

12-11 Y'S: 10 1963 B&L 12-8-71				AH-6100	
*	DESCRIPTION	MFG. ADJ.	FIELD G.S.P.	EXPLANATION OF TERMS	
	GENERAL REQUIREMENTS	100		-*DENOTES APPLICABLE ADJUSTMENTS. -#1 - INSIDE OR ARMATURE END WINDING. -#2 - OUTSIDE OR HEEL END WINDING. -S.L.A.-SHORT LEVER ARMATURE. S.R.-SLOW TO RELEASE. S.O.-SLOW TO OPERATE. A.C.-ALTERNATING CURRENT. O=OPERATE. N.O.=NON-OPERATE. H=HOLD. R=RELEASE. O.C.=OPEN CIRCUIT. RESID.=RESIDUAL ADJUSTMENT VALUE. -TEST VALUES ARE FOR INSPECTION ONLY. -READJ. VALUES ARE FOR ADJUSTING ONLY. -CURRENT IS SHOWN IN AMPERES. -POS.-TEST WITH POSITIVE BAT. THRU RESIST. OF TEST SET. -NEG.-TEST WITH NEGATIVE BAT. THRU RESIST. OF TEST SET. -RELAYS PREFIXED BY GR OR GT HAVE WIRE WRAP TERMINALS. RELAYS PREFIXED BY R OR RT HAVE SOLDER TERMINALS. THIS ADJUSTMENT APPLIES IN EITHER CASE. <u>X</u> WIRE WRAP TERM. <u>X</u> SOLDERED TERM.	
	SW. TEST & SH. JKS., ETC.	101	230-005-703	- NOTES - 1-TIME WITH BOTH WINDINGS IN SERIES. 2-#1 WINDING TO OPERATE #1 SPRING ONLY. 3-SPRINGS NEED ONLY MAKE CONTACT ON OPERATE TESTS. 4-BOTH TESTS MADE ON #1 WINDING. #1 TEST IS FOR #1 SPRING ONLY. 5-CONNECT RESISTANCE ACROSS TEST JACKS 1 & 2. 6-SHORT LEVER ARM. RESIDUAL MIN. .0015", MAX. .004". GEN.: OPERATE BUSY KEY WHILE TESTING. AFTER RELAY READJUST CHECK TUNING NOTES ON CIRCUIT.	
	CLASS A & Z	110	040-500-706		
	" B	300	040-500-502		
	" C	301	040-500-502		
	" W	784	040-500-102		
	TYPE 10 A.C.	118	040-501-702		
	TYPE 59 CODEL UNIT	783	040-500-501		
	V. O. N.	120			
	CUP & SHAFT SPGS.	121			
	CAN SPGS.	122			
	NORMAL POST	123			
	RLSE. SPGS.	124			
	R. O. N.	126	230-005-703		
	VERT. MECH.	130			
	DOGS	131			
	ROT. MECH.	132			
	W E. MECH.	133			
	SHAFTS, WIPERS, ETC.	135			
	MINOR SW.	136	230-007-708		
	TESTING LP PULSED SWS.	144			
	TESTING SX PULSED SWS.	145	230-200-504		
	TIMING SWITCHES & RLYS.	146			
	44 ROT. SW.	163	230-007-706		
	45 " "	162	230-007-705		
	SHUNT FIELD RELAY	175	040-500-706		
	280 POLAR RLY.	201	040-401-701		
	KEYS	753	032-305-700		
	SWITCHBOARD JACKS	754	032-320-700		
				SWITCH STAND ROT. SWITCH TEST POSITION	OUTGOING TRUNK CIRCUIT AUTO TO AUTO OR AUTO TO MANUAL-CIR. HOLDING CLASS OF SERVICE CX SIGNAL NO.
				REF. G.S.P. - 108-104-102	

AUTOMATIC ELECTRIC COMPANY
NORTHLAKE, ILLINOIS, U.S.A.

ENG.: RF APP'D.: APN
CIRCUIT OH SWITCH ADJUSTMENT

CKT. 11-610057 7 SHEETS 1
AH-6100

4-7-71 12-3-71
ISS: #15 ISS: #16

SIZE

AH-610057

ANALOGIC ELECTRIC COMPANY

MILWAUKEE, WIS. U.S.A. ○ CHICAGO, ILL. U.S.A. ○ WAREHOUSES, WISC., U.S.A. ○

NOTES CONTINUED:7. PULSE REPEATING TESTS FOR OUTGOING PULSES (RELAY A)

1. SWITCH PREPARATION: OPERATE BUSY & PULSE TEST KEYS.
2. TEST SET PREPARATION: CORD FROM "LP OUT" AND "LP IN" JACKS TO 8 POINT PLUG (SEE H-85388, FIG. 2)
3. APPLY TO TEST JACKS (MOM. & PULSES INPUT) 1 & 2: 12 PPS, 60.5 BREAK, LEAK A
12 PPS, 68.5 BREAK, 1200 Ω LOOP
4. MEASURE LOOP PULSES AT TEST JACKS (PULSE MEAS.) 7 & 8. REQUIRED: 52% BREAK, LEAK A
76% BREAK, 1200 Ω LOOP
5. IF MEET ABOVE REQUIREMENTS, RELAY A MAY BE RETENTIONED OUTSIDE SPECIFIED MARGIN LIMITS, BUT THEN
MARGIN SHALL BE WITHIN LIMITS: NON-OPERATE .0135 AMP., OPERATE: .0175 AMPS.
8. OPERATE AND NON-OPERATE VALUES ARE FOR USE WHEN TIMING REQUIREMENTS ARE NOT APPLIED.
9. HOLD AND RELEASE REQUIREMENTS ARE USED FOR MAINTENANCE PURPOSES WHEN TIMING REQUIREMENTS ARE APPLIED.
10. TEST HOLD - USE 1400 - LOOP IN PULSING TEST SET.)
11. TEST HOLD - USE LEAK "A" IN PULSING TEST SET.)
12. FOLLOW TESTING INSTRUCTIONS FOR TIMING OF RELAYS.

CKTS. H-85681, H-850046 OR EQUIV.

CKT. H-610057

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 ISS. #12 ISS. #13 ISS. #14 ISS. #15 ISS. #16

A4-610057

RELAYS	SPRING GAUGING				TEST FOR:	RESIST. AT 50V.		CURRENT		SEE NOTE	TESTING INSTRUCTIONS
	RESID.					READJ.	TEST	READJ.	TEST		
A FIGS.1-3 R-2215-A1 D-280026-A #1-200 Ω #2-200 Ω	.009		.004	.006	.004	.007					1 SPGS. 1 & 2 MAY BREAK ON N.O. TESTS. 3 MIN. TENSION OF SPG. 5 TO BE 35 GRAMS. CONNECT RESISTANCE ACROSS SPG. 7. OF RLY. C AND COIL TERM. FARTHEST FROM SPGS.
THIS RELAY SUPPLIED PRIOR TO ISSUE 3.											
A FIGS.1 & 2 GR-2215-A8A D-283998-P #1-195 Ω #2-195 Ω	.009		.004	.006	.004	.007					1 SPGS. 1 & 2 MAY BREAK ON N.O. TEST. 3 CONNECT RESISTANCE ACROSS UPPER COIL TERM. AND COIL TERM. NEAREST TO SPGS.
THIS RELAY SUPPLIED BEGINNING WITH ISSUE 3. THIS RELAY SUPPLIED PRIOR TO ISSUE 7.											
A FIGS.1-3 GR-2215-B1A D-284459-P #1-210 Ω #2-210 Ω NIC-IRON CORE	.006		.004	.006	.004	.007					1 SPGS. 1 & 2 MAY BREAK ON N.O. TESTS. 3 MIN. TENSION OF SPG. 5 TO BE 30 GRAMS.
THIS RELAY SUPPLIED BEGINNING WITH ISSUE 7.											
B FIGS.1 & 2 GR-8064-A2A D-282349-B #1-600 Ω SR	.003	.029	.020	.027	.020	.020	SHORT LEVER ARM.				6 POS. TO SPG. 3 OF RLY. A.
THIS RELAY SUPPLIED PRIOR TO ISSUE 7.											
B FIGS.1-3 GR-8018-A2 D-282349-B #1-600 Ω SR	.003	.029	.020	.027	.020	.020	SHORT LEVER ARM.				6 POS. TO SPG. 3 OF RLY. A.
THIS RELAY SUPPLIED BEGINNING WITH ISSUE 7.											
C GR-6283-A3A D-282224-B #1-231 Ω #300-1000 Ω NI) SR	NOTE RESID.	SHORT LEVER ARM.	.018	.015	.027	.029					POS. TO SPG. 6 OF RLY. B.
THIS RELAY SUPPLIED PRIOR TO ISSUE 7.											

AUTOMATIC ELECTRIC COMPANY
 NORTHLAKE, ILLINOIS, U.S.A.

CIRCUIT OR SWITCH ADJUSTMENT

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1-7-71 12-3-71
ISS: #16 ISS: #16

AH-610057

RELAYS	SPRING GAUGING						TEST FOR:		RESIST. AT BOV.		CURRENT		PAGE NO.	TESTING INSTRUCTIONS									
	RESID.						NO. 1	NO. 2	READJ.	TEST	READJ.	TEST											
C FIGS. 1-5 GR-6407-A6 D-282224-B #1-231 Ω (300-1000 Ω NI) SR	.003	SHORT LEVER ARM.	.024	.018	.026	.018	NO	NO	1120	1020	.0371	.0403	6	FIGS. 1 - 3: TEST IN MULT. WITH 6210 R. POS. TO SPG. 6 OF RLY. B. FIGS. 4 & 5: INS. SPGS. 10 & 11 OF RLY. D. POS. TO SPG. 6 OF RLY. F.									
									1310	1490	.032	.0291	8										
	.003						NO. 1	NO. 2	1160	1050	.036	.039	9	<table><tr><th></th><th>READJ</th><th>TEST</th></tr><tr><td>H</td><td>.111 SEC.</td><td>LEAK A</td></tr><tr><td>R</td><td>.200 SEC.</td><td>.250 SEC.</td></tr></table>		READJ	TEST	H	.111 SEC.	LEAK A	R	.200 SEC.	.250 SEC.
									READJ	TEST													
H	.111 SEC.	LEAK A																					
R	.200 SEC.	.250 SEC.																					
									1380	1540	.031	.0282	11										
(SEE SHEET 7)																							
FIGS. 4 & 5 OF THIS RLY. SUPPLIED PRIOR TO AN ISS. 16 & CKT. ISS. 19 THIS RELAY SUPPLIED BEGINNING WITH ISSUE #7.																							
F FIGS. 1-3 GR-50036-A1 D-281888-B #1-1200 Ω #2-1000 Ω	.0015	.022	.018	.010	.006	.006	NO	NO	3070	2730	.0117	.0127		BOTH TESTS MADE ON #1 WDG. #1 TEST IS FOR SPG. 2 ONLY. POS. TO SPG. 5 OF RLY. H.									
									3850	4180	.0099	.0093											
	.0015						NO. 1	NO. 2	880	690	.0241	.0265											
									1250	1500	.0204	.0185											
H GR-5256-B4 D-280921-B #1-1300 Ω #2-500 Ω NI	.0015	.015	.006	.006	.006	.009	NO	NO	2400	2030	.0135	.0150		POS. TO COIL TERM. NEAREST TO SPGS.									
									3160	3550	.0112	.0103											
J ETC. GR-5111-C4 D-281205-B #1-907 Ω (1300-3000 Ω NI) SO	.0015					.004	NO	NO	1490	1270	.0208	.0229		J: INS. SPGS. 4 & 5 OF RLY. J. POS. TO UPPER SPGS. 2 OF RLY. K. ST: POS. TO SPG. 2 OF RLY. H.									
									1830	2100	.0183	.0167											
J: FIG. 2 & ST: FIG. 3																							
D ETC. GR-5002-F9 D-283010-B #1-7 Ω #2-40 Ω	.0015	.010	.006				NO	NO	760	710	.065	.070		D: INS. LOWER SPGS. 1 & 2 OF RLY. K. NEG. TO SPG. 3 OF RLY. TR: INS. SPGS. 1 & 2 OF RLY. TN. NEG. TO SPG. 1 OF RLY. L.									
									850	900	.0585	.055											
D: FIG. 2 & TR: FIG. 3																							

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NORTHLAKE, ILLINOIS, U.S.A.

CIRCUIT OR SWITCH ADJUSTMENT

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ISS. #12 ISS. #13 ISS. #14 ISS. #15 ISS. #16

AH-610057

RELAYS	SPRING GAUGING		TEST FOR:	RESIST. AT 50V.		CURRENT		SEE NOTE	TESTING INSTRUCTIONS
				READJ.	TEST	READJ.	TEST		
G FIG.2 R-7840-A2 D-280028-A #1-1300 Ω	.0015 RESID.	WEIGHTED SPRING RELAY	NO. 1	0 NO	3800 4580	3370 5030	.0098 .0085	.0107 .0079	ARM. WT. SHALL REST AGAINST HEELPIECE WITH A LIGHT TENSION (APPROX. 5 GRAMS). SPGS. NEED NOT BE PARALLEL TO HEELPIECE. INS. SPGS. 4 & 5 OF RLY. E. POS. TO SPG. 4 OF RLY. E.
	-- RESID.		NO. 2						DOUBLE ARM. RELAY
K FIG.2 CR-60199-A1 D-280028-B #1-1300 Ω	.0015 RESID.	WEIGHTED SPRING RELAY	NO. 1	0 NO	5030 5550	4450 6050	.0079 .0073	.0087 .0068	THIS RELAY SUPPLIED PRIOR TO ISSUE 4. #1 TEST IS FOR UPPER SPGS. ONLY WITH LOWER SPGS. HELD OPERATED. WT. SHALL REST AGAINST HEELPIECE WITH A LIGHT TENSION (APPROX. 5 GRAMS). UPPER SPGS. NEED NOT BE PARALLEL TO HEELPIECE. INS. SPGS. 4 & 5 OF RLY. G. POS. TO SPG. 4 OF RLY. G.
	-- RESID.		NO. 2						DOUBLE ARM. RELAY
K FIGS.1-3 CR-9080-A1 D-280028-B #1-1300 Ω	.0015 RESID.	WEIGHTED SPRING RELAY	NO. 1	0 NO	5030 5550	4450 6050	.0079 .0073	.0087 .0068	THIS RELAY SUPPLIED BEGINNING WITH ISSUE 4. THIS RELAY SUPPLIED PRIOR TO ISSUE 10. #1 TEST IS FOR UPPER SPGS. ONLY WITH LOWER SPGS. HELD OPERATED. WT. SHALL REST AGAINST HEELPIECE WITH A LIGHT TENSION (APPROX. 5 GRAMS). UPPER SPGS. NEED NOT BE PARALLEL TO HEELPIECE. INS. SPGS. 4 & 5 OF RLY. J. POS. TO SPG. 4 OF RLY. J.
	-- RESID.		NO. 2						DOUBLE ARM. RELAY

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RELAYS	SPRING GAUGING				TEST FOR:		RESIST. AT BOV.		CURRENT		SEE NOTE	TESTING INSTRUCTIONS
							READJ.	TEST	READJ.	TEST		
TN FIGS. 3, 5 & 7 GR-5026-G3 D-280832-B #1-4000 Ω	.0015	.010	.006	.006	NO. 1	O NO	6900 7900	5800 9200	.0046 .0042	.0051 .0038		REMOVE LEADS FROM UPPER COIL TERM. POS. TO UPPER COIL TERM.
					NO. 2							
THIS RELAY SUPPLIED PRIOR TO ISSUE 13.												
TN GR-50386-A1 D-284146-B #1-6500	.0-0	.010	.006	.006	NO. 1	O NO	11400 14300	10200 16200	.0028 .0024	.0030 .0022		REMOVE LEADS FROM UPPER COIL TERM. POS. TO UPPER COIL TERM.
					NO. 2							
CHROME PLATED CORE AND ARMATURE												
A FIGS. 4 & 5 GR 6807-A3 D-284459-B #1-210 Ω #2-210 Ω	.009				NO. 1	O NO	2650 2780	2590 2850	.0163 .0156	.0166 .0153	1 3 5 7	SPGS. 1 & 2 MAY BREAK ON N.O. TESTS. MIN. SPG. TENSION OF SPG. 5 TO BE 30 GRAMS.
					NO. 2							
NICKEL IRON CORE												
B FIGS. 4-7 GR-8018-A2 D-282349-B #1-600 Ω SR	.028 .016 .026 .016 .016 .016				NO. 1	O NO	1700 1900	1500 2100	.0217 .0200	.0238 .0185	8 9 10 12	POS. TO SPG. 3 OF RLY. A.
					NO. 2							
RESIDUAL TO BE MIN. .0115", MAX. .003". SHORT LEAD ARM.												
A FIGS. 6 & 7 GR-50252-A2 D-284459-B #1-210 Ω #2-210 Ω	.009	.007 .004 .006 .004			NO. 1	O NO	2650 2780	2590 2850	.0163 .0156	.0166 .0153	1 3 5 7	SPGS. 1 & 2 MAY BREAK ON N.O. TESTS MIN. SPG. TENSION OF SPG. 5 TO BE 30 GRAMS.
					NO. 2							
NICKEL IRON CORE												
TR FIGS. 5-7 GT-10507-D90 D-281532-B #1-6.3 Ω #2-1000 Ω	.0-0				NO. 1							
					NO. 2							
SPRINGLESS RELAY												

AUTOMATIC ELECTRIC COMPANY
NORTHLAKE, ILLINOIS, U.S.A.

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9-2-68 ISS. #12	9-27-68 ISS. #13	4-9-69 ISS. #14	4-7-71 ISS. #15	12-3-71 ISS. #16	AH-610057											
RELAYS	SPRING GAUGING							TEST FOR:	RESIST. AT SOV.		CURRENT		SEE NOTE	TESTING INSTRUCTIONS		
	RESID.								READJ.	TEST	READJ.	TEST				
C FIGS. 6 & 7 GR-8616-A1 D-282224-B #1-231 Ω (300-1000 Ω NI) SR	.003	.029	.020	.028	.020	.027		NO. 1 O NO	1160 1380	1050 1540	.036 .031	.039 .0282	6 8	INS. SPGS. 10 & 11 OF RLY. D. POS. TO SPG. 6 OF RLY. D.		
THIS RELAY SUPPLIED PRIOR TO AH ISS. 16 & CKT. ISS. 19.																
D FIGS. 4-7 GR-50354-A1 D-281888-B #1-1200 Ω #2-1000 Ω	.0015	.022	.018	.011	.006	.010	.006	.009	NO. 1 O NO	3070 3850	2730 4180	.0117 .0099	.0127 .0093		BOTH TESTS MADE ON #1 WDG. #1 TEST IS FOR #2 SPG. ONLY. POS. TO SPG. 6 OF RLY. H.	
H GR-9348-A5 D-281789-B #1-900 Ω SO	NOTE	.028	.018	.018	.013	.020	.008	.020	.008	NO. 1 O NO	2200 3000	2000 3370	.0161 .0128	.0172 .0117	INS. SPGS. 1 & 2 OF RLY. A. POS. TO UPPER COIL TERM.	
RESIDUAL TO BE MIN. .0015", MAX. .003". SHORT LEVER ARM.																
G FIGS. 4 & 5 GR-6431-A6B D-282224-B #1-231 Ω (300-1000 Ω NI) SR	.003			.018	.018	.026	.018	.028	.030	NO. 1 O NO	1200 1400	1100 1500	.0350 .0305	.0375 .0289	6 8	INS. SPGS. 10 & 11 OF RLY. D. POS. TO SPG. 6 OF RLY. B.
SHORT LEVER ARM. THIS RLY. SUPPLIED BEGINNING WITH AH ISS. 16 & CKT. ISS. 19.																
C FIGS. 6 & 7 GR-8238-A6B D-282224-B #1-231 Ω (300-1000 Ω NI) SR	.003	.030	.028	.018	.026	.018	.018		NO. 1 O NO	1200 1400	1100 1500	.0350 .0305	.0375 .0289	6 8	INS. SPGS. 10 & 11 OF RLY. F. POS. TO SPG. 6 OF RLY. B.	
SHORT LEVER ARM. THIS RLY. SUPPLIED BEGINNING WITH AH ISS. 16 & CKT. ISS. 19.																
	RESID.								NO. 1 O NO							
AUTOMATIC ELECTRIC COMPANY NORTHLAKE, ILLINOIS, U.S.A.																
CIRCUIT OR SWITCH ADJUSTMENT																
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AUTOMATIC ELECTRIC COMPANY
NORTHLAKE, ILLINOIS, U.S.A.

CIRCUIT OR SWITCH ADJUSTMENT

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