



# Stator RTD Catalogue

# Simplex (Single element) stator winding RTDs

## Product Overview:

The Stator winding temperature detector (RTD) are used to measure winding temperature of large Motors, Generators etc. These sensor are sandwiched between the windings of Motors/Generators. Unlike on/off devices, It allows continuous measurement of winding temperature. The NEMA recognizes this kind of sensor as a standard protection for motor and generator Insulation. Normally, these RTDs are of wirewound and sensing element extends throughout the length of the detector. These feature will provide average temperature reading. Normally six sensors are recommended for each motor, Two per Phase. This RTD are generally flat type in construction and are available in various sizes.

## Main Features:

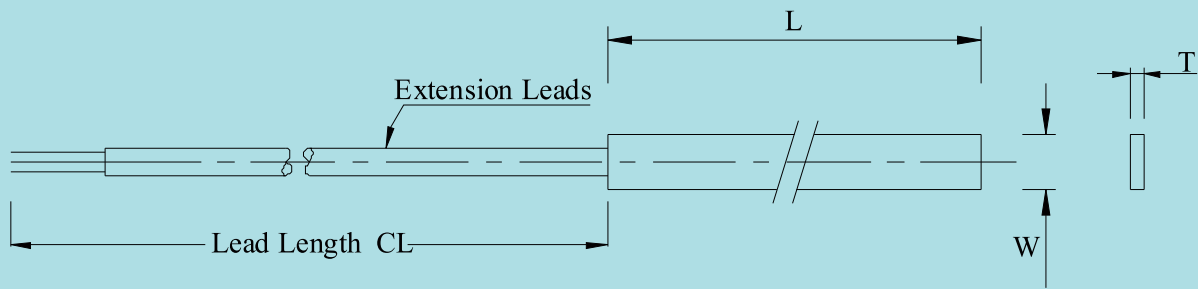
- Slim dimensions to get inserted in between windings
- Bifilar design that prevents induction voltage resulting in measurement errors
- Resistance to shock, vibration and pressure
- Withstand of VPI(Vacuum Pressure Impregnation) Process
- High Dielectric Strength
- ATEX Ex approve model available for equipment used in hazardous area

## Specification:

- Type: PT 100(100 ohm at 0 degC)\*
- Model: TSRE series
- Body Material: Fibre Glass epoxy
- Temperature Class: Class F(Temperature limit:155 DegC) or Class H(Temperature limit:180 DegC)
- Calibration Standard: IEC 60751 Or DIN 43760  
Temperature coefficient(TCR):0.003850
- Accuracy: Class A/B/2B
- Sensing current: 10mA maximum
- Dielectric strength: 3 KV/50Hz for 1 minute between leads and surface of Glass epoxy body (Increased dielectric strength up to 5 KV/50Hz for 1 minute upon request.)
- Lead Wire: 2/3/4 single or multiple stranded silver plated copper wire with PTFE or Polyamide insulation(special Lead wire and cable upon request).Please note that the selection of suitable wire gauge is depend up on the width and thickness of the sensor.

*For Sizes & all other dimension please refer drawing.*

*\*Note: Other values like PT-50,PT-200 and RTD with TCR value 0.003920 etc. are available upon request. Custom design of sensors are also available upon request.*



**MODEL: TSRE-ACC-L-T-W-NW-CL-WG-CC-TC**

ACC	Accuracy of RTD element (A/B/2B)
L	Length in mm
T	Thickness in mm
W	Width in mm
NW	Nos. of wires (option 2/3/4)
CL	Lead length in mm
WG	Wire Gauge of lead wires in AWG (option 22 to 28 AWG)
CC	Lead wire Construction (See table I)
TC	Temperature Class H or Class F

**EXAMPLE (Part Number): - TSRE-B-150-2-8-3-1000-24-X-F**

DIMENSIONAL RANGE (IN MM)				
PARAMETER	MAX	MIN*	INCREMENT	TOLERANCE
LENGTH (L)	500.0	50.0	25mm	+/- 5.0
THICKNESS (T)	3.5	1.5	0.5mm	+/-0.25
WIDTH (W)	25.0	7.0	0.5mm	+0.0/-0.4
LEAD LENGTH (CL)	50000.0	1000.0	50mm	+50.0/-0.0

**Lead wire Construction:**

TABLE 1	
DESCRIPTION	CODE
TWISTED PTFE INSULATED /PTFE JACKETED	X
FLAT PTFE INSULATED LEADS (Without Jacket)	Y
FLAT POLYAMIDE INSULATED LEADS (Without Jacket)	Z
FLAT PTFE INSULATED AND JACKETED	W

# Duplex (Double element) stator winding RTDs

## Product Overview:

Duplex stator winding RTD provide extra protection for Motors & Generator. The Second element is used either incase of damage of one element or use one element to display temperature at machine & second element for control room.

## Main Features:

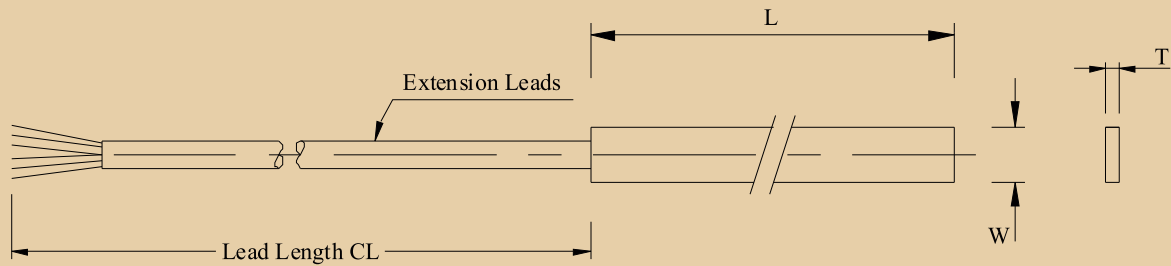
- Slim dimensions to get inserted in between windings
- Bifilar design that prevents induction voltage resulting in measurement errors
- Resistance to shock, vibration and pressure
- Withstand of VPI(Vaccum Pressure Impregnation) Process
- High Dielectric Strength
- ATEX Ex approve model available for equipment used in hazardous area

## Specification:

- Type: PT 100(100 ohm at 0°C)\*
- Model: TSRE series
- Body Material: Fibre Glass epoxy
- Temperature Class: Class F (Temperature limit:155°C) or Class H (Temperature limit:180°C)
- Calibration Standard: IEC 60751 Or DIN 43760
- Temperature coefficient (TCR): 0.003850
- Accuracy: Class A/B/2B
- Sensing current: 10mA maximum
- Dielectric strength: 3 KV/50Hz for 1 minute between leads and surface of Glass epoxy body (Increased dielectric strength up to 5 KV/50Hz for 1 minute upon request.)
- Lead Wire: 2/3/4 single or multiple stranded silver plated copper wire with PTFE or Polyamide insulation(special Lead wire and cable upon request).Please note that the selection of suitable wire gauge is depend up on the width and thickness of the sensor.

*For Sizes & all other dimension please refer drawing.*

*\*Note: Other values like PT-50,PT-200 and RTD with TCR value 0.003920 etc. are available upon request. Custom design of sensors are also available upon request.*



**MODEL: TSRF-ACC-L-T-W-NW-CL-WG-CC-TC**

ACC	Accuracy of RTD element (A/B/2B)
L	Length in mm
T	Thickness in mm
W	Width in mm
NW	Nos. of wires (option 2/3/4)
CL	Lead length in mm
WG	Wire Gauge of lead wires in AWG (option 22 to 28 AWG)
CC	Lead wire Construction (See table I)
TC	Temperature Class H or Class F

**EXAMPLE (Part Number): - TSRF-B-150-2-8-2-1000-24-X-F**

DIMENSIONAL RANGE (IN MM)				
PARAMETER	MAX	MIN*	INCREMENT	TOLERANCE
LENGTH (L)	500.0	50.0	25mm	+/- 5.0
THICKNESS (T)	3.5	2.0	0.5mm	+/-0.25
WIDTH (W)	25.0	8.0	0.5mm	+0.0/-0.4
LEAD LENGTH (CL)	50000.0	1000.0	50mm	+50.0/-0.0

**Lead wire Construction:**

TABLE 1	
DESCRIPTION	CODE
TWISTED PTFE INSULATED /PTFE JACKETED	X
FLAT PTFE INSULATED LEADS (Without Jacket)	Y
FLAT POLYAMIDE INSULATED LEADS (Without Jacket)	Z
FLAT PTFE INSULATED AND JACKETED	W

# Stator winding temperature sensor for Explosive Gas atmospheres (Increased safety "e")

Ex II 2G Ex e II

TC TSRC 00001 Ex II 2G Ex e II U-30°C to 180°C DNV-2008-OSL-ATEX-40059U PT 100

## Product Overview:

The Stator winding temperature detector (RTD) are used to measure winding temperature of large Motors, Generators etc. These sensor are sandwiched between the windings of Motors/Generators. Unlike on/off devices ,It allows continuous measurement of winding temperature. The NEMA recognizes this kind of sensor as a standard protection for motor and generator Insulation. Normally, these RTDs are of wire wound and sensing element extends through the length of the detector. These feature will provide average temperature reading. Normally six sensors are recommended for each motor, Two per Phase.

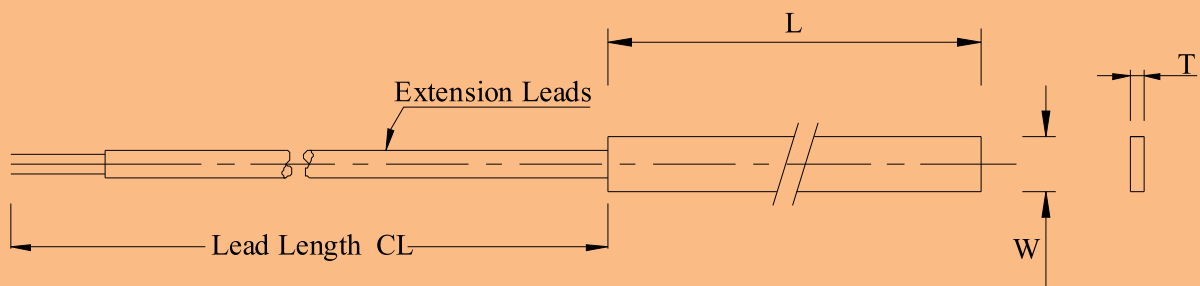
These Models are intended for use in hazardous areas in which explosive gas atmospheres, caused by mixtures of air and gases, vapours or mists, exist under normal atmospheric Condition. Due to special design guidelines It prevents arcing. This RTD are generally flat type in construction and Are available in various sizes.

## Main Features:

- Slim dimensions to get inserted in between windings
- Bifilar design that prevents induction voltage resulting in measurement errors
- Resistance to shock, vibration and pressure
- Withstand of VPI (Vacuum Pressure Impregnation) Process
- High Dielectric Strength
- RTD certified as Increase safety "e" and approval for zone 1 and 21
- EC-Type examination certificate DNV-2008-OSL-ATEX-40059U
- Complies with European standard for electrical apparatus for Explosive gas atmosphere :ATEX EU Directive 94/9/CE  
EN 60079-0:2006 (General requirements)  
EN 60079-7:2007 (Increased safety "e")

## Specification:

- Type: PT 100(100 ohm at 0°C)\*
- Model: TSRA ,TSRB,TSRC,TSRD series
- Element: Simplex for TSRA,TSRB,TSRC Series  
Duplex for TSRD series
- Body Material: Fibre Glass epoxy Class H
- Temperature Range: -30°C to 180°C
- Calibration Standard: IEC 60751 or DIN 43760
- Temperature coefficient (TCR): 0.003850
- Accuracy: Class A/B/2B
- Sensing current: 10mA maximum
- Dielectric strength: 3 KV/50Hz , 1-5 seconds, For TSRA series  
3 KV/50Hz , 1 minute, For TSRB series  
5 KV/50Hz , 1 minute, For TSRC series  
3 KV/50Hz , 1 minute, For TSRD series
- Lead Wire: 2/3/4 single or multiple stranded silver plated copper wire with PTFE or Polyamide insulation



MODEL: TSRA-ACC-L-T-W-NW-CL-WG-CC Or  
 MODEL: TSRB-ACC-L-T-W-NW-CL-WG-CC Or  
 MODEL: TSRC-ACC-L-T-W-NW-CL-WG-CC

ACC	Accuracy of RTD element (A/B/2B)
L	Length in mm
T	Thickness in mm
W	Width in mm
NW	Nos. of wires (option 2/3/4)
CL	Lead length in mm
WG	Wire Gauge of lead wires in AWG (option 22 to 28 AWG)
CC	Lead wire Construction (See table I)

**EXAMPLE (Part Number): TSRA-B-150-2-6-3-1000-24-Y**

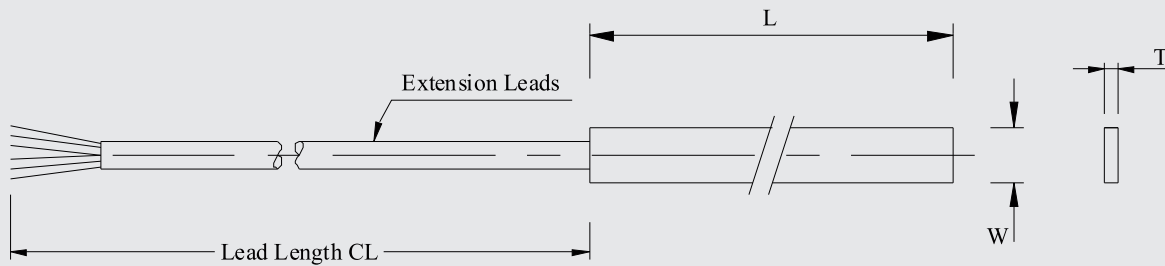
DIMENSIONAL RANGE (IN MM)			
PARAMETER	MAX	MIN*	TOLERANCE
LENGTH (L)	475	50.0	+/- 5.0
THICKNESS (T)	4.5	2.0	+/-0.25
WIDTH (W)	20.0	6.2	+0.0/-0.4
LEAD LENGTH (CL)	50000.0	1000.0	+50.0/-0.0

\* FOR 4 WIRE RTD MINIMUM WIDTH STARTS FROM 7.5 MM

#### Lead wire Construction:

TABLE 1	
DESCRIPTION	CODE
TWISTED PTFE INSULATED /PTFE JACKETED	X
FLAT PTFE INSULATED LEADS (Without Jacket)	Y
FLAT POLYAMIDE INSULATED LEADS (Without Jacket)	Z
FLAT PTFE INSULATED AND JACKETED	W

# TSRD Series (Double element)



MODEL: TSRD-ACC-L-T-W-NW-CL-WG-CC

ACC	Accuracy of RTD element (A/B/2B)
L	Length in mm
T	Thickness in mm
W	Width in mm
NW	Nos. of wires (option 2/3/4)
CL	Lead length in mm
WG	Wire Gauge of lead wires in AWG (option 22 to 28 AWG)
CC	Cable Construction (See table I)

EXAMPLE (Part Number): - TSRD-B-150-2-14-3-2000-24-Y

DIMENSIONAL RANGE (IN MM)			
PARAMETER	MAX	MIN*	TOLERANCE
LENGTH (L)	475	50.0	+/- 5.0
THICKNESS (T)	4.5	2.5	+/-0.3
WIDTH (W)	20.0	13*	+0.0/-0.4
LEAD LENGTH (CL)	50000.0	1000.0	+50.0/-0.0

## Lead wire Construction:

TABLE 1	
DESCRIPTION	CODE
TWISTED PTFE INSULATED /PTFE JACKETED	X
FLAT PTFE INSULATED LEADS (Without Jacket)	Y
FLAT POLYAMIDE INSULATED LEADS (Without Jacket)	Z
FLAT PTFE INSULATED AND JACKETED	W