

## 660 COMMUNICATION PANEL DESCRIPTION AND CONNECTIONS

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### 1. GENERAL

**1.01** The 660 communication panel provides multiple line access and call originating capability for plant operating personnel in test, maintenance, circuit order, and restoration activities.

**1.02** Revision arrows are used to emphasize the more significant changes. The reasons for re-issue are listed below.

- (a) To rate the ED-3C660-30 communication panel Mfr Disc.
- (b) To add the ED-3C660-31 and ED-3C660-32 communication panels
- (c) To change the title.

**1.03** The information in this section is based on circuit schematic drawing SD-3C292-01. For a detailed description of operation, refer to the corresponding circuit description (CD).

### 2. DESCRIPTION

**2.01** The 660 communication panel provides the features required for general plant operations telephone communication. The 660 communication panel can be identified by ED-3C660-30, ED-3C660-31, or ED-3C660-32 (see Table A.)

**2.02** Each panel includes a 10-button key with one button providing the HOLD function and two buttons reserved for office intercom access. Either TOUCH-TONE® dialing or a rotary dial may be provided. A pair of jacks for an operator's headset is provided and, in addition, six insulated jack mounting positions for miscellaneous features are included. (See Fig. 1.)

**2.03 ED-3C660-30:** The ED-3C660-30 (Mfr Disc.) is designed to occupy two 2 by 23-inch mounting plate spaces. The ED-3C660-30 panel is 12 inches deep and is equipped with movable mounting flanges to permit front or rear mounting.

**2.04 ED-3C660-31:** The ED-3C660-31 (Fig. 2) is designed to occupy two 2-inch mounting plate spaces for use in DSX1, DSX1C, or DSX2 cross-connect bays.

**2.05 ED-3C660-32:** The ED-3C660-32 (Fig. 3) is designed to occupy two 2 by 23-inch mounting plate spaces and replaces the ED-3C660-30.

**2.06** The features listed in paragraph 2.07 through 2.10 are common to ED-3C660-30, ED-3C660-31, and ED-3C660-32 communication panels. Paragraphs 2.11 through 2.18 refer only to the ED-3C660-31 and ED-3C660-32 communication panels.

**2.07** The number of lines connected to the communication panels is a matter for local engineering determination. It is expected that only the largest

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TABLE A

FEATURE OR OPTION	ED-3C660-30 MFR DISC. (NOTE 1)	ED-3C660-32 (AT&TC <sub>o</sub> STD) (NOTE 1)	ED-3C660-31 (AT&TC <sub>o</sub> STD) (NOTE 2)
Basic Communication Panel	G1	G1	G1
Rotary Telephone Dial	G3	G2	G2
Touch Tone Dialing	G4	G3	G3
Local Ringer	G5	G4	G4
Remote Headset Line	G8	G5	G5
CMS-18 Portable Unit Access Jack or No. 4 Electronic Switching System (ESS) Teletype Terminal Jack	G9	G6	G6
-48V Test Jack	—	G7	G7
Centrex Conference Key (ON HOOK)	—	G8	G8
2W Order Wire	—	G9	G9
4W Order Wire (Basic)	—	G10	G10
4W Order Wire (With Remote Headset)	—	G11	G11
Top Cover	G7	G12	G12
Hold Key for Maintenance Communication Circuit	—	G13	G13
Retractable Writing Shelf	G2	G14	—
Blank Plate to Replace Writing Shelf	GA	GA	—
Brackets for Front Mounting With Writing Shelf	GB	GB	—
Cable for connectorization of Telephone Circuit	—	GC	GB
Jack Access to No. 4 ESS TTY	—	GD	GC
Jack Access to Circuit Maintenance System (CMS) Integrated Circuit (IC) Associated With Data Speed 4540	—	GE	GD
Jack Access to CMS IC Associated With Data Speed 40/4	—	GF	GE
Brackets for Use On 19-Inch Direct Type Bay	—	—	GA

**Note 1:** Occupies a space of two 2 by 23-inch mounting plate spaces.

**Note 2:** Occupies a space of two 2 by 17.75-inch mounting plate spaces. This panel used on DSX-1, 1C, and two bays.

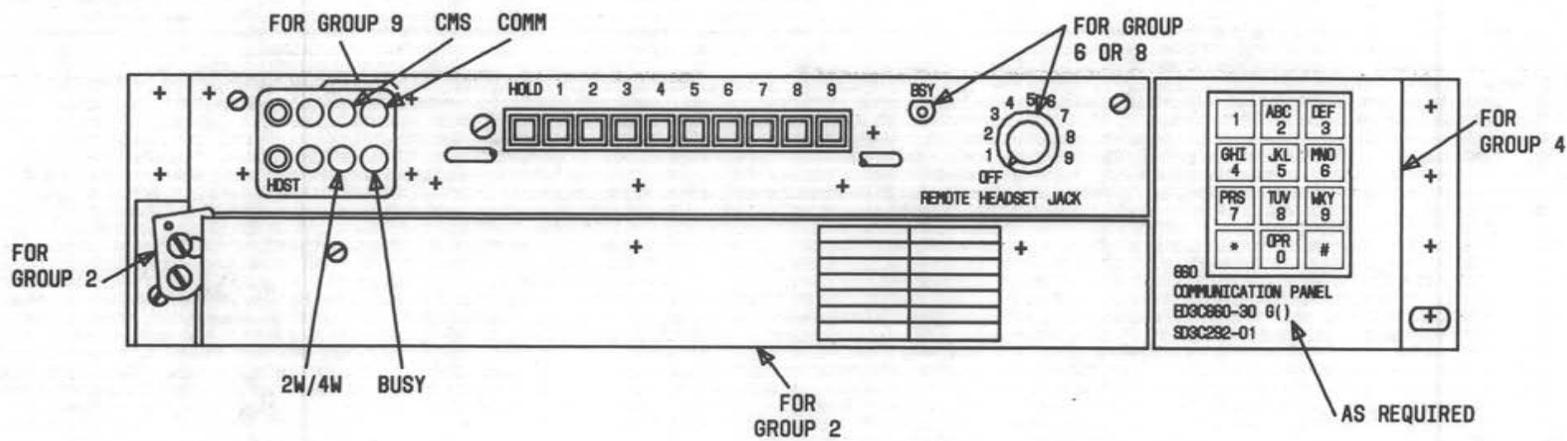


Fig. 1—ED-3C660-30 Communication Panel

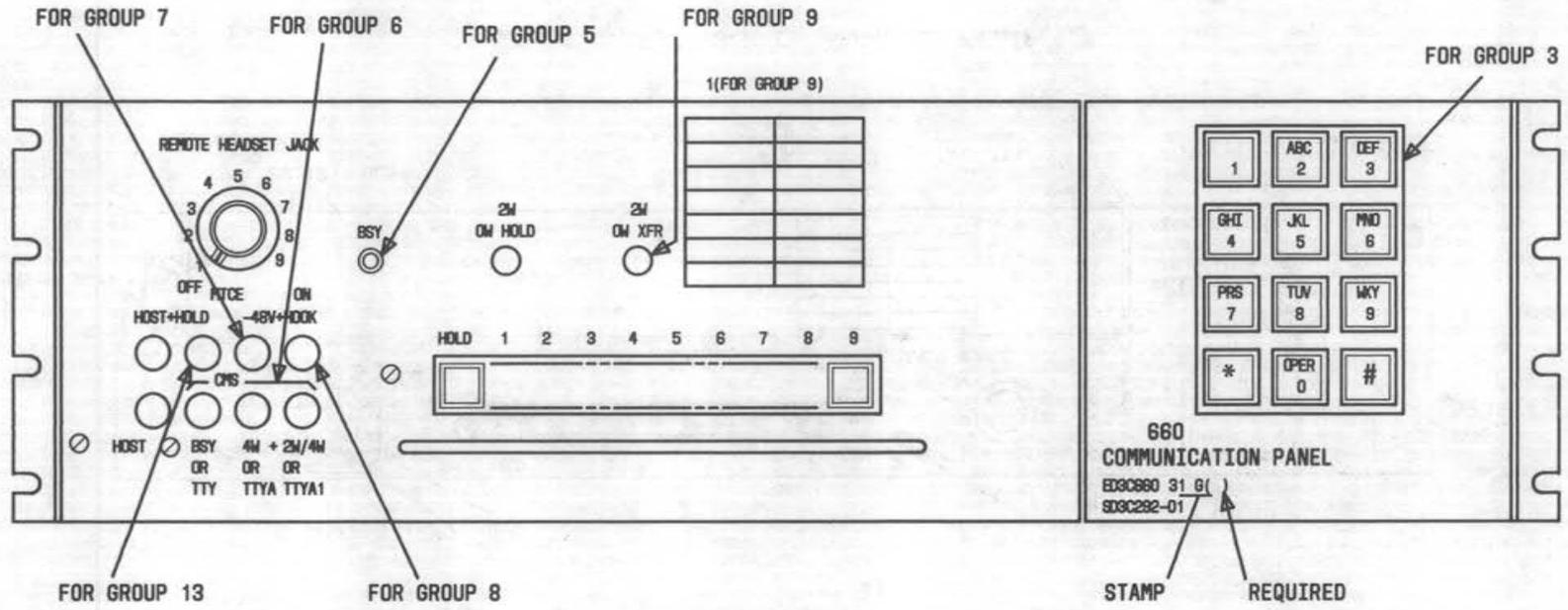


Fig. 2—ED-3C660-31 Communication Panel

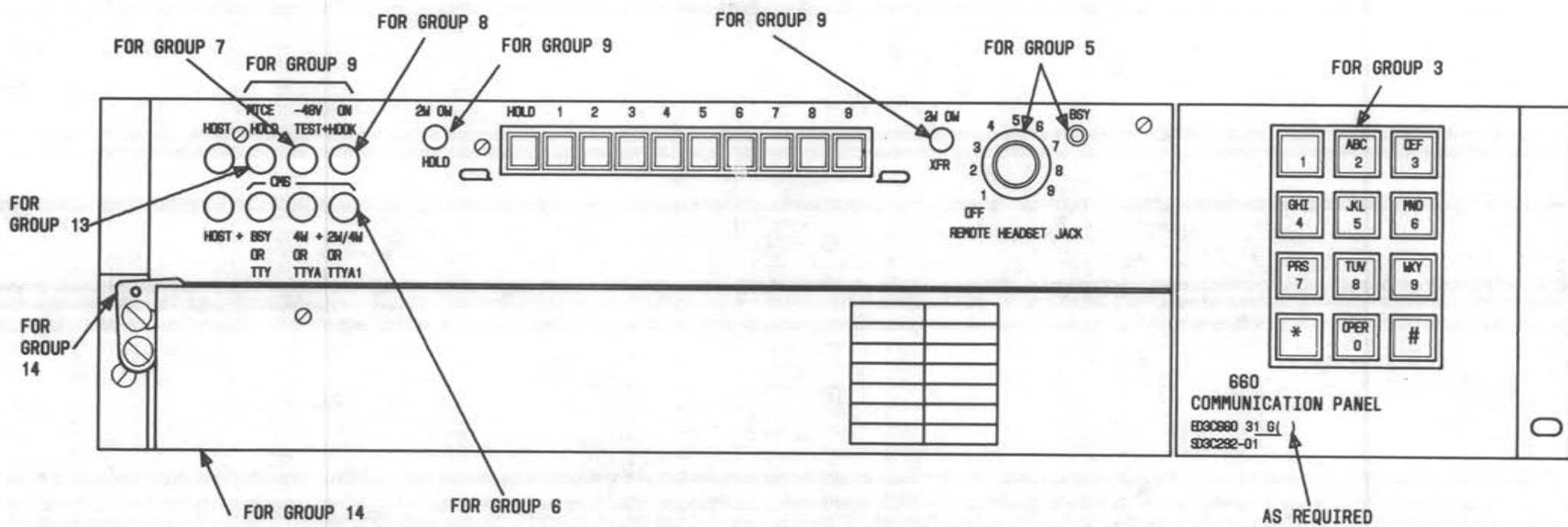


Fig. 3—ED-3C660-32 Communication Panel

office will need the full complement of seven lines. The pickup key is mounted horizontally on the panel and is restricted in the following ways.

- (a) The left-hand button is the HOLD button. By depressing this button, it opens the A lead circuit before it releases the pickup key.
- (b) The next seven buttons are for telephone lines and may be used for conferencing by depressing two or more buttons simultaneously (-31 and -32, 2-wire order wire circuit has three of seven positions optional. (See paragraph 2.12.)
- (c) The ninth and tenth buttons are intended for office intercom and cannot be conferenced with any other lines. These two positions are not connected to the keys HOLD button (-31 and -32, 4-wire order wire circuit has position eight optional). (See paragraph 2.14.)
- (d) Operation of any button releases all others.

**2.08 Local Ringer:** A ringer is available as an option. The ringer is normally not supplied when the lines are connected through other equipment to the office alarm system for alerting purposes. This option will be useful when there are only a small number of communication panels in an office or when it is desired that a call on a certain line should direct the craft to the location of a certain panel. (See Fig. 4.) In other installations the panels will be connected as shown in Fig. 5 where a PBX activates the alerting system.

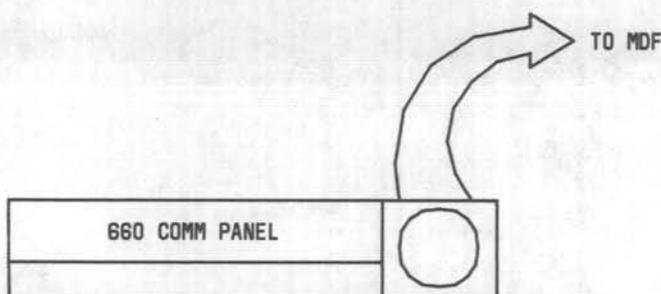


Fig. 4—660 Communication Panel With Ringer as a Single Telephone Station

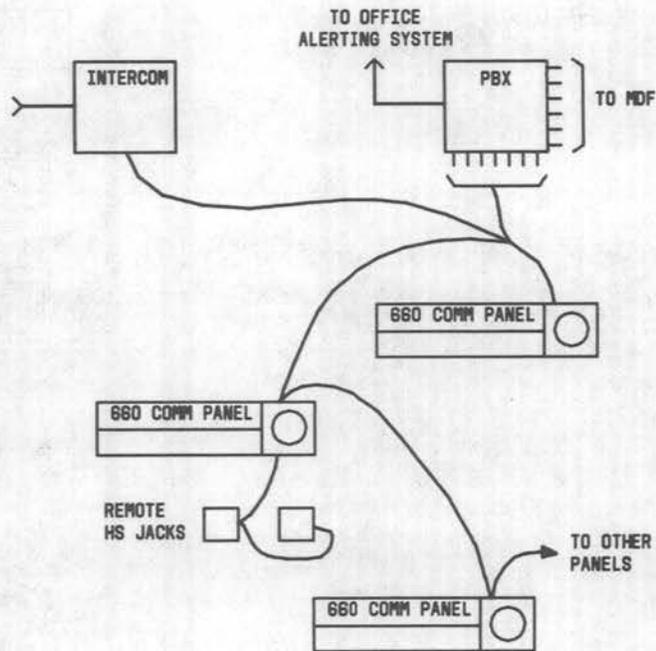


Fig. 5—Example of 660 Communication Panels Interconnected in a Larger Installation

**2.09 Remote Headset Jack:** The 660 communication panel may be equipped (optionally) with remote headset jack capability. Any number of sets of 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. This adds to the panel a 10-position selector switch, a second 2- to 4-wire network, a relay, an amplifier, and a light emitting diode (LED). The switch has an OFF position and a position corresponding to each of the nine buttons of the key. Thus, any of the telephone or intercom lines can be connected to the remote headset line. The switch duplicates the pickup key function and, therefore, frees the panel for use on another telephone or intercom line. For example, when one person is using the remote line, another can originate or receive a call on another line at the panel. The LED indicates that the remote line is in use. To use the remote line, one puts the call on HOLD, operates the remote jack switch to the appropriate line number, and disconnects the headset. Reconnecting the headset at the remote jacks, takes the call off HOLD.

**Note:** If the rotary switch is changed to another position while the belt line is being used, the call will be terminated.

**2.10 CMS or No. 4 ESS TTY Portable Unit**

**Jack:** The Circuit Maintenance System (CMS) access jacks provide a location for connecting a terminal maintenance rover. Indicator lamp BSY lights when a rover is plugged in either at this location or at another location on the multiplied access line. The same jacks may be used to connect a No. 4 ESS portable TTY terminal.

**2.11 -48V Test Jack:** A -48V test jack is provided as an option to power portable maintenance equipment.

**2.12 Two-Wire Order Wire Circuit:** When 2-wire order wire circuits are to be accessed from a 660 communication panel, pickup key five, six, and seven are reserved for this purpose. The 3-key positions may access single order wire circuits or, using a relay pickup circuit [see subparagraph 3.01(c)], may access any order wire circuit that is actively operating the office alarms. When the relay pickup circuit is used, a hold feature is available for key switch circuits five and six. Operating 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.

**2.13** When the relay pickup circuit is used, a transfer feature is available for key switch circuits five and six. 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.

**Note:** This sequence inhibits the office alarm during transfer. A transfer can also be obtained by releasing the pickup key at the transferring location, but this will activate the office alarm during the transfer.

**2.14 Four-Wire Order Wire:** When a 4-wire private line or order wire circuit is to be accessed from a 660 communication panel, circuit eight of the pickup key is used. The option V connection is

removed and replaced by the printed wiring board (pwb) relay. If the communication panel includes the remote headset jack circuit, a second pwb relay is also used and is associated with position eight of the rotary switch.

**2.15** The first pwb relay is activated by depressing the circuit eight key on S1. This transfers the communication panel headset receiver connections from its hybrid network to the receive pair.

**2.16** The second pwb relay is activated by plugging in a remote headset when the rotary switch is in position eight. This transfers the remote headset receiver connections from its hybrid network to the receiver pair.

**2.17 ON-HOOK Key Switch:** When the local headset jack circuit is used with a Centrex System or 101 ESS, the optional ON-HOOK key is required if the conferencing and other centrex features are desired. Depressing this key opens the talk circuit without opening the ground lead circuit.

**2.18 MTCE HOLD:** When the circuit is used with the line or trunk circuit for maintenance communication or repair service, a call is placed on hold by first grounding the ring lead and then releasing the pickup key. To do this, the MTCE HOLD key is required. This key must be depressed and held until the pickup key on S1 has been released.♦

### 3. CONNECTIONS

**3.01** The 660 communication panel may be connected to the following equipment.

- ♦(a) Normal telephone office key equipment such as 1A1 or 1A2 Telephone System, Centrex, or 101 ESS Telephone System
- (b) The line or trunk circuit for maintenance communications or repair service SD-99434-01
- (c) The order wire conference and interface circuits SD-1C170-01
- (d) The SS3 order wire circuit SD-1G288-01
- (e) The general purpose 4-wire order circuit SD-1C245-01
- (f) The 4-wire private line terminating and station circuit SD-96566-01

(g) The CMS 1B-SD-1P105-01 or 4 ESS TTY.

torized setup can be bridged to other communication panels by using the KS-19252, L2, bridging adapter (Fig. 6).⚡

3.02 The 660 communication panel can be set up as hard wired or connectorized using the KS-16689, L3, and KS-16690, L1, connectors. The connec-

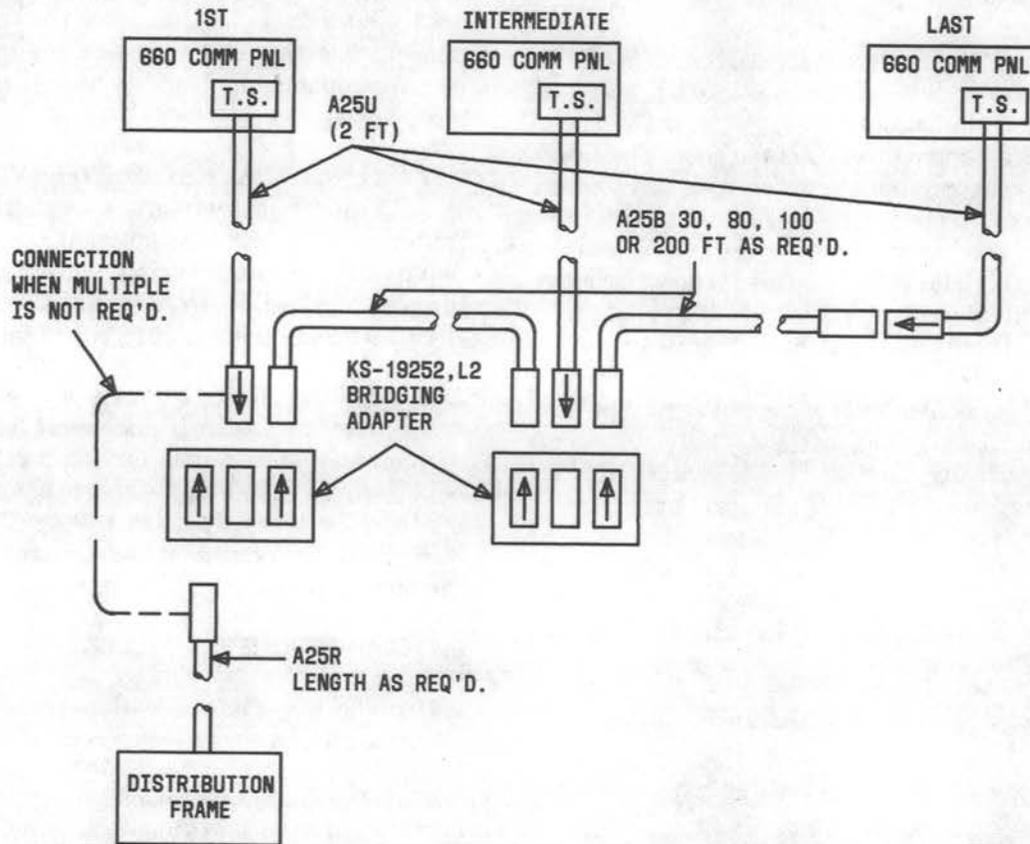


Fig. 6—⚡Block Diagram With Multiple Communication Panel Hookup⚡