

REVERTING CALL SELECTORS
5-, 10-, AND 20-PARTY TERMINAL PER LINE
OPERATION TESTS
USING TEST SET SD-31859-01 (J34722B)
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-31859-01 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 J34722B (SD-31859-01)

2.02 No. 1011G dial hand test set (or equivalent) connected to a W2CL cord 4 feet long, equipped with one No. 471A jack and one No. 240A plug (No. 2W39A cord). The cord is equipped with a KS-8010 switch which when operated to the OFF position cuts in a 1200-ohm resistance.

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 No. 59 cord tips (No. 2W12A cord) (for use where a battery supply jack is not available).

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 set is provided with PTR key.)

3. PREPARATION

TESTS A AND B

STEP	ACTION	VERIFICATION
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. <i>Note:</i> 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 310 plug of W2M cord into BAT G jack.	
3b	Connect red (sleeve) conductor of W2M cord to frame ground and white (tip) conductor to equipment side of a convenient fuse (not over 3 amperes). <i>Note:</i> When disconnecting remove cord from test set last.	
4	Insert No. 240A plug of dial hand test set into test set TJ jack.	
5	Insert No. 310 plug of P3H cord into test set T jack.	

STEP	ACTION	VERIFICATION						
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.							
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		
12	Insert No. 240A plug of P3H cord into selector test jack.	C lamp does not light. <i>Note:</i> If C lamp does light, proceed to another switch.
13	Operate REV-CALL key.	
14	Operate handset cord switch to OFF.	
15	Operate handset switch to TALK.	C lamp lighted.
16	Dial a code () that will give a ring on the ring side.	Selector steps to terminal dialed.
	<i>Note:</i> The codes which may be used in this test are listed in the following tables:	

STEP	ACTION	VERIFICATION
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355-A 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	ILIS

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	ILIS

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	ILIS

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	ILIS

- | | | |
|-----|--|---|
| 17 | Operate handset switch to MON. | Buzzer relay sounds code 1 (). |
| 18 | Operate REV-L (reverse line) key momentarily at start of a ringing interval. | Buzzer relay stops while key is operated. |
| 19f | 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. |
| 20g | 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 20g through 22g should be made during one ringing interval. | Buzzer relay silenced. |
| 21g | Operate PTR or NTR key momentarily. | |

STEP	ACTION	VERIFICATION
22g	Restore REV-L key.	Buzzer relay responds to next ringing interval.
23	Operate TR (trip) key at start of ringing interval and restore before expiration of this interval.	Buzzer relay stops. Selector releases. C lamp extinguished.
24	Repeat Steps 15 to 17 to reset ringing.	
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. C 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. C lamp extinguished.
27	Operate handset switch to TALK.	C lamp lighted.
28	Dial a code () which will give three rings on the ring side.	Selector steps to terminal dialed.
29	Operate handset switch to MON.	Buzzer relay sounds code 3 (). <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.
30	Operate REV-L key.	Buzzer relay stops.
31	Operate and restore TR key.	Selector releases. C lamp extinguished.
32	Restore REV-CALL key and operate LEAK key.	
33	Operate handset switch to TALK.	C lamp lighted.
34	Operate handset cord switch to ON.	
35	Dial a code () which will give code 5 on the tip side.	Selector steps to terminal dialed.
36	Restore LEAK key and operate REV-CALL key.	
37	Operate handset switch to MON.	Buzzer relay sounds code 5 (). <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.

STEP	ACTION	VERIFICATION
38	Operate and restore TR key.	Selector releases. C lamp extinguished. Buzzer relay stops.
39	Repeat Steps 32 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.
40	Restore REV-L key.	Buzzer relay sounds code 3 or, when selector is equipped for revertive ringing signal, sounds revertive code (code RR).
41j	If transmission battery is furnished by reverting call selector — Operate TR key.	Buzzer relay silenced.
42j	Restore TR key.	Selector releases. C lamp extinguished.
43k	If transmission battery is not furnished by reverting call selector — Operate TR key.	Buzzer relay stops. Selector releases. C lamp extinguished.
44k	Restore TR key.	
45	Remove No. 240A plug from selector test jack.	
46	Repeat Steps 12 through 45 on other selector to be tested.	
47	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**

12	Insert No. 240A plug of P3H cord into test jack of selector to be tested.	
13	Operate REV-CALL key.	
14	Operate switch on handset cord to OFF.	
15	Operate handset switch to TALK.	C lamp lighted.
16	Dial a code () which will give a ring on the ring side.	Code selectors step to terminals dialed.

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STEP	ACTION	VERIFICATION
23	Operate TR key at start of ringing interval and restore before expiration of this interval.	Buzzer relay stops. Selector releases. C lamp extinguished.
24	Repeat Steps 15 through 17 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. C lamp extinguished. Selector releases.
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. C lamp extinguished. Selector releases.
27	Operate handset switch to TALK.	C lamp lighted.
28	Operate REV-L key.	
29	Dial a code () which will give more than one ring on the tip side.	Code selectors step to terminals dialed.
30	Operate handset switch to MON.	Buzzer relay sounds code (). <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.
31	Restore REV-L key.	Buzzer relay stops.
32	Operate and restore TR key.	C lamp extinguished. Selector releases.
33	Operate handset cord switch to ON.	
34	Operate REV-L key.	
35	Restore REV-CALL key and operate LEAK key.	
36	Operate handset switch to TALK.	C lamp lighted.
37	Dial a code () which will give more than one ring for both called party on tip and calling party on ring side.	Code selectors step to terminals dialed.
38	Restore LEAK key and operate REV-CALL key.	
39	Operate handset switch to MON.	Buzzer relay sounds code () on tip side. <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.

STEP	ACTION	VERIFICATION
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. C lamp extinguished. Selector releases.
42	Repeat Steps 33 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 () on ring side. <i>Note:</i> Check that first ring is a full code ring to verify pickup feature.
43	Operate REV-L key.	Buzzer relay sounds code () or revertive ring (code RR) on tip side.
44j	If transmission battery is furnished by reverting call selector — Operate TR key.	Buzzer relay silenced.
45j	Restore TR key.	Selector releases. C lamp extinguished.
46k	If transmission battery is not furnished by reverting call selector — Operate TR key.	Buzzer relay silenced. C lamp extinguished. Selector releases.
47k	Restore TR key.	
48	Operate handset switch to TALK.	C lamp lighted.
49	Dial nonworking terminal 687.	Selector steps in response to dial.
50	Operate handset switch to MON.	C lamp extinguished. Selector releases.
51	Remove No. 240A plug from selector test jack.	
52	Repeat Steps 12 through 51 on other selectors to be tested.	
53	Unless other tests are to be made — Remove all test connections and restore all keys to normal.	