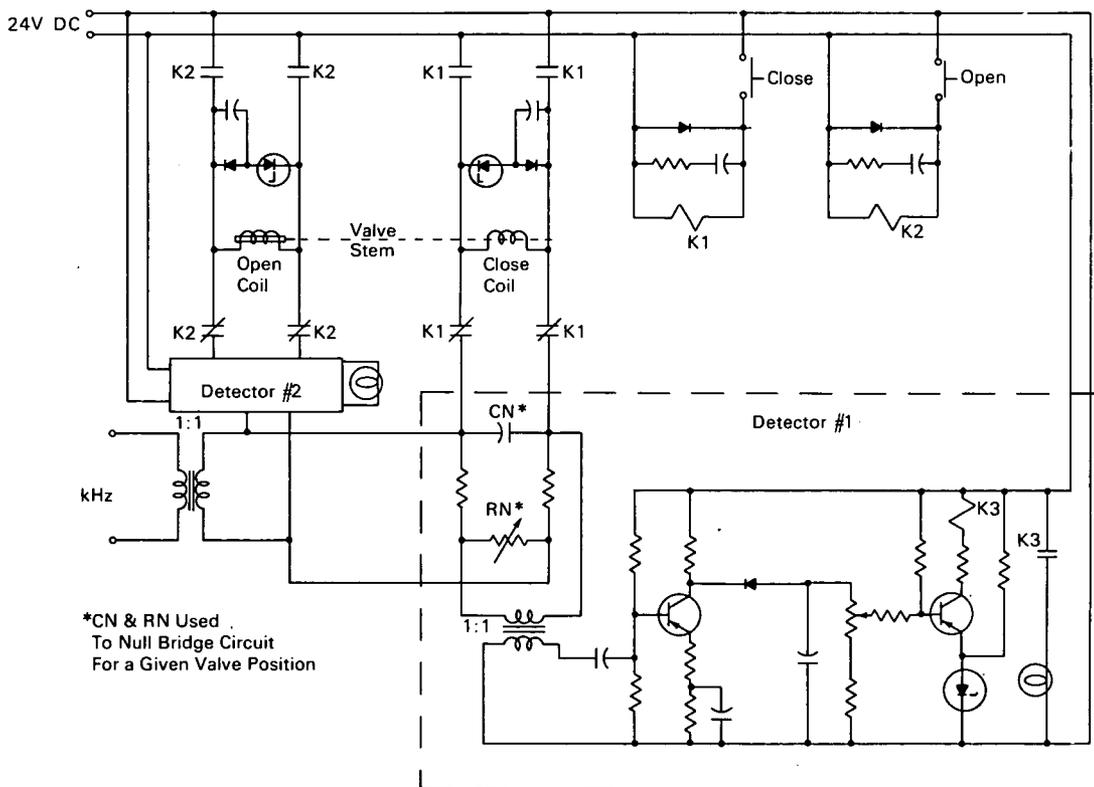


NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

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.

Source: Robert J. Frye, Heinz L. Wimmer
and Raymond Fischer
Lewis Research Center
(LEW-10926)