

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

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METHOD OF OPERATION  
TELEPHONE CIRCUIT

Sender Monitor's Position - Arranged To Trip Machine Ringing - And To Give Supervision To Zero Operator - With Incoming Call Feature - Trouble Desk - Full Mechanical Power Driven System.

GENERAL DESCRIPTION

1. This circuit is used to connect to the trunk, tie line and cord circuits which terminate in a sender monitor's position.
2. When the plug of a sender monitor's cord is inserted in a jack of a line terminating at the position, the telephone circuit is connected across the cord of the trunk for talking. During the time the operator is busy, the incoming call circuit is disconnected from the trunk circuit and it is connected to a tone circuit. If the distant operator comes in on the call circuit a tone will be received as a notification that the called operator is busy. At the same time a lamp is lighted at the called position as an indication that an operator is awaiting on the call circuit. When the calling operator releases the call circuit key, the lamp is extinguished and the tone is removed. When answering calls having machine ringing such as incoming calls on plugging up lines, the ringing is tripped before the operator is connected to the line.
3. This circuit is provided with a secondary cut-out key which connects the receiver across the tip and ring of the circuit and cuts out the secondary of the induction coil and also ringing key for ringing on outgoing calls.
4. The circuit is arranged to provide supervision on calls to or from the zero operator's position.
5. Should the operator answer a call having manual ringing the operator's set is not connected across the circuit until the ringing ceases.

DETAILED DESCRIPTION

OPERATION

6. The insertion of the plug of a sender monitor's cord circuit in the jack of a plugging-up line operates the CW relay and the T relay in series after certain functions have been performed in the cord circuit. The T relay operated, connects the telephone set to the cord and disconnects the TP relay from the tip and ring of the cord. The CW relay operated, removes the tip and ring of the incoming call circuit from the telephone set and connects the ring to a tone circuit.



At the same time, battery and ground are connected to the ring and tip respectively of the incoming call circuit through the windings of the CW-1 relay. Under this condition, if a key associated with the distant end of the incoming call circuit is depressed the CW-1 relay operates through the calling operator's telephone circuit lighting a pilot lamp as an indication that an operator is waiting on the call circuit. The release of the outgoing call circuit key at the distant operator's position releases the CW-1 relay, extinguishing the lamp. If a call is answered while manual ringing is connected to the line the TP relay operates on ringing current over the T and R leads. The TP relay operated, opens the S lead thereby preventing the CW and the T relays from operating, and the telephone set is left disconnected from the tip and ring of the cord. When the ringing current is removed the TP relay releases, allowing the T relay and the CW relay to operate in series.

7. When the plug of the sender monitor's cord circuit is withdrawn from the jack of the line, after certain functions have been performed in the cord circuit the T and the CW relays are released disconnecting the telephone set from the cord, connecting the TP relay across the cord and disconnecting the ring of the incoming call circuit from the tone circuit.

8. When the operator flashes on a connection by operating the "Flash" key, the distant operator's challenge will be transmitted from the tip and ring of the line to the telephone set over leads TF and RF.

9. When the position is idle the twin plug of the head set is withdrawn from the receiver jack, disconnecting transmitter battery.



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CIRCUIT REQUIREMENTS

	<u>OPERATE</u>	<u>NON-OPERATE</u>	<u>RELEASE</u>
B215	Test .0016 amp. Readj. .0015 amp.		Test .0005 amp. Readj. .0005 amp.
B31 (CW-1) windings in series aiding	After a soak of approximately .009 amp. Test .0043 amp. Readj. .0028 amp.		After a soak of approximately .009 amp. Test .0012 amp. Readj. .0013 amp.
E148 (T)	Test .023 amp. Readj. .018 amp.	Test .013 amp. Readj. .014 amp.	
E1880 (CW)	Test .027 amp. Readj. .025 amp.	Test .014 amp. Readj. .015 amp.	

ENG? ANB VL.  
8/3/21.  
100-3-21-22

CHK'D. CHW.

APPROVED C.L.SLUYER,  
G.M.L.



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Date: 10/10/10  
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