

110-A-1 AUTOMATIC MULTIPLE SENDER FOR TELETYPEWRITER TEST SIGNALS OPERATION

1. GENERAL

1.01 This section describes methods for operating and testing the 110-A-1 automatic multiple sender.

1.02 The information in this section is indexed as follows:

1. General
2. Operation
3. Relay Adjustment
4. Relay Tests

Individual Relay Tests

Group Test (Checking Adjustment of Relays in Position)

2. OPERATION

2.01 Start the equipment by operating the power switch underneath each transmitter-distributor. A red pilot lamp alongside of each switch indicates when the power is on.

2.02 Connect the 130-volt telegraph battery to the equipment by pushing in the two 92-type keys located in the upper left-hand corner of the monitoring panel. The left-hand key controls the battery connected to the 240 o.p.m. relays and the right-hand key controls the battery connected to the 368 o.p.m. relays.

Note: If only one testing speed is desired, the appropriate power switch and key only need be operated.

2.03 When the equipment is not being used the battery and power should be disconnected.

3. RELAY ADJUSTMENT

3.01 The adjustment of any relay used in this equipment should be in accordance with Bell System Practices, and should meet the limit specified in the circuit requirements for this equipment.

Caution: An armature travel of .002 inch is required. New relays, including those shipped with multiple sender equipment will therefore require readjustment. Relays with this adjustment should be specially marked for identification.

3.02 Before a relay is placed in service it should be tested as described in 4.03 for contact efficiency. If it does not meet the requirements of this test it should be readjusted.

4. RELAY TESTS

4.01 The following paragraphs describe tests which may be used when required for checking purposes. If readjustment is necessary Bell System Practices should be employed except as indicated in 3.01. Do not readjust relays with the aid of the multiple sender testing circuits.

Individual Relay Tests

4.02 When trouble is indicated in a particular relay it may be removed from its position in the bay without disturbing the operation of the rest of the relays. However, no more than one relay should be removed at one time.

4.03 Procedure.

(1) Insert the relay to be tested in the relay mounting at the left of the monitoring panel.

(2) Operate the left-hand lever type key to position marked "REL TEST."

(3) Test for bias with the right-hand lever type key normal. If the average meter reading is greater than ± 4 (2 divisions), or if the vibration of the meter needle is unsteady, the relay should not be used without readjustment.

(4) Test for contact efficiency with the right-hand lever-type key operated to position marked "CONT TEST." An average meter reading of 8 (4 divisions) or greater or an unsteady reading indicates that the relay should be readjusted.

Group Test (Checking Adjustment of Relays in Position)

4.04 This method is to be used only when all of the relays operated by one transmitter-distributor may be taken out of service.

4.05 Additional apparatus.

None required.

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4.06 Procedure.

(1) Test the group-sending-relay for bias as described in 4.03. This relay should be unbiased for this test.

(2) Insert the relay in the right-hand relay mounting on the monitoring panel.

(3) Operate the left-hand lever-type key on the monitoring panel to position marked "GR TST."

(4) Insert one end of the double conductor cord in either the jack marked "368 o.p.m." or in the one marked "240 o.p.m." depending upon whether the

group of relays operating at 368 or 240 o.p.m. is to be tested.

(5) Insert the other end of the double conductor cord in the jack corresponding to the relay to be tested.

(6) Test for bias with the right-hand lever-type key normal. The average meter reading should not be greater than ± 3 (1-1/2 divisions), and the reversals should be steady.

(7) Check the contact efficiency by operating the right-hand key to position marked "CONT TEST." An average meter reading of 4 (2 divisions), or greater or an unsteady meter reading, indicates that the relay is not in proper adjustment.

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