Itron

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Natural Gas Solutions

100G Datalogging
Installation Guide – Remote Disconnect

Identification

100G Datalogging Installation Guide - Direct Mount
08/25/2009 TDC-0884-000
Endpoint part number: ERG-5002-105

Applicable Patents

U.S. Patent Numbers:
Canadian Patent Numbers:

Compliance Statement

This device complies with Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference that may cause undesirable operation.

This device must be permanently mounted such that it retains a distance of 20 centimeters (7.9 inches) from all persons in order to comply with FCC RF exposure levels.

Compliance Statement

This equipment has been tested and found to comply with the limits, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Operation is subject to the following conditions:

- This device may not cause interference.
- This device must accept any interference that may cause undesired operation of the device.

Compliance Statement

This equipment complies with policies RSS-210 and RSS-GEN of the Industry Canada rules.

Operation is subject to the following two conditions:

(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Suggestions

If you have comments or suggestions on how we may improve this documentation, send them to TechnicalCommunicationsManager@itron.com
If you have questions or comments about the software or hardware product, contact Itron Technical Support:

Contact

- Internet: www.itron.com
- E-mail: support@itron.com
- Phone: 1 800 635 8725

Warning Follow these procedures to avoid injury to yourself or others:

- The lithium battery may cause a fire or chemical burn if it is not disposed of properly.
- Do not recharge, disassemble, heat above 100º Celsius (212º Fahrenheit), or incinerate the lithium battery.
- Keep the lithium battery away from children.
- Replace the lithium battery only with batteries meeting Itron specifications. Any other battery may cause a fire or explosion.

Warning Only authorized Itron personnel should attempt repairs on Itron equipment. Attempts to do so by others might void any maintenance contract with your company. Unauthorized service personnel might also be subject to shock hazard on some Itron equipment if removal of protective covers is attempted.

Warning To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

Warning Substitution of components may impair intrinsic safety.

Transportation Classification

The Federal Aviation Administration prohibits operating transmitters and receivers on all commercial aircraft. When powered, the 100G Datalogging Endpoint is considered an operating transmitter and receiver and cannot be shipped by air. All product returns must be shipped by ground transportation.

Modifications and Repairs

To ensure system performance, this device and antenna shall not be changed or modified without the expressed approval of Itron. Any unauthorized modification will void the user's authority to operate the equipment.

Meter Installation/Removal

In the event of malfunction, all repairs should be performed by Itron. It is the responsibility of users requiring service to report the need for service to Itron.

Document Conventions

The following documentation conventions are used:

Caution This type of note warns the user that failure to heed the information in the note could result in loss of data. Be sure to carefully read a CAUTION note and heed the advice/instructions.

Warning This type of note is used to warn of potential physical harm to the user or hardware. It is critical that you pay strict attention to WARNING notes, read the information carefully, and heed the advice, instructions.

Tip This type of note provides the user with extra hints/tips to make a task easier to perform or a concept easier to understand.

Note This type of note supplies generic information to the user. The information could be ignored and the user could still continue with a task without suffering any adverse consequences.

Contents

CHAPTER 1

100G Datalogging Remote Disconnect Gas Endpoint

Itron 100G Datalogging Remote Disconnect Gas endpoints are radio-frequency (RF) devices designed to transmit meter data to an RF meter reading device within transmission distance of the endpoint. 100G Datalogging Gas Remote Disconnect endpoints have the same increased output power as the first generation 100G Gas endpoints for greater RF transmission distance. The 100G direct-mount Remote Disconnect endpoint reads and transmits a Standard Consumption Message (SCM) with magnetic-tamper and tilt-tamper data. Datalogging functionality provides increased benefits by storing up to 40 days of hourly data.

This installation guide provides step-by-step instructions for installing the 100G Gas Remote Disconnect Endpoint on the Itron METRIS 250 meter.

Transmission Modes

The 100G Datalogging Remote Disconnect Gas endpoint can be set to transmit in Fixed Network, Mobile and Handheld, or Hard to Read Mobile and Handheld Mode.

- **Fixed Network Mode** The 100G Datalogging Remote Disconnect Gas endpoint transmits a high-powered RF message every 60 seconds. Output power in this mode is 250 milliwatts or +24dBm; expected battery life is 20 years.
- **Mobile and Handheld Mode** The 100G Datalogging Remote Disconnect Gas endpoint transmits a medium-powered RF message every 15 seconds. Output power in this mode is 10 milliwatts or +10dBm; expected battery life is 20 years.
- **(Optional) Hard to Read Mobile and Handheld Mode** The 100G Datalogging Remote Disconnect Gas endpoint transmits a high-powered RF message every 30 seconds. Output power in this mode is 250 milliwatts or +24dBm; expected battery life decreases to 15 years in this mode. The *Hard to Read Mobile and Handheld Mode* should only be used for exceptionally hard-to-read applications (such as meters installed on roof tops or in sub-basements).

An FCC license is not required to read 100G Datalogging Gas Endpoint.

Specifications

Functional Specifications	Description
Power Source 100G Datalogging	Two "A" cell lithium batteries
Tamper Detection	Tilt tamper and magnetic tamper
FCC Compliance	Part 15 certified
Industry Canada Compliance	RSS-210 certified
Intrinsically Safe per	UL Class I, Division 1, Groups C and D
Product Identification	Numeric and bar-coded endpoint type and serial number
Construction Materials	Gray polycarbonate housing and back plate with encapsulated electronics
Operational Specifications	**Description**
Operating Temperatures	-40° to 158° F (-40° to +70° C)
Operating Humidity	5 to 95 percent relative humidity
Program Frequency	908 MHz
Transmit Frequency	Spread spectrum 908 to 924 MHz ISM band
Data Integrity	Verified in every data message

Related Documents

Document Title	Document Part Number
Gas Endpoint Meter Compatibility List	PUB-0117-002
Gas Endpoint Ordering Guide	PUB-0117-001
100G Datalogging Specification Sheet	Publication 100941SP-01
Endpoint Link® Programming Guide	TDC-0744

Meter Compatibility List

100G Datalogging Endpoint – Remote Disconnect Meter Compatibility

Mfg.	Model	Description	Class	Comments	Endpoint Type	Endpoint Part No.
Itron/Actaris/ Schlumberger/ Sprague	METRIS 250	Remote disconnect	Residential		100G Datalogging	ERG-5002-105

Installation Prerequisites

Prior to installation, verify you have the following items:

- 100G Datalogging Gas Endpoints designed for your specific brand of residential or commercial gas meters (endpoints include new tamper seals).
- A METRIS 250 meter (see the Meter Compatibility List on page 8).
- A compatible index. Itron 100G Datalogging Gas Endpoints are compatible with standard dial and direct-read (odometer) indexes. Exceptions are noted on the Meter Compatibility List on page 8.
- Installation tools (provided by installer or customer)
  - Small and medium flat-blade or Phillips screwdrivers - to remove and tighten index and index-cover screws.
  - Side-cutting pliers/wire snips - to cut wire seals, if applicable.
  - Small putty knife - residential meters.
  - Meter seals, wire seal, and seal press - to protect the meter from tampering, if applicable.
  - 11/32-inch nut driver or other blunt tool - to securely seat new tamper plugs over screw holes.
  - FC200SR handheld computer with Endpoint-Link or Endpoint-Link Pro software - to program and check 100G Datalogging Gas Endpoint installation and operation.

Caution The 100G Datalogging Gas Endpoints can only be programmed using FC200SR Handheld Computers loaded with Endpoint-Link or Endpoint-Link Pro software version 5.3 or later.

  - Replacement screws - to mount the 100G Datalogging Gas Endpoint assembly to the meter and the index to the endpoint housing:

Replacement Screws				
Residential Meter	**To mount the 100G Datalogging Gas Endpoint on the meter:**	**Itron Part Number**	**To mount the index on the 100G Datalogging Gas Endpoint housing:**	**Itron Part Number**
Itron METRIS 250	10 - 24 x 5/8" slotted Fillister head		10 - 24 x 1/4" slotted, round pan-head	

Installation Overview

Installing the 100G Datalogging Remote Disconnect Gas endpoint on a meter involves four tasks:

1. Removing the index from the meter.
2. Assembling the 100G Datalogging Remote Disconnect Gas endpoint and index.
3. Programming the 100G Datalogging Remote Disconnect Gas endpoint assembly.
4. Attaching the 100G Datalogging Remote Disconnect Gas endpoint to the meter.

CHAPTER 2

Itron METRIS 250 Meter Installation

This chapter provides the instructions to install the 100G Datalogging Remote Disconnect Gas endpoint on an Itron METRIS 250 meter.

To remove the index from the meter

1. Remove the tamper seals, index cover screws and the index cover from the Itron meter. Examine the mounting screws. If they are 5/8" long and not corroded, keep them to re-attach the 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.

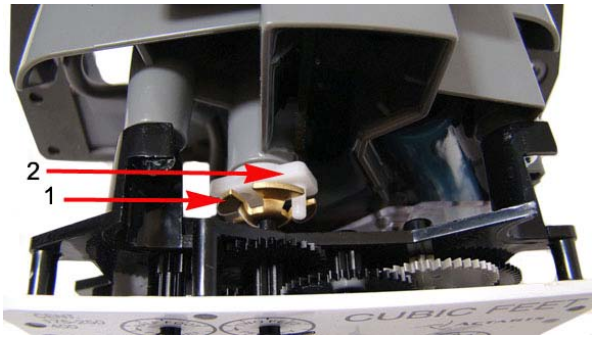
Set the index aside where it will not be damaged or fill with dirt, rain or snow. The index is mounted in the endpoint later in this procedure. Verify the index mounting screws are 1/4" long and not corroded. If the screws are the correct length and not corroded, retain for later use. If the original screws are discarded, use the correct replacement screws (see Installation Prerequisites on page 8).

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 endpoint.

To assemble the 100G Datalogging Remote Disconnect 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. The cover will be used 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 wriggler (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 wriggler. Hold the index in place and tighten the index mounting screws.

Caution Indexes have varying drive mechanism styles. Failure to align the endpoint wriggler 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 wriggler one clockwise rotation, then one-counterclockwise rotation. Do not spin more than one complete rotation. The wriggler should spin freely, with little or no resistance.

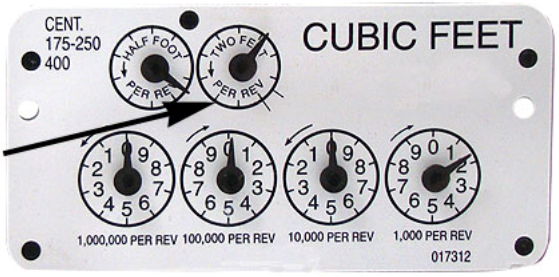
4. Slide the endpoint cover over the index and housing. Verify the cover is installed correctly. The endpoint label should be clearly visible and easily read.

Programming the 100G Datalogging Remote Disconnect Gas Endpoint Assembly

The 100G Datalogging Remote Disconnect Gas endpoint must be programmed with the FC200SR handheld computer loaded with Endpoint-Link® or Endpoint-Link Pro® software version 5.3 or higher. See the Endpoint-Link v5.3 (or later) Endpoint Programming Guide (TDC-0744) for more complete programming information.

Caution The 100G Datalogging Remote Disconnect 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 METRIS 250 meter index drive rates are typically 2-cubic feet or 0.05 cubic metres (not shown below).



To program the 100G Datalogging Remote Disconnect Gas endpoint

1. Program the index drive rate into the endpoint using the FC200SR. For all programming and "Check Endpoint" operations, hold the FC200SR as close to vertical as possible. For best success, keep the FC200SR 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 FC200SR.
   During programming, the 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 wriggler 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 wriggler faster than one turn per second.

Read or **Check** the endpoint using the FC200SR.

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

Attaching the 100G Datalogging Remote Disconnect Gas Endpoint Assembly to the Meter

After programming the 100G Datalogging Remote Disconnect Gas endpoint, attach it to the Itron METRIS meter.

To attach the 100G Datalogging Gas Endpoint to the meter

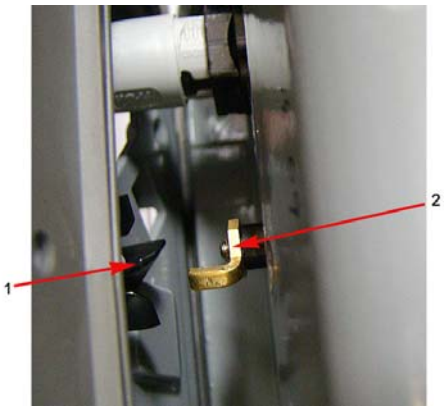
1. Align the endpoint communications plug with the meter receptacle. Insert the endpoint communications plug into the meter receptacle and push gently until the plug snaps into place.

Endpoint communications plug

Meter receptacle

Warning The communications plug notch must align with the meter receptacle notch. Verify the notches are properly aligned before pushing the communications plug into place. Do not force the plug if the notches are not aligned.

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



Warning Failure to correctly align the meter drive post (2) and endpoint wriggler drive slots (1) can cause binding and lead to poor registration or meter failure. You must properly align the meter drive dog with the endpoint wriggler drive fin.

3. Carefully place the endpoint on the meter.
4. 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 8.)
   - 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.

1. 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.

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

100G Datalogging Gas Remote Disconnect endpoint installation on the Itron METRIS 250 Meter is complete.