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Synergize™ RF Network

GE I-210

Integration Manual

Y20454-INT Rev. A

PROPRIETARY NOTICE

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FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference consult Aclara Support for help.

Safety Information

The following safety precautions must be observed during all phases of operation, service, and repair of this device. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and the intended use of the metering instrument. Aclara assumes no liability for the customer's failure to comply with these requirements.

WARNING Any work on, or near, energized meters, meter sockets, or other metering equipment can present a danger of electrical shock. All work on this product should be performed only by qualified electricians and metering specialists in accordance with local utility safety practices, utility requirements and procedures outlined in Chapter 14 of The Handbook for Electricity Metering (10th edition).

The information contained within this manual is intended to be an aid to qualified metering personnel. It is not intended to replace the extensive training necessary to handle metering equipment in a safe manner.

- Use care when servicing with the power on.
- Do not assume neutral (white lead) is always at earth ground potential. Some services have this connection at line voltage.
- Be aware that dangerous voltages exist at several points within the meter when this product is installed on a meter base.
- Disconnect power before meter disassembly, soldering, or replacing components.

The meter is connected directly to line potential. Due to the possibility of the potential lines being reversed, points accessible with the cover off may be at line voltage.

Consult the meter instruction/technical manual for meter specific information.

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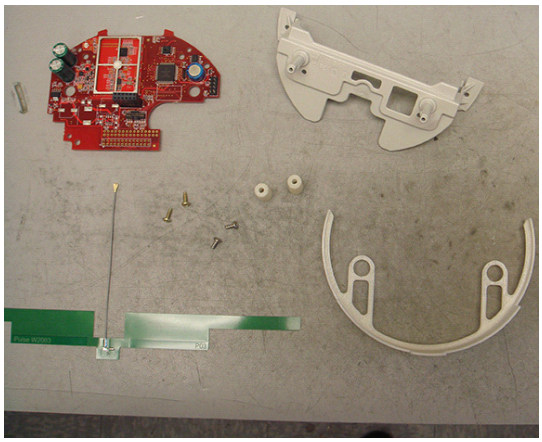
Synergize™ RF Network GE I-210 Meter Integration

This document provides an overview of the material and steps required to integrate an Aclara Synergize™ RF Network endpoint module with a new or existing GE I-210 meter.

Components Needed

- Antenna
- Meter
- Bridge
- Bridge Screws
- RF board
- Antenna holder
- Bushings/Stand-offs
- Bushing/stand-off screws



I-210 Integration

1. Put on an ESD strap.
2. Remove the meter cover.

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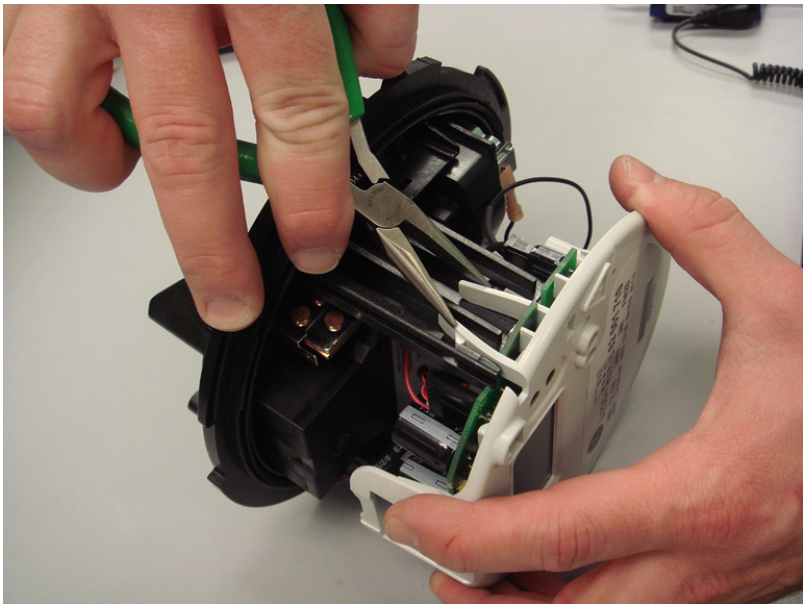
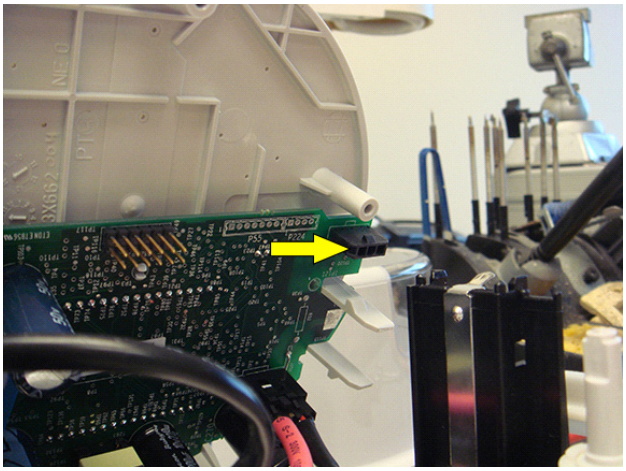
3. Remove the top of the meter by squeezing the pair of clips on each side of the meter.



4. Disconnect the remote disconnect wire from the top of the meter, if the meter has the remote disconnect option,



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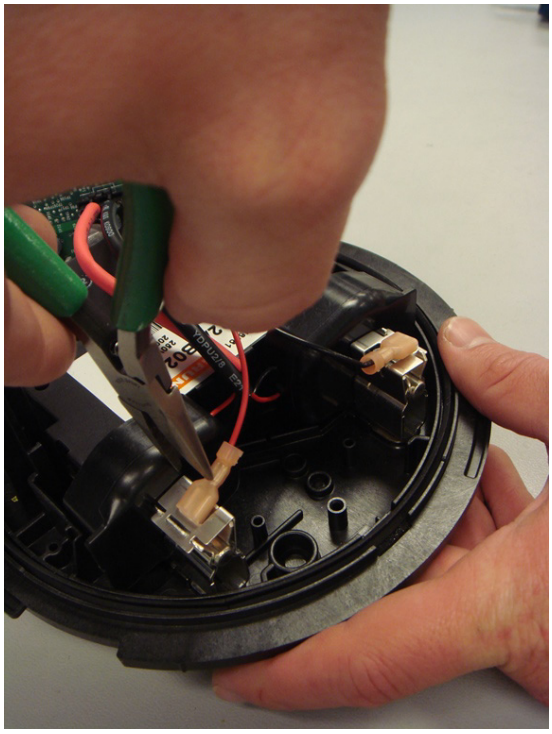
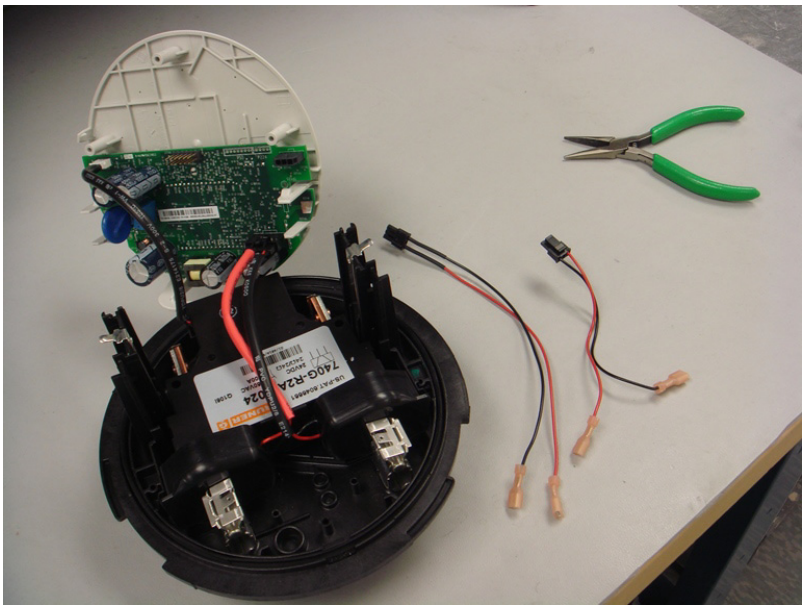
5. Remove the red remote disconnect wire from the metal clip on the meter base.



6. Remove the black remote disconnect wire from the metal clip on the meter base.



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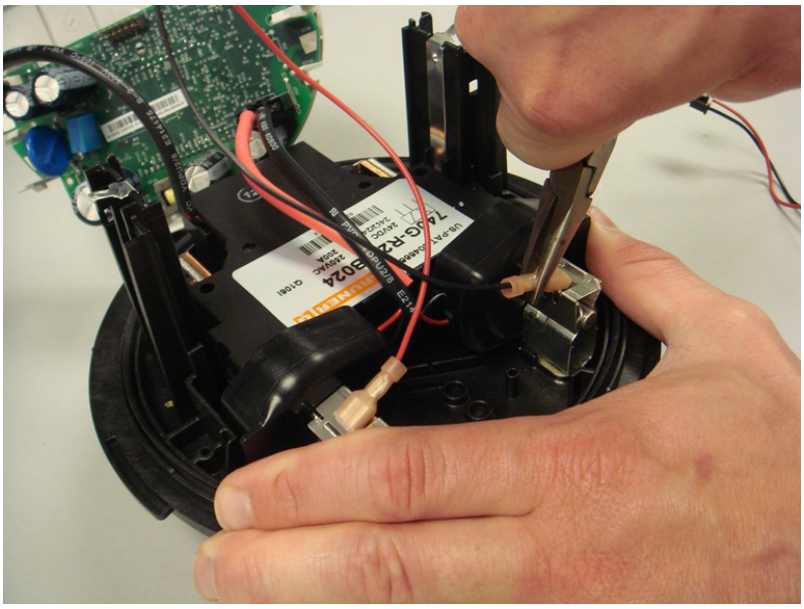
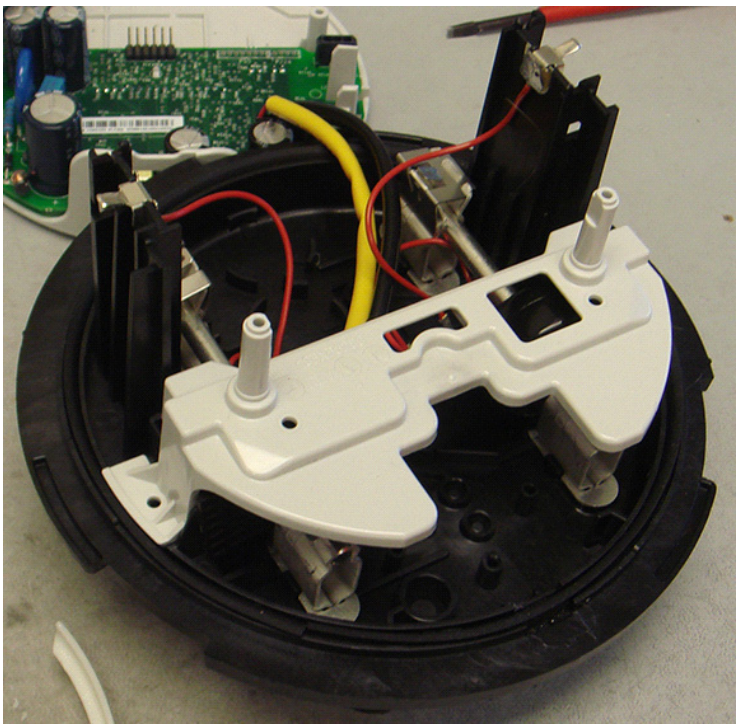
7. Attach the longer red and black remote disconnect wires as shown in the following image.



8. Verify the GE-supplied bridge is properly positioned on the meter base.



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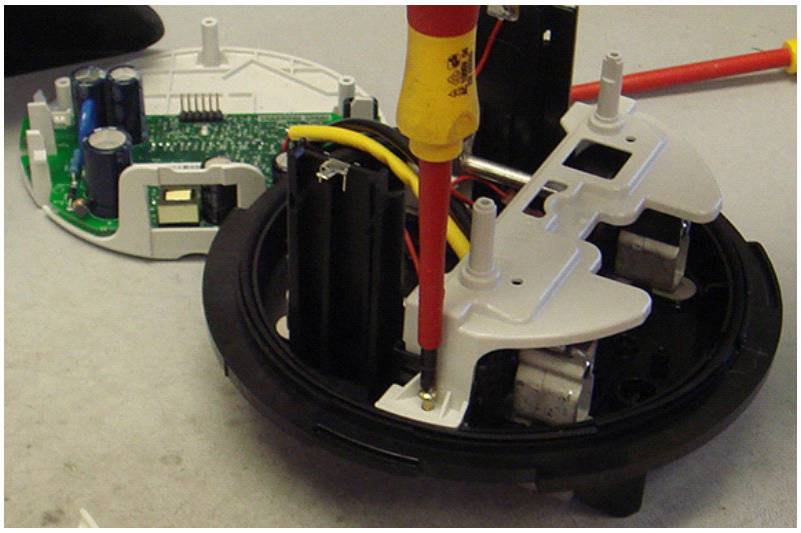
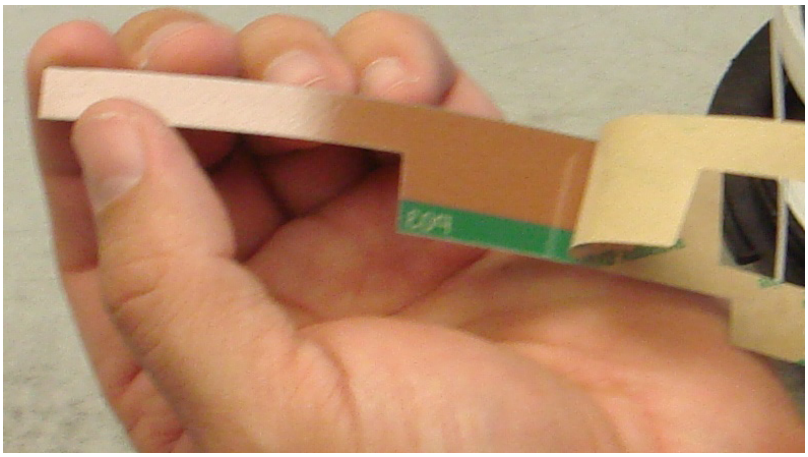
9. Secure the bridge to the meter base using the two screws.



NOTE If the meter has the remote disconnect option, carefully pull the remote disconnect wire underneath the bridge so it can be properly routed in Step 12.

10. Remove the backing from the antenna.



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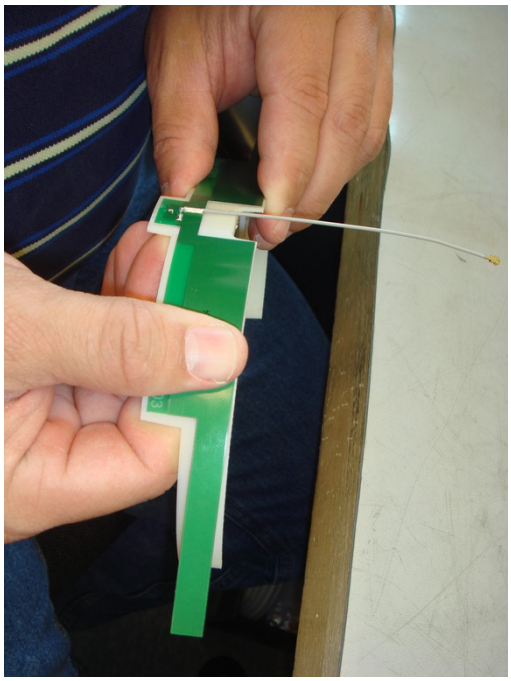
11. Affix the antenna to the antenna holder.



NOTE When applying the antenna, maximum bond strength can be obtained by thoroughly cleaning and drying the surface of the antenna holder with isopropyl alcohol. For applications such as this, it is important to use reagent grade solvents. Common household materials, such as rubbing alcohol, frequently contain oils to minimize the drying affect on skin, and can interfere with the performance of a pressure-sensitive adhesive.

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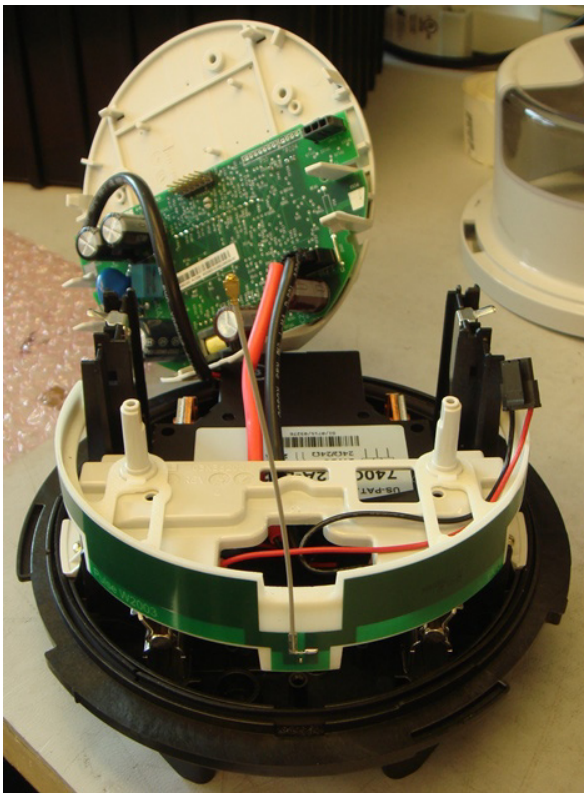
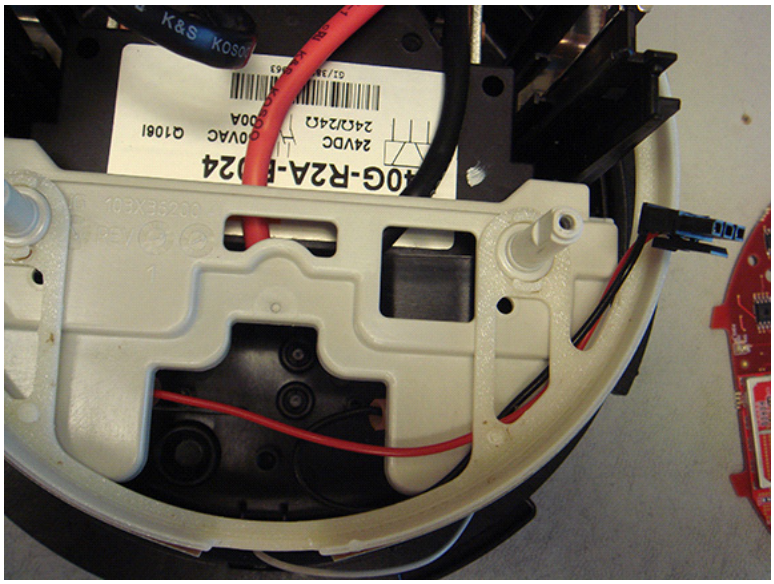
12. Place the antenna holder over the posts on the bridge.



NOTE If the meter has the Remote Disconnect option, make sure the Remote Disconnect wire is routed between the bridge and the antenna holder.



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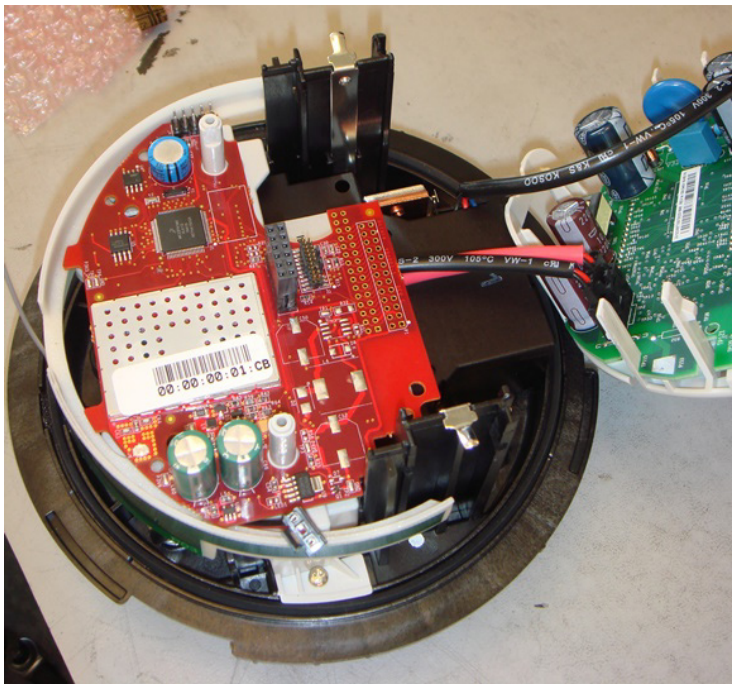
13. Install the RF board over the bridge posts.



14. Place the bushings/standoffs over the bridge posts.

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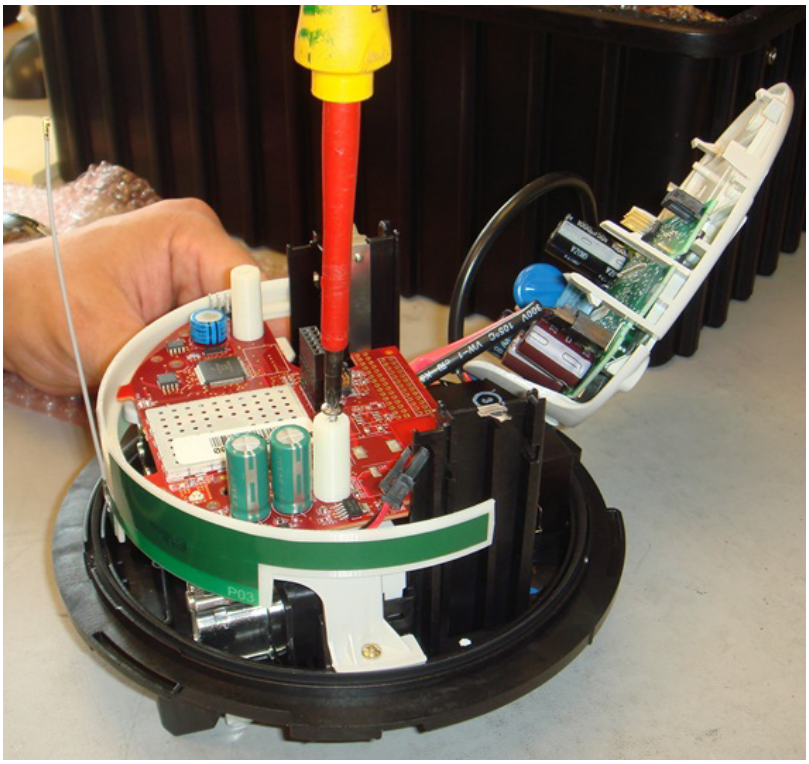
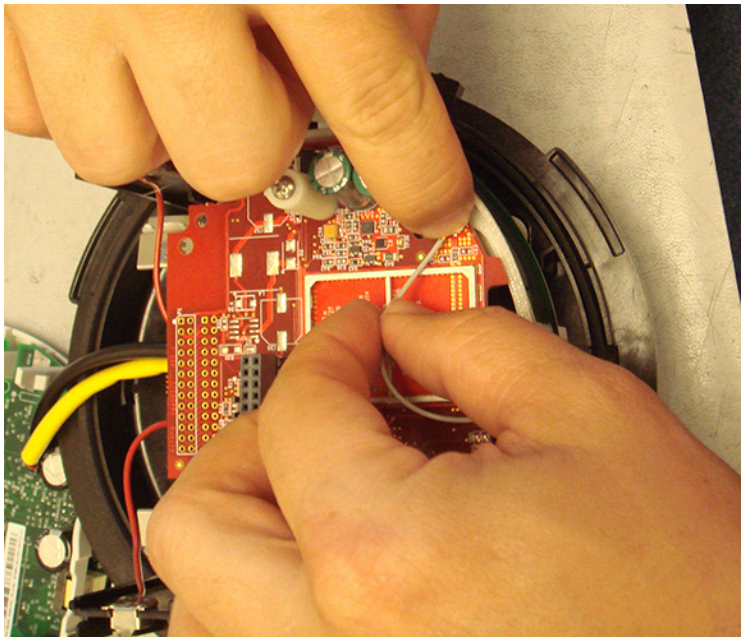
15. Secure the bushings using the two screws.



16. Connect the antenna wire to the connector on the RF board.



NOTE It is not required, but a Plug Insertion Tool (HRS U.FL-LP-IN) is available for mating U.FL series plugs and receptacles.

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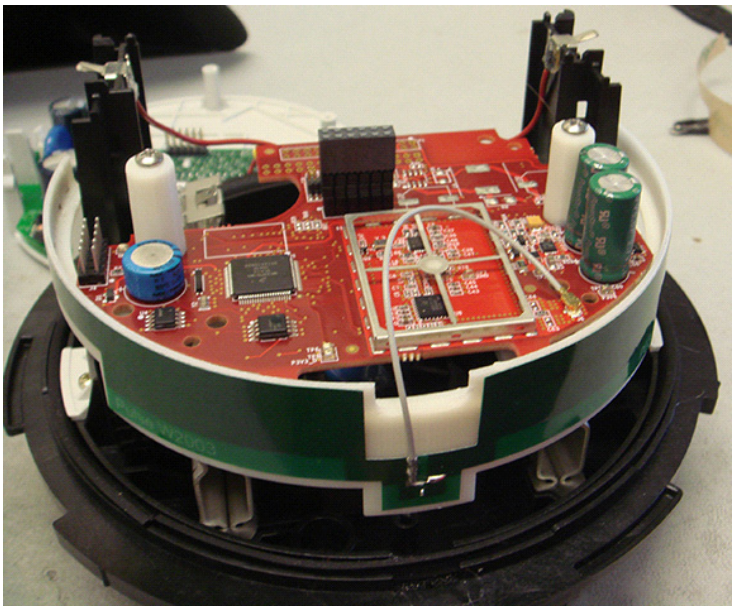
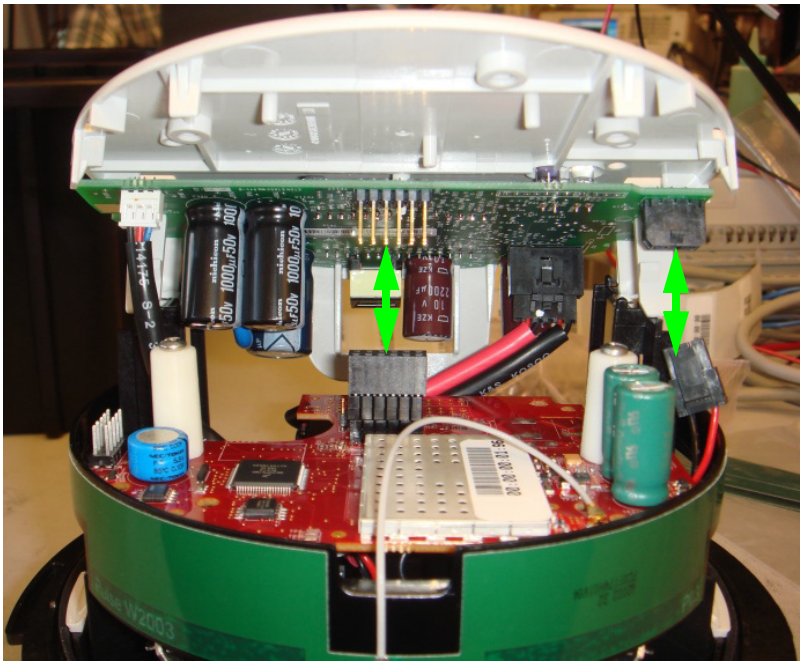


17. Align the 12 pin connector on the under-side of the meter top to the connector on the RF board.



NOTE If the meter has the remote disconnect option, align the connector on the remote disconnect wire to the connector on the underside of the meter top.

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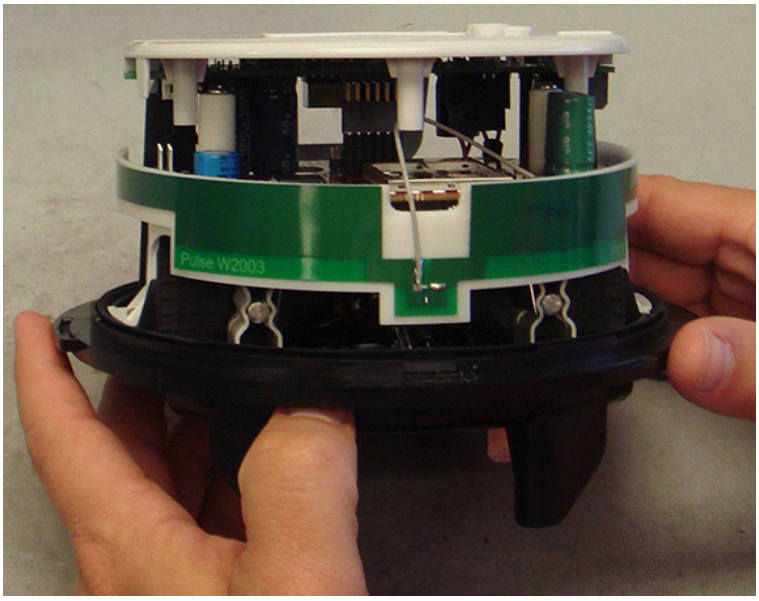
18. Press the top of the meter into place. Ensure the retaining tabs lock in place.



19. Place the MAC ID label above the LCD and place the FCC label below the LCD as shown in the following image.

20. Reinstall the meter cover.

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Support

There are several ways to get help when you have a question, an issue, or would like to speak with Aclara's Support personnel.

- Aclara Connect

  Aclara's exciting customer portal (https://connect.aclara.com) enables you to access our frequently-updated knowledge database, easily access product documentation, submit and track your Support cases and RMAs, access Aclara University's Online Learning Center (OLC) and learning library, track your orders, join communities and groups, join in discussions with other Aclara customers and Aclara personnel, and much more. If you do not have access to Aclara Connect, email support@aclara.com and request access.

- Aclara University

  Aclara's on-demand training makes content available to you in a convenient, cost-effective online environment. The OLC has recordings of several webinars, streaming educational videos, software simulations, and short videos which walk you through a specific task. Access the OLC by going the Training tab of Aclara Connect and clicking the Online Learning Center link.

- Technical Support

  Email support@aclara.com or call 1-800-892-9008 to speak with an Aclara representative.

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APPENDIX A: FORM & MODULE P/NS

Only the GE I-210 (JV103X677) meter forms listed below are qualified to be integrated with the Aclara Synergize™ RF Network module.

Meter Form	Class and Voltage	Aclara GE I-210+ Modules	Aclara GE I-210+ RD Modules	Kh Value
1S	CL100, 120V	Y84024-1	Y84024-301	1.0
	CL100, 240V	Y84024-1	Y84024-301	1.0
1SRD	CL100, 120V	Y84024-1	Y84024-301	1.0
2S	CL200, 240V	Y84024-1	Y84024-301	1.0
	CL320, 240V	Y84024-1	Y84024-301	1.0
2SRD	CL200, 240V	Y84024-1	Y84024-301	1.0
3S	CL20, 240V	Y84024-1	Y84024-301	1.0
4S	CL20, 240V	Y84024-1	Y84024-301	1.0
12S	CL200, 120V	Y84024-1	Y84024-301	1.0
	CL320, 120V	Y84024-1	Y84024-301	1.0
12SRD	CL200, 120V	Y84024-1	Y84024-301	1.0
25S	CL200, 240V	Y84024-1	Y84024-301	1.0

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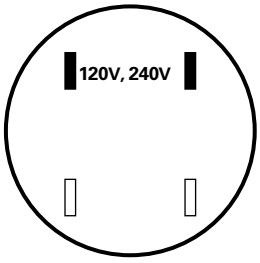
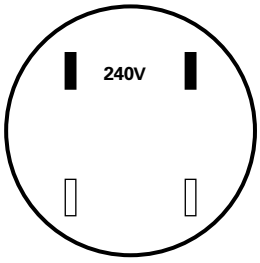
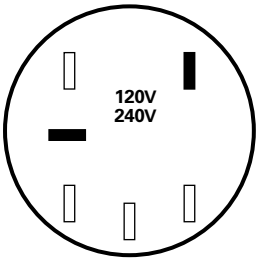
APPENDIX B: WIRING DIAGRAMS



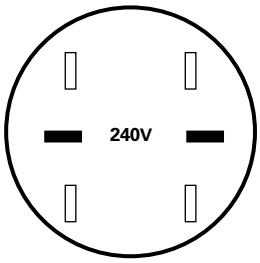
1S



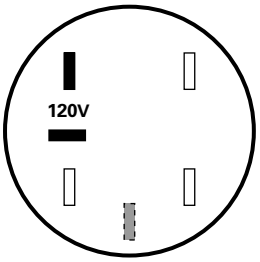
2S



3S



4S



12/25S

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Synergize™ RF Network Endpoint Module

ACLARA®

Electrical Specifications

Parameter	Rating
Input Voltage	4.0 VDC or optional 28VDC
Quiescent Current	70 mA @ 4 VDC
Current while transmitting RF	<800 mA @ 4 VDC
Power Supply	DC energy is provided by the host

Environmental Specifications

Parameter	Rating
Effect of Operating Temperature	Aclara specific test -40° C to 70° C with and without solar load
Effect of Relative Humidity	Aclara specific test 60° C for thee 24 hour cycles or 85° C for one 24 hour cycle at 95± 4% relative humidity, non-condensing

Physical Specifications

Test Title	Specification
Approximate weight	< 3 oz.
Dimensions	Irregular

Compliance Specifications

Test Title	Specification
EMI/RFI Emission - Conducted/Radiated	FCC 15.107 Conducted Emissions IEC CISPR 22 FCC 15.109 Unintentional Radiator IEC CISPR 22
EMI/RFI Susceptibility	RF Susceptibility ANSI C12.1 Test #26 200 kHz to 10 GHz 20 V/m
FCC Part 90	Subpart I, emission mask D
Occupied Bandwidth	11.25 kHz
RF Output Power	≤+30 dBm Transmit duty cycle ≤ 2%
Carrier Frequency Stability	± 2.5 ppm

Note: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. This product complies with FCC OET Bulletin 65 & Industry Canada's RSS-102 radiation exposure limits set forth for an uncontrolled environment.Aclara Technologies LLC low power RF devices and their antennas must be fixed-mounted on indoor or outdoor permanent structure(s) providing a separation distance of at least 20 cm from all persons during normal operation. This device is not designed (and it has no external connection) to operate in conjunction with any other antennas or transmitters. No other operating instructions for satisfying RF exposure compliance are needed.

NOTICE: This device is certified by the Federal Communications Commission for use pursuant to a station authorization. TWACS®, STAR®, and Metrum Cellular® are registered trademarks of Aclara Technologies LLC an Ohio limited liability company (Aclara). All software is property of Aclara. Patents issued and pending. Aclara reserves the right to change the specifications on this product without prior notification. Copyright Aclara Technologies LLC 2015.