

CIRCUIT DESCRIPTION•
BELL TELEPHONE LABORATORIES, INC.,
SYSTEMS DEVELOPMENT DEPT., NEW YORK.
PRINTED IN U.S.A.

CD-20138-01
Issue 2
Appendix 2-D
October 26, 1927
(2 Pages) Page 1

PANEL MACHINE SWITCHING SYSTEM
MISCELLANEOUS REGISTERS
FOR OFFICES USING
FINALS CONTROLLED BY EXTERNAL LINE RELAY

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 No change.

B. CHANGES IN APPARATUS

B.1 No change.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLY-
ING TO ADDED OR REMOVED APPARATUS

C.1 No change.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Rating changed from Provisional to A & M Only and
replacement note added - Replaced by SD-21127-01.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332-C

MAR)
WHM) AAW

CIRCUIT DESCRIPTION
BELL TELEPHONE LABORATORIES, INC.,
SYSTEMS DEVELOPMENT DEPT., NEW YORK.

(2 Pages) Page 1
CD-20138-01
Issue 2-D
Appendix 1-D
November 11, 1925.

PANEL MACHINE SWITCHING SYSTEM
MISCELLANEOUS REGISTERS
FOR OFFICES USING
FINALS CONTROLLED BY EXTERNAL LINE RELAY

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 No change.

B. CHANGES IN APPARATUS

B.1 No change.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLY-
ING TO ADDED OR REMOVED APPARATUS

C.1 No change.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Circuit rating is changed from Preliminary to
Provisional.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. PRINCIPAL FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332-C

LES) GH
WHM)

CIRCUIT DESCRIPTION
BELL TELEPHONE LABORATORIES, INC.,
SYSTEMS DEVELOPMENT DEPT., NEW YORK.

(6 Pages) Page 1
CD-20138-01
Issue 2-D
October 14, 1925
Replacing all
Previous Issues.

PANEL MACHINE SWITCHING SYSTEM
MISCELLANEOUS REGISTERS
FOR OFFICES USING
FINALS CONTROLLED BY EXTERNAL LINE RELAY

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 None.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLY-
ING TO ADDED OR REMOVED APPARATUS

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Lead PBR was designated PB, in Figure 9.

D.2 In Figure 9, connecting circuit was "to cordless "B"
incoming selector circuit".

OPERATION

3. FUNCTIONS

3.1 Registering number of calls reaching overflow.

3.2 Counting number of times all paths busy condition
is reached.

3.3 Registering operator's peg count.

- 3.4 To give an audible and visual signal at the trouble desk when a district selector goes to the overflow terminals of a permanent signal trunk group of a district frame.
- 3.5 To record, by means of a message register, the number of times a district selector goes to the overflow terminal of a permanent signal trunk group.
- 3.6 To silence the audible and extinguish the visual signal and to restore the circuit to normal by means of a key located at the sender monitor position.
- 3.7 To register each call handled by each selector circuit.

4. CONNECTING CIRCUITS

- 4.1 Full mechanical, key indicator and cordless incoming selectors which are arranged to control final selections.
- 4.2 District selectors.
- 4.3 Two and three-wire office selectors.
- 4.4 Final selectors.
- 4.5 Senders.
- 4.6 1-A peg count checking set.
- 4.7 Trouble desk auxiliary signal circuit.
- 4.8 Subscriber sender group busy signal circuit.
- 4.9 Local operating room desk jack circuit.

DETAILED DESCRIPTION

5. FULL MECHANICAL, KEY INDICATOR OR CORDLESS INCOMING OVERFLOW REGISTER CIRCUIT (FIGURE 1)

- 5.1 When a selector reaches the overflow terminals, ground is connected to the tip terminal and

operates the (T) relay thru the winding of the message register. The (T) relay when operated locks to ground on its armature to provide sufficient time to insure complete operation of the register. When the register is fully operated it short-circuits the winding of the (T) relay which releases and opens the locking circuit.

5.2 In intercepted cordless inoomings, ground for registering may be supplied from the repeating coil in the intercepted operator's cord circuit or may be supplied from the "Z" commutator. The operation of the register takes place in the same manner as described in paragraph 5.1.

5.3 When this figure is used with key indicator inooming selectors, the ring terminals should be multiplied to the 400 ohm resistance. When the selector switch moves thru the ringing position by means of the "Z" commutator, it rests in the talking position. The interrupter alternately operates and releases the supervisory relay in the incoming selector, giving a flashing signal to the key indicator operator. The overflow register operates in the same manner as when connected to full mechanical or cordless inoomings.

6. DISTRICT AND OFFICE OVERFLOW REGISTER CIRCUIT (FIGURE 2) This circuit may be used with district or office selectors to record the number of times the selectors in the group go to the overflow terminals. When a selector comes to rest on the overflow terminals, its sequence switch advances to overflow position and, in so doing, connects ground from the "Z" commutator thru the tip terminal and windings of the (L) relay and message register to battery. The (L) relay operates and locks to ground on its armature to provide sufficient time to insure the complete operation of the register. When the register is fully operated, it short-circuits the winding of the (L) relay which releases and opens the locking circuit.

7. PERMANENT SIGNAL TRUNK GROUP OVERFLOW REGISTER CIRCUIT (FIGURE 3) When a receiver is off the switchhook at a subscriber's station for a certain length of time, or a repair man's test set is across the line, and the plug of the sender monitor's cord circuit has been momentarily inserted in the make-busy jack of the sender, the line is connected to a permanent signal trunk group

CD-20138-01 - Iss. 2-D - Page 6

momentarily connected to lead "GR" causing the (L) relay
and message register to operate as described in paragraph 6.

BELL TELEPHONE LABORATORIES, INC.

16

DEPT. 332-A-1

JB)
WHM) TE