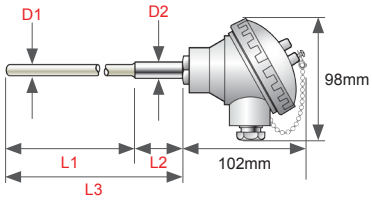
TCR Ceramic Sheathed Thermocouple Sensor with Standard Head

Commonly used in high temperature applications where standard metal sheaths cannot withstand the heat. The ceramic sheath can be supplied as Impervious Aluminous Porcelain (AP) which is suitable for use up to +1400°C, or Impervious Recrystallised Alumina (RA) which is suitable for use up to +1700°C. Both sheaths, being ceramic, are relatively fragile and can be damaged by thermal shock if not pre-heated before insertion into high temperature applications. Sheaths can be supplied as 10.0mm, 12.0mm, 17.0mm or 20.0 diameter and are glued into a metal support tube onto which the terminal head is connected. The length of the ceramic sensor and support tube can be manufactured to suit the application.

The TCR is supplied with an IP67 rated heavy duty die cast alloy terminal head (M20 x 1.5mm cable entry thread). The screw top lid has a robust chain ensuring it remains attached to the head. A ceramic terminal block inside the head makes connections to the extension cable very simple. The sensor can also be supplied with a linearised 4~20mA transmitter which can be pre-ranged to suit your requirements.



- 10.0mm, 12.0mm, 17.0mm or 20.0mm Ø ceramic probe
- Terminated with IP67 rated heavy duty die cast alloy head (M20 cable entry)
- Accuracy to IEC 60584.2 Class 1 or Class 2
- Colour coded terminals, IEC 60584.3 (BS EN 60584.3)

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Sensor Type	Code
Ceramic Sheathed Thermocouple Sensor with Standard Terminal Head	TCR

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	Conductor/Thermocouple Type (IEC 60584.2)	Conductor Temperature Range	Code
K	Nickel Chromium vs. Nickel Aluminium	0°C to +1100°C	K
J	Iron vs. Constantan	-50°C to +750°C	J
T	Copper vs. Constantan	-200°C to +350°C	T
N	Nicrosil vs. Nisil	0°C to +1200°C	N
E	Nickel Chromium vs. Constantan	-200°C to +900°C	E
R	Platinum 13% Rhodium vs. Platinum	0°C to +1600°C	R
S	Platinum 10% Rhodium vs. Platinum	0°C to +1550°C	S

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Ceramic Material	Temperature Range	Code
Impervious Aluminous Porcelain Gas-tight with a very good resistance to gases free of hydrofluoric acid. The sheath offers a high resistance to thermal shock and has good mechanical strength. The sheaths are most economical and are often used in furnaces working under normal conditions.	0°C to +1400°C	AP
Impervious Recrystallised Alumina The sheaths are suitable for use up to +1700°C; short term +1800°C. They offer a good level of resistance to thermal shock and have a good electrical resistance at high temperatures. The sheath is very pure and is suitable for use where high purity is essential. Most commonly used with Type R or S sensors.	0°C to +1700°C	RA

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Probe Diameter (D1)	Support Tube Diameter (D2)	Code
10.0mm	15.8mm	10.0
12.0mm	21.3mm	12.0
17.0mm	26.9mm	17.0
20.0mm	26.9mm	20.0

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Sensing Junction	Number of Channels		Code
Insulated (isolated, ungrounded)	Simplex/insulated example	Simplex	I
	Duplex/insulated example	Duplex	2I

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Probe Length (mm) (L1)	Code
As required to suit your application	e.g. 300

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Optional 316 Stainless Steel Compression Fittings		
To Suit Support Tube Diameter	1/2" BSPT Code	3/4" BSPT Code
15.8mm	CF158ES	CF158GS
21.3mm	-	CF213GS
26.9mm	-	-

See page 63 for our full range of adjustable compression fittings.

Optional Mild Steel Flanges
4" (101mm) Mild Steel Flange (Black, Powder Coated)
FL15
FL21
FL26

Contact sales for our full range of flanges.

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Optional Head Mounting 4~20mA Transmitter (replaces ceramic terminal block)	Code
Linearised, Head Mounting 4~20mA Transmitter, 24VDC Power Supply, Non-isolated (pre-ranged to suit your requirements)	TXHU (range) e.g. TXHU (0/200°C)

See page 87 for a full specification of the TXHU transmitter. Isolated version also available.

ATEX versions also available (contact sales)

Order Code (example)	1 2 3 4 5 6 7 8 TCR - R - RA - 10.0 - I - 300 - CF158ES - TXHU (0/200°C)