

Thermoelectric Temperature Converters. Effect Analysis of the Shell on the Thermoelectric EMF

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key words

temperature, thermocouple, thermo EMF, correction, thermoelectric

I have made an analysis of the influence of the shell on the thermo EMF of thermoelectric temperature converters (thermocouples) and calculated the correction made to the thermo EMF of different types of thermoelectric converters using a shell. The studies were carried out according to GOST R 8.585–2001. Nominal static conversion characteristics.

These studies were conducted on 13 identical thermocouples in the case and without the case, made of wire of the same batch. Thermocouple sensitive elements were welded on a spot welding machine in automatic mode. When comparing the testimony of the studied thermocouples, I found a difference in the readings in the measurements. According to the results of the research, I concluded that the case has an effect on the thermoelectric temperature transducer TEDS, and introduces an error in the readings of the thermal converter.

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