



# Thermocouple : type E

Up to 900°C  
High sensitivity

## Type E

Nickel chromium (+) -  
Constantan® (-)

Due to its high sensitivity, Nickel chromium (+) - Constantan® (-) is mainly used in the cryogenic temperature range (-200°C).

As it is non magnetic could be a further advantage in some special applications.



Type E thermocouple with MF7 connector

Thermocouple				Sheath						
Sheath	Wire Materials	Type	Mean Sensitivity μV/°C	Working Temperature °C	Code	Material	Diameter in mm			
							0.5	1.0	1.5	2.0
	Nickel Chromium(+) - Constantan®(-)	<b>E</b>	68	-200 to +900	<b>2 AK</b>	<b>Ac</b>	●	●	●	●

This range is standard:

- Other diameters
- Other sheath materials
- Other construction

Please consult us.




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### Extension cable

The thermocouple is connected to the measurement device by means of an extension cable.

The extension cable has two cores each made of one single wire individually insulated with

Wire Materials	Type	Sheath Material	Maximum temperature	Outer Diameter 2.5 mm	Loop Resistance $\Omega/m$	IEC 584.3 Identification
Nickel Chromium-(+) Constantan <sup>®</sup> (-)	<b>E</b>	PVC	100°C	<b>2AK25</b>	16	

P.V.C. and one tinned copper earth wire. All three are totally screened by a flexible

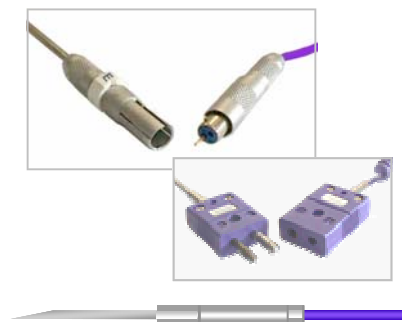
aluminum ribbon and again insulated by P.V.C. Their outer diameter is 2.5 mm.

### Connection

In order to ensure the faultless function of the thermocouples, the end has to be closed by means of an organic sealing compound to avoid any ingress of moisture.

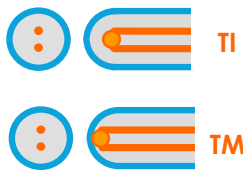
As connection to the plastic

sheathed cable, transferring the measurement signal to the instrument, direct connections are used. Besides this, it is often necessary, especially when being confronted with difficult or complicated measurement problems or specifications, to develop special connections.



### Hot junctions

The hot junction is the point where the two cores are joined. This therefore is the sensing part and can take a number of different forms.



- TI** insulated hot junction
- TM** grounded hot junction
- TIS** swaged insulated hot junction
- TMS** swaged grounded hot junction
- TIL** laminated insulated hot junction

### Accessories

Any form of brazing or welding of a thermocouple through a wall requires some skill, and to facilitate thermocouple mounting, a range of small seal-glands have been developed and adapted for the standard THERMOCOAX dimensions.



### Quality

Whether they are standard or manufactured to customers specifications, all THERMOCOAX products are developed with the same procedures, the same control principles, the same feed back and the same qualified personnel.

### Control and tests:

- X-ray of the hot junction
- Sheath integrity test
- Metallographic test on sample
- Calibration with appropriate thermal treatment...

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