

NIM POWER SUPPLY MONITOR
TEST SET OPERATIONS MANUAL

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SCOPE

The module described was designed and built to be used to check out Nim Power Supply Monitor Modules (Dwg. #0892.000-EE-46458 and 0892.000-EE-46457). To that end, the document "Nim Power Supply Monitor Module Check-Out, Calibration and Test Procedure" was written and refers to the Test Set described herein. The Test Set of which there is only one is built in a 3-wide Nim module on a kludge board. This document is not intended to detail the engineering aspects of the module, but to provide an overview of the various modes of operation as they relate to the Nim Power Supply Monitor. Drawing #0892.000-ED-46630 is a schematic of the Test Set.

GENERAL DESCRIPTION

Besides a powered Nim bin, the Test Set requires a remotely programmable Calibrator, and a Power Amplifier as shown in the block diagram of Fig. (1). There are two Nim output connectors J2 and J1. The Power available at J2 comes directly from the Nim Power Supply through a separate ON/OFF switch for each voltage. It is used to turn on power to the module for the first time and to test the dual power supply circuits of the module. The power available at the J1 connector is derived from the Nim Power Supply for all voltages, except that which is selected by the VOLTAGE SELECT switch on the front panel. For the selected voltage, the Nim Power supply is disconnected and the Calibrator and Power Amplifier are substituted depending on the MODE SELECTED

The Calibrator which was selected to be used with the Test Set is a Fluke

Model 382A. Its salient features as they apply to the Test Set and Test Procedures are: (1) remote control of calibrated voltage ($1000\Omega/\text{volt}$) up to at least 24 V, (2) supplies current up to at least 1.5 A, (3) output terminals isolated from ground, (4) current limited and short circuit proof.

The Power Amplifier which was selected is a Kepco Model BOP-1-1.5M. Its salient features as they apply to the Test Set and Test Procedure are: (1) at least ± 1 V output from dc to 60 Hz, (2) capable of producing a 0.5 V output pulse of $10\mu\text{s}$ duration of either polarity, (3) programmable as an operational amplifier with $R_f = 20\text{K}$, (4) source or sink up to 1A, and (5) current limited and short circuit proof.

NORMAL TEST MODE

In this mode of operation the RTN of J1 is grounded as is one side of the Calibrator depending upon the polarity of the VOLTAGE SELECTED. The DC ERROR SELECT of 0%, -0.5%, -1.5%, +0.5% and +1.5% is used to vary the Calibrator voltage accordingly, which is output to the appropriate pin of the J1 connector. All other outputs at J1 come from the Nim Power Supply. The Power Amplifier is not used in the NORMAL mode.

PULSE TEST MODE

In this mode of operation the RTN of J1 is grounded as is the common of the Power Amplifier. The Calibrator is placed in series with the Power Amplifier and routed to the appropriate pin of J1. With the Calibrator voltage programmable as above, and the Power Amplifier producing +2% or -2% pulses of the selected voltage, the output at J1 appears as a pulse riding on a DC level. A pulse width of $10\mu\text{s}$ at a frequency of 2K Hz is determined interval to the Test Set. A Trigger output is available on the front panel.