

CHAPTER 4

Itron/Sprague Meter Installation

This chapter provides the instructions to install the 100G Datalogging gas endpoint on an Itron/Sprague Meter.



Note Itron/Sprague meters are also known as Actaris and Schlumberger meters. For these instructions, all meters are referred to as Itron/Sprague meters.

To remove the index from the meter

1. Remove the index cover screws and the index cover from the Itron/Sprague meter. Examine the mounting screws. If they are 5/8" long and not corroded, keep them to re-attach the 100G Datalogging gas endpoint assembly. If the screws are not the correct length or if the screws are corroded, discard.



Note Use the removed index cover as a temporary storage container for screws. Properly dispose all unused screws, old index covers, gaskets, tamper seals, and other leftover materials. Do not leave materials on customer premises.

2. Loosen the index mounting screws 1/2 to one turn. Slide the index to the left and off the mounting screws and remove from the meter.



Set the index aside where it will not be damaged or fill with dirt, rain or snow. The index is mounted in the endpoint later in this procedure. Verify the index mounting screws are 1/4" long and not corroded. If the screws are the correct length and not corroded, retain for later use. If the original screws are discarded, use the correct replacement screws (see [Installation Prerequisites](#) on page 7).

3. Remove the old gasket, gasket residue, and dirt from the meter (if applicable). The meter face must be free of gasket residue or dirt before you install the 100G Datalogging gas endpoint.

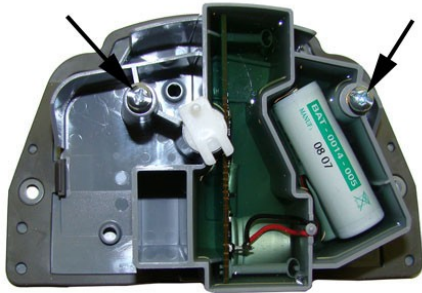


To assemble the 100G Datalogging gas endpoint and index

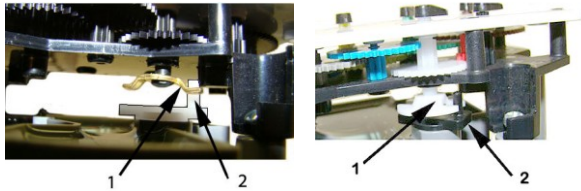
1. Separate the 100G Datalogging gas endpoint housing from the cover by pulling the cover straight out from the housing. Set the endpoint cover aside where it will not be damaged or fill with rain, dirt or snow. You will use the cover later in this installation procedure.



2. Screw the 10 - 24 x 1/4" screws into the index mounting posts two turns. Do not tighten the screws.



3. Align the index wiggler (1) with the endpoint drive post (2). Carefully slide the index onto the mounting screws. Verify the 100G Datalogging gas endpoint's housing drive post makes positive engagement with the index wiggler. Hold the index in place and tighten the index mounting screws. Install and tighten the mounting screws evenly.



Caution Indexes have varying drive mechanism styles. Failure to align the endpoint wiggler with the index drive post can cause binding and lead to poor registration or meter failure. To verify proper engagement of the index to the endpoint housing, spin the wiggler one clockwise rotation, then one-counterclockwise rotation. Do not spin more than one complete rotation. The wiggler should spin freely, with little or no resistance.

4. Slide the endpoint cover over the index and housing. The endpoint label should be clearly visible and easily read.



Programming the 100G Datalogging Gas Endpoint Assembly

Program 100G Datalogging gas endpoints using:

- An FC200SR handheld computer with Endpoint-Link® or Endpoint-Link Pro version 5.3 or higher *or*
- An FC300 with SRead handheld computer with Endpoint-Link or Endpoint-Link Pro version 5.5 or higher *or*
- A 900MHz Belt Clip Radio with Endpoint-Link version 5.5 or higher and a customer-supplied laptop. The Belt Clip Radio connects to the user-supplied laptop using a USB cable or Bluetooth.

See the Endpoint-Link v5.3 (or higher) Endpoint Programming Guide (TDC-0744) for more complete programming information.



FC200SR

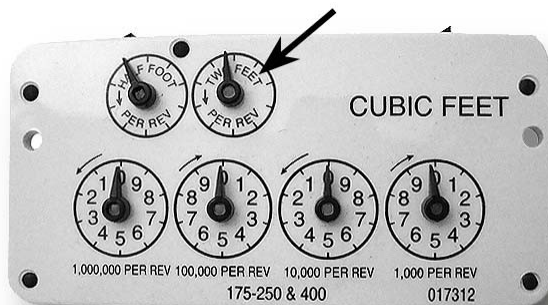
FC300 with SRead

900MHz Belt Clip Radio



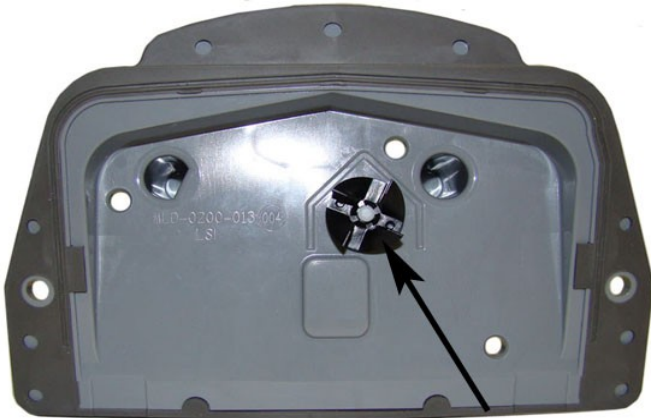
Caution The 100G Datalogging gas endpoint must be programmed before use. Follow the steps in this section to properly program the endpoint.


Take note of the index drive rate shown on the drive dial on the index. The endpoint is programmed based on the drive rate. Itron meter index drive rates are typically 2-cubic feet or 0.05 cubic meters (not shown below).



To program the 100G Datalogging gas endpoint

1. Program the index drive rate into the 100G Datalogging gas endpoint using the endpoint programming device. For all programming and "Check Endpoint" operations, hold the handheld computer as close to vertical as possible. For best success, keep the handheld programmer within six feet of the target endpoint. Verify you have the correct programming mode (Fixed Network 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 endpoint programming device. During programming, the 100G Datalogging gas endpoint 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 endpoint assembly will read to the nearest cubic foot.
2. Slowly turn the endpoint's drive wiggler two turns in the direction shown on the index drive rate. This verifies the endpoint is counting properly after assembly.



 **Caution** Do not turn the drive wiggler faster than one turn per second.

Read or **Check** the 100G Datalogging gas endpoint using the endpoint programming device.

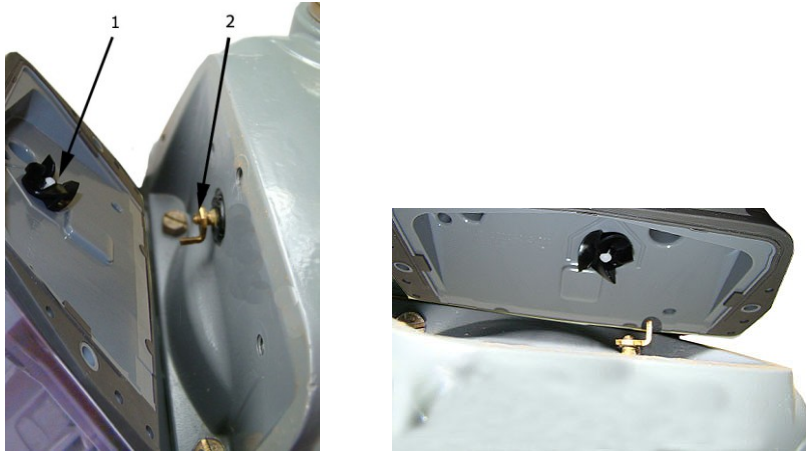
- If the read result is higher than the number programmed in Step 1, the 100G Datalogging gas endpoint is counting correctly.
- If the read result is not higher than the number programmed in Step 1, replace the 100G Datalogging gas endpoint.

Attaching the 100G Datalogging Gas Endpoint Assembly to the Itron/Sprague Meter

After programming the 100G Datalogging gas endpoint, attach it to the Itron/Sprague meter.

To attach the 100G Datalogging gas endpoint to the meter

1. Align the endpoint (1) so one of its four drive slots lines up with the meter's drive dog (2).



2. Carefully place the 100G Datalogging gas endpoint on the meter.



Warning Failure to correctly align the meter drive post and endpoint drive slot can cause binding and lead to poor registration or meter failure. If there is a gap between the endpoint gasket and the meter, it may be the drive slot of the endpoint assembly's wiggler is not correctly aligned with the meter drive slot. Remove the 100G Datalogging gas endpoint assembly and repeat the alignment procedure. You must establish proper engagement of the meter drive dog within the endpoint wiggler slot.

3. Install endpoint to meter mounting screws in an alternating fashion. Use the original mounting screws if they were the correct size and not corroded. If the original screws were discarded, use the correct replacement screws (see [Installation Prerequisites](#) on page 7).
 - Insert the right index cover mounting screw and tighten the screw enough to hold it in place. Do not completely tighten.
 - Install the left index cover mounting screw and tighten to a snug fit. Finish by tightening the right mounting screw to a snug fit. Tighten each mounting screw evenly.



Important Meter manufacturers: torque the mounting screws 15 to 20 inch-pounds.

4. Place a new tamper seal over the two screws in the tamper seal cups. Press the new tamper seals into place using an 11/32-inch nut driver or similar blunt tool.



5. Complete any necessary paperwork and properly dispose excess installation materials and scrap from the customer premises.

100G Datalogging gas endpoint installation on the Itron/Sprague Meter is complete.



Attaching the 100G Datalogging Gas Endpoint Assembly to Flat-faced Sprague Meters

100G Datalogging gas endpoint installation on a flat-faced Sprague meter requires the Itron Adapter Plate Kit (CFG-0015-001).



Itron Adapter Plate Kit (CFG-0015-001)

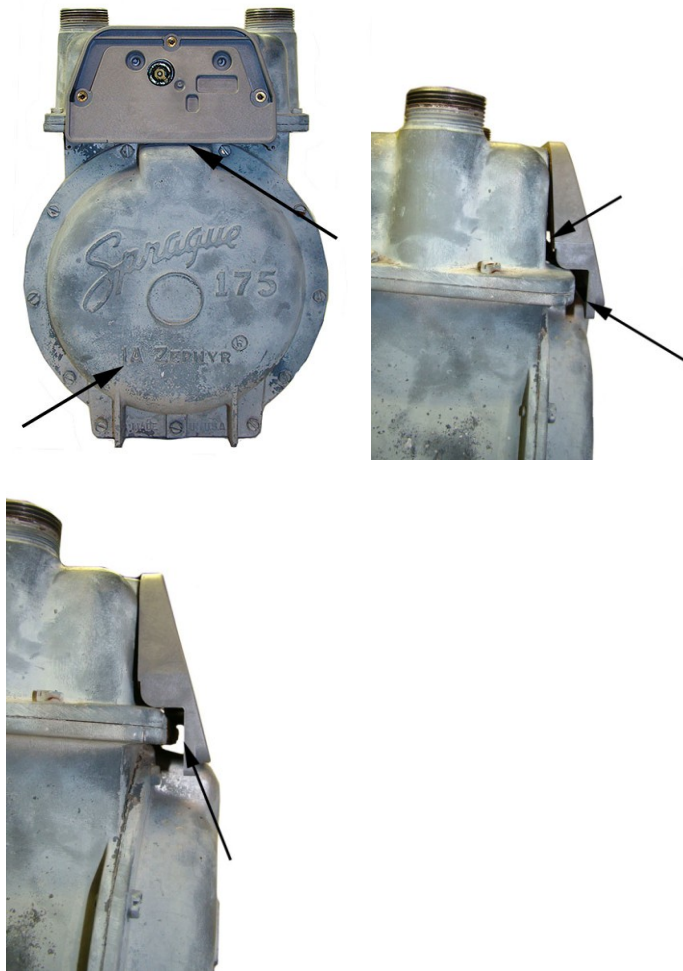
- | | |
|---|-------------------------------|
| 1 | Adapter Shim Plate |
| 2 | Index Cover Mounting Screws |
| 3 | Drive Dog |
| 4 | Adapter Plate Mounting Screws |

To attach the 100G Datalogging gas endpoint assembly to a flat-faced Sprague meter

1. Verify the kit includes the materials listed in the Itron Adapter Plate Kit table.



Warning The Adapter Plate must fit flush against the meter face. Some older Sprague meters are not compatible with the adapter plate. The following examples illustrate the potential obstruction (problem) areas between the adapter plate and meter. Failure to mount adapter plate flush on the front of a meter could result in a binding condition and lead to poor registration or meter failure.



2. Remove the drive dog from the flat-faced Sprague meter. Replace it with the extended drive dog included in the kit. Hand-tighten to snug.



Warning The meter drive dog shaft is surrounded by a gasket. A gas leak could result if the gasket is damaged. Do not use a tool to install or tighten the new drive dog. Hand-tighten only.

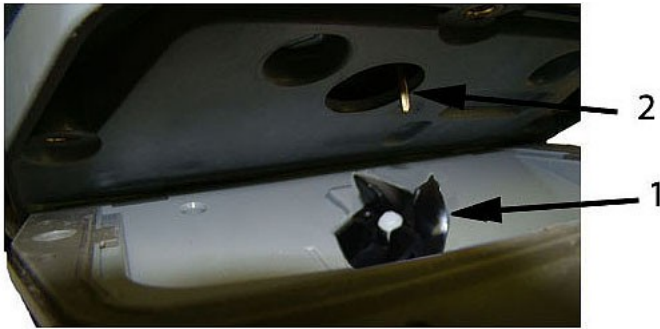
3. Attach the Adapter Plate to the meter with the gasket against the meter face. Secure with the two adapter plate mounting screws in an alternating fashion.
 - Insert the right adapter plate screw and tighten the screw enough to hold it in place.
 - Install the left mounting screw and tighten to a snug fit.
 - Finish by tightening the right mounting screw to a snug fit.

Tighten each adapter plate screw evenly.



Note 100G Datalogging gas endpoints must be assembled and programmed following the instructions in [Assembling the 100G Datalogging Gas Endpoint and Index](#) on page 29 and [Programming the 100G Datalogging Gas Endpoint Assembly](#) on page 31 prior to installation on the meter.

4. Align the white wriggler (1) so one of its four drive slots lines up with the meter's drive dog (2).



5. Carefully place the 100G Datalogging gas endpoint assembly on the meter.



Warning Failure to correctly align the meter drive post and endpoint drive slot can cause binding and lead to poor registration or meter failure. If there is a gap between the endpoint gasket and the meter, remove the 100G Datalogging gas endpoint assembly and repeat the alignment procedure. You must engage the meter drive dog in the endpoint wriggler slot.

6. Secure the endpoint to the meter by installing mounting screws in an alternating fashion. Use the index cover mounting screws shipped with the Sprague 1A Adapter Plate Kit.
 - Insert the right index cover mounting screw and tighten the screw enough to hold it in place. Do not completely tighten.
 - Install the left index cover mounting screw and tighten to a snug fit.
 - Finish by tightening the right mounting screw to a snug fit.

Tighten each mounting screw evenly.



Important Meter manufacturers: torque the mounting screws 15 to 20 inch-pounds.

7. Place a new tamper seal over the two screws with tamper seal cups. Press the new tamper seals into place using an 11/32-inch nut driver or similar blunt tool.



8. Complete any necessary paperwork and properly dispose excess installation materials and scrap from the customer premises.

100G Datalogging gas endpoint installation on the flat-faced Sprague meter is complete.



Securing Brass Meter Tags to Flat-faced Meters

Some older Sprague meters have metal index covers with brass meter tags attached (by screws or rivets) to metal index covers.



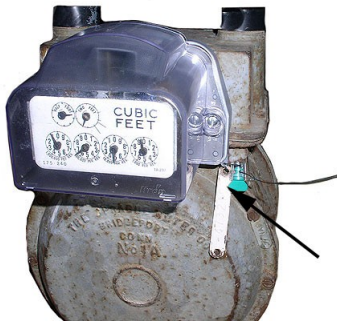
Typically, brass meter tags have mounting (screw/rivet) holes on each end of the tag.



Mount brass meter tags using one of three Itron-approved methods.

To secure brass meter tags to flat-faced meters

1. Method 1 and 2: Carefully remove the brass meter tag from the meter index cover. Try not to damage the meter tag mounting holes. The Sprague Adapter Plate has tag mounting holes in the lower left and right corners. After attaching the 100G Datalogging gas endpoint assembly to the meter, secure the meter tag to one of the holes with a utility-approved and provided security seal.



Method 1: Attach the meter tag to the Adapter Plate tag mounting hole



Method 2: Attach the meter tag to the 100G Datalogging gas endpoint mounting hole



Note If the brass meter tag will be secured to the meter utilizing the module-to-meter mounting hole, it must be attached during the 100G Datalogging gas endpoint installation procedure described in Step 1 of [Attaching the 100G Datalogging Gas Endpoint to the Meter](#) on page 32.



Caution A protruding brass meter tag can present a safety concern particularly if the tag is damaged with sharp edges protruding from the meter.

- Method 3: Remove the 100G Datalogging gas endpoint index cover and place the meter tag inside the endpoint assembly for optimal meter tag security. (See [To assemble the 100G Datalogging gas endpoint and index](#) on page 29.)



Method 3: Place the brass meter tag inside the 100G Datalogging gas endpoint assembly

CHAPTER 5

National/Lancaster Meter Installation

This chapter provides instructions to install the 100G Datalogging gas endpoint on 175 - 250 CFH National/Lancaster meters.



To remove the index from the meter

1. Remove any tamper seals from the index cover screws. Remove the index cover screws and the index cover from the meter. Discard the index cover mounting screws and index cover. The 100G Datalogging gas endpoint includes new, different-size endpoint mounting screws



Note You may use the removed index cover as a temporary storage container for screws. Properly dispose all unused screws, old index covers, gaskets, tamper seals, and other leftover materials. Do not leave materials on customer premises.

2. Unscrew one index mounting screw completely. Hold one hand under the index to catch the screw. While removing the other mounting screw, pull the index away from the meter to keep the index backplate against the back of the screw. Remove the screw completely after the index is free of the meter.



Set the index aside where it will not be damaged or fill with dirt, rain or snow. The index will be mounted in the endpoint later in this procedure. Discard the index mounting screws. The 100G Datalogging gas endpoint for National/Lancaster meters includes new, different-sized index mounting screws (see [Installation Prerequisites](#) on page 7 for screw information).

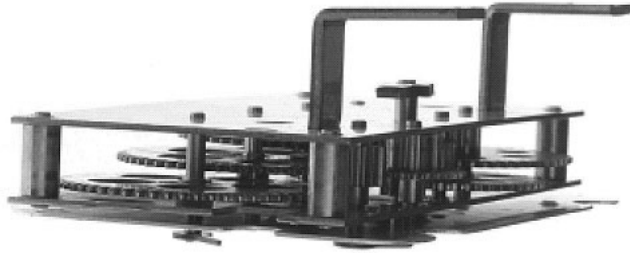
3. Remove the old gasket, gasket residue, and dirt from the meter (if applicable). The meter face must be free of gasket residue or dirt before you install the 100G Datalogging gas endpoint assembly.



4. Verify the meter drive dog points straight out from the meter.



5. If the index has mounting legs, verify each leg is parallel to the back of the index (as shown) to ensure the correct alignment between the endpoint and meter.

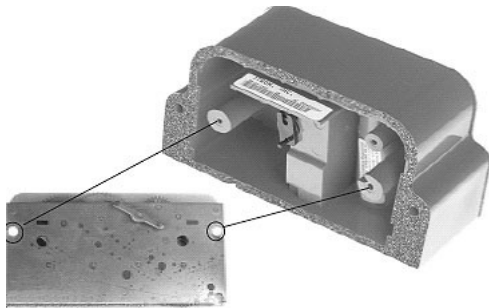


6. Verify the index wiggler is parallel to the index surface.

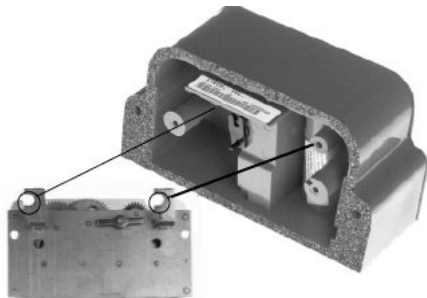


Caution User only dial-type indexes from National (or Actaris/Schlumberger/Sprague) Meter with the 100G Datalogging gas endpoint.

7. Attach indexes without mounting legs to the endpoint's index housing mounting posts (as shown below) using Itron screws SCR-0037-001 .



Attach indexes with mounting legs to the endpoint's index bracket mounting posts (as shown below) using Itron screws SCR-0015-001.



To assemble the 100G Datalogging gas endpoint and index

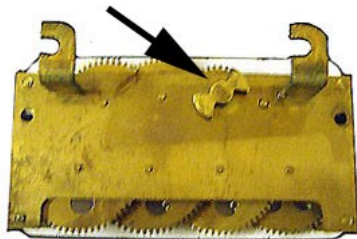
1. Separate the 100G Datalogging gas endpoint housing from the cover by pulling the cover straight out from the housing.



2. Set the endpoint cover aside where it will not be damaged or fill with rain, dirt or snow. You will use the cover later in this installation procedure.

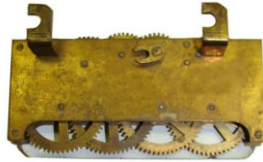
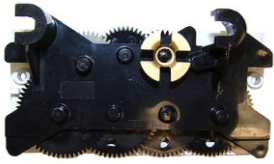


Caution Use only dial-type indexes from National (or Actaris/Schlumberger/Sprague) Meter with the 100G Datalogging gas endpoint. Indexes with bow-tie shaped wigglers are not compatible with 100G Datalogging gas endpoints. Obtain a compatible index.



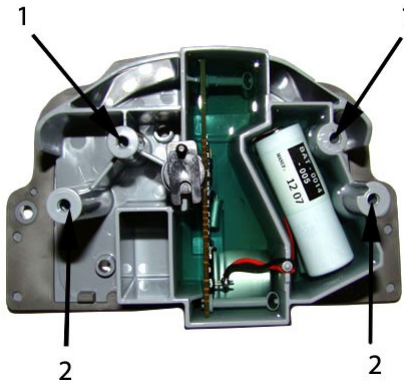
Note National/Lancaster meter indexes are available in different models:

Some National/Lancaster Meter indexes have index legs to mount the index on the meter or endpoint. Some indexes have both legs and index mounting holes and some have just mounting holes. Mounting methods are dependent on the index. Index types require different mounting screws to attach the index to the 100G Datalogging gas endpoint housing (see [Installation Prerequisites](#) on page 7). Indexes with legs must be mounted to the endpoint housing mounting posts. Indexes with mounting holes must be attached to the endpoint housing's bracket mounting posts.



Indexes with mounting legs

Index with mounting holes



1 Bracket mounting posts (indexes with legs)

2 Housing mounting posts (indexes without legs)

If your index has legs with mounting screw slots, skip steps 3 and 4. If your index has mounting screw holes in the index back plate (no legs), perform steps 3 and 4, and skip steps 5 and 6.

- For indexes with mounting screw holes in the index back plate (no legs), use replacement index mounting screws (SCR-0037-001 - see [Installation Prerequisites](#) on page 7). Place one screw into the index's right-hand mounting screw hole.

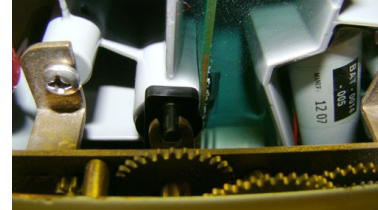
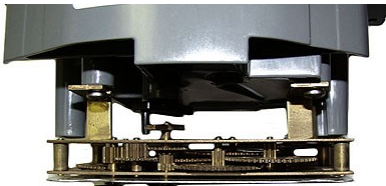
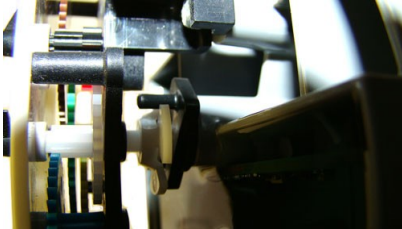


Note National/Lancaster index mounting screws are thread-forming screws and may require more torque.



- Attach the screw to the endpoint housing's right-index mounting post just enough to hold the screw and the right end of the index in place.

- For indexes with legs (mounting slots), screw one 10 - 20 x 3/8" screw (SCR-0017-001, see [Installation Prerequisites](#) on page 7 for screw information) into the right index mounting post one or two turns. Do not completely tighten the screw.
- Place the right index mounting screw slot under the screw head. Do not completely tighten the screw.
- Carefully slide the index drive post into the endpoint wiggler. Verify positive engagement of the index wiggler to the endpoint drive dog. (The following photos show index/wrigglers with positive engagement.)



Caution Verify the index drive slot engages with the 100G Datalogging gas endpoint wiggler. Failure to mate the endpoint wiggler with the index drive post (or slot) can cause binding and lead to poor registration or meter failure.

- Install and tighten the left index mounting screw (for indexes with either mounting screw slots or holes). Tighten the right index mounting screw. Tighten each index mounting screw evenly.



- Slide the endpoint cover over the index and housing. The endpoint label should be clearly visible and easily read.



Programming the 100G Datalogging Gas Endpoint Assembly

Program the 100G Datalogging gas endpoint using:

- A FC200SR handheld computer with Endpoint-Link® or Endpoint-Link Pro version 5.3 or higher *or*
- A FC300 with SRead handheld computer with Endpoint-Link or Endpoint-Link Pro version 5.5 or higher *or*
- A 900MHz Belt Clip Radio with Endpoint-Link version 5.5 or higher and a customer-supplied laptop. The Belt Clip Radio connects to the user-supplied laptop using a USB cable or Bluetooth.

See the Endpoint-Link v5.3 (or higher) Endpoint Programming Guide (TDC-0744) for more complete programming information.



FC200SR

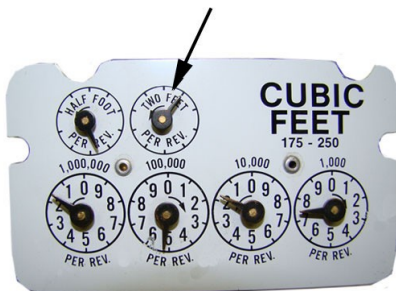
FC300 with SRead

900MHz Belt Clip Radio



Caution The 100G Datalogging gas endpoint must be programmed before use. Follow the steps in this section to properly program the endpoint.

Take note of the index drive rate shown on a top right dial on the index. The endpoint is programmed based on the drive rate. National/Lancaster meter index drive rates are typically 2-cubic feet.



To program the 100G Datalogging gas endpoint

1. Program the index drive rate into the 100G Datalogging gas endpoint using the endpoint programming device. For all programming and "Check Endpoint" operations, hold the handheld programmer as close to vertical as possible. For best success, keep the handheld programmer within 6 feet of the target endpoint. Verify you have the correct programming mode (Fixed Network 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 endpoint programming device. During programming, the 100G Datalogging gas endpoint 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 endpoint assembly will read to the nearest cubic foot.
2. Slowly turn the endpoint's drive wiggler two turns in the direction shown on the index drive rate. This verifies the endpoint is counting properly after assembly.



Caution Do not turn the drive wiggler faster than one turn per second.

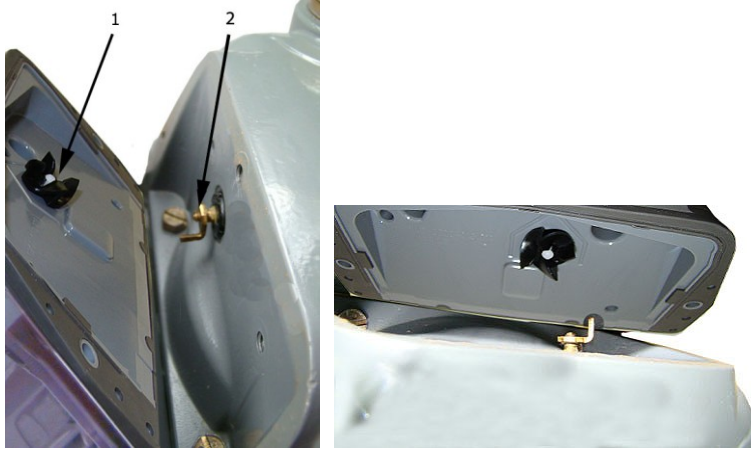
3. **Read** or **Check** the 100G Datalogging gas endpoint using the endpoint programming device.
 - If the read result is higher than the number programmed in Step 1, the 100G Datalogging gas endpoint is counting correctly.
 - If the read result is not higher than the number programmed in Step 1, replace the 100G Datalogging gas endpoint.

Attaching the 100G Datalogging Gas Endpoint Assembly to the Meter

After programming the 100G Datalogging gas endpoint, attach it to the National/Lancaster meter.

To attach the 100G Datalogging gas endpoint to the meter

1. Align the white wiggler (1) so one of its four drive slots lines up with the meter's drive dog (2).



2. Carefully place the 100G Datalogging gas endpoint on the meter.



Warning Failure to correctly align the meter drive post and endpoint drive slot can cause binding and lead to poor registration or meter failure. If there is a gap between the endpoint gasket and the meter, it may be the drive slot of the endpoint assembly's wiggler is not correctly aligned with the meter drive slot. Remove the 100G Datalogging gas endpoint assembly and repeat the alignment procedure. You must engage endpoint wiggler in the meter drive dog.

3. Install endpoint to meter mounting screws in an alternating fashion. 100G Datalogging gas endpoints for National/Lancaster meters come with new, different-size endpoint mounting screws (SCR-0014-004 - see [Installation Prerequisites](#) on page 7 for screw information.) Insert the right index cover mounting screw and tighten the screw enough to hold it in place. Do not completely tighten. Install the left index cover mounting screw and tighten to a snug fit. Finish by tightening the right mounting screw to a snug fit. Tighten each endpoint mounting screw evenly.



Important Meter manufacturers should torque the mounting screws 15 to 20 inch-pounds.

4. Place new tamper seals over the screws. Press the new tamper seals into place using the 11/32-inch nut driver or similar blunt tool.



5. Complete any necessary paperwork and properly dispose excess installation materials and scrap from the customer premises.

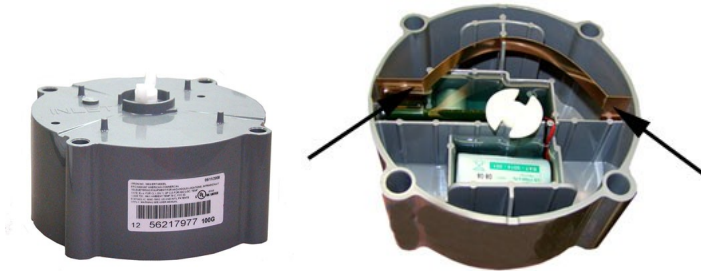
100G Datalogging gas endpoint on the National/Lancaster Meter is complete.



CHAPTER 6

Elster American and Itron Actaris Commercial Meter Installation

This chapter provides instructions to install the 100G Datalogging gas endpoint on Elster American Meter and Itron/Actaris/Schlumberger commercial meters.



Warning Handle the commercial 100G Datalogging gas endpoint carefully so the metal passive radiator antenna is not damaged.

Removing the Index/ Index Assembly from the Meter

Commercial 100G Datalogging gas endpoints can be mounted on Elster American Meters in various configurations. These instructions show metal mounting plates without tamper seal cups and plastic mounting plates with tamper seal cups to represent mounting plate options.



Mounting plate with tamper seal cups



Mounting plate without tamper seal cups

Indexes may be mounted on the 100G Datalogging commercial Elster American Meter gas endpoint without mounting plates.



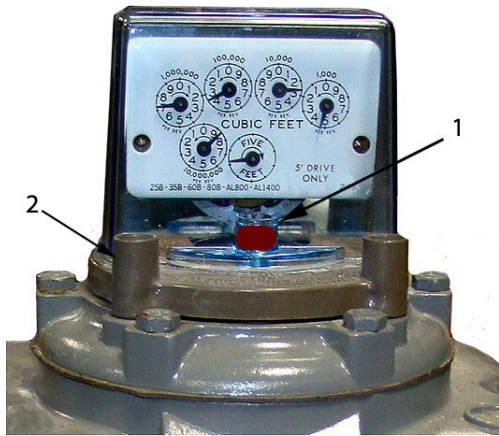
Index covers may (or may not) have tamper seal cups (on the back of the cover) for added security. Index removal assumes the installer will remove any tamper seals or wires before continuing with these instructions.

- ❗ **Note** It may not be necessary to dismantle your commercial index assembly (index and cover). These instructions do not include index/cover assembly for those applications.

Some diaphragm commercial meters do not require an index assembly mounting plate. Indexes can be mounted directly to the endpoint.

To remove the index assembly

1. Remove any tamper seals (1) (or wire seals) from the index cover and mounting plate screws (2). Set the index/cover assembly aside. You will re-install it later in these instructions.



2. Remove the index cover screws from the meter. Verify screws are 1/2" long and are not corroded. If the screws are the correct length and are not corroded, keep them to re-install the 100G Datalogging gas endpoint assembly later in this procedure. If the screws are damaged or not the correct length, discard.



- ❗ **Note** Properly dispose all unused screws, old index covers, gaskets, tamper seals, and other leftover materials. Do not leave materials on customer premises.

3. Remove the tamper seals from the mounting plate. Remove the mounting plate screws and separate the mounting plate from the meter. Place the mounting plate where it will not be damaged. You may use it later in this installation.



Programming the 100G Datalogging Commercial Gas Endpoint

Program the 100G Datalogging gas endpoints using:

- A FC200SR handheld computer with Endpoint-Link® or Endpoint-Link Pro version 5.3 or higher *or*
- A FC300 with SRead handheld computer with Endpoint-Link or Endpoint-Link Pro version 5.5 or higher *or*
- A 900MHz Belt Clip Radio with Endpoint-Link version 5.5 or higher and a customer-supplied laptop. The Belt Clip Radio connects to the user-supplied laptop using a USB cable or Bluetooth.

See the Endpoint-Link v5.3 (or higher) Endpoint Programming Guide (TDC-0744) for more complete programming information.



FC200SR

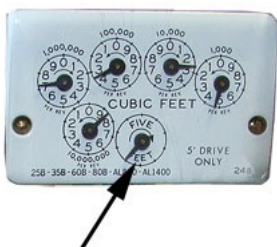
FC300 with SRead

900MHz Belt Clip Radio



Caution The 100G Datalogging commercial endpoint must be programmed before use. Follow the steps in this section to properly program the endpoint.

Take note of the index drive rate shown on the index. The endpoint is programmed based on the drive rate. Elster American commercial meter index drive rates may be 5-, 10- or 100 cubic feet. The index shown has a 5-cubic foot drive rate.



To program the 100G Datalogging commercial gas endpoint

1. Program the index drive rate into the 100G Datalogging gas endpoint using the endpoint programming device. For all programming and "Check Endpoint" operations, hold the handheld as close to vertical as possible. For best success, keep the handheld programmer within 6 feet of the target endpoint. Verify you have the correct programming mode (Fixed Network 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 endpoint programming device.
During programming, the 100G Datalogging gas endpoint 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 endpoint assembly will read to the nearest cubic foot.
2. Slowly turn the endpoint's drive wiggler two turns in the direction shown on the index drive rate. This verifies the endpoint is counting properly.



Caution Do not turn the drive wiggler faster than one turn per second.

3. **Read** or **Check** the 100G Datalogging commercial gas endpoint using the endpoint programming device.
 - If the read result is higher than the number programmed in Step 1, the 100G Datalogging gas endpoint is counting correctly.
 - If the read result is not higher than the number programmed in Step 1, replace the 100G Datalogging gas endpoint.