

COMMON SYSTEMS
660
COMMUNICATION PANEL CIRCUIT

CHANGES

D. Description of Changes

- D.1 In FS7, the lead designation for option 14 on switch S1.8 has been changed from A to RA1(9) to correct an error.
- D.2 In FS7, for option 16, the TR lead has been connected to terminal S of network Z1.

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CIRCUIT DESCRIPTION

CD-3C292-01
ISSUE 4D
APPENDIX 5B
DWG ISSUE 12B
DISTN CODE 1N99

COMMON SYSTEMS
660
COMMUNICATION PANEL CIRCUIT

CHANGES

D. Description of Changes

D.1 In FS 7, options ZB and ZD have been added.

D.2 Note 121 has been added.

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COMMON SYSTEMS
660
COMMUNICATION PANEL CIRCUIT

CHANGES

B. Changes in Apparatus

<u>B.1</u>	<u>Superseded</u>	<u>Superseded By</u>
	Network Z1, 4293F; App Fig 9	Network Z1, 4293N; App Fig 9
	Network Z2, 4293F; App Fig 10	Network Z2, 4293N; App Fig 10

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CIRCUIT DESCRIPTION

CD-3C292-01
ISSUE 4D
APPENDIX 3B
DWG ISSUE 10B
DISTN CODE 1N99

COMMON SYSTEMS
660
COMMUNICATION PANEL CIRCUIT

CHANGES

D. Description of Changes

- D.1 In FS 15 5ESS connection has been added to option M.
- D.2 The feature or option table, Note 102, has been redrawn for added clarity.
- D.3 In CAD 16, CAD 17, and CAD 19 remote headset jack connections to the DSX-3, ED-2C670-(), have been added.
- D.4 CAD18 has been redrawn to accentuate TB(B) connections.
- D.5 In CAD 22 5ESS connection has been added.

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CIRCUIT DESCRIPTION

CD-3C292-01
ISSUE 4D
APPENDIX 2A
DWG ISSUE 9A
DISTN CODE 1N99

COMMON SYSTEMS
660
COMMUNICATION PANEL CIRCUIT

CHANGES

D. Description of Changes

- D.1 In FS7, reference to note 119 has been added, and circuit has been redrawn to add Options A and ZA.
- D.2 In App Fig 3 dial 35Y3A has been designated Option A and dial 72H3A has been designated Option ZA. Also, reference to note 120 has been added.
- D.3 Notes 119 and 120 have been added.

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CIRCUIT DESCRIPTION

CD-30292-01
ISSUE 4D
APPENDIX 1D
DWG ISSUE 8D
DISTN CODE 1N99

COMMON SYSTEMS
660
COMMUNICATION PANEL CIRCUIT

CHANGES

B. Changes in Apparatus

B.1 Superseded

Network Z1;
App Fig 9; 4228F

Network Z2;
App Fig 10; 4228F

Relay K1;
App Fig 16 and 17;
KS-21742 L3

Superseded By

Network Z1;
App Fig 9; 4293F or 4293N

Network Z2;
App Fig 10; 4293F or 4293N

Relay K1;
App Fig 16 and 17; LR13

D. Description of Changes

D.1 In FS7, reference to notes 118 has been added.

D.2 Note 118 has been added.

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DEPT 54315-WJG-GJS

COMMON SYSTEMS
 660
 COMMUNICATION PANEL CIRCUIT

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SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 The purpose of the ED-3C660 communication panel (660 communication panel) is to provide a general-purpose telephone communication facility that can be used in any bay area of the telephone office.

2. GENERAL DESCRIPTION OF OPERATION

2.01 The 660 communication panel circuit provides jack access for connecting a 52S-type telephone headset, or equivalent, to a central office dial line, an office intercom circuit, a trunk circuit for maintenance communications, a 2-wire order-wire circuit, or a 4-wire private line or order-wire circuit.

2.02 An optional choice of either a rotary or a TOUCH-TONE® dial is available.

2.03 A ringer is available as an option. The ringer is normally not supplied when the line(s) are connected through

other equipment to the office alarm system for alerting purposes.

2.04 A remote headset jack circuit is available as an option. With this "belt line" feature, the remote jacks can be bridged on any pickup key position, thereby freeing the 660 panel for use on another telephone or intercom line.

2.05 Access to the Circuit Maintenance System (CMS) via a terminal maintenance rover interface circuit (TEMRIC) is provided as an option that is not normally supplied.

2.06 Power for portable maintenance equipment is provided by an optional -48 TST jack (FS14), which is not normally supplied.

2.07 Access to the 4ESS TTY circuit via a portable terminal is available as an option which is not normally supplied.

SECTION II - DETAILED DESCRIPTION

1. LOCAL HEADSET JACK CIRCUIT

1.01 The basic telephone set circuit is shown in FS7. The 10-button pickup key, S1, provides access to 9 lines. The buttons for circuits 1 through 7 may be simultaneously depressed for brute-force conferencing. The polarity guard, CAL, provides line power protection when keys are simultaneously depressed and also protects the TOUCH-TONE dial, paragraph 1.04, from the application of reversed polarity line power. The buttons for circuits 8 and 9 operate in an exclusive manner and are, therefore, reserved for either intercom or 4-wire operation (see paragraphs 4.01 through 4.03).

1.02 Back contacts on the headset jacks, J1 and J2, provide an on-hook indication when the headset is not connected to the circuit. The A1 leads for circuits 1 through 4 are strapped together and pass through one set of contacts on J1. Similarly, a second set of contacts serve circuits 5 through 7. This separation is required for 2-wire order-wire operation (see paragraph 3.01).

1.03 The amplifier, ARL, increases the signal power that the headset transmitter provides to the hybrid network, Z1, and the network connects the 4-wire headset to the 2-wire telephone lines.

1.04 The two dial options are shown in FS10. The rotary dial is the S2 option and the TOUCH-TONE dial is the S3 option.

1.05 When this circuit is operated with the 1A1 or 1A2 Key Telephone System, a call may be placed on hold by depressing the circuit before it releases the pickup key. When the circuit is used with the line or trunk circuit for maintenance communication or repair service (SD-99434-01), a call is placed on hold by first grounding the R lead and then releasing the pickup key. To do this, the MTCE HOLD key shown in FS16 is required. This key must be depressed and held until the pickup key on S1 has been released.

1.06 When this circuit is used with a Centrex System, the optional ON HOOK key of FS11 is required if the centrex conferencing is desired, rather than the method described in paragraph 1.01 of this section. Depressing this key opens the talk circuit (T,R leads) without opening the A lead circuit.

2. REMOTE HEADSET JACK CIRCUIT

2.01 The remote headset jack circuit is shown in FS6 and FS13. The part of the circuit shown in FS8 is located in the 660 communication panel. Any number of sets of FS13 remote jacks can be connected to a belt line. However, it is recommended that no more than three be used at any one time. A particular belt line of remote jacks can be used with only one 660 panel.

2.02 To connect a call from the panel to the remote jacks, the rotary switch, S4, is moved to the appropriate position. The switch positions are marked to correspond with the button position on the pickup key.

2.03 When the headset is inserted into the remote jacks, it operates the BSY LED and the relay that connects the rotary switch to the remote jack 4-wire to 2-wire network. As the headset plug is disengaged from the jacks, the relay is released, the LED goes out, and the T/R leads are opened before the A/A1 leads. This contact sequence is necessary because if the A/A1 leads are opened first, that particular line will be put on hold and appear busy to an incoming call. If the rotary switch is changed to another position while the belt line is being used, the call will also be terminated.

2.04 The normal sequence of operations is to answer or originate a call at the 660 panel, put the call on hold, set the rotary switch, and pick up the call on the belt line by plugging the headset into the remote jacks. Once the call is on hold, the local headset jack circuit is free to be used independently of the remote headset jack circuit.

3. TWO-WIRE ORDER-WIRE CIRCUIT

3.01 When 2-wire order-wire circuits are to be accessed from a 660 communication panel, circuits 5, 6, and 7 of the pickup key and the rotary switch are reserved for this purpose. The Option S connection must be replaced by the Option R connection to prevent the HOLD button of S1 from dropping order-wire calls.

3.02 The three key positions may access single order-wire circuits or, using a relay pickup circuit, may access any order-wire circuit that is actively operating the office alarms. These connecting circuits are part of SD-1C170-01.

3.03 When the relay pickup circuit is used, a hold feature is available for key switch circuits 5 and 6. FS16 shows the momentary contact OW HOLD switch, S5. Operating this switch transfers the HD leads from their associated A leads to their HP leads. An order-wire call is put on hold by operating S5 and releasing the appropriate pickup key before releasing the OW HOLD switch. Operating the pickup key restores the connection.

3.04 When the relay pickup circuit is used, a transfer feature is available for key switch circuits 5 and 6. FS16 shows the momentary contact OW XFR switch, S6. To transfer an order-wire call, the sequence is as follows:

- (a) Depress and hold the OW XFR switch.
- (b) Operate the pickup key at the new location.
- (c) Release the pickup key at the transferring location.
- (d) Release the OW XFR switch.

This sequence inhibits the office alarm during transfer. A transfer can also be obtained by releasing the pickup key at one location and operating the pickup key at the new location, but this will activate the office alarms during the transfer.

3.05 In addition to the order-wire connections of paragraph 3.02, drawing SD-1C170-01 includes a local order-wire circuit, a conference bridge, and a jack access for patch cord connecting order-wire circuits. This jack and the associated order-wire jacks require a miscellaneous jack panel adjacent to the 660 communication panel.

4. OPTIONAL RINGER CIRCUIT

4.01 An E1-type gong ringer (FS12) is available as an alternative to using the office alarm system to indicate an incoming call.

5. CIRCUIT MAINTENANCE SYSTEM OR 4ESS TTY ACCESS

5.01 The CMS or TTY access jacks of FS15 provide a location for connecting a remote TTY on a terminal maintenance rover. A BSY indicator lights when a rover is plugged in either at this location or at another location on the multiplied access line.

5.02 For TASI-E international applications, a similar jack set may be mounted remotely in company with the remote headset jacks of FS13. See paragraph 2.01.

6. FOUR-WIRE ORDER-WIRE CIRCUIT

6.01 When a 4-wire private line or order-wire circuit is to be accessed from a 660 communication panel, circuit 8 of the pickup key is used. The Option V connections are removed and replaced by the Option 16 relay shown in FS17. If the communication panel includes the remote headset jack circuit 9 (see paragraphs 2.01 through 2.04) the Option 17 relay is also used and is associated with position 8 of the rotary switch.

6.02 The Option 16 relay is activated by depressing the circuit 8 key on S1. This transfers the communication panel headset receiver connections from its hybrid network to the receive pair, T1/R1. At the same time, contacts 12 and 14 provide an A lead closure between leads FA and FAL.

6.03 The Option 17 relay is activated by plugging in a remote headset when the rotary switch is in position 8 (see paragraph 2.03). This transfers the remote headset receiver connections from its hybrid network to the receive pair, T1/R1, and provides a lead closure between leads FA and FAL.

SECTION III - REFERENCE DATA1. WORKING LIMITS

1.01 The relay and LED circuits require -48 volts and draw 66 ±11 mA.

2. FUNCTIONAL DESIGNATIONS

2.01 None.

3. FUNCTIONS

3.01 The functions are given in Section I of this CD.

4. CONNECTING CIRCUITS

4.01 Normal telephone office key equipment, such as the 1A1 or 1A2 Telephone Systems.

4.02 The line or trunk circuit for maintenance communications or repair service - SD-99434-01.

4.03 The order-wire conference and interface circuits - SD-1C170-01.

4.04 The SS3 order-wire circuit - SD-1G288-01.

4.05 The general-purpose 4-wire order circuit - SD-1C245-01.

4.06 The 4-wire private line terminating and station circuit - SD-96566-01.

4.07 The Circuit Maintenance System 1B - SD-1P105-01.

4.08 The No. 4ESS Interframe Communications Circuit - SD-4A007-01.

5. MANUFACTURING TESTING REQUIREMENTS

5.01 Normal continuity tests should be made on the panel after it has been wired.

5.02 If CAD 16 applies, connect -48 volts to terminal F18 and ground to terminal F16. Limit the current to 75 mA and operate relays on CA5, CA7, and CA8 as follows:

CA5 - ground terminal E2.

CA7 - ground terminal E3 and depress pickup key 8.

CA8 - rotate REMOTE HDST JACKS switch to position 8.

5.03 If CAD18 and CAD19 apply, connect -48 volts to terminal A13 and ground to terminal A15 of terminal strip TB(E). Limit the current to 75 mA and operate relays on CA5, CA7, and CA8 as follows:

CA5 - ground terminal A2 on TB(B).

CA7 - ground terminal B3 on TB(A), and depress pickup key 8.

CA8 - rotate REMOTE HDST JACKS switch to position 8.

5.04 Verify operation of BSY LED.

5.05 Release CA5 relay and verify that CA8 releases and that CA5 contact 2 opens before contact 4.

5.06 Release CA7.

5.07 Remove power connections.

SECTION IV - REASONS FOR REISSUEB. Changes in Apparatus (Components)

B.1	<u>Removed</u>	<u>Replaced By</u>
	Assembly, CA4, ED-3C805-30, G1, Fig 9	Assembly, CA1, ED-2C638-(), G1, Fig 9
	Dial, 35Y3A, Fig 3	Dial, 72H3A, Fig 3
B.2	<u>Removed</u>	
		Assembly, CA2, P-90D170, Fig 3

B.3 Added

Fuse, F1, 70H, Fig 10

D.1 Description of Changes

D.1 FS7 and FS10 were redrawn to eliminate polarity guards CA2 and CA4, Option E, and replaced by polarity guard CA1, Option B.

D.2 FS8 has fuse F1 added as Option F.

D.3 FS8 has Option R ground connection redirected and the ground symbol changed to agree with manufacturing practice.

D.4 FS8 and FS13 have lead designations renumbered to agree with FS13 jack terminals.

D.5 Note 309 was added.

D.6 CADs 16 and 18 have Options G and F added to provide fuse F1, to explain multiple connections and to have App Fig listing corrected.

D.7 App Fig list was added to CAD 19.

D.8 Connectorized multiple note was added to CAD 23.

D.9 Options V and K were more clearly identified in CAD 25.

F. Changes in CD Sections

F.1 In Section I, paragraph 2.07 was added.

F.2 In Section II, the following changes were made:

(a) In paragraph 1.01, CA4 was replaced by CA1.

(b) In paragraph 1.01, reverse polarity protection was added.

(c) In paragraph 1.04, CA2 was removed.

(d) In paragraph 5.01, 4ESS TTY application was added.

(e) Paragraph 5.02 was added.

F.3 In Section III, paragraph 4.08 was added.

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