DIAL LONG LINE TEST BY-PASS CIRCUIT (SD-97586-01)

CONTENTS

1. GENERAL

1.1 This test method covers the tests which are to be performed on the Dial Long Line (DLL) By-Pass Circuit (SD-97586-01). The DLL By-Pass Circuit permits testing of Non-Coin Subscriber Lines equipped with DLL circuits, and provides a metallic bypass of the selected DLL circuit on command over the tip and ring leads.

1.2 The DLL By-Pass Circuit consists of two units:
J99334E - DLL By-Pass
J99334F - DLL Timed Release

2. RECORDS AND REQUIREMENTS

2.1 Records

2.11 The results of these tests are to be recorded on forms SD-97-1313 and SD-97-1315.

2.2 Requirements

2.21 The tests in this Section are based on SD,CD-97586-01.

3. TEST EQUIPMENT

3.1 Test Sets

Amt.	Code	Description
1	R-3314	Ston Watch
1	ITE-4442A	Volt Ohmmeter
1	ITE-5590	Fuse Alarm Verification Test Set
1	KS-7889	46 1/2 Volt Battery or equivalent

4. FUSING

4.1 Remove the 48 volt fuse associated with each unit.

4.2 Using the ITE-4442A Volt-Ohmmeter, check each fuse post for the absence of battery and ground.

4.3 Insert the ITE-5590 into the vacant 48 volt office battery fuse holder and verify that the audible fuse alarm sounds, and that the fuse alarm lamp associated with the fuse lights. Verify also that the aisle pilot lamps light.

4.4 Remove the ITE-5590. Fuse alarm silence and alarm lamps go out. Insert the proper size fuse and verify that - 48 volts is present at the terminals indicated.

J99334E

Terminal Strip Unit (A)	Terminal
	11

J99334F

Terminal Strip Unit (C)	Terminal
	11

5. DETECTOR VERIFICATION (J99334E)

5.1 Block relay RC non-operated on the J99334F unit.

5.2 Connect the (+) lead of the KS-7889 battery to - 48 volt office battery and block the (0) BP relay operated.

5.3 Hold the (-) lead of the battery to the 5B contact of relay (0) BP. Verify that relay (0) DET operates and stays operated as long as the (-) lead of the battery is held to the BP relay 5B contact.

5.4 Remove the (-) lead from the (0) BP relay and remove the block.

5.5 Block relay (1) BP operated, and hold the (-) lead of the battery to the 5B contact of the relay. Verify that relay (1) DET operates and stays operated as long as the (-) battery lead is held to the 5B contact of relay (1) BP.

5.6 Remove the (-) lead from relay (1) BP and remove the block.

5.7 Repeat Paragraphs 5.5 and 5.6 for the remaining BP and DET relays.

5.8 Disconnect the battery from - 48 volt office battery, and remove the block from relay RC.

6. TIMING VERIFICATION (J99334F)

6.1 Timing Relays

6.11 Block relay TM operated. Verify that relay INT operates at a 60 IPM rate.

6.12 Verify that the timing relays (A0, B0, C0, A1, B1, C1, A2, B2,C2) operate as follows:

A0 - Once every 2 seconds (1 second on-1 second off)
B0 - Once every 4 seconds (2 seconds on-2 seconds off)
C0 - Once every 4 seconds (2 seconds on-2 seconds off)
A1 - Once every 8 seconds (4 seconds on-4 seconds off)
B1 - Once every 16 seconds (8 seconds on-8 seconds off)
C1 - Once every 16 seconds (8 seconds on-8 seconds off)
A2 - Once every 32 seconds (16 seconds on-16 seconds off)
B2 - Once every 64 seconds (32 seconds on-32 seconds off)
C2 - Once every 64 seconds (32 seconds on-32 seconds off)

6.13 Remove the block from relay TM.

6.2 Normal Timing Period

6.21 Operate key AC0. Verify that the red ALM lamp on the unit flashes at 60 IPM.

6.22 Momentarily operate relay RC and start timing with the stopwatch. Verify that the ALM lamp changes from flashing to steady, then flashes 2 to 3 times, and then again lights steadly. Observe that relay INT operates at 60 IPM and the timing relays sequentially Operate.

6.23 Verify that in approximately 60 seconds, timing stops and the ALM lamp changes from steady to flashing.

6.24 Return the AC0 key to its normal position.

6.3 Alarm Timer

6.31 Insulate contact 2B of relay TM.

6.32 Block relay ALM TMR operated and start timing with the stopwatch.

6.33 Verify that in approximately 80 seconds lamp ALM lights, the aisle pilot lamp lights, and the audible alarm sounds.

6.34 Operate key AC0. Verify that the audible alarm silences.

6.35 Release relay ALM TMR. Verify that the ALM lamp changes from steady to flashing and the aisle pilot lamp goes out.

6.36 Return the AC0 key to its normal position and remove insulation on 2 B of relay TM.

7. ACCESS VERIFICATION (J99334F)

7.1 Operate key AC0. ALM lamp flashes at 60 IPM.

7.2 Momentarily short terminal 36 and 26 of Unit T.S. (C) together. Verifty that relay RC operates and then releases, and that relays TM, BPG, and ALM TMR are held operated.

7.3 Single Access - Option Ⓥ:

a) Momentarily short terminal 36 and 26 together again. Verify that relay RC does not operate. Verify the absence of ground on 4 of relay ALM.

b) Observe that at the end of the timing period, relays TM, BPG and ALM TMR release.

7.4 Multi-Access, Without additional Time - Option Ⓩ:

a) Momentarily short terminal 36 and 26 together again. Verify that relay RC does not operate. Verify the presence of ground on 4 of relay ALM.

b) Observe that at the end of the timing period, relays TM, BPG And ALM TMR release.

7.5 Multi - Access, With additional Time - Options Ⓥ & Ⓩ:

a) Momentarily short terminals 36 and 26 together again. Verify that relay RC locks operated.

b) At the end of the timing period, verify that relay RC releases and a second timing period begins.

c) Observe that at the end of the second timing period relays TM, BPG and ALM TMR release.

8. TEST AND ALARM VERIFICATION

8.1 False Ground on BP Lead

8.11 Apply ground to terminal 15 of T.S. (c) on the J99334E unit. Verify that the unit ALM lamp lights, the aisle pilot lamp lights and the audible alarm sounds.

8.12 Remove ground from terminal 15. All alarms retire.

8.2 False Ground on RC Lead

8.21 Apply ground to terminal 26 of T. S. (c) on unit J99334E. Observe that relays RC, TM, BPC and ALM TMR operate and remain operated.

8.22 Verify that in approximately 80 seconds the unit ALM lamp lights, the aisle pilot lamp lights and the audible alarm sounds.

8.23 Operate key ACO, audible alarm silences.

8.24 Remove ground from terminal 26. Verify that within 120 seconds, the timing circuit completes a timing interval, the aisle pilot lamp goes out and the ALM lamp changes from steady to flashing.

8.25 Return the ACO key to its normal position.

8.3 Relay DET Falsly Operates

8.31 Remove the tip and ring connections on J99334E Unit T.S. (B) coming from the IDF, CDF, LDF or MDF for the first bypass circuit.

8.32 Connect the (+) lead of the KS-7889 battery to -48 volt office battery.

8.33 Connect the (-) lead of the battery to the ring lead of the first bypass circuit (terminal 38 or 35 of T.S. (B) on J99334E unit). Verify that relay (C) DET momentarily operates, and relay (O) BP locks operated. Verify that relays TM, BPC and RT1 are held operated.

8.34 After the first timing period (60 sec.), verify that relay BPC momentarily releases, relay RT1 releases, and relay RT2 operates indicating the start of the second timing period.

8.35 After the second timing period (60 sec.), verify that relay BPC releases, and relay RT3 operates.

8.36 Verify that in approximately 20 seconds after relay RT3 operates, lamp ALM lights, the aisle pilot lamp lights and the audible alarm sounds.

8.37 Operate key ACO. Audible alarm silences.

8.38 Remove the battery connection from the ring lead of the first bypass circuit. Verify that within 60 seconds the timing circuit completes the present timing period extinguishing the aisle pilot lamp. Observe that the ALM lamp changes from steady to flashing.

8.39 Return the ACO key to its normal position.

8.4 60 IPM OR TIMING CIRCUIT FAILURE

8.41 Block relay INT non-operated and momentarily operate relay RC. Observe that relay RC locks operated, and that relays TM and ALM TMR are held operated.

8.42 Verify that in approximately 80 seconds lamp ALM lights, the aisle pilot lamp lights and the audible alarm sounds.

8.43 Manually release relay RC. Observe that relays TM and ALM TMR release and all alarms retire. Remove the block on relay INT.

8.44 Block any timing relay, except relays A1 and B2, non-operated.

8.45 Momentarily operate relay RC. Observe that the timing circuit begins a timing period.

8.46 Verify that in approximately 80 seconds there are both audible and visual alarms as in Paragraph 8.42.

8.47 Manually release relay TM. Observe that all alarms retire and the circuit returns to its idle state.

8.48 Remove the block on the timing relay blocked non-operated in Paragraph 8.44.

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