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# 100G DLT Datalogging

ERT® Module



The 100G DLT Datalogging ERT® Module, or 100G DLT, is a hybrid 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 DLT combines fourth generation circuit board hardware with the same SCM message used in the 100G DLN. This means that utilities currently reading the SCM message from the 100G DLN can use the 100G DLT without any upgrades needed for programming or meter reading. The circuit board hardware used in the 100G DLT offers improved tilt tamper detection compared to the 100G DLN but does not offer optional enhanced security or extended tamper information available in the 100G DLS.

The 100G DLT 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 DLT surpasses its predecessor, the 100G DLN, by offering improved tilt tamper detection. The 100G DLT 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 DLT easily enables migration from mobile to fixed network reading and supports time-synchronized interval data and Gas Day Take reads.

## FEATURES

- » Utilities currently reading the SCM message from the 100G DLN can use the 100G DLT without any upgrades needed for programming or meter reading
- » 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)
- » 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 DLT 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 DLT 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 DLT 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 DLT. 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 DLT.



**Dresser B3 with Direct mount**



**Dresser LMMA with Remote ERT**

## Electronic Meters and Correctors

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

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

## Functional Specifications



**DATTUS III**



**Mercury Mini-AT**



**Eagle MPplus**



**Dresser IMC**

### » 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 for FN reads

### » Operating temperature: -40°F to +158°F (-40°C to +70°C)

### » Operating humidity:

- 5 to 95% non-condensing relative humidity
- 100G DLT ERT modules can be installed indoors or outdoors above grade

### » Product identification: Numeric and bar-coded ERT module type

## Programming Device (same as 100G DLN)

- » 100G DLT 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 DLT 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

Note: EPL and EPLP are no longer supported

- » 100G DLT ERT modules can be programmed using FC200SR or FC300SR with Field Deployment Manager (FDM) v1.1 or higher. 100G DLT 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

Note: EPL and EPLP are no longer supported

## Programming Options (same as 100G DLN)

- » **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 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. 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 SCM Reads (same as 100G DLN)

- » 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

- » Availability of SCM based ERT ID's are being extended requiring FCS v2.5 with a service pack, FCS v2.6 or higher, or MV-RS v8.4.6 or higher with the following:
  - MC3 (MC3-B or MC3-DL radio) with MC software v3.3 or higher
  - MC Lite (MCL-B radio)
  - FC300SR
  - FC200SR (part number FC2-0005-004 or FC2-0006-004)

## 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 DLT 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)

## Regulatory & Standards

- » FCC compliance: Part 15.247 and Part 15.249 (programming) certified
- » FCC ID EWQ100GDLAS
- » Safety approvals: Intrinsically safe per UL Class I, Division 1, Groups C & D

## Operational

- » All 100G DLT ERT modules operate without the need for an FCC 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 DLT ERT modules have encapsulated electronics for protection against environmental hazards and tampering. All 100G DLT 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 Endpoint Meter Compatibility List (PUB-0117-004) for detailed information on gas meter compatibility.

## Additional Information

- » 100G Datalogging ERT Module Installation Guide: Direct Mount (TDC-0823)
- » 100G Datalogging ERT Module Installation Guide: Remote Mount (TDC-0824)
- » Gas Endpoint Ordering Guide (PUB-0117-003)
- » 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
<b>Residential Direct-Mount</b>						
Elster American	10	20" x 11.75" x 4"	8.5 lbs / 3.9 kg	800	40" x 48" x 48" H	680 lbs / 308 kg
Sensus/Rockwell	10	20" x 11.75" x 4"	6.9 lbs / 3.1 kg	800	40" x 48" x 48" H	552 lbs / 250 kg
Itron/Sprague	10	21" x 12.625" x 4.25"	8.8 lbs / 4.0 kg	600	40" x 48" x 50" H	528 lbs / 240 kg
National	10	21" x 12.625" x 4.25"	9.7 lbs / 4.4 kg	600	40" x 48" x 50" H	582 lbs / 264 kg
Itron/Sprague 175 RM	10	22.625 x 11.25" x 4.75"	9.8 lbs / 4.4 kg	600	40" x 48" x 50" H	588 lbs / 267 kg
<b>Commercial Direct-Mount</b>						
Elster American & Itron	5	20" x 11.75" x 4"	7.6 lbs / 3.4 kg	300	40" x 48" x 52.5" H	456 lbs / 207 kg
Sensus/Rockwell	5	20" x 11.75" x 4"	7.5 lbs / 3.4 kg	300	40" x 48" x 52.5" H	450 lbs / 204 kg
<b>Remotes</b>	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.

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