INTERCONNECTING DEVICES, COMMON EQUIPMENT

604A-TYPE PANEL

1. GENERAL

1.01 This section provides identification, installation and connection information for the 604A-type panel used to mount interconnecting units (IU).

1.02 Only the internal wiring of the 604A-type panel is covered in this section. Refer to the section covering the specific Voice Connecting Arrangement (VCA) for input and output connections and schematics of the IU involved.

1.03 This issue of the section is based on the following drawing:

SD-1E200-01, Issue 2D - 604A Panel

If this section is to be used with equipment or apparatus reflecting later issues of the drawings, reference should be made to the SDs and CDs to determine the extent of the changes and the manner in which the section may be affected.

2. IDENTIFICATION

DESCRIPTION

2.01 The 604A-type panel provides mounting facilities for 101-type, 102-type, 103A (MD), and 108A IUs, fused power and a fuse alarm lamp.

2.02 The 604A1 and 604A2 panels are identical except that the 604A2 panel is provided with

INSTALLATION SEQUENCE OF INTERCONNECTING UNITS

TRUNK NO.	POSITION NO.
1	1
2	2
3	4
4	5
5	7
6	8
7	10
8	11
9	13
10	3
11	6
12	9
13	12
14	14

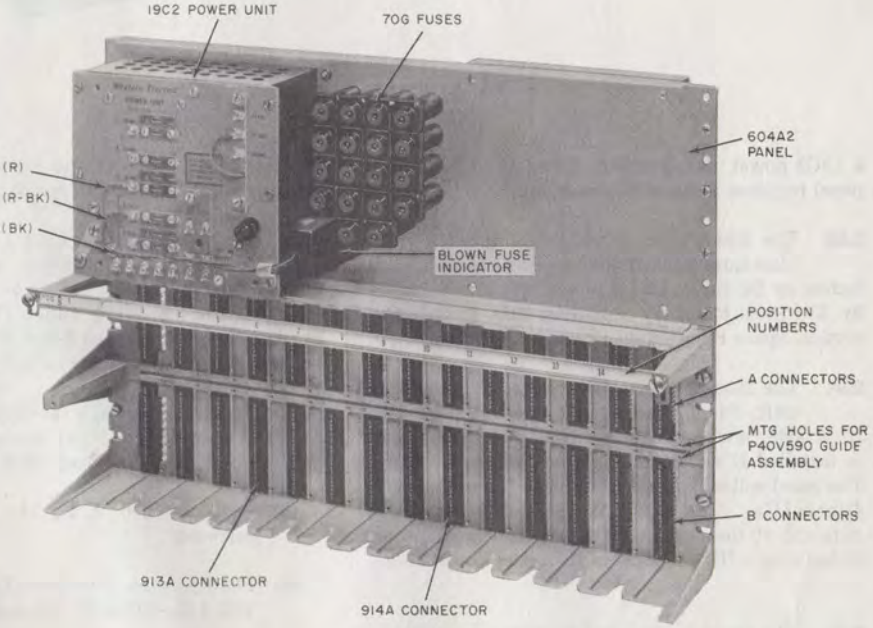


Fig. 1—604A2 Panel (Front View)

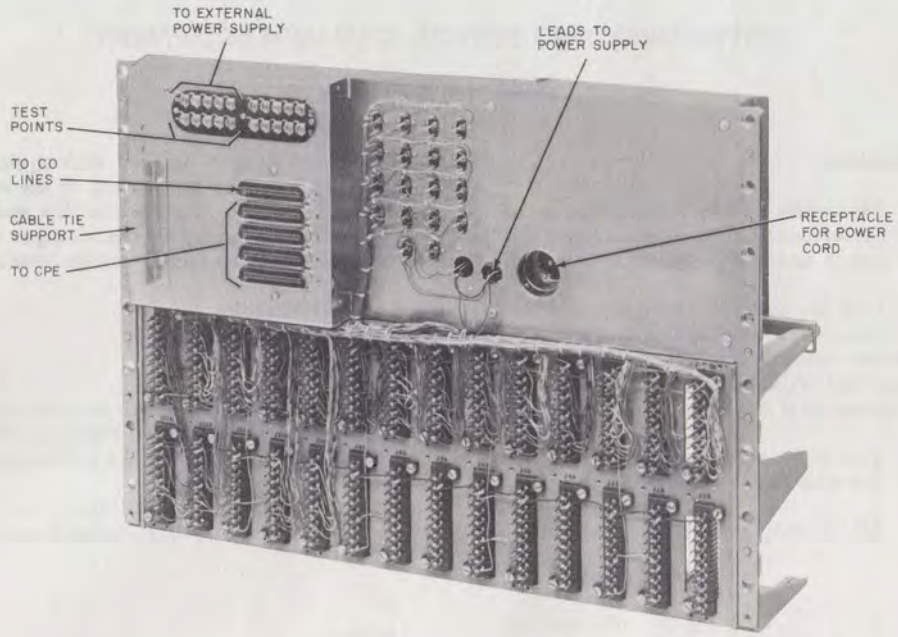


Fig. 2—604A2 Panel (Rear View)

a 19C2 power unit (see Fig. 1 and 2). The 604A1 panel requires a separate power supply.

2.03 The 604A-type panel consists of a cast aluminum printed wiring board receptacle 8 inches by 23 inches and a mounting plate 8 inches by 23 inches joined by mounting bars so that the vertical space required on a rack is 16 inches.

2.04 The mounting plate is arranged for a power unit, fuses, and fuse alarm lamp on the front side, and connectors on the rear for access to installed IUs, voice, control and power circuitry. The panel will mount fourteen 8-inch IUs or eighteen 4-inch IUs. One P-40V590 guide assembly is required at the center of the panel to mount each of the 4-inch IUs installed in the upper connectors.

2.05 The panel is arranged to accept a maximum of nine 2-way ground or loop-start trunks with pulse correction, fourteen 2-way trunks without pulse correction or eighteen one-way incoming trunks. Fig. 3 shows the connector and trunk arrangement in the 604A-type panel.

2.06 Positions 1 through 14 are equipped with an A and B connector. The arrangement of 913A (20 pin) and 914A (40 pin) connectors provides for mounting 4-inch IUs or using two vertical connectors for an 8-inch IU. The connectors are wired to accept the following units:

(a) Positions 1 through 14—Interconnecting Units 101A or 101B (2-way ground-start trunk) or 102A or 102B (2-way loop-start trunk)

(b) Positions 3, 6, 9, 12, 14—103A (MD) pulse corrector

(c) Positions 1A through 14A and 10B, 11B, 13B, 14B—108A IU (one-way incoming trunk)

Fig. 4 shows the lead designations and pin numbers for the above IUs, and Table A shows the connectors in which they may be mounted.

2.07 The power supply, fuses, and power distribution are shown in Fig. 5. The 19C2 power unit provides −24 volt (1.5 amperes) signal battery to the 604A2 panel through fuses F1 to F18. The −24 volt supply and the 10-volt ac lamp supply and their grounds are available on the terminal strip (TSA) for testing. When any of the fuses operate, the fuse alarm lamp will light. The fuses are of the indicating (pop up) type for quick location of the blown fuse. Table B shows the fuse assignment.

2.08 The 913A and 914A connectors are factory-wired to five 50 pin KS-16671, List 1 plugs on the rear of the panel. Plug No. 1 provides for tip and ring connections between the CO and the 604A-type panel. Plugs 2, 3, 4, and 5 provide for connections between the customer-provided equipment (CPE) and the 604A-type panel. Fig. 6 shows connections to connectors J1 through J14. Fig. 7 shows connections to plugs P1 through P5.

ORDERING GUIDE

- Panel, 604A1 (Includes fuse panel only)
- Panel, 604A2 (Includes 19C2 power unit and fuse panel)
- Cord, Power (For 604A2 panel only)

  P40J326 (1-1/2 ft)
  P40J327 (2 ft)
  P40J328 (4 ft)
  P40J329 (6 ft)
  P40J099 (12 ft)

- Cable, Connector (See Table C)
- Assembly, Guide, P-40V590 (14 per panel, for use with 108A IU only)

Replaceable Components for 604A-Type Panel

- Unit, Power, 19C2 (for 604A2 Panel)
- Lamp, A3 (fuse alarm)
- Fuse, 70G (1/2 ampere, 18 per panel)

3. INSTALLATION

3.01 The 604A-type panel will mount on a standard relay rack or in an ED-91180-72, Group 21, 18-plate equipment cabinet (or equivalent). The equipment cabinet will hold two 604A-type panels when the drawing holder on the lower half of the cover is removed. The relay rack or cabinet should be grounded separately.

3.02 Connection to the voice circuits is made on the rear of the 604A-type panels through connector cables. Arrangement of the KS-16671, List 1 plugs on the panel restricts the first plug (P1) to an A25B connector cable. Plugs P2 through P5 are arranged to adapt to a choice of cable sizes (see Table C).

3.03 The stub end of the connector cable from plug 1 is terminated on a 66B4-25 (or equivalent) connecting block for the CO lines. The stub end of the connector cables from plugs 2, 3, 4, and 5 are terminated at the customer end on 66MI-50 (or equivalent) connecting blocks. Follow the wiring plan shown in the section for the VCA in use, and stencil lead designations on the fanning strip as shown in that section.

3.04 The customer must provide a separately-fused 15-ampere outlet within reach of available power cords (see ordering guide for cord lengths). This outlet should not be under control of a wall switch.

3.05 When using an external power supply (if required by VCA installation) connect the −24 volts to terminal 14 of TSA and ground to terminal 13 of TSA on the rear of the 604A1 panel. See Fig. 5. If the customer is providing power, it must be routed through the KS-20944 protector before connecting to 604A1 panel. Refer to Section 463-300-109 for information on the KS-20944 protector. Refer to the appropriate section in Division 518 for proper grounding of power plants. Proper grounding of equipment and power unit is important to prevent damage from power line surges.

3.06 When installing the IUs in the 604A-type panel, position the board in the guide grooves and slide the unit in until it is properly seated in the connector. Lower the designation strip and lock down to hold the IUs in place. The P-40V590 guide assembly has a screw mounted clip retainer that is used to secure the 4-inch 108A IUs in positions 10B, 11B, 13B, and 14B (lower connectors). The designation strip will hold the 4-inch IUs in the upper connectors. Refer to Fig. 3 for the

installation sequence of the IUs in the 604A-type panel. The suggested sequence is established to correspond to the plug arrangement.

3.07 After installation is complete, apply power and perform tests shown in the section for the particular VCA being installed. To protect the electrical components of interconnecting units, always remove the fuse associated with that particular circuit before removing or installing a unit. See Table B.

4. CONNECTIONS

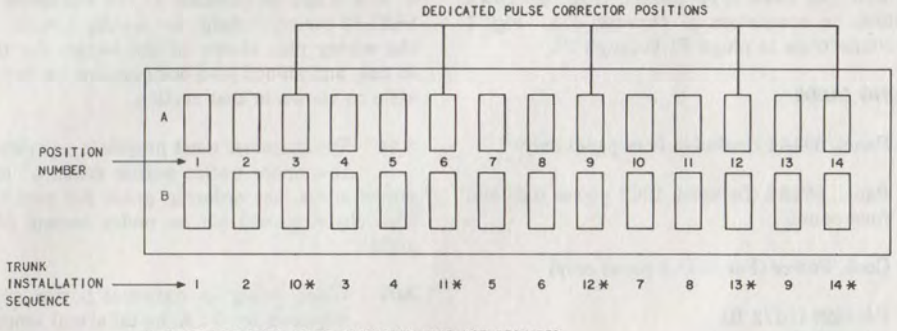
4.01 Refer to Fig. 1, 2, and 5 for connections to 19C2 power unit or external power supply.

4.02 Refer to Fig. 2 and 7 for connections to CO lines and to CPE.

4.03 Refer to Fig. 4 for connections to IUs.

4.04 Refer to Fig. 5 for connections to fuses, fuse alarm, and power distribution.

4.05 Refer to Fig. 6 for connections to A and B connectors.



MAXIMUM NUMBER OF TRUNKS PROVIDED	
WITH PULSE CORRECTION	WITHOUT PULSE CORRECTION
9	14

Fig. 3—Connector and Trunk Arrangement in 604A-Type Panel

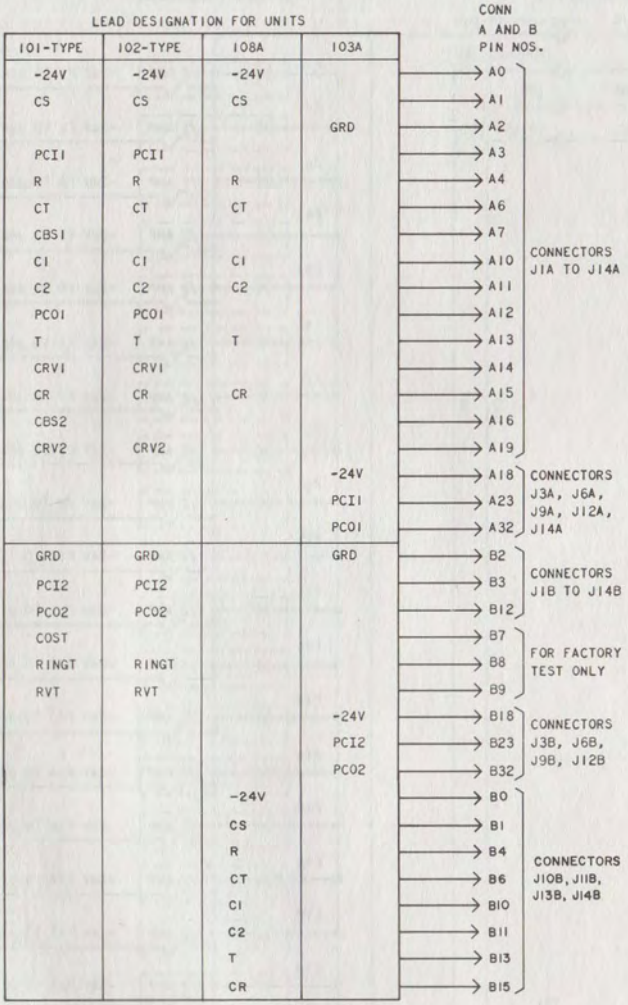


Fig. 4—Lead Designations For Interconnecting Units

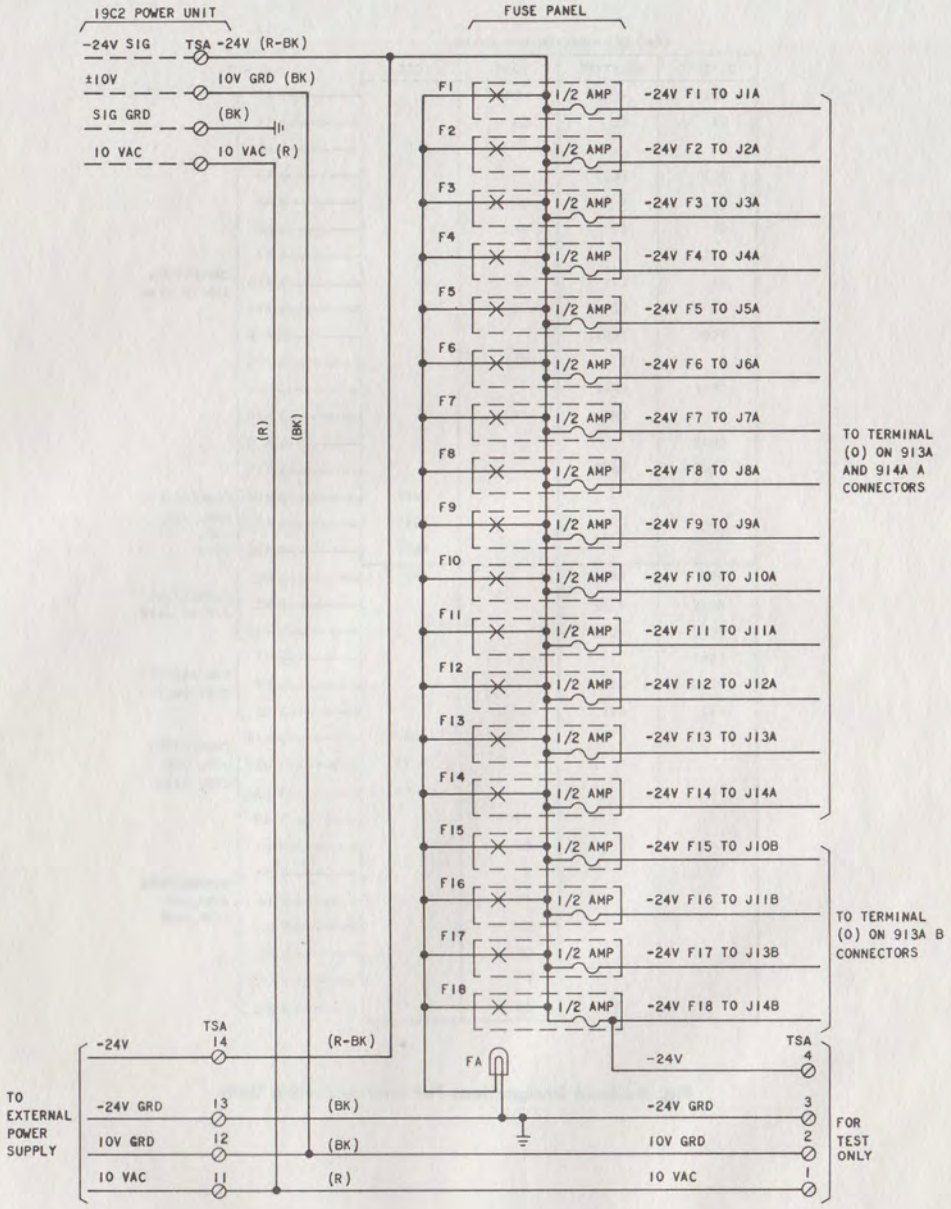


Fig. 5—Fuse and Power Distribution for −24 Volt Supply

CONNECTIONS FOR J1 TO J14

J1A	J2A	J3A	J4A	J5A	J6A	J7A
13 T → 26 (P1) 4 R → 1 (P1) 6 CT → 26 (P2) 15 CR → 1 (P2) 7 CBS1 → 30 (P2) 16 CBS2 → 5 (P2) 10 C1 → 28 (P2) 11 C2 → 3 (P2) 14 CRV1 → 29 (P2) 19 CRV2 → 4 (P2) 1 CS → 27 (P2) 12 PCO1 → 32 (J3A) 3 PCI1 → 23 (J3A) 0 -24V → F1	13 T → 27 (P1) 4 R → 2 (P1) 6 CT → 31 (P2) 15 CR → 6 (P2) 7 CBS1 → 35 (P2) 16 CBS2 → 10 (P2) 10 C1 → 33 (P2) 11 C2 → 8 (P2) 14 CRV1 → 34 (P2) 19 CRV2 → 9 (P2) 1 CS → 32 (P2) 0 -24V → F2	13 T → 35 (P1) 4 R → 10 (P1) 2 GRD → MULT 6 CT → 26 (P4) 15 CR → 1 (P4) 7 CBS1 → 30 (P4) 16 CBS2 → 5 (P4) 10 C1 → 28 (P4) 11 C2 → 3 (P4) 14 CRV1 → 29 (P4) 19 CRV2 → 4 (P4) 1 CS → 27 (P4) 18 -24V → 0 (J1A) 0 -24V → F3 23 PCI1 → 3 (J1A) 32 PCO1 → 12 (J1A)	13 T → 28 (P1) 4 R → 3 (P1) 6 CT → 36 (P2) 15 CR → 11 (P2) 7 CBS1 → 40 (P2) 16 CBS2 → 15 (P2) 10 C1 → 38 (P2) 11 C2 → 13 (P2) 14 CRV1 → 39 (P2) 19 CRV2 → 14 (P2) 1 CS → 37 (P2) 12 PCO1 → 32 (J6A) 3 PCI1 → 23 (J6A) 0 -24V → F4	13 T → 29 (P1) 4 R → 4 (P1) 6 CT → 41 (P2) 15 CR → 16 (P2) 7 CBS1 → 45 (P2) 16 CBS2 → 20 (P2) 10 C1 → 43 (P2) 11 C2 → 18 (P2) 14 CRV1 → 44 (P2) 19 CRV2 → 19 (P2) 1 CS → 42 (P2) 0 -24V → F5	13 T → 36 (P1) 4 R → 11 (P1) 2 GRD → MULT 6 CT → 31 (P4) 15 CR → 6 (P4) 7 CBS1 → 35 (P4) 16 CBS2 → 10 (P4) 10 C1 → 33 (P4) 11 C2 → 8 (P4) 14 CRV1 → 34 (P4) 19 CRV2 → 9 (P4) 1 CS → 32 (P4) 18 -24V → 0 (J4A) 0 -24V → F6 23 PCI1 → 3 (J4A) 32 PCO1 → 12 (J4A)	13 T → 30 (P1) 4 R → 5 (P1) 6 CT → 46 (P2) 15 CR → 21 (P2) 7 CBS1 → 50 (P2) 16 CBS2 → 25 (P2) 10 C1 → 48 (P2) 11 C2 → 23 (P2) 14 CRV1 → 49 (P2) 19 CRV2 → 24 (P2) 1 CS → 47 (P2) 12 PCO1 → 32 (J9A) 3 PCI1 → 23 (J9A) 0 -24V → F7
J1B	**J2B**	**J3B**	**J4B**	**J5B**	**J6B**	**J7B**
2 GRD → MULT	12 PCO2 → 32 (J3B) 3 PCI2 → 23 (J3B) 2 GRD → MULT	18 -24V → 0 (J2A) 2 GRD → MULT 23 PCI2 → 3 (J2B) 32 PCO2 → 12 (J2B)	2 GRD → MULT	12 PCO2 → 32 (J6B) 3 PCI2 → 23 (J6B) 2 GRD → MULT	18 -24V → 0 (J5A) 2 GRD → MULT 23 PCI2 → 3 (J5B) 32 PCO2 → 12 (J5B)	2 GRD → MULT
J8A	**J9A**	**J10A**	**J11A**	**J12A**	**J13A**	**J14A**
13 T → 31 (P1) 4 R → 6 (P1) 6 CT → 26 (P3) 15 CR → 1 (P3) 7 CBS1 → 30 (P3) 16 CBS2 → 5 (P3) 10 C1 → 28 (P3) 11 C2 → 3 (P3) 14 CRV1 → 29 (P3) 19 CRV2 → 4 (P3) 1 CS → 27 (P3) 0 -24V → F8	13 T → 37 (P1) 4 R → 12 (P1) 2 GRD → MULT 6 CT → 36 (P4) 15 CR → 11 (P4) 7 CBS1 → 40 (P4) 16 CBS2 → 15 (P4) 10 C1 → 38 (P4) 11 C2 → 13 (P4) 14 CRV1 → 39 (P4) 19 CRV2 → 14 (P4) 1 CS → 37 (P4) 18 -24V → 0 (J7A) 0 -24V → F9 23 PCI1 → 3 (J7A) 32 PCO1 → 12 (J7A)	13 T → 32 (P1) 4 R → 7 (P1) 6 CT → 31 (P3) 15 CR → 6 (P3) 7 CBS1 → 35 (P3) 16 CBS2 → 10 (P3) 10 C1 → 33 (P3) 11 C2 → 8 (P3) 14 CRV1 → 34 (P3) 19 CRV2 → 9 (P3) 1 CS → 32 (P3) 12 PCO1 → 32 (J12A) 3 PCI1 → 23 (J12A) 0 -24V → F10	13 T → 33 (P1) 4 R → 8 (P1) 6 CT → 36 (P3) 15 CR → 11 (P3) 7 CBS1 → 40 (P3) 16 CBS2 → 15 (P3) 10 C1 → 38 (P3) 11 C2 → 13 (P3) 14 CRV1 → 39 (P3) 19 CRV2 → 14 (P3) 1 CS → 37 (P3) 0 -24V → F11	13 T → 38 (P1) 4 R → 13 (P1) 2 GRD → MULT 6 CT → 41 (P4) 15 CR → 16 (P4) 7 CBS1 → 45 (P4) 16 CBS2 → 20 (P4) 10 C1 → 43 (P4) 11 C2 → 18 (P4) 14 CRV1 → 44 (P4) 19 CRV2 → 19 (P4) 1 CS → 42 (P4) 18 -24V → 0 (J10A) 0 -24V → F12 23 PCI1 → 3 (J10A) 32 PCO1 → 12 (J10A)	13 T → 34 (P1) 4 R → 9 (P1) 6 CT → 41 (P3) 15 CR → 16 (P3) 7 CBS1 → 45 (P3) 16 CBS2 → 20 (P3) 10 C1 → 43 (P3) 11 C2 → 18 (P3) 14 CRV1 → 44 (P3) 19 CRV2 → 19 (P3) 1 CS → 42 (P3) 12 PCO1 → 32 (J14A) 3 PCI1 → 23 (J14A) 0 -24V → F13	13 T → 39 (P1) 4 R → 14 (P1) 2 GRD → MULT 6 CT → 46 (P4) 15 CR → 21 (P4) 7 CBS1 → 50 (P4) 16 CBS2 → 25 (P4) 10 C1 → 48 (P4) 11 C2 → 23 (P4) 14 CRV1 → 49 (P4) 19 CRV2 → 24 (P4) 1 CS → 47 (P4) 18 -24V → 0 (J13A) 0 -24V → F14 23 PCI1 → 3 (J13A) 32 PCO1 → 12 (J13A)
J8B	**J9B**	**J10B**	**J11B**	**J12B**	**J13B**	**J14B**
12 PCO2 → 32 (J9B) 3 PCI2 → 23 (J9B) 2 GRD → MULT	18 -24V → 0 (J8A) 2 GRD → MULT 23 PCI2 → 3 (J8B) 32 PCO2 → 12 (J8B)	13 T → 40 (P1) 4 R → 15 (P1) 6 CT → 26 (P5) 15 CR → 1 (P5) 10 C1 → 28 (P5) 11 C2 → 3 (P5) 1 CS → 27 (P5) 2 GRD → MULT 0 -24V → F15	13 T → 41 (P1) 4 R → 16 (P1) 6 CT → 29 (P5) 15 CR → 4 (P5) 10 C1 → 31 (P5) 11 C2 → 6 (P5) 1 CS → 30 (P5) 12 PCO2 → 32 (J12B) 3 PCI2 → 23 (J12B) 2 GRD → MULT 0 -24V → F16	18 -24V → 0 (J11A) 2 GRD → MULT 23 PCI2 → 3 (J11B) 32 PCO2 → 12 (J11B)	13 T → 42 (P1) 4 R → 17 (P1) 6 CT → 32 (P5) 15 CR → 7 (P5) 10 C1 → 34 (P5) 11 C2 → 9 (P5) 1 CS → 33 (P5) 2 GRD → MULT 0 -24V → F17	13 T → 43 (P1) 4 R → 18 (P1) 6 CT → 35 (P5) 15 CR → 10 (P5) 10 C1 → 37 (P5) 11 C2 → 12 (P5) 1 CS → 36 (P5) 2 GRD → MULT 0 -24V → F18

Fig. 6—Connections For Jacks J1 to J14

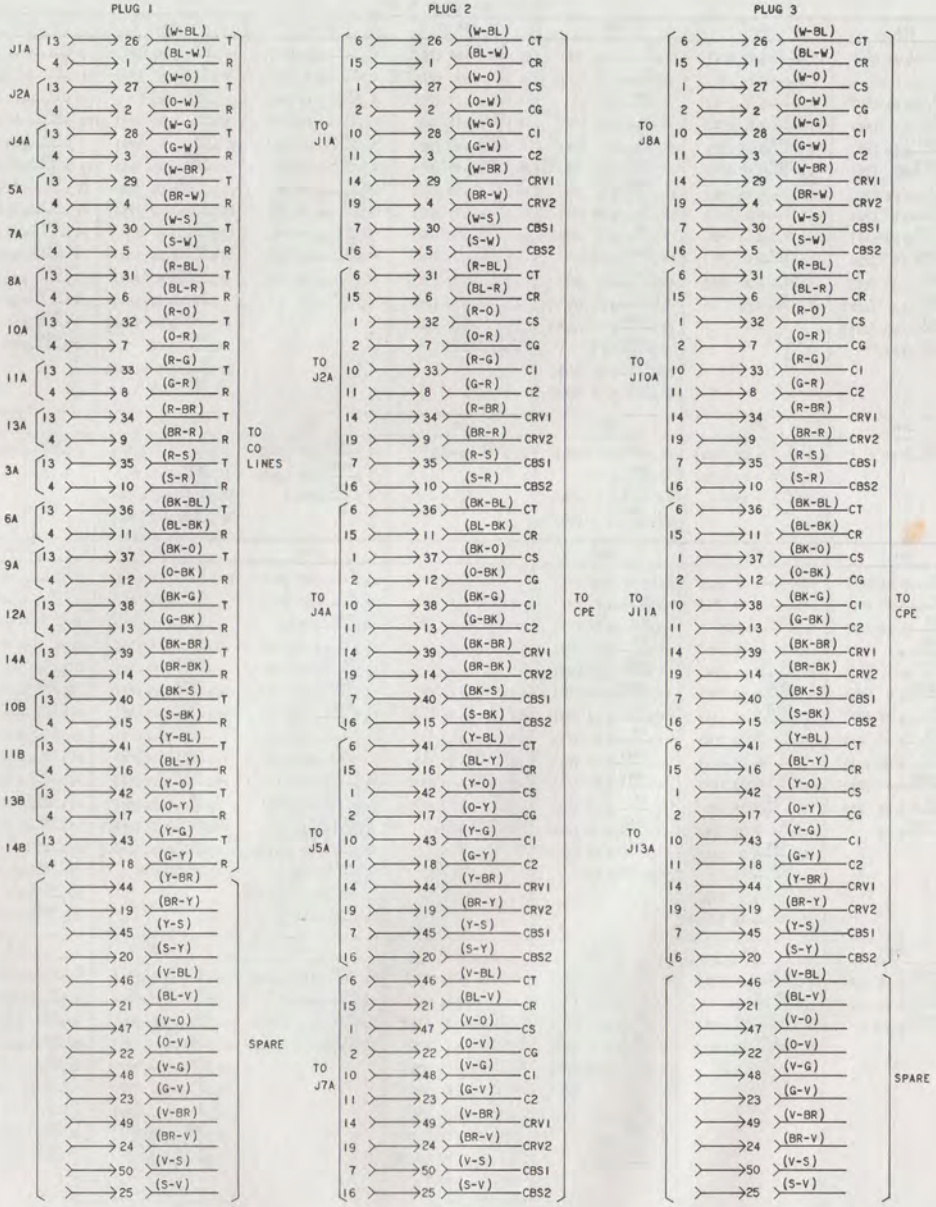


Fig. 7—Connections For Plugs P1 To P5 (Sheet 1 of 2)

Fig. 7—Connections For Plugs P1 To P5 (Sheet 2 of 2)

TABLE A

CONNECTOR USE TABLE

PANEL POSITION		CIRCUIT NO.	101-TYPE	102-TYPE	108A	103A †
J1	A	1	●	●	●	
	B				—	
J2	A	2	●	●	●	
	B				—	
J3	A	10	●	●	●	●
	B				—	
J4	A	3	●	●	●	
	B				—	
J5	A	4	●	●	●	
	B				—	
J6	A	11	●	●	●	●
	B				—	
J7	A	5	●	●	●	
	B				—	
J8	A	6	●	●	●	
	B				—	
J9	A	12	●	●	●	●
	B				—	
J10	A	7	●	●	●	
	B				●	
J11	A	8	●	●	●	
	B				●	
J12	A	13	●	●	●	●
	B					
J13	A	9	●	●	●	
	B				●	
J14	A	14	●	●	●	●*
	B				●	

● USABLE IN INDICATED CONNECTORS.

* Position 14B is not equipped with pulse correcting leads.

† The 103A(MD) pulse corrector is no longer required. Remove existing 103A pulse correctors when replacing the existing 101A or 102A IUs with 101B or 102B IUs.

TABLE B

604A PANEL FUSE ASSIGNMENT

DESIG	POSITION	TYPE
F1	J1A	70G 1/2 AMP
F2	J2A	70G 1/2 AMP
F3	J3A*	70G 1/2 AMP
F4	J4A	70G 1/2 AMP
F5	J5A	70G 1/2 AMP
F6	J6A*	70G 1/2 AMP
F7	J7A	70G 1/2 AMP
F8	J8A	70G 1/2 AMP
F9	J9A*	70G 1/2 AMP
F10	J10A	70G 1/2 AMP
F11	J11A	70G 1/2 AMP
F12	J12A*	70G 1/2 AMP
F13	J13A	70G 1/2 AMP
F14	J14A*	70G 1/2 AMP
F15	J10B	70G 1/2 AMP
F16	J11B	70G 1/2 AMP
F17	J13B	70G 1/2 AMP
F18	J14B	70G 1/2 AMP

* When a 103A pulse corrector is used in these positions, power for the two pulse corrector circuits is drawn from the fuses for the corrected circuits. For example, a pulse corrector in position J3 draws power for one circuit from F1 and for the other circuit from F2.

TABLE C

OPTIONAL CABLE ARRANGEMENTS TO PROVIDE CONNECTIONS FOR FIVE PLUGS ON 604A-TYPE PANEL

CABLE DESIGNATION (NOTE)	MAXIMUM NO. OF CABLES REQUIRED		
	ARRANGEMENTS (SEE 3.02)		
	1	2	3
A25B	1	1	2
A50B		2	
A75A			1
A100C	1		

Note: Arrangement of interconnecting units and local requirements will determine the size and maximum length of cable required