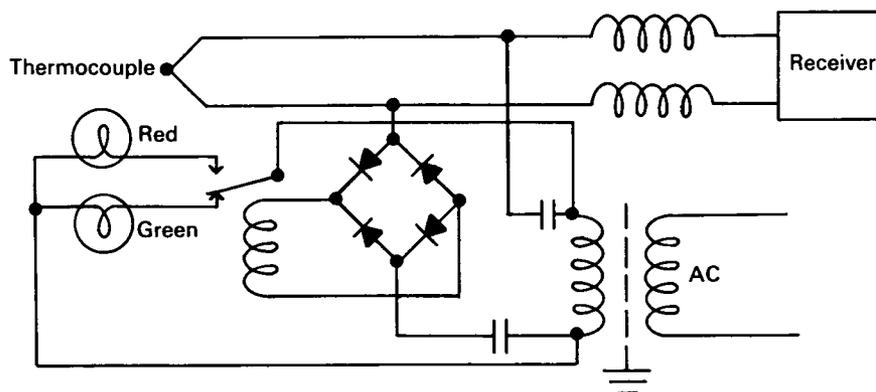


NASA TECH BRIEF



This NASA Tech Brief is issued by the Technology Utilization Division to acquaint industry with the technical content of an innovation derived from the space program.

Simple Circuit Continuously Monitors Thermocouple Sensor



The problem: Previously, checking of continuity in thermocouple sensors involved disconnecting leads and connecting an instrument directly across the individual thermocouple. This was a time-consuming and inconvenient method which could not be used while the major equipment was under power.

The solution: A series circuit depending on continuity in the thermocouple to energize a relay to light a green indicator lamp. Relay dropout lights a red lamp to give a positive indication of a thermocouple discontinuity.

How it's done: The thermocouple is capacitively connected in series with the secondary of a transformer operated by a constant 60-cycle source. With the thermocouple operating properly, the output voltage of the transformer is applied across a bridge rectifier to operate a relay lighting the green light. A thermocouple discontinuity will interrupt current flow

in the rectifier circuit causing the relay to drop out. This lights the red light as the green light goes out.

Notes:

1. This method may be used to monitor continuity in any control circuit operated at dc voltages.
2. For further information about this invention inquiries may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama, 35812
Reference: B63-10567

Patent status: NASA encourages the immediate commercial use of this invention. Inquiries about obtaining rights for its commercial use may be made to NASA Headquarters, Washington, D.C., 20546.

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