RELAYS

NOS. 209FA AND 209FD

USING TEST CIRCUIT PER SD-90411-01

REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

1.01 This section covers the electrical requirements for the Nos. 209FA and 209FD relays when using the test circuit per SD-90411-01. It also covers procedures for operating the test circuit. It is reissued to add requirements and procedures for operating the test circuit when testing No. 209FD relays.

1.02 Reference shall be made to Section 020-010-711 covering general requirements and definitions for additional information necessary for the proper application of the requirements listed herein.

1.03 Any adjustments due to failure to meet the requirements outlined in this section shall be made in accordance with the procedures covered in the section covering 209 type relays.

1.04 The cover may be either on or off when applying the electrical requirements.

2. REQUIREMENTS

2.01 Operate Test With the operate current, specified on the circuit requirement table for the winding under test set up on the associated No. 35C current flow test set, the relay shall follow the current reversals applied by the test circuit. The relay shall close each contact for approximately equal intervals as gauged by the R and G lamps of the test circuit.

2.02 Non-Operate Test (Applies when a non-operate current value is specified on the circuit requirement table) With the non-operate current, specified on the circuit requirement table for the winding under test set up on the associated No. 35C current flow test set the relay shall not follow the current reversals applied by the test circuit. This test shall be applied immediately after the operate test and shall be repeated to test that the relay will not operate when either contact is made.

3. OPERATION OF TEST CIRCUIT

3.001 List of Test Apparatus

Code No.	Description
35C	Test Set
P2B	Cord with No. 110 Plug on each end

3.01 Preparation

(1) See that all keys on the test circuit are normal and that all resistance sliders of the No. 35C test set are in the extreme right position. Then connect the T jack of the test circuit to the T&R jack of the No. 35C test set using the No. P2B cord.

(2) Insert the relay under test into the No. 18A connecting block. Operate the BATT & GRD CO key of the No. 35C test set.

(3) When testing a No. 209FA relay depress one of the keys of the No. 35C test set and set the corresponding sliders so that the reading on the meter agrees with the primary winding operate test current value shown on the circuit requirement table. In a similar manner set up the primary winding non-operate current value if a non-operate test is to be applied. Then operate the TEST SEC 209FA key and set up the secondary winding operate current. Then release the TEST SEC 209FA key.

(4) When testing a No. 209FD relay operate the TEST 209FD key. Then depress one of the keys of the No. 35C test set and set the corresponding sliders so that the reading on the meter agrees with the P1 winding operate test current shown on the circuit requirement table. In a similar manner set up the P1 winding non-operate current value if a non-operate test is to be applied. Then operate the TEST P2 209FD key and set up the operate current specified for the P2 winding. Operate the TEST P3 209FD key and set up the operate current specified for the P3 winding. Then release the TEST P3 209FD key.

3.02 Procedure

Operate Test on Primary or P1 Winding (Nos. 209FA and 209FD Relays)

(1) Operate the BB key of the test circuit and depress the key in the No. 35C test set controlling the primary or P1 winding operate current value thereby reversing the direction of the current through the primary or P1 winding of the relay under test. The relay should close each contact for approximately equal intervals as gauged by the R and G lamps. The R lamp in the relay

3.02 (Continued)

test circuit should light when the armature of the relay is in contact with its left contact. The G lamp should light when the armature of the relay is in contact with its right contact.

(2) If the requirement is not met set up the readjust operate current on the test set. Then adjust the relay in accordance with the procedures specified in the section covering 209 type relays until the relay satisfactorily follows the current reversals.

Non-Operate Test on Primary or P1 Winding (Nos. 209FA and 209FD Relays)

(3) Immediately after making the operate test as described in (1) or (2) and with the BB key still operated, note whether the red or green light is lighted and then depress the key in the No. 35C test set controlling the primary or P1 winding non-operate current value. The lamp should not be extinguished.

(4) Momentarily apply the operate test again so that the other lamp is lighted and immediately reapply the non-operate test. The lamp should not be extinguished.

(5) If the requirement is not met set up the readjust non-operate current value (if a readjust value is specified) on the test set. Then adjust the relay in accordance with the procedures specified in the section covering 209 type relays until the relay meets the non-operate test on both contacts.

(6) After readjusting reapply the operate test in accordance with (1) using the readjust current value.

Operate Test on Secondary Winding (No. 209FA Relay)

(7) Operate the TEST SEC 209FA key and apply the secondary winding operate test using the key on the No. 35C test set controlling the secondary winding operate current value. Then proceed as covered in (1) and (2).

Operate Test on P2 or P3 Windings (No. 209FD Relay)

(8) Operate the TEST P2 209FD key and apply the P2 winding operate test using the key on the 35C test set controlling the P2 winding operate current value. Then proceed as covered in (1) and (2). Operate the TEST P3 209FD key and apply the P3 winding operate test using the key in the test set controlling the operate current value. Then proceed as covered in (1) and (2).