g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-MVT-RMS9**

Work Instruction for a RMS9C and RMS9D trip units

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	R. Johnson	5/14/2012
B	Change 1 to MVT tester, added note about Display Test.	R. Johnson	5/30/2012
C	Change 2 to MVT tester, added notes to section 7 and 8	C. Wade	6/1/2012
D	Added note to step 7.2.7, how to place label paper in printer	C. Wade	6/9/2012
E	Added instructions verifying CAT#, step 7.2.7, printer label cleaning instructions at the end of section 7, and added RMS9D switch clarifications step 7.2.14.	J. Barton	8/20/12
F	Add step 6.2.5, about rating plugs.	C. Wade	10/23/2012
G	Programming information must be added to customer comment section of the service report, see step 7.2.7.	C. Wade	12/14/2012

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
R. Johnson	J. Barton		Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
5/14/2012	8/20/2012		6/1/2012

1. SCOPE

1.1 This is a Work Instruction for a RMS9C and RMS9D trip units

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.

3.1.1.1 Check GE Micro Versa Trip electronic folder for more information, located in N:\shopfloor\Design Folders\GE Micro Versa Trip

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
1	H190015	RMS9 MVT Test and Programmer
1	H190019	MVT Printer
1	H190018	Display Tester

6. Modifications/Upgrades

6.1 Pull the appropriate RMS9C or RMS9D core for the job.

6.1.1 Remove rating plug if installed.

6.1.2 Remove internal cards and replace with new from inventory.

6.1.3 Remove faceplate label. It might help if label is warmed up before removing.

6.1.4 Replace battery with new and properly dispose of old battery.

6.2 Display Test

6.2.1 Remove display from old unit and clean RTV from side connectors.

6.2.2 Install into asset number H190018, modified RMS9D unit.

6.2.3 Push button and screen should display everything, see attached picture. If unit does not work, replace with functioning display.

6.2.4 Once display is tested, reinstall tested display into unit with new cards. Be sure to put a bead of RTV across both of the side connectors.

6.2.5 If unit comes in for repair with a rating plug, remove plug and ship back separately with unit.

6.2.6 Complete Unit's assembly.

7. Testing Process

7.1 Setup

7.1.1 Turn on main power above keyboard

7.1.2 Turn on UPS switch at bottom of Test fixture.

7.1.3 Turn on Megger switch

7.1.4 Turn on computer.

7.1.5 Be sure E-Stop is not engaged, will disable interface table. After computer finishes booting up, a pop-up login screen should appear. If not go to step 7.2.1.

7.2 Testing Procedure

7.2.1 Go to GUI icon on screen "Shortcut to IESWINMAIN".

7.2.2 Computer login is "Test" and password is "Test".

7.2.3 At the top of Menu; select "Info Window" and a small window will open at bottom of screen with the "Compile Successful…"

7.2.4 Select Print and a Print Option will appear, print 2 regular paper "cleaning sheets" to clean the print head. (paper will feed from bottom tray, no need to load where labels are placed in top feed tray make sure top tray is EMPTY.)

7.2.5 Verify 2 sheets printed CLEANLY with only "Compile Successful…" and no other garbage printed… If so repeat Step 7.2.4

7.2.6 Go to the file and "RUN: or press the green "Start" button.

7.2.7 Scan or type Catalog number in to Pop-up Box. Very important to get this right. Customer may want a different option than what came in! **Be sure to check SAP's Text Box. If this information is not posted in SAP, please inform the Quality Representative. Unit cannot be processed with this data. Programming information must also be added to Customer Comment Section of the Service Report.**

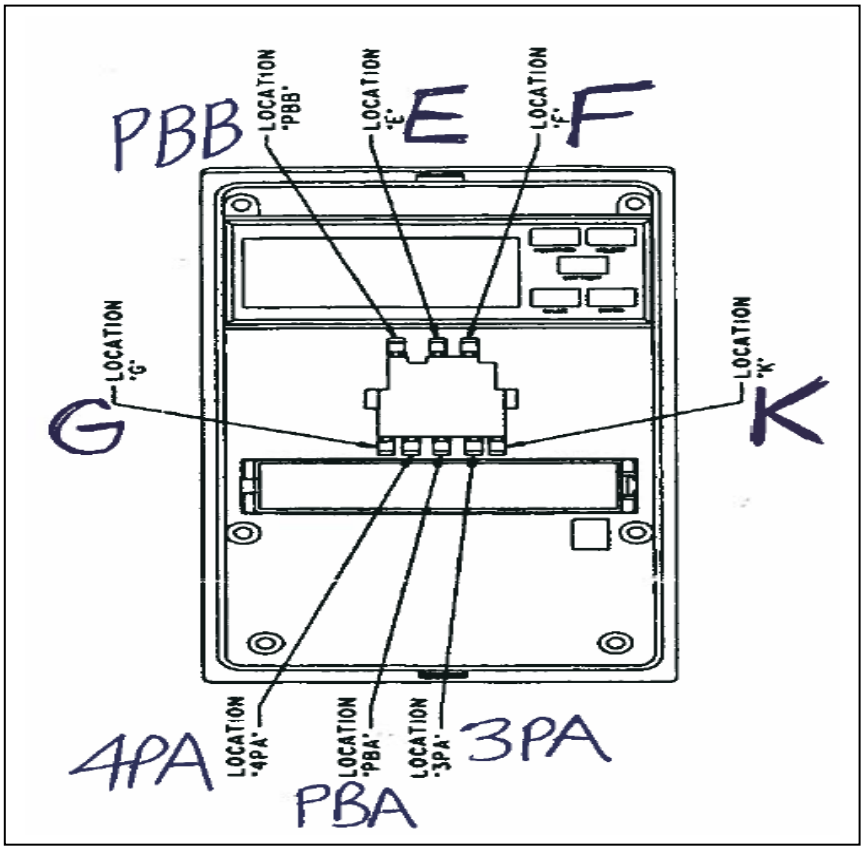
7.2.8 Press the blue "Continue" button or Mouse "OK".

7.2.9 Scan or type serial number in to Pop-up Box. Press the blue "Continue" button or Mouse "OK".

7.2.10 Scan or enter "RM" = (Reman) or "RX" = Exchange.

7.2.11 Do you want to print label "Y" or "N". **Normally select NO**, you be given another chance to print a label at the end of the test. If yes, place label on printer and press blue "Continue" button. To set the label up correctly on the printer be sure the White is facing out, away from the printer. **You will have to "clean the print head" again which is discussed in Step 7.2.4**

7.2.12 Install Rating plug rejection pins, follow on screen prompts. Suggest you use small needle-nose pliers and only apply small pressure on pins to loosen.



7.2.13 Set rejection plugs on back of unit to proper position. The v-notch indicates proper position. Once unit has been adjusted, press blue "Continue:" button or OK from mouse pad.

7.2.14 If a RMS9D unit came in with will ask you to set up the mini switches on back of unit. The “ON” location of the switch is towards the bottom of the unit.

7.2.15 Insert proper cable in to unit under test. Place on to tray and move tray into test position (slid completely forward and lock in to the test position). Once all adjustments have been made and unit has been connected and installed into the test tray, press blue "Continue" button or OK from mouse pad.

7.2.16 The "Yellow" test light will be illuminated throughout the test cycle. The green or red indicator light will come on if unit passes or fails the test.

7.2.17 When the tester finishes the full test cycle the status will be spelled out at bottom of screen. If you need to print a report, be sure that you do so before you hit the "Stop" button, because it will disable printing.

7.2.18 Pressing "Stop" will end test if there is a failure. It takes about 12 minutes to run a complete test cycle, from start to finish. If you want to re-run the test, just press the green "Start" button and the system will step you through the process.

7.2.19 Once test is completed you will be given another chance to print the label, Y or N selectable via the screen. Select Y if skipped in previous print option.

Special Note when printing unit labels: ***Select the correct label, ON THE LABEL WHERE THE CAT# ID IS PRINTED, (WHITE EMPTY BOX DECAL), clean ONLY the white box with a Tech-Wipe, mildly dampened with ACETONE.*** No need to clean any other part of label, this enhances the clarity of the CAT# ID and barcode when printed. Over time the labels get a covering of film and do not print well.

7.2.20 Printing the test report seen on screen can be done at the end of test after printing label kit, go to Menu bar > Printing > Print Report, if required

7.3 ***TEST COMPLETE ***

8. Notes

8.1 The red "Stop" button clears everything and moves the program back to the beginning or start of test. Have to re-enter everything, Cat, serial, etc.

8.2 RMS9D units have catalog numbers that start with "K" or "B".

8.3 RMS9C units have catalog numbers that start with "C" or "A".

8.4 The six dip switches or the Bell alarm circuit does not get tested on the MVT Tester (H190015).

8.5 If printer gets shutdown, the Easy Label printing software must be running in the background, otherwise you will not print.

8.6 Software can be written to loop on a specific test or on the entire cycle, but a request will need to be sent to IES to for them to perform this.

8.7 At the present time we have three RMS9C and three RMS9D units to perform as gold/master standards. They are kept on the shelves across from the MVT tester and used to validate the tester when the need arises.

8.8 Test Unit numbers (Gold/Master)

RMS9C Tester			RMS9D Tester	
Catalog Number	Serial Number		Catalog Number	Serial Number
C208LIGZ1PMRX	RMS9C086487L		K202LIRM	RMS9D081759L
C325LSIGZ1RM	RMS9C109494L		B208LSIGPMRX	RMS9D012153L
A404LHGDRX	RMS9C111735L		B440LHGDRM	RMS9D062875L

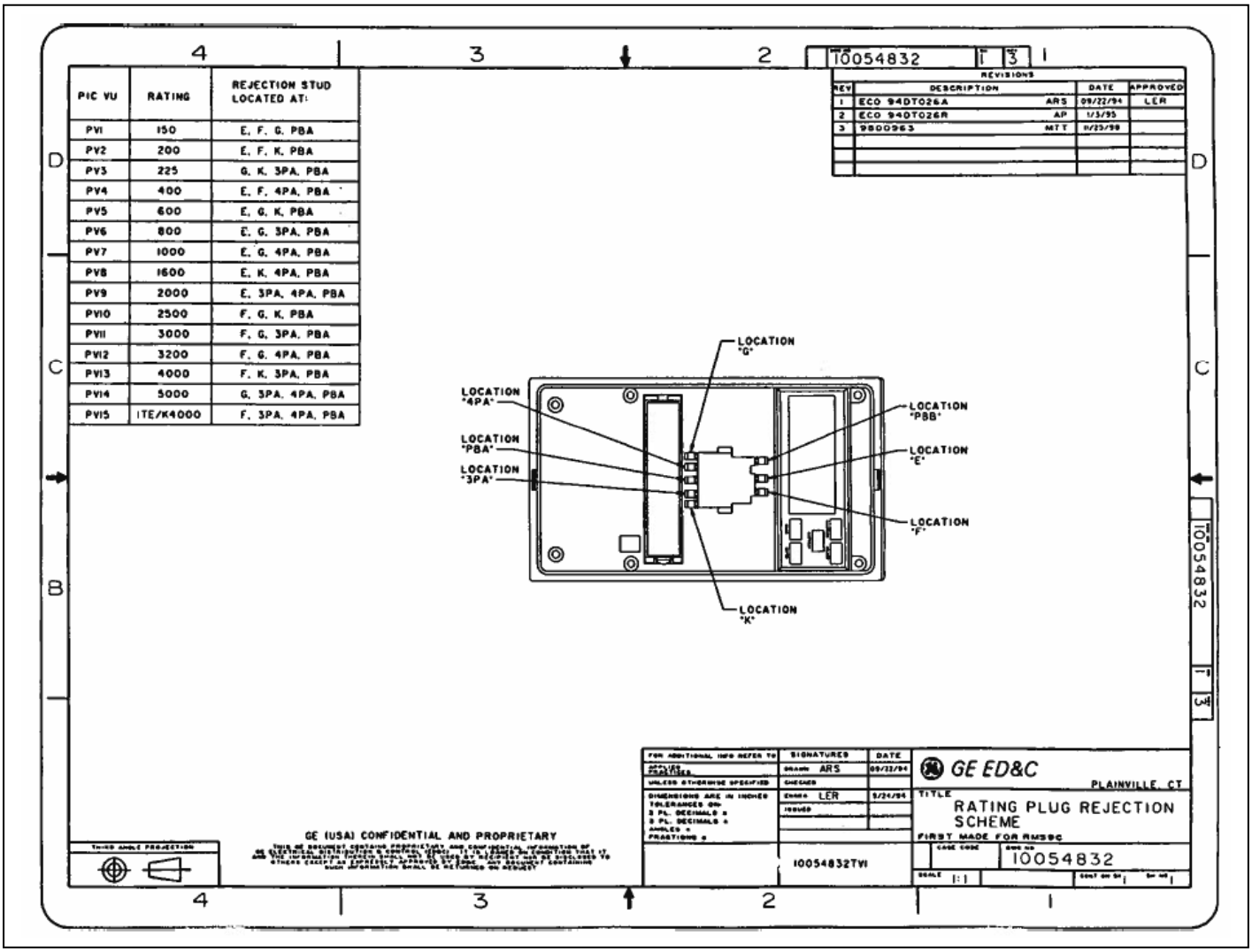
9. Attachments

9.1 Rating Plug Rejection Scheme (10054832), see page 4.

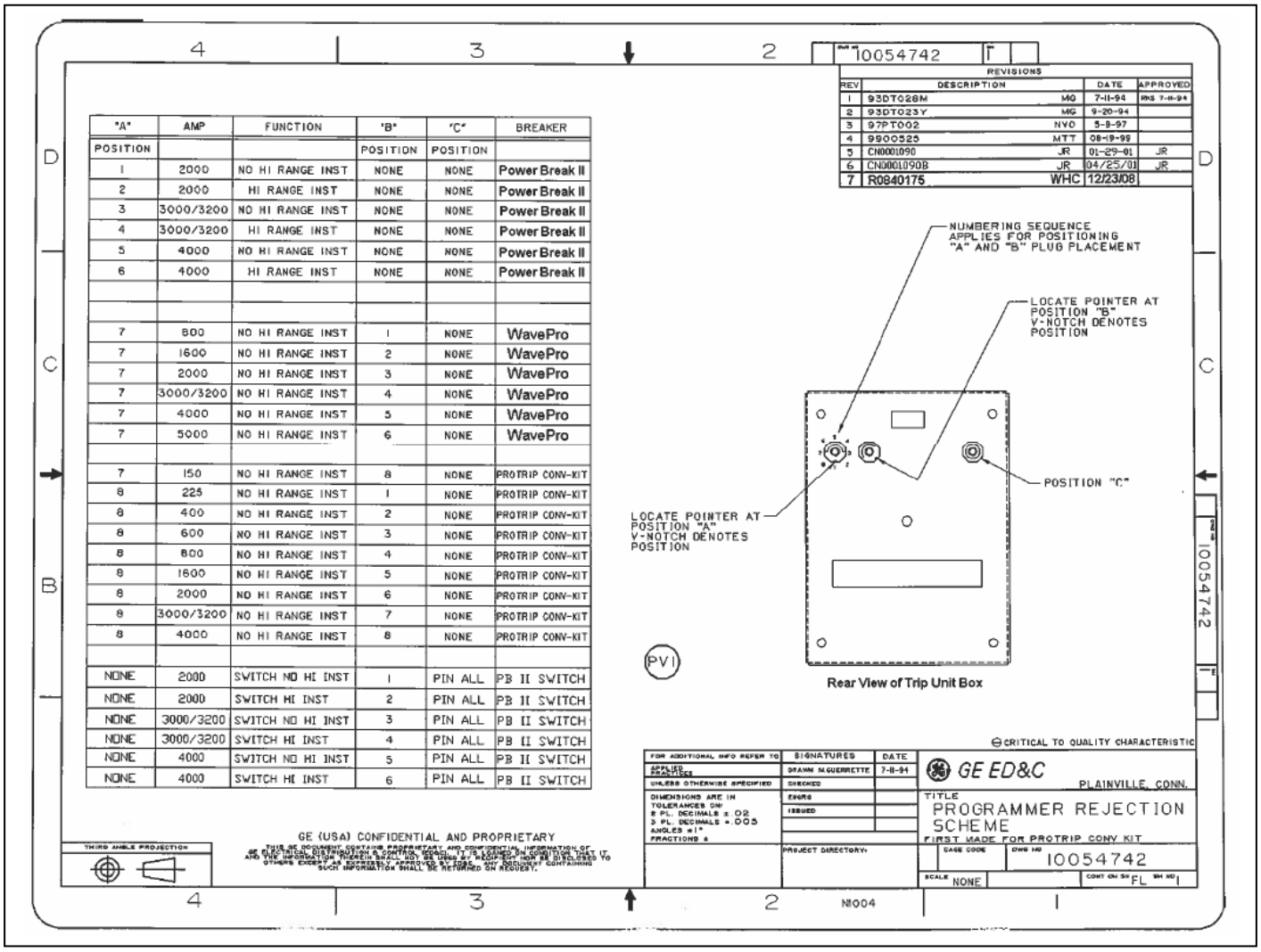
9.2 Programmer Frame Rejection (10054742), see page 5.

9.3 Programmer Frame Rejection (10054920), see page 6.

Rating Plug Rejection Scheme (10054832)



Programmer Frame Rejection (10054742)



"A" POSITION	AMP	FUNCTION	"B" POSITION	"C" POSITION	BREAKER
1	2000	NO HI RANGE INST	NONE	NONE	Power Break II
2	2000	HI RANGE INST	NONE	NONE	Power Break II
3	3000/3200	NO HI RANGE INST	NONE	NONE	Power Break II
4	3000/3200	HI RANGE INST	NONE	NONE	Power Break II
5	4000	NO HI RANGE INST	NONE	NONE	Power Break II
6	4000	HI RANGE INST	NONE	NONE	Power Break II
7	800	NO HI RANGE INST	1	NONE	WavePro
7	1600	NO HI RANGE INST	2	NONE	WavePro
7	2000	NO HI RANGE INST	3	NONE	WavePro
7	3000/3200	NO HI RANGE INST	4	NONE	WavePro
7	4000	NO HI RANGE INST	5	NONE	WavePro
7	5000	NO HI RANGE INST	6	NONE	WavePro
7	150	NO HI RANGE INST	8	NONE	PROTRIP CONV-KIT
8	225	NO HI RANGE INST	1	NONE	PROTRIP CONV-KIT
8	400	NO HI RANGE INST	2	NONE	PROTRIP CONV-KIT
8	600	NO HI RANGE INST	3	NONE	PROTRIP CONV-KIT
8	800	NO HI RANGE INST	4	NONE	PROTRIP CONV-KIT
8	1600	NO HI RANGE INST	5	NONE	PROTRIP CONV-KIT
8	2000	NO HI RANGE INST	6	NONE	PROTRIP CONV-KIT
8	3000/3200	NO HI RANGE INST	7	NONE	PROTRIP CONV-KIT
8	4000	NO HI RANGE INST	8	NONE	PROTRIP CONV-KIT
NONE	2000	SWITCH NO HI INST	1	PIN ALL	PB II SWITCH
NONE	2000	SWITCH HI INST	2	PIN ALL	PB II SWITCH
NONE	3000/3200	SWITCH NO HI INST	3	PIN ALL	PB II SWITCH
NONE	3000/3200	SWITCH HI INST	4	PIN ALL	PB II SWITCH
NONE	4000	SWITCH NO HI INST	5	PIN ALL	PB II SWITCH
NONE	4000	SWITCH HI INST	6	PIN ALL	PB II SWITCH

Programmer Frame Rejection (10054920)