

TCM13 General Purpose Thermocouple



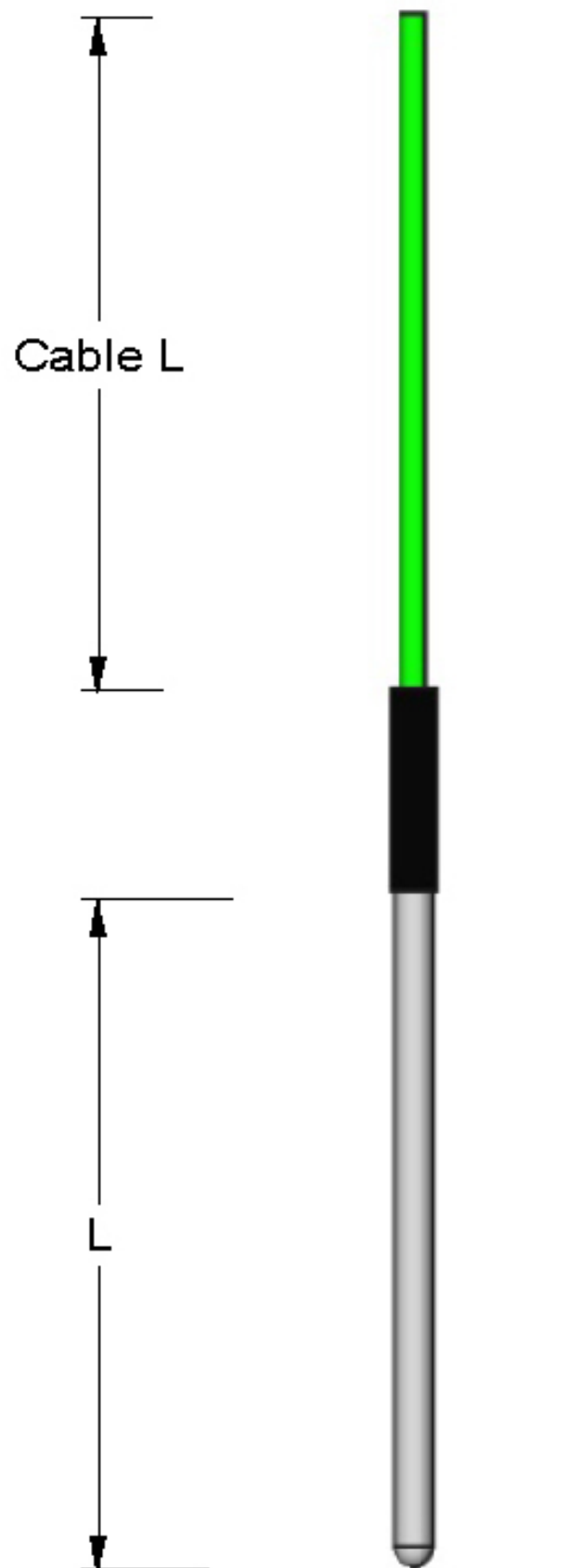
ITS is one of the leading manufacturers of thermocouples, RTDs, PT100s and thermowells in Ireland. ITS produces a variety of temperature sensors and assemblies in both standard and custom designs, which can be found on equipment and in process applications in the chemical, petrochemical, power generation, food & beverage, dairy, plastics, heat-treating, oil & gas, pharmaceutical, aerospace, biomass, metal processing, rubber, mining, HVAC, water & wastewater, incineration, and many other industries.

- RTDs and thermocouples available to meet any process requirement
- Integrated temperature assembly with transmitters available
- Temperature range of -196 to 650 °C for RTD, -196 to 1450 °C for thermocouple
- Industry-standard sensor types, including RTD and thermocouple varieties
- Variety of enclosure and connection head options
- Calibration services available

ITS TCM13 General Purpose Thermocouple



TCM13 General Purpose Thermocouple



Model	Product Description		
TCM13	Thermocouple M13 Style		
Code	Maximum Operating Temperature °C		
250C	250°C		
350C	350°C		
750C	750°C		
1100C	1100°C		
1250C	1250°C		
Code	Sensor Configuration & Class		
SK	Single Type K Class 1		
SJ	Single Type J Class 1		
ST	Single Type T Class 1		
DK	Duplex Type K Class 1		
DJ	Duplex Type J Class 1		
DT	Duplex Type T Class 1		
Code	Hot Junction		
G	Grounded		
UG	Insulated		
Code	Sensor Sheath Diameter		
1.5	3mm Diameter		
3	3mm Diameter		
4	4mm Diameter		
5	5mm Diameter		
6	6mm Diameter		
8	8mm Diameter		
10	10mm Diameter		
Code	Sensor Sheath Length		
XXX	Sensor Sheath Length		
Code	Material Type		
316L	Stainless Steel 1.4404 (316L)		
310	Stainless Steel 1.485 (310)		
INC	Inconell		
NIC	Microbel		
Code	Cable Length in Meters		
XXX	Specify in Meters		
Code	Cable Type		
PVC	PVC Cable (Suitable for temperatures up to 105°C)		
PTFE	PTFE Cable (Suitable for temperatures up to 250°C)		
SR	Silicone Rubber (Suitable for temperatures up to 200°C)		
FGSSOB	Fibre Glass Stainless Steel Over Braid (Suitable for temperatures up to 350°C)		
SSFC	Stainless Steel Flex Conduit		
Code	Optional Termination Enclosure	IP Rating	Cable Entry
SCH4	ABS Plastic Enclosure	IP65	M20 Gland
ABSL	ABS Plastic Enclosure	IP65	M20 Gland
SSBOX	Special Polished Box 100 x 100 x 50	IP65	M20 Gland
7501	Exd Aluminium Screw Cap Style	IP68	M20 Gland
Code	Termination		
FL	Flying Leads		
MP	Miniture Plug		
SP	Standard Plug		
TB	Ceramic Din Style Termination Block		
5334A3B	2-wire programmable transmitter Thermocouple Input 4/20ma Output		
5334B3A		Ex Rated 2-wire programmable transmitter Thermocouple Input 4/20ma Output	
5331D		Ex Rated 2-wire programmable transmitter Universal Input 4/20ma Output	
5337D		Ex Rated 2-wire programmable transmitter Universal Input 4/20ma Output HART 5 or HART 7	

Code	Optional Process Connection Fitting	Material
18UN	1/8"BSP Compression Union	300 Stainless Steel
14UN	1/4"BSP Compression Union	300 Stainless Steel
38UN	3/8"BSP Compression Union	300 Stainless Steel
12UN	1/2"BSP Compression Union	300 Stainless Steel
34UN	3/4"BSP Compression Union	300 Stainless Steel
1UN	1"BSP Compression Union	300 Stainless Steel
38DF	38mm Duct Flange	300 Stainless Steel



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Thermocouple sensor Termination options

TC sensors are available with termination options Flying Leads or connector to customer specific specification.



Thermocouple Plugs



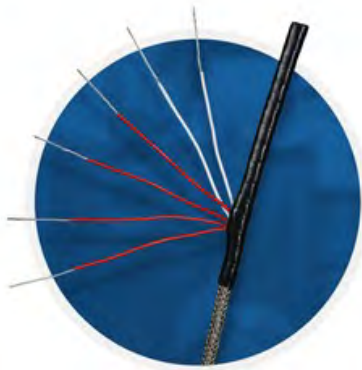
Din Connector

TCHH sensor accessories



Various instruments available to suit. Optional certification includes customer specific temperature calibration on Thermocouple sensor or Thermocouple sensor with Instrument as a system calibration.

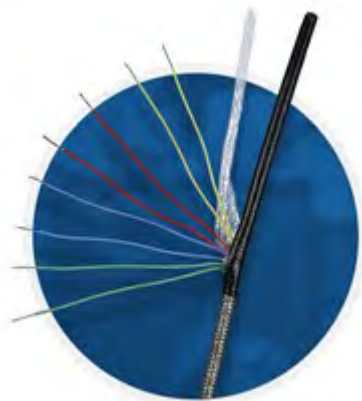
Cable Specification



PVC

-10C to 105C

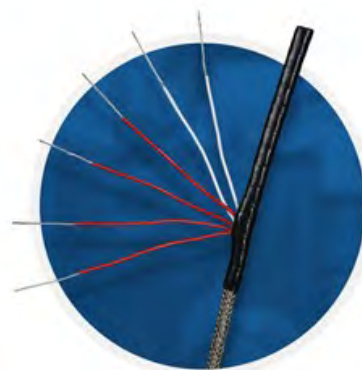
Good general purpose insulation for medium temperature environments. Waterproof and very flexible.



PTFE

-260C to +260C

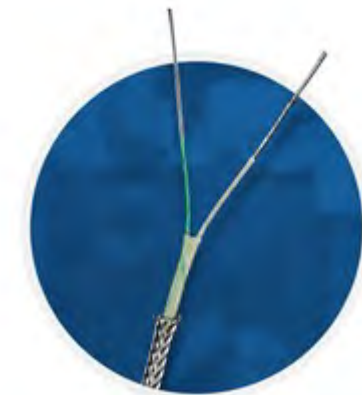
Resistant to oils, acids, other adverse agents and fluids. Good mechanical strength and flexibility.



Silicone Rubber

-50 to +200

Offers excellent dielectric strength and flexibility. Operation over a wide temperature range and ease of silastic bonding are other outstanding characteristics of silicone rubber cable.



Glass fibre

(Varnished)

-60C to 350C

Good temperature range but will not prevent ingress of fluids. Fairly flexible but does not provide good mechanical protection.



Stainless Steel Flexible Conduit

withstands high temperatures

- Durable crush-proof construction
- Corrosion and rust resistant

Color Codes for Thermocouples

Inter- national IEC 584-3	Inter- national IEC 584-3 Intrin- sically Safe	USA Canada ANSI	Czech British BS 1843	German Nether- lands DIN 43710	Japanese JIS C 1610-1981	French NFC 42-324	Type	Comments Environment - Bare Wire	Alloy Combination		Maximum Temperature Useful Range	EMF (mV) Over Max. Tempera- ture Range	Limits of Error (Whichever is Greater)	
									+ Lead	- Lead			Standard	Special
							K	Clean Oxidising and Inert. Limited use in Vacuum or Reducing. Wide Temperature range most popular calibration	Nickel - Chromium Ni-Cr	Nickel-Aluminium Ni-Al (magnetic)	-200 to 1250°C Therm. Grade 0 to 200°C Ext. Grade	-6.458 to 54.886	-200 to 1250°C 2.2°C or 0.75% above 0°C 2.0°C below 0°C 1.1°C or 0.4%	
							J	Reducing, Vacuum, Inert. Limited Use in Oxidising at high Temperatures not recommended for low Temperatures	± Fe (magnetic)	Copper-Nickel Cu-Ni	0 to 750°C Therm. Grade 0 to 200°C Ext. Grade	-8.095 to 69.553	0 to 750°C 2.2°C or 0.75% 1.1°C or 0.4%	
							S	Oxidising or Inert. Do not insert in metal tubes. Beware of Contamination. High Temperature	Platinum 10% Rhodium Pt-10% Rh	Platinum Pt	0 to 1450°C Therm. Grade 0 to 150°C Ext. Grade	-0.236 to 18.693	0 to 1450°C 1.5°C or 0.25% 0.6°C or 0.1%	
							T	Mild Oxidising, Reducing Vacuum or Inert. Good where moisture is present, low Temperature and cryogenic applications	Copper Cu	Copper-Nickel Cu-Ni	-200 to 350°C Therm. Grade -60 to 100°C Ext. Grade	-6.528 to 20.872	-200 to 1250°C 2.2°C or 0.75% above 0°C 2.0°C below 0°C 0.5°C or 0.4%	
				No standard Use IEC 584-3 Color Codes			N	Alternative to Type K. More stable at high Temperatures	Omega-P Nicrosil Ni-Cr-Si	Omega-N Nisil Ni-Si-Mg	-270 to 1300°C Therm. Grade 0 to 200°C Ext. Grade	-4.345 to 47.513	2.2°C or 0.75% above 0°C 2.0°C below 0°C 1.1°C or 0.4%	
							R	Oxidising or Inert. Do not insert in metal tubes. Beware of contamination. High Temperature	Platinum 13% Rhodium Pt-13% Rh	Platinum Pt	0 to 1450°C Therm. Grade 0 to 150°C Ext. Grade	-0.226 to 21.101	0 to 1450°C 1.5°C or 0.25% 0.6°C or 0.1%	
							E	Oxidising or Inert. Limited use in Vacuum or Reducing. Highest EMF change per degree.	Chromega Nickel-Chromium Ni-Cr	Copper-Nickel Cu-Ni	-200 to 900°C Therm. Grade 0 to 200°C Ext. Grade	-9.835 to 76.373	-200 to 900°C 1.7°C or 0.5% above 0°C 1.0% below 0°C 1.0°C or 0.4%	
				No Standard. Use Copper Wire		No Standard. Use Copper Wire	B	Oxidising or Inert. Do not insert in metal tubes. Beware of contamination. High Temperature. Common use in glass industry.	Platinum 30% Rhodium Pt-30% Rh	Platinum 6% Rhodium Pt-6% Rh	0 to 1700°C Therm. Grade 0 to 100°C Ext. Grade	0 to 13.820	0 to 1700°C 0.5% above 800°C None established	