

POLLABLE DATA TERMINAL (PDT) SD-3B232-01

TROUBLE LOCATING PROCEDURES

ENGINEERING AND ADMINISTRATIVE DATA ACQUISITION SYSTEM (EADAS)

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1. GENERAL

1.01 This section describes the methods used for locating troubles in the PDT at the PDT location via the control panel and teletypewriter. This section also contains suggested corrective procedures for the troubles.

1.02 This section is reissued to make changes in Part 6. This issue does not affect the Equipment Test List.

1.03 The procedures in this section are used when tests in Section 252-115-521 and Section 252-115-522 have failed.

1.04 *Before any of the procedures in this section are performed, it is important that consideration be given to the data which is lost while maintenance procedures are being performed.*

1.05 Refer to Section 252-115-521 for tests of PDT from the EADAS Central Unit (CU) location.

1.06 Refer to Section 252-115-522 for tests of PDT at the PDT location.

1.07 For trouble sectionalizing procedures of the CU, refer to Section 252-115-302.

1.08 In this section the PROBABLE CAUSE column contains the units or items that are likely to be the cause of trouble. The probable causes are numbered and there are corresponding numbered suggested corrective procedures listed in the SUGGESTED CORRECTIVE PROCEDURE column. The probable causes are numbered in the order they are most likely to cause troubles.

1.09 During normal data collection, the following conditions are indications of PDT malfunction.

- No counts or excessive counts in a used register
- Incorrect header information
- Erratic printout (printing of nonnumeric characters).

1.10 **◆Lettered Steps:** A letter a, b, c, etc, added to a step number in Part 6 of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step, or a series of lettered steps, should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter shall be omitted.◆

2. APPARATUS

2.01 KS-20538 L11 volt-ohm milliamper meter (VOM) or equivalent.

NOTICE

Not for use or disclosure outside the Bell System except under written agreement

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2.02 SD-3B221 Input Pulser Circuit.

only teletypewriter set equipped with W, X, Y, and Z options (or equivalent).

2.03 Leads for strapping as required.

2.04 M-HOJPX Friction feed receive only teletypewriter set equipped with W, X, Y, and Z options; or M-HODPX Sprocket feed receive

◆**Note:** Any 33 or 35 TTY with EIA interface can be used. A Portable Data Terminal with an EIA interace such as a Silent 700® may be used instead of a TTY. Refer to owners manual for installation information.◆

3. POWER FAILURES

3.01 This part locates probable causes of power failures.

SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTIVE PROCEDURE
ALM lamp lighted.	1. -48V fuse 2. -12V, -18V, +18V fuse 3. +5V fuse	1. Replace -48V blown fuse. 2. Replace respective blown fuse. 3. Replace +5V blown fuse
FA lamp lighted. ALM lamp extinguished.	1. 74H rectifier 2. 73G inverter 3. +5V fuse alarm card	1. Replace 74H rectifier. 2. Replace 73G inverter. 3. Replace +5V fuse alarm card.
LV lamp lighted.	1. 74H rectifier 2. 73G inverter 3. +5V fuse alarm card	1. Replace 74H rectifier. 2. Replace 73G inverter. 3. Replace +5V fuse alarm card.

4. INPUT SCANNER AND MEMORY CARD FAILURES

4.01 This part locates probable causes of incorrect data (no data or excessive data) being received.

SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTIVE PROCEDURE
No counts in registers.	1. JW284 circuit pack 2. JW285 circuit pack	1. Replace JW284 circuit pack. 2. Replace JW285 circuit pack.
Excessive counts in registers.	1. JW284 circuit pack 2. JW276 circuit pack 3. JW285 circuit pack	1. Replace JW284 circuit pack. 2. Replace JW276 circuit pack. 3. Replace JW285 circuit pack.

5. CONTROL CARD FAILURES

5.01 This part locates probable causes of incorrect header information, incorrect alarm indications, and incorrect commands to associated equipment.

SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTIVE PROCEDURE
Incorrect header format.	1. JW280 circuit pack	1. Replace JW280 circuit pack.
Error in identification number.	1. Bad connection on terminal strip C (in rear of PDT)	1. Check strap connections on terminal strip C.

SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTIVE PROCEDURE
Incorrect time-of-day header (with header format circuit pack functioning correctly).	<ol style="list-style-type: none"> 1. JW281 circuit pack 2. JW276 circuit pack 3. JW282 circuit pack 4. JW286 circuit pack 5. JW277 circuit pack 	<ol style="list-style-type: none"> 1. Replace JW281 circuit pack. 2. Replace JW276 circuit pack. 3. Replace JW282 circuit pack. 4. Replace JW286 circuit pack. 5. Replace JW277 circuit pack.
Incorrect collect data and select data mode digits.	<ol style="list-style-type: none"> 1. JW277 circuit pack 2. JW281 circuit pack 	<ol style="list-style-type: none"> 1. Replace JW277 circuit pack. 2. Replace JW281 circuit pack.
Incorrect peak mode digit (with header format circuit pack functioning properly).	<ol style="list-style-type: none"> 1. JW283 circuit pack 2. JW281 circuit pack 	<ol style="list-style-type: none"> 1. Replace JW283 circuit pack. 2. Replace JW281 circuit pack.
Incorrect scanner test mode digit (with header format circuit pack functioning properly).	<ol style="list-style-type: none"> 1. JW280 circuit pack 2. JW281 circuit pack 	<ol style="list-style-type: none"> 1. Replace JW280 circuit pack. 2. Replace JW281 circuit pack.
Incorrect maintenance test mode digit (with header format circuit pack functioning properly).	<ol style="list-style-type: none"> 1. JW276 circuit pack 	<ol style="list-style-type: none"> 1. Replace JW276 circuit pack.
Incorrect memory data block digit.	<ol style="list-style-type: none"> 1. JW280 circuit pack 2. X-option wiring 	<ol style="list-style-type: none"> 1. Replace JW280 circuit pack. 2. Verify X-option wiring.
Incorrect memory identification digit.	<ol style="list-style-type: none"> 1. JW280 circuit pack 2. JW277 circuit pack 	<ol style="list-style-type: none"> 1. Replace JW280 circuit pack. 2. Replace JW277 circuit pack.
Loss of line numbers or incorrect number of register totals per line.	<ol style="list-style-type: none"> 1. JW279 circuit pack 2. JW286 circuit pack 	<ol style="list-style-type: none"> 1. Replace JW279 circuit pack. 2. Replace JW286 circuit pack.
Troubles indicated by alarms do not actually exist.	<ol style="list-style-type: none"> 1. JW287 circuit pack 2. Shorted alarm pairs (central office audible and visual alarms) 	<ol style="list-style-type: none"> 1. Replace JW287 circuit pack. 2. Check wiring.
PDT inoperative and no alarms present.	<ol style="list-style-type: none"> 1. Control voltages -48V, -12V, -18V, +18V 	<ol style="list-style-type: none"> 1. Verify voltages using VOM (see Table A).
PDT fails to respond to local commands.	<ol style="list-style-type: none"> 1. Control voltages -48V, -12V, -18V, +18V 2. JW281 circuit pack 3. JW287 circuit pack 4. JW286 circuit pack 	<ol style="list-style-type: none"> 1. Verify voltages using VOM (see Table A). 2. Replace JW281 circuit pack. 3. Replace JW287 circuit pack. 4. Replace JW286 circuit pack.
Header format information correct, line numbers in data format correct, register totals erratic (consists of nonnumeric characters).	<ol style="list-style-type: none"> 1. JW287 circuit pack 	<ol style="list-style-type: none"> 1. Replace JW287 circuit pack.

SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTIVE PROCEDURE
Will not control Dial Tone Speed Machine and/or 4A TUR	<ol style="list-style-type: none"> 1. JW277 circuit pack 2. JW281 circuit pack 3. JW286 circuit pack 4. JW287 circuit pack 5. Failure of circuits being controlled 	<ol style="list-style-type: none"> 1. Replace JW277 circuit pack. 2. Replace JW281 circuit pack. 3. Replace JW286 circuit pack. 4. Replace JW287 circuit pack. 5. Refer to test procedures of circuitry being controlled.

TABLE A

VOLTAGE	LOCATION
+5V	D8 Terminal Strip C
-12V	C1 Terminal Strip C
+18V	Pin 15 J1 Connector
-18V	D11 Terminal Strip C
-48V	Terminal Strip B (-48V & GRD)

6. CROSS-CONNECTION VERIFICATION

6.01 When two or more inputs to the PDT become crossed (shorted), the data received by either of the crossed inputs will be received by all inputs involved with a cross. This may occur due to a

wire clipping falling into the input terminal network (in rear or front of terminals) or by terminals bent and distorted thereby contacting other terminals. These problems may be located using the following procedures.

STEP	ACTION	VERIFICATION
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Input Verification

Note: Apparatus per Step 2.02 must be connected to perform this test.

1a	If PDT is part of an EADAS system— Obtain release of PDT from personnel at EADAS Central Unit.	
2	Using office records, locate the suspected terminal on terminal strip associated with the register in doubt.	
3	Using office records, locate the lead at the equipment location associated with the terminal in doubt.	
4	Connect the SD-3B221-01 pulser to 110 Vac.	Ready lamp lighted.

STEP	ACTION	VERIFICATION
5	Connect the +18V lead to the lead at the equipment location.	
6	Connect the ground lead to frame ground.	
7	At Pulser— Set PULSE switch to +18.	
8	Set SEL/10X switch to 10X.	
9	Set CONT/SEL switch to SEL.	
10	Set CLR/START switch to CLR.	
	Note: The Input Pulser must be kept in a horizontal position (switches upward) during operation.	
11	Operate ACO key.	
12	At the PDT control panel— Operate the IV, CTN, and CD keys.	
13	Operate the SKD switch to hour position.	
14b	If ABRT key is provided (J option)— Operate HRD key.	
15b	Depress ADV key until the hour digit changes.	
16c	If ABRT key is not provided— At the rear of the PDT— Strap terminals 36 and 201 of JW281 circuit pack together.	
17c	Strap terminal 8 of JW281 circuit pack to an idle innet on terminal strip at rear of PDT.	
18	At the front of PDT— Apply ground pulses to innet terminal strapped in Step 16c until hour digit changes.	TTY prints out all zeros on registers.
	Note: SKD key is set to 1 hour. Approximately 36 ground pulses are needed.	
19	At the Input Pulser— Operate CLR/START key to START.	
20	After approximately 5 seconds— Operate CLR/START key to CLR.	

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STEP	ACTION	VERIFICATION
21	At PDT control panel— Operate TM and RD keys (See Note). <i>Note:</i> RD key must be operated only if PDT is equipped with PDT-1A Automatic readout.	TTY prints out 10 scores at address assigned to equipment at pulser location. <i>Note:</i> If 10 scores are printed out at any other address, that address is crossed with the address pulsed.
22	If there is a cross indicated in Step 21— Remove cross and repeat Steps 18 through 21.	
23	Remove all straps and leads to pulser.	
24	Remove straps at rear of PDT.	
25	Restore IV of key on PDT to normal.	
26	Operate CTN key.	
27	At 5 minutes before the hour— Operate the HRD switch.	
28	Operate the HLD switch. <i>Note:</i> Read Steps 29 and 30 before proceeding.	
29	Operate and hold the ADV key until the number of the approaching hour is displayed on the LED display.	LED displays the number of the approaching hour in 1-second intervals. 4-second interval if ABRT key is provided (J option).
30	When the number of the approaching hour appears— Release the ADV key immediately.	
31	At the exact time of the hour— Restore the HLD switch to normal.	Time-of-day circuit is calibrated and running.
32	Restore HRD switch to normal.	
33	Restore ACO switch to normal.◀	