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GE Industrial Systems

Functional Testing Specification

*Renewal Services
Louisville, KY*

LOU-GED-193X538xx

Test Procedure for: 193X538xxG01

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	<i>Jeffrey D. Barton</i>	6/25/02
B			
C			

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Functional test procedure for: 193X538xxG01

1. SCOPE

1.1 This is a functional testing procedure for a: **193X538xxG01**

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.

2.1.1

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		REGENERATIVE VALUTROL DRIVE
1		OSCILLISCOPE
1		INDUCTIVE LOAD @ 36 ohm's (FIELD)
1		INDUCTIVE LOAD @ 45 ohm's (AMATURE)
1		OSCILLISCOPE Probe

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6. TESTING PROCESS

6.1 Setup

- 6.1.1 Install 193X538XXG01 in Valutrol Regenerative Drive.
- 6.1.2 Connect all SCR firing wires per layout and connection labels.
- 6.1.3 Install (2) provided resistors: 58ohm on CW to CX, 68ohm on CY to CZ.
- 6.1.4 Connect Armature Coil Load to WHITE wires provided. (45 ohm load).
- 6.1.5 Connect Field Coil Load to PINK wires provided. (36 ohm load).
- 6.1.6 Verify switch on Diag. Card is in the neutral (center) position.
- 6.1.7 Verify switch on Operator Station is in STOP position.
- 6.1.8 Verify Operator SPEED REF. pot is centered per markings.

6.2 Testing Procedure

- 6.2.1 Connect Oscilloscope to LR and COM on MCC.
- 6.2.2 Release E-STOP button.
- 6.2.3 Using Diag. Card, switch from neutral to Static, (move switch to left).
- 6.2.4 Using SPEED REF. Pot, adjust LR for 0Vdc.
- 6.2.5 Connect Oscilloscope to CFB and COM on MCC.
- 6.2.6 Using CFB pot on Diag. Card, adjust CFB to 0Vdc.
- 6.2.7 Using Diag. Card, switch from Static to neutral (move to center position).
- 6.2.8 Connect Oscilloscope to VFB and COM on MCC.
- 6.2.9 Using Diag. Card, switch from neutral to RUN, (move to right position).
- 6.2.10 Using SPEED REF. pot rotate CW, (REVERSE Direction) and verify ALL 12 pulses are visible and amplitude adjusts to approximately to 4Vpp at maximum speed accordingly per SPEED REF. pot. (Approx. 19 pulses will be visible at this Oscilloscope setting). **See Fig. 1 in Oscilloscope Verification Examples.**
- 6.2.11 Adjust Oscilloscope to 5mS/DIV. and verify pulses resemble Fig. 2.
- 6.2.12 Using SPEED REF. pot rotate CCW, (FORWARD Direction) and verify ALL 12 pulses are visible and amplitude adjusts to approximately to 4Vpp at maximum speed accordingly per SPEED REF. pot. **See Fig. 2 in Oscilloscope Verification Examples.**
- 6.2.13 Return SPEED REF. pot back to centered position so that all pulses disappear, (centered zero position).
- 6.2.14 Using Diag. Card, switch from Static to neutral (move to center position).
- 6.2.15 On Operator Station, switch to RUN position.

6.2.16 SLOWLY and CAREFULLY Adjust SPEED pot CCW, (REVERSE Direction) on Operator Station and verify ALL pulses are visible and amplitude adjusts to approximately to 4Vpp at maximum accordingly per SPEED pot. **See Fig. 1 in Oscilloscope Verification Examples.**

6.2.17 SLOWLY and CAREFULLY Adjust SPEED pot CW, (FORWARD Direction) on Operator Station and verify ALL pulses are visible and amplitude adjusts to approximately to 4Vpp at maximum accordingly per SPEED pot. **See Fig. 2 in Oscilloscope Verification Examples.**

6.2.18 Return SPEED pot on Operator Station back so that all pulses disappear, (centered zero position).

6.2.19 On Operator Station, switch to STOP position.

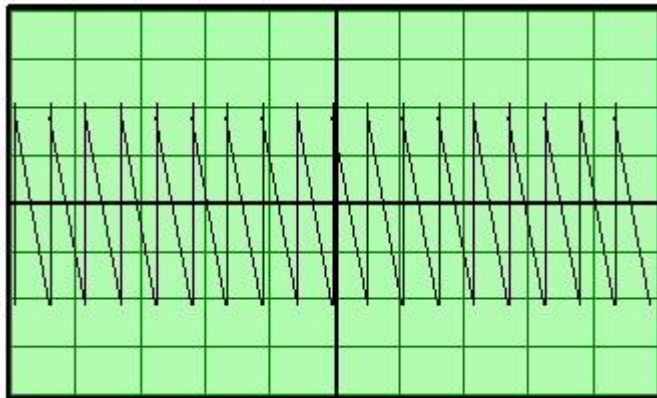
6.2.20 Engage E-STOP Button.

6.3 *TEST COMPLETE *****

7. NOTES:

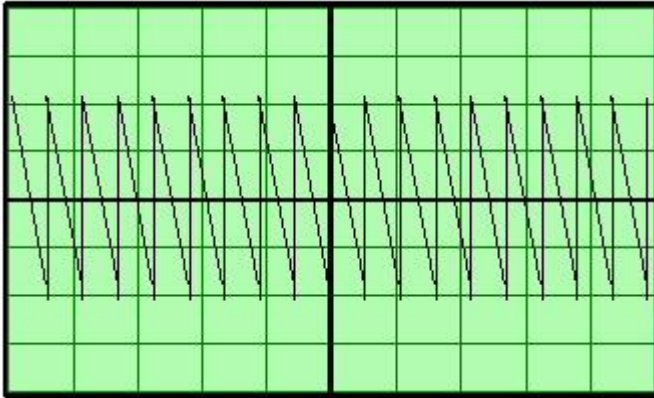
8. Oscilloscope Verification Examples

Fig. 1 - Reverse Direction



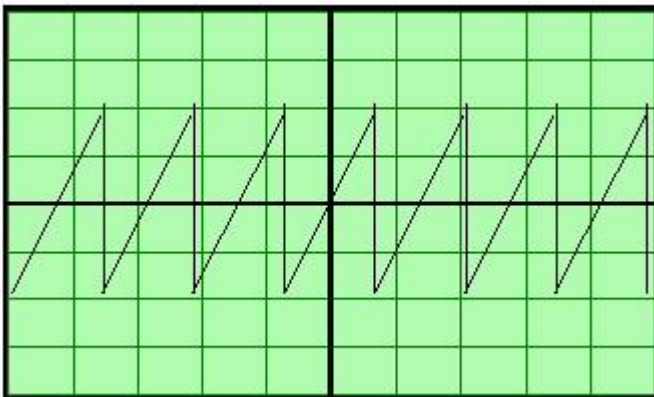
2V / DIV. AC SETTING 5Ms / DIV.

Fig. 2 - Forward Direction



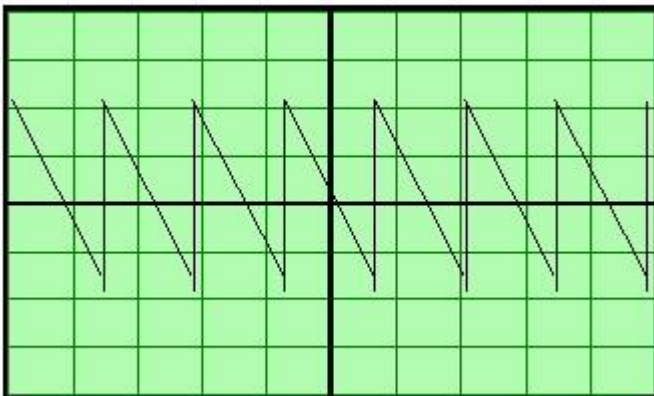
2V / DIV. AC SETTING 5Ms / DIV.

Fig. 3 - Reverse Direction



2V / DIV. AC SETTING 2mS / DIV.

Fig. 4 - Forward Direction



2V / DIV. AC SETTING 2mS / DIV.