DIMENSION®2000 AND CUSTOM PBX

NETWORK OVER TEMPERATURE ALARMS
(PROC 502)

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1.   GENERAL

1.1   This section provides information for interrogating PROC 502
          in the event that the craftsperson is directed to this
          procedure due to a NETWORK OVER TEMPERATURE alarm. Whenever
          this type of alarm occurs the ALARM PANEL - OVER TEMP and
          MINOR LED'S will be lit.

2.   RECORDS

2.1   Form SD 97-1313 is required for recording the results of this
          test.

3.   MAAP DISPLAY FIELDS (PROC 502 FORMAT)

3.1   The following describes each of the display fields for the
          NETWORK OVER TEMPERATURE (PROC 502) format:

          FIELD   DESCRIPTION
            1   TEST NO. - Displays active test number (maximum of
                    3) per the following encodes:

                    ENCODE   DESCRIPTION
                      1   Displays failure history.
                      2   Tests all circuits sequentially.
                      3   Tests a particular circuit (as displayed
                              in fields 2 & 3).

PRIVATE   Printed in U.S.A.

FIELD   DESCRIPTION

2,3   EQUIPMENT LOCATION (MODULE/CAB) - (TESTS 1,2
and 3), for TESTS 1 & 2, Displays fault location.
For TEST 3, displays test location. Allowable
encodes are as follows:

ENCODE	DESCRIPTION
00 - MM	Allowable module encodes for FIELD 2. (MM = highest module number in system under test).
0 - C	Allowable cabinet encodes for FIELD 3. (C = highest cabinet number in system under test).

4   Failure code - (TESTS 1,2 & 3), displays failure
code per the following encodes:

ENCODE	DESCRIPTION
0	Pass
1	Over temperature failure
9	Network order incomplete

5   TOTAL CABINETS - (TESTS 1,2 &3), displays total
number of network cabinets.

6   TOTAL CABINETS FAILED - (TESTS 1 & 2), displays
total number of network cabinet failures.

7   FAILURE INDEX - (TESTS 1 & 2), displays an index
number which either indicates:

A) Locations with highest number of failures in
desending order (TEST 1) or B) locations in
order of detected failures. Index number "0"
in TEST 1, indicates a display of the failure
history totals: in TEST 2, indicates that no
failures were detected.

8   FAILURES PER HOUR - (TEST 1), displays a 2 hour
average failure rate.

9   FAILURES BEGAN - HOURS AGO - (TEST 1), displays
number of hours since failures started to nearest
hour (17 hours maximum).

10,11   MOST RECENT FAILURE - HOURS/MINUTES AGO - (TEST 1),
Displays time since last failure to nearest minute
(136 hours/31 minutes maximum).

4.   MAAP CONTROL KEY SEQUENCES

4.1   PROC NO. 5, 0, 2, ENTER - causes program for PROC 502 to be
loaded into memory from tape for execution.

4.2   CLEAR DATA,. EXECUTE - (TEST 1), Clears failure history records
           stored in memory.

4.3   EXECUTE - starts executing test number displayed in FIELD 1.

4.4   NEXT CIRCUIT - (TEST 1 & 2), displays next failure. (TEST 3),
           advances test to next equipped cabinet when test is stopped.

4.5   NEXT TEST - advances procedure to the next test.

4.6   RESET - resets .the procedure to the beginning of TEST 1.

4.7   STOP - stops test 3 from further testing. Note: This key
           must be operated before the next circuit key can be operated
           if test 3 is executing.

5.   PROCEDURES

5.1   The following describes the repair procedure that should be
           used in the event of a network over temperature alarm.

5.11   Execute TEST 1 and record failure history generated by ON-LINE
           maintenance.

5.12   Execute TEST 2 and record the results. If there are no
           failures use TEST 3 to continuously test each cabinet displayed
           in test 1 to check for intermittent faults. If failures occur
           either during TEST 2 or 3 use the following repair procedures:

           A) FAILURE CODE - 1, proceed as follows:

              AA) If'more than one cabinet is indicated then possibly
                   the system ambient temperature is being exceeded
                   (refer to ED-1E301 for requirements). If true, take
                   appropriate steps to lower system ambient temperature.
                   If not true, proceed to the next step.

              AB) Refer to attachment 2 and check sensor and fan
                   operations at cabinets indicating failures. Note:
                   Fans should operate only when the cabinet temperature
                   exceeds 130 + 5% degrees farhenheit and the LC105
                   temp led should light only when the cabinet temperature
                   exceeds 145 + 5% degrees farhenheit. If cabinet temp-
                   rature does not exceed the above limits proceed to
                   the next step.

              AC) Replace LC105 at cabinet indicating failure. Use
                   test 1 to clear failure history and execute test 2.
                   If over temperature failure still exists, go to PROC
                   508 to test LC105 more thoroughly.

           B) FAILURE CODE - 9, use PROC 505 and also refer to paragraph
              6, of this section for further testing information.

5.13   After the trouble(s) has been cleared go to Test 1 and clear
          the on-line maintenance records (use CLEAR DATA EXECUTE keys).

6.   TROUBLESHOOTING AIDS

6.1   GENERAL TEST INFORMATION

6.11   TEST 1 - TEST 1 is the default test when the procedure is
          first read in from the tape or when the MAAP - RESET key is
          operated. When the MAAP - EXECUTE key is operated. Data
          accumulated by on-line maintenance is displayed on the MAAP
          starting with the display of the total failures (Failure
          Index - 0). If failures were detected, FIELD 6 should
          display the total cabinet failure number and FIELDS 8 thru
          11 will display the failure history. If no failures were
          detected, FIELD 6 will display a "0" and FIELDS 9 thru 11
          will contain dashes. Note: If failures were detected and if
          failure index is a "0", FIELDS 2 thru 4 will be dashed since
          this type of display only indicates totals and not a display
          of a cabinet failure.

          If failures were detected, operation of the NEXT CIRCUIT key
          will display the location of the cabinet failure by index
          number. FIELDS 2 & 3 will display the failure location,
          FIELD 4 displays the type of failure and FIELD 7 displays
          the failure index. Repeated operation of the NEXT CIRCUIT
          key displays other failures until all detected failures have
          been display, in which case all FIELDS except 1 and 6 will
          dashed.

          Operation of the CLEAR DATA, EXECUTE keys clears the fault
          records.

6.12   TEST 2 - The purpose of this test, is to test all network over
          temperature alarm detectors, to display the failed circuits,
          and to control alarm panel - NETWORK OVER TEMPERATURE alarms.

          The test is initiated when the MAAP - EXECUTE key is operated,
          which turns on the MAAP - WAIT lamp and begins testing each
          of the network cabinet maintenance circuits (LC105's). At
          the end of the test, the WAIT lamp is turned off and the
          appropriate data and alarms are displayed.

          If a failure is detected, the NETWORK OVER TEMP and MINOR
          lamps are turned on. All failed circuit data is stored and
          at the conclusion of the test, the first failed circuit will
          be displayed in FIELDS 2 & 3. Operation of the MAAP - NEXT
          CIRCUIT key will display other detected failures if more than
          one failure exists.

          If no failures are detected, the alarms - NETWORK OVER TEMP
          and MINOR - are turned off.

6.13   TEST 3 - The purpose of this test is to test a particular
            circuit continuously and to turn on the alarms if a failure
            exists. If a default circuit (last circuit failure detected)
            is not displayed, the craftsperson must enter a circuit
            location. If the displayed location is not the one desired,
            it can be changed by the CHANGE FIELD sequence or by
            continuely operating the NEXT CIRCUIT key until the desired
            one is obtained.

            The test is started by operating the EXECUTE key. The WAIT
            lamp is not turned on since the test is continuous however
            the failure code is flashed (60 IPM) in FIELD 4 to indicate
            that the test is running. If a failure is detected, the
            test continues to run and FIELD 4 flashes the appropriate
            failure code. The test can be stopped by either operating
            the STOP key (which the allows a NEXT CIRCUIT key operation)
            or operating the NEXT TEST, RESET, or PROC NO. keys.
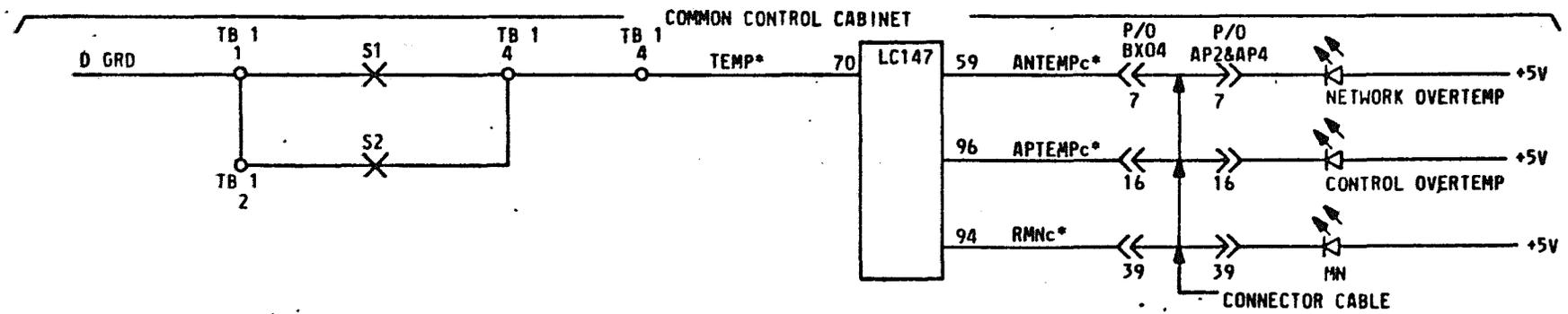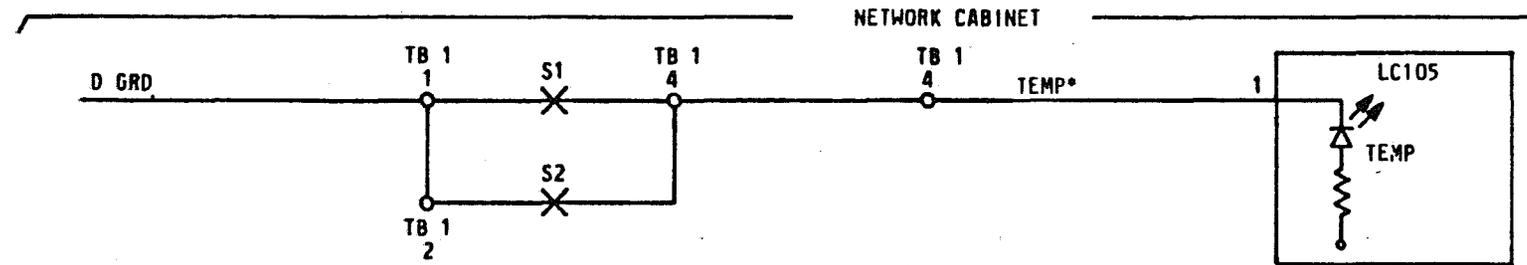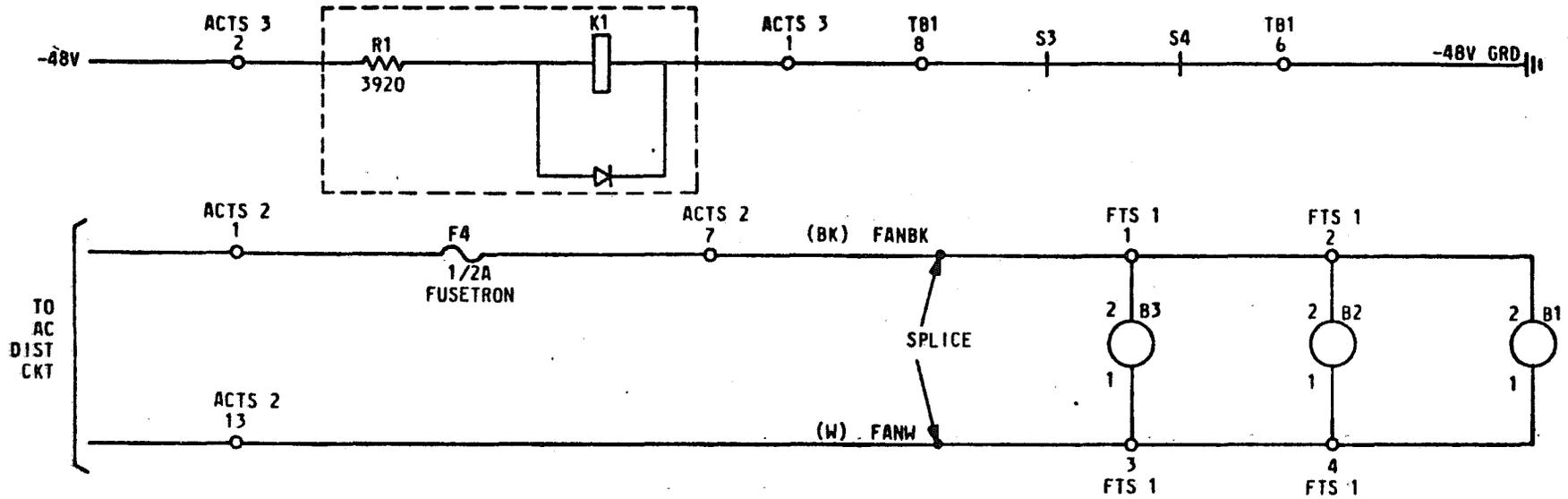
6.2   GENERAL TROUBLESHOOTING INFORMATION

6.21   PROC 502 checks for network over temperature failures by
            addressing each of the network cabinet maintenance circuits
            (LC105) and checking the status of the TEMP* lead (input
            to LC105). To check the TEMP* input, the BBS15* lead is
            activated (made low) and the status of the TEMP* will appear
            on the SS1* output lead (all these leads appear on the LC105).
            That is, if the TEMP* is low, when the BBS15* lead is
            activated the SS1* output lead should pulse low.

            The LC105 - TEMP led should light whenever the TEMP* lead
            is active.

            The above describes what is verified and should be checked
            in the event that a fail code of "1" is displayed in FIELD
            4 and the normal troubleshooting procedures described in
            paragraph 5, of this section did not clear the trouble.

            Fail code 9, in FIELD 4 indicates failure to receive an I/O
            done signal from the network and if this is the case PROC 505
            should used to clear the problem.

-48V — ACTS 3 2 — R1 3920 — K1 — ACTS 3 1 — TB1 8 — S3 — S4 — TB1 6 — -48V GRD

TO AC DIST CKT

ACTS 2 1 — F4 1/2A FUSETRON — ACTS 2 7 — (BK) FANBK — SPLICE — FTS 1 1 — FTS 1 2

2 B3 / 1 — 2 B2 / 1 — 2 B1 / 1

ACTS 2 13 — (W) FANW — 3 FTS 1 — 4 FTS 1

NETWORK CABINET

D GRD — TB 1 1 — S1 — TB 1 4 — TB 1 4 — TEMP* — 1 — LC105 — TEMP

S2 — TB 1 2

COMMON CONTROL CABINET

D GRD — TB 1 1 — S1 — TB 1 4 — TB 1 4 — TEMP* — 70 — LC147 — 59 — ANTEMPc* — P/O BXO4 7 — P/O AP2&AP4 7 — NETWORK OVERTEMP — +5V

S2 — TB 1 2

96 — APTEMPc* — 16 — 16 — CONTROL OVERTEMP — +5V

94 — RMNc* — 39 — 39 — MN — +5V

CONNECTOR CABLE

TEST 1:	TEST 2:	TEST 3:
DISPLAYS FAILURE HISTORY. USE 'NEXT CIRCUIT' TO DISPLAY FAILURE HISTORY. USE 'CLEAR DATA,EXECUTE' TO CLEAR FAILURE HISTORY.	TESTS ALL CIRCUITS. USE 'NEXT CIRCUIT' TO DISPLAY NEXT FAILURE.	TESTS A PARTICULAR CIRCUIT CONTINUOUSLY. USE 'NEXT CIRCUIT' TO DISPLAY NEXT EQUIPMENT LOCATION. FAILURE CODES: 0= PASS 9= NETWORK ORDER 1= FAIL INCOMPLETE

ISSUE L7.8	PROC 502

ISSUE L7.8   NETWORK OVER TEMPERATURE FAILURES

TEST NO		TEST 3 EQUIPMENT LOCATION			FAILURE CODE	TOTAL CABINETS	TOTAL CABINETS FAILED	FAILURE INDEX		FAILURE HISTORY				PROC 502
		MODULE	C A B							FAILURES PER HOUR	FAILURES BEGAN-HOURS AGO	MOST RECENT FAILURE		
												HOURS AGO	MINUTES AGO	
1		2	3	4		5	6	7		8	9	10	11	

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