100G Datalogging ERT® Module

Introduction
The 100G Datalogging ERT module is the latest generation radio-frequency (RF) gas meter module for Itron’s industry-leading portfolio of RF-based meter data collection solutions. The 100G Datalogging ERT offers additional functionality over the initial 100G ERT, while maintaining the fundamental magnet and reed switch design of the field-proven 40-series gas ERT module. The modules boast an accuracy of 99.999 percent between the index read and ERT read—an unprecedented benchmark in automated meter reading (AMR) and advanced metering infrastructure (AMI) accuracy. The two-way 100G Datalogging ERT module surpasses the initial 100G by storing 40 days of hourly data.

This brings additional value to mobile customers by enabling them to extract, via RF, the following data during monthly meter reading:

- Move in/move out reads for a specific date
- Daily data for customer service and billing disputes
- Monthly gas balancing reads
- Hourly data to facilitate load studies
- Data to support mid cycle rate changes

Features
> Transmits legacy standard consumption message (SCM), offering compatibility with Itron 900 MHz ChoiceConnect™ handheld, mobile and fixed network data collection solutions
> Continually stores and updates the last 40 days of hourly interval data. Specific data can be read two-way from 100G Datalogging ERT modules, via updated Mobile Collector 3.0
> Offers up to +24 dBm (250 milliwatts) of output power
> Operates in bubble-up mode and does not require a license from the Federal Communications Commission (FCC) or Industry Canada (IC)
> Can be deployed alongside legacy ERT modules
> Designed for a 20-year battery life regardless of data collection solution to ensure low operating and maintenance costs
> Updated housing optimizes antenna performance and maximizes RF signal
> Improved wriggler design for Elster American Meter, Sensus/Rockwell and Itron/Sprague residential models to make installation faster and easier than ever before, especially when gas is flowing through the meter
> Made in the USA at Itron’s state-of-the-art facilities in Waseca, Minnesota

The 100G Datalogging ERT module offers the flexibility and reliability utilities need to address the industry’s ever-changing business drivers. With the industry’s first programmable operating modes, the 100G Datalogging ERT can be deployed in mobile/handheld AMR mode with medium power and then reprogrammed to high-powered fixed network AMI mode should the time be right to migrate to a fixed network solution. Although the output power is significantly greater than legacy 40-series ERT modules, the 100G Datalogging ERT maintains Itron’s unmatched battery life—20 years when operating in either mobile/handheld mode or fixed network mode.

The 100G Datalogging ERT module—the most advanced radio-based meter module for all your AMR and AMI needs.
Residential diaphragm meters
Itron provides an extensive line of direct-mount 100G Datalogging ERT modules for use with residential diaphragm gas meters. Capacities range from 75 to 630 CFH for popular models from Elster American Meter, Sensus/Invensys/Rockwell, Itron/Actaris/Schlumberger/Sprague and National/Lancaster. Direct-mount modules are also available for older Sprague 1A meters. The compact design and direct engagement to the meter drive assure the unparalleled accuracy that makes Itron gas ERT modules the industry standard. For easier installation, 100G wrigglers have been modified from traditional ERT modules for American, Sensus and Itron/Sprague meters.

A remote-mount module is available for some less common meter types where a direct-mount solution is not available.

Commercial diaphragm meters
Itron also provides direct-mount 100G Datalogging ERT modules for use with the following commercial diaphragm meters: Elster American Meter, Itron/Actaris/Schlumberger and Sensus/Invensys/Equimeter/Rockwell. The unobtrusive profile is easy to install and the direct meter drive engagement assures the highest level of accuracy. Built-in passive radiators are standard on all commercial, direct-mount 100G Datalogging ERT modules.

Elster American Meter, and Itron/Actaris/Schlumberger commercial diaphragm meters with top-mount instrument drives utilize the same version commercial direct-mount module. For American commercial diaphragm meters, the ERT mounts directly to the meter. For Itron/Actaris/Schlumberger meters, an adapter kit must be purchased.

A remote-mount module is available for some less common meter types where a direct-mount solution is not available.

Rotary meters
Itron has several solutions for interfacing with rotary gas meters. For Dresser LMMA and B3 rotary meters with Dresser-supplied AMR adapter, Itron offers the American residential 100G Datalogging ERT module. For Dresser rotary meters with Instrument Drive (ID), Itron offers the direct-mount ERT designed for American commercial diaphragm meters. For Dresser, Romet and American Meter rotary meters with pulse output (version 17 or higher required for Dresser) and a military connector pin, Itron offers the remote-mount 100G Datalogging ERT module.

Electronic Correctors
Itron offers a remote-mount 100G Datalogging ERT module for Mercury Instruments for EC-AT, Mini-P, Mini-AT and Mini-Max electronic correctors. The ERT can be connected to these gas electronic correctors for temperature- and pressure-corrected consumption (Form A board required). The module attaches easily to the Mercury corrector circuit board through the Phoenix connector already installed on Mercury units. One 100G Datalogging ERT module can be used for uncorrected consumption and a second module can be used for corrected consumption.
Functional Specifications

- Power source:
  - Direct-mount module: “A” cell lithium battery
  - Remote-mount module: 2 “A” cell lithium batteries
- Radio programming parameters: Utility ID, index reading, count rate, index rollover, pressure compensation, security level, output power and bubble-up rate
- Tamper detection:
  - Direct-mount module: mercury-free tilt tamper and magnetic tamper
  - Remote-mount module: mercury-free tilt tamper and cut cable
- Operating temperature: -40°F to +158°F (-40°C to +70°C)
- Operating humidity: 5 to 95% non-condensing relative humidity
- 100G Datalogging ERT modules can be installed indoors or outdoors above grade
- Product identification: Numeric and bar-coded ERT module type and serial number

Programming Device

- 100G Datalogging ERT modules can be programmed using FC200SR handheld computers with Endpoint-Link or Endpoint-Link Pro version 5.3 or higher or using FC300 with SRRead handheld computers with Endpoint-Link or Endpoint-Link Pro version 5.5 or higher.

Programming Options

- Mobile/Handheld Mode with +10 dBm output power (10 milliwatts), and a 15-second bubble-up rate with a 20-year battery life. This mode should be used when mobile or handheld meter reading will be the predominant method of collecting SCM reads, or to collect 40 days of daily datalogging data with minimal impact to driving speed (note when collecting 40 days of hourly data, mobile speeds will need to be reduced significantly).
- This mode should not be used for fixed network data collection since the RF range will not be optimum
- Fixed Network Mode with +24 dBm output power (250 milliwatts), and a 60-second bubble-up rate with a 20-year battery life. This mode should be used when fixed network will be the predominant method of meter data collection. This mode should not be used for mobile or handheld SCM data collection since the driving speed may need to be reduced for reliable read performance. It should not be used when collecting datalogging data via mobile since it will require slower driving speeds. In the event of a fixed network failure, 100G Datalogging modules programmed to fixed network mode can be read by mobile or handheld to enable contingency SCM reads, however, driving speeds may need to be reduced

Hard-to-Read Mobile/Handheld Mode

- This mode should not be used for mobile or handheld SCM data collection since the driving speed may need to be reduced for reliable read performance. It should not be used when collecting datalogging data via mobile since it will require slower driving speeds. In the event of a fixed network failure, 100G Datalogging modules programmed to fixed network mode can be read by mobile or handheld to enable contingency SCM reads, however, driving speeds may need to be reduced

Collecting SCM Reads

- FC200SR handheld with following meter reading software; MV-RS® v7.8.6 or higher; Field Collection System (FCS) v1.8.5.2 or higher
- FC300 with SRRead handheld with following meter reading software; MV-RS v8.0 or higher; FCS v2.1 or higher
- GSRR handheld with following meter reading software; Premierplus4 v3.2 or higher; MV-RS v7.8.6 or higher; Integrator v6.0 or higher
- Mobile Collector 2.0 or higher with Mobile Interface software version 2.6 or higher and following meter reading software; MV-RS v7.7 or higher; FCS v1.6 or higher; Premierplus4 v3.2 or higher; Integrator v6.0 or higher
- MC3 with Mobile Interface software version 3.0 or higher with following meter reading software; MV-RS v7.7 or higher; FCS v1.6 or higher; Premierplus4 v3.2 or higher; Integrator v6.0 or higher
- Mobile Collector Lite with MV-RS v7.8.5 or higher

Approved Reading Devices for Collecting SCM Reads

- MC3 with upgraded radio (RF unit should indicate “MC3 B” or “MC3-DL” on the label) with Mobile Interface software version 3.2 or higher with following meter reading software; Premierplus4 v3.5 or higher; MV-RS v8.0 or higher and FCS v2.1 or higher

Battery Life and Design Life

- 100G Datalogging ERT modules allow for a field-replaceable “A” cell lithium battery
- When programmed to mobile/handheld mode or fixed network mode, battery life is 20 years (20+ years for remotes)
- When programmed to hard-to-read mobile/handheld mode, battery life is 15 years (20+ years for remotes)
- All 100G Datalogging ERT modules are designed for a 20-year total life

Regulatory & Standards

- FCC compliance: Part 15.247 and Part 15.249 (programming) certified
- Industry Canada 8640-100GDLA, 8640-100GDLB, 8640-100GDL; Measurement Canada AG-0546
- Safety approvals: Intrinsically safe per UL Class I, Division 1, Groups C & D

Operational

- All 100G Datalogging ERT modules operate without the need for an FCC or IC license
- Transmit frequency: Spread spectrum 908 to 924 MHz ISM band
- Program frequency: 908 MHz
- Data integrity: Verified in every message

Physical

- All 100G Datalogging ERT modules have encapsulated electronics for protection against environmental hazards and tampering. Material of construction on all 100G Datalogging ERT module housings is gray polycarbonate. For direct-mount residential ERT modules, gasket material is molded Santoprene™ and index cover material is clear polycarbonate
Physical

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<tr>
<th></th>
<th>Elster American</th>
<th>Sensus/Rockwell</th>
<th>Itron/Sprague</th>
<th>National</th>
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<td>6&quot; x 4.1&quot; x 3.9&quot;</td>
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<tr>
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<td>5.38&quot; x 4&quot; x 2.5&quot;</td>
<td>5.16&quot; x 2.42&quot; x 5.16&quot;</td>
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<td>4.9&quot; x 3.6&quot; x 2.5&quot;</td>
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<tr>
<td>Remote</td>
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Shipping Information

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<tr>
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<th>Modules Per Box</th>
<th>Pallet Weight</th>
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<tr>
<td>Elster American</td>
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<td>Sensus/Rockwell</td>
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<tr>
<td>National</td>
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<tr>
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<td></td>
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<tr>
<td>Elster American &amp; Itron</td>
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<tr>
<td>Sensus/Rockwell</td>
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<tr>
<td>Remotes</td>
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<td>968 lbs / 438 kg</td>
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* Modules are not stacked when shipped but can be stored two pallets high. Modules are to be stored indoors. If outdoor storage is necessary, modules must be sheltered from weather and damage.

Meter Compatibility

> Refer to Gas Endpoint Meter Compatibility List (PUB-0117-002) for detailed information on gas meter compatibility

Additional Information

> 100G Datalogging Installation Guide - Direct Mount (TDC-0823)
> 100G Datalogging Installation Guide - Remote Mount (TDC-0824)
> Gas Endpoint Ordering Guide (PUB-0117-001)
> 100 Series Technology Guide (TDC-0825)
> Endpoint-Link Endpoint Programming Guide (TDC-0744)
> Endpoint-Link Checklist (TDC-0671)

About Itron Inc.

Itron Inc. is a leading technology provider to the global energy and water industries. Our company is the world’s leading provider of intelligent metering, data collection and utility software solutions, with nearly 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water. Our products include electricity, gas, water and heat meters; data collection and communication systems, including automated meter reading (AMR) and advanced metering infrastructure (AMI); meter data management and related software applications; as well as project management, installation, and consulting services. To know more, start here: www.itron.com