

STATION EQUIPMENT

Station Key Systems and Special Telephone Equipment
Type 87 Handset - Busy Visual Signals

<u>Table of Contents</u>	<u>Page No.</u>
1. General	1
2. Busy Visual Control Unit - Description and Use	1

1. GENERAL

1.01 This section covers the provision of busy visual signals in Type 87 handsets, which indicate lines that are in use. This optional feature warns users against cutting in on lines that are in use.

1.02 The control unit described in this section enables the same neon signal lamps in the handset to double as busy visual signals and thus eliminate the need for external lamps to perform this function.

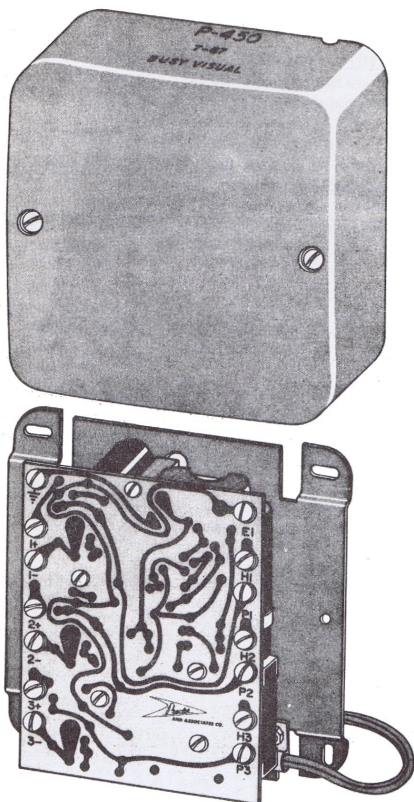
2. BUSY VISUAL CONTROL UNIT - DESCRIPTION AND USE

2.01 CAUTION! Before working on the P-450 control unit, the Type 87 handsets, and the connecting blocks in the system, disconnect the AC power to the control unit.

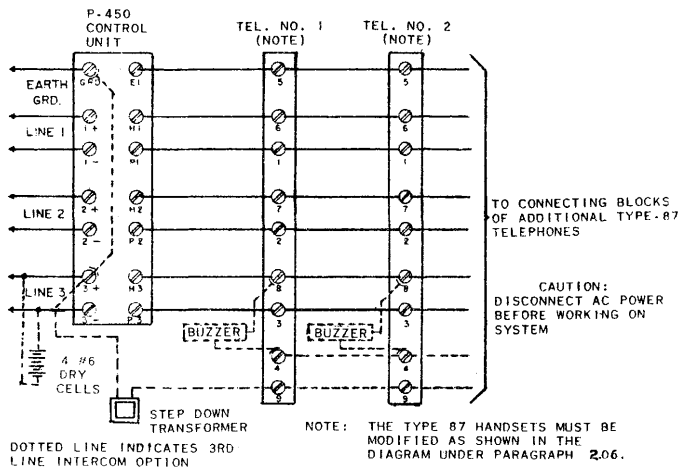
2.02 The P-450 control unit is intended to operate up to five Type 87 telephones, using one to three lines. This is a total of 15 indicator lamps, maximum. This number should not be exceeded.

NOTE: It is sometimes possible, but not recommended, to operate up to seven telephones when only two lines are being used.

2.03 The busy visual control unit is illustrated below. It is similar in appearance to the Type 33 bell box and measures 5-1/4" x 5-1/4" x 2" in size.



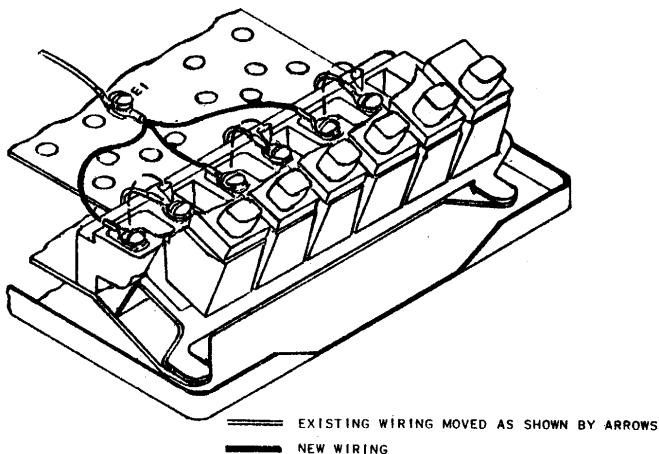
2.04 This control unit is connected in series with the incoming lines and the telephone instruments as shown in the diagram below. The polarity of these connections is very important and should be checked carefully. If the control unit is being installed in an existing system, the wiring should be checked to make certain that the H1, P1, H2, P2, and H3, P3 connections are carried correctly throughout the systems; i.e., the H1 and P1 connections are not transposed somewhere in the system.



2.05 The correctness of these connections is best checked inside each telephone with the aid of a voltmeter, making certain of the polarity in each case. This should be done before the unit is plugged in. If common audible signal units are being used, the correctness of their connections should also be checked.

2.06 The terminal "E1" on the control unit is the output of a power supply which is connected to one side of each of the neon lamps in the Type 87 telephone, as shown in the diagram below.

BUSY-VISUAL MODIFICATION
TYPE-87 TELEPHONE
FOR USE WITH P-450 CONTROL UNIT



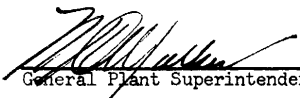
2.07 If the telephones are being equipped for exclusion service and it is not being used, the two spade tip terminals under the E1 screw should be removed and taped. The common lead from the wiring harness can then be connected as shown in the diagram above.

2.08 If the exclusion feature is being used, the common side of the wiring harness should be connected to any other unused line cord wire and carried throughout the system on that wire. No other connections should be made to this wiring except the common wire of the wiring harness in each telephone and E1 terminal of the P-450 control unit. (See diagram on page 3.)

2.09 If the lamps associated with any line should light with all phones on hook, check the wiring and the polarity of connections. If one or two lamps in the system flicker erratically when the line associated with them is in an off-hook condition, they should be replaced as faulty.

2.10 Important Notice: Apply the caution labels supplied with the control unit to the bottom of each handset in the system and to the inside of each terminal block cover.

APPROVED:


General Plant Superintendent


Chief Engineer