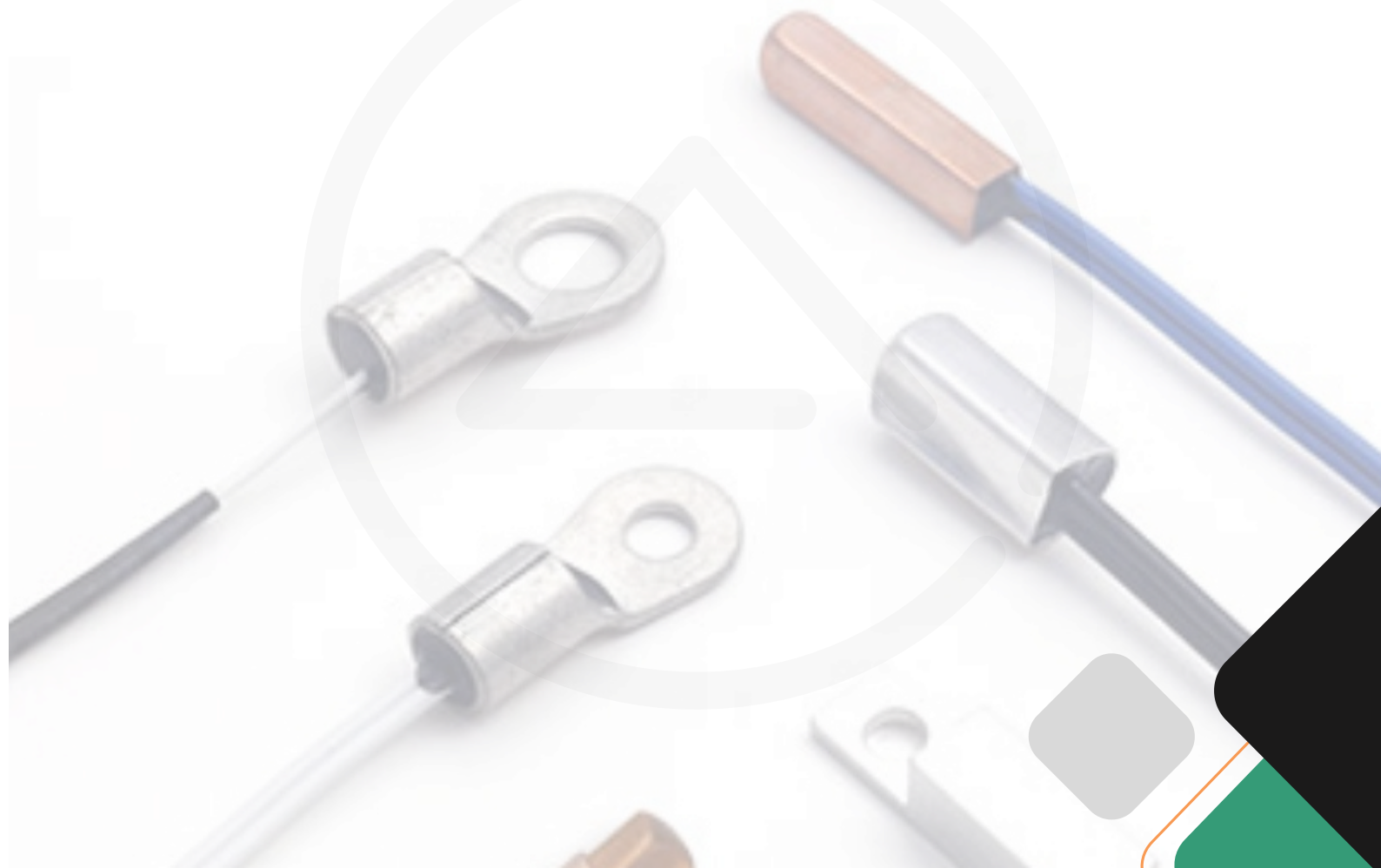




# **NTC Thermistor for Air Conditioning / Refrigerator /chiller temperature measurements**

NTC Thermistor based assembled sensors widely used for air-conditioning,refrigerator and chiller type temperature measurements



## Registered office

Zen Triad Door no. 18/331/32, 2nd Floor EDENS Complex, Kanjani Road,  
Chungam, Thrissur, Kerala, India, Pin - 680 004.  
Office PH: +91 8086861017, +91 6282940030

## Manufacturing unit:

ZENTRIAD ELECTROLINK CORP  
Industrial Development Plot No : 3  
Varavoor Industrial Estate Thalssery Road Varavoor  
8086861017 kerala

ZENTRIAD  
Second Floor, 500 SQ.FEET, Plot No:- E-69, Hall No.5, GIDC Road, Sector  
26, Gandhinagar, Gujarat, Pin-382028  
Mob: +91-8980802380, +91-9778170597

## Temperature Measurement

This type of sensors using in winding coil protection in stabilizer transformers , motor coil windings , and related coil protection at high temperature faults, We can set the customized requirements and support for the particular application like.

# Applications

- Ambient & Coil temperature measurement
- Water pipe in AC pipe housings and in water lines
- Inverters, UPS, Air Conditioners etc.
- Water Heaters, Air Warmers, Chillers
- Refrigerators, Freezers, Air-cooled systems etc.
- Washing Machines, Driers, Boilers etc...



- HVAC vent temperature (automotive)
- In cabin temperature (automotive)
- Air Temperature
- HVAC airflow monitoring (industrial)
- Industrial automation - Ambient environment and process monitoring

# Features

- High accuracy OEM sensor
- High sensitivity and reliability
- Excellent interchangeability
- High reliability and high voltage / temperature withstanding
- Thermistors encapsulated in Resin/Powder epoxy coated

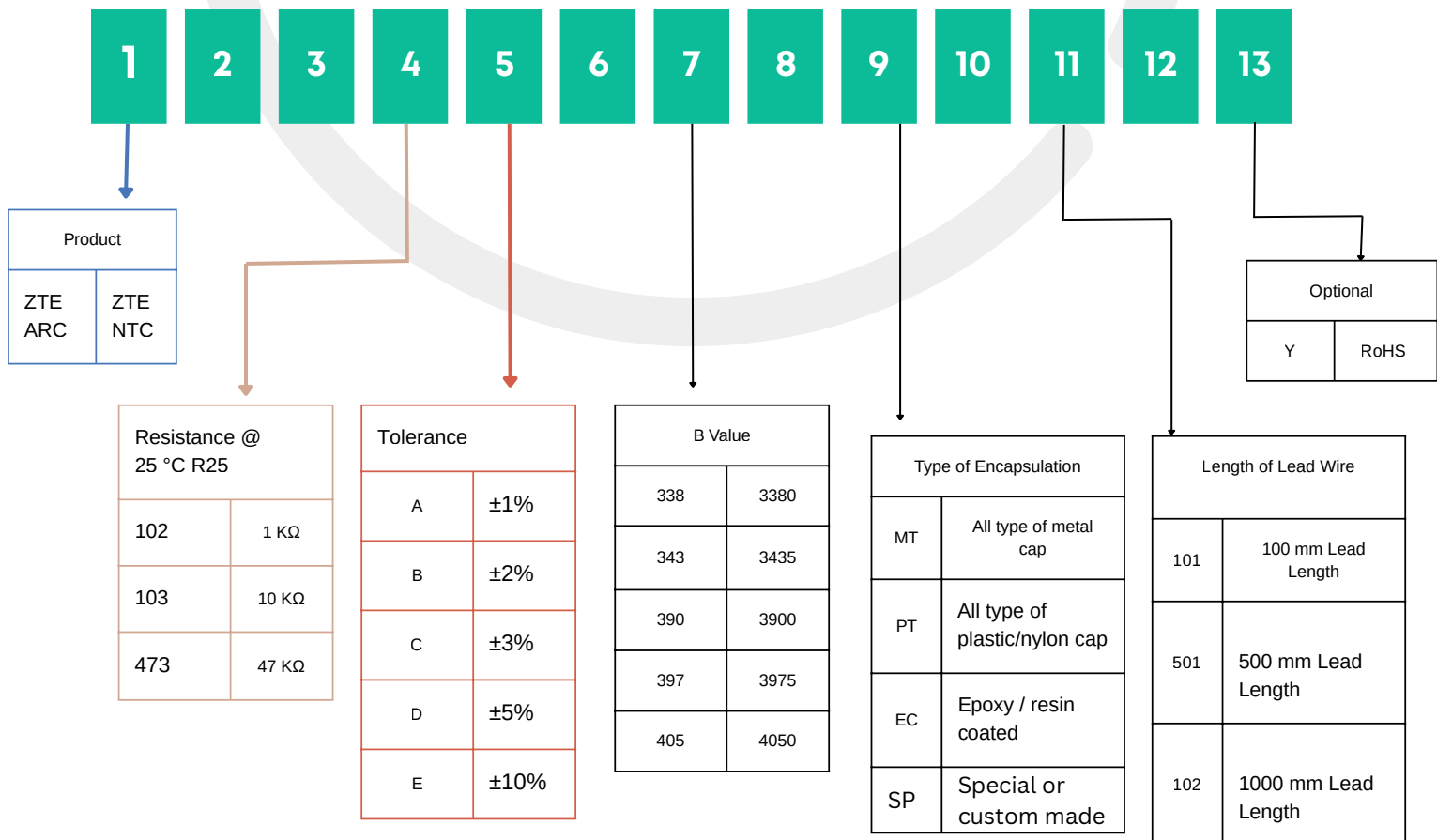
# Model image



# General Parameter Data

Parameters	Permissible values
Lower operating Temperature in °C	-40
Higher operating Temperature in °C	+105
Maximum permissible current at 25°C	10mA
Max. Power ( at 25°C) / P25	~60 mW
Resistance Tolerance ( $\Delta R/RN$ )	$\pm 1\%$ , $\pm 2\%$ , $\pm 3\%$ , $\pm 5\%$
Rated Temperature (TN)	25°C
Beta Tolerance ( $\Delta\beta/\beta N$ )	$\pm 1\%$ , $\pm 2\%$ , $\pm 3\%$
Dissipation factor in air ( $\delta_{th}$ )	~5 to 10 mW/K
Thermal cooling time constant in air ( $\tau_c$ )	~30 Sec
Heat capacity (Cth)	~22.5 mJ/K
Thermal Response time in oil (in sec)	10 to 14 Sec
Insulation Resistance ( Rins) (V=100V DC, t= 1 min)	>100 M $\Omega$
High Voltage test(t=1 sec) / (Vtest)	1.5 kV AC

# Part Numbering



## Type of encapsulations (caps) available

MT – Ø4mm to Ø6mm / 25mm length Nickel plated Copper / Brass one side closed flat/ balled

MT – Ø4mm to Ø6mm / 25mm length SS304 GRADE SS tube one side closed flat/ balled

PT – Customized diameter nylon / plastic / rubber mixed in white and black shades

EC – Black epoxy / resin coated type

SP – IN Customized specific requirements in shape and dimensions

## Type of lead wire in use

# – WHITE / BLACK PVC Insulated tinned multi stranded Copper Wire AWG 24 - 26

# – Black XLPE Insulated tinned multi stranded Copper Wire AWG 22 - 26

# – Red/Blue/ Yellow PTFE Insulated tinned single core Copper Wire AWG 24 - 30

# – Blue/ Yellow PTFE Insulated Silver Plated Multi Stranded Copper Wire AWG 30

# – 2 CORE round type cables as per special request

## Range of Products available - Electrical Characteristics

Part No.	Zero Power Resistance at 25°C	Tolerance of R25	B Value		Tolerance of B value	Max.Power Dissipation at 25 °C	Dissipation factor	Thermal Time Constant	Operating Temperature Range	Safety Approvals	
	R25 (KΩ)	(±%)	(K)		(±%)	Pmax(m W)	Δ (mW/°C)	T (Sec.)	TL~TU (°C)	UL	cUL
ZTEARC102□□□□□□	1.0	2,3,5	25/85	3420 TO 3975	2,3	60	≥1	≤30	-40 ~ +160	Y	Y
ZTEARC202□□□□□□	2.0									Y	Y
ZTEARC212□□□□□□	2.1									Y	Y
ZTEARC282□□□□□□	2.8									Y	Y
ZTEARC502□□□□□□	5.0									Y	Y
ZTEARC103□□□□□□	10.0									Y	Y
ZTEARC203□□□□□□	20.0									Y	Y
ZTEARC473□□□□□□	47.0									Y	Y
ZTEARC683□□□□□□	68.00									Y	Y
ZTEARC104□□□□□□	100.00									Y	Y

Note 1 : □ = Tolerance of R25, Type of cap,B-value,lead wire length

Note 2: Special Mechanical and Electrical specifications are available upon request.

## Reliability Measurement

Item	Standard	Test conditions	Specifications
Storage in damp heat, steady state	IEC 60068-2-78	Temperature of air: 40 °C Relative humidity of air: 93% Duration: 56 days	$\Delta R_{25}/R_{25}$ (typical): < 2% No Visible Damage
Storage in dry heat	IEC 60068-2-2	Storage at upper category temperature T:100 °C t: 1000 h	$\Delta R_{25}/R_{25}$ (typical): < 2% No Visible Damage
Storage in coldness		Storage at lower category temperature T: -30 °C t: 1000 h	$\Delta R_{25}/R_{25}$ (typical): < 2% No Visible Damage
Rapid temperature cycling (in air)	IEC 60068-2-14	Lower test temperature: -30 °C Upper test temperature: 100 °C Time to change from lower to upper temperature: <30 s Number of cycles: 1000 Medium: air	No Visible Damage $\Delta R_{25}/R_{25} \leq 3\%$
Vibration resistance	IEC 60068-2-6	Frequency range: 5 to 500 Hz Amplitude: 7.5 mm, 2 g Duration: 3 x 8 h	No Visible Damage $\Delta R_{25}/R_{25} \leq 3\%$
Long-term stability (empirical value)		Temperature: 100 °C / t: 10000 h	No Visible Damage $\Delta R_{25}/R_{25} \leq 3\%$
Voltage proof test		1250 V AC, 1 s	No Flashover
Insulation test		The sensors are placed in a vessel containing metallic balls of 1 mm diameter (with total immersed head). The applied voltage is 100 V DC	Above 100 M $\Omega$



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