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The MATRIX Multiple power supply (MPS-300L-3)

The power supply for all D.C. experiments is provided by the multiple power supply type MPS-300L-3, whose basic circuit is shown in Fig. 1. This instrument contains three power supplies which are completely independent, except for the common ON-OFF switch (lower left corner of the front panel): one with fixed output voltage 5 V D.C. (with maximum output current 1 A) (the first terminal at the right hand bottom corner of the front panel). The other two are of the variable type.

The two variable D.C. power supplies are once again mutually independent with output voltage adjustable in the range of 0 to 30 V and maximum load current 1 A. Each of the two supplies has an over-current protection circuit "VOLTAGE" the value of output voltage, the high-precision "CURRENT" sensor for the adjustment of output current limiter, protecting the measured object from accidental over-currents, or to operate the particular power supply as a D.C. current source instead of a voltage source. The current limit can be controlled independently from zero to maximum. Between each supply and load there are located two signal lights: the right one indicates when the load current has reached the maximum value set by the regulator; as long as this red light is on, the supply behaves as current source. As long as the left (green) light is on, the supply behaves as a voltage source. Both the output voltage and the load current of each supply are shown on the top display, right