Type K Thermocouple Bare Wire

TYPE K (CHROMEL vs ALUMEL) is used in oxidizing, inert or dry reducing atmospheres. Exposure to vacuum limited to short time periods. Must be protected from sulfurous and marginally oxidizing atmospheres. Reliable and accurate at high temperatures.

1. Chemical Composition

Material	Chemical composition (%)				
	Ni	Cr	Si	Mn	Al
KP(Chromel)	90	10			
KN(Alumel)	95		1-2	0.5-1.5	1-1.5

2. Physical properties and Mechnical properties

Material	Density(g/cm3)	Melting point(℃)	Tensile Strength(Mpa)	Volume resistivity (μΩ.cm)	Elongation rate (%)
KP(Chromel)	8.5	1427	>490	70.6(20℃)	>10
KN(Alumel)	8.6	1399	>390	29.4(20℃)	>15

3. EMF Value range at different temperature

Material	EMF value Vs Pt(μ V)					
	100℃	200℃	300℃	400℃	500℃	600℃
KP (Chromel)	2816~2896	5938~6018	9298~9378	12729~12821	16156~16266	19532~19676
KN (Alumel)	1218~1262	2140~2180	2849~2893	3600~3644	4403~4463	5271~5331

EMF value Vs Pt(μ V)				
700℃	800℃	900℃	1000℃	1100℃
22845~22999	26064~26246	29223~29411	32313~32525	35336~35548
6167~6247	7080~7160	7959~8059	8807~8907	9617~9737

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