PBX SYSTEMS
NO. 701A, 701B OR 740E
AUXILIARY LINE CIRCUIT
FOR USE BETWEEN SELECTOR BANK MULTIPLE AND STATION LINE CIRCUIT TO PROVIDE FOR SINGLE DIGIT ACCESS TO THE ASSOCIATED STATIONS

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Added W option and made X option Mfr. Disc. to reduce acoustical disturbance in calling partys' receiver when called party answers.

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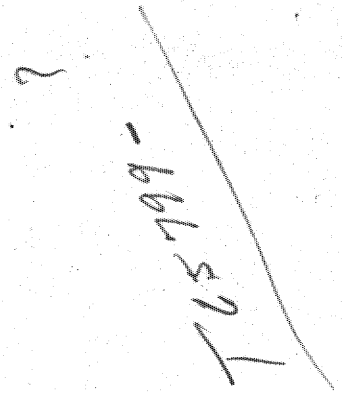
DEPT. 5336-DJG-PNR-ER



PBX SYSTEMS
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FOR USE BETWEEN SELECTOR BANK MULTIPLE AND STATION LINE CIRCUIT TO PROVIDE FOR SINGLE DIGIT ACCESS TO THE ASSOCIATED STATIONS

1. PURPOSE

This circuit provides for ringing, transmission, and supervision from a selector level to a station; so that frequently called telephones, such as Room Service, Bell Captain, etc., in a hotel may be reached by dialing a single digit.

2. WORKING LIMITS

Max. external ckt. loop	1000 ohms
Min. Insulation Res.	20,000 ohms

3. FUNCTIONS

3.01 To connect ground to selector bank conductor S for holding the switch train.

3.02 To connect ground to the station line circuit S or S2 conductor to operate the cut-off relay and busy the line at its other appearances.

3.03 To connect machine ringing to the station line.

3.04 To return ringing tone to the calling party.

3.05 To disconnect ringing and tone when the called station answers.

3.06 To provide a transmission circuit and supply talking battery to the calling and called parties.

3.07 To return reverse battery supervision when the called station answers.

3.08 To remove ground from the All Trunks Busy register lead K.

3.09 On completion of a call to connect a momentary ground to lead PC for operation of a peg count register.

3.10 To connect ground to the selector bank conductor S as a busy condition when a make-busy key is operated at the associated station.

3.11 To provide for momentarily removing the make-busy ground in order to release a call which was in process at the time the make-busy key was operated.

3.12 To connect busy ground to the selector bank S conductor when the associated line is made busy elsewhere.

4. CONNECTING CIRCUITS

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

4.01 First or Incoming Selector - SD-66359-01*.

4.02 Selector Connector - SD-65721-01*.

4.03 Station Line Ckt. - SD-66715-01*.

4.04 Traffic Register Ckt. - SD-65774-01*.

4.05 Ringing Leads Ckt. - SD-65771-01*.

4.06 Alarm Ckt. - SD-65660-01.

4.07 Tone, Ringing and Interrupter Ckt. - SD-65675-01.

*Typical

DESCRIPTION OF OPERATION

5. GENERAL

This circuit behaves almost as if it were a connector permanently connected to a particular line in the bank multiple. The relays have the same designations as their counterparts in a PBX connector. It is connected to a bank terminal of a first or incoming selector, or of a "selector" level of a selector connector, so that it may be seized by dialing a single digit. The other end of the circuit is connected to a station line circuit in multiple with the usual connector bank connection. Thus it provides a "short-cut" access to the station without other effect on the use of the station.

In addition a key, lamp indicator and relay are provided in order to make the selector appearance of a group of lines busy during off-hours so that any incoming calls at such times will automatically be diverted to an attendant trunk etc., on a higher numbered selector bank terminal.

6. SEIZURE

In the seizure process the selector or selector connector connects ground to the

S conductor. This will operate the (CO) relay of the associated line circuit. The incoming loop closure operates relay (A), which in turn operates (B). (B) grounds the S conductor to hold the switch train and to busy the station line at its other appearances. (B) also connects machine ringing to the called line, and ringing tone to the calling line. (B) is slow to release in order to remain operated in case additional digits are inadvertently dialed. (B) also removes ground from the All Trunks Busy Register lead K. Relay (F) is designed to not operate on the ringing current.

7. CALLED STATION ANSWERS

When the called station answers a dc circuit is established through the station, causing (F) to close its #12 contact due to the dc component of the ringing current through its 220 ohm winding. The #12 contact establishes a local circuit to the 1150 ohm (F) winding which fully operates the relay. Relay (F) is a wire spring equivalent of the usual 222 type ring-trip relay.

(F) disconnects machine ringing, ringing ground, and ringing tone, and connects the windings of relay (J) together with capacitors (T) and (R) to the called station. (J) operates reversing the battery and ground toward the calling station in order to furnish supervision in the case of a tie-trunk call.

8. DISCONNECT

8.1 If the called station disconnects first relay (J) releases, giving disconnect supervisory polarity toward the calling party.

8.2 When the calling party disconnects (either before or after the called party has disconnected), (A) releases, releasing (F). (F) opens the circuit to (J) which releases if it has not already done so. (F) also opens the circuit between the calling line and the (A) relay windings via the 6M and 8M contacts of (J). This is to prevent reoperation of (A) when the 6 and 8 contacts of (J) bunch as it releases. (F) also releases (B) which opens the circuit to the called station, and removes ground from the S conductor to release the line finder and selector. During the releasing time of (F) ground is connected to the peg count lead PC.

9. GROUP MAKE BUSY

For uniformity of equipment arrangements a make-busy relay (MB) is provided with each pair of Auxiliary Line Circuits. Where it is desired to make busy the selector level appearance of a line or group of lines Fig. 3 will be provided near the associated telephones, and wired to the associated (MB) relays.

Operation of the (MB) key will light the indicator, and will operate the MB relays. Each (MB) relay grounds the selector bank S conductors of the associated pair of lines, and breaks the connection to the associated line circuit S conductors. This permits the telephonesto be used for originating calls, or for receiving calls from the switchboard or from the connector appearance.

Calls in process at the time the (MB) key is operated will each be released as disconnect occurs. On such a call, when the calling party disconnects relay (A) will release the associated (MB) relay. A moment later (B) releases removing ground from the S conductor, thus releasing the switch train. (B) released also recloses the (MB) operating circuit. (MB) reoperates, reconnecting ground to the S conductor.

During the time the (MB) is released, the other line of the pair will be unbusied, and may, of course, be seized. This should be no problem because it is not expected that the key would be operated except during light load periods, and further, should an occasional call seize a line at such a time it would ring the line and either be answered or not, and would eventually be winked off as described above.

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DEPT. 2233-ROR-PWS-UC