

GENERAL ELECTRIC

P3K-AL-07B1-A01

REV NO. 0	TITLE		CONT ON SHEET 2	SH NO. 1																										
P3K-AL-07B1-A01	TEST INSTRUCTION FOR THE THRUST BEARING WEAR DETECTOR (TBWT) TEST CIRCUIT BOARD 1TM2-S102																													
CONT ON SHEET 2	SH NO. 1	FIRST MADE FOR	6NN																											
TBWDTST		E. S. ANDREJKO		REVISIONS																										
		Dec 9, 1988																												
<p>I. <u>SCOPE:</u> This instruction outlines the test procedure for the TBWD TEST:</p> <table border="0"> <tr> <td>TBWD TEST circuit board Assem.</td> <td>155D6600 G1</td> </tr> <tr> <td>TBWD TEST Schematic</td> <td>155D6601</td> </tr> <tr> <td>1TM2-S102</td> <td></td> </tr> </table> <p><u>155D6600 G1 REPLACES:</u></p> <table border="0"> <tr> <td>TBWD TEST circuit board Assem</td> <td>145D4749 G1 & G3</td> </tr> <tr> <td>TBWD TEST Schematic</td> <td>145D4746</td> </tr> <tr> <td>1TM2-S101</td> <td></td> </tr> <tr> <td>TBWD TEST circuit board Assem</td> <td>145D2290 G1</td> </tr> <tr> <td>TBWD TEST Schematic</td> <td>145D2292</td> </tr> <tr> <td>1TM2-S102</td> <td></td> </tr> </table> <p><u>155D6600 G1 DOES NOT REPLACE</u> Mk 2A TBWD TEST Logic Board:</p> <table border="0"> <tr> <td>Mk 2A TBWD TEST circuit board Assem</td> <td>186C8150 G1</td> </tr> <tr> <td>Mk 2A TBWD TEST Schematic</td> <td>148D2479</td> </tr> <tr> <td colspan="2">Refer to Trip & Monitoring Schematic.</td> </tr> <tr> <td colspan="2">Mk 2A TBWD TEST = 1TM2-S201</td> </tr> </table> <p>II. <u>CIRCUIT DESCRIPTION:</u> The THRUST BEARING WEAR DETECTOR (TBWD) TEST Logic board (1TM2-S102) is only used to replace the MK2 circuit board which used Simpson Meter Relays in the TBWD TEST and Annunciation circuit.</p>					TBWD TEST circuit board Assem.	155D6600 G1	TBWD TEST Schematic	155D6601	1TM2-S102		TBWD TEST circuit board Assem	145D4749 G1 & G3	TBWD TEST Schematic	145D4746	1TM2-S101		TBWD TEST circuit board Assem	145D2290 G1	TBWD TEST Schematic	145D2292	1TM2-S102		Mk 2A TBWD TEST circuit board Assem	186C8150 G1	Mk 2A TBWD TEST Schematic	148D2479	Refer to Trip & Monitoring Schematic.		Mk 2A TBWD TEST = 1TM2-S201	
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ISSUED JAN 17 1989		SCHENECTADY	LOCATION	CONT ON SHEET 2 SH NO. 1																										
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273-12²
273-5
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PRINTS TO

GENERAL ELECTRIC

P3K-AL-0781-A01

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	TEST INSTRUCTION FOR THE TRUST BEARING WEAR DETECTOR (TBWT) TEST CIRCUIT BOARD 1TM2-S102		3	2
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<p>TBWDTST</p> <p>TBWD Board Test Instruction cont'd</p> <p>III <u>CIRCUIT BOARD TEST</u>:</p> <p>A. <u>Power Supply Check</u>:</p> <ol style="list-style-type: none"> 1. Apply +24V to pin 38 & 24V Common to pin 40. 2. Check +5v Regulator output @ pin 35 & TP50 = +5.00 ± 0.25 VDC. 3. Observe that Green Led DS1 (Grn) is On, signaling +5V present. 4. Observe that 4 Red Leds are Off. 5. Observe Power Supply Requirements (Approx values): <ul style="list-style-type: none"> * All relays Off & all Red Leds off; 24V supply draws 0.05 A. * Four crystal can relays energized; 24V supply draws 0.20 A. (K1, K2, K5, K6, are energized) 125V supply draws 0.10 A. * Four 10 Amp relays PU & 4 Leds On; 24V supply draws 0.40 A. (K3, K4, K7, K8, energized) No 125V applied (DS2, DS3, DS4, DS5 all On) * All 8 relays energized & 4 Leds On; 24V supply draws 0.55 A. 125V supply draws 0.10 A. (K1, K2, K5, K6, energized) (K3, K4, K7, K8, energized) (DS2, DS3, DS4, DS5 all On) 	REVISIONS

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P3K-AL-07B1-A01

REV. 0	TITLE		CONT. ON SHEET 5	SH. NO. 4
P3K-AL-07B1-A01	TEST INSTRUCTION FOR THE TRUST BEARING WEAR DETECTOR (TBWT) TEST CIRCUIT BOARD 1TM2-S102			
CONT. ON SHEET 5	SH. NO. 4	FIRST MADE FOR.		
TBWDTST			REVISIONS	
TBWD Board Test Instruction cont'd				
C. <u>Relay Operation Check</u> (K5 thru K8):				
Connect 24V supply to pin 38 & 24V Common to pin 40.				
Connect 125V Common to pin 36.				
1. Check that Jumper permanently installed in B4 position.				
2. <u>Check K5</u> : Apply +125V to pin 9, K5 should PU (No red Leds On). Check for contact closure at pin 27 to 28. Remove 125V from pin 9 & observe K5 DO.				
3. <u>Check K6</u> : Apply +125V to pin 11, K6 should PU (No red Leds On). Check for contact closure at pin 28 to 26. Remove 125V from pin 11 & observe K2 DO.				
4. <u>Check K7</u> : Apply +24V to pin 18, K7 should PU, & Led DS4 should go On. Check for contact closures at pin 20 to 21 & 2 to 15. Remove 24V from pin 18 & observe K7 DO & Led DS4 go Off.				
5. <u>Check K8</u> : Apply +24V to pin 18, and observe K7 PU, & Led DS4 go On; Check for contact closures at pin 20 to 21 & 2 to 15. Observe K8 PU & Led DS5 go On immediately; Check for contact closures at pin 29 to 30 & 23 to 24.				
6. <u>Check 555 Timer (IC8)</u> : Remove 24V from pin 18 & observe K7 DO & Led DS4 go Off immediately, but K8 remains PU & Led DS5 remains On for approx 3 sec. Both Leds DS4 & DS5 should now be Off.				
7. Repeat steps 5 & 6 several times to insure that timer is repeating.				
8. Check that wire Jumper is permanently installed in B4 position, and that No jumper is installed in B3 position.				
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REV NO. 0	TITLE	CONT ON SHEET 6	SH NO. 5
P3K-AL-0781-A01	TEST INSTRUCTION FOR THE TRUST BEARING WEAR DETECTOR (TBWT) TEST CIRCUIT BOARD 1TM2-S102		
CONT ON SHEET 6	SH NO. 5	FIRST MADE FOR.	
TBWDTST			REVISIONS
TBWD Board Test Instruction cont'd			
***** Section D testing is NOT required, when Permanent wire Jumpers are used in B2 & B4 instead of Removable Berg Jumpers. *****			
D. <u>Checking ANDing Function</u> (ANDING of inputs 10 & 13): Check that inputs to both pins 10 & 13 are reqd for K4 to PU, when shunt jumper "B1" installed.			
Connect 24V supply to pin 38 & 24V Common to pin 40.			
Connect 125V Common to pin 36.			
1. Install Shunt Jumper "B1".			
2. Apply +125V to pin 10; K2 should PU (No red Leds On). Check for contact closure at pin 17 to 22.			
3. Apply +24V to pin 13; K3 & K4 should PU and Leds DS2 & DS3 should go On immediately. Check for contact closure of K3 (pin 19 to 31, & 32 to 33) and K4 (pin 23 to 24, & 29 to 30).			
4. Remove 125V from pin 10; Observe K2 DO, but both Leds DS2 & DS3 stay On. Observe that after approx 3 sec K4 DO & Led DS3 goes Off, but K3 & DS2 stay On.			
5. Keep +24V on pin 13 (K3 should remain PU and Led DS2 On); Reapply +125V to pin 10; Both K2 & K4 should PU, & Led DS4 should go On. Check for contact closures of K2 (pin 17 to 22), K3 (pin 19 to 31 & 32 to 33), and K4 (pin 23 to 24 & 29 to 30).			
6. Remove 24V from pin 13; Observe K3 DO & Led DS2 go Off immediately, and 3 sec later K4 DO and DS3 goes Off. K2 should remain PU (check contact closure at pin 17 to 22).			
7. Repeat above steps several times, and observe Leds to determine proper operation.			
8. Move Shunt Jumper from B1 to B2 position.			
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REV NO. 0	TITLE	CONT ON SHEET -	SH NO. 6
P3K-AL-0781-A01	TEST INSTRUCTION FOR THE TRUST BEARING WEAR DETECTOR (TBWT) TEST CIRCUIT BOARD 1TM2-S102		
CONT ON SHEET -	SH NO. 6	FIRST MADE FOR	
TBWDTST			REVISIONS
TBWD Board Test Instruction cont'd			
***** Section E testing is NOT required, when Permanent Jumpers are used in B2 & B4 instead of Removable Berg Jumpers. *****			
+ E. <u>Checking ANDING Function</u> (ANDING of inputs 11 & 18): Check that inputs to both pins 11 & 18 are reqd for KB to PU, when shunt jumper "B3" installed.			
Connect 24V supply to pin 38 & 24V Common to pin 40.			
Connect 125V Common to pin 36.			
1. Install Shunt Jumper "B3".			
2. Apply +125V to pin 11; K6 should PU (No red Leds On). Check for contact closure at pin 26 to 28.			
3. Apply +24V to pin 18; K7 & K8 should PU and Leds DS4 & DS5 should go On immediately. Check for contact closure of K7 (pin 2 to 15, & 20 to 21), and K8 (pin 23 to 24 & 29 to 30).			
4. Remove 125V from pin 11; Observe K6 DO, but both Leds DS4 & DS5 stay On. Observe that after approx 3 sec K8 DO & Led DS5 goes Off, but K7 & DS4 stay On.			
5. Keep +24V on pin 18 (K7 should remain PU and Led DS4 On); Reapply +125V to pin 11; Both K6 & K8 should PU, & Led DS5 should go On. Check for contact closures of K6 (pin 26 to 28), K7 (pin 2 to 15 & 20 to 21), and K8 (pin 23 to 24 & 29 to 30).			
6. Remove 24V from pin 18; Observe K7 DO & Led DS4 go Off immediately, and 3 sec later K8 DO and DS5 goes Off. K6 should remain PU (check contact closure at pin 26 to 28).			
+ 7. Repeat above steps several times, and observe Leds to determine proper operation.			
8. Move Shunt Jumper from B3 to B4 position.			
TEST IS NOW COMPLETE.			
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CONT ON SHEET 4 SH NO. 3		
TBWDTST		REVISIONS
TBWD Board Test Instruction cont'd		
III <u>CIRCUIT BOARD TEST:</u>		
B. <u>Relay Operation Check</u> (K1 thru K4):		
Connect 24V supply to pin 38 & 24V Common to pin 40.		
Connect 125V Common to pin 36.		
1. Check that Jumper permanently installed in B2 position.		
2. <u>Check K1:</u> Apply +125V to pin 12, K1 should PU (No red Leds On). Check for contact closure at pin 16 to 17. Remove 125V from pin 12 & observe K1 DO.		
3. <u>Check K2:</u> Apply +125V to pin 10, K2 should PU (No red Leds On). Check for contact closure at pin 17 to 22. Remove 125V from pin 10 & observe K2 DO.		
4. <u>Check K3:</u> Apply +24V to pin 13, K3 should PU, & Led DS2 should go On. Check for contact closures at pin 32 to 33 & 19 to 31. Remove 24V from pin 13 & observe K3 DO & Led DS2 go Off.		
5. <u>Check K4:</u> Apply +24V to pin 13; Observe K3 PU, & Led DS2 go On (Check for contact closures at pin 32 to 33 & 19 to 31), and observe K4 PU & Led DS3 go On immediately; Check for contact closures at pin 29 to 30 & 23 to 24.		
6. <u>Check 555 Timer</u> (IC7): Remove 24V from pin 13 & observe K3 DO & Led DS2 go Off immediately, but K4 remains PU & Led DS3 remains On for approx 3 sec. Both Leds DS2 & DS3 should now be Off.		
7. Repeat steps 5 & 6 several times to insure that timer is repeating.		
8. Check that wire Jumper is permanently installed in B2 position, and that No jumper is installed in B1 position.		
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