GENERAL (%) ELECTRIC

P3K-AL-0367-A01

CONT ON SHEET TITLE TEST INSTRUCTIONS FOR LOAD SET POSITIONING CIRCUIT 1L2-A001 P3K-AL-0367-A01 FIRST MADE FOR (ASS'Y DRAWING 117D9147 G-1) CONT ON SHEET REVISIONS I. CIRCUIT DESCRIPTION This circuit accepts and combines input switching signals from load control and other units of the control system and provides accordingly 115V AC to the load set motor to position it. The board contains 24 VDC circuits (TB1, all 16 relay coils and associated circuitry) and 115V 60 HZ AC circuits (TB2, TB3, the 3 transformers, the 2 thyrectors, all relay contacts and associated circuitry). The circuit provides 115V to pin 21 to increase the load set and to pin 22 to decrease it. These outputs are determined by three methods of operation involving different inputs: MANUAL OPERATION By applying 24V (through control panel pushbuttons) to relay 14 (decrease) or relay 15 (increase). Manual operation is permitted only when K13 is energized, which disables the remote operation. SPEED MATCHER OPERATION **b**. By applying 24V to relay K6 (decrease) or relay K7 (increase). When Speed Matcher Operation is selected, K8 is energized, which disables remote operation. REMOTE OPERATION c. By applying 115V AC from Plant Communications to pins 24 (decrease) or 25 (increase). The isolation transformers permit this to be done either by using external source or the 115V provided to Plant Communications through pin TB3-23 for this purpose. In addition to these normal operation inputs there are provisions to prevent load set increase under certain operating conditions (K9, K10, K5, K11, etc.) Finally under certain conditions the load set decrease command is given automatically (Runback - K10, K5, K3, K12). CIRCUIT SPECIFICATIONS II. 273-2 Before coating the board the six diodes CR1 - CR6 should be checked 273-12 one by one to insure redundancy is effective. 273-71* 273-138 2. Isolation between circuits. 273-221 Resistance between TB1-1 and TB1-2 should be \rangle 1 M Ohm Resistance between TB1-1 and TB2-19 should be > 273-227 Resistance between TB1-2 and TB2-19 should be > 1 M Ohm PRINTS TO MADY Prolacek Sept. 19, 1977 APPROVALS DIV OR Steam Turbine ... DEPT. P3K-AL-0367-A01 ISSUED SEP 20 1977 LOCATION CONT ON SHEET SH NO. Schenectady, N.Y.

CODE TOENT NO.

FF-803-WA (11-72)

+

P3K-AL-0367-A01

CONT ON SHEET

SH NO.

P3K-AL-0367-A01

CONT ON SHEET

+

+

+

... ...

TEST INSTRUCTIONS FOR LOAD SET POSITIONING CIRCUIT 1L2-A001

FIRST MADE FOR (ASS'Y DRAWING 117D9147 G-1)

REVISIONS

II. CIRCUIT SPECIFICATIONS (continued)

TITLE

2. (continued)

Resistance between TB3-26 and TB2-19 should be > 1 M Ohm Resistance between TB2-18 and TB2-19 should be < .1 Ohm

3. Thyrectors

Resistance between TB2-16 and TB2-18 should be > 100K Ohms Resistance between TB2-17 and TB2-18 should be > 100K Ohms

(These measurements must be done by using a multimeter or ther low voltage instrument and testing both polarities).

4. Transformers # CONNETT 510 R 25W RESISTUR ACROSS

4. Transformers EACH GECONDAR WHEN MEASURING VOLTAGE

933

Apply 115V 60 HZ between TB2-19 and TB2-20 and measure the voltage between TB3-23 and TB3-26. It should be 115V ± 1.5V.

Connect TB3-24 and TB3-25 together and apply 115V 60 HZ between these two points and TB3-26. Measure voltages to ground (TB2-19) of TP2 and TP3. Both should be 115V + 1.5V.

5. Logic and Path Continuity

Connect TB3-23, TB3-24, and TB3-25 together.

Connect two 115V minature lamps to pins 21 and 22 (other ends of lamps to 115V common).

Connect TB1-1 to 24 VDC and TB1-2 to 24 VDC common.

Connect TB2-19 to 115V 60 HZ common and TB2-20 to 115V 60 HZ.

Check the logic and path continuity by using the table on pages 3 and 4.

6. The above logic table cannot show that contacts K16-1, K4-1 and K2-1 are not permanently shorted. To check this the following test should be done:

Remove connections between TB3-23, 24, and 25.
All otherconnections as in step 5.
Apply permanently 24 VDC to TB1-13.
Monitor TP2 with an AC voltmeter; this voltage should be OV in all three following cases:

- a. OV at TB1-4, OV at TB1-5 $TP\lambda OV$
- b. 24 VDC at TB1-4, OV at TB1-5 T P2 O√
- c. OV at TB1-4, 24 VDC at TB1-5. → +2 -0 V

PRINTS TO

MAGE BY

J. Polacek Sept. 19, 1977

ISSUED SEP 20 1977

Schenectady, N.Y. LOCATION CONT ON SHEET 3 SH NO. 2

FF-803-WA (11-72) PRINTED IN U.S.A. CODE IDENT NO.

ISSUED 2 U 1977

Schenectady, N.Y.

P3K-AL-0367-A01

LOCATION CONT ON SHEET

SH NO.

FF-803-WA (II-70)* PRINTED IN U.S.A.

+

+

GENERAL & ELECTRIC

P 3K-AL-0367-A01

P3K-AL-0367-A01
CONT ON SHEET

TITLE

TEST INSTRUCTIONS FOR LOAD SET POSITIONING CIRCUIT 1L2-A001
FIRST MADE FOR (ASS'Y DRAWING 117D9147 G-1)

	(CONTINUED) 24 VDC INPUTS AT PIN TB-1									CORRECT OUTPUTS TB-2		REVISION			
3	4	5	6	7	8	9	10	11	12	13	14	15	21	22	
1	0	ó	0	0	0	0	0	0	0	1	0	0	2	2	
1	1	0	0	0	0	0	0	0	0	. 1	0	0	2	2	
1	0	0	0	0	0	0	0	0	0	1	0	0	2	2	
1	0	1	0	0	0	0	0	0	0	1	0	0	0	2	
1	0	0	0	0	0	0	0	0	0	1	0	0	2	2	
0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	
											 				

NOTES:

+

0: 0V

1: 24 VDC

2: 115 V AC or lamp on

The table is not sequential, therefore, the sequence of stages is not essential. Care has been taken so that only one input transition occurs at a time; it is understood that this is a constraint of the available set-up; Were this not the case, the table could be shortened to a smaller number of stages.

* (Comments)

A -
$$TP2,3,7,8,9,12 = 115V$$

$$B - TP5,6 = 115V$$

$$C - TP4, 10, 11, 13, 14, 15, 16, 17 = 115V$$

$$D - TP1 = 24VDC$$

PRINTS 10

MADE BY Olacek Sept. 19, 1977

Steam Turbine

DIV OR DEPT. P3K-AL-0367-A01

Schenectady, N.Y. LOCATION CONT ON SHEET 5 SH NO. 4

3	GENERAL 🍪 ELECTRIC	P2V AT 0267 407
NO.	TITLE	P3K-AL-0367-A01 cont on sheet sh no. 5
P3K-AL-0367-A01 cont on sheet — sh no. 5	TEST INSTRUCTIONS FOR LOAD SET PO	
		REVISIO
PREPARED BY D. Economou EHC DESIGN EN		DATE 6/13/73
APPROVED BY P.C. Callan	- MANAGER	ATE 2-6-77
EHC DESIGN R	NGINEERING	
TEST PROCEDURE REVIEWED BY: R. Debertoli EHC TEST ENG		ATE <u>4/6/22</u>
SEP 20 1977	Steam Turbine	PRINTS TO PARTITION CONT ON SHEET - SH NO.

FF-803-WA (11-72) PRINTED IN U.S.A.

+