

# Circuit & Design Ideas

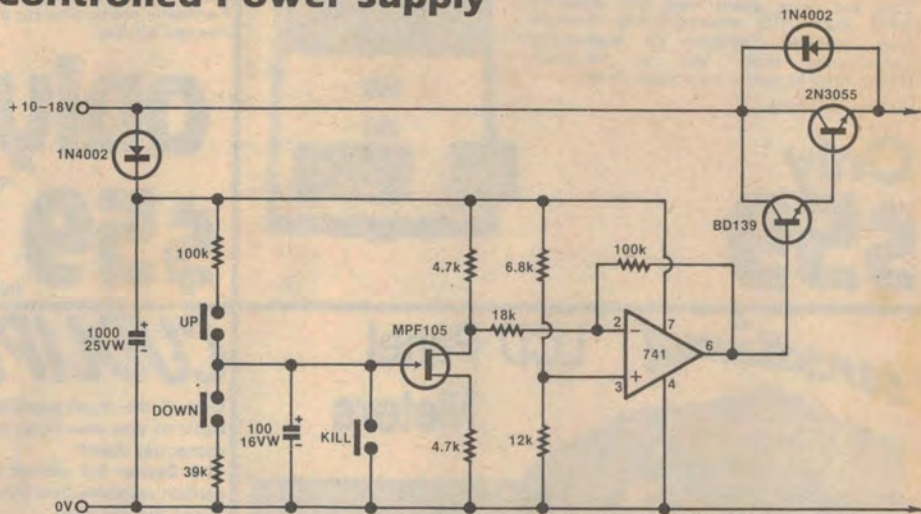
Interesting circuit ideas from readers and technical literature. While this material has been checked as far as possible for feasibility, the circuits have not been built and tested by us. As a consequence, we cannot accept responsibility, enter into correspondence or provide constructional details.

## Up/down Pushbutton-Controlled Power Supply

Using two momentary-contact pushbutton switches, or a three-position non-locking rocker switch, this circuit permits raising or lowering the output of a low-voltage DC power supply by push-button action. Exact output voltage is dependant upon the length of time either button is held operated. Optionally, a third momentary-contact button can provide the facility of quickly lowering the output of the supply to zero.

The circuit consists of a compound voltage follower which comprises a FET, op amp and a Darlington pair of output transistors. Thus, raising or lowering the potential on the gate of the FET produces a corresponding change in voltage at the output of the unit. A  $100\mu\text{F}$  capacitor is connected between the FET gate and the negative rail, producing a "hold" function for any potential which is applied to the gate.

From the positive and negative rails resistors are connected to the pushbutton switches, such that when either switch is actuated current flows through



the resistor to charge (or discharge) the  $100\mu\text{F}$  capacitor and thus vary the gate potential/output voltage. The size of the resistors determine the rate at which the capacitor is charged/discharged, and thus the response of the output to the time that a button is depressed. The

third (optional) button discharges the capacitor directly to the negative rail so that the output may be quickly taken to zero.

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