

P.B.X. SYSTEMS
NO. 552A, 552B, 552D OR 552E
AUXILIARY SIGNAL, BATTERY
CUT-OFF, BUZZER, FUSE ALARM
AND NIGHT ALARM CIRCUIT

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Information for ordering the battery
cut-off relay for Fig. 5 is added as
information Note 304.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2242-WVS-PWS-SF

PEX SYSTEMS
NO. 552A, 552B, 552D, OR 552E
AUXILIARY SIGNAL BATTERY
CUT-OFF, BUZZER, FUSE ALARM
AND NIGHT ALARM CIRCUIT

CHANGES

B. CHANGES IN APPARATUS

B.1 Superseded Superseded by
4C Foot Sw., KS-16821, L1 Foot Sw.,
Fig. B Fig. G

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Fig. "B" is rated Mfr. Disc.

D.2 Fig. G is added.

D.3 Fig. 1 is revised to show connections
to Fig. G.

D.4 Notes 102 and 104 are revised to show
replacement of Fig. B with Fig. G.

D.5 CAD 1 is revised to show connections
to Fig. G.

All other headings, no change.

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DEPT. 2233-ROB-PWS-AE

FE-8

CIRCUIT DESCRIPTION

CD-65786-01
Issue 2-D
Appendix 1-D
Dwg. Issue 3-D

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NO. 552A, 552B, 552D OR 552E
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CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 In Figure 4, the multiple on the lead
from the FA fuse to the FA relay is
removed.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2233-WVS-PWS-RA

P.B.X. SYSTEMS
NO. 552A, 552B, 552D OR 552E
AUXILIARY SIGNAL, BATTERY
CUT-OFF, BUZZER, FUSE ALARM
AND NIGHT ALARM CIRCUIT

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 In Circuit Note 102, the part under "Position Fuse Alarm" is revised.
- D.2 In Figures 2 and 4, the connecting information is changed.
- D.3 When this circuit connects to an existing installation such as a 701A, the fuse alarm lamp similar to Figure D will be shown on other drawings, therefore, Options K, M and V are not required in Figure D and are removed without record.
- D.4 Cabling Figures 1, 2, 3 and 4 are revised.
- D.5 Equipment Note 201 and 202 are revised and 203 added.

All other headings under Changes, no change.

1. PURPOSE OF CIRCUIT

- 1.1 This circuit provides an audible signal to the PBX attendant when a call is originated during periods of light load or when the PBX is not fully attended.
- 1.2 Provision is made for an audible and visual signal indicating switchboard, relay rack, apparatus cabinet or power fuse failure.

2. WORKING LIMITS

For max. station conductor loop see the station line circuit.

The insulation resistance of the combinations of lines without line relays connected to one relay LA, RA or Figure 2 shall not be less than 8200 ohms.

3. FUNCTIONS

- 3.1 To provide an audible signal to the PBX attendant when a call is originated while the (BUZ) key is normal.
- 3.2 To provide an audible and visual signal to the PBX attendant when a switchboard, relay rack, apparatus cabinet or power fuse fails while the (FA) key is normal.

- 3.3 To provide a means to silence the audible signal associated with calling stations or trunks.
- 3.4 To provide a means to retire the audible signal to the PBX attendant after a fuse fails.
- 3.5 To provide for removal of battery to the switchboard when it is not attended.
- 3.6 To provide a ground auxiliary relay for operation with trunks and tie trunks.
- 3.7 To provide a visual position fuse alarm, individual to each position.
- 3.8 To provide a battery auxiliary relay for operation with station lines.

4. CONNECTING CIRCUITS

When this circuit is listed on a key sheet the connecting information shown thereon is to be followed.

- 4.01 552A, 552B, 552D, 552E or 605A Cord Circuit - SD-66198-01.
- 4.02 Two-Way Central Office Trunk Circuit - SD-65657-01*.
- 4.03 Tie Trunk Circuit - SD-65718-01*.
- 4.04 Station Line Circuit - SD-66082-01*.
- 4.05 Ringing Leads Circuit - SD-65771-01.
- 4.06 701B Misc. Alarm Ckt. - SD-65761-01*.
- 4.07 Universal Jack Circuit - SD-65778-01.
- 4.08 Manual Station Line Circuit - SD-65776-01.
- 4.09 Charge and Discharge Circuit - SD-80740-01*.
- 4.10 Intercepting Trunk Circuit - SD-65781-01.
- 4.11 Relay Rack Fuse Alarm Circuit - SD-65779-01.
- 4.12 552A Buzzer Circuit - SD-66014-01.

FE

- 4.13 552B Buzzer, Fuse Alarm and Battery Cut-off Circuit - SD-65685-01.
- 4.14 552D Night Alarm Circuit - SD-66467-01.
- 4.15 552E Buzzer, Auxiliary Signal, Fuse Alarm and Battery Cut-off Circuit - SD-65686-01.

*Typical

DESCRIPTION OF OPERATION

5. AUXILIARY SIGNAL CIRCUIT (FIGS. 1, 2, 3, B, C AND OPTIONS N, Q, W, X, Y AND Z)

- 5.1 The common equipment (Fig. 1 less Options Q, N and Fig. C is furnished in each switchboard section to provide a battery and a ground auxiliary signal relay per panel.
 - 5.2 Option Q or N and Figure C are furnished in the first or head section.
 - 5.3 Option Y provides cord supervisory lamps without an auxiliary signal relay.
 - 5.4 Option Z provides cord supervisory lamps with an auxiliary signal relay.
 - 5.5 Option X provides a capacitor across the winding of the station line auxiliary relay to reduce crosstalk between PBX stations connected to line circuits, without line relays, while awaiting the attendant to answer.
 - 5.6 Figure 1 may be connected to other Figures 1 or to similar circuits (552A buzzer, 552B buzzer, fuse alarm and battery cut-off, 552D night alarm or 552E buzzer, auxiliary signal, fuse alarm and battery cut-off circuit).
 - 5.7 With the buzzer key (Fig. C) or the foot switch (Fig. B) normal, ringing current is connected to the make contacts of relays LA, RA, LT, RT, A or T. When any station line lamp, cord supervisory lamp, trunk lamp or tie trunk lamp is lighted, the associated auxiliary signal relay operates and completes the circuit thru the buzzer of AC ringer which operates to give an audible signal to the PBX attendant. The audible signal may be retired by the attendant answering a call, removing the cord from a station jack, operating the foot switch or buzzer key or by the station answering on a cord circuit.
- When this circuit is in a section other than the head section or connects to a similar circuit, the operation of any auxiliary signal relay will complete the circuit to the buzzer or ringer in the head or other circuit via leads 1 and 2 or E and F.
- 5.8 The purpose of the A capacitor is to reduce the ringing potential on the

frame of the auxiliary relays and to block the DC component when AC-DC ringing current is used.

6. FUSE ALARM CIRCUIT (FIGS. 4, A, D, E, F AND OPTIONS V & T)

6.1 Installations using only this circuit. Each switchboard section is provided with a fuse alarm relay per Figure 4. Each head or first section will be equipped with a switchboard fuse alarm lamp (Figure D) for each section in the lineup. In a switchboard used as a dial auxiliary, "V" option is required. A blown fuse will connect battery to the alarm bar. Battery on the alarm bar is connected thru a protective fuse to (1) the secondary winding of relay FA which operates and (2) to lead FA which lights lamp FA in the head section. Relay FA operated connects ground on lead A which causes the associated dial alarm circuit to function. In a manual installation Option T is required. Figure A is required in the head section with Figures E and F as required. A blown fuse connects battery to the alarm bar. Battery on alarm bar is connected thru a protective resistance to the secondary winding of relay FA which operates and to lead FA which lights lamp FA in the head section. Relay FA operated connects leads G & H together thru the fuse alarm key (Fig. A) to complete the circuit thru the buzzer or AC ringer which operates as an audible signal.

The audible signal may be silenced by operating the fuse alarm key. If a change, discharge, or relay rack fuse blows, battery is connected thru either Figure E or F to operate relay FA on the primary winding which functions as above.

6.2 Installations using this circuit as additions. Each switchboard section is provided with a fuse alarm relay per Figure 4.

The switchboard fuse alarm lamp circuit for the added sections will be added in the head section and wired per the original circuit.

In a switchboard used as a dial auxiliary, "V" option is required. A blown fuse will connect battery thru a protective fuse to the secondary winding of relay FA which operates. Relay A operated connects ground to lead A. Ground on lead A in the 701A misc. alarm circuit will light the switchboard fuse alarm lamp and cause the alarm circuit to function.

It is assumed that no addition will be made in either the 701B or 740E PBX.

In a manual installation, a blown fuse connects battery to the alarm bar. Battery on the alarm bar is connected thru a protective fuse to the secondary winding of relay FA and to lead FA. Relay FA operates but has no function. Battery on lead FA lights the switchboard fuse alarm lamp circuit in the head position as provided by the originating circuit.

7. BATTERY CUT-OFF CIRCUIT (FIGURE 5)

With the battery key (BCO) in the "OFF" position battery is disconnected from the entire manual switchboard with the exception of the long line or long trunk circuits. With the battery key (BCO) in the "ON" position battery is supplied to all the PBX circuits from the local battery associated with the PBX.

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DEPT. 2233-WVS-PWS-DR