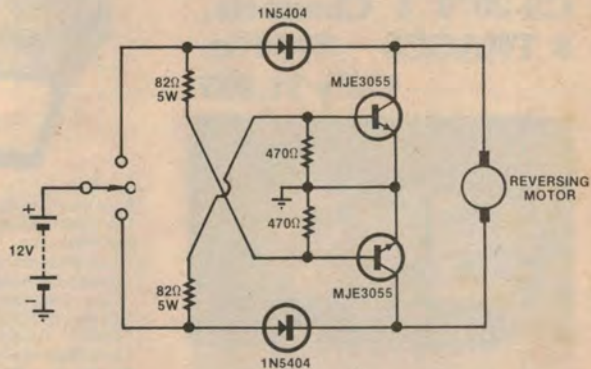
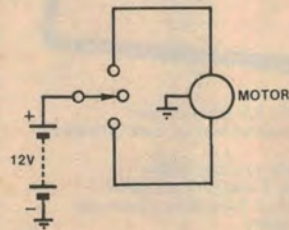


Power Inverter for Motor-Driven Antenna

The traditional motor-driven antenna installed in motor vehicles has one side of the motor grounded, plus two terminals connecting to separate field coil windings. These are connected to two contacts of a "centre-off" two-way switch so that battery polarity can be reversed, depending upon whether it is desired to raise or lower the antenna. For this application a single-pole switch is supplied.

Some contemporary antennas apparently use a "permag" motor whose windings are not grounded to its framework. Motor reversal is obtained by reversing the polarity of the current fed to its two floating terminals. Control of this type of antenna usually requires a two-pole switch, with one pole grounded and the other connected to battery. Thus, if such an antenna is used to replace one of the former type, it would be necessary to replace the original single-pole switch with a two-pole version. In many cases this is undesirable as the replacement switch may not match the decor of the instrument panel.

The accompanying circuit solves the problem. Assuming the single-pole



switch applies power to one-half of the circuit, current flows via an 82Ω 5W resistor into the base of an MJE3055 transistor, switching it on. Current also flows via a 1N5404 diode to the antenna motor. The other side of the motor is returned to ground via the switched-on MJE3055. The second 1N5404 diode prevents the other MJE3055 from switching on. In addition, it is held cut-off by the 470Ω resistor connected between its base and ground.

Exactly the same applies when power

is applied to the other side of the circuit, except that the functions of all components are reversed. Compared to the previous situation, the motor will run in the opposite direction.

Note that since it only takes some three to four seconds to raise or lower the antenna, it is unnecessary to mount the MJE3055s on heatsinks. But for continuous duty applications heatsinks should be included.

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