

Western Electric Co., Incorporated,
Engineering Dept.,
New York.

(2 Pages) Page #1.
Issue 3 - BT-431183.
Replacing all previous issues.
February 8, 1921.

METHOD OF OPERATION
SIGNAL CIRCUIT

Dialing and Dial Tone to Operator - Full Mechanical Switching System.

GENERAL DESCRIPTION

1. This circuit is used, as a dialing and dial tone circuit in connection with zero, intercepting, and combination zero and intercepting operator's cord circuit, in a full mechanical switching office.

DETAILED DESCRIPTION

OPERATION

2. When the dial key associated with the cord circuit (not shown) is operated a circuit is closed from ground through the associated sender circuit over lead TD, winding of the H relay, contact of the 1-A dial, RD lead to battery in the associated sender circuit, operating the H relay. The H relay operated, closes a circuit from ground on its armature, break contact of the DT-1 relay, to battery through the winding of the DT relay which operates. The operation of the DT relay closes a circuit from dial tone through the associated sender circuit over leads TD and RD, contacts of the 1-a operator's dial and make contacts of the DT relay, leads R and T to the associated operator's telephone circuit. During the dialing period, the circuit through the TD and RD leads is opened and closed in unison with the break and make of the contacts of the dial and the H relay is short circuited through the contacts of the dial, releasing the relay. The release of the H relay opens the holding circuit through the DT relay which releases. The release of the DT relay opens the dial tone circuit through leads T and R receiving tone from the associated operator's telephone set. When the dial key associated with this circuit (not shown) is restored to normal, after the dialing period, the circuit through the H relay is opened, releasing the relay and restoring the circuit to normal. The H relay is shunted by a 18-G resistance to prevent the operator from receiving a severe click in the receiver when the holding circuit through the relay is opened by the release of the dial key.

3. If the listening key should be operated when the operator operates the associated dial key, a circuit is closed from battery or ground as the case may be through the contacts of the listening key, lead REL to ground or battery through the DT-1 relay, operating the DT-1 relay. The operation of the DT-1 relay opens the circuit through the DT relay preventing the dialing tone being connected until the listening key has been restored to normal.

CIRCUIT REQUIREMENTS

OPERATE

NON-OPERATE

RELEASE

B5
(DT-1)

Test .027 amp.
Readj. .015 amp.

Test .0043 amp.
Readj. .0046 amp.

Spl.E17
per D-8699
coded E467
(H)

Through relay winding:
Readj. .013 amp.
Through parallel
combination with
18-G resistance:
Test .032 amp.
Readj. .029 amp.

Through relay winding:
Readj. .0015 amp.
Through parallel
combination with
18-G resistance:
Test .0017 amp.
Readj. .0033 amp.

Spl.E8
per D-20216
(Coded E563)
(DT)
(DT-1)

Test .009 amp.
Readj. .008 amp.

Test .0047 amp.
Readj. .005 amp.

ENG.--CAL-VL.
7/16/21.

CHK'D.--WJT.

APPROVED - C. L. SLUYTER, G.M.L.