g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-948D818G3**

Test Procedure for a 948D818G3

DOCUMENT REVISION STATUS: Determined by the last entry in the "REV" and "DATE" column

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release, transferred from paper copy 948D818G5 to an electronic format, modified the G5 test to reflect G3 requirements.	G. Chandler	7/14/2014

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
G. Chandler			Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
7/14/2017			7/14/2014

1. SCOPE

1.1 This is a functional testing procedure for a Turbine Control board

2. STANDARDS OF QUALITY

2.1 Refer to the current revision of the IPC-A-610 standard for workmanship standards.

3. APPLICABLE DOCUMENTS

3.1 The following document(s) shall form part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue shall apply.
- **3.1.1** Check board's electronic folder for more information

4. ENGINEERING REQUIREMENTS

4.1 Equipment Cleaning
- **4.1.1** Equipment should be clean and free of debris prior to applying power unless performing an initial check. Refer to site specific SRA's for cleaning guidelines.

4.2 Equipment Inspection
- **4.2.1** Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:
  - **4.2.1.1** Wires - broken, cracked, or loosely connected
  - **4.2.1.2** Terminal strips / connectors - broken or cracked
  - **4.2.1.3** Components - visually damaged
  - **4.2.1.4** Capacitors - bloated or leaking
  - **4.2.1.5** Solder joints - damaged or cold
  - **4.2.1.6** Circuit board - burned or de-laminated
  - **4.2.1.7** Printed wire runs / Traces - burned or damaged

5. EQUIPMENT REQUIRED

5.1 The following equipment is required to perform the process requirements. Equipment may be substituted provided that all accuracy's and test ratios are equivalent or better.

Qty	Reference #	Description
2		30VDC Power Supplies
1		Fluke 85 meter or equivalent
1		Op Amp Card

6. Modifications/Upgrades

6.1 Check Orange Book for any modifications or upgrades.

7. Testing Process

7.1 Setup

7.1.1 Notes highlighted in "Blue" were hand written on test instruction P3K-AL-0025.

7.1.1.1 Power, -22VDC to Pin-21 and ground to Pin-19

7.2 Testing Procedure

7.2.1 Turn on power.

7.2.2 Before start of test note voltages at TP4 _____and TP5 _____and write down.

7.2.3 Adjust Pot R4 and R3 clock-wise.

7.2.4 TP4 = -8.3VDC +- 0.45VDC. Pin 32 is the same voltage as TP4. Run R3 CCW monitoring the voltage at TP4, should be a smooth change to 0VDC. Return R3 clock-wise.

7.2.5 TP5 = -8.3VDC +- 0.45VDC. Run R4 CCW monitoring the voltage at TP5, should be a smooth change to 0VDC.

7.2.6 Set pot R4 CCW, set pot R3 for -5.0VDC at TP4, and short Pin-25 to common. "Do this on". Read Pin-20, about -1.7V

7.2.7 Remove common from Pin-25 and place at Pin-36. Read Pin-20 about -1.43VDC.

7.2.8 Remove common from Pin-36 and place at Pin-3. The voltage should measure between -1.66V and -2.46V at Pin-20.

7.2.9 Remove common from Pin-3 and place at Pin-18. The voltage should measure between -1.63V and -2.36V at Pin-20.

7.2.10 Set pot R3 full CCW. Set pot R4 for -5.0VDC at TP5. Read Pin-20 about -2.34VDC

7.2.11 Set TP4 (R3) and TP5 (R4) to step 7.2.2.

7.2.12 Disconnect all leads to test kit.

Using a sinewave generator put a 10 Hz signal into Pin-36 (use Pin-19 as common). Set voltage at C2 and R13 junction for 2.00VRMS. Raise the frequency until the voltage at C2/R13 junction = 1.41VRMS. The frequency should be about 36 to 45 Hz.

7.2.13 If card is for Brunswick go to appendix A, otherwise continue to next step.

7.3 Post Testing Burn-in Required _X_ Yes ___ No

Note: 100 hour burn is required for most Turbine Control Boards

*7.4 ***TEST COMPLETE ****

8. Attachments

8.1 Brunswick Drawing (Figure 1)

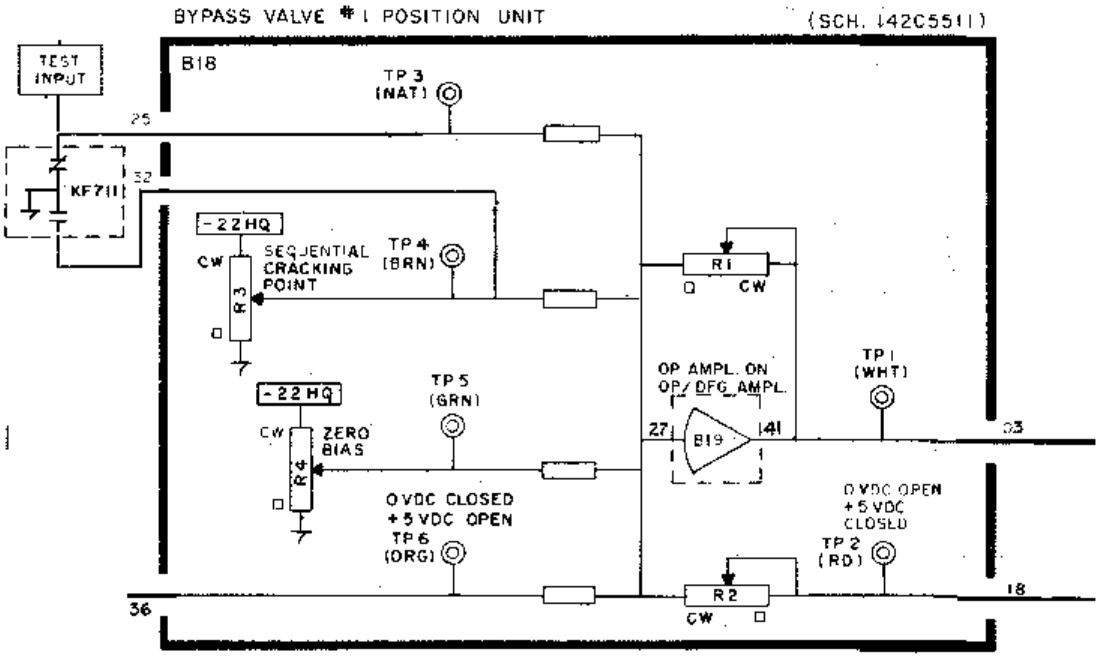

Figure 1

Job # _____

Serial # _____ Burn-in Start _____

Date _____

Data Sheet for __948D818G0003_____ Burn-in Stop _____

Test Procedure __P3K-AL-0025_____ Technician _____

Test Procedure Step	Nominal	Lower Limit	Pre-Burn in Results	Post Burn in Results	Upper Limit	Pot Values If applicable CW	CCW	Pass/Fail
7.2.4	-8.3V	-7.85V			-8.75V	R3		
7.2.4	0V	0V			0V		R3	
7.2.5	-8.3V	-7.85V			-8.75V	R4		
7.2.5	0V	0V			0V		R4	
7.2.6	-1.7V	About			About			
7.2.7	-1.43V	About			About			
7.2.8	-2.05V	-1.66V			-2.46V			
7.2.9	-1.94V	-1.63V			-2.36V			
7.2.10	-2.34V	About			About			
7.2.12	41Hz	36 Hz			45 Hz			