

REVERTING CALL SELECTORS
5-, 10-, AND 20-PARTY TERMINAL PER LINE
OPERATION TESTS
USING TEST SET SD-31858-01 (J34701A)
AND TEST LINE SD-31857-01
STEP-BY-STEP SYSTEMS

1. GENERAL

1.01 This section describes a method of testing the operating features of 5-, 10-, and 20-party reverting call selectors in Nos. 355A and 35-E-97 community dial offices using test set SD-31858-01 and test line SD-31857-01.

1.02 This section is reissued to revise the tests to make them applicable to No. 35-E-97 community dial offices. Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The tests cover selector operation under loop and leak conditions, correctness of ringing codes and the test requirements of trip relays. The tests covered are:

- A. 5-Code — 5-Party Bridged Ringing or 10-Party Divided Ringing Tests
- B. 10-Code — 10-Party Bridged Ringing or 20-Party Divided Ringing Tests

1.04 When testing reverting call selectors arranged for 1400-ohm or 1500-ohm maximum external subscriber loop, any ring-trip relay which fails on test shall be readjusted mechanically and electrically to meet the requirements specified in Section 040-236-701 and in the circuit requirement table. Repeat the tests. If the relay continues to fail, connect the TL jack to the ADJ jack of test line to apply the test set readjust resistance values and repeat the tests, changing the tension of No. 1 spring as required.

1.05 In performing either Test A or B, the particular ringing interruptions received

beyond codes 1 and 2 may vary (type A or type B codes). Accordingly, it will be necessary for the tester to determine the codes applicable for the particular office from the power ringing circuit drawings or other office records. Brackets are provided in the steps where required for noting the codes involved.

1.06 The test equipment specified in this section is designed to apply proper marginal tests (simulated critical circuit conditions) when the circuit under test and the test equipment have an applied voltage of 48.5 to 50. In those offices where power plants are normally operated at more than 50 volts, the battery voltage should be reduced and maintained within the required limits while the tests are being made.

1.07 Lettered Steps: A letter a, b, c, etc, added to a step number in Parts 3 and 4 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 should be omitted.

1.08 Local instructions should be followed for recording and reporting any register operations caused by performing these tests.

2. APPARATUS

TESTS A AND B

2.01 Test set J34701A (SD-31858-01).

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- 2.02** Connector test line SD-31857-01. No. 59 cord tips (No. 2W12A cord). (For use where a battery supply jack is not available.)
- 2.03** Patching cord, P3E cord, 6 feet long, equipped with two No. 310 plugs (No. 3P7A cord). An additional cord is required for use when test set is equipped with NTR key.
- 2.04** Testing cord, W2M cord, 9 feet long, equipped with one No. 310 plug and two
- 2.05** Patching cord, P3H cord 10 feet long, equipped with one No. 310 plug and one No. 240A plug (No. 3P2A cord).
- 2.06** Patching cord, P3E cord, one foot long, equipped with two No. 310 plugs (No. 3P6A cord). (For use when test set is provided with PTR key.)

3. PREPARATION

STEP	ACTION	VERIFICATION
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TESTS A AND B

- 1a If battery supply jack is available —
Using 6-foot P3E cord, patch BAT G jack of test set to 48-volt battery supply jack.
Note: To avoid possible grounding of the battery supply lead, connect battery supply cord to the test set first and when disconnecting, remove the cord from the test set last.
- 2b If battery supply jack is not available —
Insert No. 310 plug of W2M cord into BAT G jack.
- 3b Connect red (sleeve) conductor of W2M cord to frame ground.
- 4b Connect white (tip) conductor to equipment side of a convenient fuse (not over 3 amperes).

Note: When disconnecting remove cord from test set last.
- 5 Insert No. 310 plug of P3H cord into test set T jack.
- 6c If test set is provided with PTR key and TR-1 to TR-4 jacks —
Using P3E cord, one foot long, patch test set TL and TR-4 jacks.
- 7c Operate S key.
- 8d If test set is provided with PTR key and TR-2 to TR-4 keys —
Using P3E cord, one foot long, patch test set TL and TR-1 jacks.

STEP	ACTION	VERIFICATION						
9d	Operate keys as follows in accordance with maximum subscriber loop resistance for which selectors are arranged:							
	<table border="1"> <thead> <tr> <th>Loop Resistance</th> <th>Operate Key</th> </tr> </thead> <tbody> <tr> <td>1000 or 1115</td> <td>S</td> </tr> <tr> <td>1400 or 1500</td> <td>L and TR3-R</td> </tr> </tbody> </table>	Loop Resistance	Operate Key	1000 or 1115	S	1400 or 1500	L and TR3-R	
Loop Resistance	Operate Key							
1000 or 1115	S							
1400 or 1500	L and TR3-R							
10e	If test set is provided with NTR key — Using P3E cord, 6 feet long, connect test set TL jack to test line TST jack.							
11e	If testing selectors arranged for loops of 1400 or 1500 ohms — Operate AC-DC key of test line.							

4 METHOD

STEP	ACTION	VERIFICATION
A. 5-Code — 5-Party Bridged Ringing or 10-Party Divided Ringing Tests		
12	Insert No. 240A plug of P3H cord into selector test jack.	BSY lamp does not light.
		<i>Note:</i> If BSY lamp does light, proceed to another switch.
13	Operate LP key.	
14	Operate and restore DL-ST key.	SL lamp lighted.
15	Dial a code () that will give a ring on the ring side.	Selector steps to terminal dialed.

Note: The codes which may be used in this tests are listed in the following tables:

355A Offices

Table A

Code	R	T
11	1	—
55	3	—
56	3	3
00	—	5

35-E-97 Offices

Table B

Ring stations ring on odd codes.
Tip stations ring on even codes.

Code	R	T
11	1	
33	3	
83	3	3
90	4	1L1S

Table D

Ring stations ring on codes 1 to 5.
Tip stations ring on codes 6 to 0.

Code	R	T
11	1	
33	3	
83	3	3
40	4	1L1S

Table C

Ring stations ring on even codes.
Tip stations ring on odd codes.

Code	R	T
66	1	
88	3	
38	3	3
45	4	1L1S

Table E

Tip stations ring on codes 1 to 5.
Ring stations ring on codes 6 to 0.

Code	R	T
66	1	
88	3	
38	3	3
95	4	1L1S

STEP	ACTION	VERIFICATION
16	Operate RC key.	Buzzer relay sounds code ().
17	Operate REV-L key momentarily at start of a ringing interval.	Buzzer relay stops while key is operated.
18f	If testing in offices in which the generator is connected to battery — Operate PTR or NTR key at start of a ringing interval and restore before end of interval.	Buzzer relay stops while key is operated.
19g	If testing in offices in which the generator is connected to ground — Operate REV-L key at start of ringing interval. <i>Note:</i> Steps 19g through 21g should be made during one ringing interval.	Buzzer relay stops.
20g	Operate PTR or NTR key momentarily.	
21g	Restore REV-L key.	Buzzer relay responds to next ringing interval.
22	Operate TR (trip) key at start of ringing interval and restore before expiration of this interval.	Buzzer relay stops. Selector releases. SL lamp extinguished.
23	Restore RC key.	
24	Repeat Steps 14 through 16 to reset ringing.	

STEP	ACTION	VERIFICATION
25h	If battery winding of trip relay is not connected to line during silent period — Operate and restore TR key during a silent period.	Buzzer relay stops. Selector releases. SL lamp extinguished.
26i	If battery winding of trip relay is connected to line during silent period — Operate and restore PTR or NTR key during a silent period.	Buzzer relay stops. Selector releases. SL lamp extinguished.
27	Restore RC key.	
28	Operate and restore DL-ST key.	SL lamp lighted.
29	Dial a code () which will give three rings on the ring side.	Selector steps to terminal dialed.
30	Operate RC key.	Buzzer relay sounds code 3 (). <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.
31	Operate REV-L key.	Buzzer relay stops.
32	Operate and restore TR key.	Selector releases. SL lamp extinguished.
33	Restore RC key.	
34	Restore LP key and operate LK key.	
35	Operate and restore DL-ST key.	SL lamp lighted.
36	Dial a code () which will give code 5 on the tip side.	
37	Operate RC key.	Buzzer relay sounds code 5 (). <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.
38	Operate and restore TR key.	Selector releases. SL lamp extinguished. Buzzer relay stops.
39	Restore RC key.	
40	Repeat Steps 35 through 37 except dial a code () which will give 3 rings on both sides of the line.	Buzzer relay sounds code 3 (). <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.
41	Restore REV-L key.	Buzzer relay sounds code 3 or, when selector is equipped for revertive ringing signal, sounds revertive code (code RR).
42j	If transmission battery is furnished by reverting call selector — Operate TR key.	Buzzer relay silenced.

STEP	ACTION	VERIFICATION
43j	Restore TR key.	Selector releases. SL lamp extinguished.
44k	If transmission battery is not furnished by reverting call selector — Operate TR key.	Buzzer relay stops. Selector releases. SL lamp extinguished.
45k	Restore TR key.	
46	Remove No. 240A plug from selector test jack.	
47	Repeat Steps 12 through 46 on other selector to be tested.	
48	Unless other tests are to be made — Remove all test connections and restore all keys to normal.	

B. 10-Code — 10-Party Bridged Ringing or 20-Party Divided Ringing Tests

12	Insert No. 240A plug of P3H cord into test jack of selector to be tested.	BSY lamp does not light.
13	Operate LP key.	<i>Note:</i> If BSY lamp does light proceed to another switch.
14	Operate and restore DL-ST key.	SL lamp lighted.
15	Dial a code () which will give a ring on the ring side.	Code selectors step to terminals dialed.
	<i>Note 1:</i> In 35-E-97 offices with grounded generator use code 377.	<i>Note:</i> A or No. 1 code selector releases after first digit is dialed and again steps when the third digit is dialed.

Note 2: The codes which may be used in making this test are listed in the following tables:

Code	R	T
*111	1L	
377		1S1L
587	2L	1S1L
787	1S1L	2L

* Also used for lines with Bridged ringing.

35-E-97 Office

Table B 10-Party				Table C 20-Party			
Code	R	T	Bridged	Code	R	T	Bridged
111	1L			111	1L		
177		2L		177		2L	
128	2S	1S1L		223	2S	3S	
139	3S	1S2L		348	1S1L	4S	
146	4S	1L2S		377	2L		2S1L
377	2L			469	1L2S	1S2L	1L1S
550			2S1L	550			
505			1L1S	505			

STEP	ACTION	VERIFICATION
16	Operate RC key.	Buzzer relay sounds code 1 ().
17	Operate REV-L key momentarily at start of a ringing interval.	Buzzer relay stops while key is operated.
18f	If testing in offices in which the generator is connected to battery — Operate PTR or NTR key at start of a ringing interval and restore before end of interval.	Buzzer relay stops while key is operated.
19g	If testing in offices in which the generator is connected to ground — Operate REV-L key at start of ringing interval. <i>Note:</i> Steps 19g through 21g should be made during one ringing interval.	Buzzer relay stops.
20g	Operate PTR or NTR key momentarily.	
21g	Restore REV-L key.	Buzzer relay responds to next ringing interval.
22	Operate TR key at start of ringing interval and restore before expiration of this interval.	Buzzer relay stops. Selector releases. SL lamp extinguished.
23	Restore RC key.	
24	Repeat Steps 14 through 16 to reset ring.	
25h	If battery winding of trip relay is not connected to line during silent period — Operate and restore TR key during a silent period.	Buzzer relay silenced. SL lamp extinguished. Selector releases.

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STEP	ACTION	VERIFICATION
26i	If battery winding of trip relay is connected to line during silent period — Operate and restore PTR or NTR key during a silent period.	Buzzer relay silenced. SL lamp extinguished. Selector releases.
27	Restore RC key.	
28	Operate REV-L key.	
29	Operate and restore DL-ST key.	SL lamp lighted.
30	Dial a code () which will give more than one ring on the tip side.	Code selectors step to terminals dialed.
31	Operate RC key.	Buzzer relay sounds code (). <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.
32	Restore REV-L key.	Buzzer relay stops.
33	Operate and restore TR key.	SL lamp extinguished. Selector releases.
34	Restore RC key.	
35	Operate REV-L key.	
36	Restore LP key and operate LK key.	
37	Operate and restore DL-ST key.	SL lamp lighted.
38	Dial a code () which will give more than one ring for both called party on tip and calling party on ring side.	
39	Operate RC key.	Buzzer relay sounds code () on tip side. <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.
40	Restore REV-L key.	Buzzer relay sounds code () or revertive ring (code RR) on ring side.
41	Operate and restore TR key.	Buzzer relay stops. SL lamp extinguished. Selector releases.
42	Restore RC key.	
43	Repeat Steps 37 through 39 except dial a code () which will give more than one ring for both called party on ring and calling party on tip side.	Buzzer relay sounds code () on ring side. <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.

STEP	ACTION	VERIFICATION
44	Operate REV-L key.	Buzzer relay sounds code () or revertive ring (code RR) on tip side.
45i	If transmission battery is furnished by reverting call selector — Operate TR key.	Buzzer relay silenced.
46j	Restore TR key.	Selector releases. SL lamp extinguished.
47k	If transmission battery is not furnished by reverting call selector — Operate TR key.	Buzzer relay silenced. SL lamp extinguished. Selector releases.
48k	Restore TR key.	
49	Restore RC key.	
50	Operate and restore DL-ST key.	SL lamp lighted.
51	Dial nonworking terminal 687.	Selector steps in response to dial.
52	Operate RC key.	SL lamp extinguished. Selector releases.
53	Remove No. 240A plug from selector test jack.	
54	Repeat Steps 12 through 53 on other selectors to be tested.	
55	Unless other tests are to be made — Remove all test connections and restore all keys to normal.	