



100G Datalogging FN

ERT® Module

The 100G Datalogging FN ERT module is the third evolution in Itron's line of 100-series radio-frequency (RF) gas meter modules for Itron's industry-leading portfolio of RF-based meter data collection solutions. The 100G Datalogging FN ERT, or 100G DLN, offers additional functionality over its 100G and 100G Datalogging predecessors, while maintaining the fundamental magnet and reed switch design of the field-proven 40 series gas ERT module.

The 100G Datalogging FN ERT module boasts 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 FN ERT module surpasses the 100G Datalogging ERT by doubling output power for fixed network reads while maintaining the most stringent intrinsically safe rating of Class I Division 1 for UL.

The 100G Datalogging FN ERT module brings additional value to fixed network customers by providing more efficient reads requiring less infrastructure and ongoing O&M costs, and when used with Itron's new ChoiceConnect™ FN 100 network, now offers a two-way solution to the endpoint. A true two-way solution

enables time-synchronized interval data and supports Gas Day Take, reprogramming of non-metrology parameters and commands for additional reading of interval data.

Like its predecessor, the 100G Datalogging FN ERT module automatically stores 40 days of hourly data, providing a “black box” of hourly usage which has proven valuable in case of a catastrophic event, all while also giving mobile customers valuable information for:

- » Move in/move out reads to minimize off-cycle reading
- » 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

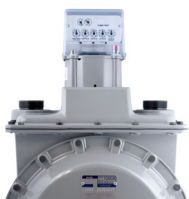
- » Transmits new Network Interval Message (NIM) for use with ChoiceConnect FN 100 network
- » Transmits legacy standard consumption message (SCM), offering compatibility with Itron 900 MHz ChoiceConnect handheld, mobile and fixed network data collection solutions as well as various in-home displays
- » Continually stores and updates the last 40 days of hourly interval data. Specific data can be read two-way from 100G Datalogging FN ERT modules, via handheld, mobile and fixed network
- » Offers up to +27 dBm (500 milliwatts) of output power for fixed network reads
- » 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 antenna optimizes RF performance
- » Improved wiggler design for Elster American Meter, Sensus/Rockwell and Itron/Sprague residential models, compared to 40 series ERT modules, to make installation faster and easier than ever before, especially when gas is flowing through the meter
- » Made in the USA at Itron's facility in Waseca, Minnesota

The 100G Datalogging FN 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 FN 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. Although the output power is significantly greater than legacy 40 series ERT modules, the 100G Datalogging FN ERT maintains Itron's unmatched battery life—20 years when operating in either mobile/handheld mode or fixed network mode.

The 100G Datalogging FN ERT module—the most advanced radio-based meter module for all your AMR and AMI needs.

COMMERCIAL METERS



Itron 1000A



Sensus/ Rockwell 750



Elster American AL 800

Residential Diaphragm Meters

Itron provides an extensive line of direct-mount 100G Datalogging FN 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/Equimeter/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. New for 100G Datalogging FN ERT modules is a wave wiggler for Elster American Meter to provide faster meter engagement which is especially helpful when clocking or spotting a meter.

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

RESIDENTIAL METERS



Itron METRIS 250



Sensus/ Rockwell R275



Elster American AC250



National 250

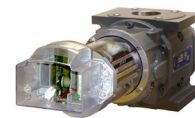
Commercial Diaphragm Meters

Itron also provides direct-mount 100G Datalogging FN 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 FN 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 Elster American Meter 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



Dresser B3 with Direct mount



Dresser LMMA with Remote ERT

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 FN 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 FN ERT module.

Electronic Meters

Itron offers a remote-mount 100G Datalogging FN ERT module for Itron's DATTUS meter. One 100G Datalogging FN ERT module can be used for uncorrected consumption and a second module can be used for corrected consumption.

ELECTRONIC METERS/INSTRUMENTS



Itron DATTUS fM2



Mercury Mini-AT

Electronic Correctors and Instruments

Itron offers a remote-mount 100G Datalogging FN ERT module for Mercury Instruments EC-AT, Mini-P, Mini-AT, Mini-Max and TCI electronic correctors. The ERT can be connected to these devices for temperature- and/or pressure-corrected consumption (Form A board required). The module attaches easily to the Mercury corrector circuit board through the terminal strip connector already installed on Mercury units (module to TCI is wired). Itron offers a remote mount 100G Datalogging FN ERT module for Dresser Micro Correctors (IMC/W2 and MC2). For both Mercury and Dresser, one 100G Datalogging FN ERT module can be used for uncorrected consumption and a second module can be used for corrected consumption.

SPECIFICATIONS

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 (note for Mercury TCI optionally can get any TCI alarm in place of cut cable)
- » Battery Counter Indicator
- » Operating temperature: -40°F to +158°F (-40°C to +70°C)
- » Operating humidity:
 - 5 to 95% non-condensing relative humidity
 - 100G Datalogging FN 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 FN ERT modules can be programmed using FC200SR with Endpoint- Link (EPL) or Endpoint-

Link Pro (EPLP) v5.3 or higher or using FC300SR with EPL or EPLP v5.5 or higher for all modes except fixed network mode which includes the Network Interval Message. 100G Datalogging FN ERT modules can also be programmed using Itron’s 900 MHz Belt Clip Radio and a customer-supplied laptop with EPL v5.5 or higher for all modes except fixed network mode. The Belt Clip Radio can be connected to a laptop via USB cable or Bluetooth

- » 100G Datalogging FN ERT modules can be programmed using FC200SR or FC300SR with Field Deployment Manager (FDM) v1.1 or higher. 100G Datalogging FN ERT modules can also be programmed using Itron’s 900 MHz Belt Clip Radio and a customer supplied laptop with FDM v1.1 or higher. The Belt Clip Radio can be connected to a laptop via USB cable or Bluetooth

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 is recommended when using traditional walk-by or drive-by meter reading methods
- » **Mobile HP Mode*** with +24dBm output power (250 milliwatts) and a 60-second bubble-up rate with a 20-year battery life. This mode allows readings to be collected from further away enabling a park-and-read method allowing the operator to skip some streets, reducing total miles driven
- » **Hard-to-Read Mobile/Handheld Mode*** with +24 dBm output power (250 milliwatts) and a 30-second bubble-up rate. This mode reduces battery life from 20 years to 15 years. Assuming that utilities would prefer a 20-year battery life, this mode should only be used for exceptionally hard-to-read applications such as meters on a roof or in a sub-basement
- » **Fixed Network Mode** with +27 dBm output power (500 milliwatts), and a 5-minute bubble-up rate of the Network Interval Message. The NIM includes the current index read and last 8 hourly intervals (7 full hours and one partial hour) with a 20-year battery life.

*Note: When reading 40 days of hourly intervals with mobile or handheld, the operator will need to slow or stop briefly which will increase route processing time.

Approved Reading Devices for Collecting SCM Reads

- » FC200SR with; MV-RS® v7.8.6 or higher; Field Collection System (FCS) v1.8.5.2 or higher
- » FC300SR with; MV-RS v8.0 or higher; FCS v2.1 or higher
- » G5SR with; Premierplus4 v3.2 or higher; MV-RS v7.8.6 or higher; Integrator v6.0 or higher
- » Mobile Collector 2.0 or higher with MC Software v2.6 or higher with; MV-RS v7.7 or higher; FCS v1.6 or higher; Premierplus4 v3.2 or higher; Integrator v6.0 or higher
- » MC3 with MC Software v3.0 or higher with; MV-RS v7.7 or higher; FCS v1.6 or higher; Premierplus4 v3.2 or higher; Integrator v6.0 or higher
- » MC Lite with MV-RS v7.8.5 or higher
- » ChoiceConnect Fixed Network 2.0; Cell Control Unit (CCU) 4.2; 8-channel repeaters; CCU Meter Reading Application software v3.6.02 or higher; Fixed Network Application software v2.2.3 or higher; Billing Gateway software v2.0.8 or higher

Approved Reading Devices for Collecting Datalogging Reads

- » MC3 (MC3-B or MC3-DL radio) with MC Software v3.3 or higher with; MV-RS v8.0 or higher; FCS v2.1 or higher; Premierplus4 v3.5 or higher
- » MC Lite (MCL-B radio) with; MV-RS v 8.2 or higher; FCS v2.3 or higher
- » FC300SR with; MV-RS v 8.2 or higher; FCS v2.3 or higher
- » FC200SR (part number FC2-0005-004 or FC2-0006-004) with; MV-RS v8.2 or higher; FCS v2.3 or higher

Approved Reading Device for Collecting Network Interval Message (NIM) Reads

ChoiceConnect Fixed Network 100 Network; Cell Control Unit 100 (CCU100); Repeater 100; Network Software v4.0 or higher; Billing Gateway software v3.0.4 or higher.

Battery Life and Design Life

- » 100G Datalogging FN 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 FN ERT modules are designed for a 20-year total life

Regulatory & Standards

- » FCC compliance: Part 15.247 and Part 15.249 (programming) certified
- » FCC ID EWQ100GDLAN, Industry Canada 864D-100GDLAN models 1N through 7N; Measurement Canada AG-0546
- » Safety approvals: Intrinsically safe per UL Class I, Division 1, Groups C & D

Operational

- » All 100G Datalogging FN 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
- » NIM – FM modulation; all other messages are AM modulated
- » Data integrity: Verified in every message

Physical

All 100G Datalogging FN ERT modules have encapsulated electronics for protection against environmental hazards and tampering. All 100G Datalogging FN ERT modules housings are made of gray polycarbonate. For direct-mount residential ERT modules, gasket material is molded Sevrene™ and index cover material is clear polycarbonate.

Meter Compatibility

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

Additional Information

- » 100G Datalogging FN Installation Guide: Direct Mount (TDC-0823)
- » 100G Datalogging FN 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)
- » Field Deployment Manager Endpoint Tools Guide (TDC-0934)
- » Field Deployment Manager Endpoint Tools Configuration Guide (TDC-0935)
- » Field Deployment Manager Endpoint Checklist (TDC-0942)

Physical

	Elster American	Sensus/Rockwell	Itron/Sprague	National	All
Residential	5.54" x 3.57" x 3.1"	4.3" x 3.8" x 2.9"	6" x 4.1" x 3.9"	6" x 3.3" x 3.9"	
Commercial	5.16" x 2.42" x 5.16"	5.38" x 4" x 2.5"	5.16" x 2.42" x 5.16"		
Remote					4.9" x 3.6" x 2.5"

Shipping Information

	Modules Per Box	Box Dimensions	Box Weight	Modules Per Pallet*	Pallet Dimensions	Pallet Weight
Residential Direct-Mount						
Elster American	20	20" x 11.9" x 8.6"	16.7 lbs / 7.6 kg	800	40" x 48" x 48" H	668 lbs / 303 kg
Sensus/Rockwell	20	20" x 11.9" x 8.6"	14.7 lbs / 6.7 kg	800	40" x 48" x 48" H	588 lbs / 267 kg
Itron/Sprague	20	21.5" x 13" x 9"	20.4 lbs / 9.4 kg	600	40" x 48" x 50" H	648 lbs / 294 kg
National	20	21.5" x 13" x 9"	20.4 lbs / 9.4 kg	600	40" x 48" x 50" H	648 lbs / 294 kg
Commercial Direct-Mount						
Elster American & Itron	10	18" x 14.5" x 9.5"	16 lbs / 7.3 kg	300	40" x 48" x 54" H	530 lbs / 240 kg
Sensus/Rockwell	10	18" x 14.5" x 9.5"	16 lbs / 7.3 kg	300	40" x 48" x 54" H	530 lbs / 240 kg
Remotes	20	23.5" x 19.5" x 4.25"	22 lbs / 10.1 kg	880	40" x 48" x 48" H	968 lbs / 438 kg

* 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.



At Itron, we're dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: www.itron.com

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