

60- AND 120- IPM INTERRUPTER CIRCUIT SD-25742-01

TESTS

NO. 5 CROSSBAR OFFICES

1. GENERAL

PAGE

1.01 This section is reissued for the following reasons:

- (a) To revise all tests to more clearly distinguish between the interrupter circuit under test and the mate interrupter circuit.
- (b) To make minor changes as required. Since this reissue is a general revision, arrows ordinarily used to indicate changes have been omitted.

1.02 This reissue does not affect Equipment Test Lists.

1.03 The tests covered are:

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A. Interrupter Timing: This test checks that the interrupter supplies optional synchronized tone and ground flash interruptions or ground flash only interruptions at a frequency of either 60- or 120- ipm.

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B. Ground Detection Features: This test check the following: (1) False ground detection in operating circuit of (F or F, T) multiplying relays. (2) False ground detection of FL- leads and removal of ground from all FL- leads to connecting circuits. (3) Major alarm indication for failure in either the operating circuit of (F or F,T) multiplying relays or FL- leads.

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C. Manual Transfer Features: This test checks the following: (1) Manual transfer for control of F or F,T secondary relays to alternate T1, T2 primary relays (2) Guard lamp indication when any TR key is operated.

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D. Automatic Transfer Features: This test checks the automatic transfer of the (F or F,T) multiplying relays from one interrupter circuit to the mate interrupter circuit if the duration of 60- or 120- ipm interruptions exceed normal intervals.

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1.04 If Tests A and D indicate a trouble in a timing network, check the timing interval given in the circuit requirement table.

1.05 **Lettered Steps:** A letter a, b, c, etc, added to a step number in Part 3 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 series of 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.

1.06 Make all tests as rapidly as possible and during periods of light traffic to avoid interfering with service.

1.07 Local instructions should be followed for recording and reporting the results of these tests.

2. APPARATUS

All Tests

2.01 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, and one 419A tool.

Tests A, C

2.02 KS-3008 stopwatch or equivalent.

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Test B

2.03 67C test set equipped with KS-6278 connecting clip (for checking presence or absence of ground).

2.04 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, and one 419A tool.

Tests B, C, D

2.05 Blocking and insulating tools as required. Use tools and apply as covered in Section 069-020-801.

3. METHOD

STEP	ACTION	VERIFICATION
A. Interrupter Timing		
	<i>Note:</i> When performing this test, the 60- and 120- ipm interrupters are tested simultaneously since the ST leads are common.	
1	At interrupter circuit under test— Connect ground to ST lead at terminal 1 on terminal strip A; <i>start timing</i> .	ST relay operated. For 60- ipm interrupter circuit— F or F, T relays operated a minimum of 56 and a maximum of 65 times per minute. For 120- ipm interrupter circuit— F, or F,T relays operated a minimum of 110 and a maximum of 142 times per minute.
2	Disconnect ground from ST lead at terminal 1 on terminal strip A.	
B. Ground Detection Features		
	<i>Note:</i> This test should be performed when interrupter circuit is not in operation.	
False Ground in Operating Circuit for F or F,T Relays		
1	At interrupter circuit under test— Momentarily connect ground to 1B of AL relay.	GF, SR relays operated. G relay operated if provided. AL lamp lighted. Red aisle pilot lamp lighted. Major alarm sounds.
2	Momentarily operate AR key.	GF, SR relays released. G relay released if provided. AL lamp extinguished. Red aisle pilot lamp extinguished. Major alarm silenced.

STEP	ACTION	VERIFICATION
False Grounds on FL Leads		
	<i>Note:</i> Steps 3 through 8 apply only to interrupter circuits arranged to provide both tone and ground flash interruptions.	
3	At interrupter circuit under test— Connect ground to ST lead at terminal 1 on terminal strip A.	ST relay operated. F, T relays operating and releasing at proper rate.
4	Connect ground to FL1 lead at terminal 13 on terminal strip A.	GT, G relays operated. AL lamp lighted. Red aisle pilot lamp lighted. Major alarm sounds. Ground not present at terminals 14, 15, 16, and 17 on terminal strip A. (Refer to 2.03.)
5	Disconnect ground from FL1 lead at terminal 13 on terminal strip A.	GT relay released.
6	Momentarily operate AR key.	G relay released. AL lamp extinguished. Red aisle pilot lamp extinguished. Major alarm silenced.
7	Repeat Steps 4 through 6 for FL2, FL3, FL4, and FL5 leads using terminals 14, 15, 16, and 17 on terminal strip A, respectively.	<i>Note:</i> When performing Step 4, ground should not be present on 4 of the 5 FL-leads associated with terminals 13, 14, 15, 16, and 17 on terminal strip A. (Refer to 2.03.)
8	Disconnect ground from ST lead at terminal 1 on terminal strip A.	
C. Manual Transfer Features		
1	At interrupter circuit under test— Connect ground to ST lead at terminal 1 on terminal strip A.	ST relay operated. F or F, T relays operating and releasing at proper rate.
2	When mate interrupter circuit is not in operation— At interrupter circuit under test— Operate TR key; <i>start timing.</i>	At mate interrupter circuit— ST relay operated. At interrupter circuit under test— ST relay released. F or F, T relays continue operating and releasing at proper rate. At MTF— Interrupter guard lamp lighted.
3	At mate interrupter circuit— Momentarily operate AL relay.	AL relay locked operated. AL lamp lighted. ST relay released. At interrupter circuit under test—

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STEP	ACTION	VERIFICATION
		F or F,T relays released. White aisle pilot lamp lighted. Minor alarm sounds.
4	At mate interrupter circuit— Momentarily operate AR key.	AL relay released. AL lamp extinguished. ST relay operated. At interrupter circuit under test— F or F,T relays operating and releasing at proper rate.
	<p>Caution: Steps 5 through 14 should be made as rapidly as possible to prevent interference with service.</p>	
5	Block non-operated G- relay.	
6	Momentarily operate GF relay.	GF relay locked operated. F or F,T relays released. AL lamp lighted. RED aisle pilot lamp lighted. Major alarm sounds.
7	Momentarily operate AR key; <i>start timing.</i>	GF relay released. AL lamp extinguished. F or F,T relays operating and releasing at proper rate. Red aisle pilot lamp extinguished. Major alarm silenced.
8	Remove blocking tool from G relay.	
9	At mate interrupter circuit— Block nonoperated G relay.	
10	Momentarily operate GF relay.	GF relay locked operated. AL lamp lighted. At interrupter circuit under test— F or F,T relays released. Red aisle pilot lamp lighted. Major alarm sounds.
11	At mate interrupter circuit— Momentarily operate AR key; <i>start timing.</i>	GF relay released. AL lamp extinguished. At interrupter circuit under test— F or F,T relays operating and releasing at proper rate. Red aisle pilot lamp extinguished. Major alarm silenced.
12	At mate interrupter circuit— Remove blocking tool from G relay.	

STEP	ACTION	VERIFICATION
13	At interrupter circuit under test— Disconnect ground from ST lead at terminal 1 on terminal strip A.	
14	Restore TR key.	
D. Automatic Transfer Features		
	<i>Note:</i> This test should be performed when the interrupter circuit under test and the mate interrupter circuit are not in operation.	
1a	If interrupter circuit under test provides both tone and ground flash interruptions— Insulate 7T of F relay.	
1b	If interrupter circuit under test provides only ground flash interruptions— Insulate 3T of F relay.	
2	At interrupter circuit under test— Connect ground to ST lead at terminal 1 of terminal strip A.	AL relay locked operated in approximately 1 to 2 seconds. AL lamp lighted. SR relay operated. ST relay released. F or F,T relays operating and releasing at proper rate. At mate interrupter circuit— ST relay operated. White aisle pilot lamp lighted. Minor alarm sounds.
3	At interrupter circuit under test— Remove insulator from F relay.	
4	Momentarily operate AR key.	AL, SR relays released. AL lamp extinguished. ST relay operated. F or F,T relays continue operating and releasing at proper rate. At mate interrupter circuit— ST relay released. White aisle pilot lamp extinguished. Minor alarm silenced.
5	At interrupter circuit under test— Disconnect ground from ST lead at terminal 1 of terminal strip A.	
6a	If interrupter circuit under test provides both tone and ground flash interruptions— Insulate 9T of F relay.	

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STEP	ACTION	VERIFICATION
7b	If interrupter circuit under test provides only ground flash interruptions— Insulate 2T of F relay.	
8	At interrupter circuit under test— Connect ground to ST lead at terminal 1 of terminal strip A.	AL relay locked operated in approximately 1 to 2 seconds. AL lamp lighted. SR relay operated. ST relay released. F or F,T relays operating and releasing at proper rate. At mate interrupter circuit— ST relay operated. White aisle pilot lamp lighted. Minor alarm sounds.
9	Momentarily operate AL relay.	AL relay locked operated. AL lamp lighted. SR relay operated. ST relay released. At interrupter circuit under test— F or F,T relays released. Red aisle pilot lamp lighted. Major alarm sounds.
10	At mate interrupter circuit— Momentarily operate AR key.	AL, SR relays released. AL lamp extinguished. ST relay operated. At interrupter circuit under test— F or F,T relays operating and releasing at proper rate. White aisle pilot lamp lighted. Minor alarm sounds.
11	Remove insulator from F relay.	
12	Momentarily operate AR key.	AL, SR relays released. AL lamp extinguished. ST relay operated. F or F,T relays continue operating and releasing at proper rate. At mate interrupter circuit— ST relay released. White aisle pilot lamp extinguished. Minor alarm silenced.
13	At interrupter circuit under test— Disconnect ground from ST lead at terminal 1 on terminal strip A.	