



Thermocouple : type J

Up to 750°C

Type J

Iron (+)
Constantan® (-)

Though in thermometry conventional type J is still popular, it has less importance in MI technology because of its limited temperature range: -40°C to +750°C.

Type J is mainly still in use based on the extremely widespread diffusion of old instruments calibrated for this type.

Their sensitivity increases up to 55µV/°C and their output can be changed by the contamination of the iron.



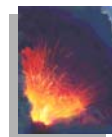
Type J thermocouple are fitting ovens for the industrial applications.

Thermocouple					Sheath				
Wire Materials	Type	Mean Sensitivity µV/°C	Working Temperature °C	Code	Material	Diameter in mm			
						1.0	1.5	2.0	3.0
Iron-(+) Constantan®(-)	J L	55	-40 to +750	2 FK	Ac	●	●	●	●

This range is standard:

- Other diameters
- Other sheath materials
- Other construction


Please consult us.



Thermocouple: type J

Extension cable

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

Wire Materials	Type	Sheath Material	Maximum temperature	Outer Diameter in mm		Loop Resistance Ω/m	IEC 584.3 Identification
				2.5	3.5		
Iron-(+) Constantan®(-)	J	PVC	100°C	2FK25	2FK35	9.2	
		PTFE	250°C	2FK25T	2FK35T		

The extension cables have two cores (each made of one single wire individually insulated with P.V.C. (2FK25) or P.T.F.E. (2FK25T) 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.

For the 2AB35 and 2AB35T, the structure is nearly the same,

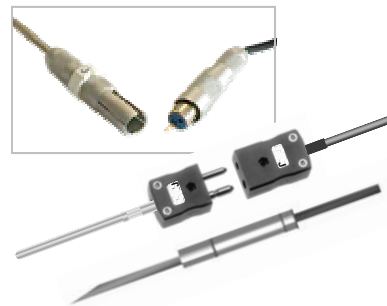
but is screened by a flexible earth braid made of silvered copper and the P.T.F.E. outer sheath has a diameter of 3.5mm.

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.

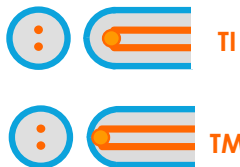
As connection to the plastic

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 of 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
- TML laminated grounded 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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