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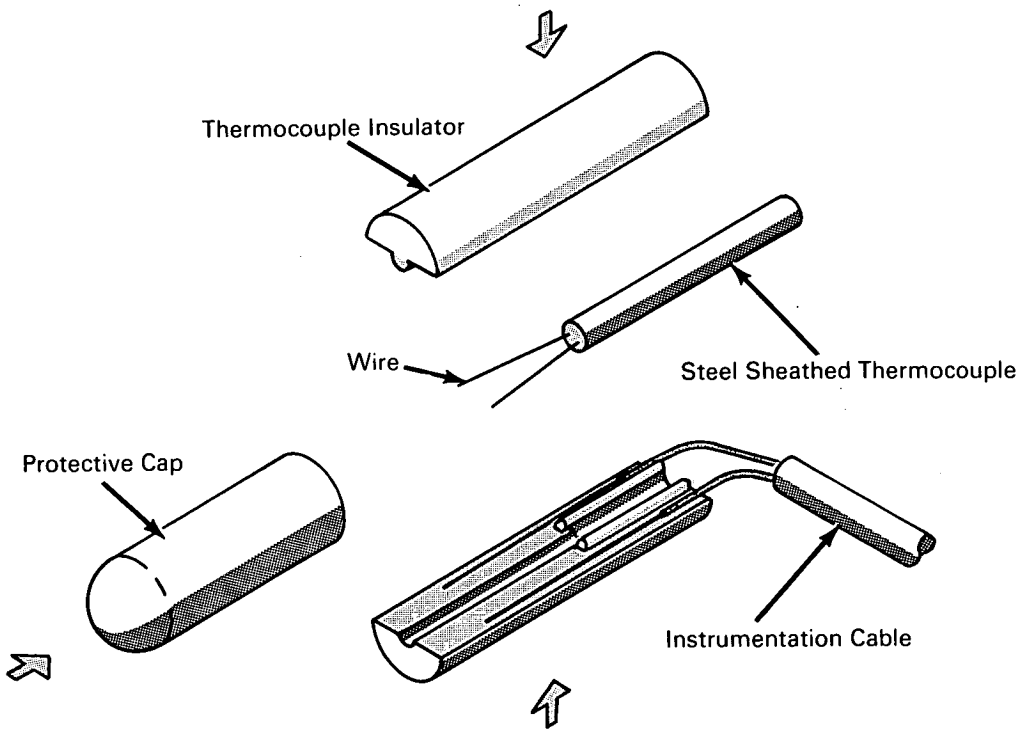
AEC-NASA TECH BRIEF

Thermocouple–Flexible Cable Connector Insulator Is Highly Reliable



The problem:

To design highly reliable thermocouple connectors for use in test operations. A commercially available steel sheath type of thermocouple was furnished with the flexible instrumentation cable attached. As supplied the connection of the instrumentation cable leads to the thermocouple lead-in wires at the end of the steel sheath was insulated by epoxy potting. This connection was highly unreliable because of the electrical shorts that developed. A more reliable type of connection and insulator was required.

The solution:

A plastic (polycarbonate) insulator that is molded in half sections, assembled mechanically, and eliminates electrical shorting.

How it's done:

The thermocouple insulator and protective cap enclose the steel sheathed thermocouple which contains two wire leads. The steel sheathed thermocouple with its bare wire leads is placed in one of the insulator halves so that the wires are separated. The instrumentation cable wire leads are soldered or laid

(continued overleaf)

against the thermocouple bare wire leads and the other insulator half is mated together. The protective cap is press fitted over the insulator halves, and the unit is then dipped in methylene chloride thus bonding the entire unit together.

Note:

Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
AEC-NASA Space Nuclear Propulsion Office
U.S. Atomic Energy Commission
Washington, D.C. 20545
Reference: B66-10709

Patent status:

No patent action is contemplated by AEC or NASA.

Source: C. M. Gracey
of Aerojet-General Corporation
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AEC-NASA Space Nuclear Propulsion Office
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