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GE Industrial Systems

## Functional Testing Specification

Renewal Services  
Louisville, KY

LOU-GED-872D432

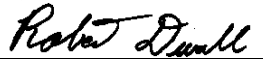
### Test Procedure for a LOW VALUE GATE Card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release. Copied into our format from Salem procedure D432.DOC	R.DUVALL	03/15/03
B			
C			

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PREPARED BY R.Duvall	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL 
DATE 03/15/03	DATE	DATE	DATE 03/22/03

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## Functional test procedure for a Low Value Gate Card

### 1. SCOPE

1.1 This is a functional testing procedure for a Card.

### 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 **D432.DOC – Salem test Instruction**

3.1.2 **838E415 – System Schematic**

### 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 the local documented procedures 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 or cracked

4.2.1.2 Terminal strips / connectors broken or cracked

4.2.1.3 Loose wires

4.2.1.4 Components visually damaged

4.2.1.5 Capacitors leaking

4.2.1.6 Solder joints damaged or cold

4.2.1.7 Circuit board burned or de-laminated

4.2.1.8 Printed wire runs 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
1		Fluke 85 DMM (or Equivalent)
1		-22 VDC Power Supply
1		+30 VDC Power Supply
1		Precision variable DC supply
1		1.5 K Ohm Load resistor (1W)
2		10 K Ohm resistor
1		Dual Operational Amplifier (equiv to LM747) bussed at $\pm 18$ VDC
1		$\pm 18$ VDC Power Supply for Operational Amplifier

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## 6. TESTING PROCESS

### 6.1 Setup

6.1.1 Connect test per figure 7.1

### 6.2 Testing Procedure

6.2.1 Connect temporary jumper across C1.

6.2.2 Close S1.

6.2.3 Apply -10.0 VDC to pin 10.

*6.2.3.1 Note: Current draw at pin 16 of card has been measured at 13mA*

6.2.4 Voltage out should be +10.0 VDC.

6.2.5 Apply -.50 VDC to pin 41.

6.2.6 Adjust R17 for output voltage of +10.0 VDC. Open S1.

6.2.7 Apply -2.00 VDC to pin 3.

6.2.8 Adjust R1 for output of +10.0 VDC.

6.2.9 Remove -2.00 VDC from pin 3.

6.2.10 Close S1.

6.2.11 Apply -20.0 VDC to pin 5.

6.2.12 Adjust R13 for output voltage of +1.00 VDC.

6.2.13 Apply -10.0 VDC to pin 39.

6.2.14 Adjust R14 for output voltage of +10.00 VDC.

6.2.15 Apply -10.0 VDC to pin 18.

6.2.16 Adjust R8 for output voltage of +10.00 VDC.

6.2.17 Open S1.

6.2.18 Output voltage should drop then rise slowly back to +10.00 VDC.

6.2.19 Close S1.

6.2.20 Reduce voltage at pin 18 to -.10 volts.

6.2.21 Then remove jumper from C1.

6.2.22 Output should integrate to +10.00 VDC in approximately 30 seconds.

### 6.3 **\*\*\*TEST COMPLETE \*\*\***

7. NOTES

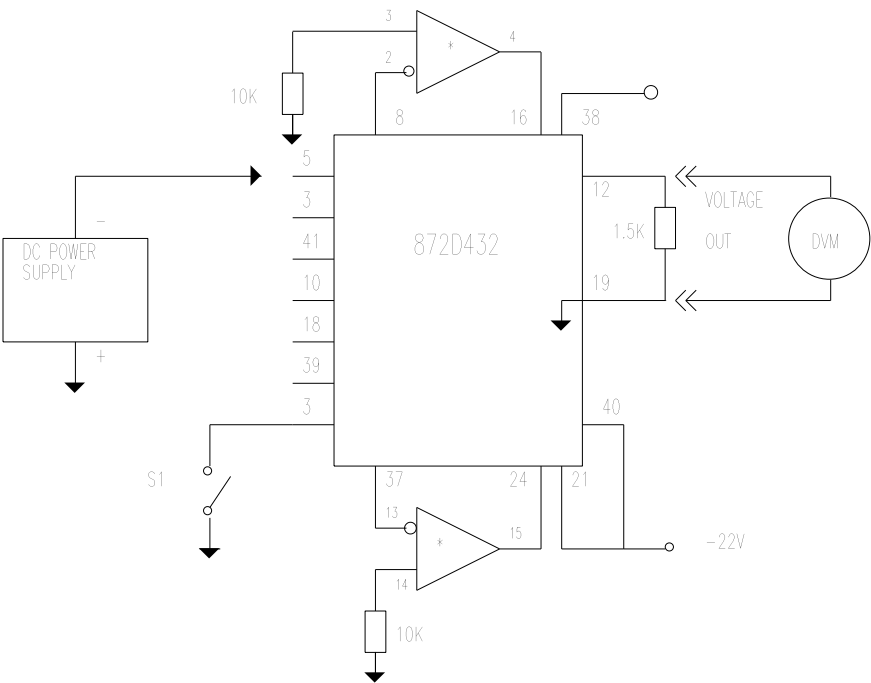


Figure 7.1

7.2 Example Data

INPUTS						OUTPUTS		
Pin 3	Pin 10	Pin 41	Pin 5	Pin 39	Pin 18	Pin 12	TP 2	TP 4
com	-10.000					10.036	13.672	
com		-0.500				10.000	13.614	
-2.000						10.000	13.603	
com			-20.000			1.000	3.172	
com				-10.000		10.000		13.612
com					-10.000	10.000		13.613