FIG. 1, 2, 3 OR 4

N.A.F.M.

H-580056
SHEET 2 OF 2

ISSUE 19
155:20
155:21
155:22
ISSUE 23

RMST = RING MACHINE START

RB TONE ON # 20
GEN ON # 5
GEN GRD ON # 15
RING MACH START ON # 8
LEAD P.U. ON # 18
BUSY TONE ON # 14
CONNECT ONE LEAD OF BUSY TONE TO #14 AND THE OTHER LEAD TO + GROUND (BATTERY).

FIG BG

FROM PRECEDING CKT.

TEST JACK

2MF (NOTE 16)

RMST

H-850698-A FIG. 65A OR EQUIV.

TIMED 1.5SC.

BUSY KEY

SUPV-1

RMST

TO FIG. BG OR FIG. GG

FIG. BG (SUFFIX A,C)

FIG. GG (SUFFIX B,D)

GEN (NOTE 14)

(NOTE 26)

V.O.N.

("H" APP) NOTE 22

VERT.

SUPV-2

R.C.D. "W" APP. SPARK SUP. NETWORK

(NOTE 32)

CR1 TD-1029-W

"L" APP.

"V" APP.

"W"

"H"

RLS. GRD.

"G" (2) "G" APP.

V.O.N.

RLS.

"U" APP. VR1

"U" (NOTE 30)

"Y" APP

POT

28½ 28½

RB TONE

PU

DEV TONE

-NB

+M ST

RLS GRD

SUPV-2

-L

-L

SUPV-1

GEN

C +GRD

GEN. GRD.

T.D.

JACK (REAR)

NOTE 11

-NB

+GRD

GEN 5

FIG. BC

TYPICAL BANK TERMINAL-BLOCK CONNECTIONS

(FOR REFERENCE ONLY)

NOTE: FOR TEN PARTY BRIDGED RINGING CONNECT TEN RINGING CODES AS REQ. USE HIGH IMP. RIVETERS ON LINES HAVING MORE THAN 5 BRIDGED RINGERS

STRAIGHT LINE
TWO PARTIES OR RING

CODE 1 CODE 1 CODE 2 CODE 3 CODE 4 CODE 5

TEN PARTIES DIVIDED (FIVE PARTIES: PICK OUT FIVE DESIRED BRIDGED OR DIVIDED RING)

RUN GEN + TO #5

FOR STRAIGHT LINE RING STRADDLE

M.F. GEN will HOOK ON GEN. 1

CONNECTOR

H-580056
SHEET 2 OF 2
SIZE D

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

OPTIONS

OPTION	ISSUES FIRST USED	ISSUES LAST USED	NOTES
A	1		SUFFIXES A-D
B	1	2	15
C	3		15
D	16		30
E	1	10	25
F	11		25
G	1	9	22
H	10		22
I			
J	1	11	26
K	12		26
L	16	17	32
M	19		SUFFIXES E & F
N			
O			
P	1	17	31
Q	18		31
R			
S	1	10	24
T	11		24
U			
V	1	22	
W	23		
X	1	7	21
Y	8		21
Z	1		19

MANUFACTURING NOTES (CONT'D):

18-FOR FIELD CONVERSION OF FIG'S. 1A, B, C OR D AND 2A, B, C OR D TO 1200 OHM LOOP OPERATION, SEE NOTES ON CIRCUIT ADJUSTMENT SHEET.

19-FOR LAST PARTY RELEASE, USE "Z" WIRING. FOR CALLING PARTY RELEASE, OMIT "Z" WIRING. (SEE SUFFIXES).

20-PRIOR TO ISSUE 6, RESISTOR "A" WAS PART OF FIG. 1, 2 OR 3.

21-PRIOR TO ISSUE 8, "X" WIRING & APPARATUS WERE PART OF THE CIRCUIT & THE NO. 1 WINDING OF RELAY E WAS 280 OHMS.
"Y" WIRING & APPARATUS WHICH WERE NOT SHOWN, SUPERSEDE "X" WIRING & APPARATUS.
RELAY G SPRING NO'S. IN ( ) FOR "X" APPARATUS SPRING NO'S. NOT IN ( ) FOR "Y" APPARATUS.

22-PRIOR TO ISSUE 10, "G" WIRING & APPARATUS WERE PART OF THE CIRCUIT AND "H" WIRING & APPARATUS WERE NOT SHOWN. "H" WIRING & APPARATUS SUPERSEDE "G" WIRING & APPARATUS. RELAY "D" SPRING NUMBERS AND V.O.N. SPRING NUMBERS IN ( ) ARE FOR "G" APPARATUS, SPRING NUMBERS NOT IN ( ) ARE FOR "H" APPARATUS.

23-PRIOR TO ISSUE 10, RESISTOR A (FIG. GG) WAS 250 OHMS 2W.

24-PRIOR TO ISSUE 11, "T" WIRING WAS NOT SHOWN AND "S" WIRING WAS PART OF CIRCUIT. "T" WIRING SUPERSEDES "S" WIRING.

25-PRIOR TO ISSUE 11, "E" WIRING WAS PART OF CIRCUIT AND "F" WIRING & APPARATUS WAS NOT SHOWN. "F" WIRING & APPARATUS SUPERSEDES "E" WIRING ON ALL FUTURE ORDERS.

26-PRIOR TO ISSUE 12, "J" WIRING WAS PART OF CIRCUIT AND "K" WIRING WAS NOT SHOWN. "K" WIRING SUPERSEDES "J" WIRING.

27-PRIOR TO ISSUE 14, CONNECTIONS TO THE "F" RELAY WERE GROUND TO THE "IN" TERMINALS AND BATTERY TO THE "OUT" TERMINALS.

28-PRIOR TO ISSUE 14, RESISTOR "A" IN FIGURE GG WAS 250 OHMS, 15W.

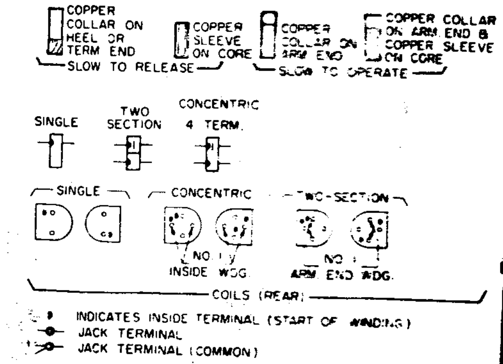
29-PRIOR TO ISSUE 14, SW JACK WAS 20 POINT.

30-PRIOR TO ISSUE 16, RELEASE-MAGNET COIL HAD 1000 OHM N-I WINDING, AND "D" WIRING & APPARATUS WERE NOT SHOWN. BEGINNING WITH ISSUE 16, OMIT RELEASE-MAGNET COIL'S N-I WINDING, AND PROVIDE "D" WIRING & APPARATUS. FOR FIELD CONVERSION, VARISTOR MAY BE ADDED WITHOUT RELEASE-MAGNET COIL CHANGE.

31-PRIOR TO ISSUE 18, "P" WIRING WAS PART OF FIG. BG. "Q" WIRING SUPERSEDES "P" WIRING.

32-IN ISSUE 16 & 17 APPARATUS & WIRING "L" WERE PART OF APPARATUS & WIRING "D". BEGINNING WITH ISSUE 18, APPARATUS & WIRING "L" ARE NO LONGER SUPPLIED.

SYMBOLS



FIGURES:

~~1000 OHM LOOP~~ N.A.F.M.

~~FIG. 1-RING BACK TONE CAP. "M" TO BE .04 MF WHEN ROTARY TYPE RINGING MACHINES ARE USED. SPECIFY SUFFIX A, B, C OR D.~~

~~FIG. 2-RING BACK TONE CAP. "M" TO BE .005MF. WHEN VIBRATOR TYPE RINGING EQUIPMENT IS USED. SPECIFY SUFFIX A, B, C OR D.~~

1200 OHM LOOP

FIG. 3-RING BACK TONE CAP. "M" 0.04MF. SUFFIX A,C,OR E (BATTERY-CONNECTED GENERATOR)ONLY.

FIG. 4-RING BACK TONE CAPACITOR "M" 0.04MF SUFFIX B,D,OR F (GROUND-CONNECTED GENERATOR) ONLY.

MANUFACTURING NOTES:

10-CONTACTS "X" OPERATE FIRST.

11-SHELF JACKS 9 & 11 MAKE CONTACT WHEN SWITCH IS REMOVED.

12-CONNECT DIRECT GENERATOR OF DESIRED FREQUENCY TO RING BACK TONE LEAD.

13-USE P.U. FOR CODE OR 1 & 2 RING HARMONIC RINGING. FOR HARMONIC RINGING, CONNECT GROUND TO P.U. LEAD AT END OF SHELF.

14-CONNECT THE INT. LEADS TO THE EC BANK CONTACTS IN ACCORDANCE WITH THE RINGING CODE OR FREQUENCY ASSIGNED FOR THE CALL NUMBER CORRESPONDING TO THE BANK TERMINAL (DIR. GEN. OR INT. GEN. CONNECTED TO JACK 5).

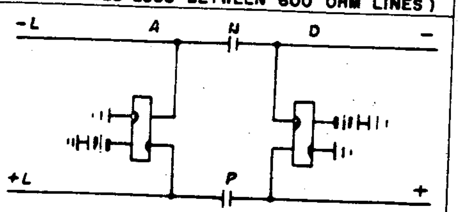
15-STARTING WITH ISSUE 3, WIRING & APPARATUS "C" SUPERSEDE WIRING & APPARATUS "B". RELAYS A & D (APPARATUS "C") HAVE SANDWICH-WOUND CONCENTRIC COILS.

16-STARTING WITH ISSUE 3, CAPACITORS N & P ARE MATCHED WITHIN 5%.

17-SWITCHES FOR 1000 & 1200 OHM LOOP SERVICE DIFFER ONLY IN ADJUSTMENT OF RELAYS D & F.

2 1118

TRANSMISSION TEST REQUIREMENTS
(1000 CYCLE LOSS BETWEEN 600 OHM LINES)



MAX. ALLOWABLE CKT. LOSS (DB) 0.5

SUFFIX

* INDICATES APP. FOR WHICH INDIV. LOSSES ARE NOT REQ.

ALLOWABLE INDIVIDUAL APPARATUS LOSSES (DB)

APPARATUS	DESIG.	MAX. LOSS	MIN. LOSS
RELAY 195 /195	A,D	0.2	11.5
CAPACITOR 2MF	N,P	14.5	

SUFFIXES

SUFFIX	RINGING GENERATOR BATT.-CONN. ON -LINE (FIG. BG)	RINGING GENERATOR GRD-CONN. ON +LINE (FIG. GG)	LAST-PARTY RELEASE (WRG. "A" & "Z")	CALLING-PARTY RELEASE (WRG. "A")	CALLING-PARTY RELEASE WITH TIMED DISCONNECTION (WIRING "M")
A	X		X		
B		X	X		
C	X			X	
D		X		X	
E	X				X
F		X			X

STOCKLIST	DH-580056-36 (FIG. 4)
STOCKLIST	DH-580056-35 (FIG 3)
MFG. DIS. STOCKLIST	DH-580056-34 (FIG. 4)
MFG. DIS. STOCKLIST	DH-580056-33 (FIG. 3)
MFG. DIS. STOCKLIST	DH-580056-32 (FIG. 1 & 2)
MFG. DIS. STOCKLIST	DH-580056-31 (FIG. 1 & 2)
MFG. DIS. RUNNING LIST	RLDH-580056-3 (FIG. 4)
MFG. DIS. RUNNING LIST	RL-580056 (FIG. 1, 2 & 3)
JUMPER LIST	JL-580056

ASSOCIATED DRAWINGS		
DRAWING NO.	ISS.	DESCRIPTION
AH-580056	22	ADJUSTMENT
E-580056	5	EXPLANATION

CURRENT DRAIN DATA AMPS.
HOLDING CURRENT 0.30

CHANGES	APP'D.
ISSUE: 18	
19-H-580056 (REG) PHOTO RECLAIMED. DESIG. "A" WRG. ADDED "M" WRG. RATED FIGS 1 & 2 N.A.F.M. ADDED. SUFFIXES E & F & OPTION TABLE. ASSOC DRG E WAS ISS. 4. D.F. 9-7-67 A.F.	K.F.S. 9-1-67
ISS: 19	
ASSOC. DRG. TABLE AH- WAS ISS. 19 MJ 6-30-69 MJ	MVR
ISS: 20	
IN ASSOC. DRG TABLE AH- WAS ISS: 20 MJ 11-14-69 MJ	SS
ISS: 21	
IN ASSOC. DRG. TABLE AH- WAS ISS. 21 O.B. 4-7-72 O.B	M.V.R.
ISS: 22	
23-H-580056 (CL.B) DESIGNATED "V" AND ADDED "W" OPTIONS. S.R.R. K.V. 10-24-74	J.F.N. R.A.J.
ISSUE 23	

SHEET 1 OF 2

H-580056

H-580056

DESIGNED P. BAKKER DR. P.B.
APP'D. H. W. BALZER CK. W.N.
SCALE: DATE 10-21-
DO NOT SCALE DRAWING

CONNECTOR CIRCUIT
TERMINAL PER STATION
CODE OR HARMONIC RINGING
GRD. OR BAT GENERATOR

H-580056 D

SHEET 1 OF 2

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

FX-2803-8 (7/63)