

EXPLANATION
OF
LOCAL OR INCOMING SEL. CKT.
MULTIPLE DIGIT ABSORBING
(MARKING TRANS. AFTER 1ST DIGIT)
RESTRICTED SERVICE
ABSENCE OF GRD. SEARCHING
ROUTINER ACCESS
H-580298

FEATURES

1. Optional restricted service.
2. Dial and busy tone.
3. Multiple digit absorbing.
4. Peg count on switch-through.

OPERATION

1. Seizure (Operated: VON springs)

This circuit is marked idle to preceding equipment by battery via #2C ("G" and "Y" wiring) on lead C, or by absence of ground ("K" and "Y" wiring). Upon seizure, a loop is closed via leads "+" and "-" to A. Relay A operates and closes B and #2C in multiple ("K" wiring).

E-580298

TOTAL 7

SHEET 1

A

CHK.

DATE:

ISSUE 1

-1-60

O-6-E-
80298Class C
changed
sections
.2 and
3.1

-24-65

Issue 6

7714

AUTOMATIC ELECTRIC COMPANY
NORTH LAKE, ILL., U.S.A. GENOA, ILL., U.S.A. WAUKESHA, WISC., U.S.A.

Relay B operates, closes #2C ("G" wiring), grounds lead C to mark this circuit busy to other equipment, and connects resistance ground to lead SUPY. Relay C operates and closes lead DIAL TONE & GRD via #2A to lead "+".

2. Vertical Stepping (Operated: Relays A, B and C and VON springs)

Relay A follows the dial pulses and, when at normal, closes #1C and the VERT magnet in series, and opens B, and #2C in multiple ("K" wiring). The VERT magnet operates under the control of A and steps the wipers to the desired level. Relays B and C remain operated during pulsing due to their slow-to-release characteristics. On the first vertical step, the VON springs restore, open #2C, and close E. Relay E operates and locks.

After the last dial pulse, A re-operates, closes B, and opens #1C and the VERT magnet. Relay C restores after its slow-to-release interval and removes lead DIAL TONE & GRD from lead "+".

3. Digit Absorbing (Operated: Relays A, B, C and E)

Options which can be provided are outlined in NOTES 51-53 on H-580298.

3.1 Single Digit Cut-In (Use lead CI)

When single digit cut-in is to take place on the dialed level, lead CI is wired to the VERT BANK contact associated with that level. At the completion of the digit, C restores (after its slow-to-release interval), and closes a circuit via the VERT BANK contact of the desired level to #1 and #2D in series. Relay D operates, locks, and closes the ROT magnet (See Section 4).

E-580298		TOTAL		7
A		SHEET		3
AUTOMATIC ELECTRIC COMPANY				
NORTH LAKE, ILL. U.S.A. GENOA, ILL. U.S.A. WALKESHA, WISC. U.S.A.				
DATE:	ISSUE:	6		

3.2 Digit Absorbed Once Only (Use lead A)

When a digit is to be absorbed once only, with cut-in to take place on any succeeding digit, lead A is wired to the VERT BANK contact of the dialed level. When C restores at the completion of the digit, a circuit is closed via the VERT BANK contact of the dialed level to #2D.

Relay D closes its "X" contacts, short circuits #1D, and closes the RLS magnet. The RLS magnet operates, locks, releases the switch shaft, and opens E. When the switch shaft returns to normal, the VON springs operate, close #1Z in series with the RLS magnet and close #2C. Relay Z operates its "X" contacts, locks, operates fully, opens #1Z and the RLS magnet in series, and may change the type of digit absorption used (as outlined in NOTE 53 of H-580298). The RLS magnet restores and closes #1D in series with #2D. Relay E restores.

Relay D now operates completely with both windings in series and locks. Relay C re-operates.

The next digit steps the switch shaft vertically as described in Section 2. However, D is now operated and locked, so that when C restores at the end of pulsing, ground is closed to the ROT magnet (see Section 4).

3.3 Digit Absorbed Repeatedly (Use lead AR)

When a digit is to be absorbed repeatedly, lead AR is wired to the VERT BANK contact associated with the particular digit absorbing level. When C restores at the

completion of the digit, a circuit is closed via the VERT BANK contact of the dialed level to the RLS magnet, except as noted below. The RLS magnet operates, locks, opens E, and releases the switch shaft. When the switch shaft returns to normal, the VON springs operate, close #1Z in series with the RLS magnet, and close #2C. Relay Z operates its "X" contacts, locks, operates fully, opens its #1 winding and the RLS magnet in series and may change the type of digit absorption used (as outlined in NOTE 53 of H-580298). Relay E restores. Relay C re-operates. Magnet RLS restores. The next digit steps the switch vertically as described in Section 2.

NOTE: If a digit which is normally absorbed repeatedly (AR) is dialed after a digit which is to be absorbed once only (A), the AR digit will not be absorbed since D has operated and locked, following the (A) digit, and prepared a circuit to step the ROT magnet on any subsequent digit (see Section 3.2).

4. Rotary Stepping (Operated: Relays A, B, D, E and possibly Z)

At the completion of vertical stepping, the ROT magnet is closed by one of the methods described in Section 3. The ROT magnet steps the wipers to the first bank contact and opens E. Idle trunks are marked by absence of ground on the associated C bank contact. If ground is found on the C bank contact, the associated trunk is busy, and F does not operate because its winding is short-circuited. The release of E opens the ROT magnet, which restores

APP'D.	SIZE	E-580298
ISSUE	A	SHEET 5 TOTAL 7
AUTOMATIC ELECTRIC COMPANY NORTH LAKE, ILL., U.S.A. GENOA, ILL., U.S.A. WALKESHA, WISC., U.S.A.		

and closes E. Relay E operates and closes the ROT magnet, which re-operates, opens E, and steps the wipers to the next bank contact. This relay-interrupted stepping continues until either an idle trunk is found or the eleventh rotary step is taken (all-trunks-busy).

5. Switch-Through (Operated: Relays A, B, D, E and possibly Z)

When the wipers encounter an idle trunk, battery via E closes F. Relay E restores since it cannot operate in series with F and opens the ROT magnet, which restores. Relay F operates, locks, connects leads "+" and "-" to wipers "+" and "-", grounds lead TONE ST, connects wiper C to lead C, grounds lead PEG COUNT to register the switch-through, opens #1 and #2A, and connects lead EC or ground ("X" wiring) to wiper EC.

Relay A restores and opens B. Relay B restores after its slow-to-release interval, opens Z and D, and removes ground from lead PEG COUNT. Relays Z and D restore.

6. All-Trunks-Busy Condition (Operated: Relays A, B, D, E and possibly Z)

When all trunks are busy, the CAM SPGS operate on the eleventh rotary step. Operation of the CAM SPGS opens E and connects lead BSY TONE & GRD to lead "+".

All-trunks-busy condition can be registered by connecting high resistance battery-connected meters to the eleventh step C bank contact which operates from ground via F. However, F does not operate. This switch is held until

the preceding equipment is released and opens the loop circuit to A. Relay A restores and opens B. Relay B restores, after its slow-to-release interval, and removes ground from lead SUPY, opens Z and D and closes the RLS magnet. Relays Z and D restore. The RLS magnet operates and releases the switch shaft. When the switch shaft returns to normal, the VON springs operate and open the RLS magnet, which restores.

7. Blocked Levels (Operated: Relays A, B, C, E and possibly Z)

It is desirable to block access to certain levels and return BUSY TONE to the calling party. When these levels are dialed before a preliminary digit has been absorbed, the LEFT NP SPGS operate. When C restores after vertical stepping, ground is closed to the ROT magnet via the LEFT NP SPGS. Rotary stepping is as described in Section 4 until the eleventh rotary step has been taken. Switch through cannot take place since D is not operating and F is open. Subsequent operation is as described in Section 6.

8. Restricted Service (Operated: Relays A, B, C, E and possibly Z)

The RT NP SPGS operate on these levels which are to be restricted to switches in groups which project ground forward on lead EC (FIG RS). Ground on lead EC short circuits F and prevents its operation. As a result, the wipers are rotated to the eleventh rotary step as described in Section 6.

X OPPOSITE END OF EC LEAD WIRED TO LINK FINDER EQUIPPED WITH NORMAL POST SPRINGS THAT OPERATE AT CERTAIN LEVELS & PLACE GROUND ON EC LEAD. THUS, PHONE LINES ASSIGNED TO THIS LEVEL ARE RESTRICTED AND CANNOT DIAL OUT ON CERTAIN LEVELS ON SELECTOR SWITCH.

APPROVED BY	DATE	SIZE	E-580298
<i>F. Buback</i>	4-1-65	A	
SHEET 7		TOTAL 7	
AUTOMATIC ELECTRIC COMPANY			
NORTH LAKE, ILL., U.S.A. O'NEAL, ILL., U.S.A. O'NEAL, WISC., U.S.A. O'NEAL			
ISSUE	6		

9. Release (Operated: Relay F)

When the last switch of the train is released by the opening of the line loop, F restores, closes magnet RLS and disconnects lead EC or removes ground ("X" wiring) from wiper EC. The RLS magnet operates and releases the switch shaft. The switch shaft restores to normal and closes the VON springs. The VON springs operate and open the RLS magnet. The RLS magnet restores, The circuit is now at normal.

- (10) FVB
- (11) FVB:jaw

100

100

100

100

100

100

100

100

100