Type E Bare Wire

TYPE E (CHROMEL vs Constantan) may be used in oxidizing, inert or dry reducing atmospheres, or for short periods of time under vacuum. Must be protected from sulfurous and marginally oxidizingatmospheres. Produces the highest EMF per degree o any standardized thermocouple.

1. Chemical Composition

Material	Chemical composition (%)				
	Ni	Cr	Cu	Mn	Al
EP(Chromel)	90	10			
EN(Constantan)	45		55		

2. Physical properties and Mechnical properties

Material	Density(g/cm3)	Melting point(℃)	Tensile Strength(Mpa)	Volume resistivity (μΩ.cm)	Elongation rate (%)
EP(Chromel)	8.5	1427	>490	70.6(20℃)	>25
EN(Constantan)	8.8	1220	>390	49.0(20℃)	>25

3. EMF Value range at different temperature

Material	EMF value Vs Pt(μ V)					
	100℃	200℃	300℃	400℃	500℃	600℃
EP (Chromel)	2769~2859	5921~6019	9272~9374	12709~12819	16144~16282	19537~19699
EN (Constantan)	3499~3561	7389~7513	11647~11779	16109~16255	20699~20885	25362~25588

EMF value Vs Pt(μ V)				
700℃	800℃	900℃	1000℃	1100℃
22859~23043	26102~26308			
30030~30292	34664~34960			

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