THERMOCOUPLE & COMPENSATING CABLES

A Thermocouple Cable is usually a pair of insulated conductors made from two different metals with the same or similar properties to the thermocouple probe. They carry the signal from the probe back to the measuring unit. To transmit the signal there must be a positive (+) and negative (-) conductor. These conductors are often referred to as legs. Two legs make a pair and you must have a pair for a thermocouple to operate. Multiple Pair Cables are also used where a number of sensors or probes in one area link back to a control panel.

Thermocouple Cables have different insulation types such as PVC, PTFE, fiberglass, & silicone rubber, depending on the temperature range and the application requirements. Selecting right cable insulation is critical to ensure safety, reliability and accuracy of the temperature measurement.

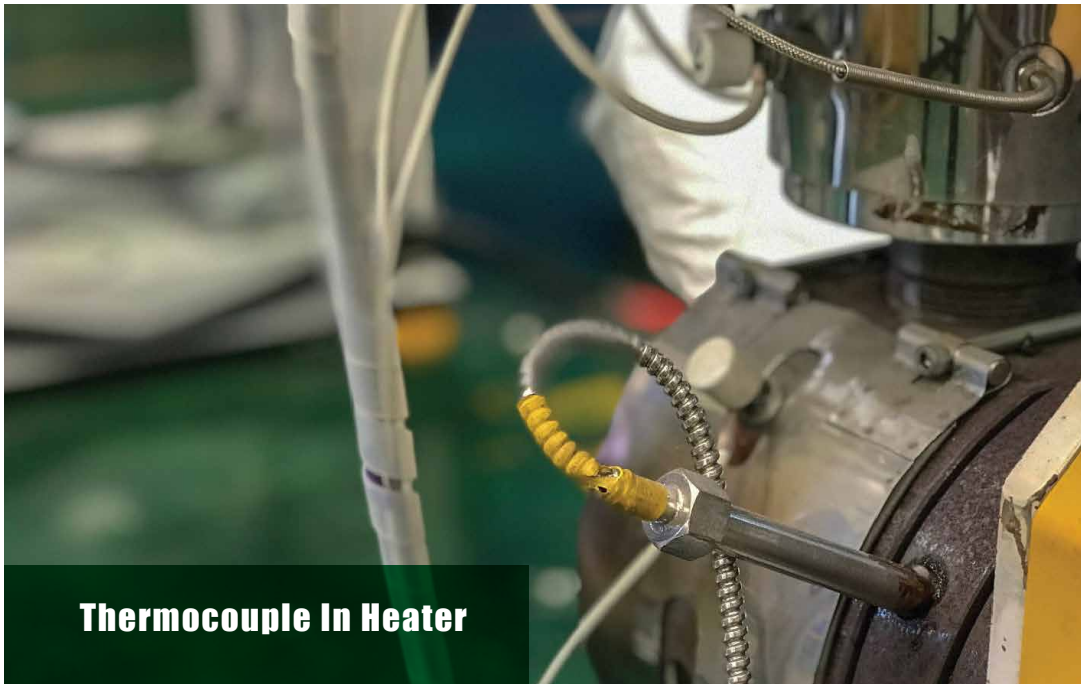
When selecting a thermocouple cable, it is essential to consider factors such as the thermocouple type, the temperature range, the cable length and the environmental conditions.

Cables can be supplied as standard measurement industry designs or to specific standards like BS 5308, IEC 60092 and EN 50288-7.
RTD (PT-100) cables can also be supplied in three core versions.

Pressure Transmitter for Combined-Cycle Co-Generation Power Plant

Gas Machines - Gas Insulated Switchgear in Power Plant

APPLICATIONS



Thermocouple In Heater

Modern Industry Equipment

Steel Production | Chemical Processing | Measuring the Temperature of Furnaces

Conductor Size & Stranding Options

Size mm ^{2}	Strands mm	Strands mm	Strands mm	AWG/ Strands
0.22	1/0.51	7/0.20	-	24/7
0.44	1/0.37	7/0.28	13/0.20	22/7
0.50	1/0.80	7/0.30	16/0.20	20/7
0.75	1/0.97	7/0.37	24/0.20	18/16
1.0	1/1.13	7/0.43	32/0.20	18/7
1.5	1/1.38	7/0.53	30/0.25	16/19

Insulation Material Options

Material	Operating Temp.	Properties
PVC	-30°C to +70°C	General Usage
PVC + HT	-20°C to +105°C	High Temperature Applications
XLPE	-30°C to +90°C	Low Smoke Halogen-free
XLPE + MICA	-30°C to +90°C	Fire Resistant Barrier (IEC 60331-21)
SILICONE	-60°C to +180°C	High Temperature Applications
FEP	-100°C to +205°C	Chemical & Heat Resistant
PFA	-190°C to +260°C	Chemical & Heat Resistant
PTEF	-190°C to +260°C	Chemical & Heat Resistant
GLASS	-50°C to +600°C	Dry Environments Only

Screening Options

Collective Screen Options	Individual Screen Options
Aluminium / Polyester Foil With Drain Wire	Individual & Collective Aluminium / Polyester Foil With Drain Wires
Tinned Copper Braid	Individual Aluminium / Polyester & Drain Wire, Each Pair Jacketed
Silver Plated Copper Braid	Individual & Collective Aluminium / Polyester Foil & Drain Wires + TCU Braid
Nickel Plated Copper Braid	Individual Tinned Copper Braids

Armour Protection

Armour Option	Construction	Application
GSWA	Galvanised Steel Wire Armour	Mechanical Protection
GSWB	Galvanised Steel Wire Braid	Flexibility For Installation In Confined Areas
GSTA	Galvanised Steel Tape Armour	Mechanical Protection
CWB	Copper Wire Braid Armour	Mechanical Protection (Mainly Offshore)
SSWB	Stainless Steel Wire Braid	Armouring For Very High Temperature Cables

Sheathing and Bedding Materials

Sheathing / Bedding Material	Operating Temp.	Application
PVC	-30°C to +70°C	General Usage
PVC - HT	-20°C to +105°C	High Temperature Applications
LDPE	-50°C to +70°C	Water Resistant
LSHF	-30°C to +90°C	Low Smoke Halogen-free
Tri-Barrier (ALI / HDPE / PA)	-50°C to +70°C	Hydrocarbon Resistant Barrier
SILICONE	-60°C to +180°C	High Temperature Applications
FEP	-100°C to +205°C	Chemical & Heat Resistant
PFA	-190°C to +260°C	Chemical & Heat Resistant
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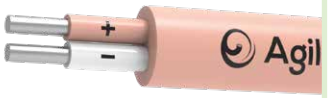
International Colour Codes for Thermocouple Cables

CABLE TYPE		EUROPEAN BS 4937 Part 30 IEC 60584	BRITISH BS 1843	AMERICAN ANSI MC96.1	GERMAN DIN 43710.4
Extension Cables					
KX	Nicro Nial				
JX	Iron Constantan				
TX	Copper Constantan				
EX	Nicro Constantan				
NX	Nicrosil Nisil				
Compensating Cables					
KCB Compensation for Type K (was Vx)	Copper Constantan				
RCA/ SCA Compensation for Type R or S	Copper Cupronic