

Main characteristics of Thermocouple wires

Alloy Nomenclature Performance		Nickel- Chromium	Nickel-Silicon	Costantan
Main Chemical composition %	Ni	90	97	45
	Cr	10	\	\
	Si	\	3	\
	Cu	\	5	5
Melting point (approx.) (°C)		1427	1399	1220
Density (g/cm ³)		8,5	8,6	8,8
Resistivity at 20°C (μΩ·m)		0,706	0,294	0,49
TCR (10-4/°C)		2,9	16,3	0,5
Tensile strength (N/mm ²)		>=490	>=390	>=390
Elongation at rupture(%)		>=25	>=15	>=25

The working temperature of thermocouple alloy wire

Type	Tag	Operating temperature range (C°)		Tolerance (°C)		
		Long Term	Short Term	Grade	Temperature range	Tolerance
NiCr-NiSi	K	1200	1300	I	da -40 a 1100	+/-1,5°C or 0,4 % t
				II	da -40 a 1300	+/-2,5°C or 0,75 % t
NiCrSi-NiSi	N	1200	1300	I	da -40 a 1100	+/-1,5°C or 0,4 % t
				II	da -40 a 1300	+/-2,5°C or 0,75 % t
NiCr-CuNi	E	750	900	I	da -40 a 800	+/-1,5°C or 0,4 % t
				II	da -40 a 900	+/-2,5°C or 0,75 % t
Fe-CuNi	J	600	1300	I	da 0 a 750	+/-1,5°C or 0,4 % t
				II		+/-2,5°C or 0,75 % t
Cu-CuNi	T	300	350	I	da 0 a 750	+/-0,5°C or 0,4 % t
				II		+/-1°C or 0,75 % t
				III	da - 200 a 40	+/-1 or +/- 1,5 %t