EA_Gatekeeper firmware version 6

Upgrade/RMA installation instructions

General

<div style="text-align:center;">⚠ **WARNING**</div>

Do not disassemble the EA_Gatekeeper enclosure, service the gatekeeper unit, or service the components inside the unit with power present. Use authorized utility procedures to install and service equipment. Dangerous voltages are present. Equipment damage, personal injury, and death can result if safety precautions are not followed.

The leaflet contains instructions for installing the electronic assembly for the gatekeeper firmware version 6 in the following EA_Gatekeeper models.

- EA_Gatekeeper with an AC power supply and battery backup
- EA_Gatekeeper with an AC power supply only
- EA_Gatekeeper with a solar power supply

In addition, this leaflet contains each model may use one of the following communication options:

- Ethernet
- Cellular modem
- Telephone (POTS/PSTN) modem
- RS-232

Unpacking the upgrade kit

Visually inspect all parts for any damage during shipment, contacting Elster as appropriate.

<div style="text-align:center;">**NOTICE**</div>

The upgrade kit contains components that are sensitive to electrostatic discharge (ESD). When installing, servicing, or removing components, connect to ground with a wrist strap and follow safe ESD procedures. Failure to properly ground both you and the electronic devices, or failure to follow safe ESD procedures to avoid ESD, can result in equipment damage.

There is an upgrade kit for each communication option supported by the different EA_Gatekeeper models.

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Ethernet and cellular modem communication options

The Ethernet and cellular modem communication options kit contain identical components.

Style number	Description
5D25648G91	A3 ALPHA® meter electronic assembly
1C11994G01	RJ-45 communication cable
7S1734H001	DC power cable (not required or used in EA_Gatekeeper with AC power supply only)
7S1755H001	Retention tape
7S1750H00X	Model number label
7S1752H00X	FCC ID label
7S1052H001	FCC ID label clear UV overlay
3A35340H01	Formed heat shrink tubing*

Telephone (POTS/PSTN) modem communication option

The telephone modem communication option kit contains the following components.

Style number	Description
5D25648G91	A3 ALPHA meter electronic assembly
1B12129G06	RJ-11 communication cable
7S1734H001	DC power cable (not required or used in EA_Gatekeeper with AC power supply only)
7S1755H001	Retention tape
7S1750H00X	Model number label
7S1752H00X	FCC ID label
7S1052H001	FCC ID label clear UV overlay
3A35340H01	Formed heat shrink tubing*

RS-232 communication option

The RS-232 communication option kit contains the following components.

Style number	Description
5D25648G91	A3 ALPHA meter electronic assembly
4074B15G05	RS-232 communications cable
7S1734H001	DC power cable (not required or used in EA_Gatekeeper with AC power supply only)
7S1755H001	Retention tape
7S1750H00X	Model number label
7S1752H00X	FCC ID label
7S1052H001	FCC ID label clear UV overlay
3A35340H01	Formed heat shrink tubing*

*The A3 ALPHA meter electronic assembly is provided with pre-formed heat shrink tubing already assembled on the ends of the DC leads. This must remain on the ends of these leads until the electronic assembly is installed in the field. Additional heat shrink tubing is provided in the event that configuration takes place separately from installation, and extra tubing is needed to secure the DC wires from shorting during transport to the installation site.

EA_Gatekeeper with AC power and battery backup instructions

<div style="text-align:center">**⚠ WARNING**</div>

Do not disassemble the EA_Gatekeeper enclosure, service the gatekeeper unit, or service the components inside the unit with power present. Use authorized utility procedures to install and service equipment. Dangerous voltages are present. Equipment damage, personal injury, and death can result if safety precautions are not followed.

The instructions for removing the electronic assembly are the same for all communication options. See Figure 1 for an illustration of the Ethernet and telephone (POTS/PSTN) communication options; see Figure 2 for the cellular modem communication option; see Figure 3 for the RS-232 communication option. The numbered items in all figures refer to the following removal instructions:

How to remove the existing module
1.   Switch the AC circuit breakers to the "off" position.
2.   Remove the fuse from the fuse holder.
3.   Disconnect the communications or crossover (for cellular modem styles) cable from the surge suppressor.
4.   If present, remove the Kapton tape securing the electronic assembly to the meter base (approximately a 2-inch strip located at the 12 o'clock position).
5.   Disconnect the red DC power cable by loosening the terminal block that holds the cable.
6.   Rotate the electronic assembly counterclockwise and gently lift it from the meter base.
7.   Disconnect the AC voltage harness (Figure 4) and the antenna isolation board RF cable (Figure 5) from the electronic assembly.
8.   Remove the electronic assembly with the DC power cable and communication cable still attached to the electronic assembly.

How to install the RMA/upgrade kit
1.   Unpack the RMA/upgrade kit.
2.   Remove the tape securing wires to the side of the electronics module housing. Be sure to keep the formed heat shrink tubing on the bare ends of the DC power cable.
3.   Route the DC power cable to the terminal strip hook up location. Remove the formed heat shrink tubing from the DC power cable. Press the bare ends of both the white wire and red wire to the enclosure back panel and hold for a few seconds.

     ■   Connect the white wire to the green terminal

     ■   Connect the red wire to the gray terminal

4.   Connect the following cables in the order specified:

     a.   Connect the antenna cable from the isolation board to the electronics module.

     b.   Connect the communications cable to the surge suppressor or the crossover cable used for modem applications.

     c.   Connect the AC voltage harness from the enclosure to the electronics module.

5.   Place the Kapton tape at the 12 o'clock position to secure the electronic assembly to the meter base.
6.   Connect the communications or crossover (for cellular modem styles) cable to the surge suppressor.

7. Insert the fuse into the fuse holder.
8. Switch the AC breakers to the "on" position.
9. Verify that the gatekeeper is operating.

NOTICE

If the carryover error (Er1 000001) or the clock error (Er3 030000) are displayed when the electronic assembly is powered on, the errors should be reset using Metercat™ software.

After you install the electronic assembly for the gatekeeper firmware version 6, you must attach new labels to the enclosure.

1. Attach the new model number label, covering the existing model number label. The model number label is located inside the enclosure door. If an ESN is present, transfer this number to the new label.
2. Remove the clear overlay to FCC label and the existing FCC label. Attach the new FCC label and apply the new clear overlay. The FCC label is located on the outside of the enclosure.

1	Circuit breakers	**4**	Kapton tape (if present)
2	Fuse holder	**5**	DC power cable and terminal block
3	Communication cable	**6**	Electronic assembly for collector

Figure 1. Ethernet and telephone modem options
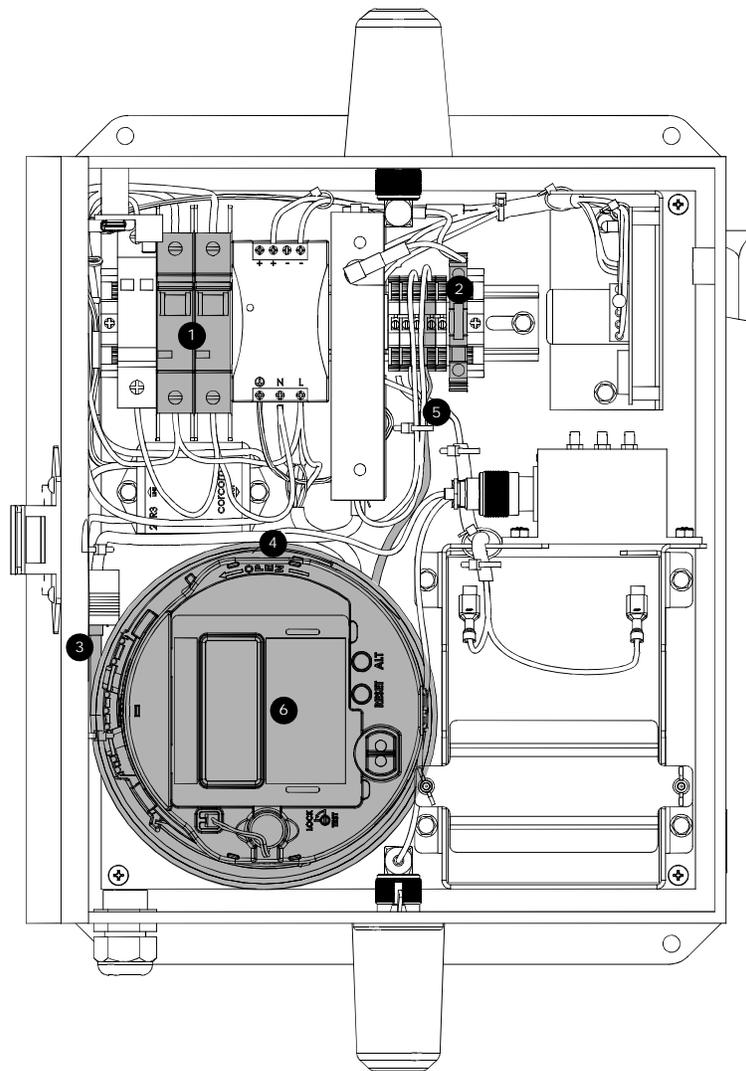
Figure 2. Cellular modem option
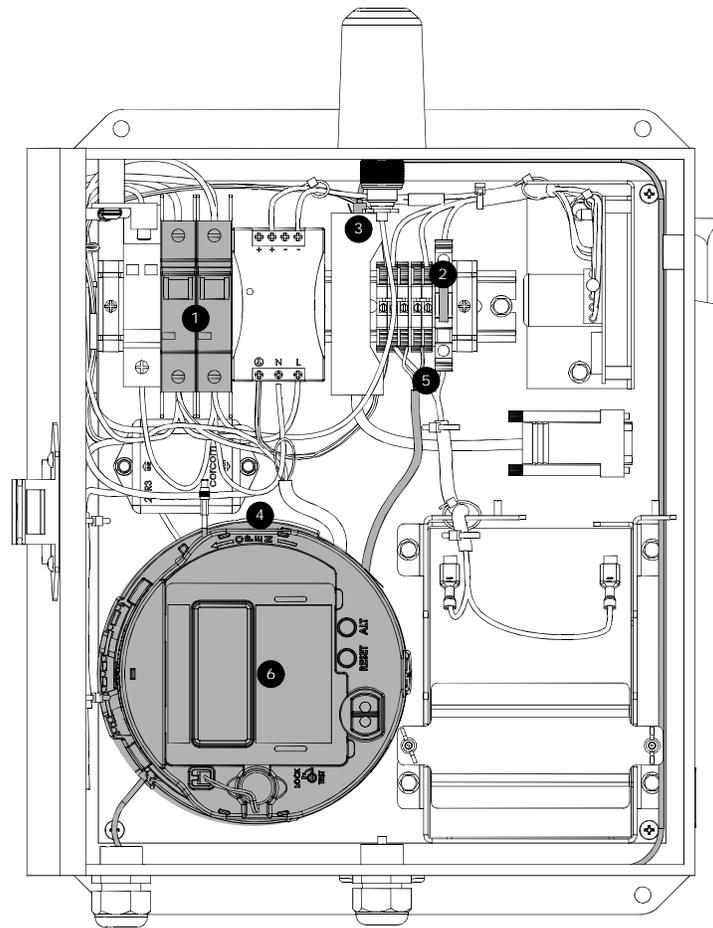
1	Circuit breakers	4	Kapton tape (if present)
2	Fuse holder	5	DC power cable and terminal block
3	Communication cable	6	Electronic assembly for collector

①	Circuit breakers	④	Kapton tape (if present)
②	Fuse holder	⑤	DC power cable and terminal block
③	Communication cable	⑥	Electronic assembly for collector

Figure 3. RS-232 communication option
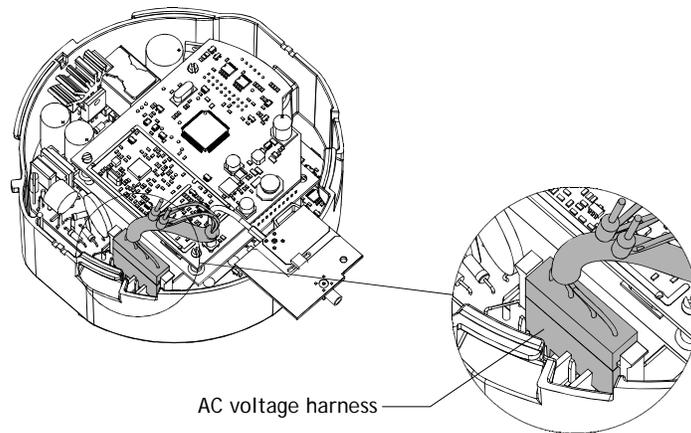
AC voltage harness

Figure 4. Location of AC voltage harness
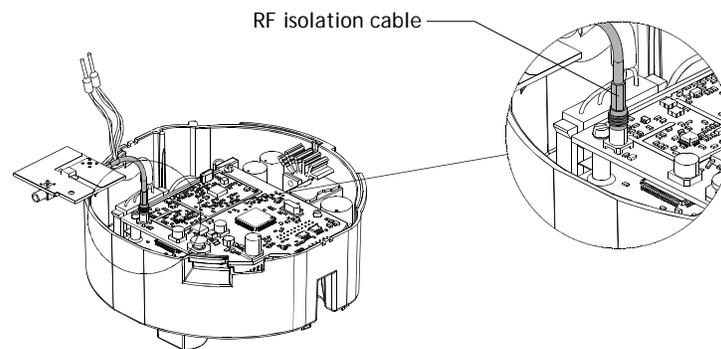
Figure 5. Location of RF isolation cable

EA_Gatekeeper with only AC power

⚠ WARNING

Do not disassemble the EA_Gatekeeper enclosure, service the gatekeeper unit, or service the components inside the unit with power present. Use authorized utility procedures to install and service equipment. Dangerous voltages are present. Equipment damage, personal injury, and death can result if safety precautions are not followed.

Note. The upgrade kit ships the electronic assembly with a DC power cord attached (see Figure 6). The DC power cord is not used in or required by the EA_Gatekeeper with only AC power. Remove the DC power cord and discard it before continuing with the upgrade.
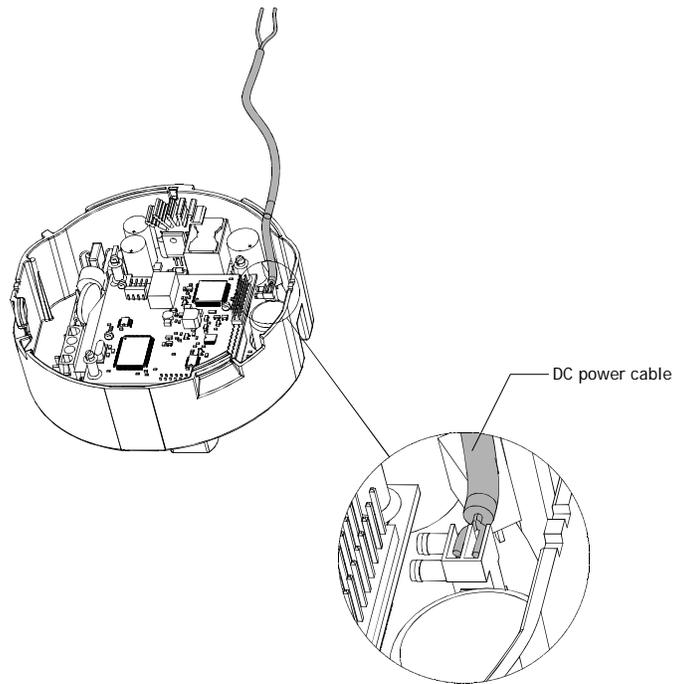
Figure 6. DC power cable

Ethernet, telephone (POTS/PSTN), and RS-232 communication options

The instructions for removing the electronic assembly vary depending on the communication option. Use the following procedure while referring to the figures beginning with Figure 7 for Ethernet and telephone communication options and Figure 8 for RS-232 communication (Note: the numbered items in the figures correlate to the removal procedure):

How to remove the existing module

1. Disconnect the communication cable from the surge suppressor.

2. If present, remove the Kapton tape securing the electronic assembly to the meter base (approximately a 2-inch strip located at the 12 o'clock position).

3. Rotate the electronic assembly counterclockwise and gently lift it from the meter base.

4. Disconnect the antenna cable from the electronic assembly (see Figure 9).

5. Disconnect the AC voltage harness (see Figure 10).

6. Remove the internal antenna from the electronic assembly.

   a. Unlatch latches A, B, C, and D (see Figure 11) and gently pry open both sides of the antenna about ½ inch.

   b. Press on the left and right sides of the antenna slightly to disengage the lower left and right antenna latches.

   c. With a small flat blade screwdriver, gently pry up and disengage the latch E (see Figure 11).

   d. Move the internal antenna assembly toward the top using a hinge-like motion about the top antenna mounting hole. The antenna should then pull easily from its mounting hole and can be removed from the electronic assembly.

7. Remove the existing electronic assembly with the communication cable still attached to the electronic assembly.

How to install the RMA/upgrade kit

1. Unpack the RMA/upgrade kit.

2. Remove the tape securing wires to the side of the electronics module housing. Remove and discard DC cable from the kit.

3. Connect the following cables in the order specified:

   a. Connect the antenna cable from the isolation board to the electronics module.

   b. Connect the communications cable to the surge suppressor or the crossover cable used for modem applications.

   c. Connect the AC voltage harness from the enclosure to the electronics module.

4. Re-attach the internal antenna to the electronic assembly.

   a. Move the internal antenna assembly and engage latch E using a hinge-like motion about the top of the antenna mounting hole.

   b. Engage latches A, B, C, and D by gently snapping both sides of the antenna.

5. Place the Kapton tape at the 12 o'clock position to secure the electronic assembly to the meter base.

6. Connect the communications or crossover (for cellular modem styles) cable to the surge suppressor.

7. Insert the fuse into the fuse holder.

8. Switch the AC breakers to the "on" position.

9. Verify that the gatekeeper is operating.

NOTICE

If the carryover error (Er1 000001) or the clock error (Er3 030000) are displayed when the electronic assembly is powered on, the errors should be reset using Metercat™ software.

After you install the electronic assembly for the gatekeeper firmware version 6, you must attach new labels to the enclosure.

1. Attach the new model number label, covering the existing model number label. The model number label is located inside the enclosure door.

2. Remove the clear overlay to FCC label and the existing FCC label. Attach the new FCC label and apply the new clear overlay. The FCC label is located on the outside of the enclosure.
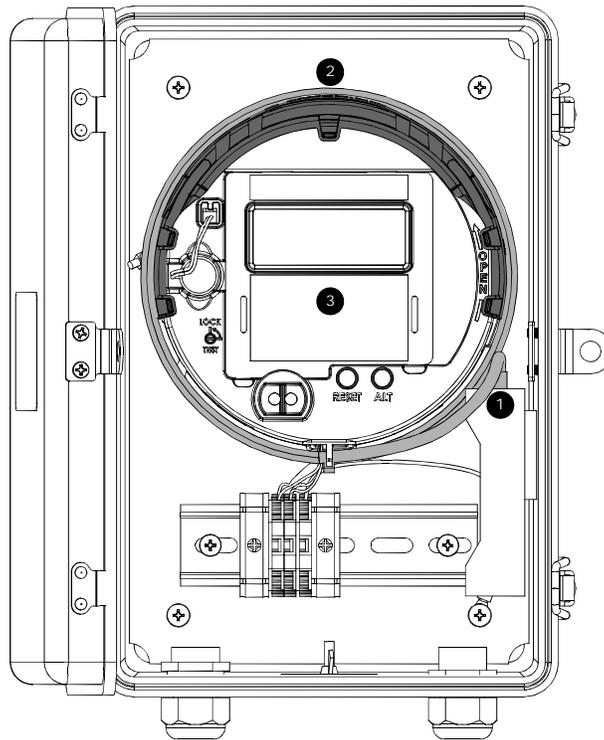
① Communication cable

② Kapton tape (if present)

③ Electronic assembly for collector

Figure 7. Ethernet and telephone modem options
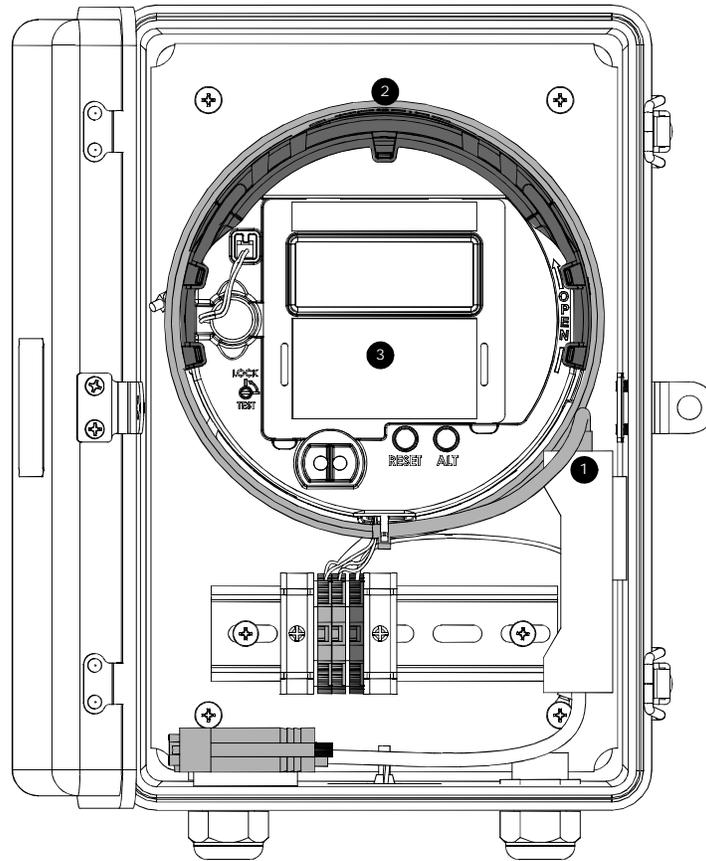
1   Communication cable

2   Kapton tape (if present)

3   Electronic assembly for collector

Figure 8. RS-232 communication option
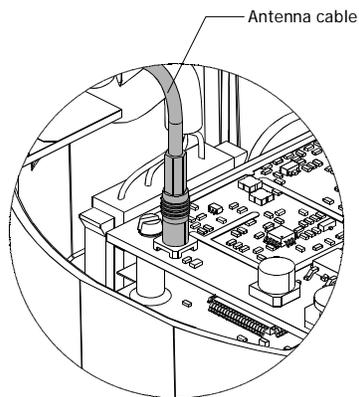
Figure 9. Internal antenna cable
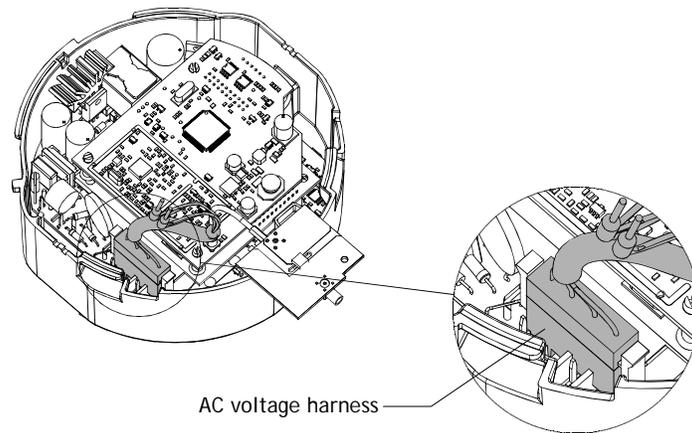
Figure 10. AC voltage harness
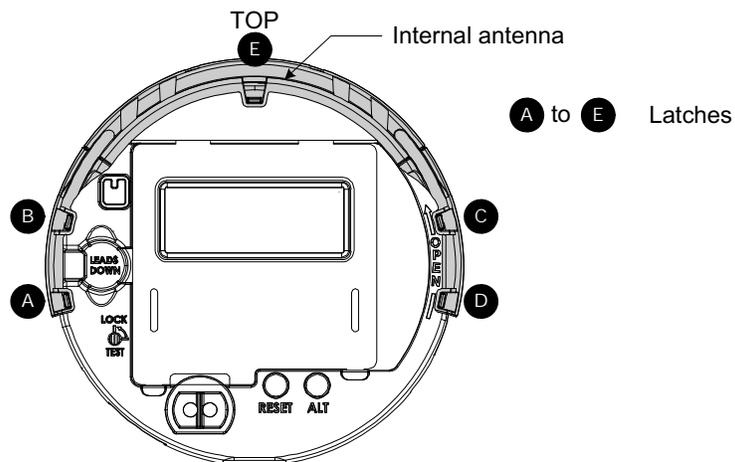
Figure 11. Internal antenna latches

Cellular modem communication option

For the cellular modem communication option, use the following procedure while referring to (Note: the numbered items in the figures correlate to the removal procedure):

How to remove the existing module

1. Switch the AC circuit breakers to the "off" position.
2. Disconnect the communication cable from the surge suppressor.
3. If present, remove the Kapton tape securing the electronic assembly to the meter base (approximately a 2-inch strip located at the 12 o'clock position).
4. Rotate the electronic assembly counterclockwise and gently lift it from the meter base.
5. Disconnect the AC voltage harness.
6. Remove the electronic assembly with the communication cable still attached to the electronic assembly.

How to install the RMA/upgrade kit

1. Unpack the RMA/upgrade kit.
2. Remove the tape securing wires to the side of the electronics module housing. Remove and discard DC cable from the kit.
3. Connect the following cables in the order specified:
   a. Connect the antenna cable from the isolation board to the electronics module.
   b. Connect the communications cable to the surge suppressor or the crossover cable used for modem applications.
   c. Connect the AC voltage harness from the enclosure to the electronics module.
4. Place the Kapton tape at the 12 o'clock position to secure the electronic assembly to the meter base.
5. Connect the communications or crossover (for cellular modem styles) cable to the surge suppressor.
6. Insert the fuse into the fuse holder.
7. Switch the AC breakers to the "on" position.
8. Verify that the gatekeeper is operating.

NOTICE

If the carryover error (Er1 000001) or the clock error (Er3 030000) are displayed when the electronic assembly is powered on, the errors should be reset using Metercat™ software.

After you install the assembly for gatekeeper firmware version 6, you must attach new labels to the enclosure.

1. Attach the new model number label, covering the existing model number label. The model number label is located inside the enclosure door. If an ESN is present, transfer this number to the new label.
2. Remove the clear overlay to FCC label and the existing FCC label. Attach the new FCC label and apply the new clear overlay. The FCC label is located on the outside of the enclosure.

1	Circuit breakers	**3**	Kapton tape (if present)
2	Communication cable	**4**	Electronic assembly for collector

Figure 12. Cellular modem model
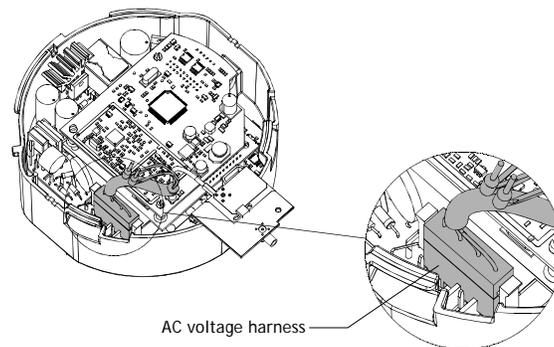
AC voltage harness

Figure 13. AC voltage harness

EA_Gatekeeper with solar power

Exercise caution when servicing an EA_Gatekeeper with the solar powered option. The EA_Gatekeeper with the solar powered option may be installed on or near high voltage equipment. Always use authorized utility procedures to install and service equipment. Failure to follow all safety precautions can result in equipment damage, personal injury, or death.

The instructions for removing the electronic assembly are the same for all communications options. See Figure 14 for an illustration of the Ethernet and telephone (POTS/PSTN) communication options; see Figure 16 for the cellular modem option. The numbered items in the figures refer to the following removal instructions:

How to remove the existing module
1. Remove all fuses from all 4 fuse holders.
2. Disconnect the communications or crossover (for cellular modem styles) cable from the surge suppressor.
3. If present, remove the Kapton tape securing the electronic assembly to the meter base (approximately a 2-inch strip located at the 12 o'clock position).
4. Disconnect the red DC power cable by loosening the terminal block that holds the cable.
5. Rotate the electronic assembly counterclockwise and gently lift it from the meter base.
6. Disconnect the AC voltage harness (Figure 4) and the antenna isolation board RF cable (Figure 5) from the electronic assembly.
7. Remove the electronic assembly with the DC power cable and communication cable still attached to the electronic assembly.

How to install the RMA/upgrade kit
1. Unpack the RMA/upgrade kit.
2. Remove the tape securing wires to the side of the electronics module housing. Be sure to keep the formed heat shrink tubing on the bare ends of the DC power cable.
3. Route the DC power cable to the terminal strip hook up location. Remove the formed heat shrink tubing from the DC power cable. Press the bare ends of both the white wire and red wire to the enclosure back panel and hold for a few seconds.
   - Connect the white wire to the green terminal
   - Connect the red wire to the gray terminal
4. Connect the following cables in the order specified:
   a. Connect the antenna cable from the isolation board to the electronics module.
   b. Connect the communications cable to the surge suppressor or the crossover cable used for modem applications.
5. Place the Kapton tape at the 12 o'clock position to secure the electronic assembly to the meter base.

6.   Insert all 4 fuses into the 4 fuse holders.

7.   Verify that the gatekeeper is operating.

NOTICE

If the carryover error (Er1 000001) or the clock error (Er3 030000) are displayed when the electronic assembly is powered on, the errors should be reset using Metercat™ software.

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① Fuse holders   ③ Kapton tape (if present)

② Communication cable   ④ Electronic assembly for collector

Figure 14. Ethernet and telephone (POTS/PSTN) options

1	Fuse holders	**3**	Kapton tape (if present)
2	Communication cable	**4**	Electronic assembly for collector
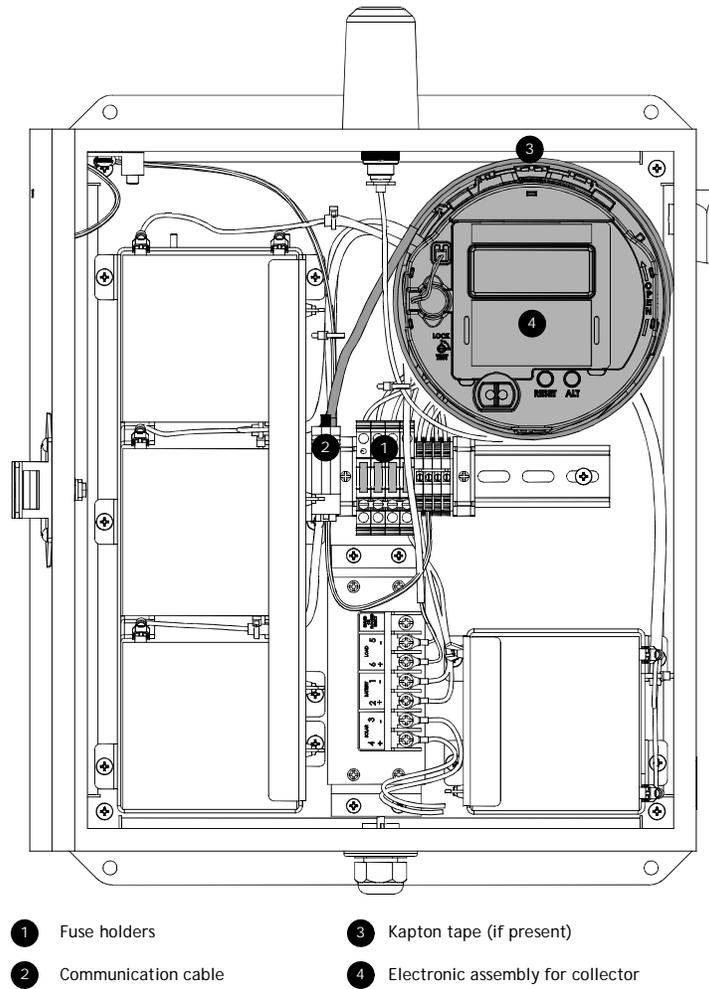
Figure 15. RS-232 communication option
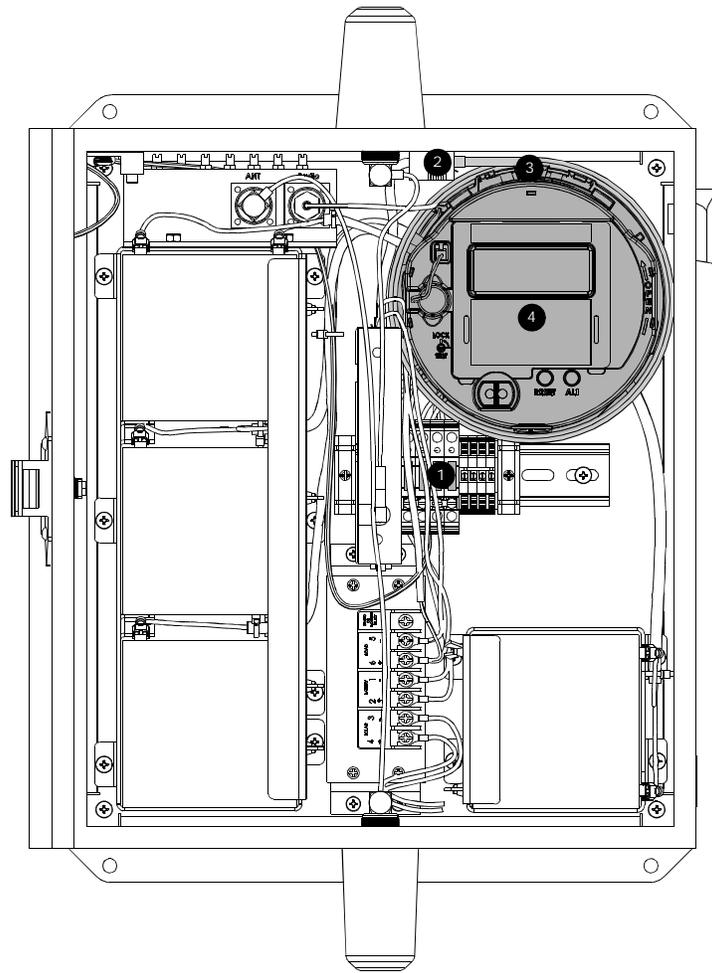
1	Fuse holders	3	Kapton tape (if present)
2	Communication cable	4	Electronic assembly for collector

Figure 16. Cellular modem option
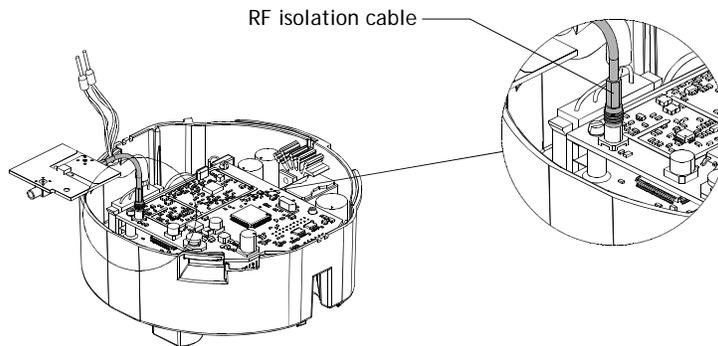
RF isolation cable

Figure 17. RF isolation cable

Notes: