

# 2-WIRE NON-ISOLATED

## TEMPERATURE TRANSMITTER

Inputs :  
Resistance  
Thermometers (RTD)

Input selection  
using PC & USB  
programmer

Operating  
temperature  
upto 85 °C

Mounting :  
In RTD head



### APPLICATION AREAS

- Head mount temperature to convert RTD input signals into a scalable 4 to 20 mA analog output signal
- Inputs :  
Resistance thermometers (RTD)  
Resistance
- Mounting : In RTD head

### PERFORMANCE

- User programmable with PC based utility software and USB configurator
- 2-wire technology, 4~20 mA analog output
- Accuracy over total ambient temperature range
- Active temperature compensation
- Supply range 7.5~48 V DC
- User programmable measurement range, unit, bias, preset output, etc

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### SPECIFICATIONS

All specifications at ambient of 25 °C, 24VDC unless specified otherwise

#### INPUT

Input type	Pt100, Pt500, Pt1000, Cu53, Ni100, Ni500, Ni1000
RTD	
Resistance	0~400 Ω, 0~2000 Ω, 0~5000 Ω
Range limits	See Table 1
RTD excitation	0.250 mA (0.1 mA for Pt1000, Ni1000, 0~5000 Ω)
Underranging	Linear upto 3.8mA
Overranging	Linear upto 22mA

#### SENSOR BREAK DETECTION

Preset output	Upscale ~ 22 mA Downscale ~ 3.8 mA
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#### OUTPUT

Output signal	4~20 mA
Load	Max (V power supply - 7.5V) / 0.0208A
Response time	Approx 500 ms
Switch on delay	≤ 5s

#### ACCURACY

Accuracy	See Table 1
Temperature coefficient of accuracy	See Table 1
Lead resistance effect	
Pt100, 3-wire	0.1°C/Ω, individual lead resistance
Supply voltage effect	± 0.001% of span / V
Supply ripple effect, 50/60hz, 5 Vp - p	± 0.005% of span
Long term stability	≤ 0.05% / year
Common-mode rejection ratio (CMRR)	>120db

#### POWER SUPPLY

Supply voltage	7.5 to 48 VDC
Reverse polarity	Protected

#### ENVIRONMENTAL CONDITIONS

Ambient, storage	-40 to 85 °C (-40 to 185 °F)
Ambient, operation	-20 ~ 85 °C
Relative humidity	0 ~ 95%

#### ENCLOSURE

Dimensions (in mm)	44 x 22.5 mm
Potting	Silicon based compound
MOC	Polycarbonate
Mounting	For DIN form B sensor head
Wire size	1x1.5 mm <sup>2</sup> stranded wire
Maximum torque on screw	0.5Nm
Weight	40g
Ingress protection	IP00

#### PROGRAMMABLE PARAMETERS \*

List of parameters	Input type Unit Sensor break detection Offset for PV Digital filter Range
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\* USB configurator DCC501 USB to serial converter can be used to program the SCC642 transmitter

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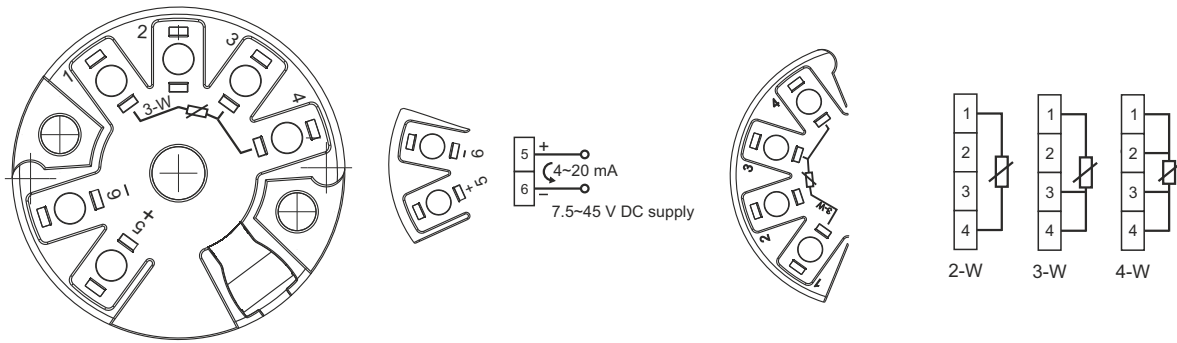
## TEMPERATURE TRANSMITTER

TABLE 1

SENSOR / INPUT	RANGE LIMITS		MINIMUM SPAN (°C)	ACCURACY AT 25 °C (°C / EU)	TEMPERATURE COEFFICIENT OF ACCURACY
	LOW SCALE	HIGH SCALE			
Pt100 *	-200 °C	850 °C	10 °C	± 0.2 °C or 0.08% of span	0.003 % of span per °C
Pt500 *	-200 °C	250 °C	10 °C	± 0.5 °C or 0.20% of span	0.060 % of span per °C
Pt1000 *	-200 °C	250 °C	10 °C	± 0.3 °C or 0.12% of span	0.036 % of span per °C
Ni100 (6180ppm/K) *	-60 °C	180 °C	10 °C	± 0.2 °C or 0.08% of span	0.003 % of span per °C
Ni500 (6180ppm/K) *	-60 °C	180 °C	10 °C	± 0.5 °C or 0.20% of span	0.060 % of span per °C
Ni1000 (6180ppm/K) *	-60 °C	150 °C	10 °C	± 0.3 °C or 0.12% of span	0.036 % of span per °C
Cu53 *	-50 °C	150 °C	10 °C	± 0.2 °C or 0.08% of span	0.003 % of span per °C
0 to 400 Ω *	0 Ω	400 Ω	10 Ω	± 0.1 Ω or 0.08% of span	0.003 % of span per °C
0 to 2000 Ω *	0 Ω	2000 Ω	20 Ω	± 1.5 Ω or 0.12% of span	0.060 % of span per °C
0 to 5000 Ω *	0 Ω	5000 Ω	100 Ω	± 7.5 Ω or 0.20% of span	0.036 % of span per °C

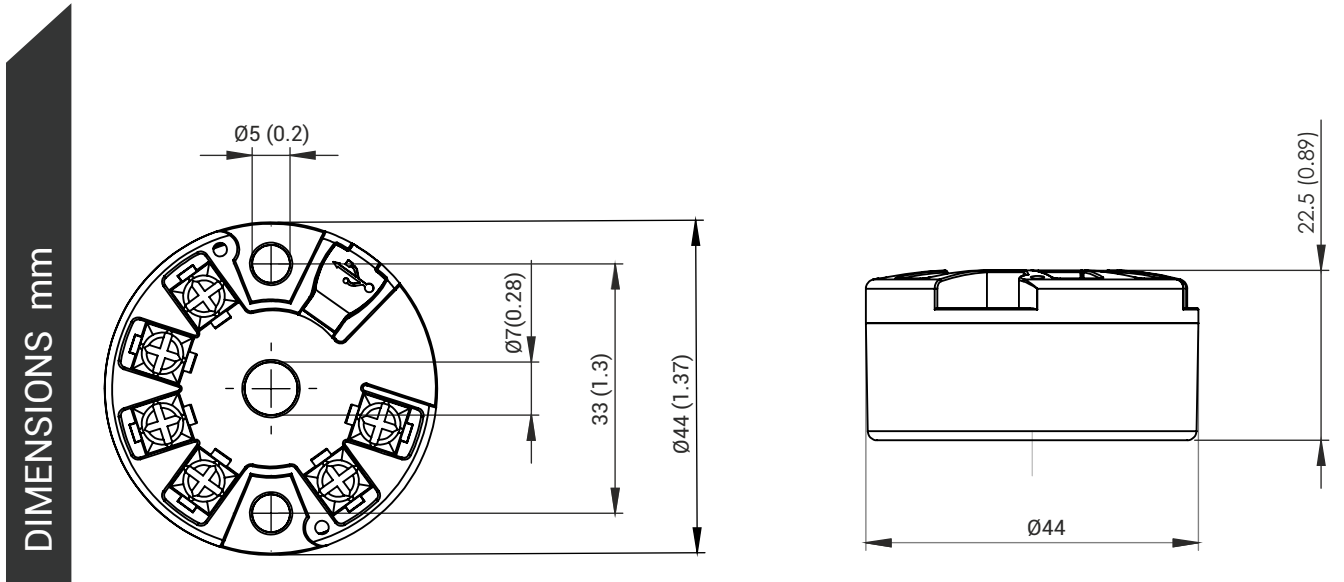
\* Accuracy specified is for 2,3 and 4-wire RTD & resistance inputs. For 2-wire, lead resistance is taken as '0' ohms.

### ELECTRICAL CONNECTIONS



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## TEMPERATURE TRANSMITTER



### PROGRAMMING OF INSTRUMENT VIA USB CONFIGURATOR

### ORDERING INFORMATION

ITEM	MODEL	ORDER CODE
2-WIRE NON-ISOLATED, TEMPERATURE TRANSMITTER	SCC642	2403
USB TO SERIAL CONVERTER *	DCC501	2555

\* To be purchased separately.

#### Default Parameters

Input type : Pt100, 3-wire  
 Range : 0~150 °C (if user range not specified)  
 Sensor break : Upscale, 22mA

If user requires a specific input & range to be calibrated before dispatch, both must be specified in the order.

If user wishes to program the input and range, user must purchase separately the USB to serial converter DCC501.



CAT#568R0/A

#### ENQUIRIES

**Instruments:** sales@radix.co.in  
**Sensors:** sensors@radix.co.in  
**Gauges:** gauges@radix.co.in  
**Automation:** automation@radix.co.in  
**Level:** level@radix.co.in

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