EXCLUSION UNIT 911K-TYPE
DESCRIPTION AND OPERATION

1. GENERAL

1.01 The Exclusion Unit 911K-Type is used with multiple control panel installations of several telegraph service board Test Sets. The 911K allows up to five serving positions located within a telegraph serving test center to utilize a single common electronic unit. The electronic unit may be either a 911F Distortion Measuring Set, a 911G Test Sentence Generator, a 911J Data Signal Distorting Set, or a KS-19935 Telegraph Carrier Test Set (TCTS-2). Application of the 911K is not limited to these units.

1.02 A connect switch and a busy lamp is associated with each control panel position that utilizes the common circuit. When any control position has obtained access to the common electronic unit, the exclusion circuit is arranged to prevent access by any other position and will light the busy lamps at the non-using control panel positions. When a connect switch is operated during the time the common equipment is in use, the busy lamp at the using position will flash at a 60 ipm rate.

2. IDENTIFICATION

2.01 The Exclusion Unit 911K-type (Fig. 1), consists of a 7-inch by 19-inch mounting plate equipped with connectors, relays, and a terminal block. All input and output connections are made by connectors.

2.02 Twelve 50-pin connectors are mounted on the Exclusion Unit 911K. Six connectors are designated A1-0 through A1-5 and six connectors are designated B1-0 through B1-5. The connectors designated A1-0 and B1-0 are for connections to the common unit. The connectors designated A1-1 through A1-5 and B1-1 through B1-5 are for connection to the control panels that require selective access to the common unit. The "A" series connectors provide 23 switched circuits, 2 control and indicator circuits, and 25 multiple circuits. The "B" series connectors provide 50 multiple circuits (Fig. 3).

2.03 The relays associated with the 911K may be divided into functional groups as follows:

DESIGNATION	FUNCTION
S1-5	Select 1-5
C1-5	Connect 1-5
G1-2	Group 1-2
FL	Flashing

3. OPERATION

3.01 When access to the common electronics unit is desired, it is necessary to operate the connect switch on the control panel where access is desired. Operation of the connect switch initiates a series of relay operations that may be seen by referring to Fig. 2.

3.02 In the idle condition, the Group 1 (G1) and the Group 2 (G2) relays are operated. For the purpose of discussion, assume that an attendant at control panel position 1 operates the Connect 1 (CONN1) switch. A ground is connected through the operated contacts (G1) and (G2) 1 to operate the Select 1 (S1) relay. The S1 relay performs the following functions:

(1) Contact 3M provides a ground, through contacts (S2) 10B, (S3) 3B, (S4) 10B, and (S5) 3B, to light the busy (BSY) lamps at control panel positions 2 through 5.

(2) Contact 3B opens the circuit to inhibit lighting the BSY lamp at control panel position 1.

(3) Contact 2M completes the circuit to enable the BSY lamp at control panel position 1 to flash when the flash (FL) relay operates.

(4) Contact 4M holds the circuit to keep the S1 relay energized when contacts (G1) 1M and (G2) 1M open.

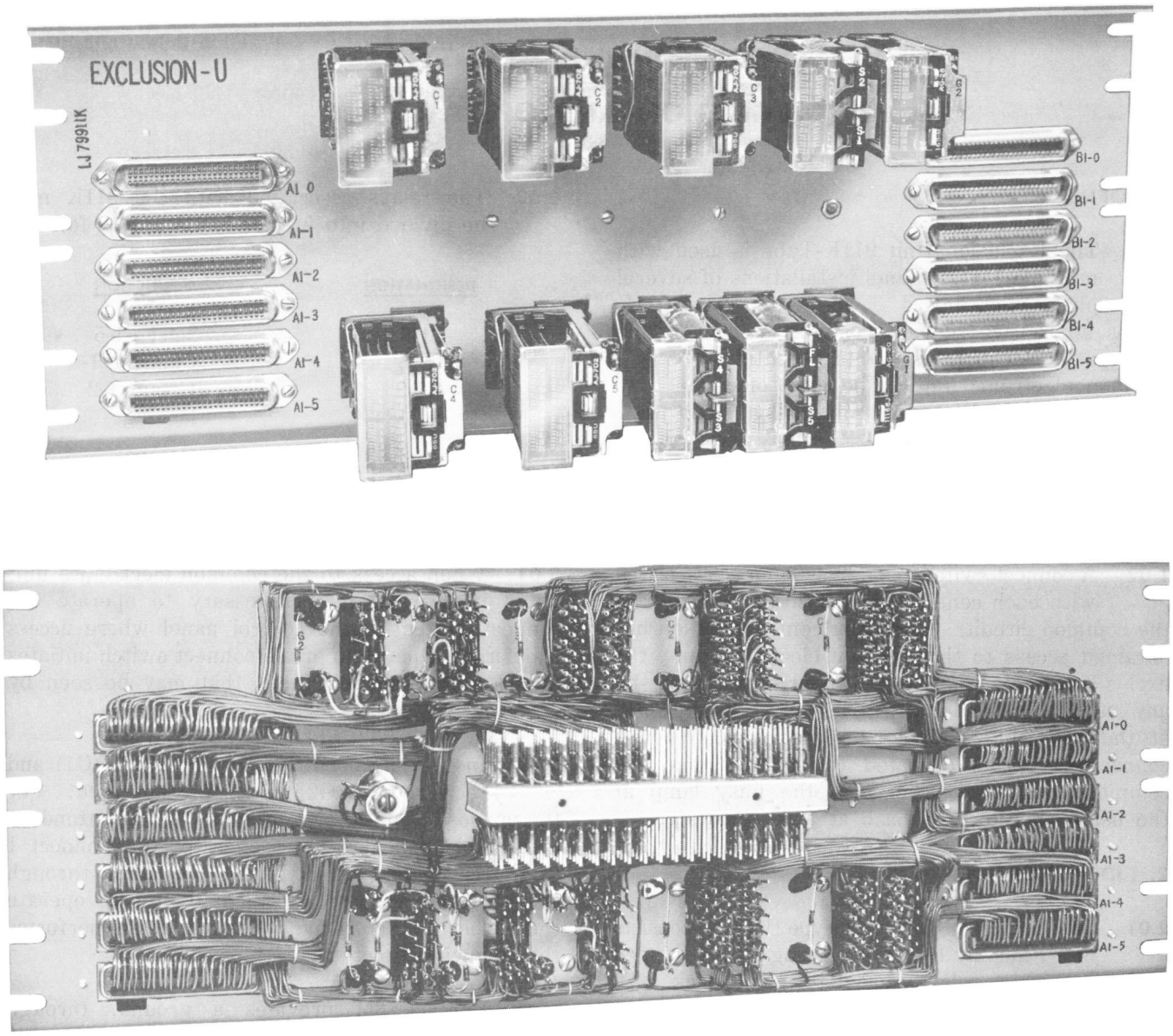

Fig. 1—Exclusion Unit Type 911K—Front and Rear View

(5) Contact 4B opens the circuit to inhibit energizing the (FL) relay.

(6) Contact 1M connects the circuit to allow operation of the connect 1 (C1) relay.

(7) Contact 5B opens the circuit to release the slow release (G1) relay.

3.03 The (G1) relay releases in approximately 100 msec and performs the following functions:

(1) Contact 2B completes the circuit to provide a ground which will allow the (C1) relay to operate when the (G2) relay releases.

(2) Contact 2M releases the slow release (G2) relay.

(3) Contacts 3M, 9M, 11M, and 12M open the circuits between the CONN 2-5 switches and their associated (S-) relays.

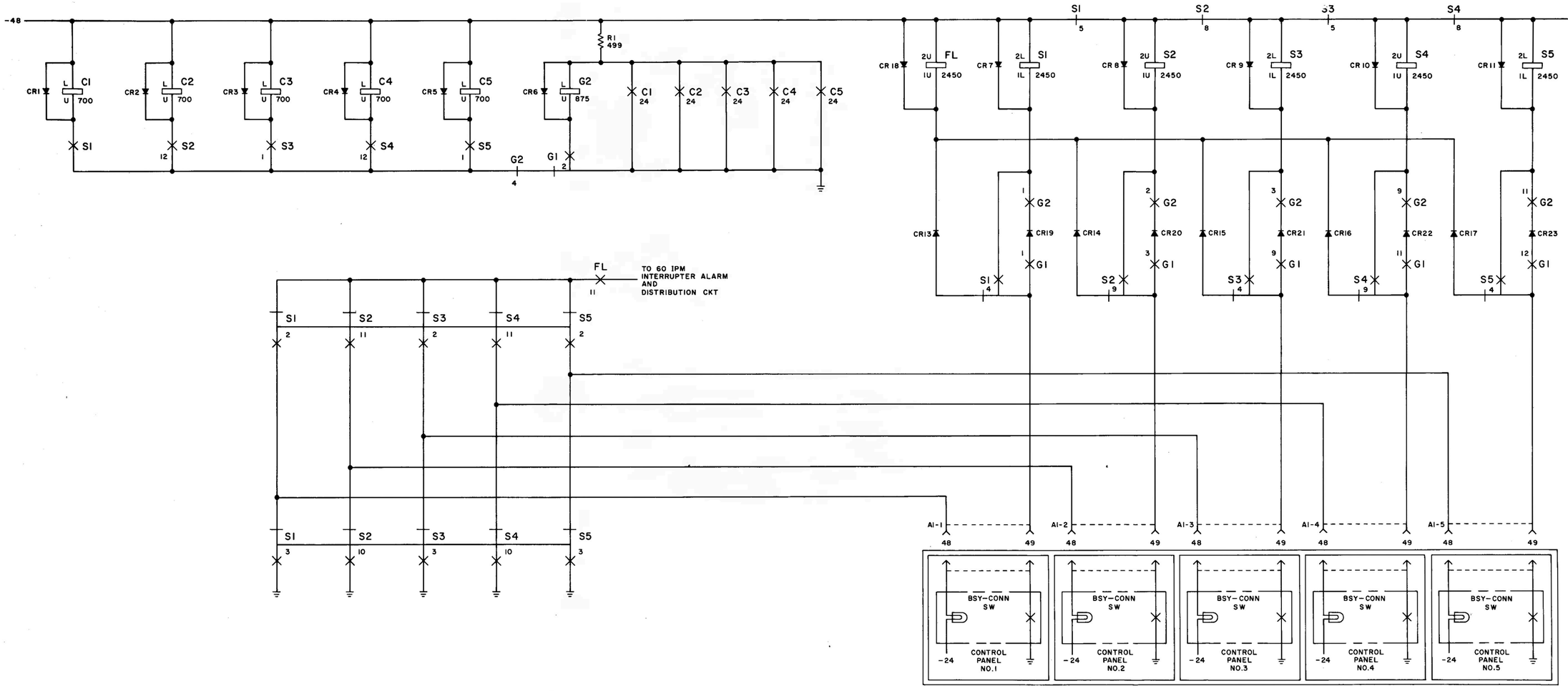

Fig. 2—Exclusion Unit Type 911K—Control and Indicator Circuit

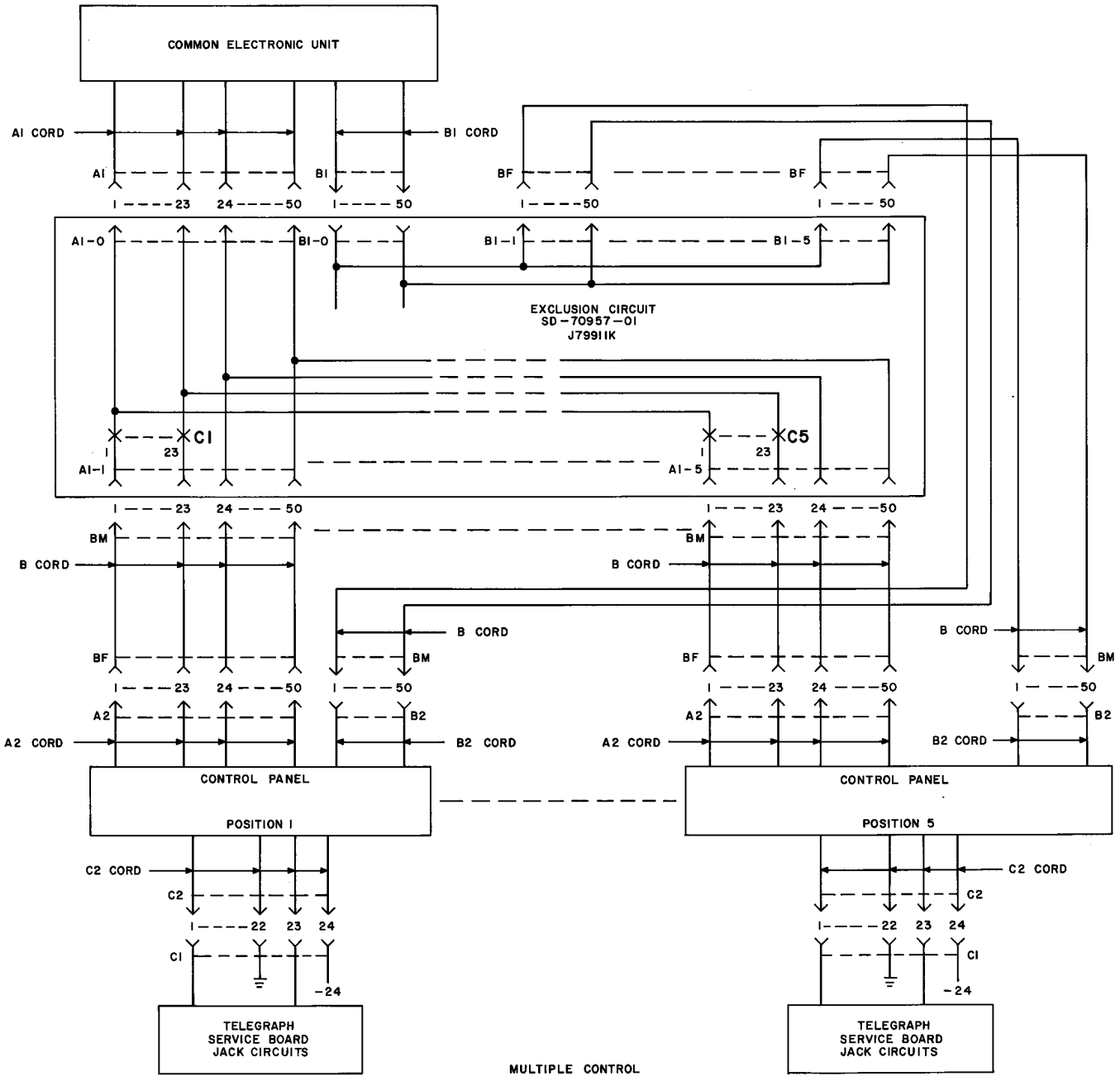

Fig. 3—Exclusion Unit Type 911K—Typical Installation

3.04 Relay (G2) releases approximately 100 msec after contact (G1) 2M opens the circuit and performs the following functions:

(1) Contacts 1M, 2M, 3M, 9M, and 11M provide an additional break in the circuits between the CONN 2-5 switches and their associated (S-) relays.

(2) Contact 4B completes the path to operate relay (C1) and complete the 23 switched connections between the control panel position 1 and the common electronic unit. Contact (C1) 24M provides a short circuit across the (G2) relay winding.

3.05 Any other position operator may make a bid for connection to the common circuit by

operating the CONN-switch. In this event, the associated (S-) relay cannot operate because the (G1) and (G2) relays are both released. However, a ground through the CONN-switch is connected through the 4B or 9B contact of the associated (S-) relay to operate the (FL) relay. The (FL) relay provides an interrupted ground (60 ipm) through all the released (S-) relay 2B or 11B contacts and through the only operated (S) relay to flash the BSY lamp at the using position.

3.06 When the CONN switch associated with the using control panel position is released, the (S-) relay is released and:

(1) The busy lamp is stopped if flashing.

(2) The (C-) relay is released to disconnect the common circuit.

(3) The (G1) relay is operated. The operated (G1) relay completes the circuit for operation of the (G2) relay. The released (C-) relay removes the shunt on the (G2) relay so that the (G2) relay operates. When the (G2) relay operates, all circuits to the (S-) relays are closed and any position may obtain access to the common circuit.

3.07 More detailed information concerning the Exclusion Circuit 911K may be found in the following:

SECTION	TITLE
SD-70957-01	Data Systems Central Office—Exclusion Circuit
SD-63899-01	60 IPM Interrupter Alarm and Distribution Circuit
SD-70952-01	911F Distribution Measuring Set
SD-70953-01	911G Test Sentence Generator
SD-70954-01	911J Signal Distorting Set