

VOICE CONNECTING ARRANGEMENT CD4

1. GENERAL

1.01 This section provides information on identification, installation, operation, maintenance and connections for the 31B or 31A (MD) voice coupler when used in Voice Connecting Arrangement CD4.

1.02 This section is reissued to:

- Change note in Fig. 2 for connecting 608-type switchboard
- Revise 1.03
- Add 5.05 and 6.02.

1.03 The 31B voice coupler is a direct replacement for the 31A (MD) voice coupler. The 31B voice coupler may be used in all CD4 arrangements; the 31A (MD) may not be used where tone signaling is required. The 31B is identical to the 31A coupler except for higher breakdown voltage rating of the transformer and varistors.

1.04 If the customer wants a copy of the Technical Reference which covers this interface specification, the customer should contact the local Telephone Company Business Office or the Marketing Representative.

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

SD-69613-01 Issue 2B—31B Voice Coupler

If this section is to be used with equipment or apparatus reflecting later issue(s) of the drawing(s), 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

PURPOSE

- To provide a connection between a Telephone Company manual cord switchboard and a customer-provided (CP) communication system

(typically an intercom or radio system) not arranged for supervision.

- To limit excessive voice power levels from customer-provided equipment (CPE) and to provide protection for personnel against hazardous voltages.

ORDERING GUIDE

- Coupler, Voice, 31B-49 (Fig. 1, one for each circuit between Telephone Company PBX and CPE) (31A-49 may be substituted if tone signaling is not used.)

DESIGN FEATURES

- Approximate dimensions are 4 inches long by 2-3/4 inches wide by 2 inches high.
- Provides dc isolation to CPE.
- Can be mounted on any flat surface.
- Voice transmission only.
- Permits tone signaling through coupler (31B only).
- Provides a means of holding the Telephone Company PBX circuit in the busy state.
- Maximum dc line current is 0.150 ampere.
- Operating temperature range is 0°C through 55°C.

3. INSTALLATION

3.01 The voice coupler will mount on any surface. A backboard is not required unless mounting on a damp surface or when a backboard will facilitate mounting.

3.02 One 31B voice coupler must be provided for each circuit between the Telephone Company PBX and the CP communication system.

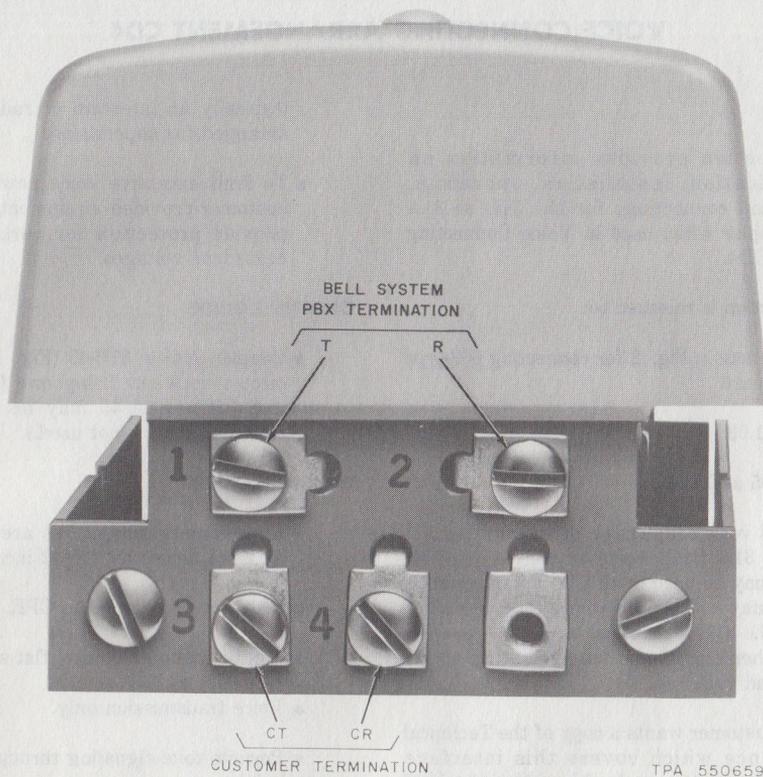


Fig. 1—31B (or 31A [MD]) Voice Coupler

3.03 Terminate the T and R leads to the 31B voice couplers on spare trunk jacks in the station jack area of the PBX switchboard. Refer to Division 536 for additional information covering the type of PBX in use.

3.04 Refer to Section 463-130-100 entitled Backboards, Identification, and Installation for information on mounting backboards.

3.05 CPE may be attached externally to the surface of the switchboard by means of a pressure sensitive adhesive or other means that will not damage the switchboard.

3.06 Power for CPE must be provided by the customer. Transformer isolation prevents central office (CO) dc from flowing through the

CPE and dc from the CPE is blocked by capacitor C1 within the coupler.

4. OPERATION

4.01 The customer must provide a means of signaling between the attendant of the Telephone Company PBX and the CP communication system (ie, key telephone set, lamps, buzzers, etc).

4.02 Incoming Call From CO

- PBX attendant receives incoming call signal from CO on switchboard and answers with trunk cord.
- Customer requests connection to the CP intercom station.

- Attendant plugs station cord into the trunk jack associated with an idle coupler circuit. This connects the CO trunk to tip and ring of the Telephone Company side of the 31B voice coupler.
- Attendant uses CPE to signal the called station that a call is being connected via Voice Connecting Arrangement CD4 and to connect to the CT and CR leads of the 31B voice coupler.
- A talking connection is now established from the intercom station through the coupler to the calling station.
- Since Voice Connecting Arrangement CD4 provides no form of supervision, it will be necessary for the attendant to periodically monitor the circuit via the PBX attendant circuit or to receive a disconnect signal via the CPE and to remove the cords when conversation is terminated.

4.03 *Outgoing Call to CO*

- Customer station user signals PBX attendant via CPE to request an outgoing connection and connects to CT and CR leads of coupler.
- Attendant answers the call by plugging station cord into trunk jack of associated coupler circuit and is connected to the T and R leads of coupler.
- Attendant plugs trunk cord into CO trunk jack and dials the requested number. A talking connection is then established from CO line, through coupler, to CP station.
- Since Voice Connecting Arrangement CD4 provides no form of supervision, it will be necessary for the attendant to periodically monitor the circuit via the PBX attendant circuit, or to receive a disconnect signal via the CPE, and to remove the cords when conversation is terminated.

5. MAINTENANCE

- 5.01** Check the CO pair and check for loose connections at 31B voice coupler and switchboard trunk jack.

- 5.02** Remove customer connections to terminals 3 and 4 of the 31B voice coupler and perform the following tests:

- (a) Connect a 1013A (or equivalent) hand test set to terminals 3 and 4 of the 31B voice coupler.
- (b) Place the hand test set in the MONITOR position.
- (c) Request the switchboard attendant to plug the station cord into trunk jack of associated 31B voice coupler and to plug the trunk cord into a vacant CO trunk jack and release TALK DIAL key.

Dial tone at normal volume should be heard on the 1013A (or equivalent) hand test set.

- 5.03** When trouble is suspected in the 31B voice coupler, exchange it with another unit known to be working properly.

- 5.04** If the reception is normal, the coupler is working. Replace customer connections to terminals 3 and 4 of the 31B voice coupler.

- 5.05** When in the repairman's judgment the trouble is located in the CPE, the Repair Service Bureau should be notified so that proper Maintenance of Service Charge billing can be initiated as outlined in BSP 660-101-312 entitled Maintenance of Service Charge on Services With Customer-Provided Equipment.



Do not attempt any tests or repairs to the CPE.

6. CONNECTIONS

- 6.01** Refer to Fig. 2 and 3 for a typical connecting arrangement.

- 6.02** The following are typical connecting circuits:

- (a) SD-67034-01—608D Cord Circuit
- (b) SD-66520-01—555 Station Line Circuit
- (c) SD-66198-01—552D Cord Circuit
- (d) SD-66198-01—605A Cord Circuit

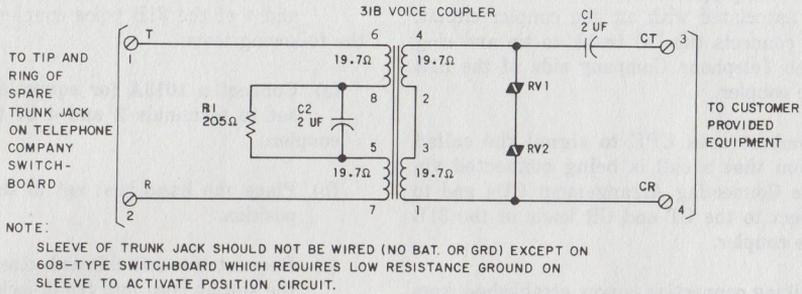


Fig. 2—Connections for 31B Voice Coupler

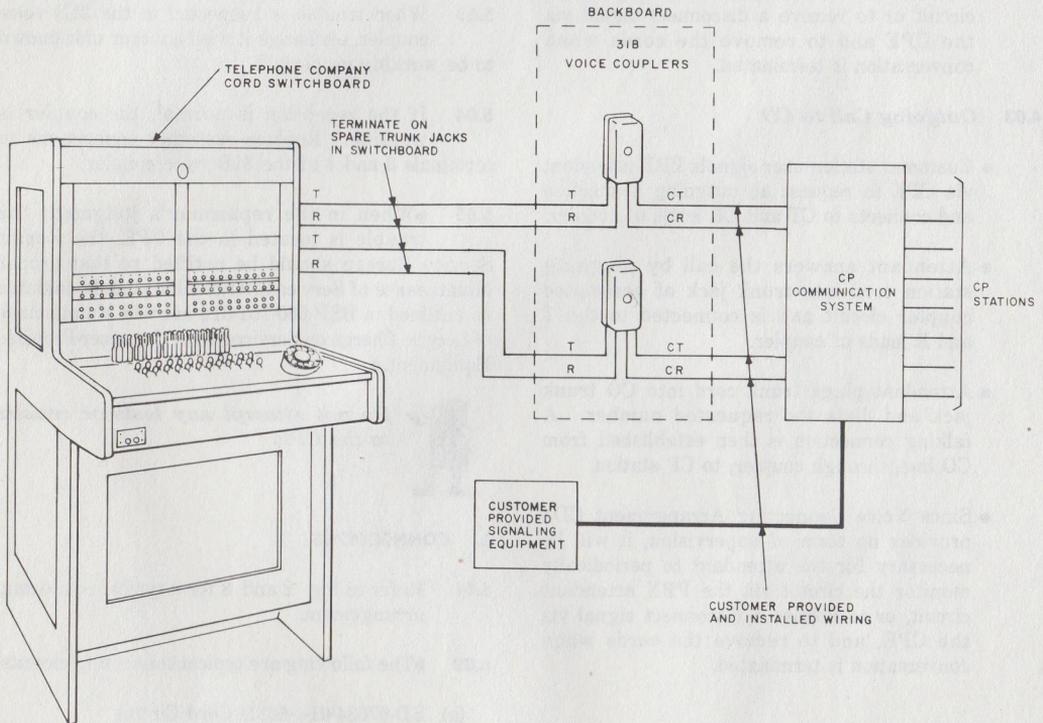


Fig. 3—Typical Arrangement for Two Voice Connecting Arrangements CD4