

SEQUENTIALLY CONTROLLED AUTOMATIC TRANSMITTER START SYSTEM (SCATS)

14 TRANSMITTER-DISTRIBUTOR CONTROL CIRCUIT EA-10963-SD

DESCRIPTION, OPERATION, AND TEST PROCEDURE

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1. GENERAL

1.01 This section gives a description, the operating principles, and test procedure for the 14 Transmitter-Distributor Control Circuit per EA-10963-SD.

2. DESCRIPTION

2.01 The circuit was designed for use at an outlying station or a control station on a SCATS system.

2.02 The purpose of the circuit is to start a 14 Transmitter-Distributor (14 TD) on receipt of a two-letter Transmitter Start Code (TSC) through the selective mechanism of a 28 TTY and the sixth pin feature of the TD. The sixth pin feature also provides a means of stopping the TD when tape runs out.

2.03 An auxiliary feature is a key which will effect a manual start of the TD during any idle circuit period if it is desired to transmit out of sequence.

2.04 The control circuit equipment consists essentially of two Y, one U, and one 255A-type relays.

2.05 When used at an outlying station, the control circuit requires a J86256B rectifier or equipment.

2.06 The rectifier and relay mounting plate can be mounted in an ED91472-01 cabinet or can be housed in a 28A or 28B table when there is sufficient space.

3. THEORY OF OPERATION

AUTOMATIC START OF TD

3.01 Assuming the 28 TTY in the select "non-print" condition and tape available in the TD gate, receipt of a valid TSC momentarily operates a contact.

3.02 This momentary contact operation puts a short on the AA and BB leads operating the TS1 relay, which locks via its 3-4 contacts and the sixth pin closed.

3.03 Operation of TS1 relay removes the ground from the TS2 relay lead. TS2 relay releases slowly and closes the start magnet of the TD via the L1 and L2 leads. The TD will now start.

3.04 When the tape runs out, the tape-out contacts will open, opening the lock path of TS1 relay, causing TS1 relay to release. Upper 1-2 contacts of TS1 relay will connect ground to the winding of TS2 relay which will operate and open the start magnet via its lower 2-3 contacts. The TD will stop.

MANUAL START OF TD

3.05 Holding the nonlocking 6017P key to its operated position places a short on the KA and KB leads. This feeds a ground to top 2 of SR relay. While holding the key operated and line transmission is taking place, the first spacing character will cause LD relay to move to its No. 5 contact causing SR relay to operate.

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3.06 Operation of SR relay opens the ground path of the key and the attempt to seize the circuit will be unsuccessful.

3.07 When the circuit becomes idle, the LD relay will remain on its No. 4 contact. SR relay will release and the ground from the key will operate TS1 relay. TS1 relay operated, locks through the tape-out pin and the TD will start.

4. TESTS

4.01 To test the control circuit operation, coordination is required with the Serving Test Center (STC) due to the automatic features of the equipment.

4.02 The station tester should first obtain a release of equipment if tests are to be made during service hours, then have the STC terminate the station in a dummy or test circuit.

4.03 At the station under test, with the equipment in operating condition, place a test tape in the TD gate. For test purposes, any test sentence such as "The quick brown fox" will suffice.

4.04 Request the STC to transmit a valid TSC. This can be done manually from a keyboard. The TSC for any station should be FIGS H LTRS FIGS * S LTRS. The character designated (*) will be the individual code of the station under test.

4.05 Receipt of the TSC by the 28 TTY and its selective functioning should cause the TD to operate and transmit the test sentence.

4.06 Assuming the test sentence is on a torn tape, complete passage of the tape through the TD gate will operate the sixth pin deactivating the TD.

4.07 With tape available, request the STC to transmit an invalid TSC. The TD should not operate.

4.08 Request the STC to send continuous test from a transmitter. Place test tape in gate of the TD under test and hold the 6017P key operated. The TD under test should not operate while the STC is transmitting.

4.09 With the 6017P key still operated, request the STC to stop transmission. The TD should operate as soon as transmission stops from the STC. The 6017P key may be released as soon as the TD starts.

5. CONNECTING CIRCUITS

5.01 For connecting circuits use drawing EA-12348-SD "Count Circuit Outlying Station Message Count Circuit (SCATS)".

6. REFERENCES

6.01 The following are EA drawings related to this section.

EA-10669-CD — Sequentially Controlled Automatic Transmitter Start System (SCATS)

EA-10720-CD — MXD Timing and Control Circuit

EA-12149 — Connect 28 TTY from Transmitter Start Circuit

Note: For information on basic teletypewriter apparatus, refer to standard instructions covering the particular apparatus.