To wire the 100G series remote gas module to the Honeywell Instrument

1. Insert the ERT module cable into the instrument's compression connector.
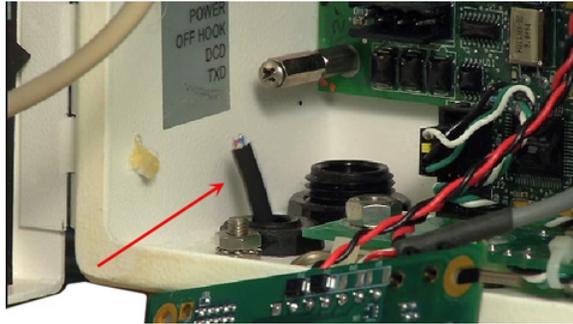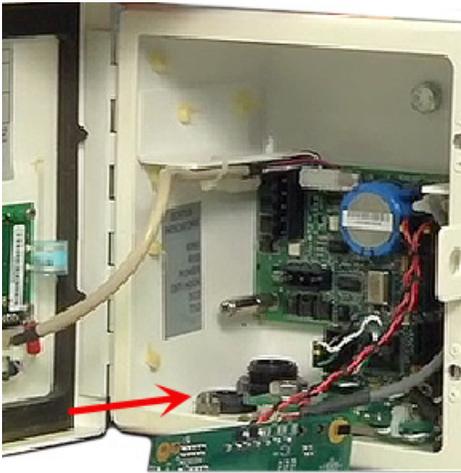
2. Strip one inch of the outer insulation from the 100G series remote gas module.
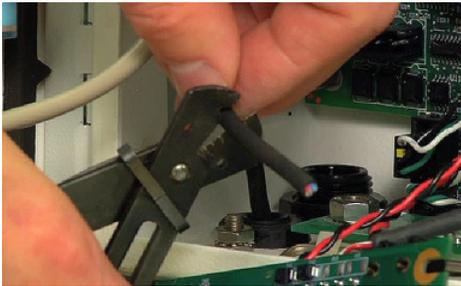
Caution Keep wires away from the rotating magnetic spindle in the Honeywell Instrument.

3. Strip 1/4-inch individual wire insulation from the red, white, and blue lead wires.

Count enabling wire
(pulsed ground reference)

Count sensing wire
(high impedance positive reference)

Cut cable sensing wire
(positive return)

4. Twist the blue and white wires together and connect them to the Honeywell Instrument terminal strip connector (Phoenix connector) following the Honeywell Instrument Item Code Settings on page 43 Table.
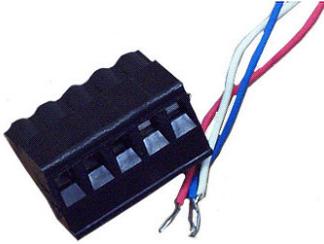
5. Connect the red wire following the Item Code Settings on page 43 Table.
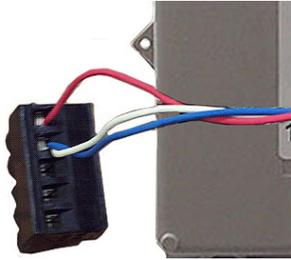
> **Note** In Honeywell Instrument EC-AT correctors, the connector may be soldered to the pulse board.

6. See Mounting the 100G series remote gas module on page 9 for module mounting instructions.

Wiring Dual ERT Modules to a Honeywell Instrument

This section includes the information to wire dual ERT modules to a single Honeywell Instrument. Installation requires the correct programming parameters (see Item Code Settings on page 43).

With Itron 100G series remote gas modules, utilities can receive *corrected* and *uncorrected* consumption values by installing two ERT modules. The ERT module for *corrected* reads is attached to the corrector's pulse output. The ERT module for *uncorrected* reads is attached to the input switch board. The *corrected* pulse output is programmable; the *uncorrected* pulse output is dependent on the connected meter's drive rate.

> 🔵 **Important** Some Honeywell Instruments have two pulse outputs so the *uncorrected* pulse output could be connected to the additional output, but the connection should be to the input switch board in case the corrector battery fails. Counts will be collected if the *uncorrected* pulse is connected to the switch board since the board is not dependent on battery power.

Dual remote ERT modules mounted on a Honeywell Instrument

To install dual 100G Series Gas ERT Modules to a Honeywell Instrument Mini-Max Case Volume Corrector using Honeywell Kit 22-1077

1. Place the Honeywell Instrument volume corrector in *shutdown* condition and disconnect all power from the Mini-Max main board.
2. Remove the battery pack from the volume corrector and set it aside.
3. Remove the four screws from the main board and the board from the enclosure. Set the board aside.
4. Remove the two hex screws from the input switchboard and the switchboard from the enclosure and set it aside. You will re-install the switchboard later.

   Warning The battery pack, main board and switchboard may be damaged if left in the Honeywell Instrument volume corrector while completing this installation.

5. Drill two 3/16-inch holes in the back of the Mini-Max enclosure as specified by the information included in the kit. Remove any metal shavings from the enclosure.
6. Clean the 100G series remote gas modules with the alcohol wipe where you will place the corrected and uncorrected labels (included in the kit).

   Note Clean the 100G series remote gas modules with the alcohol wipe to ensure good label adhesion.

7. Mount the module for c*orrected* pulse outputs on the left bracket mounting space. Insert three #8-32 x 1/2-inch screws in a triangular pattern. Install the top screw so the head of the screw is approximately 1/8-inch from the ERT mounting bracket surface. Slide the module onto the screw so the mounting lug fits securely onto the screw. If necessary, remove the module and make any necessary adjustment to the screw depth to ensure a secure fit. Install the two bottom screws in an alternating fashion.
8. Mount the module for u*ncorrected* pulse outputs on the right bracket mounting space. Insert three #8-32 x 1/2-inch screws in a triangular pattern. Install the top screw so the head of the screw is approximately 1/8-inch from the ERT mounting bracket surface. Slide the ERT module onto the screw so the mounting lug fits securely onto the screw. If necessary, remove the module and make any necessary adjustment to the screw depth to ensure a secure fit. Install the two bottom screws in an alternating fashion.
9. Route the module cables under the bracket edge and toward the rear of the Honeywell Instrument.
10. Mount the ERT mounting bracket (Honeywell Instrument part number 22-1077, included in the kit) onto the Mini-Max enclosure. Place a #8 metal flat washer followed by a rubber sealing washer onto both #8-32 x 3/8-inch screws. Align the lower threaded holes in the mounting bracket with the drilled enclosure holes and insert a screw/washer through the enclosure housing. Screws heads must be inside the enclosure. Tighten both screws using a screwdriver.

    Note Aligning the second bracket threaded hole and drilled hole may require some manipulation of the mounting bracket.

11. Insert the module cables (both units) through the large cable strain relief on the left rear of the instrument's enclosure. Leave a one-half to one inch drip loop under the cable strain relief.
12. Secure three cable ties on the module cables in three places on the cables as specified by information included in the kit.
13. Re-install the input switchboard, main board, and battery pack removed in step 2.

14. Connect the *corrected* module wires to TB1 on the Mini-Max board following the table below. Use Honeywell upgrade kit 40-2678-1 to provide the second pulse output channel for the uncorrected endpoint.

Corrected ERT Module Connections

ERT Module	Mini-Max TB1
Red wire	K terminal
Blue wire*	Ya terminal
White wire*	Ya terminal

 *Twist the blue and white endpoint wires together before connecting to the Mini-Max board.

 Tighten terminal connections securely.

15. Connect the *uncorrected* module wires to the Input Switch Board UNC. VOL following the table below.

Uncorrected ERT Module Connections

ERT Module	Mini-Max Input Switch Board UNC. Vol.
Red wire	COM terminal
Blue wire*	NO terminal
White wire*	NO terminal

 *Twist the blue and white ERT module wires together before connecting to the Mini-Max board.

 Tighten terminal connections securely.

16. Tighten the large strain relief securely.

Warning Do not crush the module through-cables when tightening the strain relief.

17. Re-install or reconnect the power or battery sources.

18. Close the instrument case and tighten the case screw securely. Replace any locks that were removed for installation.

Wiring the Remote ERT Module to the Honeywell TCI

The Honeywell Instruments Temperature Compensating Index (TCI) provides two Form-A volume pulse outputs and one Form-B alarm output. These outputs are electronic switches. The Form-A pulse outputs are configurable for compensated or uncompensated volume. The Form-B output is for alarm output use only.

Connections to the three output pulse channels are completed using loose unterminated wires (the individual wires from a cable) and gel-connectors. The TCI unit has six unterminated wires and six gel-connectors (Itron part number CON-0023-001) to enable pulse connections to ancillary devices. Loose wires are located inside the gray adapter plate behind the black strain relief fitting.

Adapter plate with   Loose cable wires   Honeywell TCI adapter backplate
black fitting   (Honeywell part number 22-1929)

To make TCI pulse connections

> **Note** Connect one ERT module/channel to the alarm output if the modules are used on channels A and B.

1. Remove strain relief fitting by unscrewing from the gray adapter plate.

> **Note** Do not remove the fitting's hex nut. Unscrew the entire fitting from the gray adapter plate. A tether line is secured to the strain relief fitting. When the strain relief fitting is removed, the tether line pulls the unterminated wires out of the adapter plate for access to the loose wires.

2. Loosen the strain relief fitting hex nut and remove the white plug from the center.
3. Place the strain relief fitting onto the field pulse cable.

4. If the field pulse cable is smaller than a 0.2-inch diameter, install the rubber tube supplied with the TCI onto the cable so the strain relief will clamp onto the tube after it is reinstalled.

5. Connect the individual external pulse cable conductors to the unterminated wires following *Configuration for two ERT modules connected to one TCI*. Insert one unterminated wire into an opening of a gel-connector (six gel-connectors were included with the TCI). Insert the appropriate field cable wire into the other gel-connector opening.

Configuration for two ERT modules connected to one TCI

Channel A	
ERG-500x-502 or 503	**TCI**
White	Orange and brown
Red	Yellow
Blue	Blue (alarm)

Channel B	
ERG-500x-502 or 503	**TCI**
White	White
Red	Green
Blue	White
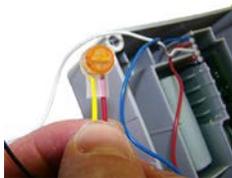
6. Verify both wires are fully inserted into the gel-connector prior to crimping.
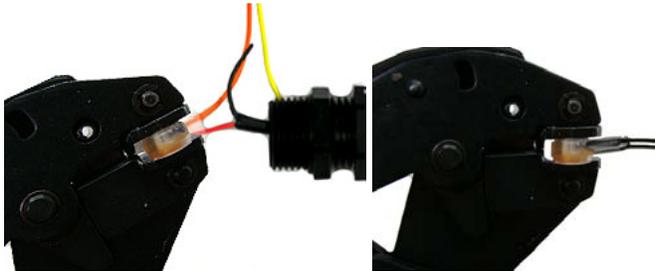
Important Use a crimping tool compatible with gel-connectors. *Do not* use a standard pliers for crimping gel-connects. The crimping tool provides an even pressured crimp to make a secure connection. Apply pressure for three seconds until the gel cap is fully crimped (collapsed) to allow time for the low viscosity silicone-based gel to flow. If the silicone gel flows out of the crimped connector, avoid touching the gel. Gel flowing from the connector provides environmental protection for the connection.

7. Insert the gel-connected wires into the threaded gray adapter plate hole.

8. Replace the strain relief and tighten until secure.

Honeywell Software Settings

The Honeywell MasterLink SQL software is used to configure Honeywell products.

ℹ️ **Important** This information is subject to change without notice. Refer to the Honeywell MasterLink SQL product documentation to verify the most current information about programming and configuring the corrector for use with the 100G series remote ERT module.

To review instrument settings

1. Connect the interface cable from the Honeywell instrument to a PC loaded with the MasterLink SQL software.
2. Open the MasterLink SQL software.

   The software opens and reports a "Not Connected" status.
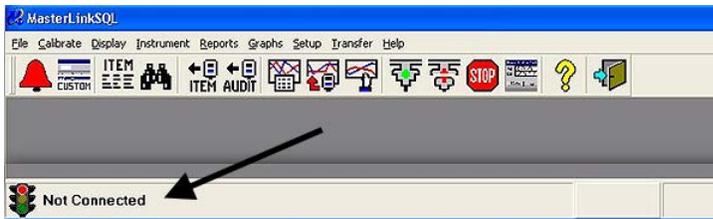
   The Site List window automatically opens after the software detects an instrument.
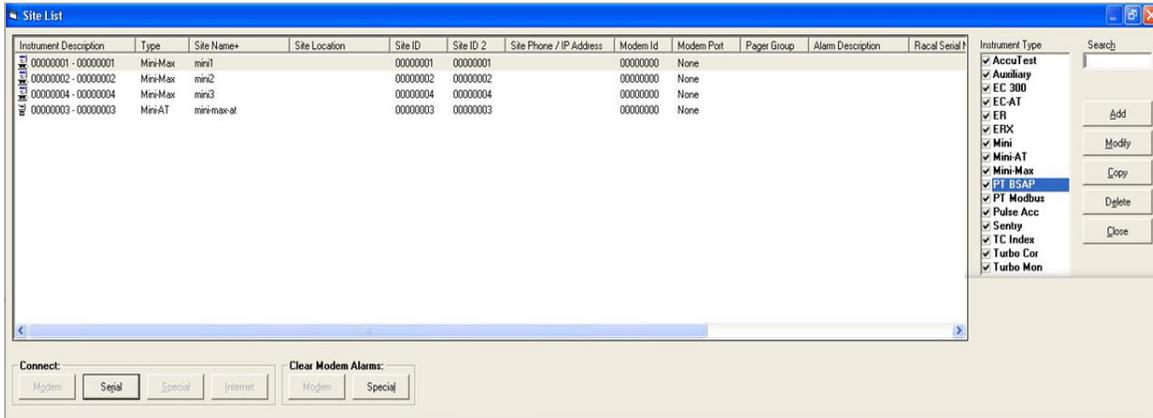
3. Select the Honeywell instrument type from the **Instrument List** on the right of the screen.

   Important You must select the correct instrument type. Selecting the incorrect type causes communication errors.

4. The status indicator in the lower left corner of the MasterLink SQL software displays the connection status as Connected (instrument type).
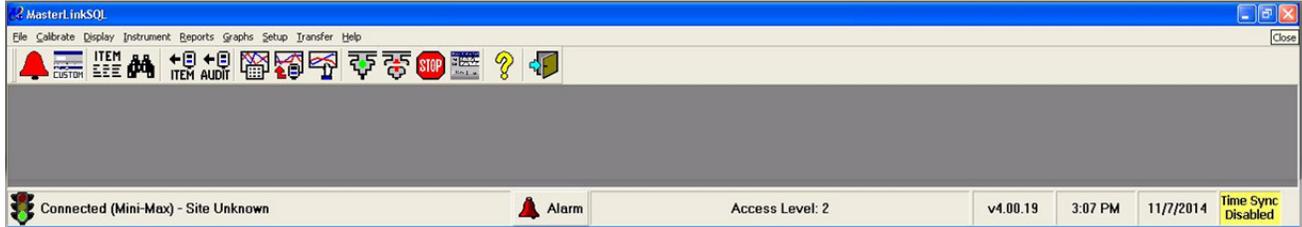
5. To view an Item configuration, select **Display** > **Items by Number**.
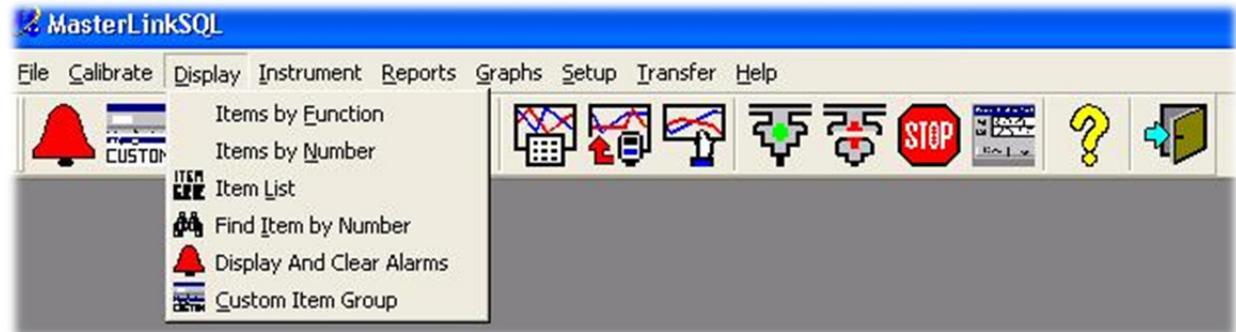
Important Refer to the Itron 100G Series Remote ERT Module Meter Compatibility List on page 4 for the required Honeywell Instrument settings.

6. Verify the Honeywell instrument settings are correct. For example, Item number 56 must be set to 2.0. If the setting is incorrect, click the **Change** button.
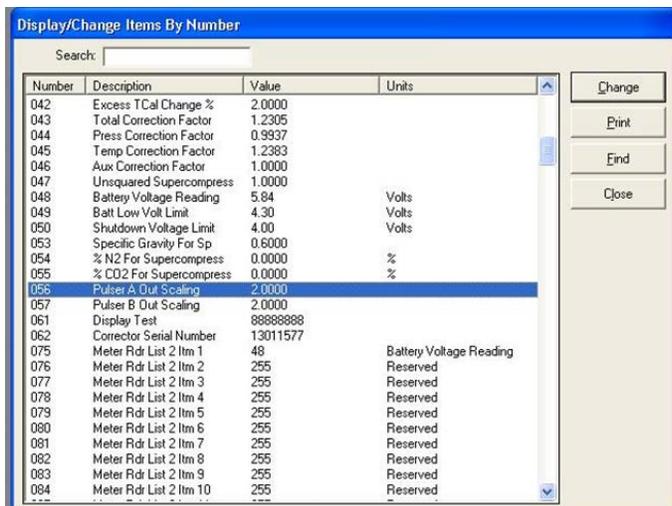
A Change Item pop-up provides the interface to change the setting.

7. Enter the correct setting. Click **Save**.

8. Confirm all settings match the settings required for the ERT module connected to the Honeywell Instrument. For more information, 100G Series Remote ERT Module Meter Compatibility List on page 4.

Connecting the Remote Mount ERT to the IMC/W2 or MC2 Cable

You can ship the Itron 100G series remote gas module directly to GE Dresser for a factory-installed cable. If you connect the module to the meter using an existing cable purchased from GE Dresser, complete the following cable installation procedure.

⚠️ **Caution** The purchased cable must have a mating connector compatible with the IMC/W2 or MC2 receptacle. GE Dresser cables may be wired in different configurations for specific applications. If necessary, contact GE Dresser for wiring diagrams for your specific application.

To connect the 100G series remote gas module to the IMC/W2 or MC2 cable

1. Remove the backplate (4 screws) from the 100G series remote gas module and expose the module lead wires. The backplate and screws will be re-installed on the module later in this procedure so store them (temporarily) in a safe, secure place.
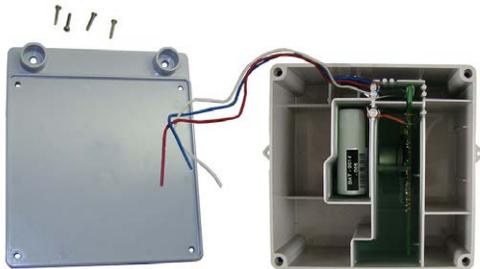
2. Insert the lead wires from the 100G series remote gas module into new 3M gel connectors (Itron part number CON-0023-001) together with the same colored lead wire from the meter cable (see the wiring table below) and crimp using a 3M hand-held crimping tool.

Important Use a crimping tool compatible with gel-connectors. *Do not* use a standard pliers for crimping gel-connects. The crimping tool provides an even pressured crimp to make a secure connection. Apply pressure for three seconds until the gel cap is fully crimped (collapsed) to allow time for the low viscosity silicone-based gel to flow. If the silicone gel flows out of the crimped connector, avoid touching the gel. Gel flowing from the connector provides environmental protection for the connection.
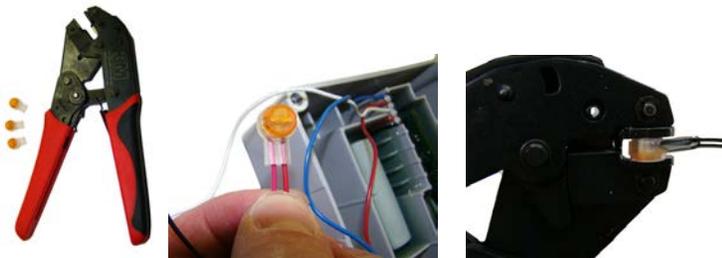
Note Do not strip lead wire prior to inserting the wire in the gel connector.

IMC/W2 to Remote ERT Module Wire Table

IMC/W2 Wire	Remote Module wire
Red	Red
White	White
Blue	Blue

3. GE Dresser IMC/W2 and MC2 cables are typically delivered with a cable tie installed. If the meter cable does not include a cable tie, install a tie to the cable just below the exposed colored lead wires on the cable insulation. Remove the excess cable tie using a hand-held side-cutter pliers. The cable tie performs as a cable strain relief to mitigate the risk of destructive tension on the lead wires.
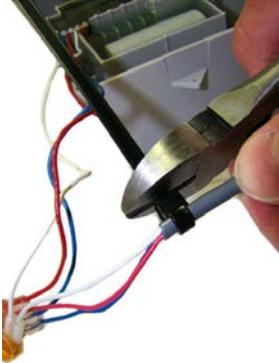
4. Tuck the three gel connectors and cable tie inside the ERT module housing, as shown. Position the cable tie as shown by the arrow.
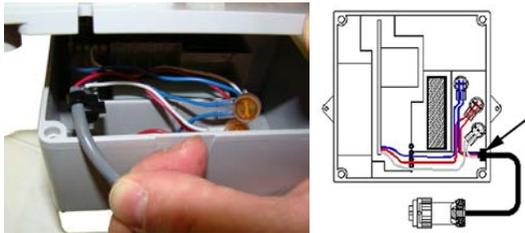
5. Install the 100G series remote gas module backplate using the four screws previously removed from the ERT module and a Torx T-10 screwdriver.

   Important Verify the cable tie and gel connectors are inside the module housing and the cable extends out of the slot in the backplate. Torque the backplate mounting screws to 9-12 inch-pounds.

Installing the ERT Module to the GE Dresser Micro Corrector (IMC/W2 or MC2)

GE Dresser offers a mounting bracket kit assembly to mount Itron's 100G series remote gas module to the IMC/W2.

GE Dresser Mounting Bracket Kit (GE Dresser Part Number 057783-000)		
Quantity	**Description**	**GE Dresser Part Number**
1	Mounting bracket	015951-000
1	Screw, 8-32 x 7/16-inch	000163-277
2	Screw, 8-32 x 3/4-inch	000163-282
3	Nut, 8-32	012829-005
4	Spacer, #10	053669-001
4	ERT module/bracket mounting screw, M6 x 20 mm	013444-002

🔴 **Important** GE Dresser mounting bracket kit does not include the cable required to connect the 100G series remote gas module to the Amphenal connector on the IMC\W2.

GE Dresser Accessories	
Description	**GE Dresser Part Number**
9" A-B male cable	054983-012
9" D-E male cable	054983-010

To attach the ERT module to the IMC\W2 and MC2

1. Insert the 8-32 x 7/16-inch screw (A) into the top of the mounting bracket. Insert the two 8-32 x 3/4-inch screws (B) into the bottom of the mounting bracket.

2. Insert one 3/32-inch nut on the top 7/16-inch bracket screw (A). Slide the 100G series remote gas module mounting lug over the top of the bracket screw and nut.

3. Secure the bottom 100G series remote gas module mounting holes over the two 8-32 x 3/4-inch screws with the remaining two 8-32 nuts.

4. Insert the #10 spacers into the four mounting holes on the back of the IMC\W2.

Caution Upright vertical positioning is very important because:

- 100G series remote gas modules are designed with the antenna in a vertical direction so the antenna is parallel to the reading device (which has a vertical antenna). Matching antenna polarity can greatly affect RF performance and enable easy ERT module reading.
- 100G series remote gas modules are designed so the tilt tamper is vertical. It is important to maintain vertical positioning in the field to enable tilt tamper stability.
- 100G series remote gas module batteries must be vertical (installed with the positive terminal upward) or battery life is compromised.

---

5. Secure the ERT module/bracket assembly on the IMC\W2 using four ERT module/mounting bracket screws (M6 x 20 mm).

6. There are two options to connect the 100G series remote gas module to the GE Dresser IMC\W2:

    1. For the Amphenol connector: plug the connector from the Itron ERT module to the IMC\W2 volume input connector.

2. For the cable gland or conduit fitting:

a. Route the cable from the 100G series remote gas module through the IMC\W2 cable gland/conduit connector.

To receive uncorrected reads: connect the red wire to the terminal block 3 (TB3 telemetry output) GND1 (ground) position (B). Connect the white and blue wires to the pulse output 1 position (A).
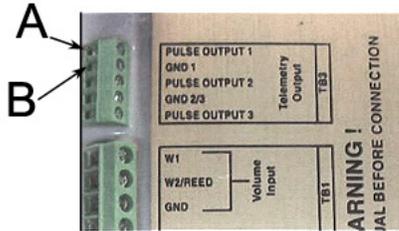
To receive corrected reads: connect the red wire to the GND 2/3 (ground) TB3 telemetry output position (C). Connect the white and blue wires to the pulse output 2 position.
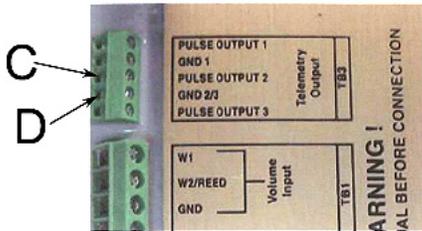
b. Tighten the cable gland fitting around the cable. Apply 15 inch-pounds torque.

Note ERT modules using the flying lead cable assembly (GE Dresser part number 055018-700) are factory wired to terminal block 3 (TB3) according to IMC\W2 pulse output default configuration. Consult the customer specification for other wiring configurations.

To test the 100G Series Gas ERT Module IMC\W2 installation

1. Connect the IMC\W2 to the PC using the serial cable.

2. Using the GE Dresser User Terminal (UT) communications software, connect to the IMC\W2.

3. Read the uncorrected or corrected count number on the 100G series remote gas module with the Itron endpoint reading device. Compare the IMC\W2 uncorrected or corrected amounts to the 100G series remote gas module.

4. Input approximately 20 pulses to the 100G series remote gas module. Verify the uncorrected or corrected counts on the IMC\W2 and the 100G series remote gas module are the same.

Galvanic Gas Micro Installation

Galvanic Gas Micro Electronic Volume Corrector

Complete the connections shown in the following diagram to connect the Galvanic Micro corrector to the remote ERT module.
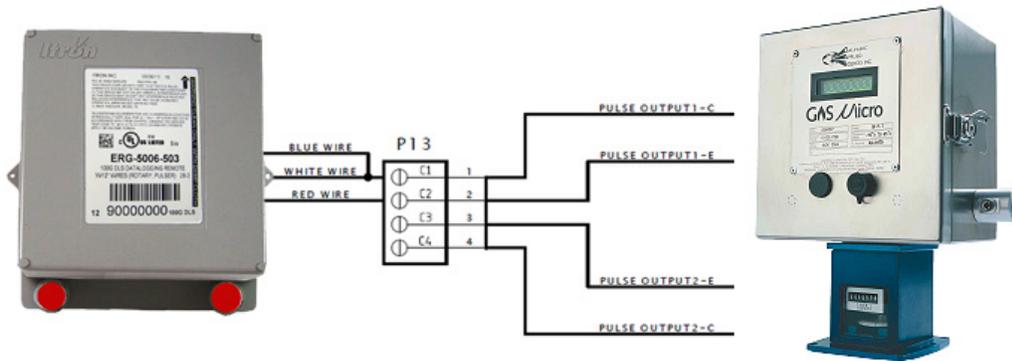
Programming the Galvanic Gas Micro Electronic Volume Corrector

For more information about programming the Galvanic Gas Micro Electronic Volume Corrector, see the GAS MICRO Operator's Manual, Galvanic part number MA1956. Contact Galvanic Applied Sciences, Inc to obtain the operator's manual.

Eagle Research Meter Installation

MPplus   **XARTU-1**

This section describes remote 100G ERT module installation with the following Eagle Research Meter volume correctors.

- MPplus
- XARTU-1

Configuration with the meter is dependent on your system's application. See the Eagle Research meter product documentation for Eagle Research Field Manager database configuration information.

These installation instructions provide the information to install two 100G modules--one for corrected reads and one for uncorrected reads. The installation procedure is the same for one ERT module (uncorrected or corrected); the hardware is similar between the uncorrected and corrected outputs.

Eagle Research meter outputs are optically isolated from the meter's control board and each other. The volume corrector's software configuration controls the port's operation. Follow the documentation and these installation instructions to ensure correct installation and compatibility.

Required Materials

The following materials are required for ERT module installation with the Eagle Research volume corrector.

Description	Part number
Eagle Research mounting rail	Eagle Research part number 1010247
Remote 100G ERT modules	ERG-500X-502
Customer-supplied Phillips-head screwdriver	

To mount the remote 100G ERT module and the Eagle Research volume corrector

Note These instructions show the Eagle Research MPplus volume corrector. Installation is the same for the XARTU-1 corrector.

1. Mount a remote ERT module on each end of the mounting rail using the mounting screws supplied with the ERT modules.
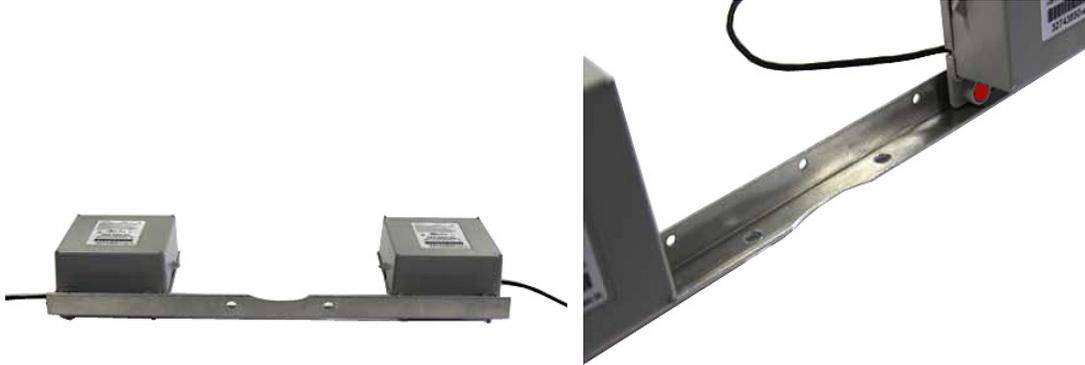
Note The notch on the mounting rail is the front bottom of the rail. The ERT modules mount to the back of the mounting rail as shown.

2. Insert tamper seals into the tamper seal mounting cups on the remote ERT modules.
3. With the corrector facing forward, align the corrector mounting holes with the index drive mounting holes.
4. Insert the corrector's mounting screws in the front corrector and index mounting holes. Loosely tighten the front two mounting screws.
5. Align the inside mounting rail screw holes over the back index and corrector mounting screw holes.
6. Insert the two remaining mounting screws in the corrector bracket mounting holes.
7. Tighten all four mounting screws.

To connect the 100G ERT module to the MPplus corrector

For uncorrected reads:

1. With the MPplus door open, insert the flying leads from the remote ERT module into the compression connector on the left of the MPplus housing.
2. Pull the lead wires through the compression connector until there is adequate wire to reach the terminal blocks labeled 15, 16, 17, 18, 19, 20, 21, and 22.
3. Tighten the compression connector.
4. Twist the remote ERT module's blue and white wires together.
5. Connect the twisted blue and white wires to terminal 17 on the MPplus terminal block.

6. Connect the red remote ERT module wire to terminal 18 on the MPplus terminal block.
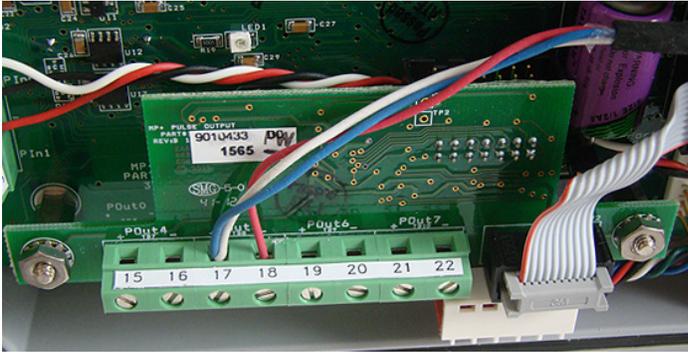
For corrected leads:

7. With the MPplus door open, insert the flying leads from the remote ERT module into the compression connector on the right of the MPplus housing.

8. Pull the lead wires through the compression connector until there is adequate wire to reach the terminal block labeled 15, 16, 17, 18, 19, 20, 21, and 22.

9. Tighten the compression connector.

10. Twist the remote ERT module's blue and white wires together.

11. Connect the twisted blue and white wires to terminal 15 on the MPplus terminal block.

12. Connect the red remote ERT module wire to terminal 16 on the MPplus terminal block.
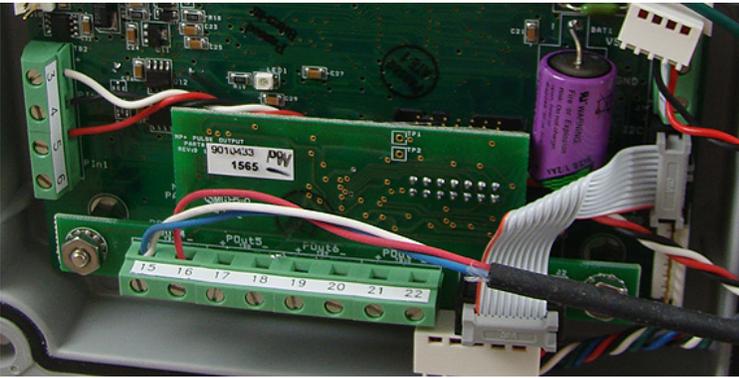
13. Close and latch the MPplus corrector door.

To connect the 100G ERT module to the MPplus corrector

For corrected reads (ERT module mounted to the left of the corrector):

1. With the XARTU-1 door open, insert the flying leads from the remote ERT module into the compression connector on the left of the corrector's housing.

2. Pull the lead wires through the compression connector until there is adequate wire to reach the K1 terminal port.

3. Tighten the compression connector.

4. Connect the red remote ERT module wire to pin 1 on the K1 terminal port .
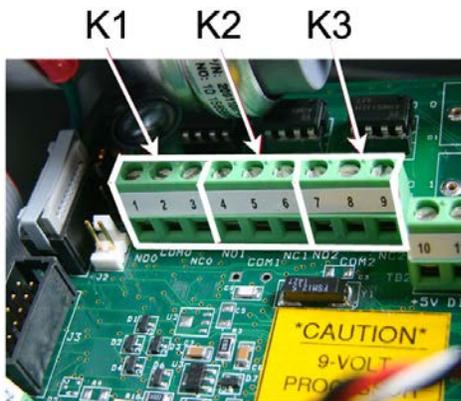
5. Twist the remote ERT module's blue and white wires together.

6. Connect the twisted blue and white wires to terminal 2 on the K1 terminal port. The following illustration shows the completed connections.
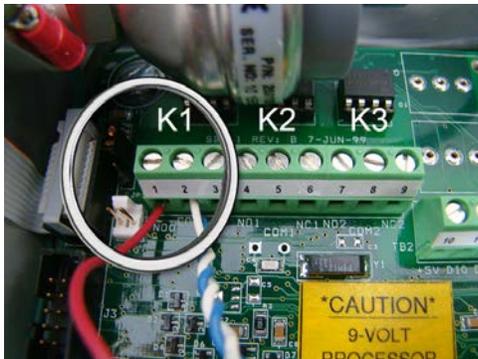
 For uncorrected leads:

7. Insert the flying leads from the remote ERT module into the compression connector on the right of the XARTU-1 corrector housing.

8. Pull the lead wires through the compression connector until there is adequate wire to reach the K2 the terminal port.

9. Tighten the compression connector.

10. Connect the red remote ERT module wire to pin 4 of the K2 terminal port.

11. Twist the remote ERT module's blue and white wires together.

12. Connect the twisted blue and white wires to pin 5 of the K2 terminal port. The following illustration shows the completed connections.
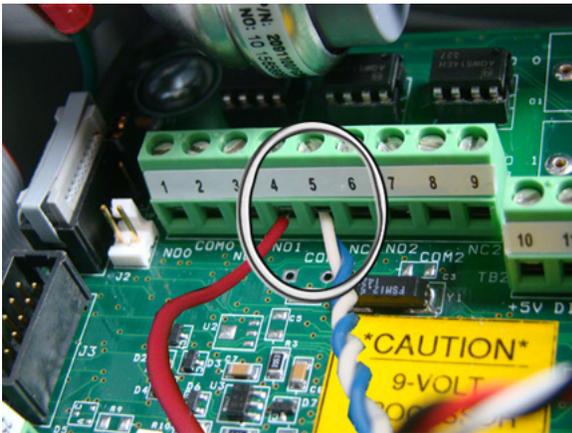
13. Plug the MTA battery connector from the battery pack into the VBAT1 connector to supply power to the XARTU-1 corrector.
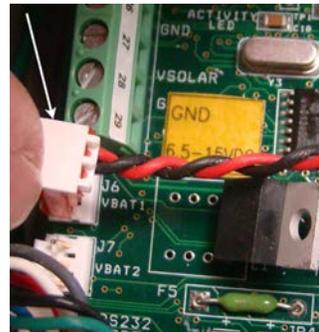
14. Close and latch the corrector door.

100G Series Communications with the Eagle Research Corrector

Using Itron 100G series remote ERT modules with Eagle Research volume correctors require Eagle Research Field Manager software configured with the parameters for your model of Eagle Research corrector.

ℹ️ **Important** This information is subject to change without notice. Refer to the Eagle Research MPplus product documentation to verify the most current information about programming and configuring the corrector for use with the 100G series remote ERT module.

To change the MPplus 60291 database and Itron ERT module settings using Eagle Research Field Manager

Important This information is subject to change without notice. Refer to the Eagle Research product documentation to verify the most current information about programming and configuring the corrector for use with the 100G series remote ERT module.

1. Open the Eagle Research Field Manager from the Start menu or the desktop shortcut.

2. Connect the communications cable from your computer into the MS connector on the side of the MPplus corrector. After the MS connector is connected, take note of the baud rate displayed on the front of the corrector.

3. Click Connect on the upper left corner of the Field Manager window.

A Connect to Remote window opens.
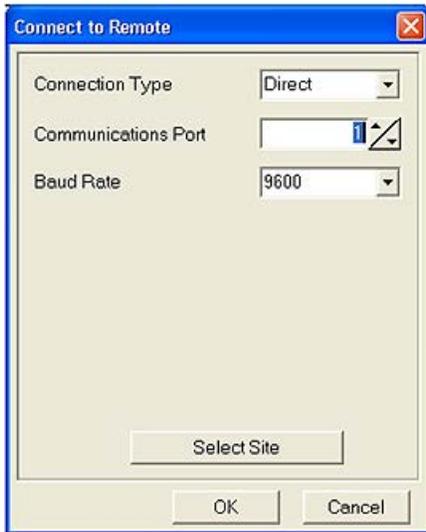
4. Select the following parameters:

   - Connection Type: Direct

   - Communications Port: Enter your computer's port number

   - Baud Rate: Enter the baud rate that displayed in step 2.

5. Click **OK**.

   If this is the initial connection to the remote, The Enter Station Name window opens.

6. Enter a name for the remote installation.

7. Click **OK**.

   The Site ID 1 window opens when you are connecting to a remote ERT module with the factory default setting (Site ID 1).
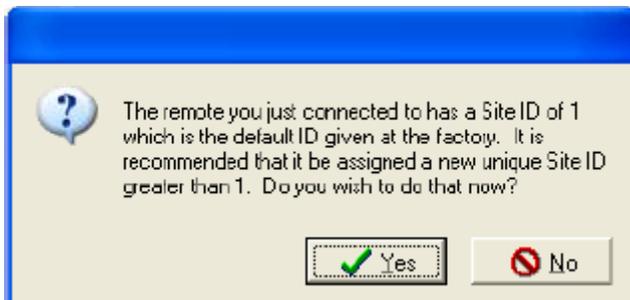
8. Click **Yes** to change the site ID or click **No** to connect to the remote unit without changing the site ID. If you selected **Yes**, the Change RTU Site ID window opens.
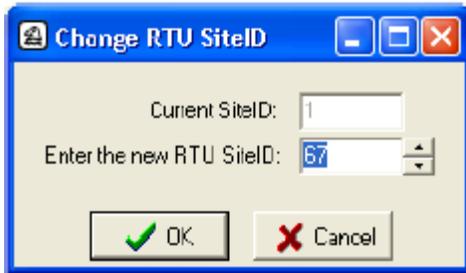
The current site ID displays in the **Current SiteID**: field.

9. Enter the new SiteID or select an ID from the **Enter the new RTU SiteID** field. The ID range is 2 to 59999.

10. Click **OK** to send the updated ID to the remote ERT module.

11. Click **Cancel** to cancel the ID change.

12. Click **View/Config**.

The Field Manager window opens and displays the settings for the current connection.
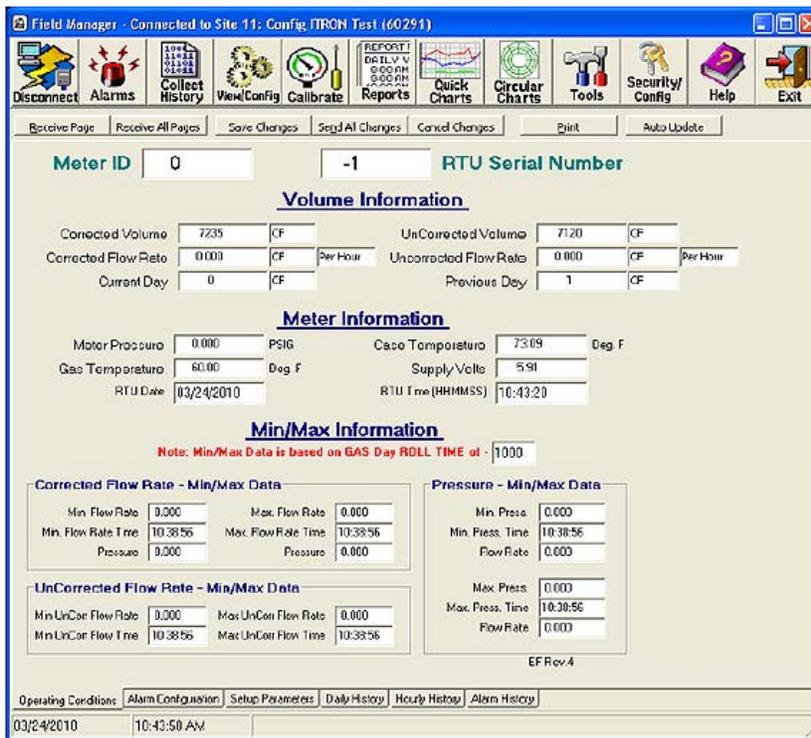
13. Click the **Setup Parameters** tab at the bottom of the parameters window.

A parameters window opens.

14. Enter the following parameters in the Uncorrected Pulse Output Setup section in the lower right of the window.

- • (Set to ERT 2 connection) Enable POut 5 (17, 18)
- • Current/Test Pulses to Output 0.0000
- • Out Cubic Unit/Pulse (set to 10 or more dependent on application) 10.00
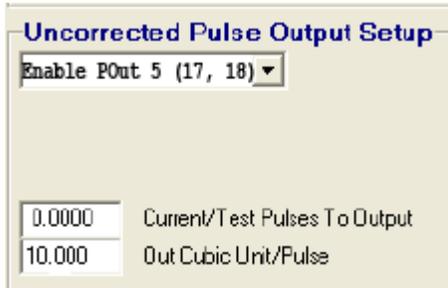
Important If your software does not have an option to use POut 5 for the Uncorrected Pulse Output, contact Eagle Research to obtain the correct software version. You must uninstall the previous Field Manager version, delete (or rename) the Field Manager folder (C:/Field Manager--copy important files before you delete the folder), and then install the new or updated version.

15. Enter the following parameters in the **Corrected Pulse Output Setup** section in the lower left of the window.

- • Primary Pulse Output (set to the ERT 1 connection) Enable POut 4 (15, 16)
- • Optional Pulse Output Disable
- • Pulse Out On ms 70mS
- • Pulse Out Off ms 500mS AMR
- • Current/Test/Pulses to Output 0.0000
- • Out Cubic Unit/Pulse (set to 10 or more dependent on application) 10.00
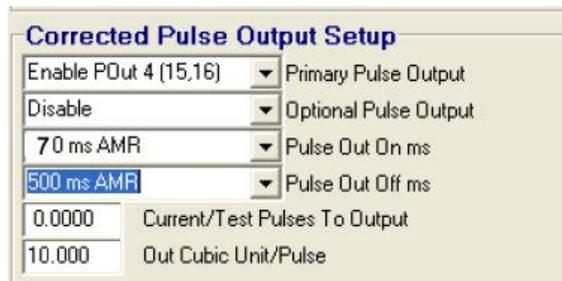
16. Click Send All Changes.

17. Verify all parameters are correct.
18. Click **Disconnect**.

To change the MPplus 60291 database and Itron ERT module settings using Eagle Research Field Manager

Important This information is subject to change without notice. Refer to the Eagle Research product documentation to verify the most current information about programming and configuring the corrector for use with the 100G series remote ERT module.

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1. Open the Eagle Research Field Manager from the Start menu or the desktop shortcut.

2. Click **Tools**.
3. Select **Import Station(s)**.
4. Click **Next**.
5. Click **Select**.
6. Navigate to the *STN60070.zip* file.
7. Click **Open**.
8. Click **Next**.
9. Click the box to the left of 60070. A check mark appears to show 60070 is selected.
10. Click **Next**.
11. Click **Finished**.
12. Connect the communications cable from your computer into the MS connector on the side of the corrector.
13. Click Connect on the upper left corner of the Field Manager window.

A Connect to Remote window opens.
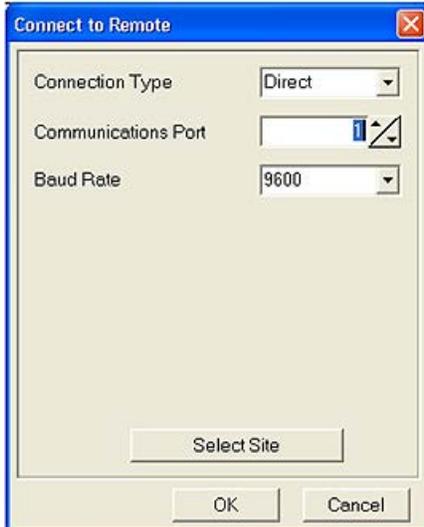
14. Select the following parameters:

    - Connection Type: Direct

    - Communications Port: Enter your computer's port number

    - Baud Rate: Enter the baud rate for the XARTU-1 corrector.

15. Verify the time and station name are correct.

16. Click **OK**.

17. Click **View/Config**.

18. Click the **Setup Parameters** tab at the bottom of the parameters window.
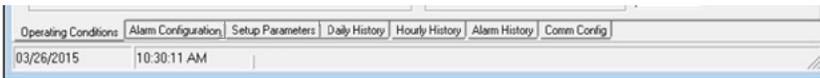
    The Meter Setup and Accumulation Multipliers window opens.
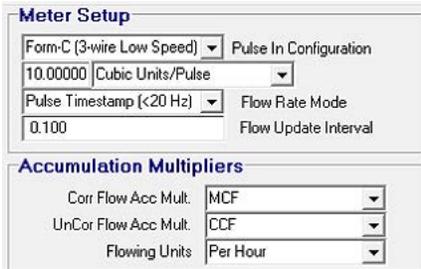
    Set up the meter and accumulation multipliers as appropriate for your installation.

19. Enter the following parameters in the Uncorrected Pulse Output Setup section in the lower right of the window.

    - Select the channel to K2.

    - Enter the number of Current/Test Pulses to Output desired to test the connection.

    - Enter the same setting as the ERT module. For example, if the ERT module consumption is in MCU (thousand cubic feet), set Out Cubic Unit/Pulse to 1000.

20. Enter the following parameters in the **Corrected Pulse Output Setup** section in the lower left of the window.

• Primary Pulse Output.	Select K1.
• Optional Pulse Output.	Set to "Disable".
• Pulse Out On ms	70mS
• Pulse Out Off ms	500mS AMR
• Current/Test/Pulses to Output.	Select the number of pulse output pulses to send as a connection test for the remote ERT module.
• Out Cubic Unit/Pulse.	Enter the same setting as the ERT module. For example, if the ERT module consumption is in MCU (thousand cubic feet), set Out Cubic Unit/Pulse to 1000.
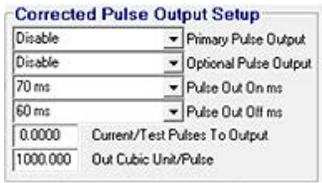
21. Click Send All Changes.

22. Verify all parameters are completed and correct.

23. Click **Disconnect**.

100G Series Remote Module Installation to the Romet AdEM Using a Cannon or PG9 Factory-Installed Pigtail Cable

Romet™ AdEM®-S/-T/-PTZ   100G Series Remote using the Romet™ Meter Mounting Bracket

This section describes remote 100G ERT module installation with the Romet AdEM®-S, AdEM®-T and AdEM®-PTZ series correctors.

Required Materials

The following materials are required for ERT module installation with the Romet AdEM series correctors using a Cannon connector:

Description	Part number
Connection options	Cannon cable (part number: 43-035-40*) Pigtail Option**
Romet AdEM communication cable	*
RometLink communication software	*
3 gel cap connectors	CON-0023-001
3M crimping tool	
Torx T-10 screwdriver	
Remote ERT module with backplate and four included Torx screws (included with module)	ERG-5007-503

* Must be purchased from Romet.
**Pigtail option must be selected when the AdEM is ordered from Romet.

Meter Preparation

Meter set up requires confirmation of communication settings with the AdEM corrector. Communication confirmation requires the RometLink software and the Romet communication cable.

To configure the AdEM corrector settings

1. Install the RometLink software on your PC.
2. Connect the AdEM corrector communication cable to your computer and the AdEM corrector.
3. Add the AdEM meter to your *Phone Book*.
   a. Open the RometLink software and log on.
   b. From the *Talk to Unit* tab, select **Check** > **All**.
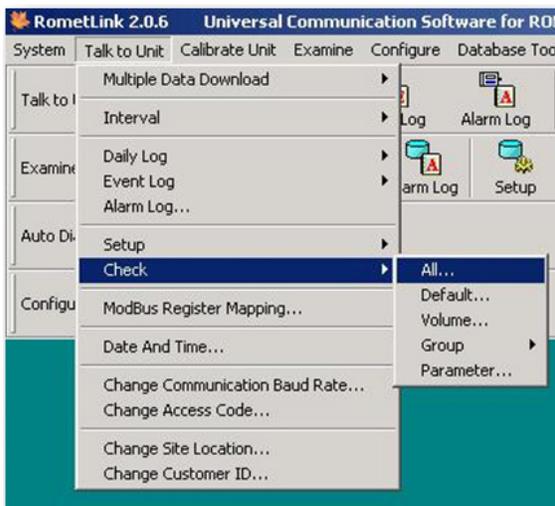
   A dialog box opens asking if you want to add the unit in the *Phone Book*.

c. Click **Yes**.
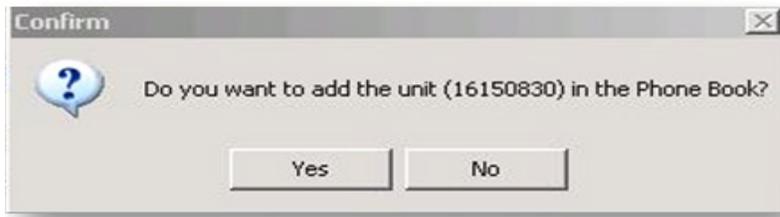
d. Click **Close** at the bottom of the window.
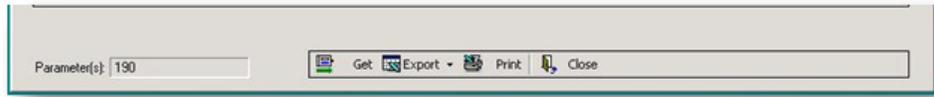
e. Confirm the Meter was added to the Phone Book.
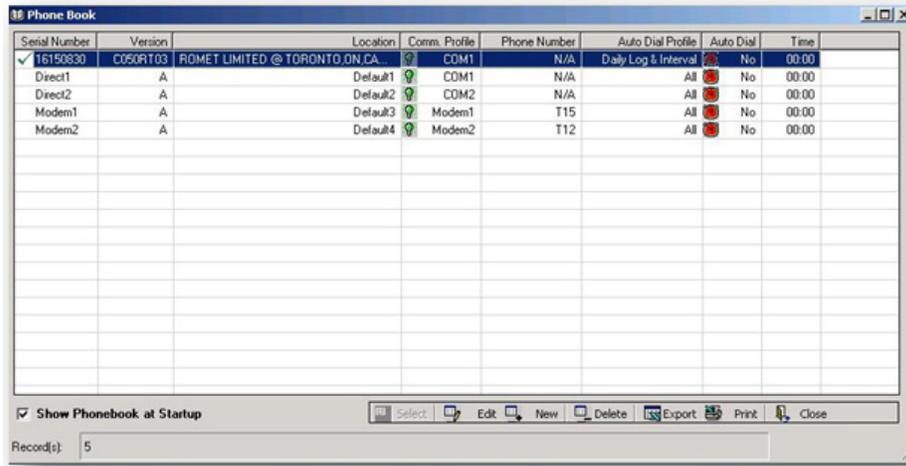
f. Set up the corrected or uncorrected parameters.

1. From the *Talk to Unit* tab, select **Setup** > **Default**.
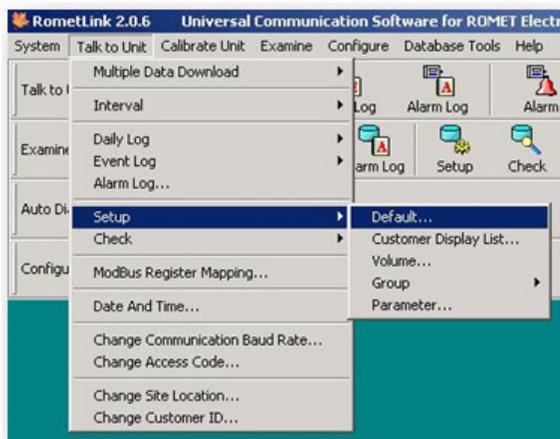
2. Set the following *Default Setup Group* parameters:
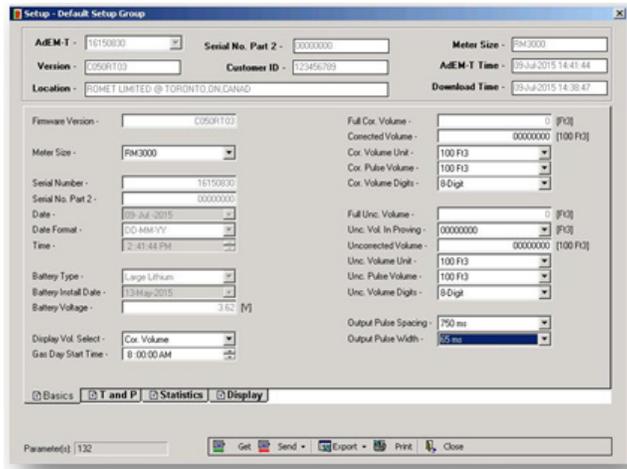
Enter the desired **Cor. Volume Unit** parameter. Set **Cor. Pulse Volume** to the same number of units.

Enter the desired **Unc. Volume Unit** parameter. Set **Unc. Pulse Volume** to the same number of units.

For **Output Pulse Spacing**, enter the largest number over 285mS that works for your application. (Itron recommends a setting of **350mS**.)

For **Output Pulse Width**, enter the largest number over 28mS that works for your application. (Itron recommends a setting of **40mS**.)

3. Click **Send** at the bottom of the page.
4. Select **Current Page**.

Wiring

Romet offers different cables and setup options. These instructions include the two most common setup configurations. For specialized setup instructions, contact Romet.

Military connection. Connect the Itron 100G series remote module using the standard Romet cable (part number 43-035-40).

Standard Romet 43-035-40 Cable Wiring Table				
	Corrected count		Uncorrected count	
Connection	Romet cable	ERT wire	Romet cable	ERT wire
Pulse Output 1+	Green	White	Red	White
		Blue		Blue
Pulse Output 1-	White	Red	Black	Red

Note This wiring configuration will not allow a cut cable tamper.

Pigtail connection. Connect the 100G series remote module using the Romet Pigtail Cable. The pigtail cable is the cable extruding from the back of the AdEM corrector. You must select the Pigtail Cable at the time the AdEM corrector is ordered.

Romet PG9 Pigtail Cable Wiring Table		
	Corrected count	
Connection	**Romet Cable**	**ERT module**
Pulse Output 1+	White	White
Pulse Output 1-	Red	Red
Cut Cable Alarm	Green	Blue

To connect the 100G remote module to the Romet AdEM corrector using the PG9 factory-installed pigtail cable

1. Remove the ERT module backplate (4 screws) to expose the module lead wires. The backplate and screws will be re-installed on the ERT module later in this procedure so store them (temporarily) in a safe, secure place.
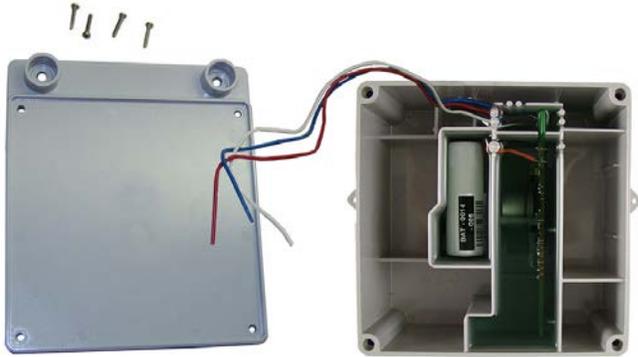
2. Insert the lead wires from the module into new 3M gel connectors (Itron part number CON-0023-001) together with the lead wire from the meter cable (see the Romet PG9 Pigtail Wiring table on page 72).
3. Crimp the connectors using a 3M hand-held crimping tool.

> **Important** Use a crimping tool compatible with gel-connectors. *Do not* use a standard pliers for crimping gel connectors. The crimping tool provides an even pressured crimp to make a secure connection. Apply pressure for three seconds until the gel connector is fully crimped (collapsed) to allow time for the low viscosity silicone-based gel to flow. If the silicone gel flows out of the crimped connector, avoid touching the gel. Gel flowing from the connector provides environmental protection for the connection.

> **Note** Do not strip lead wire prior to inserting the wire in the gel connector.
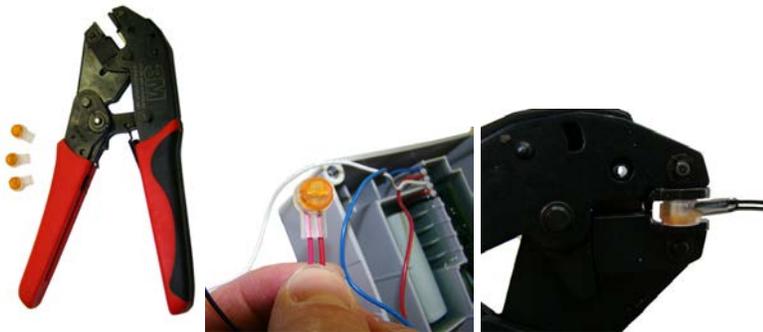
4. After the wire connections are completed, install a cable tie to the meter cable just below the exposed colored lead wires on the cable insulation.

5. Remove the excess cable tie using a hand-held side-cutter pliers. The cable tie performs as a cable strain relief to mitigate the risk of destructive tension on the lead wires.
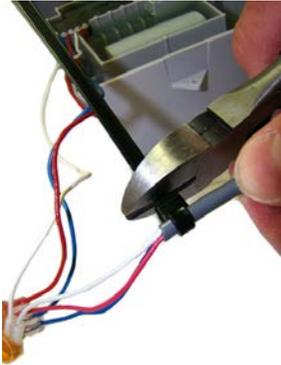
6. Tuck the three gel connectors and cable tie inside the module housing, as shown in the following placement schematic illustration.
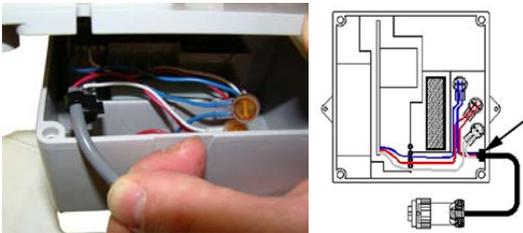
7. Install the remote ERT module backplate using the four screws previously removed from the module and a Torx T-10 screwdriver.

> **Important** Verify the cable tie and gel connectors are inside the module housing and the cable extends out of the slot in the backplate. Torque the backplate mounting screws to 9 to 12 inch-pounds.

8. Install the module on the wall or a pipe using the Pipe Installation Kit (Itron part number CFG-0005-003) or install the module on the Romet AdEM meter using the Romet ERT mounting bracket (Romet part number 46-444-2).

Programming the Remote ERT Module

⚠️ **Caution** You must program the 100G series remote gas module before use.

Program the **100G**, **100G DL**, **100G DLN**, and **100G DLT** ERT modules using:

- An FC200SR handheld computer with Field Deployment Manager (FDM) software version 1.1 or higher or
- A FC300 with SRead handheld computer with Field Deployment Manager (FDM) software version 1.1 or higher or
- A 900MHz Belt Clip Radio with Field Deployment Manager (FDM) software version 1.1 or higher and a customer-supplied laptop. The Belt Clip Radio connects to the user-supplied laptop using a USB cable or Bluetooth.

The 100G DLS ERT modules support enhanced security with the Itron Security Manager. Enabling command or enhanced security requires additional programming.

Program the **100G DLS** ERT modules using:

- An FC200SR handheld computer with Field Deployment Manager (FDM) software version 3.3 or higher or
- An FC300 with SRead handheld computer with Field Deployment Manager (FDM) software version 3.3 or higher or
- A 900MHz Belt Clip Radio with Field Deployment Manager (FDM) software version 3.3 or higher and a customer-supplied laptop. The Belt Clip Radio connects to the user-supplied laptop using a USB cable or Bluetooth.

To enable enhanced security and for more complete programming information, see the *Field Deployment Manager Endpoint Tools Mobile Application Guide* (TDC-0934).

FC200SR   **FC300 with SRead**   **900MHz Belt Clip Radio**

To program the remote ERT module

- Program the meter drive rate into the 100G series remote gas module using a handheld computer or Belt Clip Radio and laptop computer.
- For all programming and **Check Endpoint** operations using a handheld computer, hold the handheld as close to vertical as possible. For best success, keep the handheld within six feet of the target ERT module.
- Verify you have the correct programming mode (fixed network mode, mobile high power mode, mobile/handheld mode, or hard-to-read mobile/handheld mode) for your application.

Programming parameters are based on the configuration file loaded into the programming device. During programming, the 100G series remote gas module is set to the nearest 100 cubic feet; the last two digits (tens and units) are programmed as zeros (0). After programming is complete, the ERT module assembly will read to the nearest cubic foot.

- **Read** or **Check** the 100G series remote gas module using the handheld computer or Belt Clip Radio.
    - If the read result is higher than the number programmed in step 1, the 100G series remote gas module is counting correctly.

- If the read result is not higher than the number programmed in step 1, replace the 100G series remote gas module.

C H A P T E R   5

Diaphragm Meter Installation

This chapter provides the instructions to install 100G series remote gas modules (Itron part number ERG-500X-501 with 2.5 foot cable and encoder) on diaphragm gas meters where a direct mount ERT module is not possible. Reference the Itron 100G Series Remote ERT Module Meter Compatibility List on page 4 for compatible diaphragm meters.

Tools and Materials Supplied By You

Note 100G series remote gas module installation to a diaphragm meter may require additional tools and materials over those listed in Installation Prerequisites.

The following user/installer-supplied tools and materials are required to install, program, and check the

- Medium flat-blade screwdriver
- Medium flat-blade, torque-measuring screwdriver
- Medium Phillips screwdriver
- Pliers
- Side-cutting pliers or similar tool
- 1/4-inch nut driver or other blunt tool
    - Itron programming device:
        FC200SR handheld computer with Field Deployment Manager (FDM) software
        or
        FC300 with SRead with Field Deployment Manager (FDM) software
        or
        900 MHz Belt Clip Radio with Field Deployment Manager (FDM) and a customer-supplied laptop

        Note The FDM version required is dependent upon the model in use.

- 1-inch putty knife or similar tool
- Replacement temperature compensation (TEMP COMP) meter index stickers (if required)

Materials Available from Itron

The following items are required for each 100G series remote gas module installation to a diaphragm gas meter:

Itron Part Number	Description	
ERG-500X-501	100G Remote ERT Module with 2.5' encoder cable	
CFG-0081-001	Remote Mount Encoder Kit A acetone applicator stick B tamper seals C cable ties D mounting screws E magnet hub spacer F magnet hub	
013-1723-112	Encoder Spacing Tool (Use the Encoder Spacing Tool to ensure the encoder mounts the correct distance from the magnet hub on the meter index.)	

Replacement Gaskets

The Itron replacement index cover gaskets shown below are thicker than standard gaskets and have a special slot to accommodate the encoder cable. *Gaskets are designed for Schlumberger/Sprague model 675 and 1000 commercial diaphragm meters. These gaskets may be incompatible on meters from other manufacturers; alternate cable relief procedures may be necessary.*

4-hole front cover gasket: Itron part number FAB-0014-003

2-hole front cover gasket: Itron part number FAB-0014-002

1-hole front cover gasket: Itron part number FAB-0014-001

Installing the 100G Series Gas ERT Module

The 100G series remote gas module mounts on a pipe using the Pipe Installation Kit (Itron part number CFG-0005-003) or a vertical flat (wall) surface. Always mount the 100G series remote gas module with the printed label right-side-up (arrow pointing up -1), and the encoder wires (2) and tamper seals (3) at the bottom, as shown.

⚠️ **Caution** Upright vertical positioning is very important because:

- 100G series remote gas modules are designed with the antenna in a vertical direction so the antenna is parallel to the reading device (which has a vertical antenna). Matching antenna polarity can greatly affect RF performance and enable easy ERT module reading.
- 100G series remote gas modules are designed so the tilt tamper is vertical. It is important to maintain vertical positioning in the field to enable tilt tamper stability.
- 100G series remote gas module batteries must be vertical (installed with the positive terminal upward) or battery life is compromised.

-

Installing 100G Series Gas ERT Module Encoders

⚠️ **Caution** To insure proper adhesion, the 100G series remote gas module encoder must be installed at temperatures between 40° to 95° Fahrenheit.

There are four tasks when installing the 100G series remote gas module with an encoder on a diaphragm meter:

1. Remove the index cover and any gasket residue.
2. Install the 100G series remote gas module encoder on the index.
3. Program the 100G series remote gas module.
4. Attach the index cover to the meter.

To remove the index

> **Note** Properly dispose all unused screws, old index covers, gaskets, tamper seals, and other leftover materials. Do not leave materials on customer premises. Replace any stripped, worn, or corroded mounting screws.

1. Cut and remove any wire seal routed through the index cover screws. Remove the index cover and set aside. Remove the index mounting screws in an alternating fashion.

2. Remove the two index screws in an alternating fashion. Loosen the left index screw two turns, loosen the index screw three to four turns. Hold the index while removing the screws to keep the index from falling. Set the index aside where it will not be damaged.

3. Remove the old gasket and any gasket residue from the meter and the index cover.

4. Use the FC200SR or FC300 to read the 100G series remote gas module. Record the reading for comparison with progressive readings as installation is completed.

To install the encoder

1. Remove the magnet hub from the Encoder Installation kit (Itron part number CFG-0081-001). Verify there is only one magnet in the hub.

> **Note** If there is no magnet or if there are two magnets in the magnet hub, discard the magnet hub and use a hub with one magnet.

2. Briefly place the magnet side of the magnet hub into the curved indentation in the encoder, as shown.
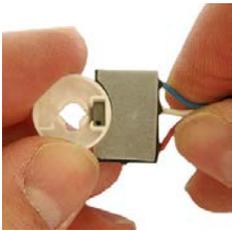
3. Remove the magnet hub from the encoder and set it at least one inch away from the encoder.

4. Use the ERT module programming device to read the 100G series remote gas module. If this reading is higher than the reading taken after removing the index, the 100G series remote gas module is counting and working properly.

> **Note** If the reading is not higher than the previous reading, the 100G series remote gas module is not reading. Repeat steps 3, 4, and 5. If the 100G series remote gas module is still not counting, replace the 100G series remote gas module and perform steps 3, 4, and 5.

5. Align the large notch in the side of the magnet hub spacer with the needle of the meter drive rate dial (1-foot or 2-foot for residential diaphragm meters; 5-, 10-, or 100-foot for commercial diaphragm meters).

6. Press the magnet hub spacer down over the dial needle as far as possible. The tip on the bottom of the spacer may touch index face. Turn the dial in the direction noted on the index after hub spacer installation to verify the index dial functions with a smooth, easy rotation.

7. Align the pointer (1) on the top of the magnet hub and the notch (2) in the side of the magnet hub with the needle (3) of the meter drive rate dial.
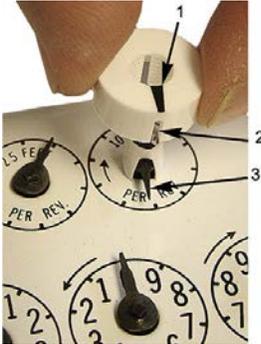
8. Press the magnet hub down over the hub spacer as far as possible. The bottom of the hub spacer may touch the index face. Turn the dial after magnet hub installation to verify the index dial functions with a smooth, easy rotation.

9. If the tip of the dial needle sticks out past the edge of the magnet hub, cut off the end of the dial needle as close as possible to the magnet hub with a sharp, side-cutting pliers.
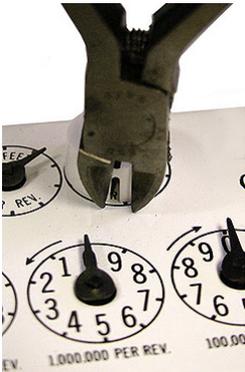
10. Remove the acetone stick applicator from the Remote Encoder Installation Kit (Itron part number CFG-0081-001).

11. Select a location on the index face next to the magnet hub. After encoder installation, the encoder cable must not interfere with the index dials.

    Note   If a TEMP COMP sticker is attached to the index where the encoder cable will mount, remove it before cleaning with the acetone stick. If the sticker (or replacement sticker) must be put back on the register face, place it in a new location on the index face after the encoder is attached.

12. Tilt the acetone stick vertically with the wick end down. Squeeze the acetone stick on the black dot until the packet inside the pen breaks. Continue to hold the acetone stick vertical until the acetone wicks into the foam applicator end.