



100G DLS Datalogging

ERT® Module

The 100G DLS Datalogging ERT® module is the fourth evolution in Itron's line of 100 series radio frequency (RF) gas meter modules and is part of our industry-leading portfolio of RF-based meter data collection solutions. The 100G DLS Datalogging ERT, or 100G DLS, offers all the benefits of its 100G predecessors while delivering a new message called SCM+, which is different from the legacy SCM message. The new SCM+ message has the capacity to use serial numbers up to 10 digits long and includes other valuable data. The 100G DLS also offers optional enhanced security with the addition of authentication and encryption.

The 100G DLS boasts an accuracy of 99.999 percent between the index read and ERT read—an unprecedented benchmark in Advanced Metering Infrastructure (AMI) and Automated Meter Reading (AMR). The module also achieves the industry's highest UL rating for intrinsic safety. The two-way 100G DLS surpasses its predecessor, the 100G DLN, by offering optional authentication of command and encryption of communications data when Itron Security Manager is added to your Itron system. Additionally, the 100G DLS offers extended data—low battery indicator, metrology and non-metrology programming counters—which can be read not only by fixed network, but for the first time by mobile and handheld readers. The 100G DLS also offers improved tilt tamper detection.

The 100G DLS automatically stores 40 days of hourly data, providing a “black box” of hourly usage which has proven valuable in case of a catastrophic event. This functionality benefits mobile customers by providing 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 and data to support mid-cycle rate changes. With its programmable output power and two-way functionality, the 100G DLS easily enables migration from mobile to fixed network reading and supports time-synchronized interval data and Gas Day Take reads.

FEATURES

- » Offers optional enhanced security with authentication of command and encryption of communications data
- » New SCM+ message allows unique ERT ID numbers up to 10 digits and includes extended data
- » Can be read alongside legacy gas ERT modules with Itron's 900 MHz ChoiceConnect® handheld, mobile and fixed network data collection solutions
- » Continually stores and updates the last 40 days of hourly interval data which can be read via handheld, mobile and fixed network
- » Operates in bubble-up mode and does not require a license from the Federal Communications Commission (FCC) or Industry Canada (IC)

- » Designed for a 20-year battery life regardless of data collection solution to ensure low operating and maintenance costs
- » Module design makes installation fast and easy, especially when gas is flowing through the meter
- » Made in the USA at Itron's facility in Waseca, Minnesota

Residential Meters

Itron provides the most extensive line of direct mount 100G DLS 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 and Sprague 175RM meters. The compact design and direct engagement with the meter drive assure the unparalleled accuracy that makes Itron gas ERT modules the industry standard. A remote mount module is available for some less common meter types where a direct mount solution is not available.



Itron I-250



Sensus/ Rockwell R275



Elster American AC250



National 250

Commercial Meters

Itron also provides direct mount 100G DLS 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 DLS 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.



Itron 1000A



Sensus/ Rockwell 750



Elster American AL 800

Rotary Meters

Itron has several solutions for interfacing with rotary gas meters. For Dresser LMMA and B3 rotary meters with Dresser-supplied AMI/AMR adapter, Itron offers the American residential 100G DLS. 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 DLS.



Dresser B3 with Direct mount



Dresser LMMA with Remote ERT

Electronic Meters and Correctors

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

Itron offers a remote mount 100G DLS for Honeywell/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 ERT 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 DLS for Dresser Micro Correctors (IMC/W, MC2 and Eagle MPplus. For Mercury, Dresser, and Eagle, one 100G DLS module can be used for uncorrected consumption and a second module can be used for corrected consumption.



DATTUS III



Mercury Mini-AT



Eagle MPplus



Dresser IMC

Functional Specifications

- » Power source:
 - Direct mount module: "A" cell lithium battery
 - Remote-mount module: Two "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 (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 DLS ERT modules can be installed indoors or outdoors above grade
- » Product identification: Numeric and bar-coded ERT module type and up to 10 digit serial number

Programming Mode 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, bypassing many streets and 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 to 18 years with basic security and 13 years with enhanced security. 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

*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

- » **Fixed Network Mode**** with +27 dBm output power (500 milliwatts), and a 5-minute bubble-up rate of the Network Interval Message (NIM). The NIM includes the current index read and the last 8 hourly intervals (7 full hours and one partial hour) with a 20-year battery life
- » **Itron Cellular Solutions (ICS) Mode**** The 100G DLS module is compatible with the OpenWay CENTRON with 3G Itron Cellular Module (ICM) and is programmed with FDM Endpoint Tools Enhanced or FDM. In ICS mode, the 100G DLS transmits a high-powered network interval message (NIM) RF message every five minutes across 50 channels for optimum operation. Output power in this mode is 500 milliwatts or +27 dBm with a 20-year battery life

NOTE: The 100G DLS must be in full security mode to work with ICS

**NOTE: Interspersed in the high power NIM, the 100G transmits a medium power RF message at 10 milliwatts or +10 dBm every 60 seconds

Approved Reading Devices for Collecting Reads with Basic Security

Handheld and Mobile Application Software
SCM+ Only:

- » MV-RS v8.3 or higher
- » Field Collection System (FCS) v2.3 or higher
 - Including FCS DC v2.3.10.1 and FCS DC v2.4.8.2
- » Mobile Collection Software v3.4 or higher

- » Field Deployment Manager (FDM) v3.3 or higher

Handheld and Mobile Application Software
Datalogging:

- » MV-RS v8.3 or higher
- » Field Collection System (FCS) v2.3 or higher
 - Including FCS DC v2.3.10.1 and FCS DC v2.4.8.2 and the database update script from FCS Server 2.3.2.4 HF5 and FCS Server 2.4.1.20 HF8
- » Mobile Collection Software v3.4 or higher
- » Field Deployment Manager (FDM) v3.3 or higher

Handhelds and Radios:

- » FC300SR: All models along with application software listed above
- » 900MHz Belt Clip Radio: All models require firmware v1.6.12 or higher along with FDM software listed above
- » FC200SR: Application software listed above along with models listed here:
 - SCM+ Only: FC2-0005-002, FC2-0006-002, FC2-0005-003, FC2-0006-003, FC2-0006-004Datalogging: FC2-0005-004, FC2-0006-004, FC2-0005-104, FC2-0006-104

Mobile Collectors:

- » MC3 when used with Mobile Collection Software v3.4 and application software listed above.
 - SCM+ Only: DCU-5300-001 *, DCU-5300-011U *, DCU-5300-101U, DCU-5300-111UDatalogging: DCU-5300-001DL, DCU-5300-001DLU, DCU-5300-011DLU, DCU-5310-001, DCU-5310-011, DCU-5310-011U
- » MCLite when used with application software listed above.
 - SCM+ Only: DCU-5000-001 *, DCU-5000-002 *, DCU-5000-002U *, DCU-5000-102UDatalogging: DCU-5000-002DL, DCU-5310-201

Network Products:

- » ChoiceConnect Network Software v4.1.6.68
- » CCU100: All models when used with Network Software v4.1.6.68 or higher
- » Repeater 100: All models when used with Network Software v4.1.6.68 or higher

- » CCU 4.2: All models when used with updated Network Software and the included firmware update

Approved Reading Devices for Collecting Reads with Enhanced Security

Note: Requires purchase of security keys (SEC-0000-001), Itron Security Manager and FDM or FDM Endpoint Tools Enhanced

Handheld and Mobile Application Software:

- » Field Collection System (FCS) v2.5 or higher
- » Mobile Collection Software v3.5.1 or higher
- » Field Deployment Manager (FDM)
 - FDM work orders v3.3 or higher
 - or FDM Endpoint Tools Enhanced v3.3 or higher

Note: ICS mode requires v3.4 or higher

- » FC300SR: All models along with application software listed above
- » 900MHz Belt Clip Radio - All models require firmware v1.6.12 or higher along with FDM software listed above
- » FC200SR: Application software listed above along with models listed here:
 - SCM+ Only: FC2-0005-002, FC2-0006-002, FC2-0005-003, FC2-0006-003, FC2-0006-004Datalogging: FC2-0005-004, FC2-0006-004, FC2-0005-104, FC2-0006-104

Mobile Collectors:

- » MC3 when used with Mobile Collection Software v3.4 and application software listed above.
 - SCM+ Only: DCU-5300-001 *, DCU-5300-011U *, DCU-5300-101U, DCU-5300-111UDatalogging: DCU-5300-001DL, DCU-5300-001DLU, DCU-5300-011DLU, DCU-5310-001, DCU-5310-011, DCU-5310-011U
- » MCLite when used with application software listed above.
 - SCM+ Only: DCU-5000-001 *, DCU-5000-002 *, DCU-5000-002U *, DCU-5000-102UDatalogging: DCU-5000-002DL, DCU-5310-201

Network Products:

- » ChoiceConnect Network Software v5.0
- » CCU 100: All models support enhanced security when used with Network Software v5.0
- » Repeater 100: All models support enhanced security when used with Network Software v5.0 and the included firmware update

*Firmware must be updated at service center.

Battery Life and Design Life

- » 100G DLS allows for a field-replaceable “A” cell lithium battery
- » All programming modes and security levels support a 20-year battery life (20+ years for remotes) except Hard-to-Read Mobile/Handheld mode, which reduces battery life to 18 years with basic security and 13 years with enhanced security
- » All 100G DLS modules are designed for a 20-year total life

Regulatory & Standards

- » FCC compliance: Part 15.247 and Part 15.249 (programming) certified
- » FCC ID EWQ100GDLAS, Industry Canada 864D-100GDLAS; Measurement Canada (AG-0546)
- » Safety approvals: Intrinsically safe per UL Class I, Division 1, Groups C & D

Operational

- » All 100G DLS ERT modules operate without the need for an FCC or IC license
- » Frequency Range: Frequency-Hopping Spread Spectrum 903 to 926.85 MHz in the ISM band
- » Program frequency: 908 MHz
- » NIM: FM modulation; all other messages are AM modulated
- » Data integrity: Verified in every message

Physical

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

Meter Compatibility

Refer to Gas & Telemetry Module Compatibility List (PUB-0117-002) for detailed information on gas meter compatibility.

Additional Information

- » 100G DLS Datalogging ERT Module Installation Guide: Direct Mount (TDC-0823)
- » 100G DLS Datalogging ERT Module Installation Guide: Remote Mount (TDC-0824 coming soon)
- » Gas & Telemetry Module Ordering Guide (PUB-0117-001)
- » 100 Series Technology Guide (TDC-0825)
- » Field Deployment Manager Endpoint Tools Mobile Application Guide (TDC-0934)
- » Field Deployment Manager Endpoint Tools Configuration Guide (TDC-0935)
- » Field Deployment Manager Endpoint Checklist (TDC-0942)

Physical (width x height x depth)

| | 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 | 612 lbs / 278 kg |
| National | 20 | 21.5" x 13" x 9" | 20.4 lbs / 9.4 kg | 600 | 40" x 48" x 50" H | 612 lbs / 278 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 52.5" H | 480 lbs / 218 kg |
| Sensus/Rockwell | 10 | 18" x 14.5" x 9.5" | 16 lbs / 7.3 kg | 300 | 40" x 48" x 52.5" H | 480 lbs / 218 kg |
| Remotes | 20 | 23" x 15.8" x 6.5" | 22 lbs / 10.1 kg | 500 | 40" x 48" x 37.5" H | 550 lbs / 253 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.



Itron is a global technology company. We build solutions that help utilities measure, manage and analyze energy and water. Our broad product portfolio includes electricity, gas, water and thermal energy measurement and control technology; communications systems; software; and professional services. With thousands of employees supporting nearly 8,000 utilities in more than 100 countries, Itron empowers utilities to responsibly and efficiently manage energy and water resources.

Join us in creating a more resourceful world; start here: www.itron.com

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