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COMPUTER CONTROLLED POWER SUPPLIES

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A simple method of using general purpose power supplies of the reference element-differential amplifier type as pulsed and/or programmed and/or computer controlled current regulated power supplies is presented.

Available at the input terminals of most power supplies is provision for employing a variable resistance (typically 100 or 200 Ω) to produce a current regulated output of controlled magnitude. Actually this node is an entry into the differential amplifier control loop of the power supply, and the supply is set to sense the voltage developed across the external resistor by a supply generated current source. Thus if we replace the external resistor by a true voltage source (operational amplifier), resistance control becomes voltage control with all its inherent advantages.

Since we have not modified the power supply itself, the resulting system is as linear as under resistance control (quite good), and stability is dependent upon the previous specifications of the supply plus the drift of the operational amplifier which is small since a unity gain non-inverting configuration may be used.

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