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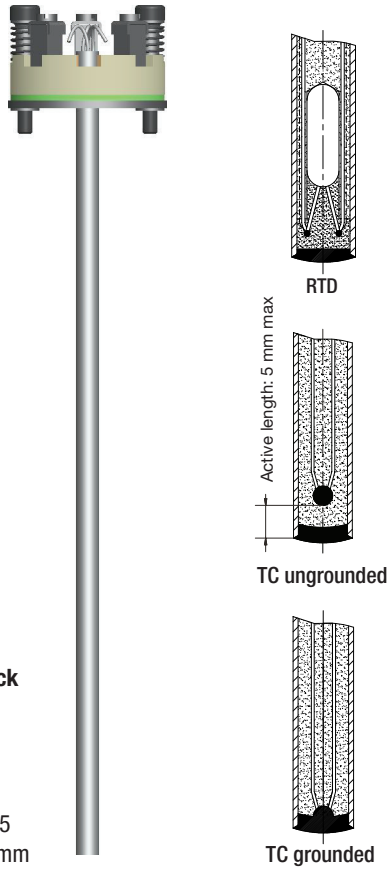
S01 RTD & Thermocouple Inserts

TYPICAL USES

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

DESCRIPTION

The sensors incorporated in these inserts are with a mineral insulation metal sheath. They can be of two types: resistance temperature detectors (RTDs) or thermocouples (TCs). In each case, the sensor supplies an electrical signal corresponding to the temperature. Integral DIN style terminal block and transmitter designs. The travel of this spring mounting assures best thermal conductivity, compensation of length tolerances in thermowells and protection against vibration. When mounted in thermowells, inserts can be simply replaced, without removing the thermowell from the pipe and without any process interruption.



Ceramic terminal block or transmitter :
Size DIN B
Diam. 42 mm
Screw spring : 33 mm
Screw thread : M4 x 1.5
Spring travel : 8 to 10 mm

SPECIFICATIONS

Ashcroft Series:	S01
Insert Stem Diameter:	⅛″, 3⁄16″, ¼″, 3 mm, 4.5 mm, 6 mm, 8 mm
Stem Length:	Minimum: 50 mm/2 in Maximum: 3 m/120 in
Sensor Type & Measuring Range	RTDs Platinum 385 Pt 100 -200 to 600 °C Pt 1000 -40 to 600°C Thermocouples Type J -40 to 750 °C Type E -200 to 800 °C Type K -200 to 1000 °C Type N -200 to 1000 °C
Wiring Configuration:	RTDs single or dual 2 Wire 3 Wire 4 Wire Thermocouples 2 Wire single or dual
Accuracy Class	RTD's (IEC 60751) Class A: ±(0.15 + 0.0020 |t|) Class B: ±(0.30 + 0.0050 |t|) Class AA: ±(0.10 + 0.0017 |t|)

KEY BENEFITS

- **Flexible designs for critical applications.**
- **Fast response times**

Thermocouples (ANSI MC 96.1)

	Type J	Type K	Type E	Type N
Standard	±2.2 °C or ±0.0075*|t|(1)	±2.2 °C or ±0.0075*|t|(1)	±1.7 °C or ±0.0050*|t|(1)	±2.2 °C or ±0.0040*|t|(1)
Special	±1.1 °C or ±0.0040*|t|(1)	±1.1 °C or ±0.0040*|t|(1)	±1.0 °C or ±0.0075*|t|(1)	±1.1 °C or ±0.0040*|t|(1)

Thermocouples (IEC 60584-2)

	Type J	Type K	Type E	Type N
Class 1	±1.5 °C or ±0.0040*|t|(1)	±1.5 °C or ±0.0040*|t|(1)	±1.5 °C or ±0.0040*|t|(1)	±1.5 °C or ±0.0040*|t|(1)
Class 2	±2.5 °C or ±0.0075*|t|(1)	±2.5 °C or ±0.0075*|t|(1)	±2.5°C or ±0.0075*|t|(1)	±2.5 °C or ±0.0040*|t|(1)
Class 3	N/A	±2.5 °C or ±0.0040*|t|(1)	±2.5 °C or ±0.0150*|t|(1)	±2.5 °C or ±0.0150*|t|(1)

(1) Absolute temperature in °C

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OPTIONAL APPROVALS	
FM Intrinsically safe:	Class I, Division 1, Groups A, B, C, D T4 for -55 °C ≤ Ta ≤ 80 °C T5 for -55 °C ≤ Ta ≤ 55 °C T6 for -55 °C ≤ Ta ≤ 40 °C
FM Nonincedive:	Class I, Division 2, Groups A, B, C, D T4 for -55 °C ≤ Ta ≤ +80 °C T5 for Ashcroft Series: 55 °C ≤ Ta ≤ 55 °C T6 for Ashcroft Series: 55 °C ≤ Ta ≤ 40 °C
ATEX or IECEx:	ATEX or IECEx II 1 G Ex ia IIC T6 Ga -50 °C to 60 °C II 2 G Ex ib IIC T6 Gb -50 °C to 60 °C II 2 G Ex e IIC T6 Gb -55 °C to 60 °C

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S01 RTD ORDERING CODE Example:	S01	1	T	1	A	A	B	A	B	--	X	------
Area Classification												Continued on next page
1 - Standard		1										
3 - Intrinsic Safety - ia												
B - Intrinsic Safety - ib												
E - Increased Safety												
N - Non-Incendive												
Sheath Diameter												
R - ⅛″ Ø3.18 mm												
S - 3⁄16″ Ø4.76 mm												
T - ¼″ Ø6.35 mm												
3 - 3 mm												
4 - 4.5 mm												
6 - 6 mm												
8 - 8 mm												
RTD Type												
1 - Pt 100				1								
Accuracy or Class (IEC 60751)												
A - class A					A							
B - class B												
C - ½ DIN												
D - class AA - ⅓ DIN												
RTD Element/Range												
A - RTD - -50/+400 °C						A						
B - RTD - -200/+600 °C												
D - RTD -vibrations-proof												
Electrical Circuit												
A - Single 2 wires												
B - Single 3 wires							B					
C - Single 4 wires												
D - Dual 2 wires												
E - Dual 3 wires												
F - Dual 4 wires												
Sheath Material												
A - AISI 316L / 1.4404								A				
Head Type												
A - Dimension DIN A												
B - Dimension DIN B									B			
--										--		
Insert Nominal Length												
X - Li=(min=100, max=100000) (add actual length LI=?? at the end of ordering code)											X	
------												------

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S01 RTD & Thermocouple Inserts

SO1 RTD ORDERING CODE Example: Continued)	1	-	3p	T
Electrical Connection				
- - With terminal block				
1 - With transmitter - Not available with FM IS or NI approvals	1			
3 - Without terminal block, with flying leads				
Certifications				
- - None		-		
F - FM				
2 - SIL 2				
P - EAC (Gost R) + Metrological Russia				
A - ATEX				
S - SIL 2 + ATEX				
I - INMETRO				
X - IECEx				
D - ATEX + IECEX				
Calibration Report				
-- - Without				
3P - 3 points			3P	
5P - 5 points				
3D - 3 points				
5D - 5 points				
Tagging				
- - Without				
T - Label in stainless steel with tag				T
Prices subject to change without notice • All prices subject to escalation				

LI=400

Nominal length in mm

mm = inches x 25.4

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S01 RTD & Thermocouple Inserts

S01 TC ORDERING CODE Example:	S01	S	T	K	N	1	1	3	B	--
Area Classification										
S - Standard		S								
J - Intrinsic Safety - ia										
B - Intrinsic Safety - ib										
E - Increased safety										
N - Non-Incendive										
Sheath Diameter										
R - ⅛″ Ø3.18 mm										
S - 3⁄16″ Ø4.76 mm										
T - ¼″ Ø6.35 mm			T							
3 - 3 mm										
4 - 4.5 mm										
6 - 6 mm										
8 - 8 mm										
Thermocouple Type										
E - Temperature range: -200 to 800°C										
J - Temperature range: -40 to 750°C										
K - Temperature range: -200 to 1000°C				K						
N - Temperature range: -200 to 1000°C										
Accuracy or Class										
N - ANSI MC 96.1: Standard Limits										
S - ANSI MC 96.1: Special Linimts										
1 - IEC 60584-2: class 1										
2 - IEC 60584-2: class 2					N					
3 - IEC 60584-2: class 3										
Junction										
1 - Ungrounded						1				
2 - Grounded										
3 - Ungrounded, vibration-proof										
4 - Grounded, vibration-proof										
Electrical Circuit										
1 - Single							1			
2 - Dual										
Sheath Material										
1 - AISI 316/ 1.4401										
3 - Inconel 600/ 2.4816								3		
Head Type										
A - Dimension DIN A										
B - Dimension DIN B									B	
--										--

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S01 RTD & Thermocouple Inserts

S01 TC ORDERING CODE Example: (Cont'd)	X	------	1	-	3P	T	LI=600
Insert Nominal Length							Nominal length in mm
X - Li=... (min=50, max=100000). (add actual nominal length LI=?? at end of ordering code)	X						mm = inches x 25.4
------		------					
Electrical Connection							
- - With terminal block					-		
1 - With transmitter			1				
3 - Without terminal block, with flying leads							
Certifications							
- - None required				-			
F - FM							
A - ATEX							
X - IECEx							
S - SIL 2 + ATEX							
I - INMETRO							
D - ATEX + IECEX							
2 - SIL 2							
P - EAC (Gost R) + Metrological Russia							
Calibration Report							
-- - without							
3P - 3 points					3P		
5P - 5 points							
3D - 3 points							
5D - 5 points							
Tagging							
- - without							
T - Label in stainless steel with tag						T	
Consult factory for other configurations							

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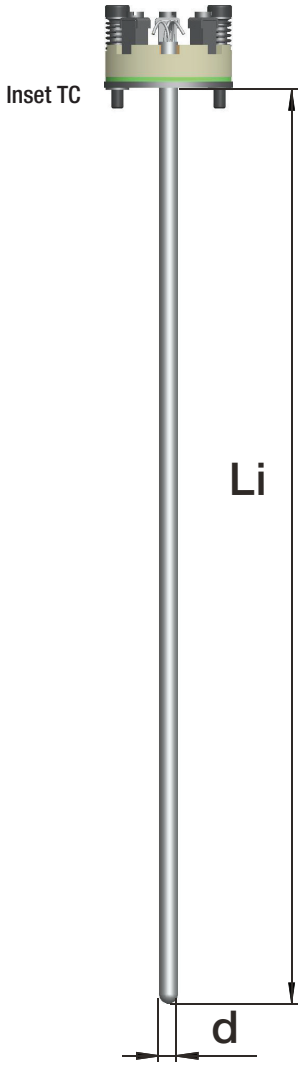
DIMENSIONS in [ ] are millimeters

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 Li is measured from base of the DIN mounting plate to the tip of the probe.
- To convert inches to millimeters multiply by 25.4. mm = inches x 25.4

d = Stem diameter

LI = Insert Nominal Length