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PRIMARY POWER MONITOR FOR REMOTE GENERATING POWER STATIONS

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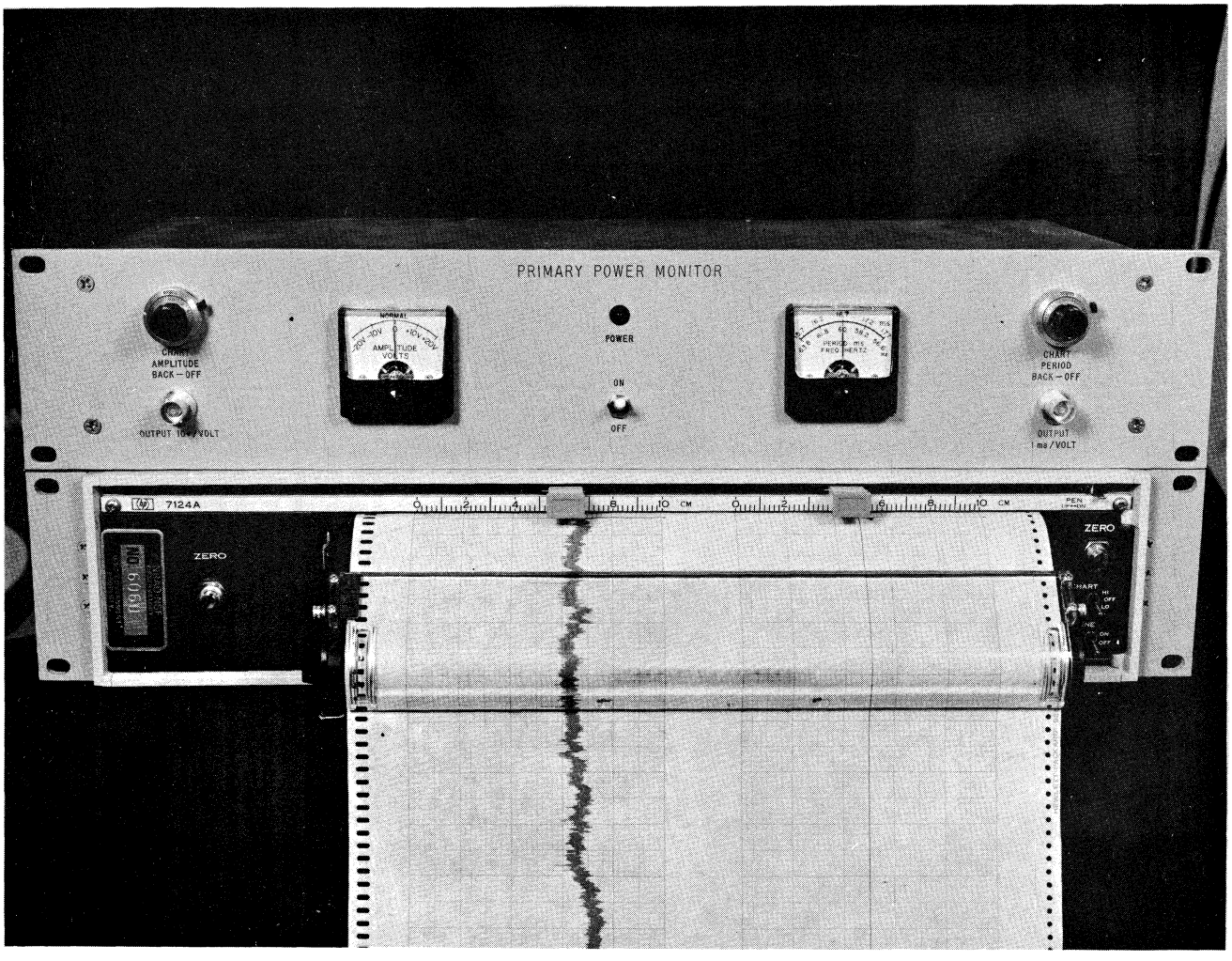
A small analog system has been fabricated to monitor and record the amplitude and period of small remote power systems.

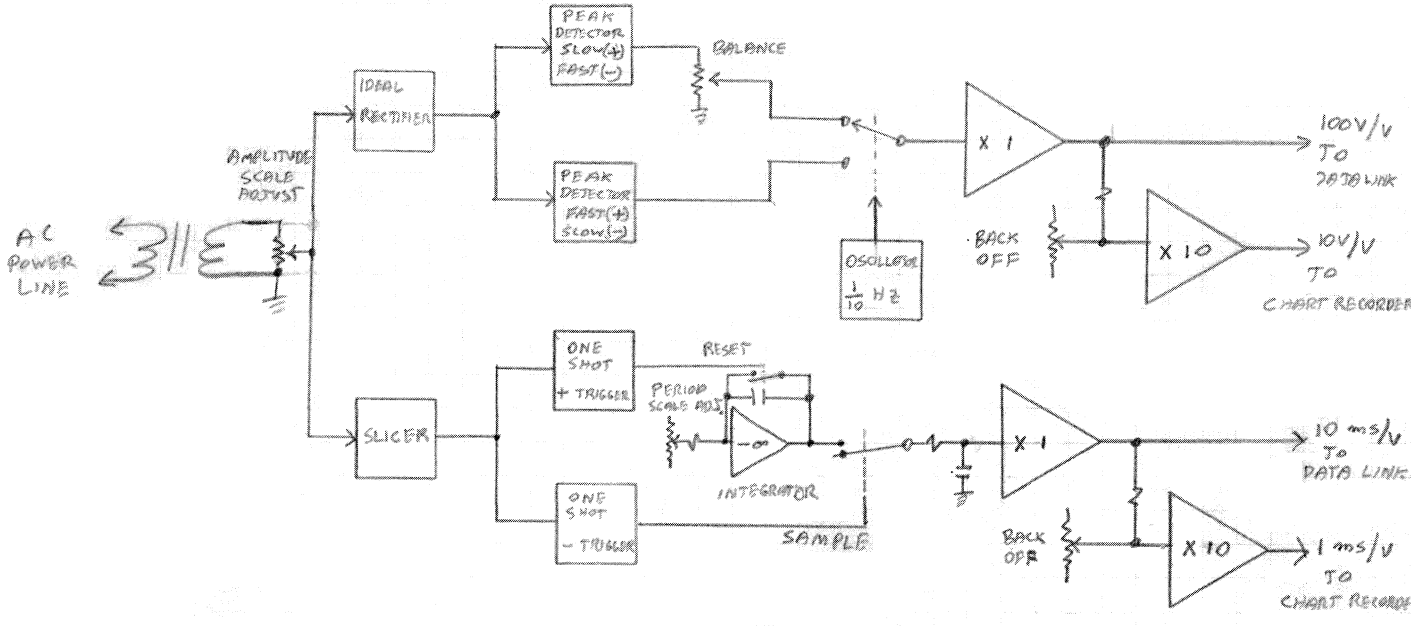


An HP Model 7124A strip chart recorder makes 2 week "snapshot" recordings of the power system performance. The HP 7124A was chosen since it contains only two moving parts, namely, the paper and pens. Linear motors drive the pens so that static overloads driving the pens into the stops will not damage the device, thus permitting expanded scales of only $\pm$ 1 ms (f $\approx$ $\pm$ 4 Hz) of nominal 120 V AC and 16.67 ms. Scale centers may be easily changed by means of potentiometers.

In one application, the primary power at the remote 45-foot portable telescope site is monitored and variable data is transmitted via data link to the NRAO interferometer control building for local monitoring purposes. Amplitude and period data may be written into the computer operating system output tape for logging with the various scientific data for later use.

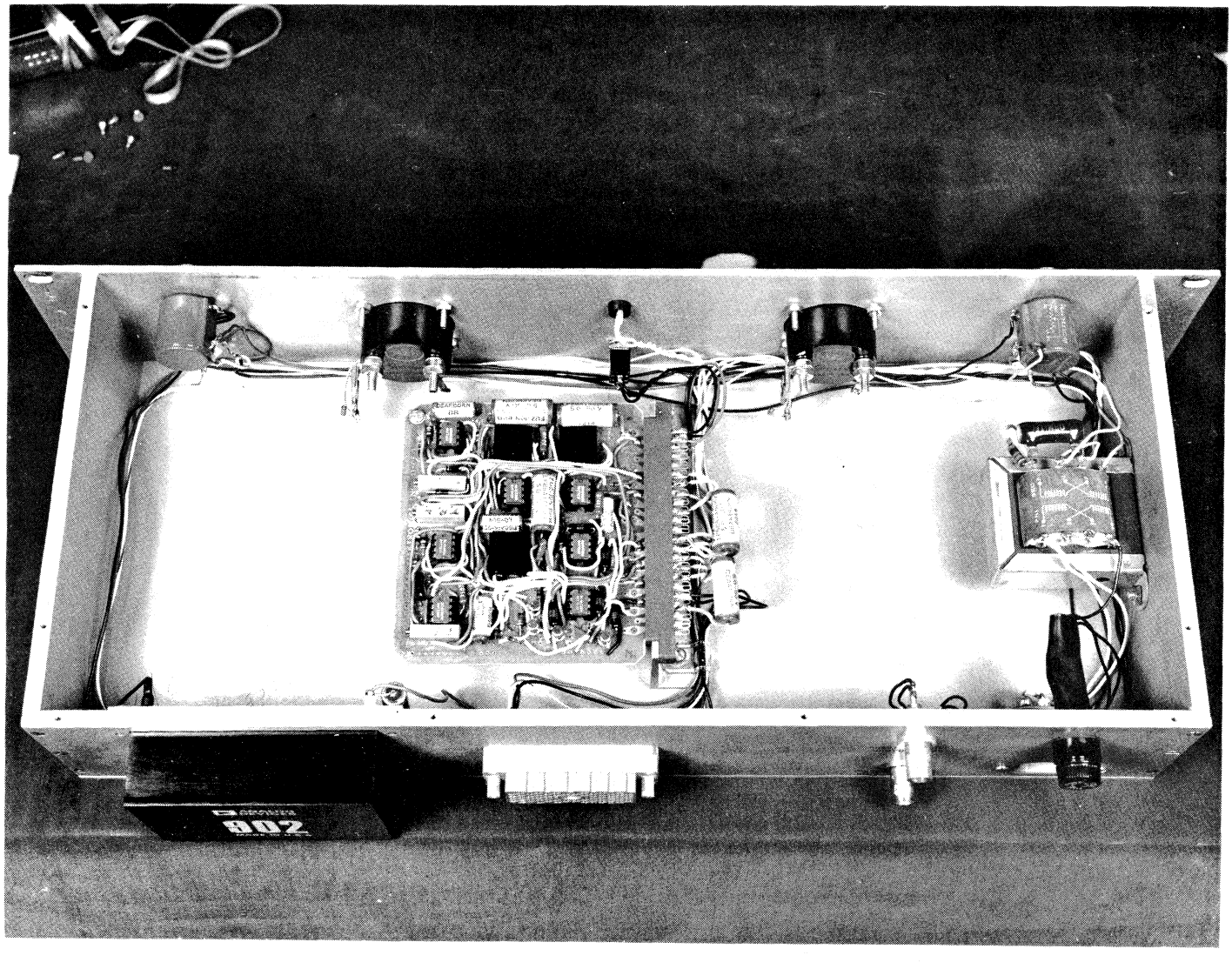
Circuit Description

The circuit comprises the basic functions as shown in the block diagram.

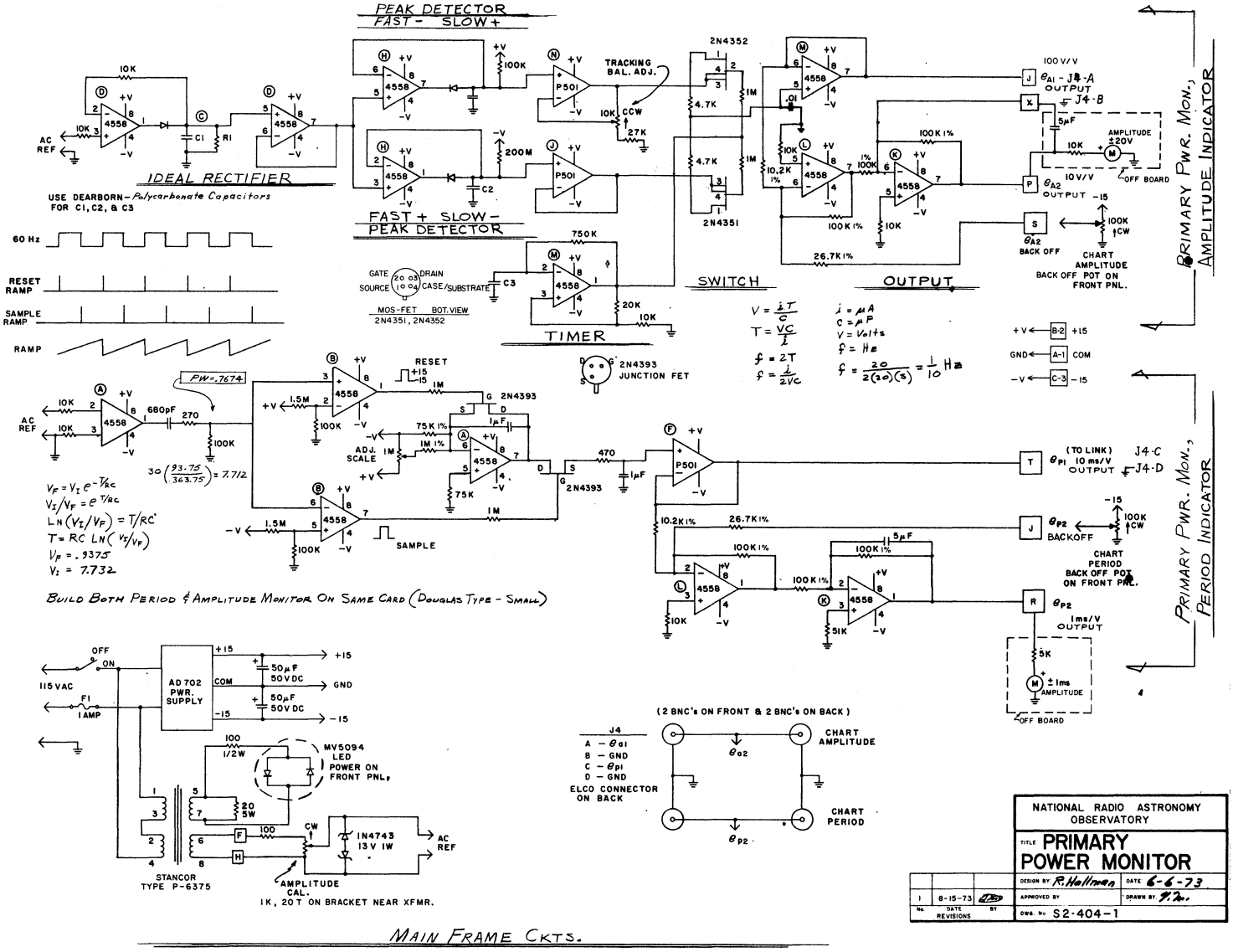


PRIMARY POWER MONITOR FUNCTIONAL BLOCK DIAGRAM

The circuit functions are self-explanatory, and the schematic is laid out similar to the block diagram; hence, no more lecture is presented. A picture of the guts is shown below:



The electronic circuit schematic is presented below:



Note that some calculations of certain parameters are presented in the schematics. Also, the I/O connectors and indicators are shown.