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P24B-AL-4841 CONT ON SHEET 2 SH NO. 1	TEST INSTRUCTIONS FOR TESTING MONITOR CIRCUIT BOARD, (DIODE) FIRST MADE FOR 170X326

REVISIO

SCOPE

MONITOR CIRCUIT BOARD, (DIODE) PL 948D195

(A) GENERAL

(B) TEST EQUIPMENT

(C) SETUP

(D) FWD AND REV. RESISTANCE TEST

(E) FWD VOLTAGE TEST

(F) REV. LEAKAGE TEST

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MADE BY H. KELLER APR. 4, '68	APPROVALS	LST ENGINEERING DIV OR DEPT.	P24B-AL-4841
ISSUED APR 8 1968		SCHENECTADY LOCATION	CONT ON SHEET 2 SH NO. 1

REVISION

(A) GENERAL

This circuit board consists of 39 circuits of 2 series diodes each. One common line connects to 28 of these circuits. Another connects to 11 of the circuits. All common connections are made at the cathode.

The test is designed to check the forward and reverse resistance of each 2-diode combination. This will assure proper placement and connection of the diodes.

Next the forward voltage is checked. This will show any opens or shorts of either or both of the diodes. The forward voltage drop is measured across both diodes at once, so a reading of about 1.8 volts is normal. The limits have been set at 1.6 VDC to 1.9 VDC. If a diode shorts, the reading will drop to about 0.9 VDC. If a diode opens, the reading will be 24 VDC. The test panel will be set up to produce a current surge of 0.875 amp. and a steady state current of 0.628 amp.

The effectiveness of the diode combinations is also checked in the reverse direction. Measurement of current and observation of a lamp are used for this purpose.

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(B) TEST EQUIPMENT

(1) STANDARD TEST PANEL

(2) PRE-WIRED PATCH BOARD MARKED "MONITOR CKT BD. (DIODE)"

(3) MULTITESTER, SIMPSON OR EQUIV.

(4) RESISTOR, 50 Ω/20 WATTS, ADJUSTABLE, SET TO 40 Ω.

(5) DVM

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(C) SETUP

(1) Connect 40 Ω/20 w resistor between BP-3 and BP-4.

(2) Connect DVM (+) lead to BP-5.

(3) Connect DVM (-) lead to BP-6.

(4) The red lead of some multitesters contains the minus voltage. The (+) and (-) connections of this step refers to the polarity at the probes regardless of the color of the lead.
Connect (+) lead of ohmmeter to BP-7.
Connect (-) lead of ohmmeter to BP-8.

(5) Set multimeter to RX100 scale.

(6) Set switches as follows:

DOWN	UP	STEP SWITCH
S4	S3	1
S5		
S6		
S7		

(7) Check the board for obvious errors.

(8) Plug board into PCR-1.

NOTE 1: Whenever step of 1 to 30 is mentioned, position 21 and 19 will not read like the others. This pin of the step switch is left open so that the switch position indicated reflects the number of the pin being tested.

NOTE 2: It is not necessary to apply 24 V at this time.

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(D) FWD AND REV. RESISTANCE TEST

(1) Step from position 1 to position 30, and 32, 34, 36, 38 and 40 observing forward resistance of diode assemblies.
READINGS: < 1K (except step 21 and 19).

(2) Set SW3 to DOWN position.

(3) Step from position 1 to position 30, and 32, 34, 36, 38 and 40 observing reverse resistance.
READINGS: > 50K

(4) Set SW3 to UP. Set SW6 up.

(5) Step the following positions: 31, 33, 35, 37, 39 and 41 observing resistance.
READINGS: < 1K (except 19 and 21).

(6) Set SW3 to DOWN.

(7) Step the following positions: 31, 33, 35, 37, 39 and 41 observing resistance.
READINGS: > 50K

(E) FWD VOLTAGE TEST

(1) Set SW4, SW5 UP AND SW6 DOWN.

(2) Apply 24 VDC using internal power supply.

(3) Step from position 1 to 30, and 32, 34, 36, 38 and 40 observing voltage drop and lamp for each step.

LAMP: PL-1 lights for each position of SSW except 19 and 21.
DVM: 1.75 + 0.15 VDC.

(4) Set SW6 UP.

(5) Step to position 31, 33, 35, 37, 39 and 41 while observing lamp PL-1.
LAMP: LIGHTS FOR ALL BUT 21 and 19.

(6) Step position 1 thru 30, and 32, 34, 36, 38 and 40 while observing lamp PL-1.
LAMP: DOES NOT LIGHT.

(7) Set SW6 to DOWN.

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(F) REV. LEAKAGE TEST

(1) Connect multitester between BP-1 and BP-2. (BP-1 will contain the (+) potential).

(2) Set multitester to amp scale, using necessary ranges during test.

(3) Set SW5 DOWN, SW6 UP.

(4) Step from position 1 to 18 and 20 and 32, 34, 36, 38 and 40 with SW6 UP, with SW6 DOWN step 31, 33, 35, 37, 39 and 41. NO current should be present.

CAUTION: Do not measure current if PL-1 lights. This is an indication of High Current.
CURRENT: 0.1 MA

(5) Remove power.

(6) Remove board from PCR-1.

TEST COMPLETE

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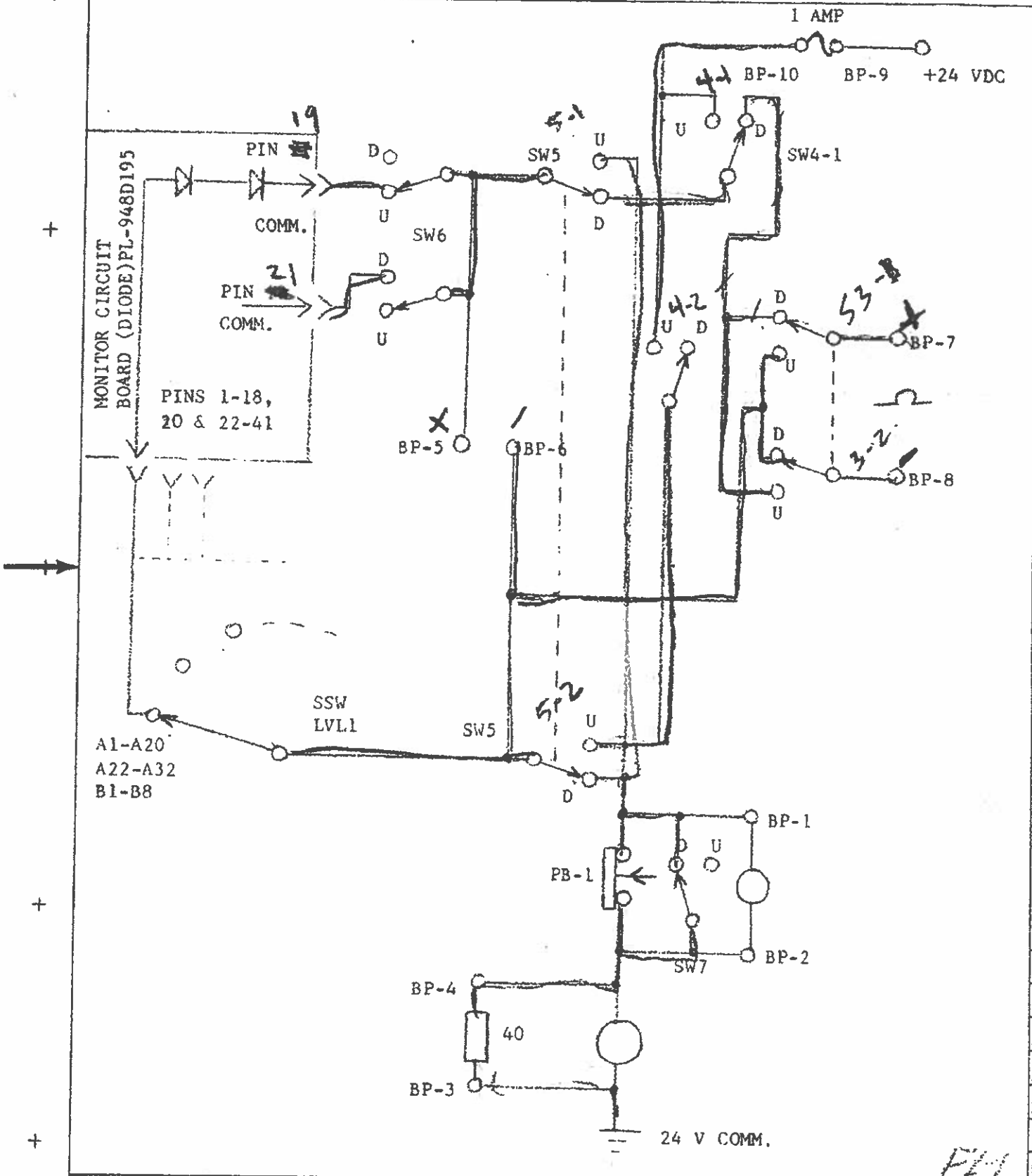

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REVISION

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