g	GE Energy	**Functional Testing Specification**
	Parts & Repair Services *Louisville, KY*	**LOU-GEF-ACO01**

Test Procedure for ACO01 AC Output Card

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Functional test procedure for ACO01 A.C. Output Board.

1. **SCOPE**

    1.1 This specification provides the Engineering Requirements for testing ACO01 cards. The process applies only to control cards model number 44A719336-G01

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	**GEK-25382**	Maintenance & Troubleshooting
3.1.2	**GEK-25381**	Startup & Adjustments
3.1.3	**GEK-25391**	System Diagrams
3.1.4	**44C719650**	Board Schematics
3.1.5	**GIT-200**	**TAB12** Diagnostic Software

4. **ENGINEERING REQUIREMENTS**

    4.1 Description
    4.1.1 The A.C. Output Board (ACO01) provides a means of switching AC power to customer's devices. The board interfaces with the I/O Bus.
    4.2 Equipment Cleaning
    4.2.1 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.
    4.3 Equipment Inspection
    4.3.1 Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:
    4.3.1.1 Wires broken or cracked
    4.3.1.2 Terminal strips / connectors broken or cracked
    4.3.1.3 Loose wires
    4.3.1.4 Components visually damaged
    4.3.1.5 Capacitors leaking
    4.3.1.6 Solder joints damaged or cold
    4.3.1.7 Circuit board burned or de-laminated
    4.3.1.8 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	None	2000 Bench test Control
1	None	Resides on Bubble Board MB1:
1	ACO Test Box	AC input and output Lamp Box

6. TESTING PROCESS

6.1 Pre Test Requirement

6.1.1 Connect ACO Test Box Cables into 1PL and 2PL

6.1.2 Install Board in to MC2000 Control Rack.

6.1.3 Plug in Test Box's AC Plug.

6.1.4 Turn control on by depressing green "Control On" push button on the NCS Station. Board Green LED should come on after Program is fully loaded.

6.1.5 "Power Up Diagnostics" should be displayed on screen, followed by "System Loading", which will be followed by "Mark Century 2000 Service Diagnostics Initialization" & "Make any Keyboard entry for manual/menu mode".

6.1.6 Press any key and Factory Diagnostic Screen will be displayed.

6.1.7 To select a heading on the menu page, use the cursor control up or down arrow key. Go to manual testing of the ACO by selecting Additional Test/ Option Menu then select AC Output Test. Test and pressing enter or return. You need to go through the following tests.

6.1.7.1 "1 Select Test Control Test (Bit Map Display: All Outputs should be **"0" All Lamps on Test Box should be off. (IF not the board it bad shut down and repair)** using Keyboard enter 1 then SOR button to move to next Output, enter all 1 into all 8 Outputs all test lamps should be on. Depress Cancel to return to Test Menu.

6.1.7.2 "2.Go to "Automatic Test" enter, Select board 1 enter, Enter 5 to 25 repetitions. **When test is Complete screen should display "Passed"** Depress enter to return to test menu.

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6.1.7.3 "3.Go to "Flash Diagnostic LED Test" enter, Select board 1 enter, enter 5 repetitions **Board's LED will turn off and on 5 times. When test is complete screen will return to test menu.**

6.1.7.4 "4.Goto "Initialize Output High Test" enter, Select board 1 enter, Enter 1 repetition. **All Output Lamps will turn on and off. When test is finished screen should display "Passed"** Depress enter to return to test menu.

6.1.7.5 "5.Goto "Shit Pulse Test" enter, Select board 1 enter, Enter 5 to 25 repetition. **Each Lamp will light one at a time (lamp #1 sift #2-#8) When test is finished screen should display "Passed"** Depress enter to return to test menu.

6.1.7.6 "6.Go to "Alternating High & Low Test" enter, Select board 1 enter, Enter 5 to 25 repetition. **Output Lamps will turn on and off. When test is finished screen should display "Passed"** Depress enter to return to test menu.

6.1.7.7 "7.Go to "Slow Shift Pulse Test" enter, Select board 1 enter, Enter 5 to 25 repetitions. **Output Lamps with Turn on and off as test is running, When test is finished screen should display "Passed"** Depress enter to return to test menu.

6.1.7.8 "8. Go to " Slow Alternating High & Low Test' enter, Select board 1 enter, Enter 5 to 25 repetition. **Output Lamps will turn on and off. When test is finished screen should display "Passed"** Depress enter to return to test menu. After all 8 tests are done return to "Factory Test Diagnostics" page. by depressing Cancel twice.

6.1.8 Go to "Execute Automatic Test Cycle", Push Enter.

6.1.9 Enter test name "ACO", Push Enter.

6.1.10 Enter number of test cycles as 25 to 50, Push Enter.

6.1.11 The following headings will appear on the CRT and "Working" will appear under the headings:

6.1.12 "ACO TEST FASH"

6.1.13 "ACO TEST INITHIGH"

6.1.14 "ACO TEST AUTOMATIC"

6.1.15 "ACO TEST SHIFT"

6.1.16 "ACO TEST ALTERNATE"

6.1.17 If all the tests pass, control will come back to "Factory Test Diagnostics" page.

6.2 **If test fails,** then "Failure in Error Log" will be displayed.

    6.2.1   Depress any key to continue to main menu.

    6.2.2   Select "Error Log Options", press enter.

    6.2.3   Select "Display Error Log", press enter.

    6.2.4   Scroll through Error Log with the Down key until "fail" appears in log.

    6.2.5   Record test name for all failures present in Error Log.

    6.2.6   When all failures are recorded, depress Cancel.

    6.2.7   Select "Erase Error Log", and push enter.

    6.2.8   Press "Cancel" to return to main menu. Shut down control and troubleshoot card.

    6.2.9   **Shut down and remove ACO from Rack.**

6.3 ***TEST COMPLETE ***

7. Notes

7.1 None at this time.

8. Attachments

8.1 None at this time.