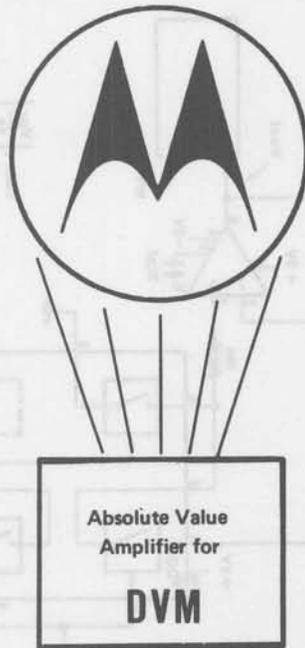


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APPLICATION IDEA

FROM **MOTOROLA**



In many DVM systems, the Analog Digital Converter works with a unipolar differential input voltage. In order to obtain a DVM which accepts bipolar inputs, it is possible to use the absolute value amplifier shown here. The MLM301A is connected for a gain of +1 or -1 according to the polarity of the input, as detected by the MC1741, which can also be used to drive the polarity indicator.

The switches used for changing the circuit from inverting to non-inverting may be either mechanical (e.g. reed relays) or electronic (MC14016). The circuit shows the connections for the MC14016. The supply voltages  $V_{DD}$  (5V) and  $V_{SS}$  (-3V) are chosen to provide good switching action taking into account both the switch drive requirements and the analog voltage levels to be switched.

In this application, the absolute voltage output is ten times smaller ( $V_1$ , MC1505) than the input voltage ( $V_{IN}$ ) applied. This ratio may be changed by modification of the alternating voltage divider at the input terminal.

