Smart Meters - “e” Series
Residential Gas Meters with Electronic Index

CO₂ and climate change impacts today’s and future businesses all across the world. Regulatory frameworks, incentives and an ever-growing demand for resources favor investments into energy efficiency solutions.

Advanced Meter Infrastructure
In this context, Advanced Metering Infrastructure provides the foundation enabling a more sensible stewardship with our natural resources and empowers utilities to take advantage of the related opportunities. Instant meter reading through two way communication allows utilities to reduce read to cash time, prevent billing errors, improve customer service and offer completely new value adding services. With a long track record in the provision of highest quality and most accurate measurement systems, Itron is a trusted partner providing a complete system from the meter to the data collection system (Saturne) to the data management system (Itron Enterprise Edition - IEE), thus turning data into knowledge.

Smart Meters “e” Series
The Itron Smart “e” Series meters are the result of combining more than 100 years of diaphragm meter engineering experience with latest high quality electronic and communication technologies.

Comply with Energy Rules & Standards
Supporting the well established European M-Bus standard, the “e” Series is designed to facilitate integration into wired and wireless fixed networks, minimizing installation costs. Infrastructure investments are well safeguarded in the fast moving market environment with M-Bus as communication protocol and MID approval.
A LC display, time stamped indexes and data logging functionality provide an interface to inform customers about their consumption to fulfill all legal requirements.

Revenue Protection
The supported 2-way communication allows more frequent periodic or instant remote meter readings, which ensures together with the optional temperature compensation more accurate billing and shorter cash collection cycles. Alarms that can be read remotely include excess maximum flow rate threshold (programmable) and tampering attempts. Together with the historic data stored, load profiles can be built at data management level (IEE) to control and optimize the gas infrastructure. The optional integrated valve makes new pay-as-you-go contracts possible and further reduce unbilled revenues.

> 2-way wired/wireless M-Bus communication
> Optional internal shut-off valve and temperature correction
> Safe data transmission with AES
> MID approved
Robustness & Safety
Apart from the well proven robust and high quality mechanical design, special focus has been put on an ultra low power electronic design to ensure a long battery lifetime. An interchangeable battery, indication of charge state and a low power warning lamp further improve field support. With a design preventing reversed operation and protection against magnetic tampering and backflow, maximum attention has been paid to provide a safe concept. Further examples to be mentioned are the encrypted data transmission (AES-128), the choice to enable user interaction when opening the integrated valve (option) and implemented leakage detection mechanisms during valve opening process (automatic closure for detected flow rates above 15 l/h).

Multi-energy Solution Portfolio
As part of Itron's multi-energy solution portfolio, the “e” Series is well matched to all necessary components in the value chain, such as the ACE 4000 GPRS electricity meter or the meter data management system Itron Enterprise Edition (IEE). As an end to end solution provider, Itron’s turnkey solutions minimize your investment risks.

Easy Installation
Together with the standard M-Bus discovery process, tools and manuals are provided to support an easy installation. For an even more installation convenience, managed services are available.

Operation
The “e” Series gas meter sends data to an M-Bus master working as a data concentrator such as the Itron ACE 4000 GPRS electricity meter. The concentrator forwards the data to a central software system, where it can be used for billing, energy data management, or other applications.

Itron Enterprise Edition: Meter Data Management
- Robust integration using service-oriented architecture
- Robust validation, estimation and editing
- Broad set of AMI interaction and controls
- Scalability
- Flexible role-based security provisions
- Integrated Microsoft queuing technology

Saturne: PLC/GPRS Fixed Data Collection System
- Multi-energy solution based on electricity MDC system
- Suitable for all kinds of environments
- Highly scalable
RF1 e

As part of the comprehensive end-to-end AMI system, the RF1 e residential gas meter is the latest development in the well-known RF1 diaphragm meter technology.

Versions Available

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>RF1 e SW</td>
<td>RF1 gas meter with electronic index and wired M-Bus (EN13757-2/3 compliant)</td>
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<tr>
<td>RF1 e WL</td>
<td>RF1 gas meter with electronic index and wireless M-Bus (EN13757-4 compliant)</td>
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<tr>
<td>RF1 eV SW</td>
<td>RF1 gas meter with electronic index and wired M-Bus and integrated valve</td>
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<tr>
<td>RF1 eV WL</td>
<td>RF1 gas meter with electronic index and wireless M-Bus and integrated valve</td>
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</tbody>
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Technical Data

- **Meter size**: G4/G6
- **Qmax**: 6 m³/h / 10 m³/h
- **Qmin**: 0.04 m³/h / 0.06 m³/h
- **Cyclic volume**: 2 dm³
- **Max. operating pressure**: 0.9 bar (0.2 bar for version with valve, 0.1 bar for HTL)
- **Operating temperature**: -25°C to +55°C
- **Storage temperature**: -40°C to +70°C (≥ 55°C for up to 4 hours)
- **ATEX approval**: II 2G Ex ib IIB T3
- **Relative humidity**: Maximum 93% non-condensing between -25°C and +55°C
- **Colour**: Light grey RAL 7035
- **Display**: LCD with 9 digits
- **Battery**: Lithium battery with an average lifetime of min. 15 years under reference conditions
- **Accuracy**: Class 1.5
- **Approvals**: MID class B
- **Certificates**: ISO 9001
- **Display**: 9 digits, 4 decimals
- **Serial bus**: M-Bus slave (wired: EN13757-2/3, wireless: EN13757-4)
- **Customer Port**: IR service interface (EN62056-21)
- **Protection Degree**: IP54

Datalogging

- **Yearly log**: 1 record
- **Monthly log**: 12 records
- **Daily log**: 12 records
- **Interval log**: 1200 records
- **Error/alarm/event log**: 30 records
- **Configuration log**: 50 records
- **Status log**: 30 records

Dimensions

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<td>DN</td>
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Related Products

- **Meters**: RF1 (Residential diaphragm meter)
- **ACE 4000 GSM**
- **Itron water meters with Cyble**
- **Systems**: Saturne
- **IEE**

- Well-proven design with 8 million installed worldwide
- High accuracy error curve correction
- Optional temperature conversion
- 2-way wired/wireless M-Bus communication
- Optional internal shut-off valve
- Safe data transmission with AES
- Tamper protection and detection
- MID approved

[Diagram of RF1 e Single Pipe]

[Diagram of RF1 e Dual Pipe]
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 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 and water 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

For more information, contact your local sales representative or agency.

Battery Warning
- Fire, explosion and severe burn hazard
- Do not recharge, short circuit, crush, disassemble, heat above 100°C (212°F), incinerate, or expose contents to water
- Do not solder directly to the cell

Respect the storage recommendations

Ordering Information
- Measuring range (G4, G6)
- Maximum working pressure (0.1-0.3-0.5 bar)
- Meter interaxis and connection type
- Specific marking (serial number, logo, bar code)
- Options (e.g. valve, temperature compensation, wired/wireless communication)