



Water Metering Systems Solutions

Advanced metering information technology,
data collection and project management



"A World Leader In Water Metering Solutions"

www.elsteramcowater.com

www.elster-evolution.com

A world leader in metering solutions

Elster AMCO Water leads the way in advanced metering solutions

Elster AMCO Water is part of Elster Group, the world's largest multi-utility metering company and leading global provider for water, gas and electricity solutions.

Our approach to a total system offering is much more than selling you a water meter and reading system. We offer customized solutions that begin with identifying your needs, analyzing alternatives, and developing revenue-enhancement plans that include complete hardware and software systems, implementation, after-sale performance tracking and maintenance.

Elster AMCO Water's utility partners can tap into our vast network of resources and experience to generate customized solutions consistent with the utility's needs and resources. Our tailored approach, while simplifying the decision-making process, provides the tools and resources that benefit utilities with the development of multiple program alternatives.

Elster AMCO Water partners with leaders in the utility industry to provide state-of-the-art electronic systems, installation company financing, consulting and project management to provide complete system solution.

Elster AMCO Water has won praise for its commitment to project quality and customer satisfaction with our management of Automatic Meter Reading (AMR) replacement/upgrade projects, from Maine to Florida, California to Michigan. Turn to the world's leading metering solutions provider for professional project planning and management from concept to completion, and the highest quality meters and reading systems with expert consultation and installation services.



Water



Electricity



Gas

Flexible system integration

Access a wealth of meter intelligence

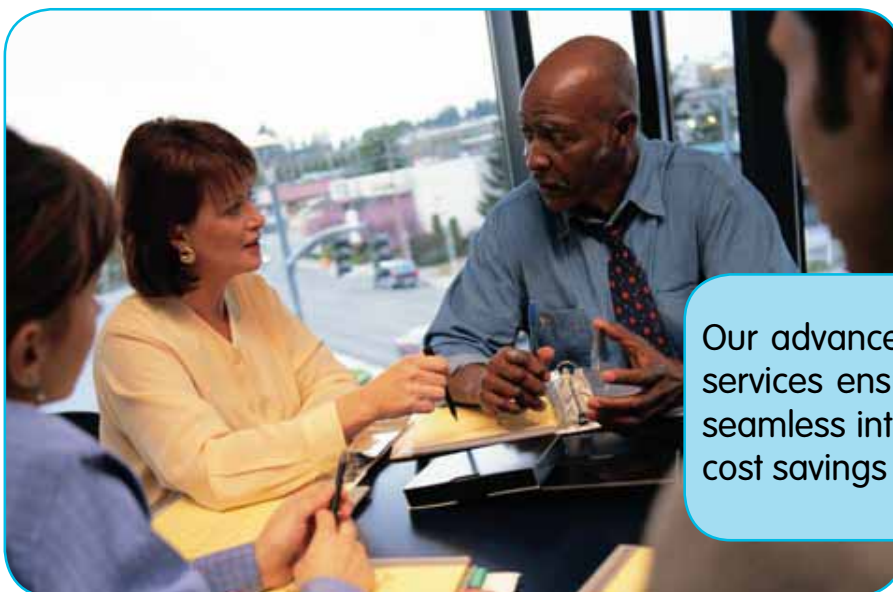
Elster AMCO Water represents a diverse range of Automated Meter Reading technologies. Utilities now have multiple systems to choose from to aid with the management of meter data for improving operational efficiencies and customer service. Elster's offerings include, Evolution™ walk-by/drive-by AMR, Itron Choice Connect™ AMR/AMI, and KP Mega-Net™ high-power AMI, all available from the world leader in water metering. Depending on the utilities' unique requirements, Elster can supply the intelligent communication systems with the capability to acquire meter readings and the medium necessary to receive information about various events from the radio transmitters. For example some advanced intelligent features available include: leak detection, tamper alert, low battery indication and backflow detection, all reported back to the utility. Beyond revenue collection, the wealth of data obtained can empower the utility to monitor usage, advise consumers of leaks to meet conservation initiatives, and identify high risk infrastructure areas to implement repair plans.



Connecting metering technology with data management infrastructures

Once the decision to upgrade your utility's metering or reading system is made, accelerated installation maximizes project cash flow. The faster and more efficiently that inaccurate meters are replaced and cost-saving AMR/AMI technologies installed, the faster utility revenue increases. Elster AMCO Water offers integrated solutions to empower utilities with the capability to capture revenue and efficiency improvements without sacrificing attention to daily operations.

With our experienced project management and trained field installation teams focused on your replacement / upgrade program, installation proceeds quickly and with minimum disruption to your customers. Once you select the AMR/AMI technology that complements our full line of high quality water meters, we drive your meter replacement, register conversion and AMR/AMI technology deployment to your specifications. While your staff continues to support daily utility operations, we can devote our full-time efforts to keeping your project on schedule and on budget - with the entire project supported by the world's leading water utility solutions provider.



Our advanced project management services ensure ease of installation, seamless integration, and increased cost savings for your water business

evolution™ AMR

Select AMR options from Elster AMCO Water

evoWalk™ - evoDrive™

evolution™ AMR

Built on the globally proven Wavenis® radio frequency technology, evolution employs a unique highly functional single endpoint for all installation environments. Evolution AMR utilizes an intelligent communication based system, engineered for competitive performance. Evolution delivers the added advantages of an extended operating life and secure and reliable transmissions using frequency-hopping spread spectrum. Competitively priced for medium and low volume deployments, the evolution system's low infrastructure and administrative costs put the system



Benefits of evolution™ AMR

- 2-Way communication
- Optional remote shut-off valve
- Datalogging
- Improved revenue management
- Reduced operating cost
- Better data management
- Low cost of ownership

evoValve™

Remotely actuated valve

An effective tool for reducing time and labor costs associated with field disconnects and re-connects. Evolution's remote valve actuation feature enables utilities to simply and easily activate or shut-off / decrease water pressure to a particular end-user via a handheld / mobile collector for improved operator safety.



evoValve™ features:

- IP68 rated, fully submersible, fully potted and sealed
- Connects directly to a dedicated RTM, which manages its position
- Automatic self cleaning operation
- Designed for 10 year use with multiple turns per month
- Available with full shut-off or limited flow options

ChoiceConnect™ AMR/AMI

Select AMR/AMI options from Elster AMCO Water

ChoiceConnect™

Selecting the right system provider can be difficult, when making the decision choose the solution that's more than just a read. Elster meter technology and system integration services connected with the ChoiceConnect™ system delivers a time proven, cost effective technology that, will increase your revenue, provide better customer service, and free up much needed resources.

ChoiceConnect is a suite of data collection technologies handheld, mobile, fixed network and enhanced monitoring systems all built on Itron's unlicensed low power 900 MHz ERT® platform for an array of flexible meter reading options. ChoiceConnect can be deployed in the right combination, at the right cost, based upon specific needs with the option to transition to a more advanced collection system when business requirements change, all while retaining the same electric, gas and water endpoints in the field.

Meter Data Management System

Meter Data Management is the primary data repository that integrates MV-RS, FCS and the Network Software data and analytical applications. This integration supports a true end-to-end AMI solution, as well as other business processes, including data collection, data validation and estimation, data management and calculations. Usage and variance reports offer comparative assessments of current and historic consumption to address customer issues. Trending reports spotlight usage patterns to better understand who is using how much and when. Web presentment tools empower customers to understand their water usage and support conservation.

Benefits of ChoiceConnect™

- The capacity to concurrently read electric, gas and water endpoints and enhanced monitoring systems with the same collection system
- A sensible, blended approach to deploy handheld or mobile systems and/or fixed network systems to meet operational needs
- Collection of data logging information with mobile or fixed network systems and the operational advantages gained with daily or hourly meter data
- Migration to more advanced data collection systems, such as handheld to fixed network, whenever and wherever business objectives demand, without stranding field assets
- Lower operations and maintenance costs due to deployment flexibility, low cost per point, reduced field service visits and tamper analytics
- Mitigation of future risks with a proven technology platform that can easily extend data collection capabilities for increased operational efficiencies as business cases evolve
- Extending the data collection capabilities beyond the meter with enhanced monitoring technologies
- Transmission of meter data to in-home- displays, empowering consumers to make informed decision about energy and water usage
- Acoustic leak detection is available with ChoiceConnect™ fixed network 100



**100W Endpoint
on C700 Polymer
Case**



**MC3
Mobile
Collector**

Mega-Net AMI

Select AMI options from Elster AMCO Water

High Power AMI

Mega-Net is a high powered system designed to transmit data at a rate that allows for fewer collectors in most geographical locations. The limited numbers of collectors reduces the overall cost of a typical installation. The licensed full radio transmission eliminates the need for 3rd party communications contracts and direct receipt of the data from MTU to head-end. The system design and functionality makes it easy for small to medium sized utilities to manage the network without the need for vendor managed services. Larger facilities also benefit from the robust and cost effective system, with or without the need for off-site data management.

The user friendly simplicity of the system utilizes a powerful and cost effective feature rich data management package. Data is collected and transmitted via the Meter Transmission Unit (MTU) with a typical range of up to 5 miles. The Collector Unit is positioned within range and stores - and - forwards the data readings from the MTUs. Installation is as easy as plugging a handheld into the MTU to activate the transmission, initializing the location and validating the transmission immediately on-site with feedback from the collector verifying signal strength at the handheld.

The base station receiver at the head-end can receive transmissions directly from MTUs and/or collectors recording data readings and displays data on the management software.



Benefits of Mega-Net™

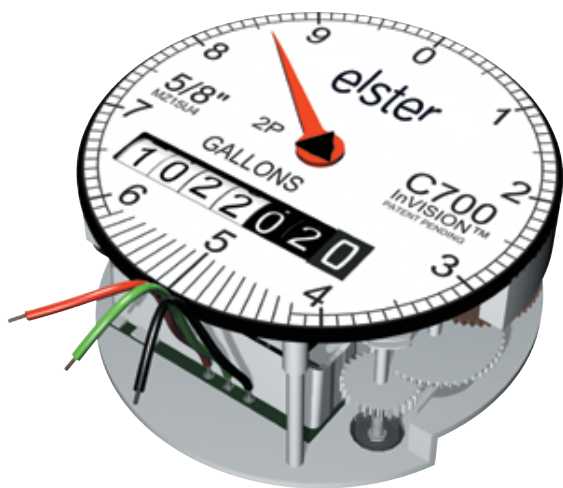
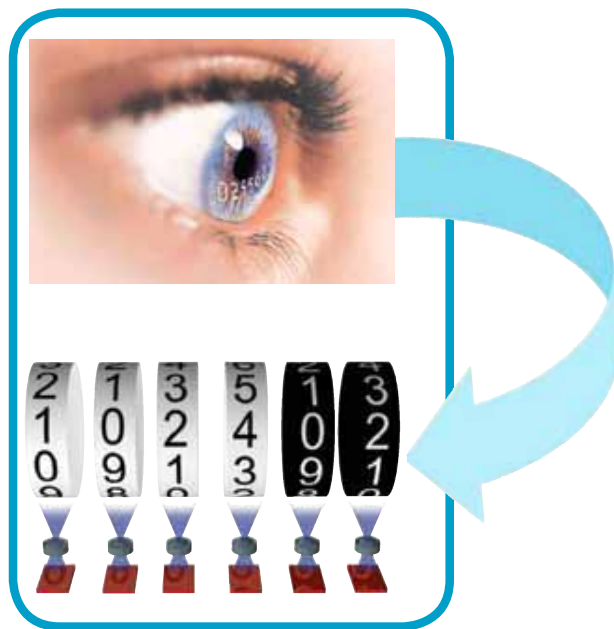
- Licensed frequency with full 2 Watt radio transmitter
- Replaceable battery pack
- Instant installation verification
- Network time synchronization
- Smart store and forward collector
- Multiple backhaul options available
- Extended network coverage
- Full network management
- Status change alerts
- Generates current and historical reports of consumption
- Reads are transmitted and collected in real-time
- Simple operation and powerful tools for the utility

Reading technology for today

For reduced reading cost and improved accuracy, efficiency and safety

Utilities can select the most appropriate level of reading automation from the broad range of AMR/AMI systems available from Elster AMCO Water. Our approach allows utilities to implement versatile, cost-efficient reading systems that can be integrated into today's operations, with flexibility that empowers the utility to evolve and grow as technology advances.

Elster AMCO Water's InVISION™ Absolute Encoder highlights our commitment to product improvement and customer satisfaction. Our scientists and engineers have employed innovative technology, field proven for its reliability, to improve meter reading accuracy and extend product life.



The InVISION Absolute Encoder is a non-contact encoder that uses optical character recognition (OCR) to eliminate wear on contact pads associated with traditional encoders, resulting in extended register life. While absolute encoders have revolutionized meter reading, lower power requirements and increased reliability are essential to successful implementation of advanced reading technologies.

InVISION technology mimics human vision and vision processing with optimum lighting, resulting in better than 20:20 vision, allowing correct interpretation and data entry. Elster AMCO Water provides utilities with the first true absolute encoder through the use of InVISION technology.

Elster AMCO Water provides multiple meter register/output configurations to fit the varying needs of the utility industry today.

The future of measurement today

Today's water meters need to be more reliable, accurate and durable, with advanced flow technology capable of capturing revenue while reducing overall operating costs

Make every drop count

evoQ₄ and SM700 SmartMeter™

Elster's suite of solid state metering products deliver high levels of accuracy over a variety of installation conditions and applications. The meters are well suited for either predominantly high or low flows within their size classes. Residential and Commercial customer service revenue metering, network management and leak detection capabilities improve through the use of these innovative, yet proven metering solutions.

Accurate measurement

The evoQ₄ magmeter utilizes a continuous 0.5 second sampling rate to deliver excellent accuracy performance. The SM700's fluidic oscillator design provides electronic flow sensing that delivers outstanding performance, exceeding AWWA C713 requirements and comparable traditional mechanical meters. Most importantly these meters' performance curves do not change over their lifetimes. The accuracy you buy today is the accuracy you will continue to see years from now.

Durability

Both the evoQ₄ and SM700 meters are constructed from materials chosen to resist corrosion without concerns for lead contamination of water supplies. These measurement technologies are unaffected by the particulates that inevitably wear traditional mechanical meters. The IP68 rated construction protects both



SM700 SmartMeter Specifications

Flow	Units	5/8" x 1/2" 5/8" x 3/4"	3/4" x 3/4" S *3/4" x 3/4" *3/4" x 1"	*1"
Low	gpm	0.125	0.25	0.375
High	gpm	20	30	50

* Expected release late 2011

Water conservation meets technology

Look to the evoQ₄ and SM700 SmartMeter to fill your advanced meter technology needs

Maximize Performance

Maintenance Free

Both evoQ₄ and SM700 meters operate with no moving part technologies. Regular maintenance, testing and periodic calibration are not necessary.

Simple Installation

Advanced technology in the operating principles and design of evoQ₄ and SmartMeters make them even easier to install. There is no need for external grounding rings, complex initialization programs, or difficult bolting techniques. evoQ₄ meters fit into typical turbine laylengths with options for spool pieces to replace compounds and fire service assemblies. SM700 meters fit into existing meter sets with standard thread connection.

Easy Information Access

Both evoQ₄ and SM700 meters with easily fitted output devices are compatible with AMR/AMI solutions, no register changes are ever required. evoQ₄ meters offer additional output choices to integrate the meters to both AMR and network management systems.

Multi-function Display

Easy to read LCD displays provide totaled volume for both meter types. Embedded intelligence in the evoQ₄ and SM700 meters provide value added status functionality including rate of flow indication for evoQ₄ meters.



evoQ₄ Specifications

Flow	Units	1-1/2"	2"	3"	4"	6"	8"	10"	12"
Starting	gpm	0.5	.25	0.6	1.7	4	8	16	32
Continuous	gpm	176	176	440	700	1,100	2,774	3,800	3,800
High	gpm	220	220	550	880	1,400	3,500	5,500	5,500

Highest accuracy measurement

Maximize revenue for residential and light commercial applications

C700 oscillating piston-type water meters are the most advanced design positive displacement meters available. Delivering dependability and engineering excellence, the C700 line carries the industry's most comprehensive product warranty, assuring your utility unparalleled performance and increased revenue.

The C700's unique chamber design, with dual-stage, grooved pistons, is engineered for exceeding AWWA performance standards. The meter's sensitivity provides out-standing low-flow performance. Custom engineered materials are employed in critical wear areas or long life and quiet operation.

The complete family of top-performing C700 meters, sizes 5/8" to 2", is offered with a variety of registers and material configurations; including, a choice of water works or NSF 61 certified bronze main cases.

Unsurpassed versatility

All direct read meters are easily converted with absolute encoder or digital registers for remote, electronic or AMR/AMI compatibility.

A leader in the development and delivery of high quality, highly accurate, advanced metering systems and meter reading solutions



C700 Positive Displacement Meters

Flow	Units	5/8" x 1/2" 5/8" x 3/4"	3/4" x 3/4" S 3/4" x 3/4"	1"	1-1/2"	2"
Low	gpm	0.125	0.25	0.75	1.5	2
Continuous	gpm	15	15	25	50	80
Maximum	gpm	20	30	50	100	160

V100 world's best selling meter



V100 piston-type meter is the best conservation meter, it begins flow registration at 1/50 of a gallon. The most cost effective, accurate, and versatile piston meter on the market today.

V100

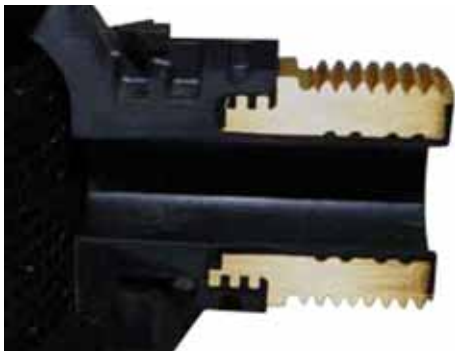
Flow	Units	5/8" x 1/2" 5/8" x 3/4"
Starting	gpm	0.02
Low	gpm	0.125
Continuous	gpm	15
Maximum	gpm	20

Molding the Future

Shaped by the past...

Elster is a world-leader in metering technology, with a global reputation for innovation and quality. Building on the success of the C700, the polymer meter incorporates the unsurpassed metering performance in a design to comply with future water quality and environmental requirements.

Developing on the unparalleled expertise of the C700, polymer meters are able to offer real benefits during installation and operation. The C700 polymer meters combine the benefits of advanced engineering polymer materials and molding technologies, with the proven measurement technology of the bronze C700 family of water meters. With many innovative design features; including, insert molded metal thread connections, they offer extreme metering accuracy over an extended flow range. The C700 polymer is available as $5/8$ " and $3/4$ " sizes in $7\ 1/2$ " and 9 " length versions with direct read, digital pulse output and InVISION™ absolute encoded registers options.



Features

- Insert molded metal threads integral to the body
- Ultra lightweight construction, half the weight of a bronze product/meter
- No leaded material in contact with water and certified to NSF-61
- Corrosion resistant
- Proven measurement technology

Combining unparalleled expertise in polymer meter design with proven measurement technology



C700 Positive Displacement Meters

Flow	Units	$5/8$ " x $1/2$ "	$3/4$ " x $3/4$ "S
		$5/8$ " x $3/4$ "	$3/4$ " x $3/4$ "
Low	gpm	0.125	0.25
Continuous	gpm	15	15
Maximum	gpm	20	30

* Expected release mid-late 2011

Benefits

- Metal thread inserts provide simple and reliable connections by reducing the risk of stripped or crossed threads
- Strategic material selection made to provide compliance to NSF-61 and any future changes to water quality regulations
- Upgradeable to Digital pulse output or InVISION absolute encoder for AMR/AMI implementation
- Polymer body material deters theft of valuable bronze alloy

Proven reliable high volume utility measurement

Revenue-enhancing turbine and compound meters

Elster AMCO Water Turbine and Compound Meters have been proven to provide long-life and superior accuracy measurement for high volume utility services. Engineered for performance: the Turbine's throated inlet increases low flow sensitivity, assuring maximum revenue with low pressure loss. The debris damage typical of high volume installations is minimized by a design that incorporates space to allow passage of many suspended solids. Selection of high quality materials extends service life.

The family of top-performing AWWA Class II Turbine Meters is offered with a variety of registers including AMR/AMI configurations, and a choice of water works or NSF 61 certified bronze main cases, or an epoxy coated ductile iron main case. The T4000i ductile iron meter carries the same NSF 61 listing as the lowlead bronze version.



T4000/T4000i/TS4000 Turbine Meters (TS4000 1-1/2" - 6" only)*

Flow	Units	1-1/2"	2"	3"	4"	6"	8"	10"	12"
Low	gpm	1.5	1.5	2.2	2.6	8	16	20	40
Continuous	gpm	220	220	600	900	2,000	3,000	5,500	6,500
Maximum	gpm	400	400	900	1,250	2,600	4,500	7,000	9,000

HT4000

Never estimate hydrant usage or flushing again. The HT4000 hydrant meter leads the way in weight, size performance, and cost. Based on the highly acclaimed 4000 series turbine, the HT4000 is sure to outperform your expectations.



HT4000 specifications

Flow	Units	3"
Low	gpm	2.5
Continuous	gpm	300
Maximum	gpm	450/750

* Complete specifications are available from your authorized Elster representative or go to www.elsteramcowater.com

High performance excellent low-flow accuracy

The Industry Choice

From the single body C4000 to the fire service leader F4000, Elster AMCO Water has the compound meter that meets your needs. Adapting to the changing needs of the industry, the C4000 combines the high performance of the 4000 series turbine measuring element with the accuracy of a positive displacement bypass, all in one case. Designed with easy access to service the bypass or turbine element.

A proven performer within the utility industry, the C3000 dual body compound has stood the test of time. Its modular design has made it popular with many utilities.

C4000 and C3000 series meters are available in water works bronze or NSF 61 bronze configurations. Also, multiple register styles are available for AMR/AMI or electronic reading.

The F4000 FM approved fire service meter's robust design and low flow accuracy provide the high flow necessary for fire protection, while accounting for everyday usage.



C4000

C4000 Specifications

Flow	Units	2"	3"	4"
Low	gpm	0.125	0.125	0.125
Normal Range	gpm	1-160	1-325	1-575
Maximum	gpm	220	900	1,100

C3000 Specifications

Flow	Units	6"	8"
Low	gpm	0.75	1.5
Normal Range	gpm	1.5-1,560	5-1,875
Maximum	gpm	2,500	3,000



C3000



F4000

F4000 Specifications

Flow	Units	4"	6"	8"	10"	12"
Low	gpm	0.5	1.5	2.2	2.6	8
Continuous	gpm	900	2,000	3,000	5,500	6,500
Maximum	gpm	1,250	2,600	4,500	7,000	8,000

High-performance multi-jet/single-jet meters

Long term accuracy measurement

M700 rotor type water meters are the most advanced concept in multijet meters. Offering high performance and quality accuracy, the M700 line provides greater anti-tampering performance with its magnetic shielding feature.

The M700's hydraulic design, with highly sophisticated damping features, is engineered for long term measuring stability in all water types. The combination of the measuring chamber and strainer design insures long term hydraulic accuracy. The meter incorporates high quality materials that allow for low wear and long term, low flow measuring stability.

The complete family of top-performing M700 meters, sizes 5/8" to 2", is offered with a variety of registers and material configurations, including a choice of waterworks or low lead bronze main cases.

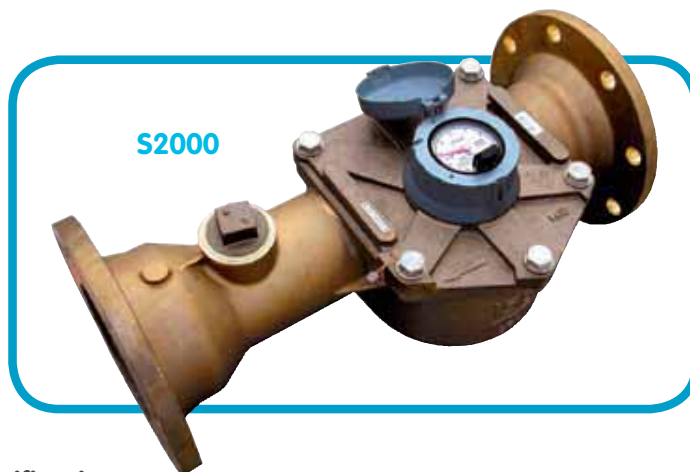


M700

Flow	Units	5/8" x 1/2" 5/8" x 3/4"	3/4" x 3/4" S 3/4" x 3/4"	1"	1-1/2"	2"
Low	gpm	0.25	0.5	.75	1.5	2
Continuous	gpm	10	15	25	50	80
High	gpm	20	30	50	100	160

S2000 Commercial Single-jet Meters

S2000 Commercial Single-jet Meters fill the gap of traditional utility products for broad flow range (500:1) and higher-pressure applications. Adding to its growing acceptance in utility applications are the meter's compact design and ease of installation. S2000 series meters are available in multiple body and register configurations



S2000 Specifications

Flow	Units	1-1/2"	2"	3"	4"	6"
Low	gpm	0.3	0.3	0.5	1.0	1.0
Normal Range	gpm	1-45	1-90	2-200	3-265	3-265
High	gpm	90	180	400	530	530

* Complete specifications available from your authorized Elster representative or go to www.elsteramcowater.com

One size doesn't fit all

World class products, data management and integration services

Elster AMCO Water understands the diversity of the North American water distribution market, with over 50,000 utilities, the needs of water purveyor's are not all the same. Elster has products and system solutions to meet the needs of utilities of all sizes from the smallest sub-metering application to the largest AMR/AMI implementation.

Elster has a passion for innovative metering technology. They are the first to offer a full range of battery powered electronic, no-moving parts utility water meters and continue to work with customers to develop metering solutions to solve diverse application requirements.

It is Elster's goal to lead the way with next generation measuring technologies, alternative materials for performance and compliance to environmental legislation, and choosing the best partners the industry has to offer in data collection and management services. It is no wonder more utilities look to Elster to understand their needs and develop solutions to meet their specific requirements.



Commercial



Residential



Data Acquisition and Management



About Elster AMCO Water, LLC

Located in Ocala, Florida, Elster AMCO Water is part of Elster, the world's largest metering and smart metering system solution company. Elster AMCO Water is an industry leader in the development and implementation of innovative metering and system solutions and is committed to delivering superior customer service, quality products, solutions and services to the water utility industry.

About Elster Group

Elster has delivered over 1.5 million smart metering devices worldwide with systems located in North America, Central America, Europe, Australia, New Zealand and the Caribbean. Elster smart metering systems allow utilities to implement energy conservation measures, demand response programs, smart grid initiatives, and smart home solutions as well as achieve operational efficiencies resulting in significant value creation across the utility enterprise. Elster has over 7,500 staff and operations in 38 countries, focused in North and South America, Europe, and Asia.

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