



MODEL TPA-1 TELEPHONE PAGING ADAPTOR

OPERATING INSTRUCTIONS

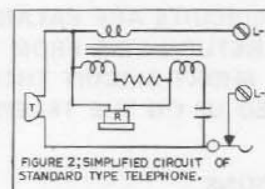
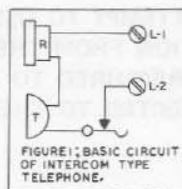
DESCRIPTION

Model TPA-1 is an AC powered adaptor which makes possible the use of regular carbon circuit type telephones instead of microphones for paging and public address systems. It also supplies voltage to these telephones so that they may be operated as a COMM line (party line) when not being used for paging. Model TPA-1 will when connected with a Raymer paging receiver or tuner and amplifier combination mute music while paging. The adaptor provides high and low level outputs for connection to either the microphone or auxiliary inputs of the paging amplifier or receiver. A Music Level control is incorporated in Model TPA-1 to permit a balance between music and page level when used with a separate tuner and amplifier combination. It is housed in a sturdy steel case which may be vertically mounted on a wall or may be placed horizontally on a table or shelf. Model TPA-1 makes possible a complete paging and intercome system using telephones not connected to the public telephone utility.

BASIS OF OPERATION

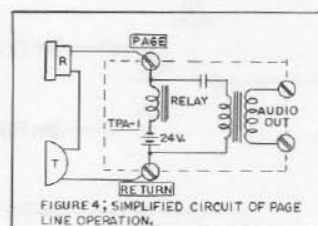
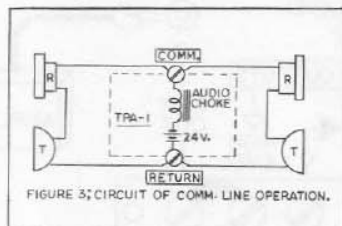
The principal components of a telephone to be used with the Model TPA-1 must include a magnetic earphone and a carbon microphone. The earphone converts the incoming electrical signals into sound waves for receiving and the microphone converts sound waves into electrical signals for transmission. A switch should be included to disconnect the telephone circuit when not in use. In order to communicate between two telephones, an electrical current common to both telephones must flow through these elements. This current is supplied by the power supply in the Model TPA-1.

There are two types of telephone instruments available. The most simple unit is the type used in intercoms. Although such an instrument may include push buttons for signaling and a built-in buzzer, the basic talking path is that shown in Figure 1.



The standard telephone instrument used by the telephone company includes a network to reduce the sidetone heard in the ear piece. The basic talking path of this type unit is shown in Figure 2. Because of the difference between these two types of instruments it is recommended that all of the telephones in an installation be of the same type.

The basic talking path between two telephones on the COMM line is shown in Figure 3. Since the COMM line is a party line, any number of telephones may be connected to this circuit. Communication on the COMM line is not limited to two phones at the same time. Several phones may be used simultaneously; however the sound level at each phone will drop slightly under such conditions.



In the page line operation a relay coil is used instead of an audio choke. The contacts of this relay may be used to activate other paging functions. Audio voltage developed across this coil is coupled to the paging amplifier through an audio transformer. A simplified circuit of page line operation is shown in Figure 4.

UNPACKING

The unit is to be removed carefully from the carton and inspected for any possible damage in transit. If there is any evidence of any damage which might have occurred in shipment, immediately notify your supplier, or the transportation company which delivered it. Claims for damage sustained in transit must be made upon the carrier. Save all packing material for inspection by the claim agent who will furnish you with the proper forms and will also give you the necessary instructions for filing a claim. In addition to the unit there should be a warranty card included in the carton.

To insure proper servicing and to protect your rights under the warranty, be sure to fill in the warranty registration card and mail to the factory within 5 days.

INSTALLATION

IT IS NOT NECESSARY TO REMOVE THE CHASSIS FROM ITS CASE TO WALL MOUNT. To wall mount the unit it is necessary to remove the front cover. This is done by removing the four screws on the front of the unit, which will expose four mounting holes in the rear of the cabinet. The unit may be mounted by using four No. 8 round head screws of the type appropriate for the wall material.

Although the unit is designed to be wall mounted, it may also be placed on a shelf or table. DO NOT place on top of a vacuum tube equipment. DO NOT store or operate in areas where the ambient temperature exceeds 140°F.

CONNECTIONS

In order to connect to the unit it is necessary to remove the front cover. This is done by removing the four screws on the front of the unit.

Remove the AC line cord, and plug into any outlet furnishing 105 to 120 volts 60 Hz AC.

Because of the low current drain of the TPA-1, it may be left running continuously without heat build-up. If however it is desirable to turn the unit on and off with its associated equipment, the AC cord should be plugged into the AC convenience outlet on the amplifier or receiver with which it is used.

TELEPHONE CONNECTIONS

The telephone connections are made by means of a screw terminal board located at the lower left side in the unit. Unshielded cable may be used for connecting to the telephones. To prevent wiring loss, No. 22 gauge wire is recommended. If a telephone is to be used for both paging and COMM line, a paging switch should be added to the telephone as shown in Figure 5. Wiring to such instruments requires a 3-conductor cable.

Wiring to a COMM line only or paging only telephone requires a 2-conductor cable.

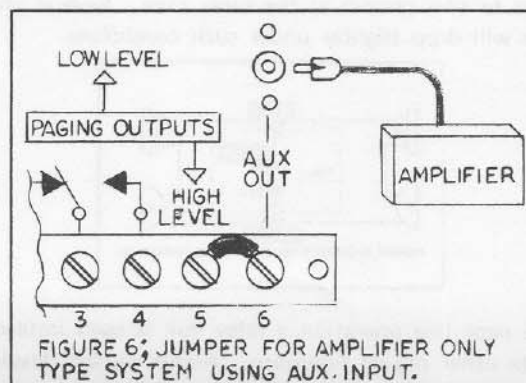
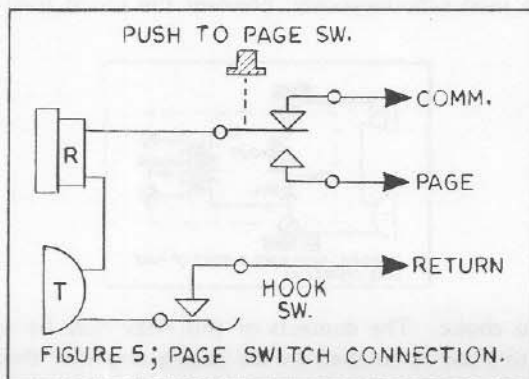
If paging only is desired from some areas, a telephone is not required. A carbon microphone with a push-to-talk switch may be used as the paging source instead of a telephone.

CAUTION:

THE TELEPHONE CIRCUITS ARE BALANCED ABOVE GROUND. DO NOT ATTEMPT TO USE "WATER PIPE" GROUND AS THE RETURN LINE FROM THE TELEPHONES. ANY CONNECTION FROM THE TELEPHONE LINES TO GROUND MAY SHORT CIRCUIT THEIR OPERATION. IF A GROUND IS REQUIRED TO SHORT OUT EXTRANEOUS NOISES PICKED UP ON THE TELEPHONE LINES, IT SHOULD BE CONNECTED TO THE CHASSIS OF THE TPA-1 ONLY.

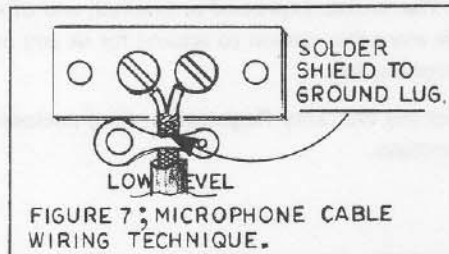
PAGING CONNECTIONS

The paging connections will differ according to the type of installation in which the TPA-1 is to be used. By correctly jumpering the screw terminal board at the lower right hand side in the unit, the TPA-1 may be made universally applicable to all types of paging systems. These systems include: (1) amplifier only with no music, (2) amplifier without microphone precedence used with separate music source such as a tuner, (3) amplifier which includes a microphone precedence circuit used with a separate music source or tuner, (4) paging receiver which includes microphone precedence. Connections for each of these systems are as follows:

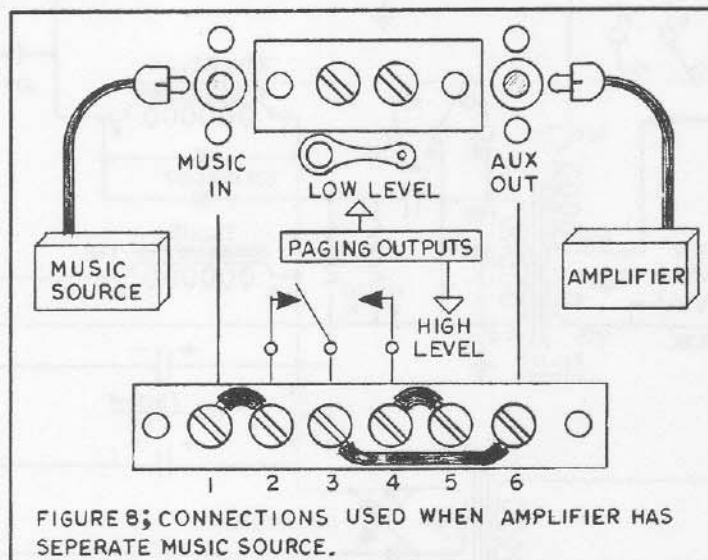


AMPLIFIER ONLY. The preferred method of connection into a paging amplifier is to use the AUX (Radio/Phono) input. This input should be from the High Level paging output of the TPA-1. This is done by jumpering terminal #5 to terminal #6 of the screw terminal board. A shielded audio connector cable may then be used to connect the AUX OUT of the TPA-1 to the AUX IN of the amplifier. Refer to Figure 6.

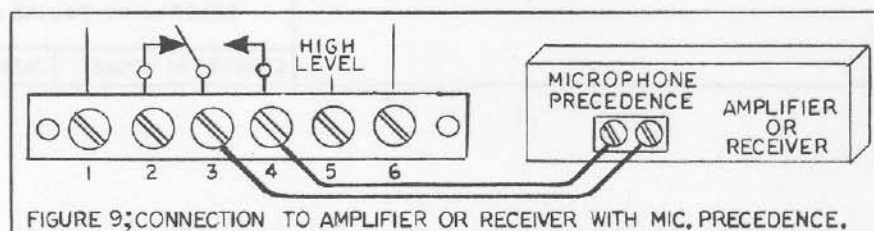
When the only available input into an amplifier is to a MICROPHONE INPUT, this input should be from the Low Level output of the TPA-1. In order to prevent ground loops the audio cable connecting the TPA-1 to the amplifier should be a two-conductor shielded cable. The correct wiring technique for connecting this cable to the Low Level paging output screw terminals of the TPA-1 is shown in Figure 7. If the microphone input of the amplifier is unbalanced, connect one of the conductors in the cable to the shield only at the microphone connector. The other conductor in the cable is connected to the hot lead of the microphone connector.



AMPLIFIER WITH SEPARATE MUSIC SOURCE: The relay contacts in the TPA-1 are activated only when the page line is activated. Therefore, these contacts may be used to switch the input to the amplifier from the music source (tuner) to the High Level paging output of the TPA-1 during the page function. This connection is made by jumpering terminal #1 to terminal #2, terminal #3 to terminal #6, and terminal #4 to terminal #5 on the screw terminal board of the TPA-1 as shown in Figure 8. When connected in this fashion the Music Level knob on the TPA-1 is used to control the balance between the music and paging levels.



AMPLIFIER WITH PRECEDENCE AND SEPARATE MUSIC SOURCE. The relay contacts on the TPA-1 are used to operate the microphone precedence circuit of the amplifier during the page function. This connection is made by connecting two wires from terminals #3 and #4 to the two microphone precedence terminals of the amplifier as shown in Figure 9. The paging input to the amplifier may be from either the High Level or Low Level paging output of the TPA-1 as previously described under **AMPLIFIER ONLY** connection.



PAGING RECEIVER. The microphone precedence circuit of the paging receiver is used to mute the music during the page function as previously described and shown in Figure 9. The paging output of the TPA-1 is connected to the microphone input of the receiver as described under **AMPLIFIER ONLY** connection.

WARRANTY

It is recommended that any unit on which service is required be processed through your distributor or installation company wherever possible.

In order for the above Warranty to be in effect the Warranty Registration Card enclosed with the unit must be filled out completely and mailed within five days of purchase.

