

**CUSTOMER PREMISES FACILITY TERMINAL
FOR METALLIC FACILITY TERMINAL PLUG-IN EQUIPMENT
GENERAL DESCRIPTION**

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A. MFT Plug-In Unit Mountings	5	1.01 This section describes the Customer Premises Facility Terminal (CPFT) which uses Metallic Facility Terminal (MFT) plug-in equipment and impedance compensator networks to terminate metallic facilities on customer premises.	
B. Impedance Compensator Mountings	7	1.02 This section is reissued to include new equipment that has been added to the CPFT family to increase its flexibility and utility. This new equipment permits economical termination of circuits at smaller installations, ie, those with initial requirements of four or less MFT plug-in units. Due to the large number of changes, arrows used to indicate changes have been omitted.	
C. Miscellaneous	8	1.03 The CPFT is a standard arrangement designed to be installed at customer premises. The CPFT will supply all of the transmission and signaling functions required to terminate 2-wire and 4-wire metallic facilities. The CPFT replaces the V4 and DLL families of equipment which were previously installed at customer premises.	
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NOTICE

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SECTION 332-610-100

1.05 Presently available MFT repeater units permit the connection of:

- (a) 2-wire PBX or PL equipment to 4-wire metallic facilities
- (b) 4-wire PBX or PL equipment to 4-wire metallic facilities
- (c) 4-wire PBX or PL equipment to 2-wire metallic facilities.

1.06 An MFT 2-wire repeater necessary to terminate a 600-ohm PBX such as the DIMENSION® PBX is not presently available. Requirements for an appropriate MFT repeater are being studied; however, a specific development schedule has not been defined. Until a suitable MFT repeater is available, it is recommended that any required transmission gain on 2-wire facilities be supplied at the serving central office (CO).

2. TRANSMISSION CONSIDERATIONS

A. MFT Transmission Units (TU)

2.01 The CPFT mounting arrangements will accommodate any of the various MFT transmission units, of which Fig. 1 is typical. The particular type of unit to be used in each case will be determined by the type of termination needed and the transmission enhancement required.

2.02 The more commonly used MFT Transmission Units are listed in Table A. Included in the table is a brief description of the units and BSP references. More detail may be found in Section 332-910-180.

B. Terminal Balance

2.03 Terminal balance is required whenever 2-wire trunks can be switched through to VNL tie trunks or CCSA access lines on a pad out basis. Terminal balance requirements on 2-wire PBX-CO trunks with insertion connection loss (ICL) greater than 2.0 dB should be met by placing an 837-type network or CPFT equivalent (J99380-type) in the facility at the PBX and switching out the 2.0-dB switch pad in the connecting tie trunk.

2.04 Terminal balance is accomplished by the use of 837-type impedance compensator networks or the CPFT equivalent, Fig. 2, at the PBX. Either

the 837-type networks or the CPFT J99380AA, AB, and AC units may be mounted in CPFT hardware.

2.05 The J99380AA, AB, and AC plug-in units are mounted on 8-inch by 6-inch, KTU format, printed wiring boards to facilitate changes and rearrangements. Two impedance compensator networks are mounted on each board.

2.06 The J99380AA and AB plug-in units are electrically equivalent to the 837D and 837E networks, respectively. The 837G network, which is required for 26-gauge loaded cable, presents 900-ohm impedance toward the PBX. When 600-ohm impedance is needed, as in the DIMENSION PBX, a 120T repeating coil is connected between the network and the PBX. When the 837G network is used, the repeating coil is mounted adjacent to it. The 837G network and coil arrangement have been replaced by the J99380AC plug-in unit.

2.07 Table B indicates the proper impedance compensator network to be used based on the facility adjacent to the PBX.

C. Miscellaneous

2.08 The MFT transmission units have no permanent jack access for transmission testing. Two test extenders, J99380TA (manufacture discontinued) and J99380TB, are available which permit jack access to the transmission leads for monitoring, transmitting and receiving test tones, and circuit terminating plugs. The J99380TB test extender, Fig. 3, contains compromise networks (600 or 900 ohms + 2.16 μ F), which may be substituted for the precision balancing networks in certain MFT units, for use during alignment procedures. Jacks for connecting external networks are available.

2.09 In use, the MFT transmission unit is plugged into the test connector; the jack assembly of the test extender is mounted on the face of the transmission unit as shown in Fig. 4; and the combined unit is plugged into the MFT transmission slot. With the test extender installed, the transmission unit is extended out of the shelf far enough to gain access to the control switches and potentiometers for adjustments of gain and equalization.

2.10 The J99380TB test extender replaces the J99380TA (MD) test extender.

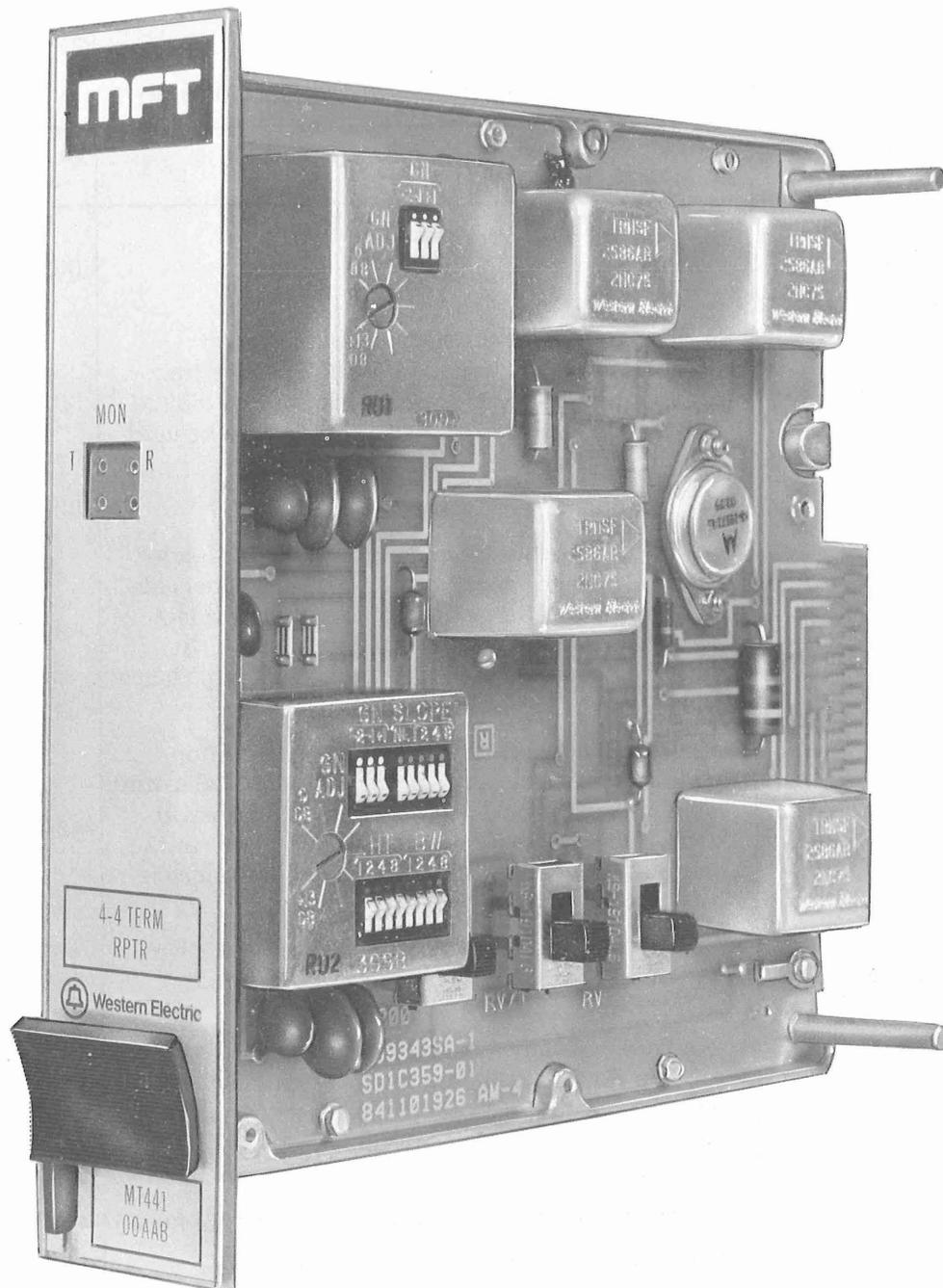


Fig. 1—Typical MFT Plug-in Unit

3. SIGNALING FUNCTIONS

3.01 The CPFT signaling functions, when required, are performed by MFT plug-in signaling units. The CPFT mounting arrangement will accommodate any of the various MFT signaling

units. A typical MFT signaling unit is shown in Fig. 5.

3.02 Some of the more commonly used MFT signaling units and their applications are listed in Table C. When more detailed information

TABLE A
MFT TRANSMISSION UNITS COMMONLY USED WITH CPFT

J99343 () UNIT	APPLICATION	DESCRIPTIVE SECTION
(BC) Replaced (AA) which is Mfr Disc	Coupling Only — No Gain.	332-912-101
(GA)	Loop-Start Only/2-Wire Transmission Unit — Combines the functions of the (BC) passive transmission unit and many of the functions of the (AD) LSR signaling unit in a single unit. It is to be used only in a TU slot.	332-912-152
(RA)	2-4 Terminal Repeater.	332-912-131
(RG) Replaced (RB) which is Mfr Disc	4-2 Terminal or Intermediate Repeater for loaded 2-wire cable and loaded or nonloaded 4-wire cable facilities. May also be used to terminate loaded 2-wire cable in 4-wire 600-ohm equipment. In the terminal application, the 2-wire side impedance is 900 ohms + 2.15 μ F.	332-912-121
(RC)	4-2 Terminal or Intermediate Repeater for non-loaded 2-wire cable and loaded or nonloaded 4-wire cable. May also be used to terminate nonloaded 2-wire cable in 4-wire 600-ohm equipment. In the terminal application, the 2-wire side impedance is 900 ohms + 2.15 μ F.	332-912-121
(RH) Replaced (RD) which is Mfr Disc	2-4 Intermediate Repeater for use between 2-wire loaded cable and 4-wire loaded or nonloaded cable.	332-912-121
(RF)	2-4 Terminal Repeater to terminate 4-wire cable in 600- or 900-ohm 2-wire equipment. Same as RA unit except that it has provision for equalization in the transmit direction (pre-equalization).	332-912-131
(BD)	4-4 Passive Transmission Unit (under development).	332-912-102
(BE)	2-4 Passive 900-ohm Terminating Set (under development).	332-912-104
(BF)	2-4 Passive 600-ohm Terminating Set (under development).	332-912-104
(SA)	4-4 Terminal Repeater for terminating 4-wire loaded or nonloaded cable in 600-ohm 4-wire equipment.	332-912-131
(SB)	4-4 Intermediate Repeater for use between loaded or nonloaded 4-wire cable facilities.	332-912-131
(SN)	Amplitude and delay equalization in one direction and continuity only in other direction.	332-912-250

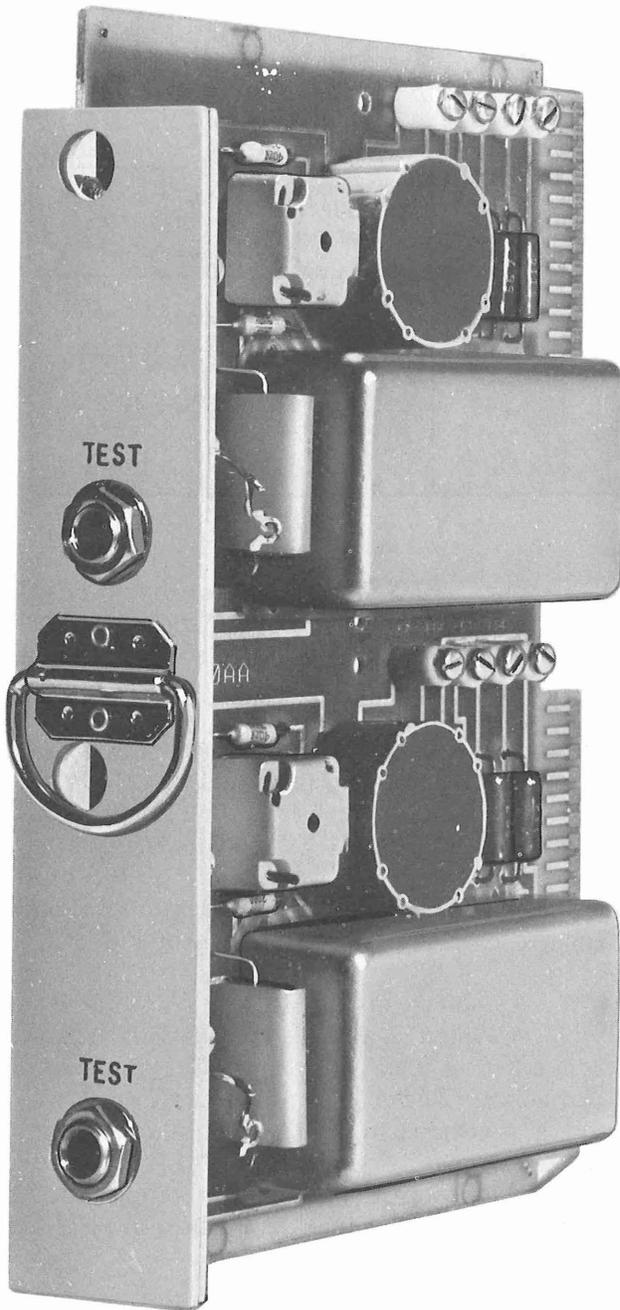


Fig. 2—J99380AA Plug-in Unit

is needed, refer to the sections listed in Table C and Section 332-910-180.

4. CPFT MOUNTING ARRANGEMENTS FOR LARGE INSTALLATIONS

4.01 The CPFT mounting arrangements discussed in this part are normally used at those locations where more than four MFT plug-in units are required. CPFT arrangements for small installations are described in Part 6 of this section.

4.02 The CPFT mounting arrangements coded J99380A through H and J have been designed to allow mounting of MFT transmission and signaling units and impedance compensation equipment at the customers premises. These mounting arrangements are described in the following paragraphs.

A. MFT Plug-In Unit Mountings

4.03 Four CPFT shelves are available for mounting the MFT plug-in units. These are the J99380A, E, F, and G coded shelves.

4.04 The J99380A and E shelves were designed specifically for installation in the DIMENSION PBX. These two shelves, shown in Fig. 6, are identical except for wiring.

4.05 The J99380A shelf has mounting space for 12 MFT transmission units, or 12 MFT LSEs, or any combination of these totaling 12. No signaling units other than the LSE should be mounted in the J99380A shelf. Each of the 12 slots of the shelf is wired for 4-wire transmission and A and B signaling leads in each direction as shown in Fig. 7.

4.06 The transmission and signaling leads of the J99380A shelf are terminated in KS-16672, L16 connectors J2, J3, and J4. The A side of the MFT transmission unit is connected to J3; the B side, to J4; and the signaling leads of both sides, to J2.

4.07 The J99380E shelf is arranged to accommodate both MFT transmission and signaling units.

TABLE B

SELECTION OF IMPEDANCE COMPENSATOR NETWORKS

CABLE FACILITY

NETWORK	NONLOADED 19-, 22-, 24-, 26-Ga	LOADED 19-, 22-, 24-Ga	LOADED 26-Ga	DESCRIPTIVE SECTION	INSTALLATION AND PRESC. SETTINGS
837D or J99380AA	X			332-206-154	332-206-254
837E or J99380AB		X		332-206-155	332-206-255
837G + 120T Coil or J99380AC			X	332-206-157	332-206-257

When fully loaded, the shelf will mount six transmission units and six signaling units.

4.08 The odd-numbered slots of the J99380E shelf, 1, 3, 5, 7, 9, and 11, are wired for transmission units and are designated TU1 through TU6. The even-numbered slots, 2, 4, 6, 8, 10, and 12, are wired for signaling units and are designated SU1 through SU6.

4.09 The LSE units may be installed in the TU1 through TU6 slots of the J99380E shelf when transmission treatment for a particular application is not required. When the LSE function and transmission treatment are both required, the LSE is placed in the SU slot corresponding to the transmission unit slot.

4.10 When a signaling unit slot is used, a transmission unit must be installed in the corresponding TU slot.

4.11 The J99380E shelf wiring is terminated in three KS-16672, L16 connectors J3, J4, and J5 as shown in Fig. 8. The A side transmission leads are terminated on J3; the B side, on J4; and the signaling leads, on J5.

4.12 The J99380A and E shelves have wires connected to the plug-in slots for connection to power fuses. The fuse end of the wires is left unterminated, or is terminated on an ED-7C055 fuse and alarm assembly, depending on the list number ordered.

4.13 For CPFT installations in other than DIMENSION PBX cabinets, the J99380F and G shelves (Fig. 9) are available for mounting MFT plug-in units.

4.14 The J99380F shelf has mounting space for 12 MFT transmission units, or 12 MFT LSEs, or any combination of these totaling 12. No signaling units other than the LSE should be mounted in this shelf. Each of the 12 slots of the shelf is wired for 4-wire transmission and A and B signaling leads in each direction as shown in Fig. 10.

4.15 As shown in Fig. 10, the transmission and signaling leads of the J99380F shelf are terminated in AMP CHAMP 229941 connectors J2, J3, and J4. The A side of the MFT transmission unit is connected to J3; the B side, to J4; and the signaling leads of both sides, to J2. Power for the MFT units is connected through an AMP CHAMP 552300-1 connector J5 to a J99380H or J feature panel.

4.16 The J99380G shelf is arranged to accommodate both MFT transmission and signaling units. When fully loaded, the shelf will mount six transmission units and six signaling units.

4.17 The odd-numbered slots of the J99380G shelf, 1, 3, 5, 7, 9, and 11, are wired for transmission units and are designated TU1 through TU6. The even-numbered slots, 2, 4, 6, 8, 10, and 12, are wired for signaling units and are designated SU1 through SU6.

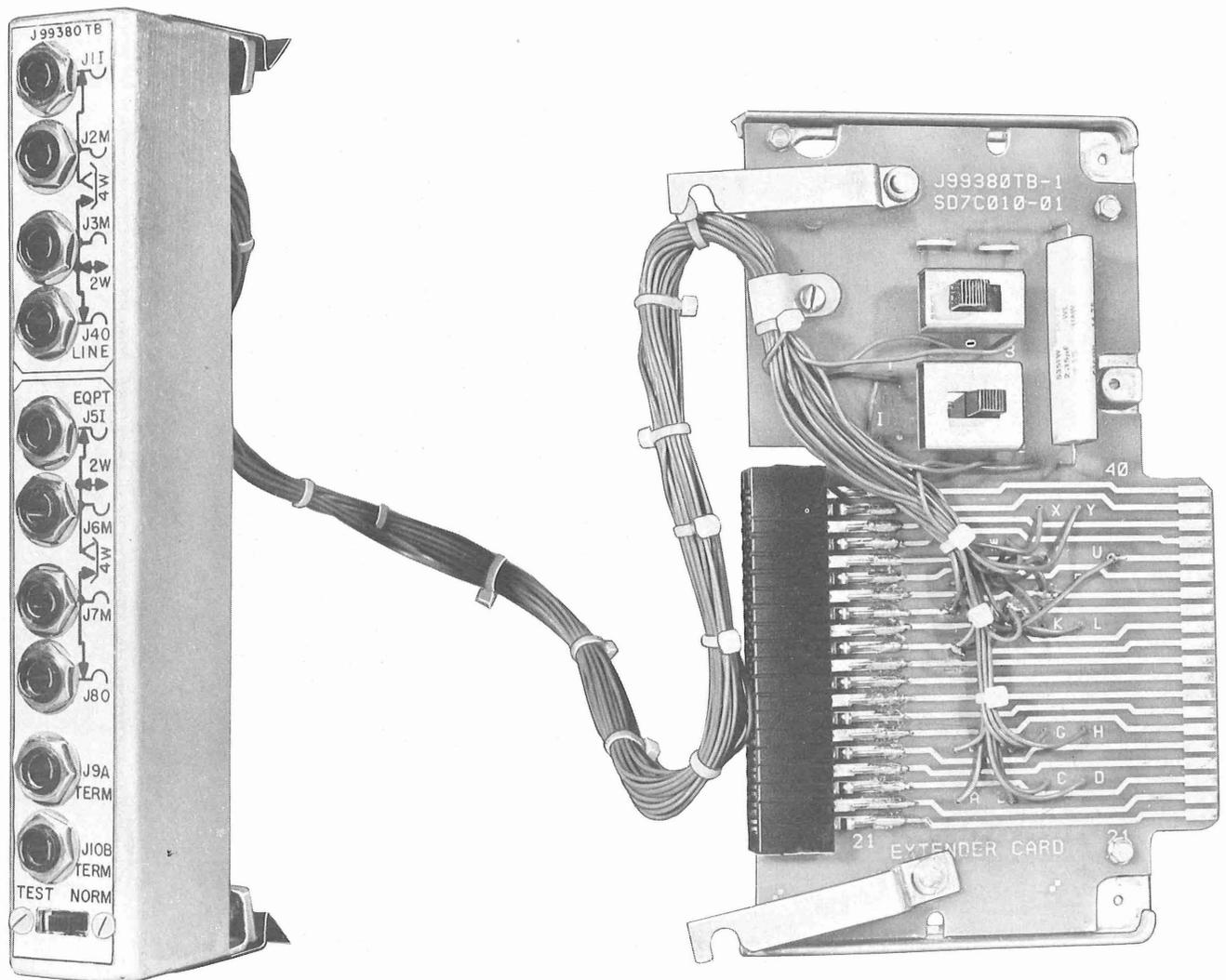


Fig. 3—J99380TB Test Extender

4.18 The LSE units may be installed in the TU1 through TU6 slots of the J99380G shelf when transmission treatment for a particular application is not required. When the LSE function and transmission treatment are both required, the LSE is placed in the SU slot corresponding to the transmission unit slot.

4.19 When a signaling unit slot is used, a transmission unit must be installed in the corresponding TU slot.

4.20 The J99380G shelf wiring is terminated in three AMP CHAMP 229941 connectors J3, J4, and J5 and one AMP CHAMP 552308-1 connector

J6. The A side transmission leads are terminated on J3; the B side, on J4; the signaling leads for both sides, on J5; and the power leads, on J6. The transmission and signaling lead interface for the J99380G shelf is shown in Fig. 8.

B. Impedance Compensator Mountings

4.21 Two types of panels are available for mounting impedance compensator networks.

4.22 The J99380B panel, Fig. 11, has 12 mounting spaces which may be used to mount 837-type networks and/or 120T repeating coils. When the

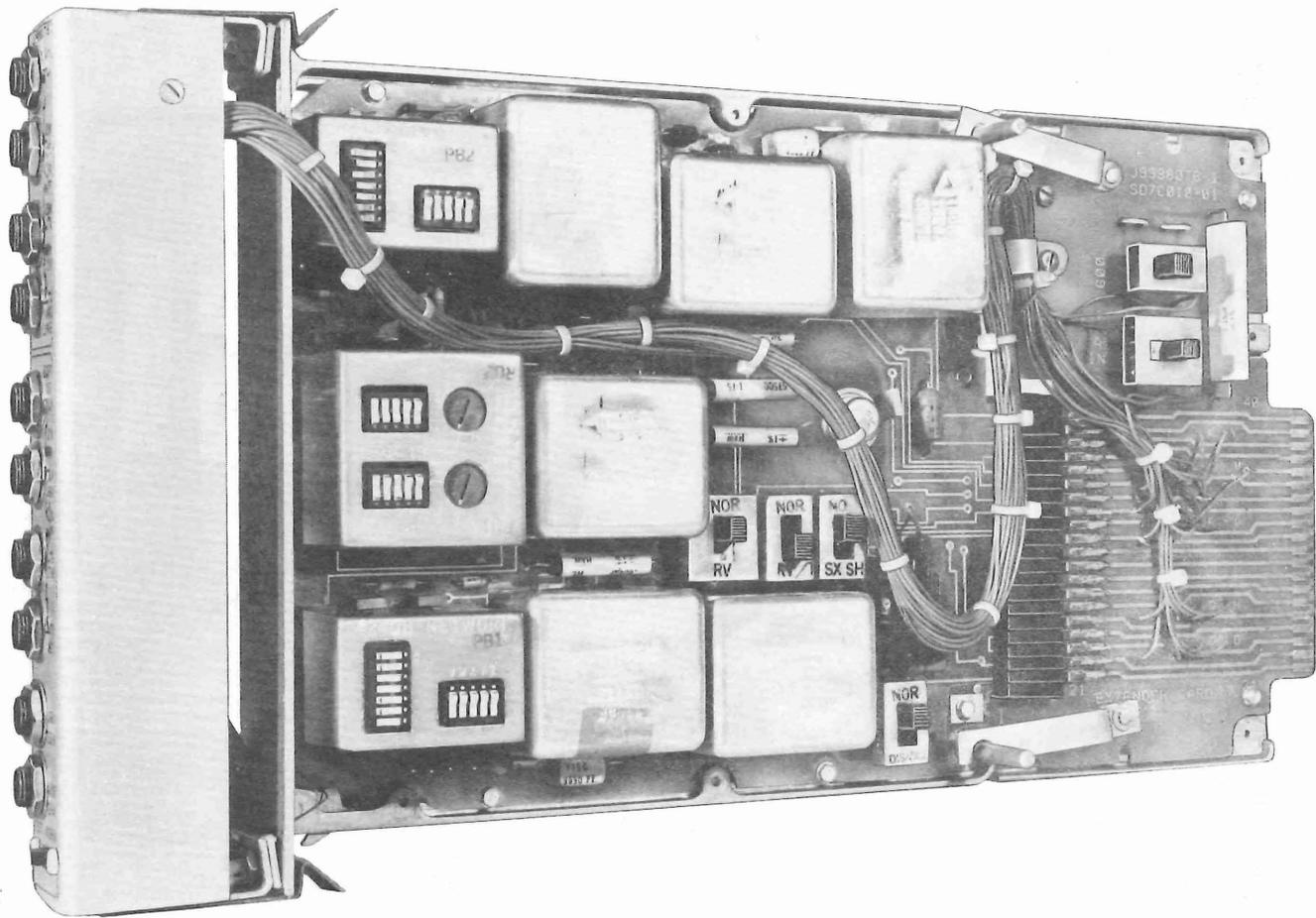


Fig. 4—J99380TB Test Extender Installed on MFT Transmission Unit

837G network is used with a 120T repeating coil, two adjacent spaces are used.

4.23 Wiring for the 12 mounting spaces of the J99380B panel is provided by a cable which is terminated on one end in a KS-16672, L16 connector and on the other end in a terminal strip, T1, which is located under the network mounting spaces. The networks and/or repeating coils are connected to the T1 terminal strip at the time of installation.

4.24 The J99380C shelf, Fig. 12, is a connectorized 600-type KTU shelf wired to accommodate the J99380AA, AB, and AC impedance compensator plug-in networks. This shelf, which is approximately 9 inches high, 9 inches deep, and 23 inches wide, will mount up to 14 plug-in units which will serve 28 circuits (two per plug-in unit).

C. Miscellaneous

4.25 The J99380D double-depth mounting frame, Fig. 13, was designed to better utilize space available in the DIMENSION PBX cabinet. The front/rear swing frame assembly is made such that the front position mounting may be opened exposing the rear position mounting.

4.26 The J99380D mounting frame occupies the space of one DIMENSION PBX carrier and may be used to mount CPFT shelves as shown in Table D.

4.27 The J99380TB, L2 test extender holder is used to store the J99380TA or TB, L1 test extender when J99380A or E shelves are used without the J99380D double-depth mounting frame.

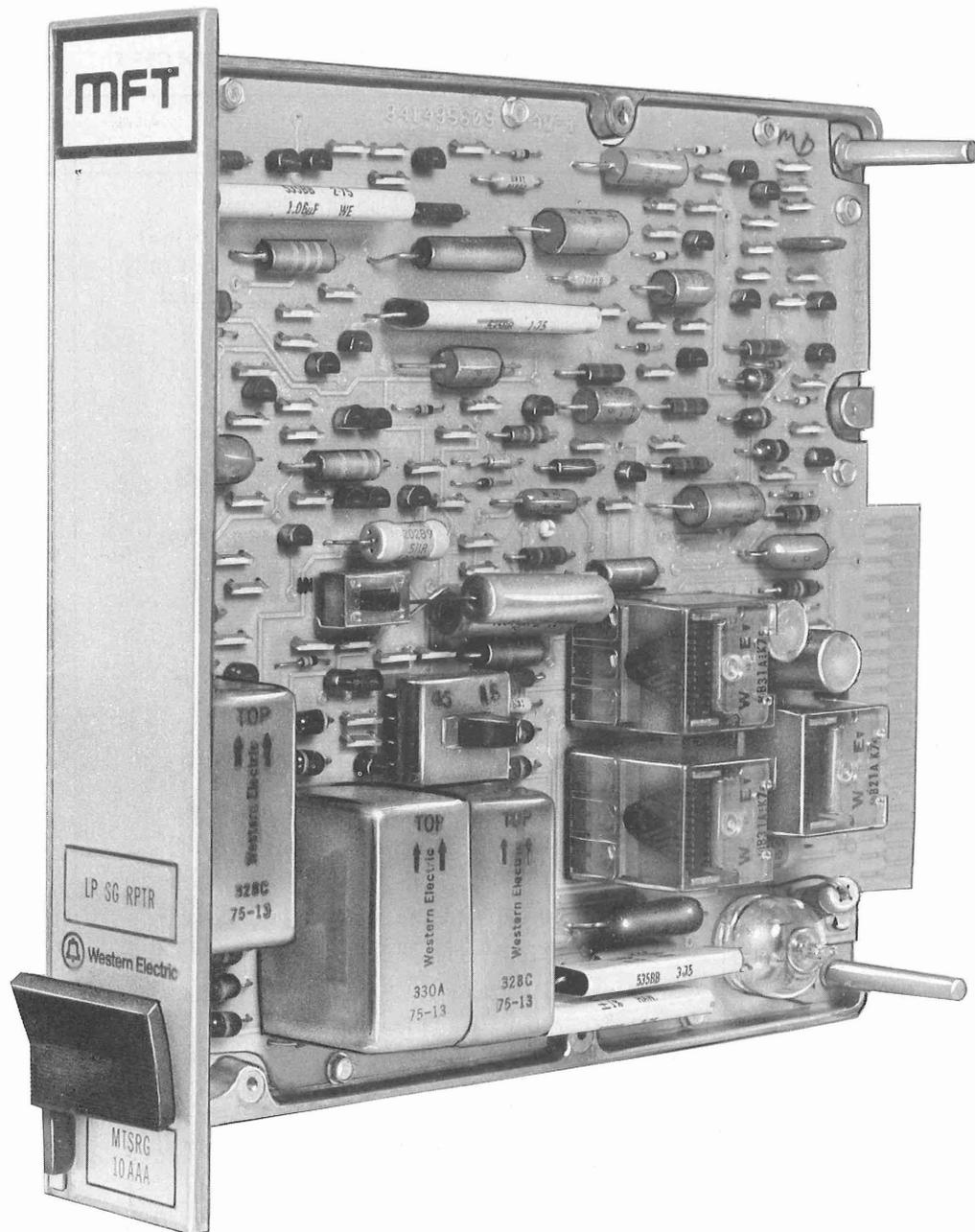


Fig. 5—Typical MFT Signaling Unit

The double-depth mounting frame has built-in storage space for the test extender.

5. POWER SUPPLY FOR LARGE INSTALLATIONS

A. General

5.01 The MFT plug-in units used in the CPFT require -48 volt signaling battery and, in

some cases, -48 or -72 volt talk battery. The J99343AC, AD, EA, EB, and EC MFT signaling units require 20 ± 3 Hz ringing between 84 and 88 volts ac superimposed on -37 to -52 volts dc.

5.02 A fully loaded J99380A shelf requires a maximum of 1.4 amps, -48 volts dc, and a fully loaded J99380E shelf requires a maximum of 1.0 amp, -48 volts dc. As the maximum current

TABLE C

MFT SIGNALING UNITS COMMONLY USED WITH CPFT

J99343 () UNIT	FUNCTION	DESCRIPTIVE SECTION
(AC) Replaced (AA) which is Mfr Disc	Loop Signaling Repeater (LSR) capable of loop-start or ground-start operation (LS/GS). It is a loop-to-loop dial-long-line circuit that may be used in place of SD-96555, SD-66192, and similar circuits.	332-911-101
(AD) Replaced (AB) which is Mfr Disc	LSR capable of loop-start only (LSO). Otherwise similar to (AC) unit.	332-911-101
(AE)	Loop-start to ground-start converter (LS-GS CONV). The unit provides LS operation (with a sleeve lead) on the central office (CO) side and GS operation on the station side. (PBXs without external sleeve lead access cannot use this unit).	332-911-101
(AH)	Loop Signaling Repeater/Distinctive Ringing (LSR/DR) supplies same functions as (AC) unit except guard band has been reduced to 50 ms which permits response to DIMENSION PBX distinctive ringing signals.	332-911-101
(DA)	E&M lead signaling to DX signaling converter (DX1).	332-911-103
(DB)	E&M lead signaling to DX signaling conversion (DX1) or signal lead extension function (DX2).	332-911-103
(EA)	Code Select Ringdown (CSR) signaling unit. It may be used with SG lead or E&M lead signaling. It converts 20-Hz ringing from the station to E&M or SG lead signaling. It receives E&M or SG lead signaling from the CO and rings 20 Hz toward the station when a preset code has been received.	332-911-104
(EB)	This unit is a ringdown converter. It will perform the following ringdown conversions: E&M to 20 Hz SG to 20 Hz E&M to SG	332-911-104
(FA)	E&M or DX to loop-start converter used at switch end. Replaces SD-96251.	332-911-105
(FB)	E&M or DX to loop-start converter used at station end. Replaces SD-96252.	332-911-105
(FC)	E&M or DX to ground-start converter used at switch end. Replaces SD-1C363.	332-911-105

TABLE C (Cont)

MFT SIGNALING UNITS COMMONLY USED WITH CPFT

J99343 () UNIT	FUNCTION	DESCRIPTIVE SECTION
(FD)	E&M or DX to ground-start converter used at station end. Replaces SD-1C364.	332-911-105
(CD)	LSE II — supplies function of and replaces J99343CC and CB units.	332-911-102
(EC)	Private Line Automatic Ringdown (PLAR) signaling unit. This unit supplies signaling functions and talk battery required to interconnect two station sets. Either station going off-hook will cause a 20-Hz ring at the other station.	332-911-104

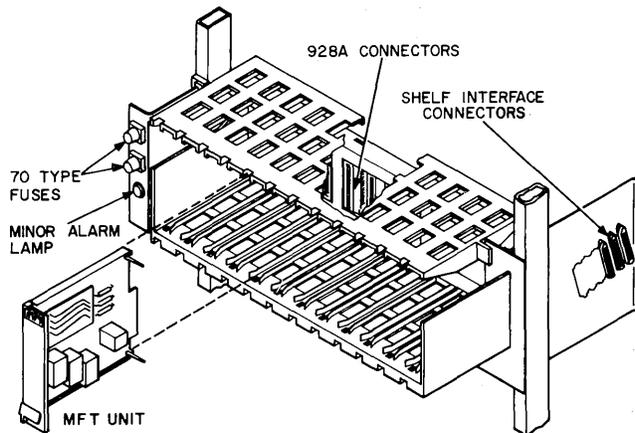


Fig. 6—J99380A and J99380E Shelf Assembly

drawn by a CPFT shelf is less than that drawn by a DIMENSION PBX carrier, the CPFT power may be obtained from the DIMENSION PBX power supplies in these installations.

5.03 When the CPFT equipment is installed in other than a DIMENSION PBX environment, suitable power sources must be obtained from existing equipment at the location or by the use of auxiliary power supplies and the J99380H or J feature panels. See 5.10 through 5.20.

B. Distribution and Fusing (DIMENSION PBX)

5.04 The J99380A and E shelves have wires connected to the plug-in slots for connection

to power fuses. The wires are left unterminated on the fuse end in the List 1 assemblies. List assemblies 2 through 5 supply an ED-7C055 fuse and alarm assembly for mounting on the side of the J99380A and E shelves. For the mounting arrangements of these shelves, see Fig. 6.

5.05 The J99380A shelf power is arranged so that one 1.33-amp fuse supplies the odd-numbered transmission unit plug-in slots and a second 1.33-amp fuse supplies the even-numbered transmission unit plug-in slots. With this arrangement, an operated fuse will disable only half of the units.

5.06 The J99380E shelf power is arranged so that one fuse feeds the odd-numbered transmission units and the odd-numbered signaling units. Another fuse feeds the even-numbered transmission units and the even-numbered signaling units. An operated fuse then will affect only half of the CPFT shelf.

5.07 When a fuse operates, an alarm lamp associated with the CPFT will light. Provision is made for extending the alarm to the PBX alarm system. There are no alarm reset procedures other than replacement of the fuse.

5.08 The 20 Hz superimposed on -37 to -52 volts dc is normally supplied and fused by equipment external to the J99380E mounting shelf, and protected by a resistance lamp installed in the fuse and alarm panel associated with the shelf.

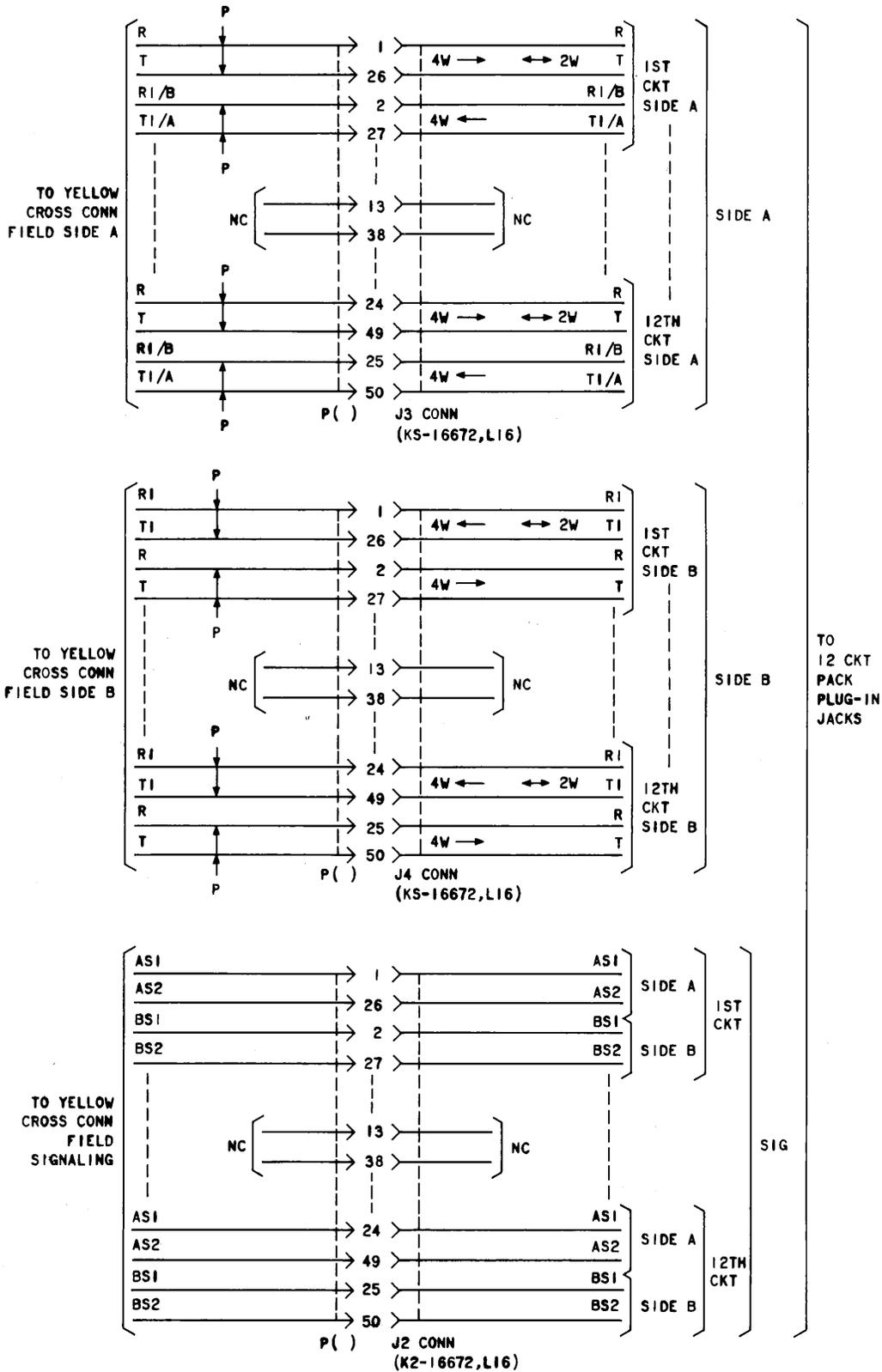


Fig. 7—J99380A Shelf Connector Interface

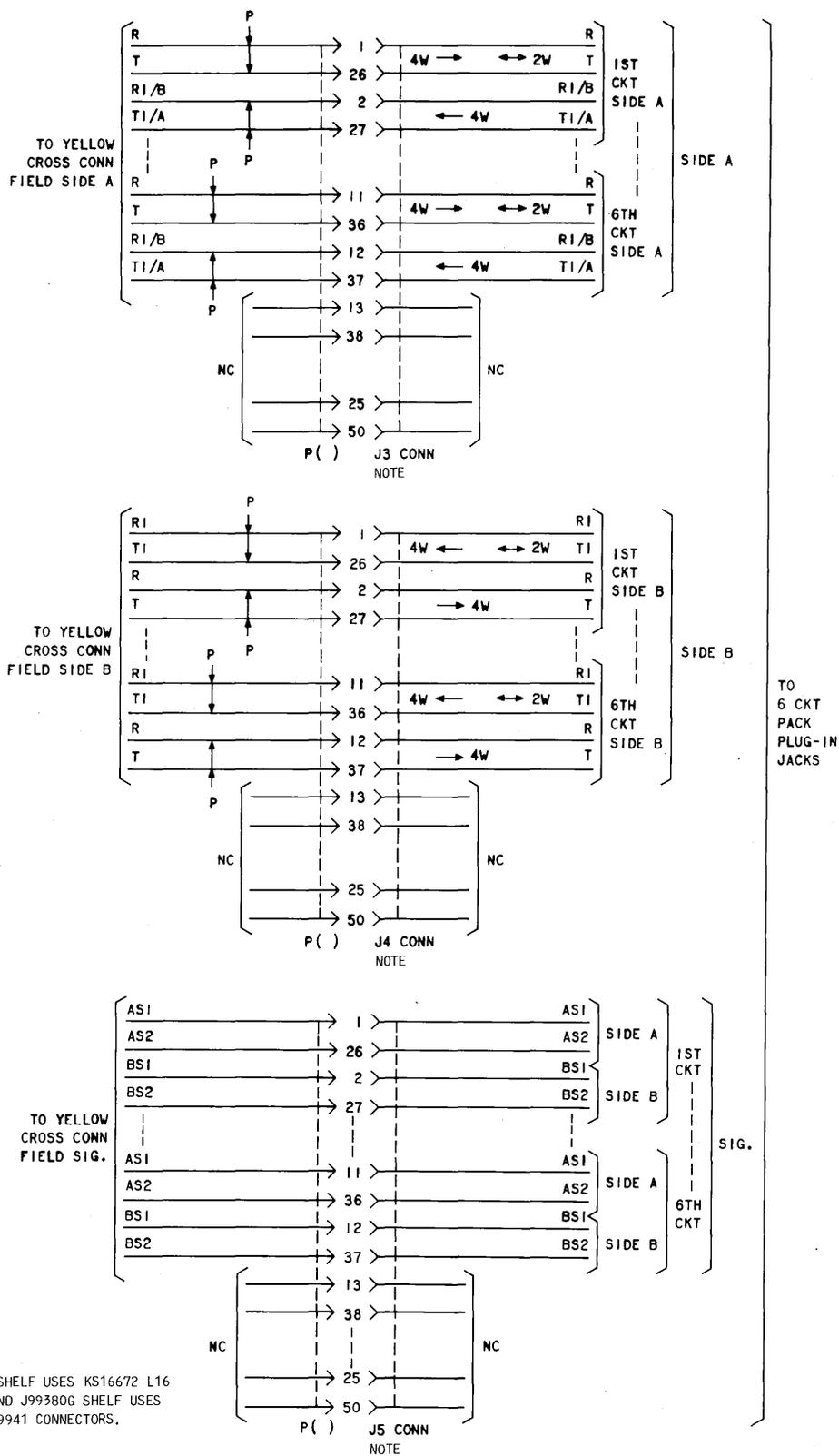


Fig. 8—J99380E and J99380G Shelves—Transmission and Signaling Lead Connector Interface

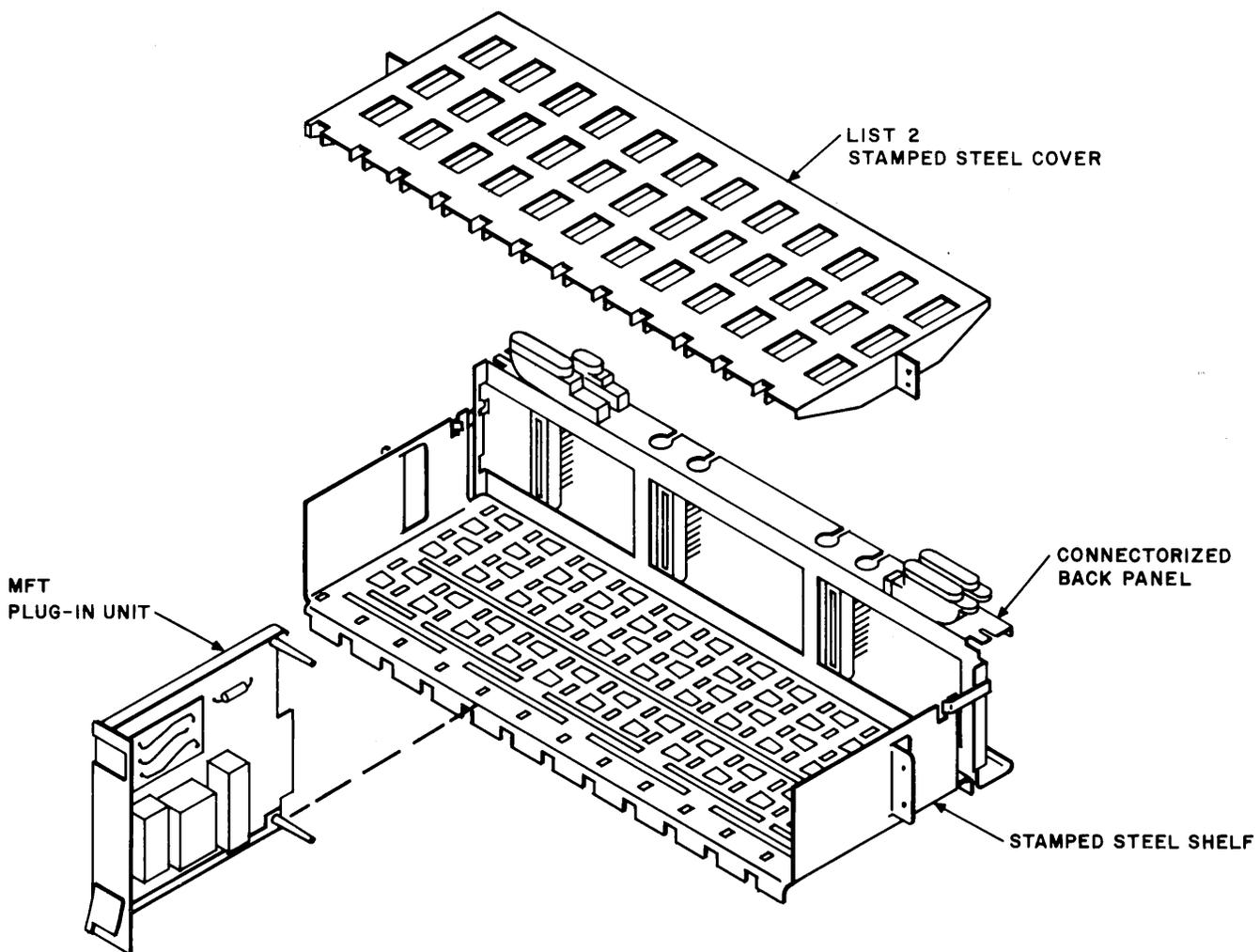


Fig. 9—J99380F and G Shelves

5.09 In certain installations, where CPFT is the sole occupant in a DIMENSION PBX auxiliary cabinet, an additional J99380A or E shelf may be mounted in the cabinet by removing the fuse panel associated with the cabinet.

C. Distribution and Fusing (Other Than DIMENSION PBX Installations)

5.10 When the CPFT equipment is installed in other than a DIMENSION PBX cabinet, the J99380F and/or G shelves should be used in connection with J99380H or J feature panels. The purpose of the H and/or J feature panels is to distribute power to the MFT plug-in units installed in the mounting shelves.

5.11 Power (-48 volts) is wired from the power source to the feature panels and is fused and distributed to the mounting shelves. Each J99380H or J panel will feed up to four mounting shelves whether J99380F, G, or a mixture of both.

5.12 Both the J99380H and J panels (Fig. 14 and 15, respectively) have provisions for relay isolated alarms which will operate either as a result of a power failure or a blown fuse on the panel. An alarm lamp on the panel will light in case of a blown fuse.

5.13 The J99380H and J feature panels are connected to the J99380F and G mounting shelves with connectorized cables. The shelf connections are shown in Fig. 16.

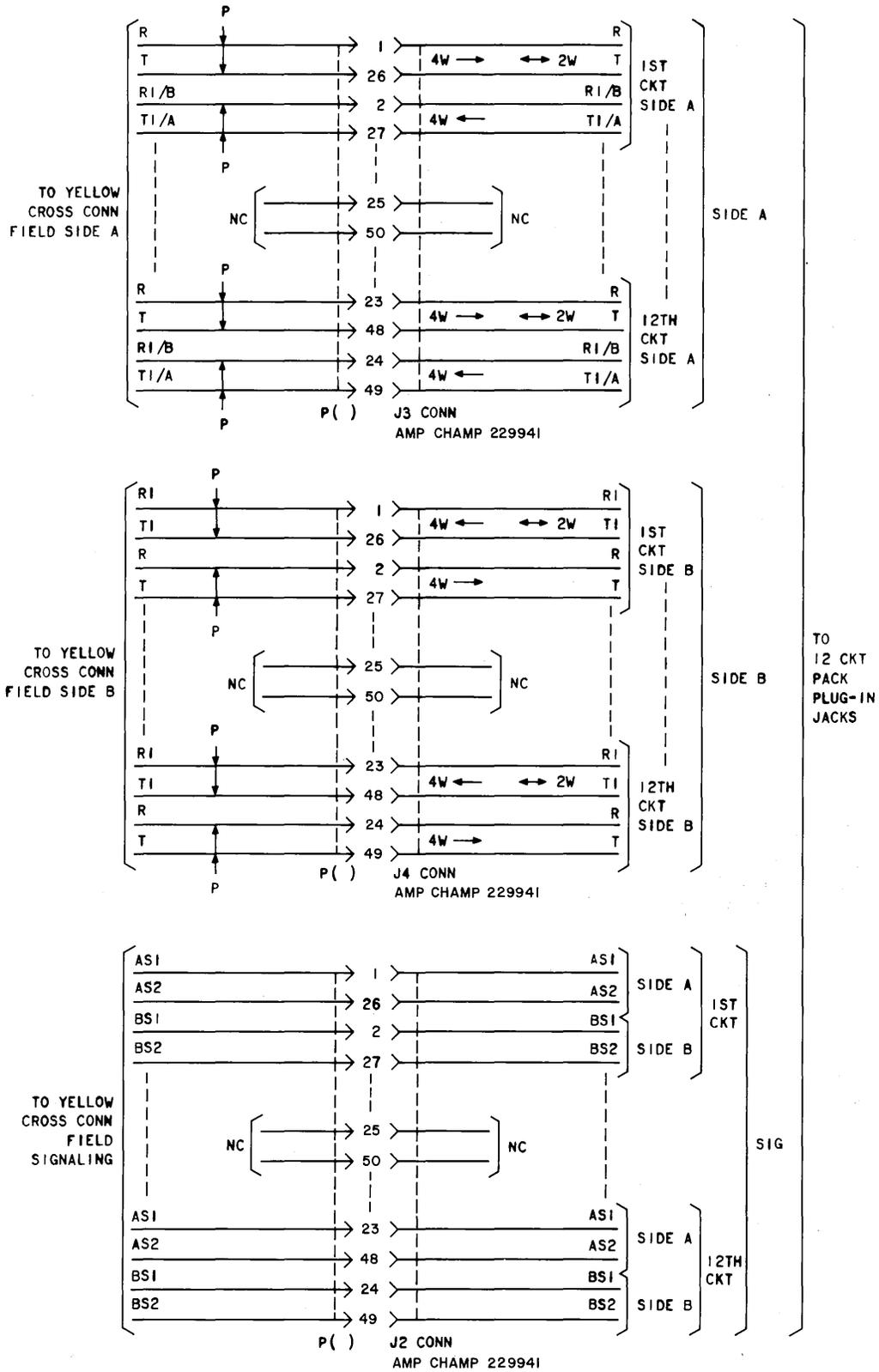


Fig. 10—J99380F Shelf Connector Interface

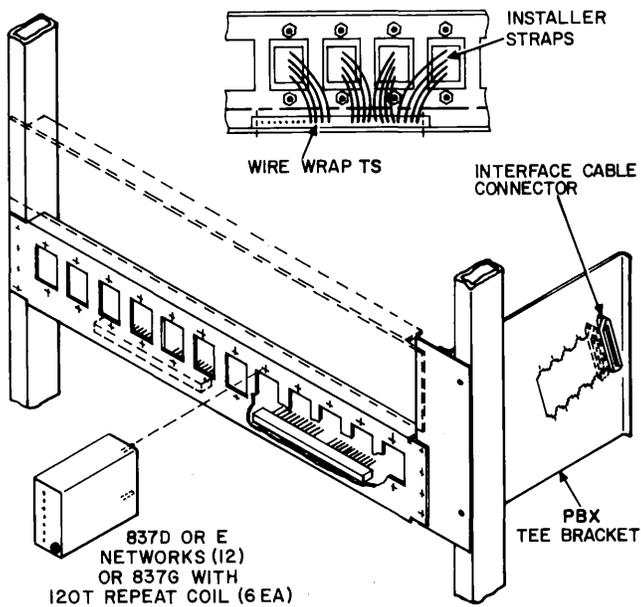


Fig. 11—J99380B Apparatus Panel

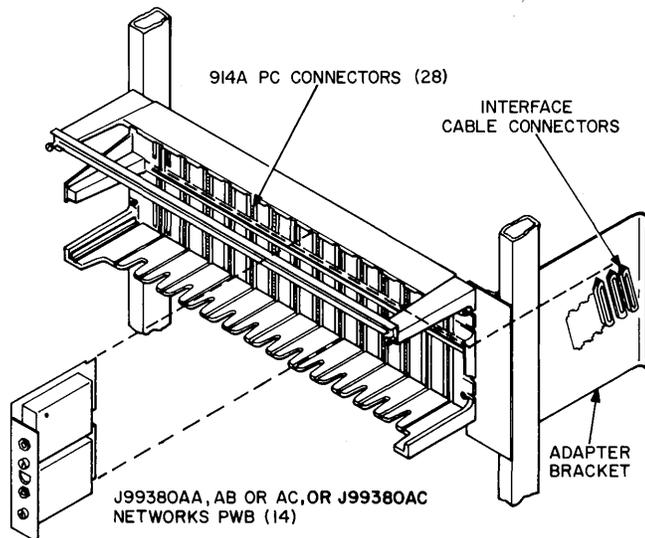


Fig. 12—J99380C Shelf Assembly

J99380H Feature Panel

5.14 The J99380H feature panel is intended for those applications where only -48 volt signaling battery is required by the MFT units installed in the CPFT mounting shelves.

5.15 Each J99380H panel contains an 8-amp main fuse (L1) with an indicator fuse (L1A) and

eight distribution fuses (FA1 through FA8). Fuses FA1, 3, 5, and 7 supply the odd-numbered mounting slots of the F and/or G shelves 1, 2, 3, and 4, respectively. Fuses FA2, 4, 6, and 8 supply the even-numbered mounting slots of the F and/or G shelves 1, 2, 3, and 4, respectively. Each -48 volt dc fused supply is accompanied by a ground lead.

J99380J Feature Panel

5.16 The J99380J feature panel is intended for those applications where the MFT plug-in units require -48 or -72 volt dc talk battery and/or a 20-Hz ringing source in addition to the -48 volt signaling battery. The -48 volt signaling battery distribution from this panel is identical to the J99380H panel (in 5.15).

5.17 The J99380J panel can be used to supply the -72 volt dc talk battery by:

- (a) The use of a J99380RA rectifier on the panel
- (b) An external -72 volt dc source
- (c) An external 24-volt isolated (ungrounded) rectifier whose output is connected in series with -48 volts dc.

5.18 The J99380RA rectifier output is connected in series with -48 volts dc to obtain the -72 volts dc. This rectifier was designed only for this purpose and its output should not be tapped or used for other purposes.

5.19 The -72 volt dc talk battery is distributed through fuses FA 10 through FA 17 to the mounting shelves.

5.20 20-Hz superimposed ringing, when needed, is supplied by the J99380J panel to the mounting shelves. The 20 Hz may be supplied by an external source or by a 112A ringing generator which may be mounted on the J99380J panel. In either case, the 20-Hz supply is protected by resistance lamps (RL1 through RL4) and fed to the mounting shelves.

6. CPFT ARRANGEMENTS FOR SMALL INSTALLATIONS

A. MFT Plug-in Mountings

6.01 The arrangements described in this part are generally meant to be used at those locations

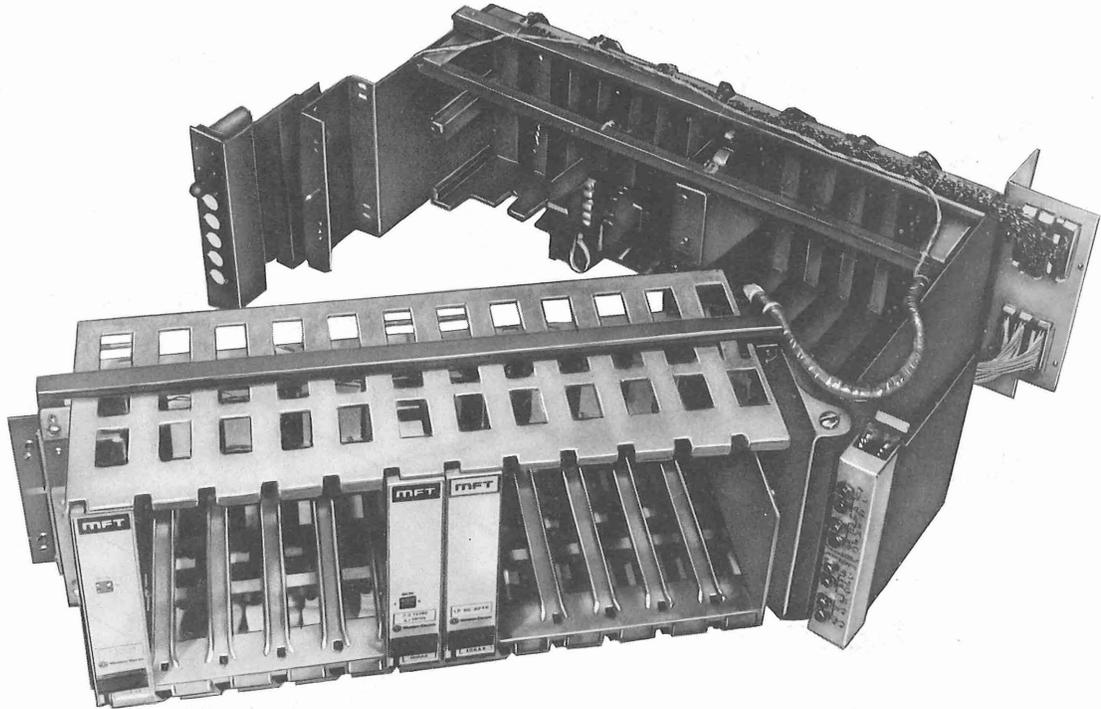


Fig. 13—J99380D Double-Depth Mounting Frame

TABLE D

J99380D DUAL MOUNTING
FRAME CAPACITY

CPFT SHELF	SHELVES PER POSITION	
	FRONT	REAR
J99380A	1	0
J99380B	1 or 2	1 or 2
J99380C	1	1
J99380E	1	0

where the initial requirements call for four or less MFT plug-in units.

6.02 The basic mounting is the J99380K Circuit Pack Carrier (CPC). The CPC will mount two MFT plug-in units as follows:

- (a) Transmission units, Loop Signaling Extenders (LSEs), combined transmission/signaling units, or any combination of these

- (b) One transmission unit and one signaling unit.

6.03 The CPC consists of a case that supports the MFT units and a base on which four 928A connectors are mounted. With the case and base joined, MFT units can be inserted in only two of the four 928A connectors.

6.04 By rotating the base 180° with respect to the case, the other two connectors are available to receive MFT units.

6.05 When the case and base are oriented as shown in Fig. 17, the mounting will accept two MFT transmission units, etc, as listed in 6.02(a). In the other orientation, as shown in Fig. 18, the mounting will accept one transmission unit and one signaling unit.

6.06 The transmission and signaling leads from the four 928A connectors are wired to a 50-pin AMP CHAMP 229941 connector which permits the use of a standard 25-pair cable between the CPC and the cross-connect field. Regardless of the orientation between the case and base, no

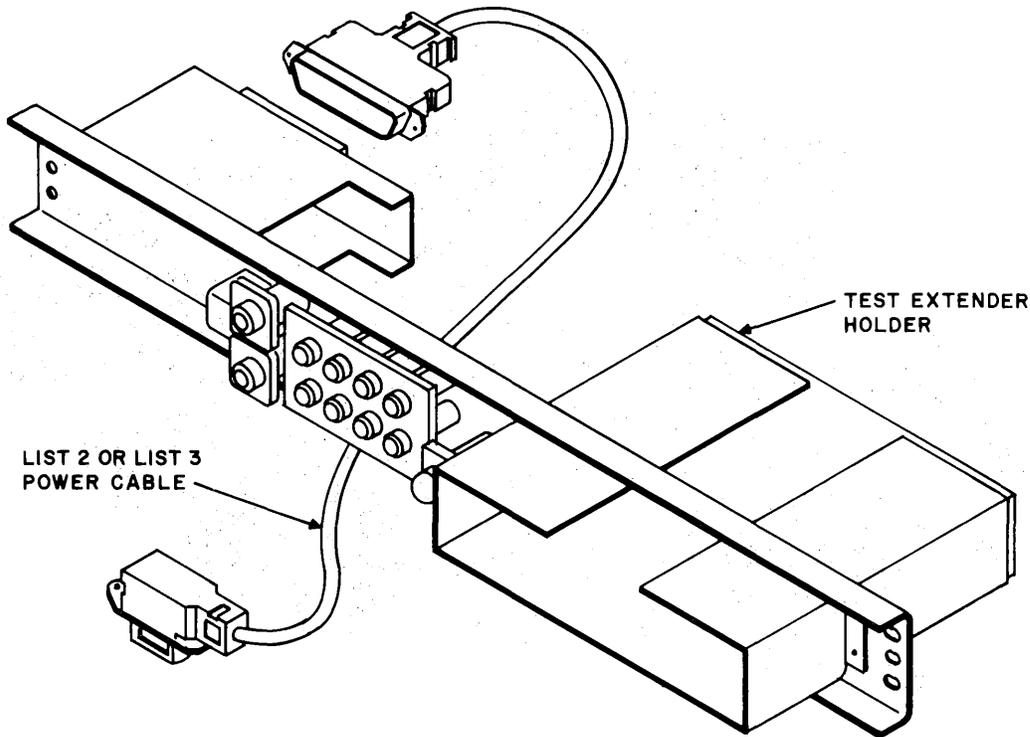


Fig. 14—J99380H Power Distribution and Feature Panel

wiring changes in the transmission and signaling leads are necessary within the CPC.

6.07 Figure 19 shows the CPC connector and MFT jack wiring. When the CPC is arranged for two transmission units, J2 is for circuit 1 and J3 is for circuit 2. When the CPC is arranged for a transmission unit and a companion signaling unit, J4 is for the transmission unit and J5 is for the signaling unit.

B. Power Supply

6.08 Power requirements for small installations may be obtained from either 117 volts 60 Hz or -48 volt dc local battery where available.

6.09 The power supply options available for small installations are as follows.

(a) **J99380L Power Distribution Panel**—This panel is used at those locations where -48 Vdc local battery is available. This panel, which will serve up to four CPCs, provides fusing, fuse alarm lamp, and talk battery filtering. When -72 volt battery is required, an ED-7C164 48V

to 24V dc-dc converter is added to the J99380L panel. If 20-Hz ringing is required, obtain from external sources.

(b) **232A Power Unit**—This unit converts 117 volts 60 Hz to -48 volt signal and negative talk battery. By means of an internal option, either -48 volt or -72 volt talk battery is available. Additional filtering of the talk battery is not required. The 232A Power Unit provides distribution fusing and a fuse alarm lamp. Up to four CPCs may be powered by this unit. When 20-Hz ringing voltage is required, an ED-7C163 ringing generator may be connected to the Power Unit. Both the 232A Power Unit and the ED-7C163 ringing generator will operate on 60 ± 3 Hz and, therefore, may be used with customer-provided motor generator emergency alternators. The AC power cord on the 232A Power Unit is 9 feet long.

(c) **J99380RB Power Unit**—MFT **transmission units** may be powered by -24 volts dc. In those installations where **only** transmission units will be used, the J99380RB Power Unit will

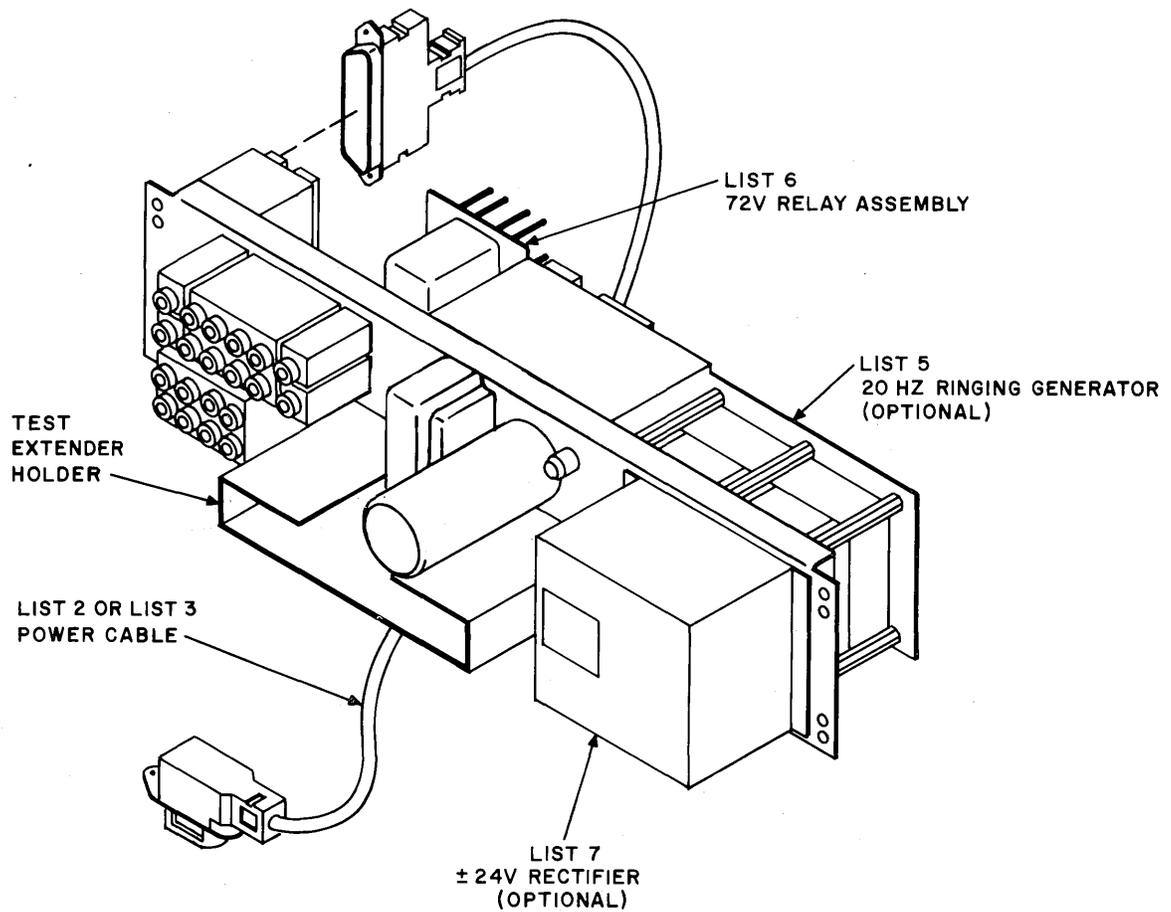


Fig. 15—J99380J Power Distribution and Feature Panel

provide 117 volts 60 Hz to -24 volt dc conversion necessary to power a maximum of 4 CPCs.

C. Mounting Arrangements

6.10 There are three basic methods for mounting CPFT equipment at small installations. They are as follows:

- (1) On any standard wall board with equipment exposed (see Fig. 20)
- (2) On any standard wall board with equipment flush mounted and covered (see Fig. 21)
- (3) On standard 23-inch mounting rack, frame, or cabinet (see Fig. 22).

6.11 The mounting arrangements and necessary hardware are covered in detail in Section 332-610-200.

D. Impedance Compensator Networks

6.12 The J99380AA, AB, and AC impedance compensator networks discussed earlier in this section are applicable in small installations. The networks were designed using a standard KTU format and, therefore, may be mounted in KTU mounting such as the 69B apparatus mounting. These networks should be mounted in space available at the installation.

7. CROSS-CONNECTION ARRANGEMENTS

7.01 The CPFT equipment may be terminated on any standard cross-connection arrangement normally installed at customer premises.

are wired with both sides appearing in a third KS-connector. This arrangement is a compromise between not using the last two plug-in slots and providing two KS- connectors for four networks. For this reason, it is suggested that the last two slots of each J99380C shelf be used for growth only. Figure 25 shows the wiring scheme for the J99380C shelf. Note that the wiring for the A and B sides of the last two slots, 13 and 14, must be separated at the cross-connect field.

7.05 As mentioned earlier, the CPFT equipment may be terminated on any suitable cross-connection arrangement. In the DIMENSION PBX application, the cross-connect field may be contained in two common customer equipment enclosure assemblies which protect the field from dust and water and also prohibit unauthorized access. They also present a suitable appearance when the field is located in an office environment.

7.06 Colored 183-type backboards are used in the DIMENSION PBX cross-connect field to help identify the various circuit components terminated in the field. The backboard colors and the equipment terminated are as follows:

- (a) Yellow—CPFT and miscellaneous circuits and equipment
- (b) Blue—Station line circuits
- (c) Green—Central office trunk circuits
- (d) Red—Key equipment
- (e) Purple—DIMENSION PBX circuits and equipment.

7.07 Connectorized cables suitable for extending the CPFT equipment to the cross-connect field must be ordered or prepared locally. See Section 332-610-200.

8. REFERENCES

8.01 The following documents contain additional information on CPFT and related equipment.

DOCUMENT	SUBJECT
SD-, CD-1C359-01	Metallic Facility Terminal Circuit
SD-, CD-7C010-01	CPFT for Use With Voice-Frequency Circuits

SD-, CD-1E441-01	DIMENSION PBX Power Distribution
332-205-100	Impedance Compensators Description
332-206-154	837D and J99380AA Network Description
332-206-155	837E and J99380AB Network Description
332-206-157	837G and J99380AC Network Description
332-206-254	837D and J99380AA Network Installation and Prescription Settings
332-206-255	837E and J99380AB Network Installation and Prescription Settings
332-206-257	837G and J99380AC Network Installation and Prescription Settings
332-610-200	CPFT Installation
332-610-500	CPFT Maintenance and Testing
332-910-100	MFT General Description
332-910-180	MFT General Application Information and Cross References to Other MFT Documents
554-101-100	DIMENSION PBX Description
554-101-101	DIMENSION PBX Pre-Installation
554-101-112	DIMENSION PBX Auxiliary Circuits
554-851-100	DIMENSION PBX TOP
801-026-171	J99380 CPFT Design Requirements
851-300-101	Prescription Design of Switched Special Service Circuits
851-311-101	Transmission and Signaling Design of PBX-CO Trunks Requiring Terminal Balance

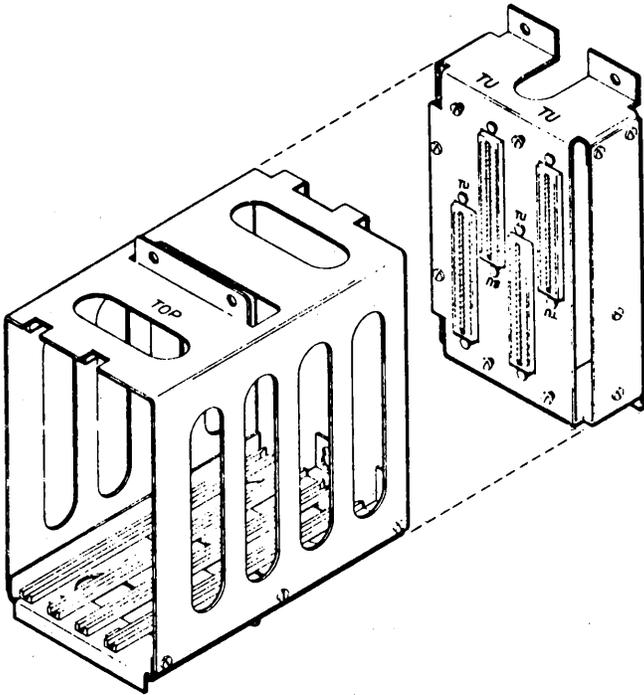


Fig. 17—J99380K CPC Orientation for Two MFT Transmission Units

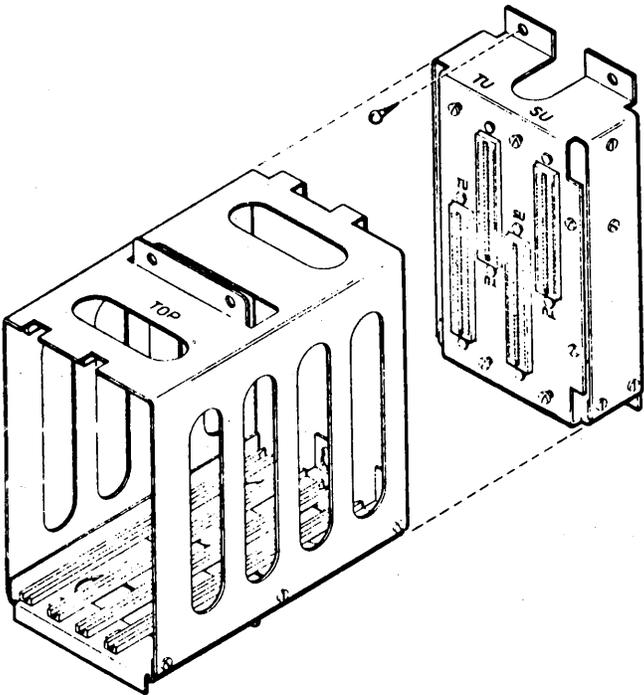


Fig. 18—J99380K CPC Orientation for One MFT Transmission Unit and One Signaling Unit

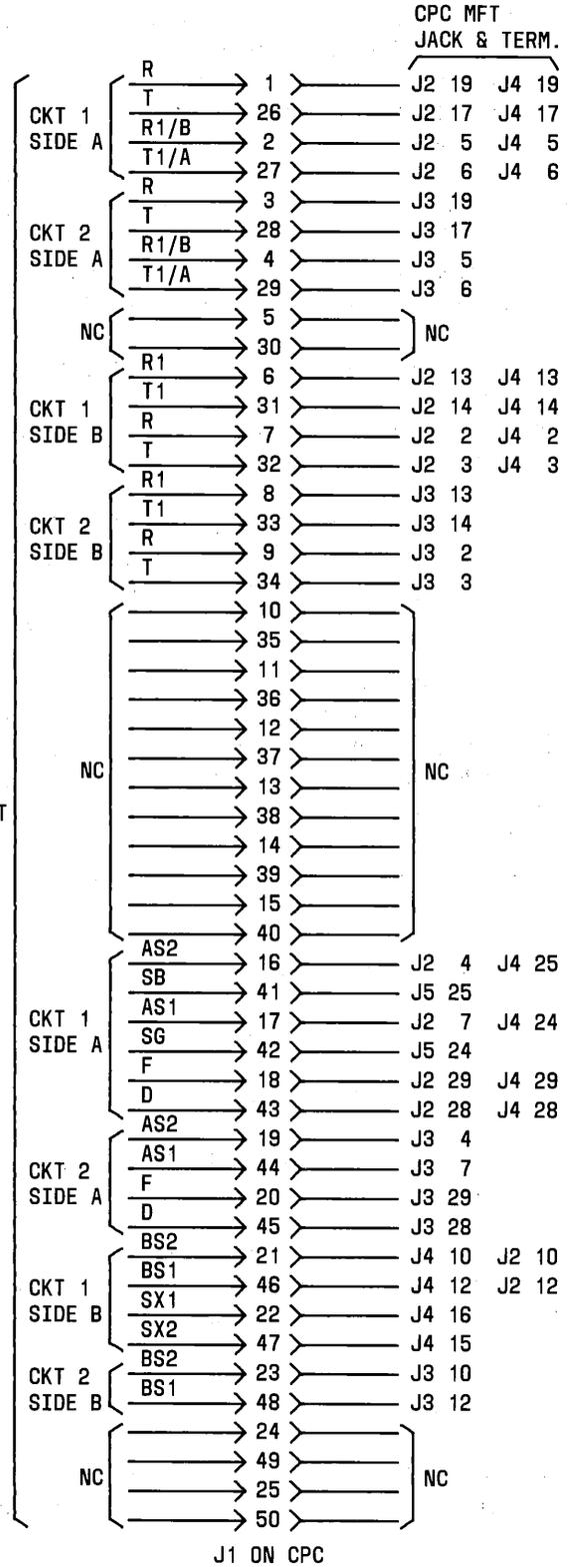
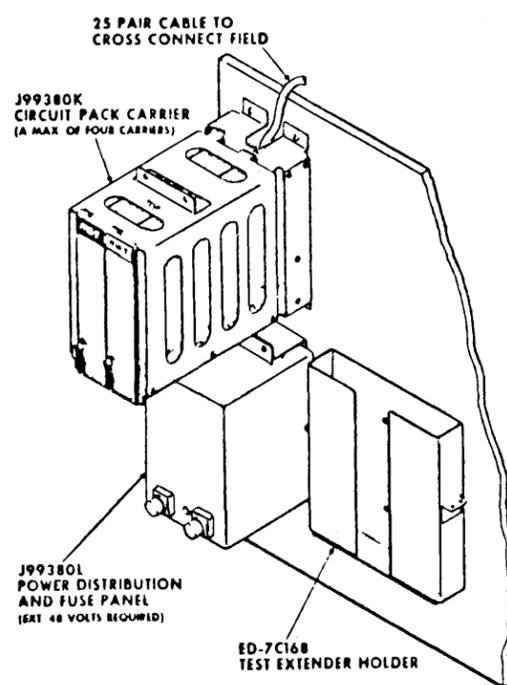
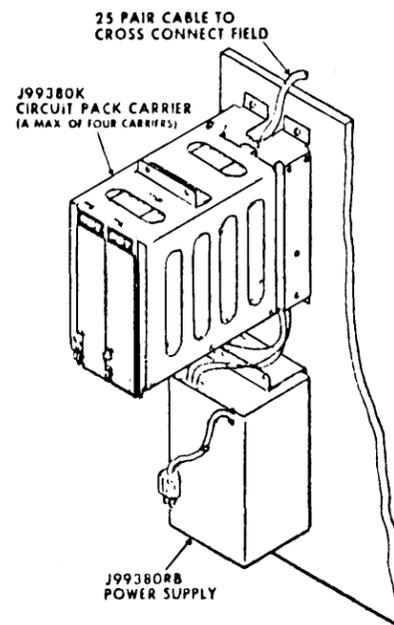


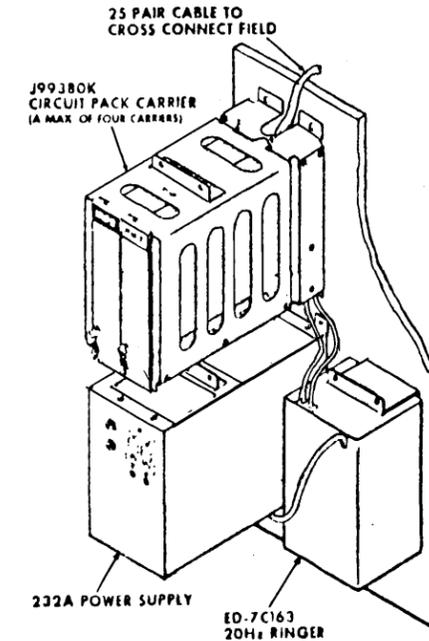
Fig. 19—J99380K CPC Transmission and Signaling Lead Interface



LOCAL BATTERY POWER AVAILABLE

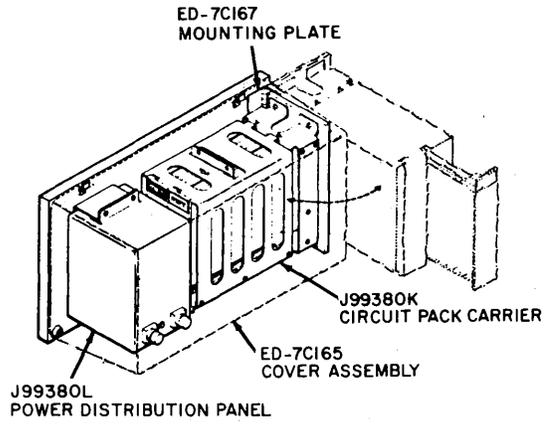


MFT TRANSMISSION UNITS ONLY
(117V AC INPUT)

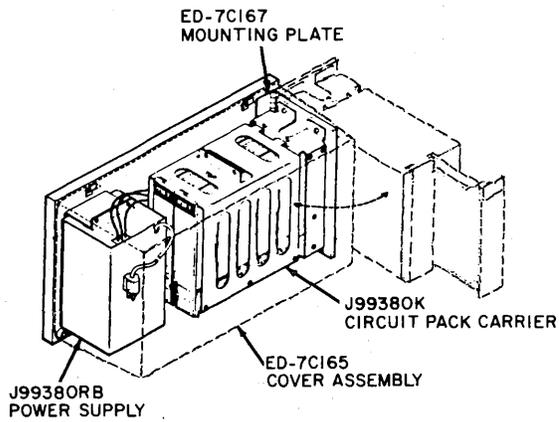


TRANSMISSION AND SIGNALING
WITH COMPLETE POWER
(117V AC INPUT)

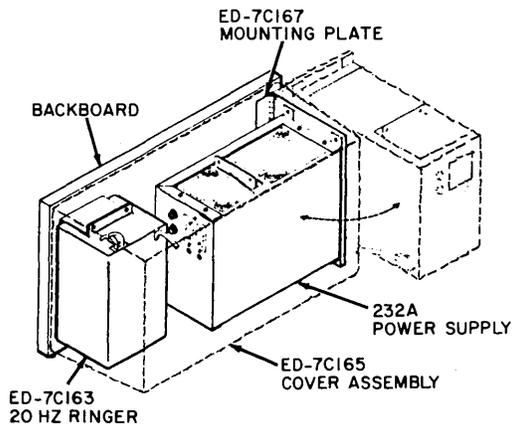
Fig. 20—Exposed Wall Mounting



LOCAL BATTERY POWER AVAILABLE



**TRANSMISSION ONLY WITH POWER
(117V AC INPUT)**



**POWER FOR TRANSMISSION AND SIGNALING
(117V AC INPUT)**

Fig. 21—Covered Wall Mounting

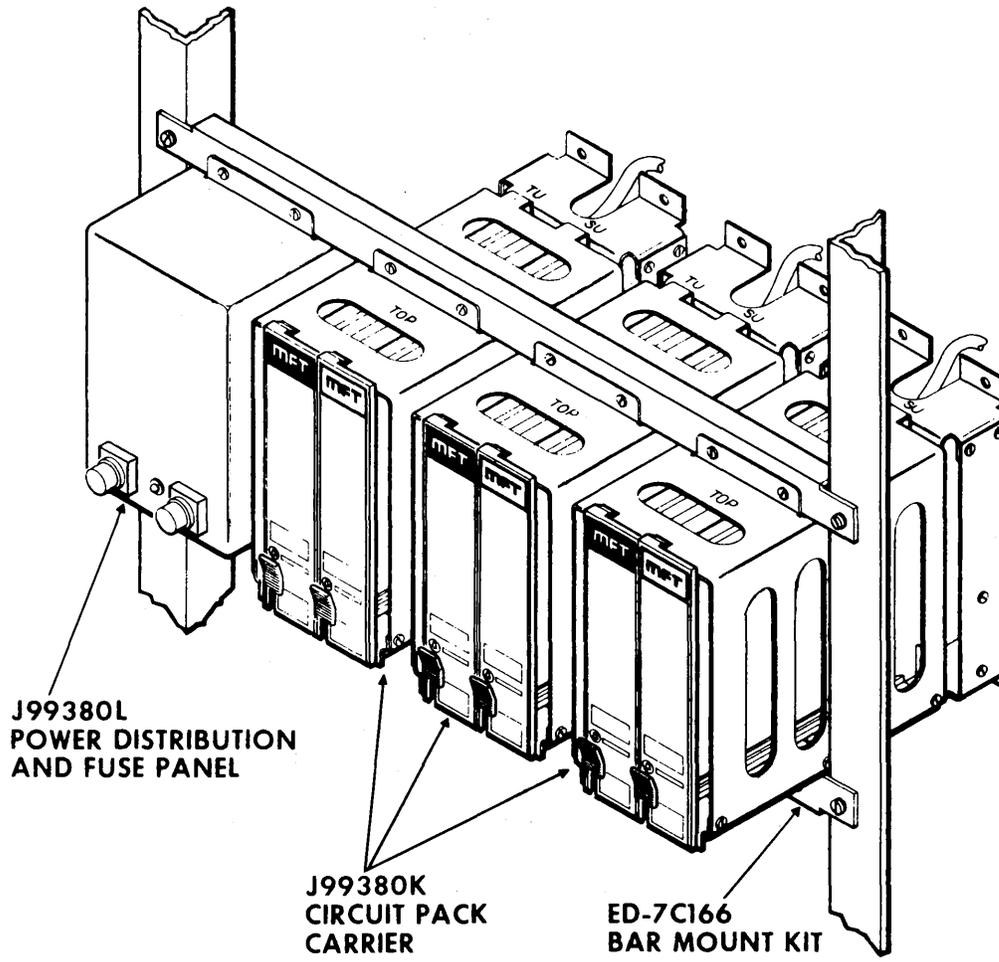


Fig. 22—Frame Mounting

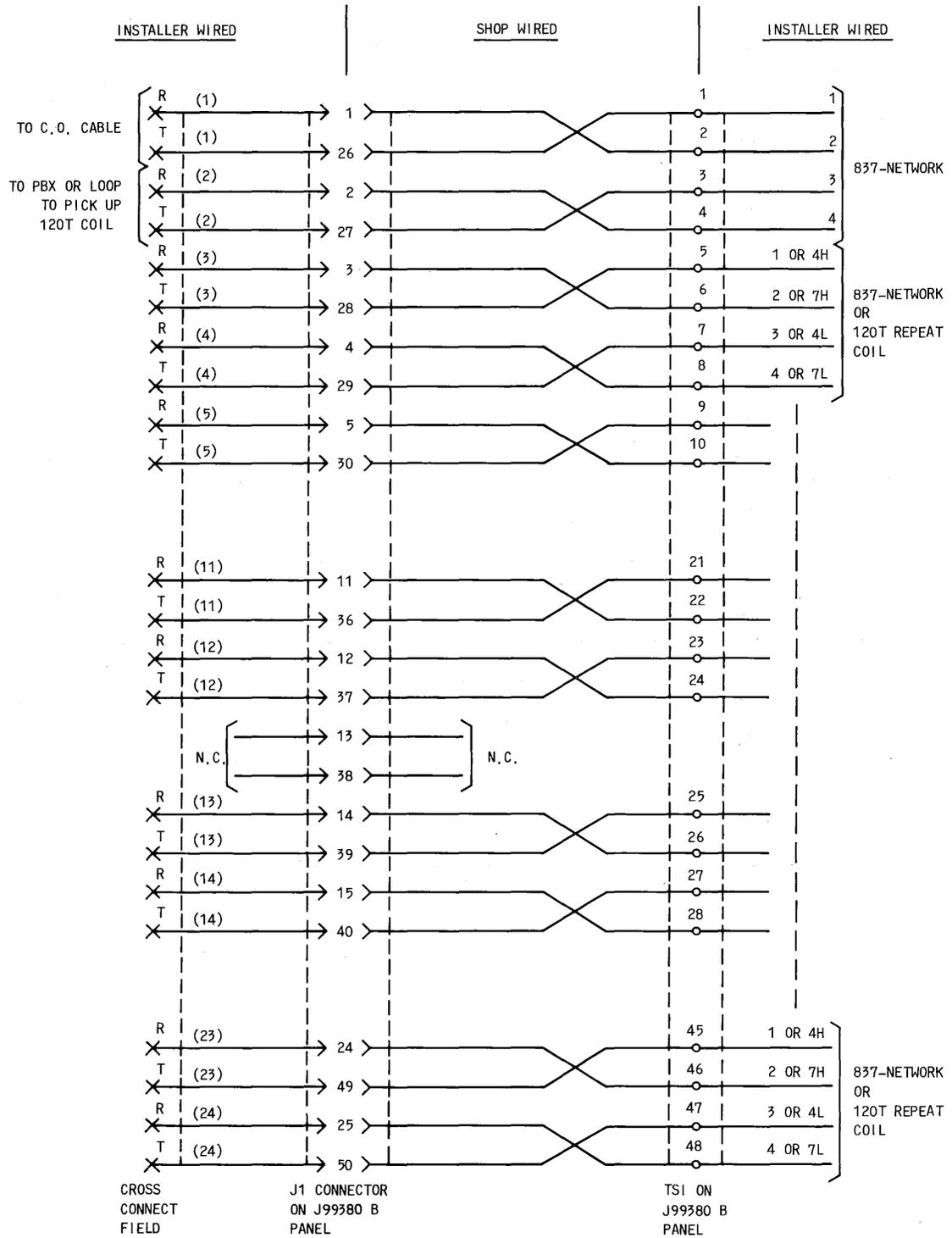
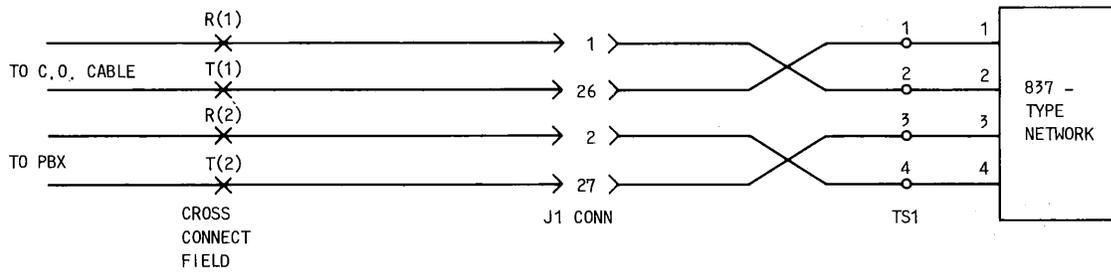
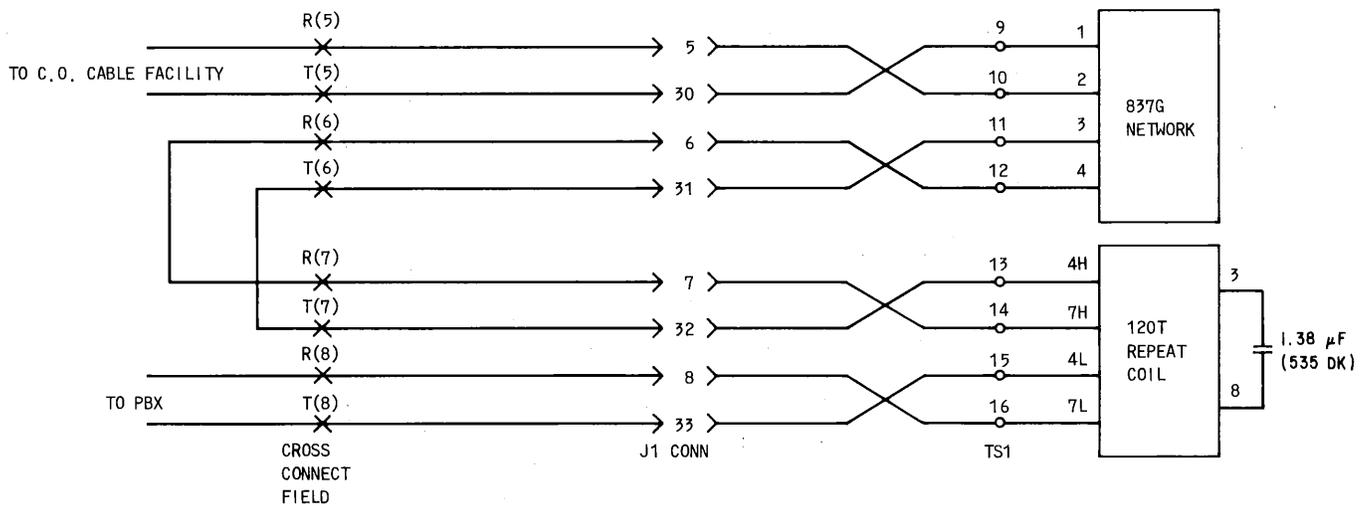


Fig. 23—J99380B Apparatus Panel Wiring

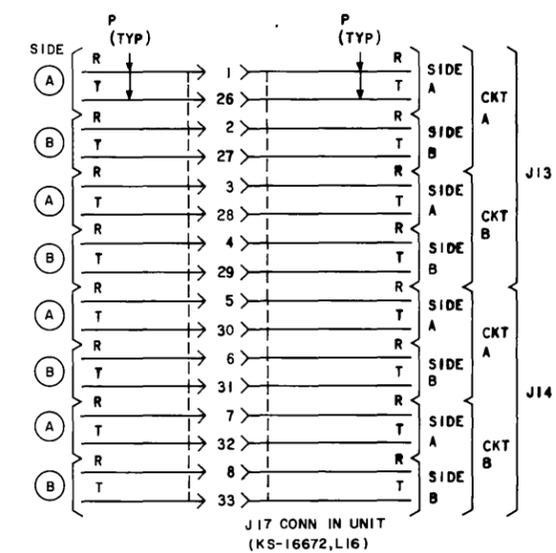
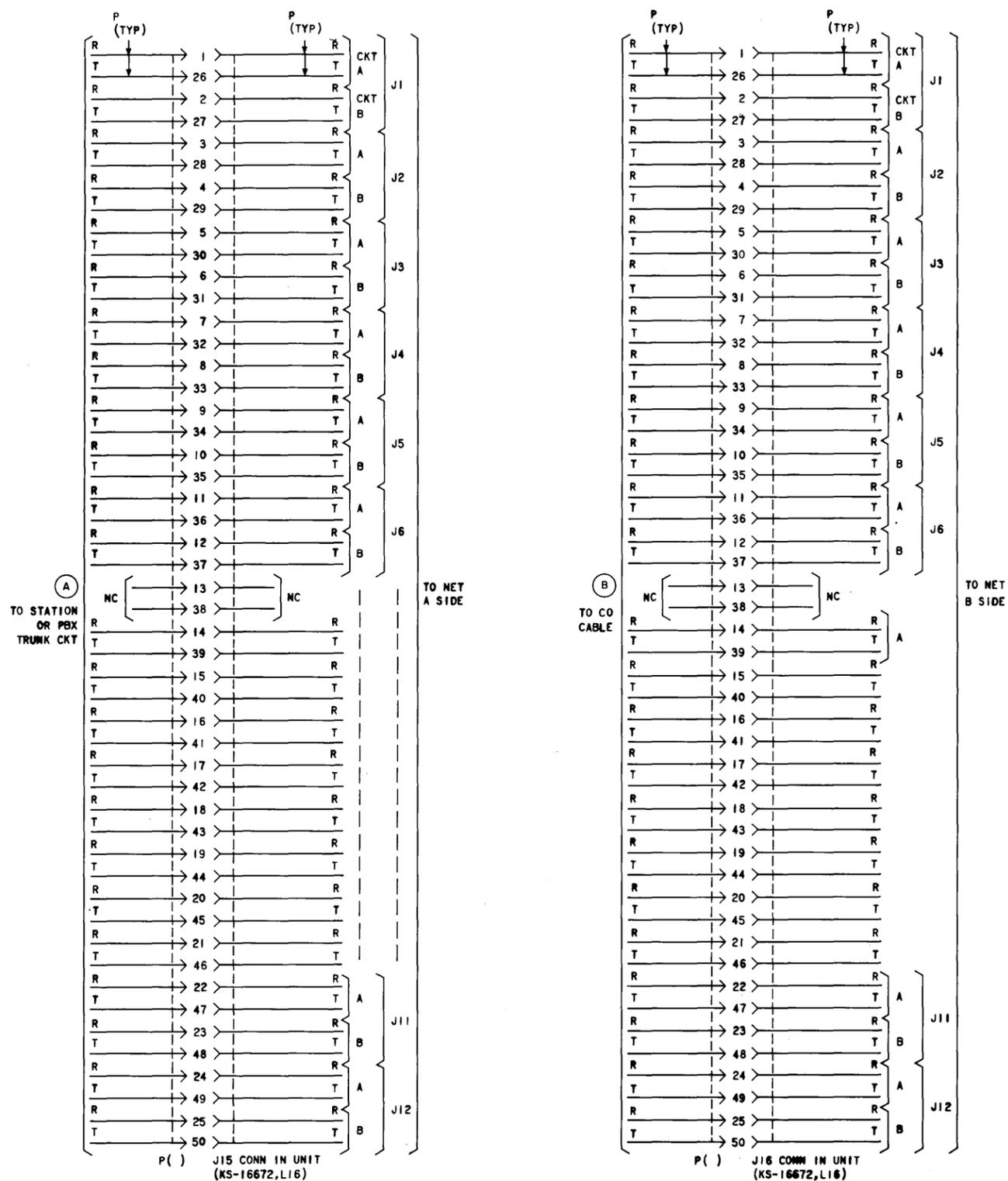


A. EXAMPLE OF CONNECTIONS FOR 837-NETWORK ONLY



B. EXAMPLE OF CONNECTIONS FOR 837G NETWORK AND 120T REPEATING COIL USED FOR 26 GAUGE LOADED CABLE FACILITIES AND 600 OHM EQUIPMENT

Fig. 24—J99380B Apparatus Panel Cross-Connection Examples



- (A) TO STATION OR PBX
- (B) TO CENTRAL OFFICE CABLE FACILITIES

- NOTES:**
1. CONNECTORS ARE NUMBERED J1 THRU J14 ON SHELF (J99380C)
 2. CONNECTORS ARE WIRED FOR 2 CKTS PER CIRCUIT PACK (DMN).
 3. CONNECTOR J17, CKTS 13 AND 14 RECOMMENDED FOR GROWTH ONLY. CABLE TO BE SPLIT TO A AND B SIDE AT CROSSCONNECT FIELD.

Fig. 25—J99380C Shelf Assembly Wiring