GE Power Generation Engineering

Materials and Processes Engineering
Schenectady, NY 12345

PROCESS SPECIFICATION

P3K-AL-0335-A01

BOARD TEST SPECIFICATION - VOLTAGE SENSOR 22 VDC 1P3-E001

117D8508G0002

DOCUMENT REVISION STATUS: DETERMINED BY THE LAST ENTRY IN THE "REV" AND "DATE" COLUMN

REV.	AN NO.	DESCRIPTION	SIGNATURE	REV. DATE
A	YA00096	SPECIFICATION LISTED IN STEAM TURBINE/GENERATOR INDEX AS "INACTIVE" HAS BEEN FORMALLY REVISED AS "INACTIVE FOR NEW DESIGN". (PR BUDKA)	C.R. Trupp	DEC 0 2 1991

INACTIVE FOR NEW DESIGN

AS OF 12/02/91

PREPARED BY: P.R. BUDKA

ORIG. ISSUE DATE: --

TITLE

BOARD TEST SPECIFICATION - VOLTAGE SENSOR, 22 VDC
1P2-E005 - SCHEMATIC 117D7368

FIRST MADE FOR

REVISIONS

1. PURPOSE

A. The purpose of this specification is to convey the proper information needed to test the referenced circuit board for its correct function.

B. To enable the skilled Test Engineer to produce the detailed Test Procedure for the referenced circuit board.

2. DOCUMENTS PERTAINING TO THIS SPECIFICATION

A. Voltage Sensor - 22 VDC - 117D8508

B. AC/DC Power Ground System - 117D7762

C.

3. EQUIPMENT NEEDED TO TEST

A. DC Power Supply - 24 VDC nominal, 2 ampere rating.

B. DC Power Supply - 0 to 28 VDC nominal, 1 ampere rating.

C. 2 switches - SPST - 1 ampere rating, 24 VDC nominal.

D. 3 Push-button Switches - SPST - 1 ampere rating, 24 VDC nominal each.

E. 3 Indicating devices - 24 VDC nominal, 80 ma rating each.

F.

4. CIRCUIT DESCRIPTION

This board consists of a Voltage Sensor and associated components to monitor the output voltage of the 22 VDC Power Supply. The outputs of the board logic are brought out to allow indication and control functions.

5. CIRCUIT INTEGRATION

The voltage sensor continuously monitors the output voltage of the Power Supply. Whenever this voltage exceeds a pre-set limit, a latching relay energizes, sending a signal to an indicator and the Malfunction Bus. If the voltage falls to within the pre-set value, this signal can be overriden.

If the voltage falls below a pre-set limit, a different relay will send a signal to another indicator and the Malfunction Bus. As before, if the voltage rises above the preset value, logic circuitry can be activated to override the signal.

273-5
273-314
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273-12
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273-138
273-71

PRINTS TO

MADE BY D.Mone June 11, 1973

APPROVALS

ISSUED JUN 1 2 1973

Steam Turbine DIV OR DEPT.

Schenectady, N.Y. LOCATION

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6. TEST SPECIFICATION

A. Connect the board as shown in Figure 1.

B. With PS1 set at 0 volts and 24 VDC set on PS2, close S1 and S2. Indicators 1 and 2 shall indicate, indicator 3 shall not.

C. Press in succession PB1, PB2, and PB3. No change shall occur in the indicators.

D. Increase the voltage between TP52 and TP53 at a 1 volt per second rate. Stop when the voltage reaches 22 ± 0.5 VDC. There shall be no change in the indicators.

E. Press and release PB1. Indicators 1 and 2 shall cease indicating.

F. Reduce the PS1 voltage at a 1 volt per second rate. Stop when the voltage reaches 19 ± 0.5 VDC.

G. Indicators 1 and 2 shall indicate where the voltage between TP52 and TP53 is 20 + 1 - 0 VDC. Increase the voltage to 22 ± 0.5 volts.

H. Press and release PB2. Indicators 1 and 2 shall cease to indicate.

I. Press and release PB3. There shall be no change in the status of the indicators.

J. Increase the voltage between TP52 and TP53 at the 1 volt per second rate to 26 ± 0.5 VDC. Indicators 2 and 3 shall indicate when the voltage reads 24 + 0, -1 VDC.

K. Reduce the voltage between TP52 and TP53 to 22 ± 0.5 VDC. There shall be no changes in the status of the indicators.

L. Press and release PB3. Indicators 2 and 3 shall cease indicating.

M. Repeat steps J and K. Press and release PB2. Indicators 2 and 3 shall cease indicating.

N. Reduce PS1 and PS2 to 0 VDC. Open S1 and S2.

7. REPORT SHEET

	ACTION	REACTION	YES	NO
A.	Close S1 & S2	Ind. 1, 2 indicate Ind. 3 not indicate		

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TITLE
BOARD TEST SPECIFICATION - VOLTAGE SENSOR, 22 VDC
1P2-E005 - SCHEMATIC 117D7368
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7. REPORT SHEET (continued)

	ACTION	REACTION	YES	NO
B.	PB1, PB2, PB3 pressed.	Ind. 1,2,3; No change		
C.	PS1: Increase 0 → 22 VDC.	Ind. 1,2, indicate Ind. 3, not indicate		
D.	PB1 pressed.	Ind. 1,2,3 not indicate		
E.	PS1: Decrease 22 VDC → 19.5 VDC.	Ind. 1,2 indicate Ind. 3 not indicate		
F.	PS1: Increase 19.5 VDC → 22 VDC.	Ind. 1,2 indicate Ind. 3 not indicate		
G.	PB2 pressed.	Ind. 1,2 de-indicate Ind. 3 no change		
H.	PB3 pressed.	Ind. 1,2,3, no change		
I.	PS1: Increase 22 VDC → 26 VDC.	Ind. 2,3 indicate Ind. 1, not indicate		
J.	PS1: Decrease 26 VDC → 22 VDC.	Ind. 1,2,3 no change		
K.	PB3 pressed.	Ind. 2,3 de-indicate Ind. 1, no change		
L.	PB2 pressed.	Ind. 2,3 de-indicate Ind. 1, no change		

8. NOTES

1. If any indicator does not indicate as described, the board shall be rejected.

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REV NO.	TITLE	P3K-AL-0335-A01
P3K-AL-0335-A01 CONT ON SHEET 6 SH NO. 4	BOARD TEST SPECIFICATION - VOLTAGE SENSOR, 22 VDC 1P2-E005 - SCHEMATIC 117D7368 FIRST MADE FOR	CONT ON SHEET 6 SH NO. 5

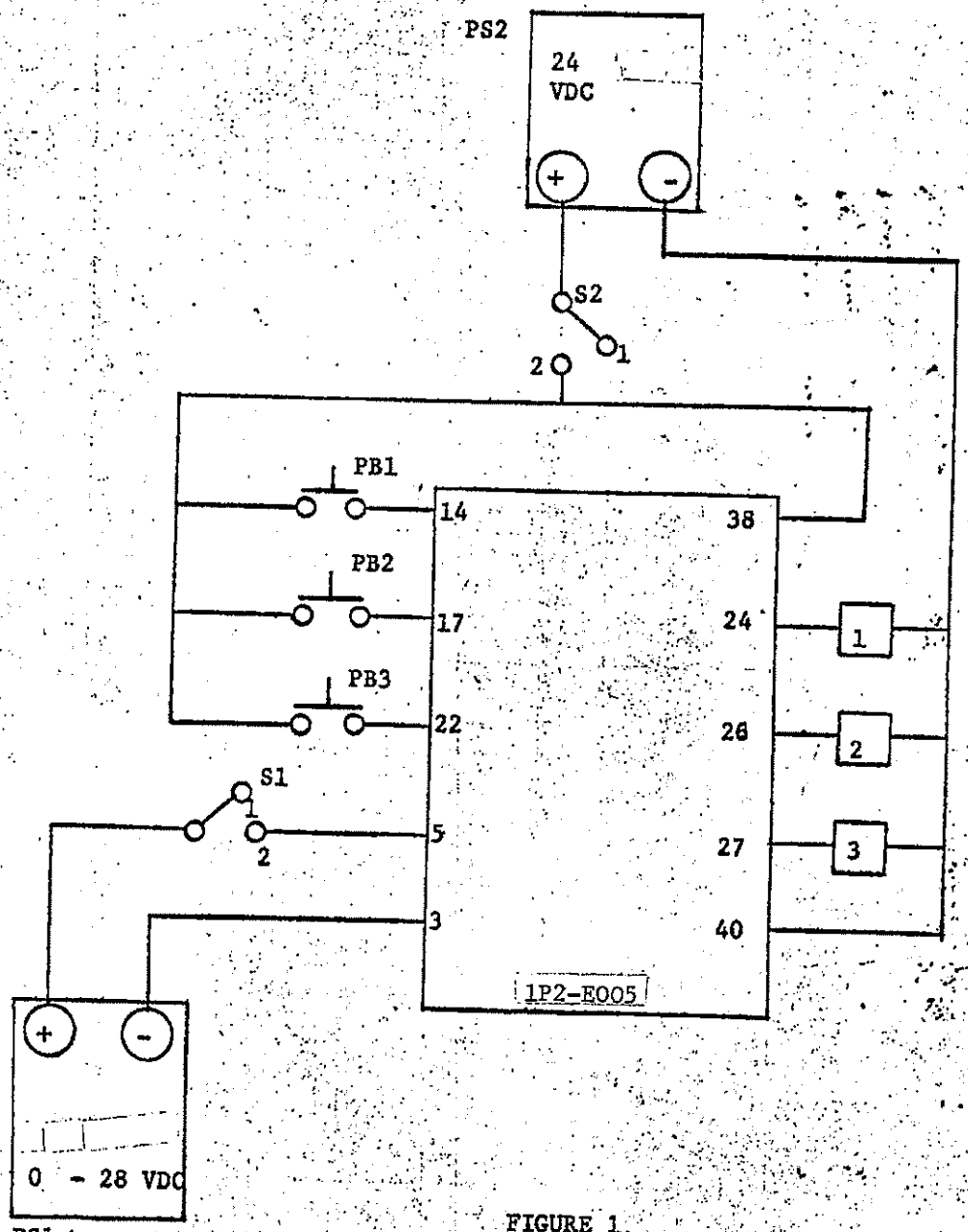

FIGURE 1

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D. Wynne June 11, 1973 ISSUED JULY 1 2 1973		Steam Turbine DIV OR DEPT. Schenectady, N.Y. LOCATION	P3K-AL-0335-A01 CONT ON SHEET 6 SH NO. 5 CODE IDENT NO.

FP-803 WA (8-69)
PRINTED IN U.S.A.

TITLE
Board Test Specification - Voltage Sensor, 22 VDC
1P3-
FIRST MADE FOR EHC Mark II

REVISIONS

TEST INSTRUCTIONS 1P3-

Assembly 117D8508

Schematic 117D-7368

The 22 VDC sensor monitors the output voltage level of its specific power supply. If the voltage level falls below 20 to 21 VDC, K1 de-energizes, contact K1-1 closes to apply a signal to pins 24 and 26. If the voltage level rises above 23 to 24 VDC, KL1 energizes, contact KL1-1 closes to apply a signal to pins 27 and 26. A reset signal applied to pins 14 or 17 will pickup K2 allowing K1-1 to latch in. Similarly, a reset signal applied to pins 22 or 17 will pick up KL1-R.

TEST PROCEDURE:

1. Refer to Fig. A for test circuit.
2. All switches down.
3. Read voltage of VS1 from TP53 to TP52.
4. Adj. VS1 for 0 VDC.
5. The chart which follows outlines the procedure for testing the relay logic of this circuit.

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P3K-AL-0335-A01 CONT ON SHEET 8 SH NO. 8

REV NO. A

P3K-AL-0335-A01 CONT ON SHEET 8 SH NO. 8

TITLE

BOARD TEST SPECIFICATION - VOLTAGE SENSOR, 22 VDC
1P3- SCHEMATIC 117D7368

FIRST MADE FOR Mark II

REVISIONS

	PROCEDURE	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	
6	Initial conditions				X	X								
7	S3 up	X			X	X								
8	S3 down - S4 up		X		X	X								
9	S4 down - S5 up			X	X	X								
10	S5 down				X	X								
11	Adj VS1 for +22.00 VDC				X	X								
12	S3 up	X												
13	S3 down													
14	Decrease VS1 volts until L4 goes on				X	X								
15	Check VS1 volts for +20.00 to 21.00 VDC				X	X								
16	Adj. VS1 for +22.00 VDC				X	X								
17	S4 up		X											
18	S4 down													
19	Adj. VS1 for +25.00 VDC					X	X							
20	S3 up	X				X	X							
21	S3 down - S4 up		X			X	X							

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