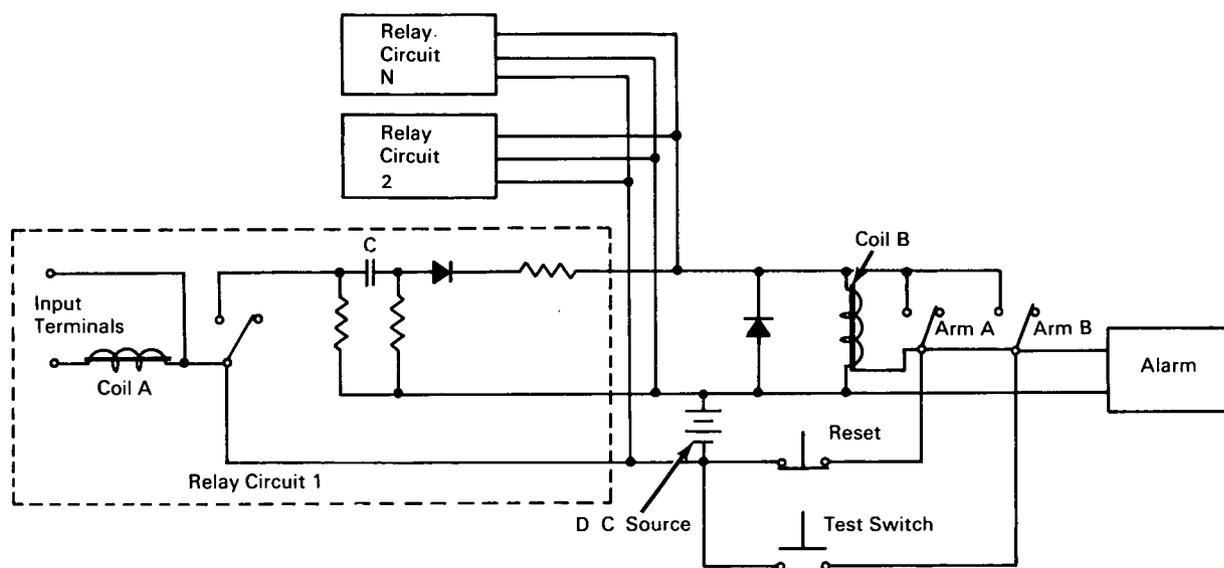


# NASA TECH BRIEF



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## Multiple Meter Monitoring Circuits Served by Single Alarm



### The problem:

Relay circuits are often used in series with instrumentation to trip an alarm when an out-of-tolerance condition arises. When several meter relay circuits are grouped together to monitor a number of critical parameters, continued warning capability must be maintained for the rest of the system while the relay acting in response to the out-of-tolerance condition is disconnected from the alarm.

### The solution:

Circuitry that provides complete isolation for each of  $N$  relay circuits served by a single alarm and permits alarm reset after an out-of-tolerance event in one relay circuit so that the remaining relay circuits continue to be alarm protected.

### How it's done:

Out-of-tolerance performance of a monitored component energizes its related relay circuit to connect a dc source to an alarm relay through an R-C circuit. The alarm, audible or visible or both, can be deactivated by a manual reset. Due to the R-C net in the meter relay circuit, the out-of-tolerance condition still existing in the meter relay circuit cannot cause the alarm relay to again be energized. Should an out-of-tolerance condition cause another meter relay to close, the alarm relay will again be energized.

In operation, a sufficient signal across the input terminals energizes coil A and connects the dc source across coil B. Arm B actuates the alarm and arm A supplies holding current to coil B from the dc source.

(continued overleaf)

Manually operating the reset turns off the alarm by deenergizing coil B and though coil A remains energized the charge on the capacitor C prevents reenergizing of coil B. However an out-of-tolerance condition arising in the other relay circuits (2 through N) will energize coil B to start the alarm cycle again.

**Note:**

Inquiries concerning this invention may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center  
Houston, Texas 77058  
Reference: B67-10369

**Patent status:**

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: Urbano Bandini  
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