR working principle.

Applications:

- > IOT
- > Automotive Sector
- > Industrial Appliances
- > Power Electronics



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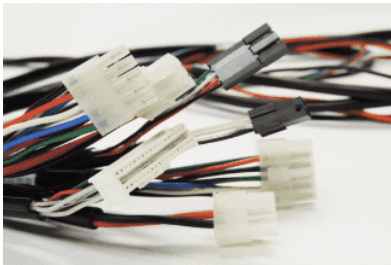
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WIRE HARNESSING SOLUTIONS

Thermosen offers custom cable and wire harness solutions, designed to organize multi-wire systems in application for Consumer Electronics, Automotive, Instrumentation and Industrial automation. From design to production, we have the right resources, experience, compliance and capacity to serve high volume with precision in shorter lead-time.

Cable and wiring harnesses can be customized in limitless style and material options, including:

- Cables: PVC, PTFE, FR, Shielded, Ribbon, power & data cables
- Connectors: wire to wire, wire to board including multi pin connector and terminals
- Cable ties, Heat-shrink tubes, Variety of Sleeve & Lacing, Custom color Tag/Labels/Barcoding
- Insulation materials of all kinds, Custom shielding, Polypropylene, nylon, and paper fillers
- Wide range of molded components, Lugs, clips, gourmet, custom component



Interested in a Custom Cable Assembly Solution?

Contact our team of experts to learn more about our broad range of custom capabilities.

[Speak To An Expert](#)



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THERMOCOUPLES

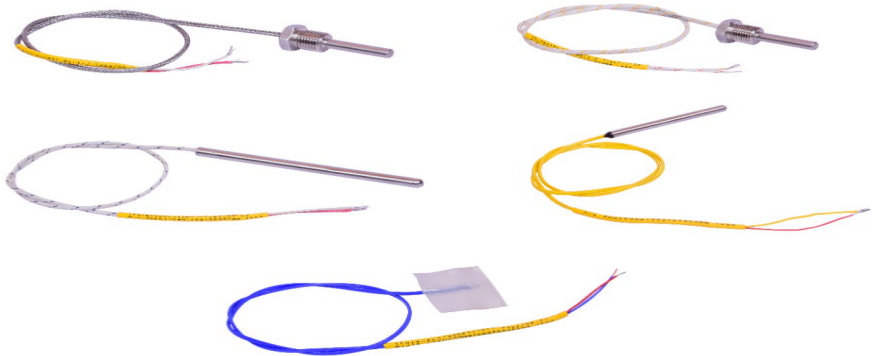
Thermocouples are essential temperature sensors used across various industries and applications to measure temperature accurately and reliably.

It can be customized with various color codes and the shape can be modified as per the application demand. The applications include Packaging industries, Battery application, Automation, 3D-Printing, Locomotives and Medical applications

THERMOCOUPLE COLOUR CODES:

Thermocouple Extension Type	ANSI	BS	DIN	NFC	JIS	IEC
JX Iron +						
Constantan [®] -						
KX Chromel [®] +						
Alumel [®] -						
TX Copper +						
Constantan [®] -						
EX Chromel [®] +						
Constantan [®] -						
NX Nirosil [®] +						
Nisil [®] -						
SX Copper +						
Alloy II -						

TC Type	ANSI Std	BS Std	DIN Std	JIS Std	IEC Std
J Type	White(+ve) Red(-ve)	Yellow(+ve) Blue(-ve)	Red(+ve) Blue(-ve)	Red(+ve) White(+ve)	Black(+ve) White(-ve)
K Type	Yellow(+ve) Red(-ve)	Brown(+ve) Blue(-ve)	Red(+ve) Green(-ve)	Red(+ve) White(-ve)	Green(+ve) White(-ve)



Technical Data	
Housing Types	Probe type, Washer Type, Rotating bolt type, Bend type, Lug type.
Diameter Tolerance	±0.1 mm (Customizable).
Extension Cable length	100mm (Customizable).
Sheath material	SS304, SS316 (500°C rated).
Junction	Grounded / UN-Grounded.



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PRODUCTION FLOOR

Automated process for sleeve/Wire cutting stripping, using programmable machines to minimize human intervention.

LINE PRODUCTION

With capacity of 60000 sensors everyday; production line run in 2 shifts to handle sudden spike in adherence to the defined processes.



Reliability Testing

To ensure quality performance of the products, Reliability tests are conducted on periodic basis for continual improvement.

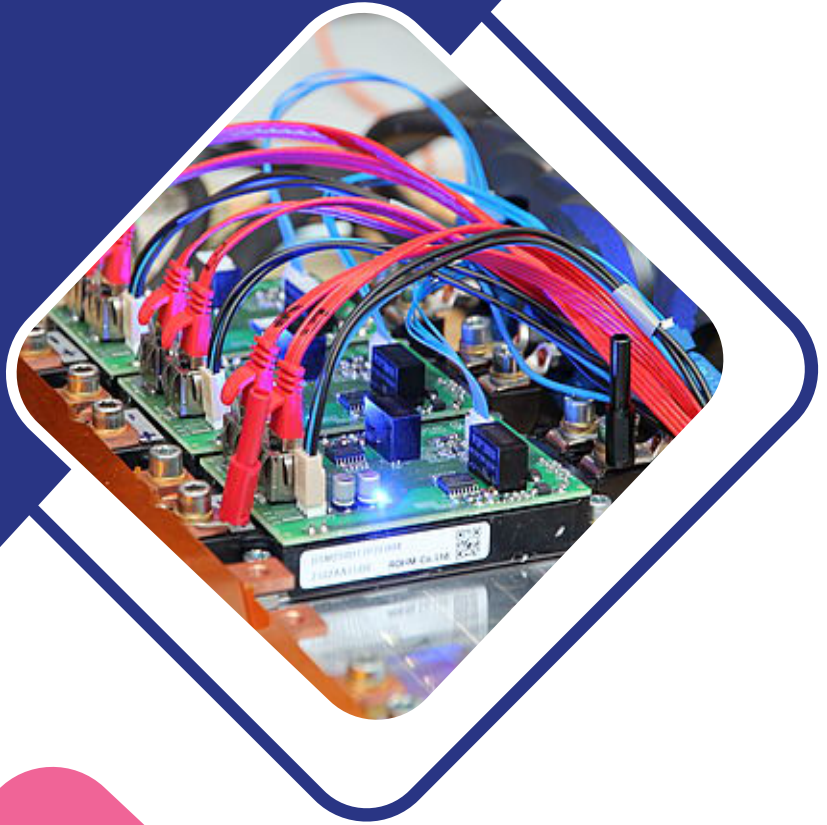


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