

S01 RTD & Thermocouple Inserts

TYPICAL USES

- For industrial applications used for probe replacements
- Special designs for intrinsically safe and non-incendive application

DESCRIPTION

- Power Generation
- Reactors
- Storage Tanks
- Cooling Towers
- Industrial equipment Manufacture
- Industrial Ovens
- HVAC/R
- Food and Beverage
- Pharmaceutical and Biotech

SPECIFICATIONS

Model:	S01		
Stem Diameter:	3 mm, 4.5 mm, 6 mm, 8 mm, 1/8", 3/16", 1/4"		
Stem Length:	min. 50 mm max. 3000 mm		
Stem Material:	Stainless steel 316L (1.4401) Inconel 600 (2.4816)		
Insulation Material:	Compacted pure MgO (Magnesium oxide)		
Senore Types and max. Range: (single and dual)	RTD:		
	Pt100	-200 up to 600 °C	
	Pt1000	-40 up to 600 °C	
	Thermocouples:		
	Type J	-40 up to 750 °C	
	Type E	-200 up to 800 °C	
	Type K	-200 up to 1000 °C	
	Type N	-200 up to 1000 °C	
Wiring Configuration:	RTD (single or dual) as 2, 3 or 4 wire Thermocouple (single or dual) as 2 wire		
Electrical Connection:	Ceramic terminal block Spring loaded with 8 to 10 mm travel		
Insulation Resistance:	For RTD $\geq 100 \text{ M}\Omega$ with $U = 250 \text{ VDC}$ For TC $\geq 1 \text{ G}\Omega$ with $U = 500 \text{ VDC}$		
Sensitive Length of			
RTD:	7 to 40 mm		
Thermocouple:	< 5mm		
Ambient Temperature:	-40 to 85 °C		

ACCURACY CLASSES

Accuracy Classes: (RTD - IEC 60751)	Class A:	$\pm(0,15 + 0,0020 * t)$	
	Class B:	$\pm(0,30 + 0,0050 * t)$	
	1/2 Class B:	$\pm(0,15 + 0,0025 * t)$	
	1/3 Class B:	$\pm(0,10 + 0,0017 * t)$	
Accuracy Classes: (TC - ANSI MC 96.1)	Type J	Standard	Special
		$\pm 2,2 \text{ }^\circ\text{C}$ or $\pm 0,0075 * t $	$\pm 1,1 \text{ }^\circ\text{C}$ or $\pm 0,0040 * t $
	Type E	$\pm 1,7 \text{ }^\circ\text{C}$ or $\pm 0,0050 * t $	$\pm 1,0 \text{ }^\circ\text{C}$ or $\pm 0,0075 * t $
		Type K	$\pm 2,2 \text{ }^\circ\text{C}$ or $\pm 0,0075 * t $
	Type N		$\pm 2,2 \text{ }^\circ\text{C}$ or $\pm 0,0040 * t $



Ceramic terminal block or transmitter:

Size DIN B
 $\varnothing 42 \text{ mm}$
 Screw spring: 33 mm
 Screw thread: M4 x 1.5
 Spring travel: 8 to 10 mm



KEY BENEFITS

- Manufactured to IEC 60751 or IEC 60584-2
- Available with and without transmitters
- Mineral insulated inserts
- Intrinsically safe designs available

ACCURACY CLASSES



Accuracy Classes: (TC - IEC 60584-2)	Class 1	Class 2	Class 3
Type J	$\pm 1,5 \text{ }^\circ\text{C}$ or $\pm 0,0040 * t $	$\pm 2,5 \text{ }^\circ\text{C}$ or $\pm 0,0075 * t $	N/A
Type E	$\pm 1,5 \text{ }^\circ\text{C}$ or $\pm 0,0040 * t $	$\pm 2,5 \text{ }^\circ\text{C}$ or $\pm 0,0075 * t $	$\pm 2,5 \text{ }^\circ\text{C}$ or $\pm 0,0150 * t $
Type K	$\pm 1,5 \text{ }^\circ\text{C}$ or $\pm 0,0040 * t $	$\pm 2,5 \text{ }^\circ\text{C}$ or $\pm 0,0075 * t $	$\pm 2,5 \text{ }^\circ\text{C}$ or $\pm 0,0040 * t $
Type N	$\pm 1,5 \text{ }^\circ\text{C}$ or $\pm 0,0040 * t $	$\pm 2,5 \text{ }^\circ\text{C}$ or $\pm 0,0040 * t $	$\pm 2,5 \text{ }^\circ\text{C}$ or $\pm 0,0150 * t $

S10 Electrical Thermometer for RTD
APPROVALS

Available Approvals: FM, ATEX, IECEx, SIL2, INMETRO, EAC, CCC, AMI, ExNEPSI

FM Intrinsically safe: T4 for $-55\text{ °C} \leq T_a \leq +80\text{ °C}$
 Class I, Division 1, T5 for $-55\text{ °C} \leq T_a \leq +55\text{ °C}$
 Groups A, B, C, D T6 for $-55\text{ °C} \leq T_a \leq +40\text{ °C}$

FM Nonincendive: T4 for $-55\text{ °C} \leq T_a \leq +80\text{ °C}$
 Class I, Division 2, T5 for $-55\text{ °C} \leq T_a \leq +55\text{ °C}$
 Groups A, B, C, D T6 for $-55\text{ °C} \leq T_a \leq +40\text{ °C}$

ATEX or IECEx:   II 1 G Ex ia IIC T6 Ga -50 °C to $+60\text{ °C}$
 II 2 G Ex ib IIC T6 Gb -50 °C to $+60\text{ °C}$
 II 2 G Ex e IIC T6 Gb -55 °C to $+60\text{ °C}$

SENSING ELEMENT TYPES


RTD



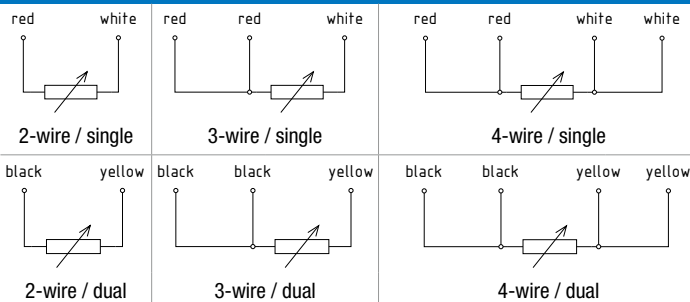
TC - ungrounded



TC - grounded

MINIMUM IMMERSION LENGTH

Type & Inserts Ø	in liquid	in gas/vapour
RTD Ø 3 mm	45 mm	55 mm
RTD Ø 6 mm	60 mm	75 mm
TC Ø 3 mm	15 mm	25 mm
TC Ø 6 mm	30 mm	50 mm

MEASUREMENT CIRCUITS - COLOR IDENTIFICATION FOR RTD


S10 Electrical Thermometer for RTD**DIMENSIONS IN MM [INCH]**

For reference only, consult Ashcroft for specific dimensional drawings

**HOW TO ORDER S01 TEMPERATURE PROBES:**

- The ordering code is built by selecting the appropriate configuration for the various sections of the ordering code.
- The Insert nominal length L_i is measured from base of the DIN mounting plate to the tip of the probe.

d = Stem diameter

L_i = Insert Nominal Length

