

S80 Thermocouple Temperature Probes

Thermocouple Temperature probes with mineral insulation, available with optional connectors.

TYPICAL USES

- Industrial probes for chemical, petrochemical and power plants.
- For a wide range of process applications: vapors, gases, liquids and non-abrasive substances, provided that these are compatible with the sheath material
- Flexible configurations, heavy duty MgO
- Special designs for intrinsically safe and non-incendive applications

DESCRIPTION

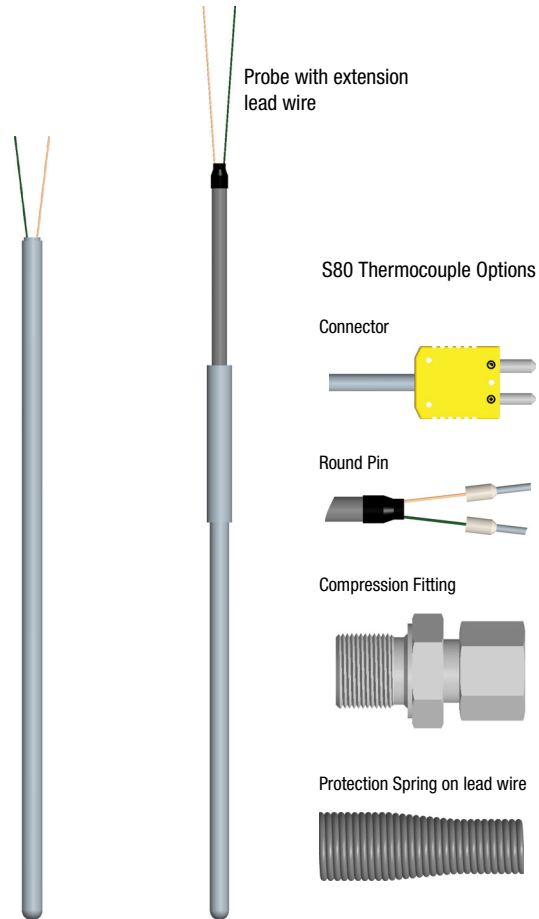
These probes are supplied as either single or dual sensors. The sensor(s) is (are) housed inside a flexible metal sheath. With or without extension lead wire, process connection on request. If fitted, the extension lead wire (with or without protective spring and/or electromagnetic shielding) can be provided with PVC, silicone, Teflon® or fiberglass insulation. The soldering between the extension lead wire and the sheathed cable is enclosed in a sealed transition.

SPECIFICATIONS

Insert Stem Diameter:	1/8, 3/16, 1/4, 3 mm, 4.5 mm, 6 mm, 8 mm
Stem Length:	Minimum: 50 mm/2 in Maximum: 3 m/120 in
Sensor Type & Range	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:	Thermocouples Single or Dual

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 Nonincendive:	Class I, Division 2, 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
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



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⁾

(1) Absolute temperature in °C

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⁾

Data Sheet

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ORDERING CODE	Example:	S80	S	R	K	N	2	1	3	7	--	X	X	Cont. on next page
Area Classification														
S - Standard			S											
J - Intrinsic Safety - ia														
B - Intrinsic Safety - ib														
E - Increased safety														
N - Non-Incendive														
Sheath Diameter														
R - 1/8" Ø3.18 mm				R										
S - 3/16" Ø4.76 mm														
T - 1/4" Ø6.35 mm														
3 - 3 mm														
4 - 4.5 mm														
6 - 6 mm														
8 - 8 mm														
Thermocouple Type														
E - E -temperature range: -200...+800°C														
J - J -temperature range: -40...+750°C														
K - K -temperature range: -200...+1000°C					K									
N - N -temperature range: -200...+1000°C														
Accuracy or Class														
N - ANSI MC 96.1: standard						N								
S - ANSI MC 96.1: special														
1 - IEC 60584-2: class 1														
2 - IEC 60584-2: class 2														
3 - EC 60584-2: class 3														
Junction														
1 - Ungrounded														
2 - Grounded							2							
3 - Ungrounded, vibrations-proof														
4 - Ungrounded, vibrations-proof														
Electrical Circuit														
1 - Single								1						
2 - Dual														
Sheath Material														
1 - AISI 316 / 1.4401														
3 - Inconel 600 / 2.4816									3					
Wire Termination														
7 - Stripped										7				
3 - With miniature male connector														
4 - With miniature male and female connector														
5 - With standard male connector														
6 - With standard male and female connector														
--											--			
Length Probe														
X - L=(min=50, max=10000) (add actual length in mm L=?? at the end of ordering code)													X	
Length Cable														
X - Lc=(min=100, max=10000) (add actual length in mm LC=?? at the end of ordering code)														X

Data Sheet

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ORDERING CODE	Example: (Continued)	-	M	M	C3	3	-	3P	T	LC=900	L=400
Lead Wire											
M - PVC			M							Lead wire length in mm	Insertion length in mm
N - Silicon											
O - PTFE Téflon [®]											
P - Fiberglass											
-- Without											
Lead Wire Options											
M - With protective spring on lead wire				M							
N - Without protective spring on lead wire											
O - Electrically shielded, with protective spring											
P - Electrically shielded, without protective spring											
Q - With Stainless steel braided cover, with protective spring											
R - With Stainless steel braided cover, without protective spring											
-- Without											
Process Connection											
-- Without connection											
C1 - Compression fitting 1/4"NPT, AISI 316											
C3 - Compression fitting 1/2"NPT, AISI 316					C3						
A1 - Compression fitting G 1/4" AISI 316											
A3 - Compression fitting G 1/2" AISI 316											
3						3					
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		

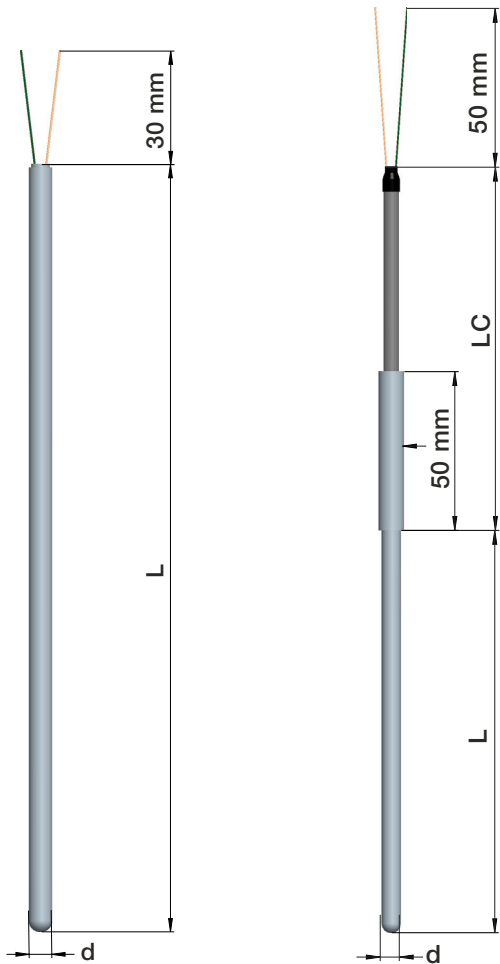
mm = inches x 25.4

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DIMENSIONS in [] are millimeters

For reference only, consult Ashcroft for specific dimensional drawings



HOW TO ORDER S50 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 is measured from base of the cable transition piece to the tip of the probe.
- The lead wire length LC is measured for the base of the lead wire transition piece to the end of the lead wire jacket.
- The L length and the LC length are added to the end of the ordering code in millimeters.
- To convert inches to millimeters multiply by 25.4.
 $\text{mm} = \text{inches} \times 25.4$

d = Stem diameter
 LC = Length lead wire
 L = Insertion length