TO: ALL HOLDERS OF LEADING EDGE FLAP AND SLAT POSITION INDICATOR UNIT ASSEMBLY M229 OVERHAUL MANUAL, 27-56-40

REVISION NO. 40, DATED JUL 1/08

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D&O	D/Assy	Cleaning	Insp/Chk	Repair	Assy	F/C	Test	T/Shooting	S/Tools	Storage	IPL	L/Overhaul
Removed BAE Systems P/Ns from manual	X				X			X	X			X	

LEADING EDGE FLAP AND SLAT POSITION INDICATOR ACCESSORY UNIT ASSEMBLY M229

27-56-40

BOEING P/N 69-62790-2

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision
F Indicates foldout pages - print one side only

	PAGE	DATE		PAGE	DATE		PAGE	DATE
	27-56-40		*	720	DELETED	*	818	DELETED
*	T-1	Jul 1/08	*	721	DELETED	*	819	DELETED
	T-2	BLANK	*	722	DELETED	* F	820	DELETED
*	LEP-1	Jul 1/08	*	723	DELETED	* F	821	DELETED
*	LEP-2	Jul 1/08	*	724	DELETED	*	822	DELETED
*	T/C-1	Jul 1/08	*	725	DELETED	*	823	DELETED
	T/C-2	BLANK	*	726	DELETED	* F	824	DELETED
*	1	Jul 1/08	*	727	DELETED	* F	825	DELETED
*	2	Jul 1/08	*	728	DELETED	*	826	DELETED
*	3	Jul 1/08	*	729	DELETED	*	827	DELETED
*	4	Jul 1/08	*	730	DELETED	* F	828	DELETED
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*	704C	DELETED	* F	806E	DELETED	* F	843	DELETED
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LIST OF EFFECTIVE PAGES

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PAGE	DATE	PAGE	DATE	PAGE	DATE
27-56-40 (Cont)					
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* F 863	DELETED				
* 864	DELETED				
* 865	DELETED				
* 866	DELETED				
* 1101	Jul 1/08				
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* 1104	Jul 1/08				
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* 1106	DELETED				
* 1107	DELETED				
* 1108	DELETED				
* 1109	DELETED				
* 1110	DELETED				
* 1111	DELETED				
* 1112	DELETED				

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*[1] Use applicable procedures in SOPM 20-11-04 and standard industry practices.

*[2] Special instructions not required. Use standard industry practices.

LEADING EDGE FLAP AND SLAT POSITION INDICATOR ACCESSORY UNIT ASSEMBLY (M229)

DESCRIPTION AND OPERATION

CAUTION: THIS ASSEMBLY CONTAINS THE COMPONENTS WHICH CAN BE DAMAGED BY ELECTROSTATIC DISCHARGE. HANDLE PER PROCEDURES CONTAINED IN SOPM 20-12-02 (HANDLING OF ELECTROSTATIC DISCHARGE SENSITIVE DEVICES).

NOTE: For coverage of assemblies 65-52807-19, -21, -26, -33, -35, -37, -39, -43, -63, -65, -66, -69, -71, -74, -76, refer to BAE Systems (V89954 BAE Systems Controls Inc., 600 Main St., Johnson City, NY 13790-1806) CMM 27-56-40.

1. Description

   A. The leading edge flap and slat position indicator accessory unit assembly consists of switch and logic printed circuit assemblies, transistor circuits, and interconnecting circuitry, mounted in a chassis assembly.

2. Operation

   A. The leading edge flap and slat position indicator accessory unit assembly controls operation of the position indicating system. The accessory unit assembly receives signals from proximity sensors or lock switches. A change in current level is sensed by the transistorized circuits, resulting in operation of the switches to complete logic circuits which control annunciator panel indicators and flap and slat position indicators.

3. Functional Description (See Schematic Diagram.)

A. The flap and slat leading edge position indicator module provides ground paths for indicator lamps denoting flap and slat positioning. Two indicator panels are involved. One panel provides position indicating for individual leading edge flaps and slats. The other provides a master indication that flaps are in transit, in position, all retracted, or inconsistent. (An inconsistency would be one flap fully retracted while another is fully extended or other such misalignment.) All lamps are extinguished when flaps and slats are fully retracted. An amber lamp is illuminated on both indicator panels during in-transit conditions. (The amber lamp on the master panel will also illuminate during inconsistent conditions.) A green lamp is illuminated on the indicator panel to show extend or mid-extend positioning. A green lamp is illuminated on the master panel when all flaps and slats have reached the indicated position.

B. All proximity switches react to an impedance change in external circuitry received at proximity switch pins 3 and 6. The proximity switch pin 9 output is either a ground or an open circuit. An open circuit output indicates that the position sensor has detected the flap or slat in position. A ground output indicates that the flap or slat is not present at that position. The "slat-retracted" inputs are from lock switches rather than through proximity switches. When slats are retracted, the lock switches provide open circuit inputs. When slats are not retracted, the lock switches provide ground inputs.

C. Figures 2 and 3 correlate flap and slat positions with specific proximity switches or input pins, with annunciator logic cards, and with lamp circuit output pins (master panel indicator data not included). To trace circuitry for any given flap or slat position, apply the pin and card data from Fig. 2 and 3 to the circuit illustration of Fig. 4 or 5. Circuit ground is connected to input pins P1A-7 and P1A-8. Circuit power, +28 volts dc, is connected to input pin P1A-1.

	Proximity Switch	Input Pins		Annunciator Logic Card	Output Pins	
		Red Lead	Blue Lead		Amber Lamp	Green Lamp
Slat 1, Full-extend	A2	P1B-1	P1B-21	A4	P1A-9	P1A-11
Slat 1, Mid-extend	A3	P1B-2	P1B-22	A4	P1A-9	P1A-10
Slat 1, Retract	*[1]	P1B-41		A4	P1A-9	
Slat 2, Full-extend	A5	P1B-3	P1B-23	A7	P1A-12	P1A-14
Slat 2, Mid-extend	A6	P1B-4	P1B-24	A7	P1A-12	P1A-13
Slat 2, Retract	*[1]	P1B-42		A7	P1A-12	
Slat 3, Full-extend	A8	P1B-5	P1B-25	A10	P1A-15	P1A-17
Slat 3, Mid-extend	A9	P1B-6	P1B-26	A10	P1A-15	P1A-16
Slat 3, Retract	*[1]	P1B-43		A10	P1A-15	
Slat 4, Full-extend	All	P1B-15	P1B-35	A13	P1A-26	P1A-28
Slat 4, Mid-extend	A12	P1B-16	P1B-36	A13	P1A-26	P1A-27
Slat 4, Retract	*[1]	P1B-44		A13	P1A-26	
Slat 5, Full-extend	A14	P1B-17	P1B-37	A16	P1A-29	P1A-31
Slat 5, Mid-extend	A15	P1B-18	P1B-38	A16	P1A-29	P1A-30
Slat 5, Retract	*[1]	P1B-45		A16	P1A-29	
Slat 6, Full-extend	A19	P1B-19	P1B-39	A21	P1A-32	P1A-34
Slat 6, Mid-extend	A20	P1B-20	P1B-40	A21	P1A-32	P1A-33
Slat 6, Retract	*[1]	P1B-46		A21	P1A-32	

*[1] Input from retract lock switch

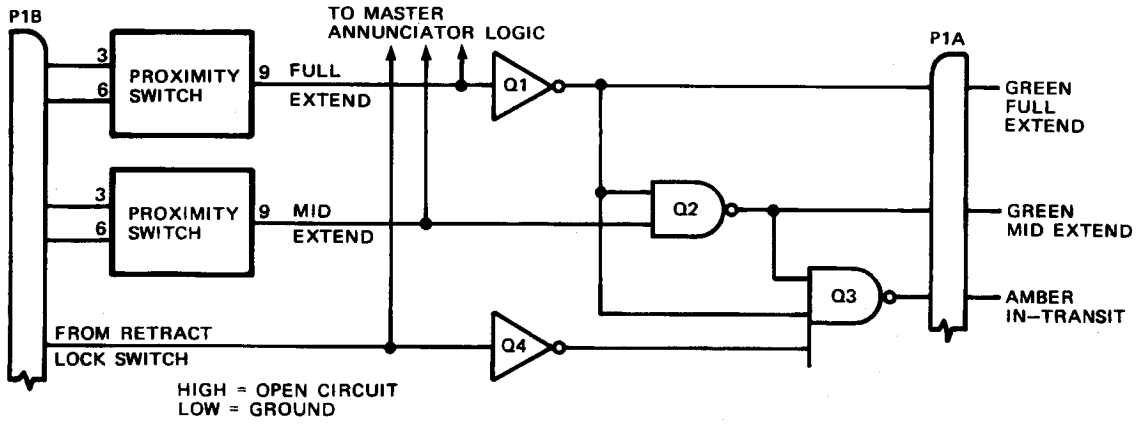
Leading Edge Slat Input and Output Data
Figure 2

	Proximity Switch	Input Pins		Annunciator Logic Card	Output Pins	
		Red Lead	Blue Lead		Amber Lamp	Green Lamp
Flap 1, Extend Flap 1, Retract	A23 A24	P1B-8 P1B-7	P1B-28 P1B-27	A25 A25	P1A-18 P1A-18	P1A-19
Flap 2, Extend Flap 2, Retract	A26 A27	P1B-10 P1B-9	P1B-30 P1B-29	A25 A25	P1A-20 P1A-20	P1A-21
Flap 3, Extend Flap 3, Retract	A29 A30	P1B-12 P1B-11	P1B-32 P1B-31	A31 A31	P1A-22 P1A-22	P1A-23
Flap 4, Extend Flap 4, Retract	A32 A33	P1B-14 P1B-13	P1B-34 P1B-33	A31 A31	P1A-24 P1A-24	P1A-25

Leading Edge Flap Input and Output Data
Figure 3

D. Three-position slat annunciation is illustrated in Figure 4. High inputs are defined as open circuit. Low inputs are defined as ground. Four circuit conditions are possible; slat retracted, slat in transit, slat at mid-extend and slat at full-extend.

(1) When the slat is retracted, the proximity switch inputs are low and the lock switch input is high. The proximity switch low inputs inhibit Q1 and Q2 and extinguish the green full and mid-extend lamps. The lock switch high input activates Q4 which inhibits Q3 and extinguishes the amber in-transit lamp.



Three-Position Slat Annunciation Logic
Figure 4

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(2) When the slat is in transit, all three inputs are low, inhibiting Q1 Q2 and Q4. The three inputs to Q3 are high, Q3 is activated and provides a ground path to illuminate the amber in-transit lamp.

(3) When the slat reaches mid-extend, the mid-extend input is high and the other two inputs are low. Q1 and Q4 are inhibited by their grounded bases. The high mid-extend input removes the inhibit from Q2. Q2 delivers a low output to illuminate the mid-extend green lamp and at the same time inhibit Q3.

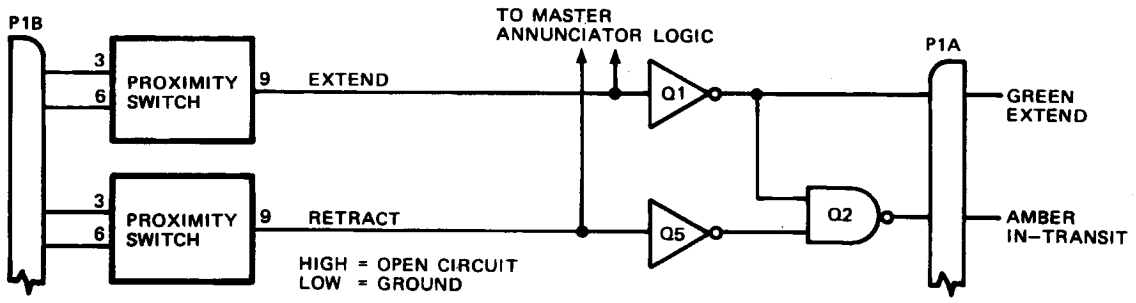
(4) When the slat reaches full extend, the high input to Q1 removes the inhibit permitting a low output. This output provides a ground path for the green full-extend lamp. At the same time, the low output of Q1 inhibits Q2 and Q3.

E. Two-position flap annunciation is illustrated in figure 5. High inputs are defined as open circuit. Low inputs are defined as ground. Three circuit conditions are possible; flap retracted, flap in transit, and flap extended.

(1) When flap is retracted, Q5 has a high input from the retract proximity switch. Q5 is activated, inhibiting Q2 and extinguishing the amber in-transit lamp. The extend proximity switch has a low output inhibiting Q1 and extinguishing the green extend lamp.

(2) When in transit, the proximity switches have low outputs, Q1 and Q5 are inhibited and Q2 is activated to turn on the amber in-transit lamp.

(3) When at extend position, the inhibit is removed from Q1 by the high input from the extend proximity switch. Q1 activates to provide a low output for the green extend lamp and at the same time inhibit the output of Q2.



Two-Position Flap Annunciation Logic
Figure 5

F. Master annunciator logic is illustrated in Fig. 6. Note that a ground input indicates that a slat or a flap is not in the position specified, and an open input indicates that the slat or flap is in the position specified. Low inputs are defined as ground and high inputs are defined as open circuit or applied voltage.

(1) Master annunciator logic is performed by the flap and slat comparator logic card with inputs from the flap and slat logic cards and the trailing edge flap. When all flaps and slats are in the retract position, both the amber "in-transit" lamp and the green "extend" lamp on the master panel are extinguished. With the flaps and slats moving between positions, the amber "in-transit" lamp is illuminated and the green "extend" lamp is extinguished. When all slats are in the mid-extend position and again when all flaps and slats are in the full-extend position the green "extend" lamp is illuminated and the amber "in-transit" lamp is extinguished. An inconsistency, such as one flap fully retracted while another is fully extended, illuminates the amber "in-transit" lamp.

(2) When all flaps and slats are in the retract position all card inputs are ground except to pins 4, 12 and 13. The high input at pin 12 activates Q7, inhibiting Q2 and Q4, and supplies a high input to Q1 and pin P1A-4. Q1 is armed and the green "extend" lamp is extinguished. The open circuit at pin 13 inhibits Q6 supplying a high input to Q5. The open circuit at pin 4 supplies a high input to Q5. When the trailing edge flap is not up, pin P1B-50 is grounded, and Q8 is inhibited supplying a high input to Q5. The three high inputs, from pin 4, Q6 and Q8, activate Q5 supplying a low input to Q1. Q1 is inhibited and the amber "in-transit" lamp is extinguished.

(3) When any flap or slat leaves the retract position, pin 4 is grounded, Q5 is inhibited and supplies a high input to Q1. Q1 is activated, supplying a low to pin P1A-5 and the amber "in-transit" lamp is illuminated. As pin 4 is grounded, Q7 is inhibited arming the extend circuitry.

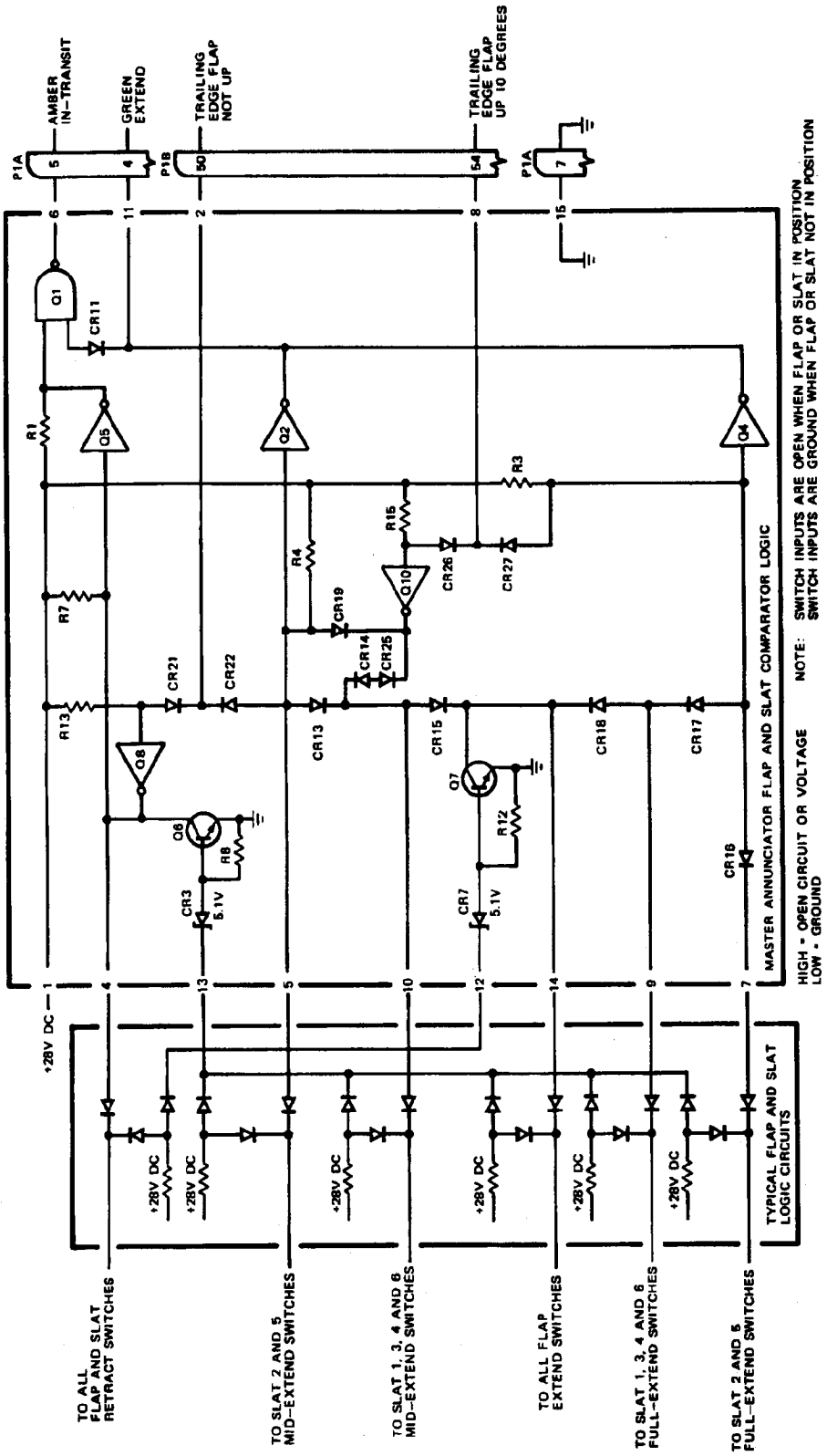
(4) As all slats reach the mid-extend position, the inputs at pins 5 and 10 go high or open circuit. Provided the trailing edge flap is up but not above 10 degrees, the input at pin P1B-50 is open circuit and the input at pin P1B-54 is ground. The ground at pin P1B-54 inhibits Q10, supplying a high input to Q2. With all inputs to Q2 high (pins 5, 10, P1B-50 and Q10), Q2 activates supplying a low to pin P1A-4 and illuminates the green "extend" lamp. Q2 also supplies a low input to Q1 which inhibits Q1, extinguishing the amber "in-transit" lamp.

(5) As the slats leave the mid-extend position, pins 5 and 10 are grounded and Q2 is inhibited. Q2 supplies a high output to Q1 and pin P1A-4. The amber "in-transit" lamp is illuminated and the green "extend" lamp is extinguished.

(6) When the trailing edge flap reaches 10 degrees and above the input at pin P1B-54 goes high or open circuit, arming the full-extend Q4 circuit.

(7) When the flaps and slats reach the full-extend position, pins 7, 9 and 14 go high or open circuit. Q4 is activated supplying a low to Q1 and P1A-4. The low input to Q1 extinguishes the amber "in-transit" lamp; and the low input to pin P1A-4 illuminates the green "extend" lamp.

(8) Note that when any flap or slat leaves the retract position, Q5 is activated, arming Q1. All leading edge flaps and slats and the trailing edge flap must be in consistent positions before Q2 or Q4 can be activated. Thus if an inconsistency occurs, the amber "in-transit" lamp will be illuminated and the green "extend" lamp must then be extinguished.



Master Annunciation Logic
Figure 6

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REPAIR

CAUTION: THIS ASSEMBLY CONTAINS THE COMPONENTS WHICH CAN BE DAMAGED BY ELECTROSATIC DISCHARGE. HANDLE PER PROCEDURE CONTAINED IN SOPM 20-12-02 (HANDLING OF ELECTROSTATIC DISCHARGE SENSITIVE DEVICES).

1. All repair can be accomplished using standard industry practices and procedures contained in SOPM 20-11-04 except as noted in par. A below.

   A. If keying plugs require replacement, install in connectors as indicated in Fig. 401.

Connector	Contact Position
J2, J3, J8, J9, J11, J12, J19, J20, J23, J24, J26, J27, J29, J30, J32, J33,	10-L
J5, J6, J14, J15	10-L
J4, J7, J10, J13, J16, J21	6-F
J25, J31	9-K
J28	7-H
J34	13-P

Keying Plug Installation
Figure 401

TESTING

1. Test Equipment

   A. Power Supply

      (1) 28 volts dc, 3 amperes

   B. Multimeter

      (1) Simpson 260 or equivalent

   C. Test Lamps

      (1) 28 volts dc, 40 ma (327 equivalent) (L1 thru L26)

      (2) 28 volts dc, 100 ma (1820 or equivalent) (L351, L352)

   D. Switches

      (1) SPST (MS24523 or equivalent) (S2, S3, S5, S6, S8, S9, S11, S12, S14, S15, S19, S20, S23, S24, S26, S27, S29, S30, S32, S33, S245, S363 thru S368, S584) (28 required)

   E. Banana Jacks and Plugs

      (1) Jacks

         (a) Dual (J2, J3, J5, J6, J8, J9, J11, J12, J14, J15, J19, J20, J23, J24, J26, J27, J29, J30, J32, J33) (20 required)

         (b) Single

            1) 7 required

      (2) Plugs (Used with centerpoint sensor)

         (a) Dual

         (b) Single

F. Resistors

1) 8.2K, 10PCT, 1W (20 required)

G. Calibration Test (Dial) Stand (including 1.2" x 0.5" x 0.05" target and dial indicator)

(1) ELDEC P/N 3-455-16 (ELDEC Corp., 16700-13th West, P.O. Box 100, Lynnwood, Washington 98037-8503)

H. Proximity Sensor

(1) ELDEC P/N 1-899-15-CP-01, or P/N 1-899-15-CP-02 centerpoint sensors, (ELDEC Corp., 16700-13th West, P.O. Box 100, Lynnwood, Washington 98037-8503), Boeing Specification 10-61226-15.

I. Test Connectors

(1) AM2P57S57S-8062 (Tyco Electronics Corp., 2800 Fulling Mill Rd., Bldg-38, Middletown, Pennsylvania 17057-3142) (Mates with P1A, P1B) (Opt P/N DPX2MB57S57S-33B-0000)

J. Oscilloscope

(1) Dual channel oscilloscope capable of measuring time interval of 1 $\pm$0.2 seconds. Tektronix 2235 or equivalent. Tektronix, Inc., 14200 S.W. Karl Braun Dr., P.O. Box 500, Beaverton, OR 97077-0001

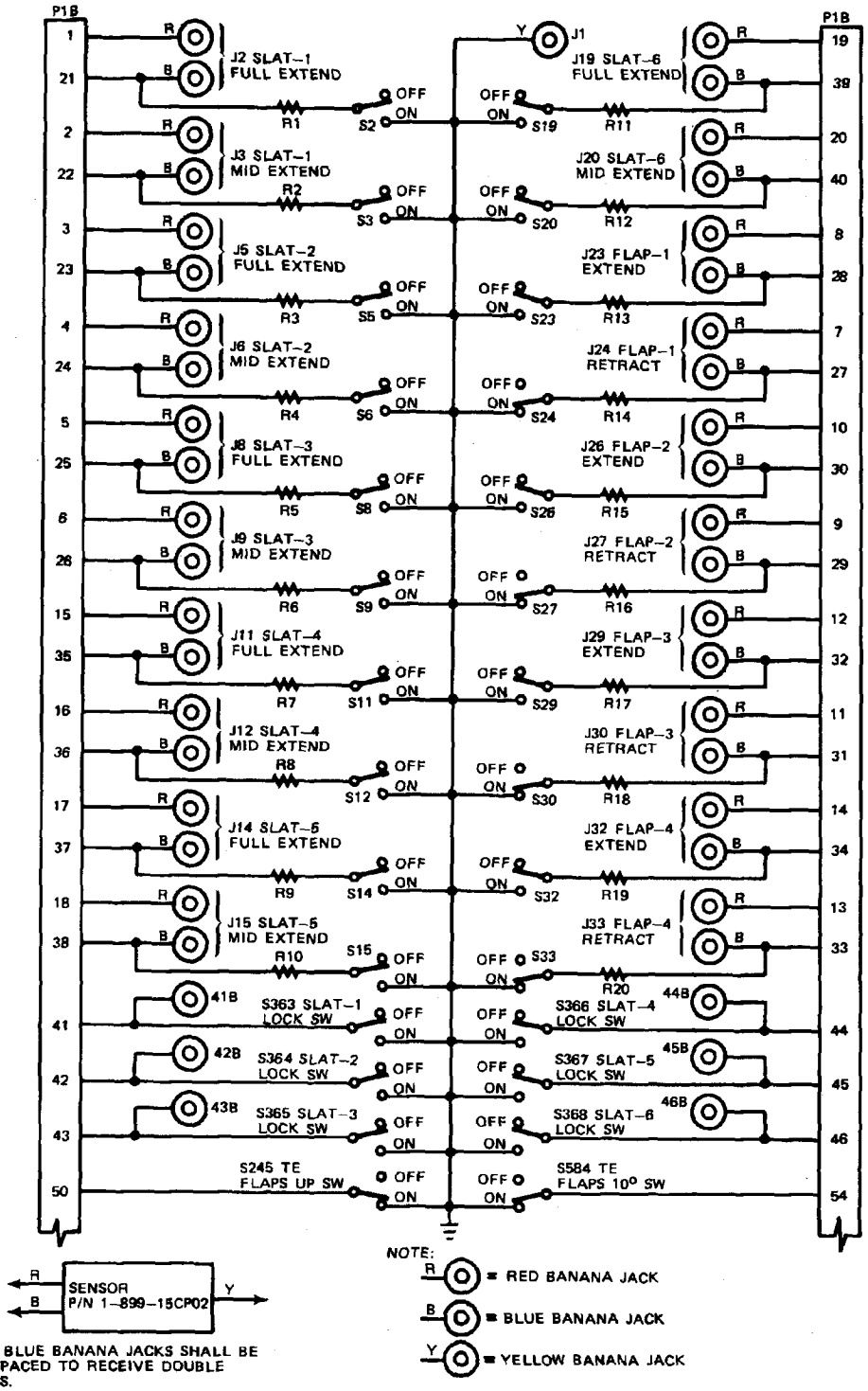
K. Counter/Timer

(1) Counter/timer capable of measuring time interval of 1 $\pm$0.2 seconds. Optional to oscilloscope of J.(1) above. HP5334A or equivalent. Hewlett Packard Co., Neely Sales Region, 15815 SE 37th, Bellevue, WA 98006

2. Functional Test

A. Connect test setup per Fig. 701 with all switches set to OFF except S24, S27, S30, S33, S245, S584. Turn on power supply.

NOTES: (1) The centerpoint sensor leads are terminated in banana plugs. The red and blue leads are terminated in a dual banana plug such that they are inserted and removed as a pair. The yellow lead is terminated in a single banana plug which is inserted into the Y jack of the test setup, Fig. 701. It is important that the red lead connects to the red banana jack and that the blue lead connects to the blue banana jack through the entire test.

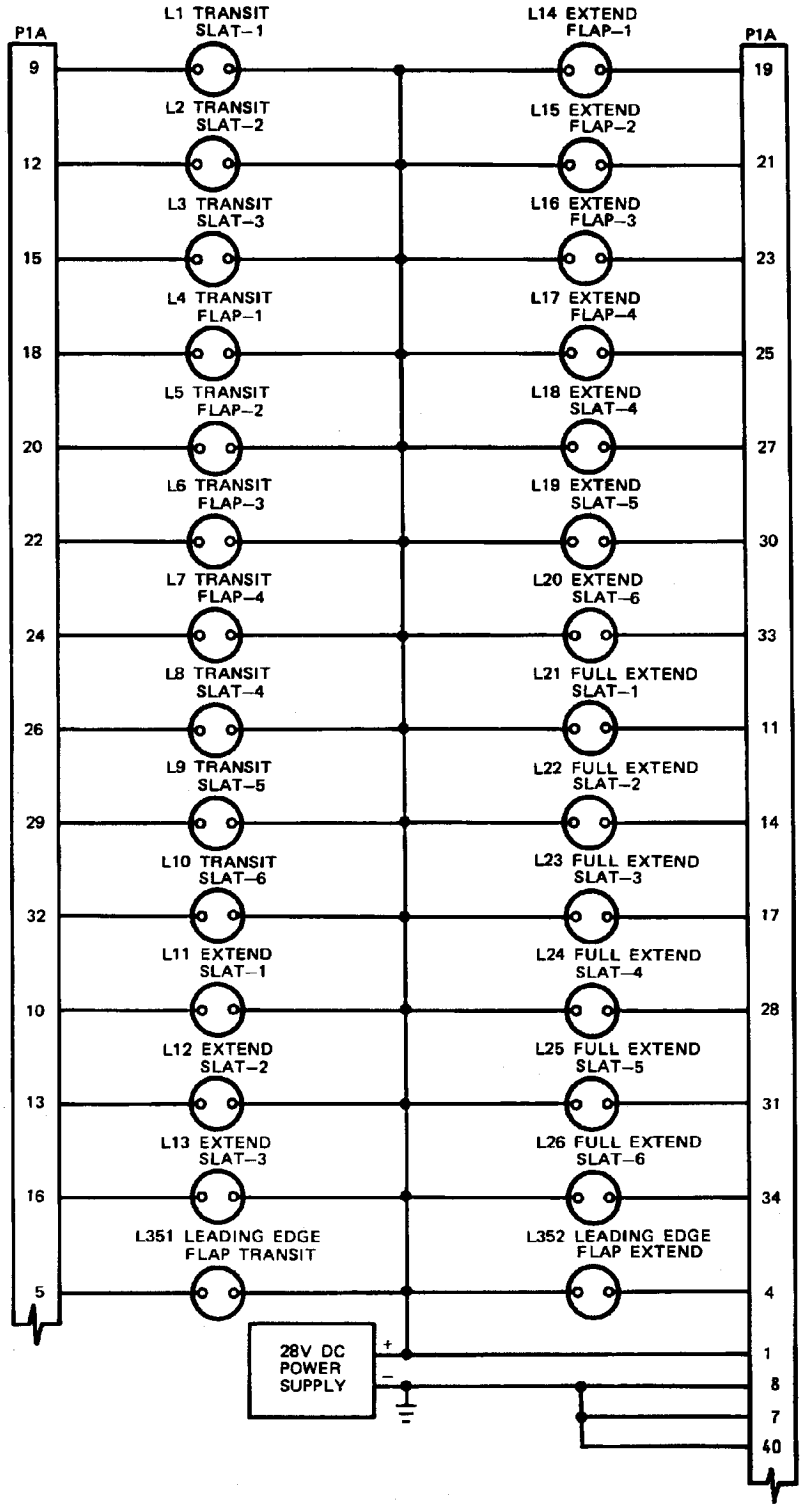


THE RED AND BLUE BANANA JACKS SHALL BE PAIRED AND SPACED TO RECEIVE DOUBLE BANANA PLUGS.

NOTE: ALL RESISTORS 8.2K ± 10 PCT, 1W UNLESS OTHERWISE STATED.

Test Setup
Figure 701 (Sheet 1)

M35261



Test Setup
Figure 701 (Sheet 2)

M35281

B. Perform test procedures per Fig. 702

(1) Use test sensor P/N 1-899-15-CP-02 unless otherwise noted.

Step	Procedure	Test Lamp Indications		Required Results
		Illuminated	Extinguished	
	Flap and Slat Comparator Logic Card (A22)			
1	Set S245 to OFF	L351		
2	Set S245 to ON		L351	
	Proximity Switch Cards (A2, A3, A5, A6, A8, A9, A11, A12, A14, A15, A19, A20, A23, A26, A29, A32)			
	NOTE: Indicator L351 responds to the test centerpoint sensor as actuation is accomplished. Actuation shall occur as the target bar is brought to 0.290 to 0.315 inch from the sensor (0.07 to 0.13 inch for test sensor P/N 390FW04A10). The proximity switch card shall remain actuated as the gap is decreased to zero. Deactuation shall occur as the bar is moved away from the sensor 0.005 to 0.025 inch from the actuation point.			
3	Connect deactuated sensor to test jack J2			
4	Actuate sensor	L21, L351		
5	Deactuate sensor		L21, L351	
6	Disconnect sensor from test jack J2			
7	Connect deactuated sensor to test jack J3			
8	Actuate sensor	L11, L351		
9	Deactuate sensor		L11, L351	
10	Disconnect sensor from test jack J3			
11	Connect deactuated sensor to test jack J5			
12	Actuate sensor	L22, L351		
13	Deactuate sensor		L22, L351	
14	Disconnect sensor from test jack J5			

Test Procedures
Figure 702 (Sheet 1)

Step	Procedure	Test Lamp Indications		Required Results
		Illuminated	Extinguished	
15	Connect deactuated sensor to test jack J6			
16	Actuate sensor	L12, L351		
17	Deactuate sensor		L12, L351	
18	Disconnect sensor from test jack J6			
19	Connect deactuated sensor to test jack J8			
20	Actuate sensor	L23, L351		
21	Deactuate sensor		L23, L351	
22	Disconnect sensor from test jack J8			
23	Connect deactuated sensor to test jack J9			
24	Actuate sensor	L13, L351		
25	Deactuate sensor		L13, L351	
26	Disconnect sensor from test jack J9			
27	Connect deactuated sensor to test jack J11			
28	Actuate sensor	L24, L351		
29	Deactuate sensor		L24, L351	
30	Disconnect sensor from test jack J11			
31	Connect deactuated sensor to test jack J12			
32	Actuate sensor	L18, L351		
33	Deactuate sensor		L18, L351	
34	Disconnect sensor from test jack J12			
35	Connect deactuated sensor to test jack J14			
36	Actuate sensor	L25, L351		
37	Deactuate sensor		L25, L351	
38	Disconnect sensor from test jack J14			

Test Procedures
Figure 702 (Sheet 2)

Step	Procedure	Test Lamp Indications		Required Results
		Illuminated	Extinguished	
39	Connect deactuated sensor to test jack J15			
40	Actuate sensor	L19, L351		
41	Deactuate sensor		L19, L351	
42	Disconnect sensor from test jack J15			
43	Connect deactuated sensor to test jack J19			
44	Actuate sensor	L26, L351		
45	Deactuate sensor		L26, L351	
46	Disconnect sensor from test jack J19			
47	Connect deactuated sensor from test jack J20			
48	Actuate sensor	L20, L351		
49	Deactuate sensor		L20, L351	
50	Disconnect sensor from test jack J20			
51	Connect deactuated sensor to test jack J23			
52	Actuate sensor	L14, L351		
53	Deactuate sensor		L14, L351	
54	Disconnect sensor from test jack J23			
55	Connect deactuated sensor to test jack J26			
56	Actuate sensor	L15, L351		
57	Deactuate sensor		L15, L351	
58	Disconnect sensor from test jack J26			
59	Connect deactuated sensor to test jack J29			
60	Actuate sensor	L16, L351		
61	Deactuate sensor		L16, L351	
62	Disconnect sensor from test jack J29			

Test Procedures
Figure 702 (Sheet 3)

Step	Procedure	Test Lamp Indications		Required Results
		Illuminated	Extinguished	
63	Connect deactuated sensor to test jack J32			
64	Actuate sensor	L17, L351		
65	Deactuate sensor		L17, L351	
66	Disconnect sensor from test jack J32			
	Transit Slat Logic Circuit (A4,A7,A10,A13,A16,A21,A22)			
67	Set S363 to ON	L1, L351		
68	Set S363 to OFF		L1, L351	
69	Set S364 to ON	L2, L351		
70	Set S364 to OFF		L2, L351	
71	Set S365 to ON	L3, L351		
72	Set S365 to OFF		L3, L351	
73	Set S366 to ON	L8, L351		
74	Set S366 to OFF		L8, L351	
75	Set S367 to ON	L9, L351		
76	Set S367 to OFF		L9, L351	
77	Set S368 to ON	L10, L351		
78	Set S368 to OFF		L10, L351	

Test Procedures
Figure 702 (Sheet 4)

Step	Procedure	Test Lamp Indications		Required Results
		Illuminated	Extinguished	
	Transit Flap Logic Circuit and Proximity Switch Cards (A24, A25, A27, A30, A31, A33)			
	NOTE: Test lamps shall extinguish as test sensor is actuated and vice versa. Actuation shall occur as target bar is brought to 0.290 to 0.315 inch from the sensor. Test lamps shall remain extinguished as gap between target bar and sensor is reduced to zero. Deactuation shall occur as target bar is moved away from sensor 0.005 to 0.025 inch from the actuation point.			
79	Verify S24 set to ON		L4, L351	
80	Set S24 to OFF	L4, L351		
81	Connect deactuated sensor to test jack J24			
82	Actuate sensor		L4, L351	
83	Deactuate sensor	L4, L351		
84	Disconnect sensor from test jack J24			
85	Set S24 to ON		L4, L351	
86	Verify S27 set to ON		L5, L351	
87	Set S27 to OFF	L5, L351		
88	Connect deactuated sensor to test jack J27			
89	Actuate sensor		L5, L351	
90	Deactuate sensor	L5, L351		
91	Disconnect sensor from test jack J27			
92	Set S27 to ON		L5, L351	
93	Verify S30 set to ON		L6, L351	
94	Set S30 to OFF	L6, L351		
95	Connect deactuated sensor to test jack J30			
96	Actuate sensor		L6, L351	
97	Deactuate sensor	L6, L351		
98	Disconnect sensor from test jack J30			

Test Procedures
Figure 702 (Sheet 5)

Step	Procedure	Test Lamp Indications		Required Results
		Illuminated	Extinguished	
99	Set S30 to ON		L6, L351	
100	Verify S33 set to On		L7, L351	
101	Set S33 to OFF	L7, L351		
102	Connect deactuated sensor to test jack J33			
103	Actuate sensor		L7, L351	
104	Deactuate sensor	L7, L351		
105	Disconnect sensor from test jack J33			
106	Set S33 to ON		L7, L351	
	NOTE: For test step 107 thru test step 130, test lamps L1 thru L10 shall remain extinguished and test lamp L11 thru L20 shall remain illuminated.			
107	Set S245 to OFF	L352	L351	
108	Set S363 to OFF	L351	L352	
109	Set S363 to ON	L352	L351	
110	Set S364 to OFF	L351	L352	
111	Set S364 to ON	L352	L351	
112	Set S365 to OFF	L351	L352	
113	Set S365 to ON	L352	L351	
114	Set S366 to OFF	L351	L352	
115	Set S366 to ON	L352	L351	
116	Set S367 to OFF	L351	L352	
117	Set S367 to ON	L352	L351	
118	Set S368 to OFF	L351	L352	
119	Set S368 to ON	L352	L351	
120	Set S24 to ON	L351	L352	
121	Set S24 to OFF	L352	L351	
122	Set S27 to ON	L351	L352	
123	Set S27 to OFF	L352	L351	
124	Set S30 to ON	L351	L352	
125	Set S30 to OFF	L352	L351	
126	Set S33 to ON	L351	L352	
127	Set S33 to OFF	L352	L351	
128	Set S584 to OFF	L351	L352	
129	Set S584 to ON	L352	L351	
130	Set S584 to OFF	L351	L352	

Test Procedures
Figure 702 (Sheet 6)

Step	Procedure	Test Lamp Indications		Required Results
		Illuminated	Extinguished	
	NOTE: For test step 131 thru test step 144 test lamp L351 shall remain illuminated and test lamp L352 shall remain extinguished.			
131	Set S6 to OFF	L2	L12	
132	Set S15 to OFF	L9	L19	
133	Set S5 to ON	L22	L2	
134	Set S14 to ON	L25	L9	
135	Set S3 to OFF	L1	L11	
136	Set S9 to OFF	L3	L13	
137	Set S12 to OFF	L8	L18	
138	Set S20 to OFF	L10	L20	
139	Set S2 to ON	L21	L1	
140	Set S8 to ON	L23	L3	
141	Set S11 to ON	L24	L8	
142	Set S19 to ON	L26, L352	L10, L351	
143	Set S584 to ON	L351	L352	
144	Turn off power supply		All	

Test Procedures
Figure 702 (Sheet 7)

C. Verify indexing on rear connector as follows:

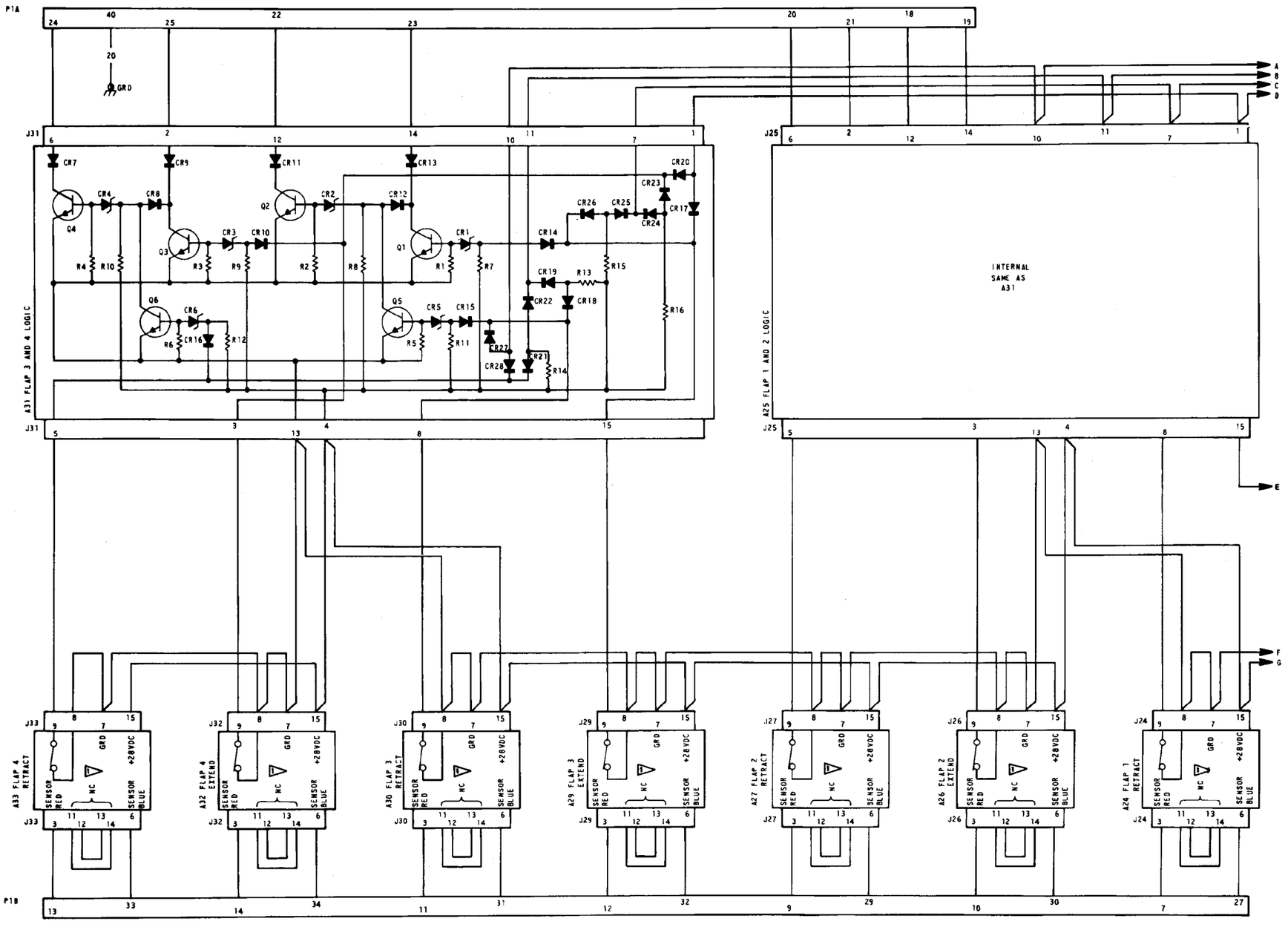
NOTE: Darkened portion indicates extended parts of keying post.

M36763

TROUBLE SHOOTING

1. Trouble shooting is keyed to steps of the test procedures. References are to that portion of TESTING wherein the fault specified could occur. The presumption is made that when a fault indication is encountered, the results of all previous steps were normal.

Trouble	Possible Cause and Correction
L351 or L352 do not illuminate or extinguish and other test operate properly - All steps	Replace A22, A28 or K1. If trouble persists, replace logic card associated with specific test or lamp
L351 or L352 do not illuminate or extinguish and other test lamps do not illuminate or extinguish	Isolate and replace proximity switch or logic card associated with specific test step or lamp
L1 through L26 fail to illuminate or extinguish	Isolate and replace proximity switch or logic card associated with specific test step or lamp



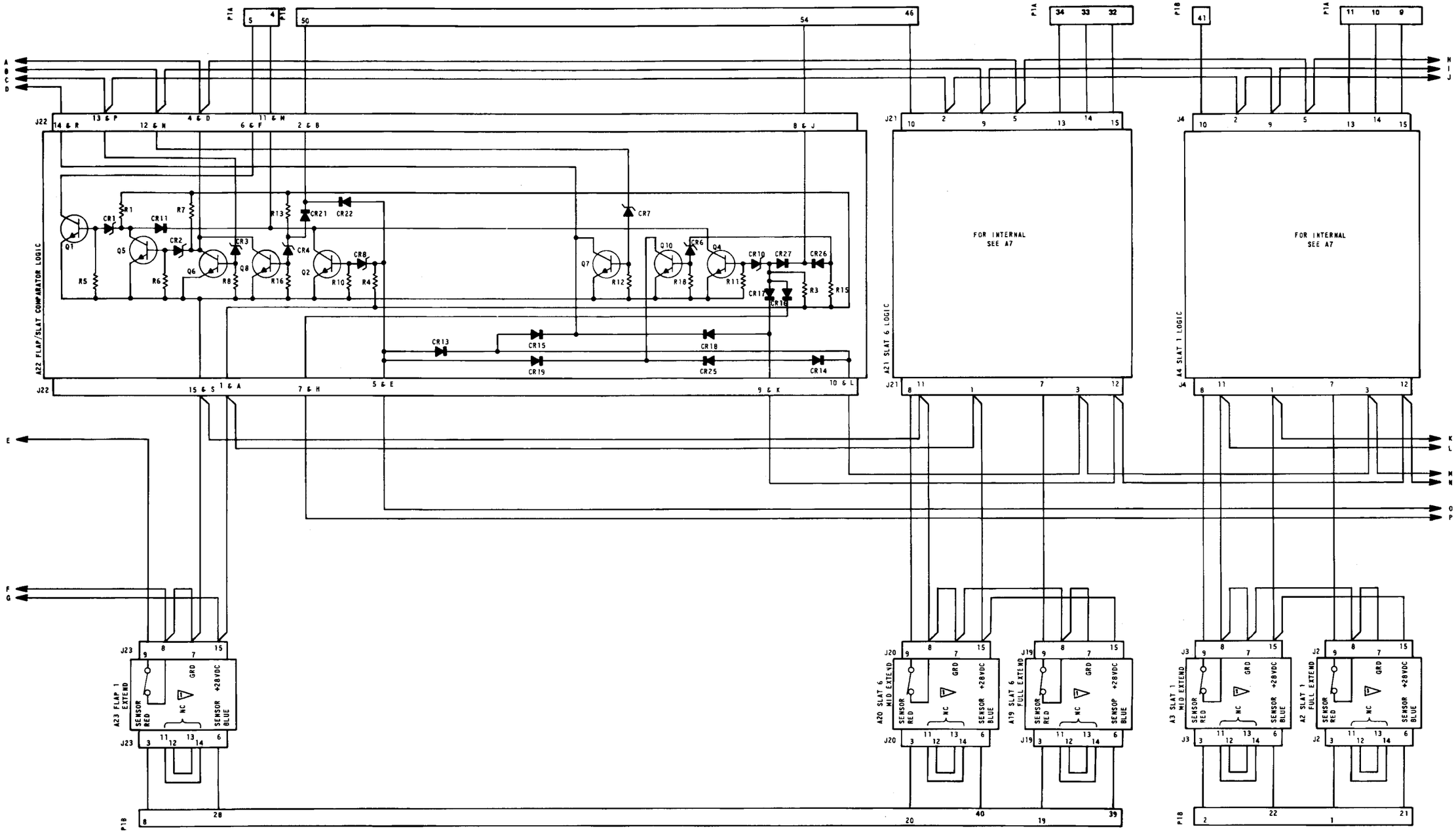
1 REFER TO APPLICABLE MANUFACTURER'S INSTRUCTIONS

NOTE: ALL WIRE BMS 13-16, TYPE 1, CLASS 1, SIZE AWG 24 UNLESS OTHERWISE NOTED

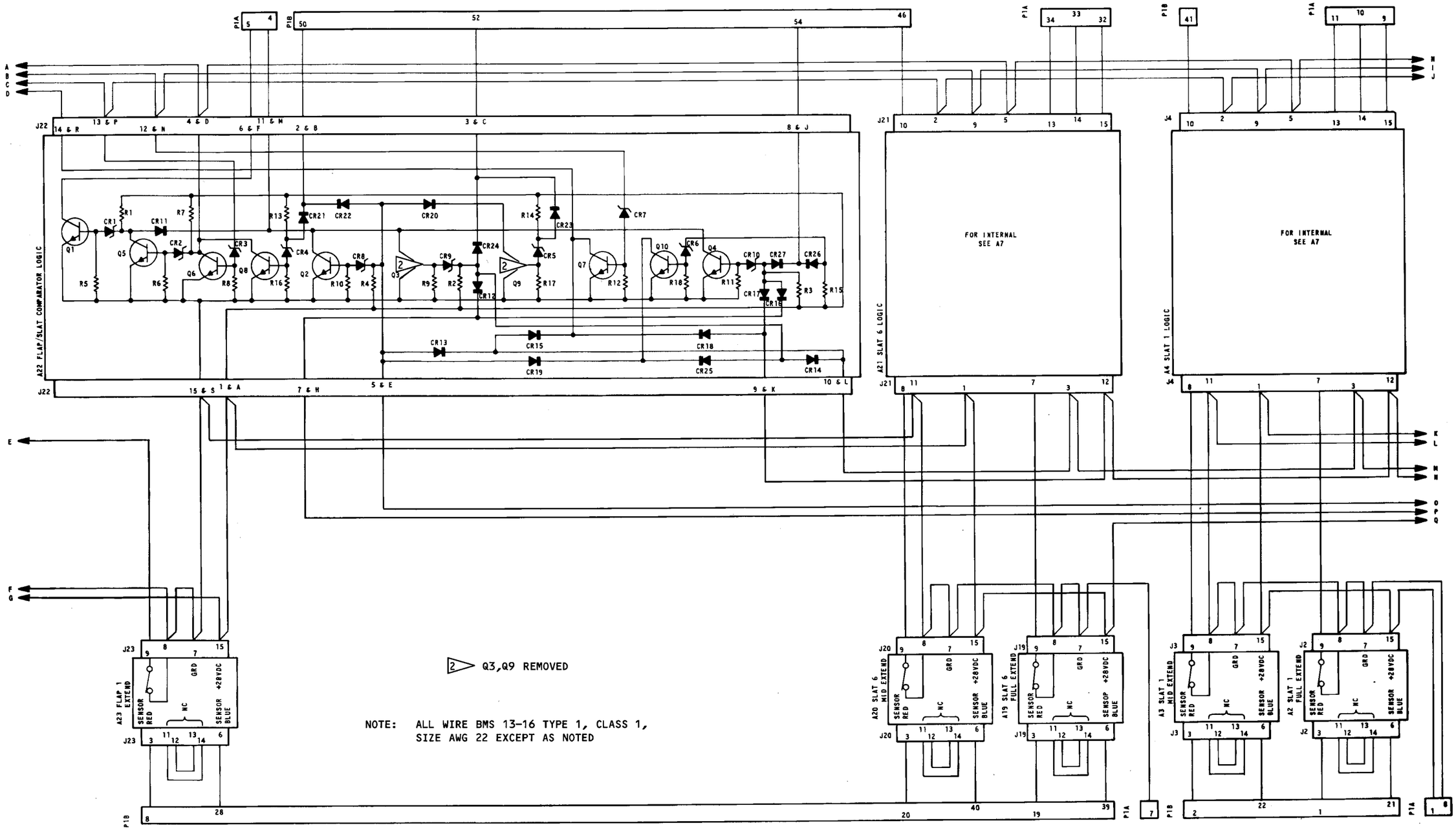
-20- THIS WIRE SIZE AWG 20
65-52807-35 WIRE, BMS 13-46, TYPE II, AWG 26, BLK

Schematic Diagram
Figure 802 (Sheet 1)

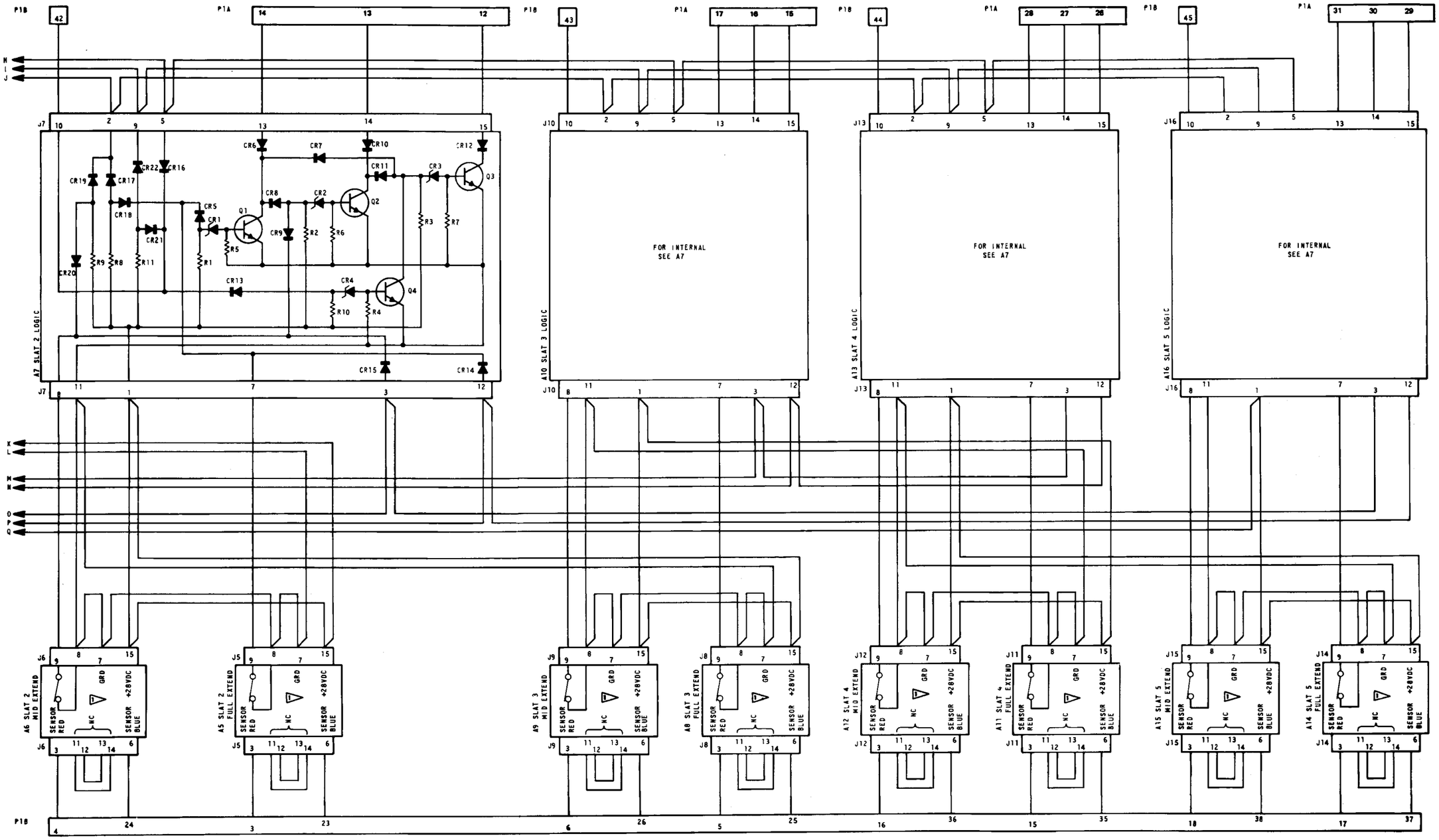
N94104



Schematic Diagram
Figure 802 (Sheet 2)



Schematic Diagram
Figure 802 (Sheet 3)



Schematic Diagram
Figure 802 (Sheet 4)

ILLUSTRATED PARTS LIST

1. This section lists and illustrates replaceable or repairable component parts. The Illustrated Parts Catalog contains a complete explanation of the Boeing part numbering system.

2. Indentures show parts relationships as follows:

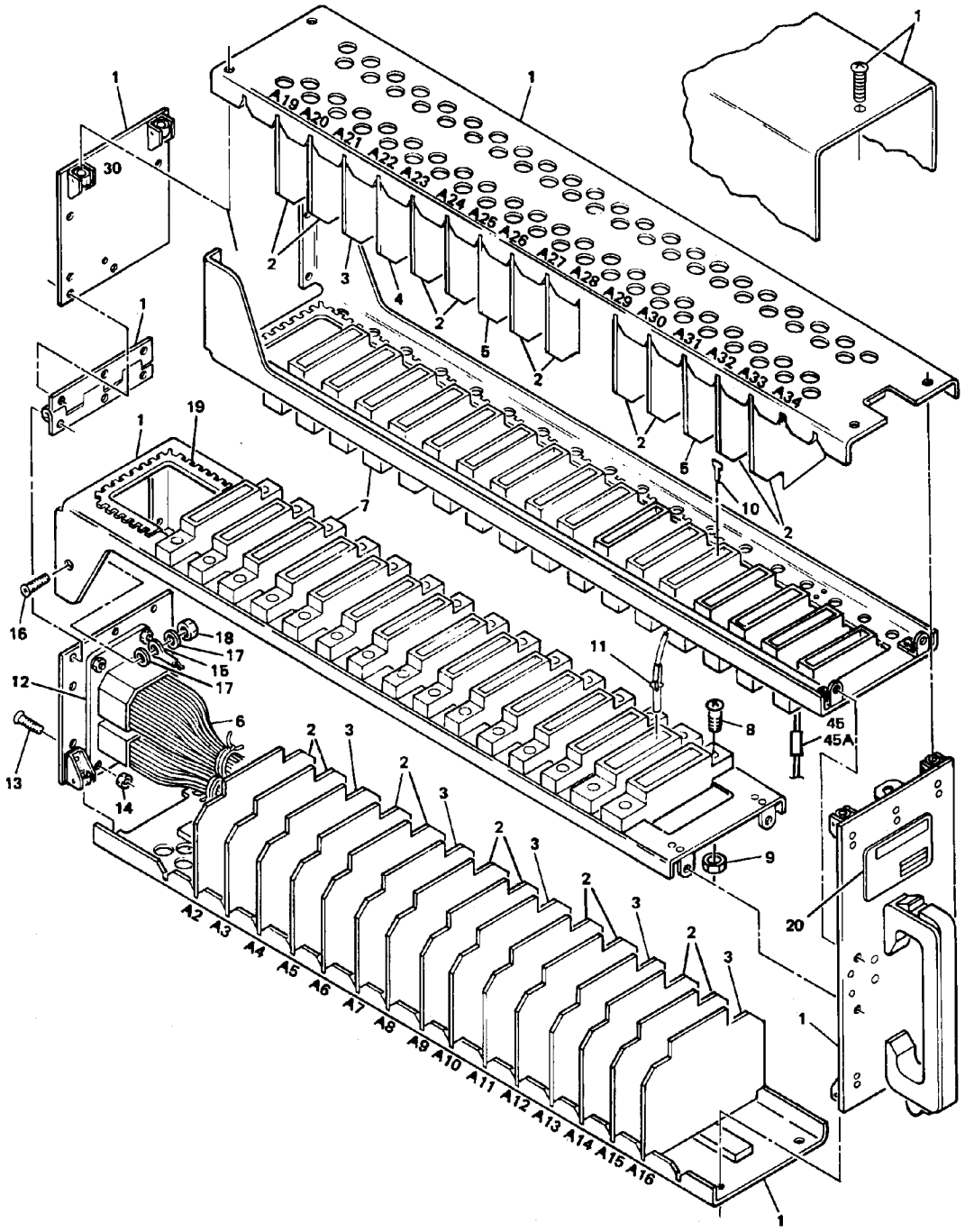
    Assembly
    - Detail Parts for Assembly
    - Subassembly
    - Attaching Parts for Subassembly
        - Detail Parts for Subassembly

    Detail Installation Parts (Included only if installation parts may be returned to shop as part of assembly)

3. One use code letter (A, B, C, etc.) is assigned in the USE CODE column for each variation of top assembly. All listed parts are used on all top assemblies except when limitations are shown by use code letter opposite individual part entries.

4. The MOD level codes in the nomenclature column, such as MOD A and MOD B, identify interchangeable top assemblies which have the same part number but which have differences at the subassembly or component levels. The IPL identifies each MOD level of a top assembly with a different item number and use code. The nameplate identifies the MOD level of each top assembly in the MOD LEVEL block.

5. Use substitute parts only as specified in the drawing, 280T1001, Airplane Electrical/Electronic Parts Substitution Drawing.



Leading Edge Flap and Slat Position Indicator
Accessory Unit Assembly (M229)
Figure 1101

M355316

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
	69-62790-2		LE FLAP AND SLAT POSITION INDICATOR ACCESSORY UNIT ASSY (M229)		RF
1	65-73698-59		. CHASSIS ASSY		1
2	8-060-02		. PRINTED CIRCUIT ASSY, V08748 (BOEING 10-61226-211)		20
2	2-899-111		. PRINTED CIRCUIT ASSY, V08748 (BOEING 10-61226-111)(OPT)		20
3	69-62252-3		. PRINTED CIRCUIT ASSY		6
4	69-62790-3		. PRINTED CIRCUIT ASSY		1
5	69-62252-5		. PRINTED CIRCUIT ASSY		2
6	65-52807-17		. WIRE BUNDLE		1
7	582553-1		. CONNECTOR, V00779		29
			ATTACHING PARTS		
8	NAS600-9P		. SCREW		58
9	BACN10DN40		. NUT		58
			-------*------		
10	582507-1		. PLUG, KEYING, V00779		AR
11	66143-2LP		. CONTACT, V00779		AR
12	AMS2R57P57P 8062		. CONNECTOR, V00779		1
			ATTACHING PARTS		
13	NAS514P440-6		. SCREW		4
14	BACN10DN40		. NUT		4
			-------*------		
15	BACT12AC		. TERMINAL		1
			ATTACHING PARTS		
16	NAS514P632-( )		. SCREW		1
17	AN960PD6L		. WASHER		2
18	22NM107-62		. NUT, V019L2		1
			-------*------		
19	BACG20ZA1275		. GROMMET		7
20	69-31184-53		. NAMEPLATE		1

- ITEM NOT ILLUSTRATED

FIG. 1101 REFERENCE DESIGNATION INDEX (SEE SCHEMATIC DIAGRAM)		
REFERENCE DESIGNATION	PART NUMBER	ITEM NO.
A2, A3, A5, A6, A8, A9, A11, A12, A14, A15, A19, A20, A23, A24, A26, A27, A29, A30, A32, A33	*8-060-02	2
A2, A3, A5, A6, A8, A9, A11, A12, A14, A15, A19, A20, A23, A24, A26, A27, A29, A30, A32, A33	2-899-111	2

* PREFERRED PART

VENDORS

V00779 TYCO ELECTRONICS CORP., 2800 FULLING MILL RD., BLDG-38, MIDDLETOWN, PENNSYLVANIA 17057-3142

V019L2 MACLEAN-FOGG COMPANY, 611 COUNTRY CLUB RD., POCAHONTAS, ARIZONA 72455-8803

V08748 ELDEC CORP., 16700 13TH AVE. W., P.O. BOX 100, LYNNWOOD, WASHINGTON 98037-8503