P3K-AL-0525-A01

CONT ON SHEET 2

sh No. 1

REVISION

NO.

P3K-AL-0525-A01

TEST INSTRUCTIONS FOR THE SPEED CONTROL

REFERENCE: ANALOG TO LOGIC

CONT ON SHEET 2

sh NO. 1

TITLE

FIRST MADE FOR EHC MARK II (SPEED CONTROL UNIT)

I. SCOPE

This instruction outlines the specifications for testing the Speed Control Reference Analog to Logic Board 183-B002.

CIRCUIT BOARD 133D6571

II. CIRCUIT DESCRIPTION

The Speed Control Reference analog to logic board (A/L) contains relays for controlling the analog speed reference signals to the Low Value Gates (LVG's).

III. CIRCUIT SPECIFICATIONS

- 1. All functional tests shown in the A/L Testing Table can be made with the board coated as well as uncoated.
- 2. Apply +24V to pin 38 and common to pin 40 for all steps in the A/L Testing Table.
- 3. The symbols used on the A/L Testing Table are as follows:

TABLE SYMBOLS

0 = NO VOLTAGE applied to Power Input pins

1 = +24 VDC applied to Power Input pins

X = CONTINUITY PATH UNDER TEST

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GENERAL (%) ELECTRIC P3K-AL-0525-A01 CONT ON SHEET 3 TITLE TEST INSTRUCTIONS FOR THE SPEED CONTROL REFERENCE: ANALOG TO LOGIC P3K-AL-0525-A01 FIRST MADE FOR EHC MARK II (SPEED CONTROL UNIT) CONT ON SHEET 3 REVISIONS SPEED CONTROL REFERENCE ANALOG TESTING TABLE POWER INPUTS AT PINS **K**2 لاي K_1 К4 K7 FUNCTION to to to to to to to +24V +24V 15 14 13 29 30 31 33 35 36 Close 1 Valves Low 1 Speed Hold Med 1 Speed Ho1d Ηi 1 Speed Ho1d 1 Overspeed Medium Accel. 1 Rate Fast Accel. 1 Rate Backup Speed 1 Amp. Rotor 1 Warming S/M in 1 Operation PRINTS T MADE BY D.Mone APPROVALS DIV OR July 23, 1976 Steam Turbine DEPT. P3K-AL-0525-A01 JUL 23 1976 Schenectady, N.Y. LOCATION CONT ON SHEET 3

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CODE IDENT N

P3K-AL-0525-A01

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CONT ON SHEET 4

P3K-AL-0525-A01

TITLE CONT TEST INSTRUCTIONS FOR THE SPEED CONTROL

REFERENCE: ANALOG TO LOGIC

		SF	EED	CONTRO	OL REFERENC	CE ANALO	G/LOGI	TEST:	ING T	TABLE		REVISIO
	E			С	CONTINUITY	CHECKS						
FUNCTION UNDER TEST	Opens Pin 5 to 16 Closes Pin 4 to 16 Closes Pin 4 to 16	Pin 18 to 6	Closes Pin 18 to 7	Closes Pin 18 to 8 Opens Pin 10 to 39	Closes Pin 26 to 18 Closes Pin 21 to 18 Opens Pin 26 to 39 Opens Pin 21 to 39	Closes Pin 22 to 32 Opens Pin 22 to 23 Opens Pin 23 to 32	Opens Pin 23 to 32 Closes Pin 24 to 32	Closes Pin 26 to 34 Opens Pin 26 to 39	Closes Pin 18 to 39	Opens Pin 25 to 39 Closes Pin 27 to 25		
Close Valves	X											
Low Speed Hold		х		·		·						
Med Speed Hold			х								", "	
Hi Speed Hold	·			X								
Overspeed					Х							
Medium Accel. Rate						X						
Fast Accel. Rate							Х					
Backup Speed Amp1.								х				
Rotor Warming									х			
S/M In Operation										х		
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P3K-AL-0525-A01

CONT ON SHEET 5

SH NO. A

NO.

TITLE

TEST INSTRUCTION FOR THE SPEED CONTROL

REFERENCE: A/L

CONT ON SHEET 5

SH NO. 4

FIRST MADE FOR MK II

REVISION

TEST INSTRUCTIONS

P3K-AL-0525-A01

1**5**3-B002

Assembly 133D6571 Schematic 133D6574

PROCEDURE:

A. Refer to P3K-AL-0494-A02 for test circuits, equipment list, and set of instructions.

- B. Table A provides the step by step procedure to follow in testing this circuit.
- C. Table B provides a step by step description of input voltages (to use as a troubleshooting aid).

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LOCATION CONT ON SHEET 5

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GENERAL 6 ELECTRIC P3K-AL-0525-A01 CONT ON SHEET 6 SH NO. 5 REV O TITLE TEST INSTRUCTION FOR THE SPEED CONTROL P3K-AL-0525-A01 REFERENCE: A/L FIRST MADE FOR MK II CONT ON SHEET 6 BH NO. 5 REVISIONS VOLTAGE AT PINS ACTION 10 7 8 11 5 6 2 3 INIT. COND. STEP 1 APP P38 STEP 2 Ø Α APP P16 STEP 3 Α Α APP P25 Α STEP 4 APP P18 STEP 5 Ø A Α STEP 6 APP P17 A Ø Ø Ø A REM P17 STEP 7 Α STEP 8 APP P14 Ø REM P14 STEP 9 Α APP P13 STEP 10 · STEP 11 REM P13 Ø APP P9 STEP 12 STEP 13 REM P9 STEP 14 REM P18 Ø Ø APP P36 STEP 15 Α STEP 16 REM P36 STEP 17 APP P32 STEP 18 APP P30 STEP 19 REM P30 STEP 20 APP P31 STEP 21 REM P31 STEP 22 REM P32 STEP 23 APP P35 STEP 24 REM P35 STEP 25 APP P33 PRINTS TO D.Mone July 23, 1976 APPROVALS

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P3K-AL-0525-A01

LOCATION CONT ON SHEET 6

CODE IDENT NO.

P3K-AL-0525-A01

CONT ON SHEET 7 8H NO. 6 TITLE TEST INSTRUCTION FOR THE SPEED CONTROL P3K-AL-0525-A01 REFERENCE: A/L FIRST MADE FOR MK II CONT ON SHEET 7 SH NO. 6 REVISIONS VOLTAGE AT PINS ACTION 7 8 10 2 5 11 1 STEP 26 REM P33 STEP 27 REM P25 STEP 28 APP P26 STEP 29 APP P33 STEP 30 REM P33 Α APP P29 Ø STEP 31 REM P29 STEP 32 REM P26 STEP 33 REM P16 STEP 34 STEP 35 REM P38 PRINTS TO D.Mone July 23, 1976 APPROVALS Steam Turbine DIV OR P3K-AL-0525-A01 ISSUED AIII 2 2 10/5 LOCATION CONT ON SHEET 7 Schenectady

PP-803-WA (8-74)

CODE IDENT NO.

GENERAL & ELECTRIC

P3K-AL-0525-A01

CONT ON SHEET 8

8H NO. 7

P3K-AL-0525-A01

TITLE

TEST INSTRUCTION FOR THE SPEED CONTROL

REFERENCE: A/L

ONI ON SHEE			RST MADI		MK II	71.07 1	T DING		. '•			REVISIO
Α	CTION				VOL	TAGE A'	r PINS	1	<u> </u>	1		_
		12	15	18	21	22	23	24	26	27	34	-
STEP 1	INIT. COND.		ļ	ļ	-							-
STEP 2	APP P38						ļ		<u> </u>			-
STEP 3	APP P16										<u> </u>	_
STEP 4	APP P25	A							A			_
STEP 5	APP P18											
STEP 6	APP P17		A			-						_
STEP 7	REM P17		Ø									_
STEP 8	APP P14											_
STEP 9	REM P14											
STEP 10	APP P13											
STEP 11	REM P13											
STEP 12	APP P9	Ø.										
STEP 13	REM P9	A										
STEP 14	REM P18											
STEP 15	APP P36	Ø								A		
STEP 16	REM P36	A								ø		
STEP 17	APP P32					ø	A.	Ø				
STEP 18	APP P30					A	Ø	ø				
STEP 19	REM P30					Ø.	A	ø				
STEP 20	APP P31					ø	ø	A				-
STEP 21	REM P31		 			Ø	A	Ø				
STEP 22	REM P32						5 Ø A					
STEP 23	APP P35			A								
STEP 24	REM P35			Ø							-	-
STEP 25	APP P33				 	1	†		ø		 	-

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LOCATION CONT ON SHEET 8

sh NO. 7

GENERAL 66 ELECTRIC

P3K-AL-0525-A01

TITLE

CONT ON SHEET 9

8H-NO. 8

P3K-AL-0525-A01

TEST INSTRUCTION FOR THE SPEED CONTROL

REFERENCE: A/L

ACTION	• 1	٠,			VOL	TAGE AT	LIND		•			REVISION
		12	15	18	21.	22	23 -	24	26	27	34	
STEP 26 REM P3	3								A			
STEP 27 REM P2	5											
STEP 28 APP P2	6		-		A						Ø	
STEP 29 APP P3	3				ø						A	
STEP 30 REM P3	3				A						Ø	
STEP 31 APP P2	9				A							
STEP 32 REM P2	9						•					
STEP 33 REM P2	6											
STEP 34 REM P1	6				-			·		·		
STEP 35 REM P3	8				-							
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P3K-AL-0525-A01

sh no. 9

CONT ON SHEET 10

TITLE

TEST INSTRUCTION FOR THE SPEED CONTROL

REFERENCE: A/L

P3K-AL-0525-A01

CONT OH SHEET 10 SH NO. 9	1 '	E FOR MK II				
ACTION		VOL	TAGE AT PINS		-	REVISION
	39					
STEP 1 INIT. COND.						
STEP 2 APP P38						_
STEP 3 APP P16			·			_
STEP 4 APP P25	A					
STEP 5 APP P18						
STEP 6 APP P17						
STEP 7 REM P17	-					_
STEP 8 APP P14			·			
STEP 9 REM P14						
STEP 10 APP P13						
STEP 11 REM P13						
STEP 12 APP P9						
STEP 13 REM P9						
STEP 14 REM P18						
STEP 15 APP P36						
STEP 16 REM P36	·			·		
STEP 17 APP P32						
STEP 18 APP P30						
STEP 19 REM P30				•		
STEP 20 APP P31		·				
STEP 21 REM P31						
STEP 22 REM P32						
STEP 23 APP P35						_
STEP 24 REM P35						
STEP 25 APP P33						
						PRINTS T
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P3K-AL-0525-A01 CONT ON SHEET 11 SH NO. 10 TITLE TEST INSTRUCTION FOR THE SPEED CONTROL P3K-AL-0525-A01 REFERENCE: A/L MK II FIRST MADE FOR CONT ON SHEET 11 BH NO. 10 REVISIONS VOLTAGE AT PINS ACTION 39 STEP 26 REM P33 STEP 27 REM P25 STEP 28 APP P26 STEP 29 APP P33 STEP 30 REM P33 APP P29 STEP 31 STEP 32 REM P29 REM P26 STEP 33 STEP 34 . REM P16 STEP 35 REM P38 PRINTS TO D.Mone July 23, 1976 APPROVALS Steam Turbine DIV DR P3K-AL-0525-A01 DIV DR JUL 23 12/0 sh NO. 10 Schenectady LOCATION CONT ON SHEET 1.1

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CONT ON SHEET 12 TITLE

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TEST INSTRUCTION FOR THE SPEED CONTROL

REFERENCE: A/L

11 FIRST MADE FOR MK II

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-	30	29	26	25	18	17	16	14	13	9		
_	<u> </u>				-							STEP 1
											APP P38	STEP 2
							Х				APP P16	STEP 3
_	ļ			Х			Х		·	-	APP P25	STEP 4
				Х	X		Х				APP P18	STEP 5
_				Х	Х	. X	X				APP P17	STEP 6
_				Х	Х		Х				REM P17	STEP 7
				х	Х		Х	X			APP P14	STEP 8
_				Χ.	Х		X				REM P14	STEP 9
				Х	X		Х		Х		APP P13	STEP 10
				Х	Х		Х				REM P13	STEP 11
				Х	Х		Х			X	APP P9	STEP 12
				X	Х		Х				REM P9	STEP 13
				Х			Х				REM P18	STEP 14
				X			X				APP P36	STEP 15
				Х			Х				REM P36	STEP 16
			•	· X			Х	-			APP P32	STEP 17
	x			Х			Х				APP P30	STEP 18
				Х			Х				REM P30	STEP 19
				· X			Х				APP P31	STEP 20
				Х			Х				REM P31	STEP 21
				Х			X	-			REM P32	STEP 22
-				Х			Х				APP P35	STEP 23
				Х			Х				REM P35	STEP 24
				Х			X				APP P33	STEP 25
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TITLE

CONT ON SHEET 13 SH NO. 12

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TEST INSTRUCTION FOR THE SPEED CONTROL

REFERENCE: A/L

ACT	ION				INP	JT AT E	INS		,			REVISIO
		9	13	14	16	17	18	25	26	29	30	
STEP 26	REM P33				х			Х				
STEP 27	REM P25				Х							
STEP 28	APP P26	·			. X				Х	·		
STEP 29	APP P33		· · · · · · · · · · · · · · · · · · ·		х				х			
STEP 30	REM P33				X				Х			
STEP 31	APP P29				х				Х	Х		
STEP 32	REM P29				х	1			Х			
STEP 33	REM P26			-	Х							
STEP 34	REM P16										ļ	
STEP 35	REM P38											
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LOCATION CONT ON SHEET 13

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GENERAL 6 ELECTRIC

P3K-AL-0525-A01

SH NO. 13

CONT ON SHEET 14

P3K-AL-0525-A01

REV NO.

TEST INSTRUCTION FOR THE SPEED CONTROL

REFERENCE: A/L

TITLE

REVISIO					INS	T AT P	INPU					TION	AC	
					38	36	35	33	32	31.			· · · · · · · · · · · · · · · · · · ·	
-													1.	STEP
					X						P38	APP	2	STEP
					· X						P16	APP	3	STEP
					Х						P25	APP	4	STEP
					Х						P18	APP	5	STEP
			:		X						P17	APP	6	STEP
	-				X						P17	REM	7	STEP
					Х						P14	APP	8	STEP
					Х						P14	REM	9	STEP
					Х						P13	APP	10	STEP
					X						P13	REM	11	STEP
					Х						Р9	APP	12	STEP
İ					Х						Р9	REM	13	STEP
					Х						P18	REM	14	STEP
					Х	Х					P36	APP	15	STEP
		:	!		Х						P36	REM	16	STEP
				·	Х		,		Х		P32	APP	17	STEP
	-				Х				Х		P30	APP	18	STEP
					Х				X		P30	REM	19	STEP
					X				Х	Х	P31	APP	20	STEP
			•		Х				х		P31	REM	21	STEP
					Х						P32	REM	22	STEP
					Х		Х	-			P35	APP	23	STEP
					X									STEP
					Х			х			P33	APP	25	STEP

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GENERAL & ELECTRIC

P3K-AL-0525-A01

CONT ON SHEET

sh NO. 14

TITLE

TEST INSTRUCTION FOR THE SPEED CONTROL

P3K-AL-0525-A01 REFERENCE: A/L

REVISIO		. •		INS	JT AT F	INP				CION	AC'
				38	36		33	32	31		·
				X		,			·····	REM P33	STEP 26
				Х						REM P25	STEP 27
				Х					:	APP P26	STEP 28
				X			Х			APP P33	STEP 29
				X						REM P33	STEP 30
			:	X			-			APP P29	STEP 31
				X						REM P29	STEP 32
		 		Х						REM P26	STEP 33
		 		X						REM P16	STEP 34
										REM P38	STEP 35
		 -									
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