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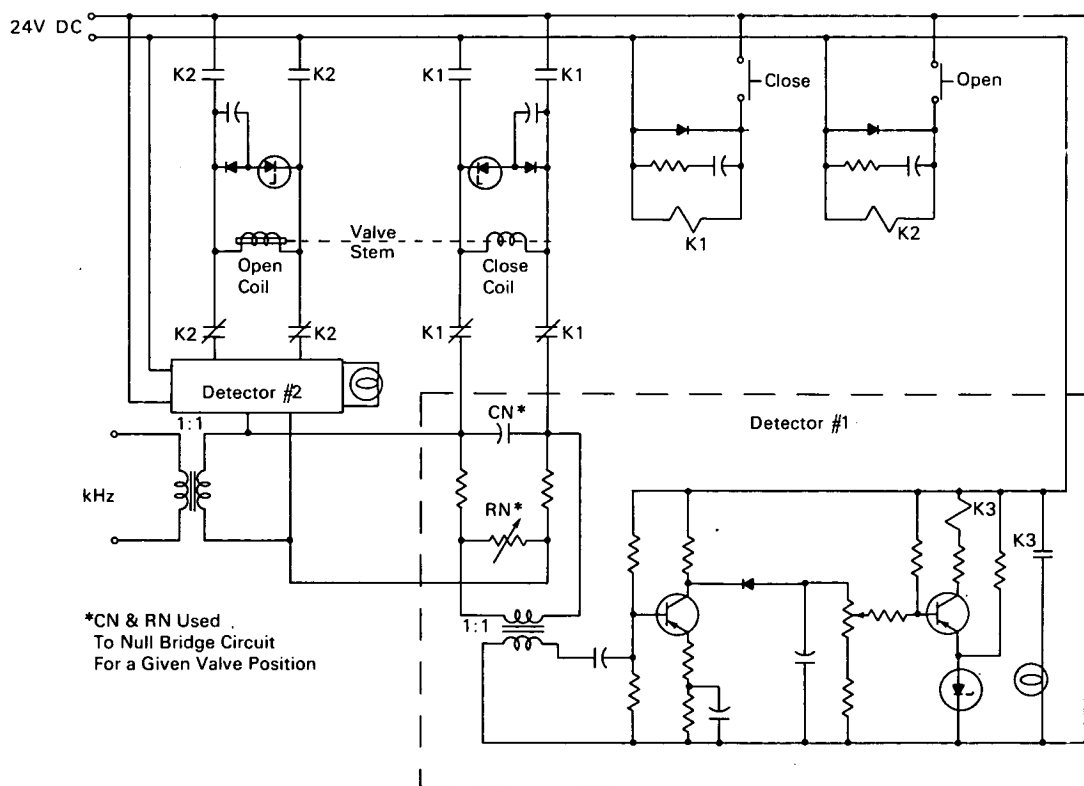
Brief 70-10174

# NASA TECH BRIEF



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## Electronic Position Indicator for Latching Solenoid Valves



Detecting Circuit For Double-Latching Solenoid Valve

### The problem:

To determine whether a double latching solenoid valve is open, closed, or at some in-between position.

### The solution:

An electronic circuit connected to the solenoid valve coils which visually indicates the position of the valve stem.

### How it's done:

The circuit shown in the figure detects the change in impedance of a solenoid coil caused by the change in position of the solenoid plunger with respect to the coil. This change in impedance of the coil unbalances a bridge and thus provides a signal for the level detection circuitry. Identical detection circuits are connected to the valve coils so that if the valve is

(continued overleaf)

not fully open or fully closed, neither detection lamp will be on.

Transient suppression has been provided to prevent damaging voltage spikes. No modifications of the valve are required since the detector is connected directly to the valve coil.

**Notes:**

1. This indicator can be used with completely sealed double-latching valve assemblies.
2. The following documentation may be obtained from:

Clearinghouse for Federal Scientific  
and Technical Information  
Springfield, Virginia 22151  
Single document price \$3.00  
(or microfiche \$0.65)

Reference: NASA-TM-X-1760 (N69-20874);  
Electronic Position Indicator for Latching Solenoid Valves.

3. Requests for further information may be directed to:

Technology Utilization Officer  
Lewis Research Center  
21000 Brookpark Road  
Cleveland, Ohio 44135  
Reference: B70-10174

**Patent status:**

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

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