

VOICE CONNECTING ARRANGEMENT FTP

1. GENERAL

1.01 This section provides identification, installation, operation, maintenance, and connecting information for Voice Connecting Arrangement FTP. The 33A voice coupler (Fig. 1) is used to implement Voice Connecting Arrangement FTP. This arrangement provides a "high-fidelity" connection (see note) between a customer-provided (CP) music or information source and the music-on-hold circuit and/or the paging amplifier circuit in a Bell System 7A or 14A Communication System.

Note: The 3 dB bandwidth of the 33A voice coupler is from 100 Hz to 20 kHz.

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

SD-69911-01 Issue 1—33A Voice Coupler

If this section is to be used with equipment or apparatus reflecting later issue(s) of the drawing, reference should be made to the SD to determine the extent of the changes and the manner in which the section may be affected.

2. IDENTIFICATION

PURPOSE

- To provide a "high-fidelity" connection between a CP music or information source and the music-on-hold circuit(s) and/or the paging amplifier circuit in the 7A or 14A Communication System for the music-on-hold feature and/or background music over the paging speakers when the paging circuit is not in use.
- To limit excessive levels from customer-provided equipment (CPE) and to provide protection for personnel against hazardous voltages.

Note: The output of the CP music source must provide AC coupling only—thus blocking all direct current to the input terminals of the 33A voice coupler.

APPLICATION

- 7A and 14A Communication System

ORDERING GUIDE

- Coupler, Voice, 33A (order as required—see note)

Note: *One* 33A voice coupler will accommodate a maximum of *two* 451A music-on-hold circuits and *three* 457C paging amplifier circuits. The 7A Communication System may be equipped with either *zero* or *one* music-on-hold circuit and either *zero* or *one* paging amplifier circuit; the 14A Communication System may be equipped with from *zero* to *two* music-on-hold circuits and from *zero* to *three* paging amplifier circuits.

- Wire, "G" station, or equivalent (for cabling from the 33A voice coupler to the 7A or 14A Communication System)

Replaceable Components

- Fuse, 35P (3/4 ampere—two per 33A voice coupler)
- Assembly, Cover, 841224751
- Guard, 841223696

DESIGN FEATURES

- Approximate dimensions—4 by 2-3/4 by 2 inches
- Provides dc isolation between 457C paging amplifier circuit and CPE
- Mounts on any flat surface
- Provides 8-ohm nominal input impedance to CP music or information source
- Limits input level from CP music or information source to one watt
- Provides level adjust control between CP music or information source and 457C paging amplifier circuit

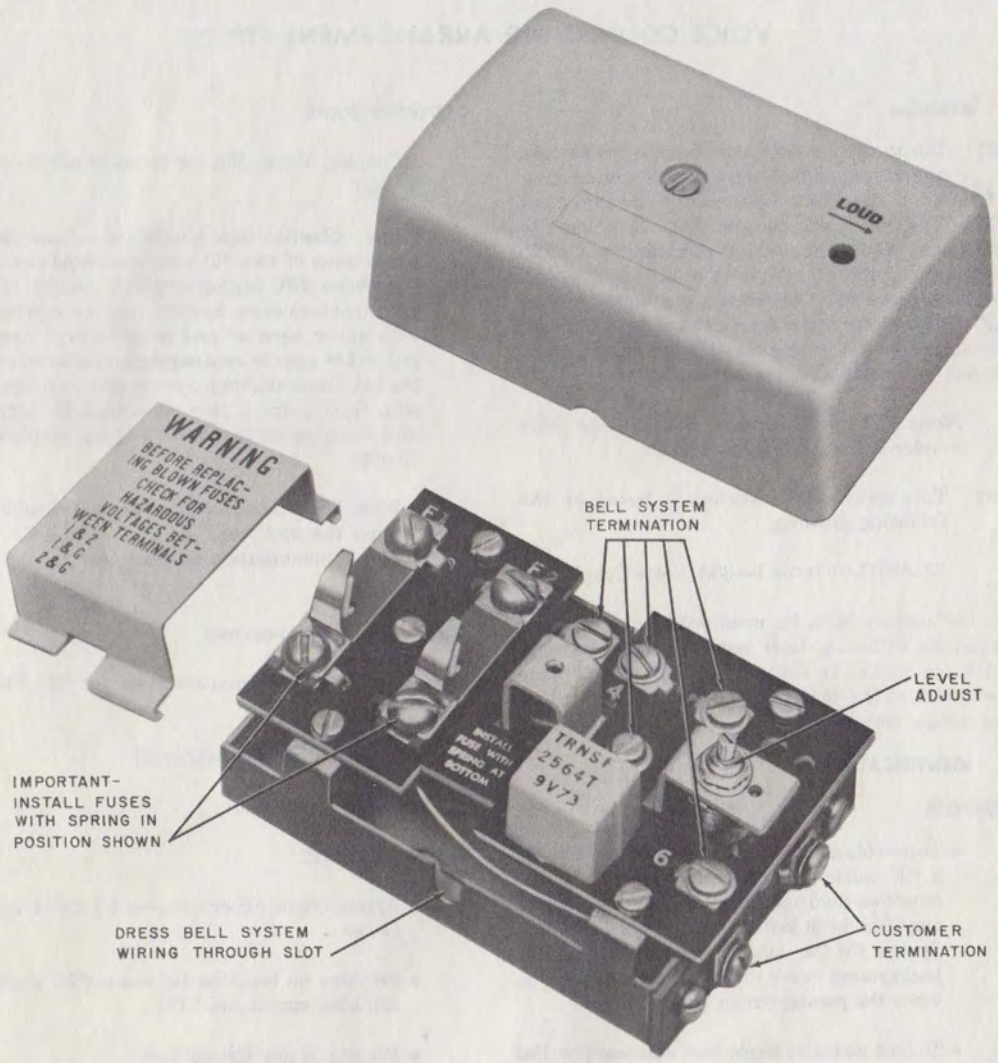


Fig. 1—33A Voice Coupler, with Cover and Fuse Guard Removed

- Has a passband extending from 100 Hz to 20 kHz at the half-power points
- Provides fused protection (3/4 ampere) between CPE and Telephone Company equipment
- Shorts primary winding of T1 to ground when fuses blow, to protect Telephone Company equipment—see Fig. 2
- Provides screw terminals for connections to the CP music or information source and Telephone Company equipment.

3. INSTALLATION AND CONNECTIONS

3.01 The 33A voice coupler will mount on any flat surface. A backboard is not required unless mounting on a damp surface or when a backboard will facilitate mounting.

3.02 The voice coupler should be mounted as near as possible to the KSU in the 7A or 14A Communication System. If the installation is such that the distance between the CPE and the KSU is excessive, the longer leads should be the CP wiring between the CPE and the voice coupler (see Fig. 2). The length of these leads should be determined by the customer; the loop resistance of these leads should not exceed 50 ohms.

3.03 Install and connect the voice coupler as follows:

- (1) Remove the cover from the coupler.
- (2) Using two locally provided screws, mount the coupler on the designated surface. Two keyhole slots are provided in the base for mounting the coupler.
- (3) Make connections from the screw terminals on the coupler, using "G" station wiring or equivalent, to the 7A or 14A Communication System, as shown in Fig. 2. Dress the wiring through the slot in the side of the coupler—see Fig. 1.
- (4) Ascertain that the fuses are installed with the spring in the position shown in Fig. 1.
- (5) Replace cover.
- (6) Have the customer make connections from his music or information source to the screw terminals provided on the coupler.

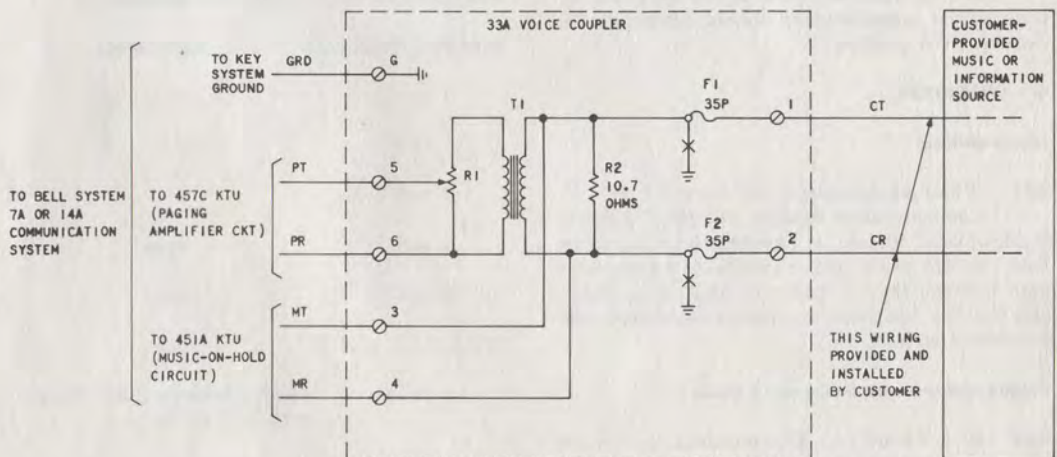


Fig. 2—Connections—Voice Connecting Arrangement FTP

Adjustment at Time of Installation

3.04 When the 33A voice coupler has been installed and connected and customer connections have been made, adjust the coupler as follows:

- (1) Rotate the level adjust potentiometer to the full CCW position.
- (2) Place a call to a 7A or 14A station which is associated with the coupler being adjusted.
- (3) Answer the call and place it on hold.
- (4) Have the customer adjust his music or information source for a comfortable listening level at the held station.
- (5) Disconnect call.
- (6) Dial paging code and adjust potentiometer on each paging speaker for desired volume while paging in a normal voice.
- (7) Disconnect
- (8) Have the customer rotate the level adjust potentiometer on the coupler to the setting which provides the desired level of background music.

3.05 When paging and music-on-hold is provided and background music is not required, the level adjust potentiometer should remain in the extreme CCW position.

4. OPERATION**Music-on-Hold**

4.01 When an incoming call to a 7A or 14A Communication System, equipped with the music-on-hold feature, is answered and placed on hold, the 33A voice coupler provides a transmission path between the CP music or information source and the key telephone equipment associated with the station on hold.

Paging Feature with Background Music

4.02 In a 7A or 14A Communication System equipped with the paging feature, background music can be applied over the paging speakers when the system is not being used for paging.

The paging feature takes precedence over the CP source and temporarily cuts it off; it is reconnected automatically when paging is completed. When background music is provided, the 33A voice coupler provides a transmission path between the CP music or information source and the key telephone equipment associated with the paging zones.

4.03 If the CPE presents excessive signal levels or foreign voltages to the connecting arrangement, the fuse circuit is arranged in such a manner that when one fuse operates it will apply ground to the other fuse causing it to operate and remove the applied voltage from the connecting arrangement.

5. MAINTENANCE

Before replacing blown fuses or attempting any maintenance on the 33A voice coupler, check for hazardous voltages between terminals 1 and 2, 1 and G, and 2 and G.

5.01 When trouble is reported, check for blown fuses and loose or broken connections at the 33A voice coupler.

5.02 Remove customer connections to terminals 1 and 2 and Telephone Company connections to terminals 3, 4, 5, and 6 of the voice coupler. Make the following resistance measurements:

BETWEEN TERMINALS	RESISTANCE
1 and 2	approx. 1 ohm
1 and 3	0
2 and 4	0
1 and 5	open
2 and 6	open
any terminal and G	open
5 and 6	variable between 0 and 46 ohms with level adjust pot.

5.03 When trouble is indicated in the 33A voice coupler, exchange it with a coupler known to be working properly.