



NATIONAL

METER & AUTOMATION

WEBB COUNTY

Automated Meter Analytics Software

RFP 2018-005

September 17, 2018 at 3:00 PM CST



CONFIDENTIALITY STATEMENT

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7220 S. Fraser Street | Centennial, CO 80112
877.212.8340 | Fax: 303.649.1017

September 17, 2018

Webb County
Attention: Purchasing Department
1110 Washington St., Ste. 101
Laredo, Texas 78040

RE: Sealed Bid Request for Proposals – RFP # 2018-008
Submittal deadline: September 17, 2018 – 3:00 PM CST

Dear Webb County:

This letter is attached to and becomes a part of our bid to furnish water meters to the Webb County.

Payment terms are net 30 days.

Prices quoted in this bid, if awarded to Badger Meter, Inc. DBA National Meter & Automation ("National Meter") will remain firm for twelve (12) months if acceptance is made within ninety (90) days.

Prices for the annual renewals may be increased in proportion to the increase in the Producer Price Index for Totalizing Fluid Meters and Counting Devices as reported by the U.S. Department of Labor. Changes in prices will be no more frequent than every twelve (12) months if necessary.

We provide certification files to help manage meter and endpoint inventory and to maintain meter accuracy data. The standard method of delivery for this format is via electronic mail. Any deviations from our standard format, or any custom file formats, will be considered on a time and material basis. Please contact our Technical Support Group (1-800-456-5023) if you require more information.

Due to continuous improvements and redesign of our products and technology solutions, we reserve the right to provide our newest product solutions as an alternate to the proposed products provided they are in conformance with the requirements of the specifications and do not exceed the prices quoted.

Webb County
Automated Meter Analytics Software

In the event that you have any questions concerning our response, your account manager, Chip Woods, can be reached by telephone at (210) 305-0221, or via email at: rwoods@nationalmeter.com. A copy of the bid tabulation, for our records, is appreciated. Electronic results can be emailed to bids@nationalmeter.com.

National Meter appreciates this opportunity to support the metering and meter reading technology needs of Webb County.

Sincerely,
Badger Meter, Inc. DBA National Meter & Automation

A handwritten signature in blue ink, appearing to read "Korrine L. Fleming". The signature is fluid and cursive, with a long, sweeping tail that loops back under the name.

Korrine L. Fleming
Assistant Secretary

CC: Chip Woods, Account Manager
Mark Leveille, Regional Sales Manager



4545 W Brown Deer Road
 PO Box 245036
 Milwaukee, Wisconsin 53224-9536
 414-355-0400 | 800-876-3837
 www.badgermeter.com

CERTIFICATION
 OF SIGNATURE AUTHORITY

I certify as follows:

By Board Resolution adopted by the Board of Directors of Badger Meter, Inc. and in full force and effect as of this date:

The following *elected company officers* are, among other things, hereby authorized to execute, amend, and cancel bids and contracts for the sale of products, distributor and representative agreements, bid bonds, surety bonds, contracts, leases and certain other legally binding documents in the ordinary course of business, in the name of Badger Meter, Inc. (or Badger Meter, Inc. dba National Meter & Automation):

Richard A. Meeusen	Chairman and Chief Executive Officer
Kenneth C. Bockhorst	President
Richard E. Johnson	Senior Vice President – Finance, CFO and Treasurer
William R.A. Bergum	Vice President – General Counsel and Secretary
Kimberly K. Stoll	Vice President – Sales and Marketing
Robert A. Wrocklage	Vice President - Finance

The following *appointed company officers* are hereby authorized to execute, amend, and cancel bids, bid-related contracts and documents, requests for proposals and quotes, and all other bid-related documentation in the name of Badger Meter, Inc. (or Badger Meter, Inc. dba National Meter & Automation):

Christie L. Collins	Assistant Secretary	Sr. Project Manager – Bid & Contract Administration
Charla D. Dury	Assistant Secretary	Project Manager – Bid & Contract Administration
Frank J. Fenton	Assistant Secretary	Director – Utility Sales
Korrine L. Fleming	Assistant Secretary	Supervisor – Bid and Contract Administration
Nathaniel R. Hawley	Assistant Secretary	Director. – Distribution Operations
Rebecca L. Loomans	Assistant Secretary	Sr. Project Manager – Bid & Contract Administration
Christopher D. Washington	Assistant Secretary	Sr. Proposal Lead - Bid & Contract Administration

September 14, 2018

 Date

BY:

William R. A. Bergum
 William R. A. Bergum,
 Vice President - General Counsel & Secretary
 Badger Meter, Inc.





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
01/08/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Hays Companies of Wisconsin, Inc. 1200 North Mayfair Road, Suite 100 Milwaukee, WI 53226	1-414-443-0000 CONTACT NAME: PHONE (A/C, No. Ext): E-MAIL ADDRESS: FAX (A/C, No):																					
INSURED Badger Meter, Inc. dba National Meter & Automation P.O. Box 5429 Greenwood Village, CO 80155-5429	<table border="1"> <tr> <th colspan="2">INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A:</td> <td>PHOENIX INS CO</td> <td>25623</td> </tr> <tr> <td>INSURER B:</td> <td>TRAVELERS PROP CAS CO OF AMER</td> <td>25674</td> </tr> <tr> <td>INSURER C:</td> <td>TRAVELERS CAS INS CO OF AMER</td> <td>19046</td> </tr> <tr> <td>INSURER D:</td> <td></td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A:	PHOENIX INS CO	25623	INSURER B:	TRAVELERS PROP CAS CO OF AMER	25674	INSURER C:	TRAVELERS CAS INS CO OF AMER	19046	INSURER D:			INSURER E:			INSURER F:		
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INSURER D:																						
INSURER E:																						
INSURER F:																						

COVERAGES

CERTIFICATE NUMBER: 51855545

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		Y660 268J2023 PHX 18	01/01/18	01/01/19	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY <input type="checkbox"/> OTHER:		Y810268J2035 TIL 18	01/01/18	01/01/19	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 0		CUP0K08406A 15 14	01/01/18	01/01/19	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
C	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y/N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	UB 9J217994 18 14 (AOS)	01/01/18	01/01/19	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**

For Sample Use Only
For Supply Only Contracts

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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THIS FORM MUST BE INCLUDED WITH RFP PACKAGE; PLEASE CHECK OFF EACH ITEM INCLUDED WITH RFP PACKAGE AND SIGN BELOW TO COMFIRM SUBMITTAL OF EACH REQUIRED ITEM.

RFP 2018-008
***“Advanced Metering Analytics Software
for Water Utilities”***

- Proposer Information

- A minimum of five (5) references

- Proposed pricing sheet (Form “A”)

- Conflict of Interest form (Form CIQ)

- Certification regarding Debarment (Form H2048)

- Certification regarding Federal lobbying (Form 2049)

- Code of Ethics Affidavit

- Proof of No Delinquent Tax Owed to Webb County



Korinne L. Fleming - Assistant Secretary

A. RELEVANT EXPERIENCE AND REFERENCES



Every drop counts.

A. RELEVANT EXPERIENCE AND REFERENCES

To streamline corporate structure, Badger Meter, Inc., a provider of flow measurement and control solutions since 1905, based in Milwaukee, Wisconsin (www.badgermeter.com), will be the contracting legal entity. It will be “doing business as (DBA) National Meter and Automation” to acknowledge the operational strength that National Meter and Automation’s teams, locations, service and brand will bring to water utility contracts. In October 2014, Badger Meter purchased National Meter and Automation, Inc., a major distributor of Badger Meter products since 2004, based in Centennial, Colorado. This acquisition was the first step in Badger Meter’s plan to provide increased sales support, services and supply to our customers.

Helping protect the world’s most precious resources, Badger Meter is a market leader in flow measurement technology with more than a century of innovation and strong, stable growth. Badger Meter serves water utilities, municipalities, and commercial and industrial customers worldwide. Measuring water, oil, chemicals and other fluids, Badger Meter products are known for accuracy, long-lasting durability, and for providing valuable and timely measurement data. We offer solutions for a wide range of customer applications and with our global network of manufacturing facilities, innovation centers, sales offices, and warehouses, Also, we help customers manage their operations, add to revenue and minimize waste. Badger Meter is a publicly held company and its common stock trades on the New York Stock Exchange under the symbol “BMI.” Badger Meter is also a founding member and ongoing participant in the American Water Works Association (AWWA), the trade group that sets the industry standards for water measurement in the United States.

We are a leader in the AMI, AMR and AMA (Advanced Metering Analytics) industry with thousands of satisfied utilities who are benefitting from our technology products every day. Badger Meter introduced its first AMR system in June of 1986 and has since successfully deployed over 13 million AMI/AMR endpoints in the field. Our years of experience in metering and AMI/AMR allow our customers to rest assured that they have a relationship with a company that is dedicated to providing high quality meters and best-in-class AMI/AMR software and hardware.

As utilities strive to find solutions for their everyday problems, we offer a technology solution to improve utilities’ operational efficiency and resource management while enhancing their customer service and conservation efforts. Since 2002, we have offered utilities a cutting edge AMI/AMR solution through our ORION® product family. With over seven million ORION endpoints successfully deployed at utilities in North America, you can be confident of our track record of reliability is backed by years of experience in the water and gas utility industries. In 2011, we expanded this successful product family to give utilities even more flexibility by also offering a fixed network and a migrate-able solution.

BEACON AMA software suite is designed specifically for the unique needs of water utilities. This software suite takes the two-way hardware of a traditional AMI network and brings utility efficiency to a new level, through its powerful analytics.

A. RELEVANT EXPERIENCE AND REFERENCES

Reference Project # 1 Name: City of Southlake, TX

Owner: City of Southlake

Owner's Representative: Kyle Flanagan

Owner's Representative Telephone No.: (817) 748-8081

General Contractor: Not applicable

General Contractor's Telephone No.: Not applicable

Date of Project Completion: October 2016

Number of Water Meters Provided for Project: 15,500

Reference Project # 2 Name: Highland Village Utility, TX

Owner: Highland Village Utility

Owner's Representative: Scott Kriston

Owner's Representative Telephone No.: 972-899-5091

A. RELEVANT EXPERIENCE AND REFERENCES

General Contractor: Not applicable

General Contractor's Telephone No.: Not applicable

Date of Project Completion: November 2014

Number of Water Meters Provided for Project: 5,500

Reference Project # 3 Name: City of Santa Fe, NM

Owner: City of Santa Fe

Owner's Representative: Nick Schiavo

Owner's Representative Telephone No.: (505) 955-4267

General Contractor: Not applicable

General Contractor's Telephone No.: Not applicable

Date of Project Completion: May 2017

Number of Water Meters Provided for Project: 34,888

A. RELEVANT EXPERIENCE AND REFERENCES

Reference Project # 4 Name: City of Odessa, TX

Owner: City of Odessa

Owner's Representative: Agapito Bernal

Owner's Representative Telephone No.: 432-335-3210

General Contractor: Not applicable

General Contractor's Telephone No.: Not applicable

Date of Project Completion: On going

Number of Water Meters Provided for Project: 36,000

A. RELEVANT EXPERIENCE AND REFERENCES

Reference Project # 5 Name: City of Kingsville, TX

Owner: City of Kingsville

Owner's Representative: City of Kingsville

Owner's Representative Telephone No.: Diana Medina

General Contractor: Not applicable

General Contractor's Telephone No.: 361-595-8030

Date of Project Completion: On going

Number of Water Meters Provided for Project: 8,968

B. PROPOSED STAFF



Every drop counts.

B. PROPOSED STAFF

Chip Woods Account Manager

Office: 414-371-7204

Cell: 210-305-0221

rwoods@badgermeter.com



Summary of Qualifications

Chip Woods is an Account Manager for Badger Meter and is a strong sales leader with a history of outstanding performance in competitive technological environments. He is a top producer with expertise in business development and analysis, sales, account management, and customer retention. Adaptable in challenging situations with the ability to respond decisively and quickly, Chip is driven with a commitment to excellence to make a global contribution to the entire organization. Chip was recruited by Badger Meter in 2011 to help launch the new line of ORION AMR/AMI/AMA (Advanced Metering Analytics) portfolios.

Education & Associations

University of Texas at San Antonio, Bachelors of Arts, 1996

University of the Incarnate Word-San Antonio, Texas, Masters in Business Administration (expected completion 2018)

Memberships in the American Water Works Association (AWWA), Texas Water Utility Association, and Texas Rural Water Association

Professional Experience

Badger Meter, Account Manager, 2011-present

- Promotes, educates, and sells Badger Meter's suite of water flow measurement and data management products to utilities in the south, including west Texas and New Mexico
- Responsibilities include regular, planned visits to established and new potential accounts for the purpose of securing sales and growing Badger Meter's market share
- Works directly with the Regional Sales Manager and the Solution Architects in the western and central regions to achieve stated goals and objectives within Badger Meter guidelines

B. PROPOSED STAFF

AT&T, National Sales Executive and National Sales Manager, 2000-2011

- Concentrated focus on the nation's top residential builders, developers, and management companies to promote, educate, and sell AT&T's suite of IP-based home entertainment services to include video, high-speed Internet, and voice
- Responsible for leading sales activities for an AT&T Connected Communities (ACC) sales team focused on national multi- and single-family builders and developers across the 22-state footprint; responsibilities included the development of sales and customer operational parameters, business plans and targets, channel supporting system requirements, and post-sale metrics and reporting
- Assisted in the development of business unit targets, pricing assumptions, commission structures, and compensation plans which enabled successful revenue and sales attainments
- Required to analyze, track and execute on the terms of the agreements and their related AT&T products and services

Accomplishments

Chip has assisted in the following key projects for Badger Meter customers.

- Santa Fe, New Mexico: BEACON AMA and ORION Cellular (~35,000 services, turnkey project)
- Odessa, Texas: Galaxy AMI system (about 37,000 services, turnkey project)
- Grey Forest, Texas: ORION AMR system (~16,000 services); customer install gas and water endpoint project
- Claremore, Oklahoma: ORION Fixed Network (SE) AMI system (~8,000 services)
- Skiatook, Oklahoma: ORION Fixed Network (SE) AMI system (~5,000 services)

B. PROPOSED STAFF

Alan Breese Solution Architect

Office: 414-371-7227

Cell: 414-793-6601

abreese@badgermeter.com



Summary of Qualifications

Alan Breese is a Solution Architect for Badger Meter and assists utility customers in the states of Texas, Oklahoma, New Mexico, and Arizona. As a Solution Architect, Alan is key to the development and implementation of metering solutions for utilities and municipalities throughout his region. Prior to joining Badger Meter in 2008, Alan worked in the IT industry for NEC Corporation, where he gained extensive experience in the application of hardware and software systems. Alan obtained a bachelor's degree in Mathematics from the University of Texas and maintains memberships in the American Water Works Association and the Texas Association of Water Board Directors.

Education & Associations

University of Texas, Bachelor of Science in Mathematics, 1983

Membership in Texas Section of American Water Works Association (AWWA)

Membership in the Association of Water Board Directors – Texas

Professional Experience

Badger Meter, Solution Architect, 2008-present

- Provides assistance to utility customers regarding AMR and AMI solutions and technology
- Supports field sales and distribution efforts in expanding the product and service offering of Badger Meter

B. PROPOSED STAFF

NEC Corporation, 1986-2008

- Solution Sales Engineer (2003-2008): Assisted in sale of high-end software and hardware systems; served as project manager and technical liaison for large-scale customer deployments
- Senior Systems Sales Engineer (1992-2003): Responsible for technical sales support for computer hardware platforms
- Service Account Manager (1986-1992): Implemented national service program resulting in over \$1 million in sales and service revenues

Accomplishments

During Alan's tenure at NEC Corporation, he successfully managed full-scale deployments of identity and security management solutions to more than 20 individual healthcare facilities and 35,000 users, which increased productivity for physician and healthcare employees while ensuring patient privacy.

Since joining the sales team of Badger Meter in 2008, Alan has been integral to the expansion of the Badger Meter product line, including the GALAXY, ORION, and BEACON metering solutions and technologies. Below is a list of Alan's successful projects.

- Santa Fe, New Mexico: 34,000 services (BEACON with ORION Cellular); completed early 2016
- Southlake, Texas: 11,500 services (BEACON with ORION Cellular); completed late 2016
- Highland Village, Texas: 5,500 services (BEACON with ORION Cellular); completed late 2015
- Rockett Special Utility District, Red Oak, Texas: 13,500 services (BEACON with ORION Cellular); completed early 2016
- Azle, Texas: 5,500 services (BEACON with ORION Cellular); completed mid-2017
- Bedford, Texas: 14,000 services (BEACON ORION Cellular); project ongoing, currently about 40% complete

B. PROPOSED STAFF

Dennis McConville Solution Architect

Office: 512-781-7302

Cell: 916-436-6670

dmconville@nationalmeter.com



Summary of Qualifications

Dennis McConville is a Solution Architect for Badger Meter. With 20 years of experience in the water metering industry, Dennis has a breadth of knowledge in delivering customized metering solutions to utilities across the United States. Specifically, Dennis has provided instrumental technical support and training to his utility customers regarding water meters and reading technology. Besides working for Badger Meter, Dennis has worked for other companies in the water industry, such as Mountain States Pipe & Supply in Colorado Springs, Colorado. Dennis also worked at National Meter & Automation from its inception through its acquisition by Badger Meter. Prior to entering the water metering industry, Dennis spent over 20 years in the United States Navy as a Machinist Mate Chief Petty Officer.

Education & Associations

Southern Illinois University, *Bachelor Degree in Education*, 1996

Professional Experience

Badger Meter, Inc. DBA National Meter & Automation, *Solution Architect*, January 2015-present

- Provides pre and post-sales support to utility customers, including during product implementation and deployment
- Assists direct and distribution sales force in expanding the Badger Meter product line

National Meter & Automation, *California Tech Support Manager and Implementation Specialist*, December 2004-December 2014

- Setup and trained customers regarding Itron and Badger Meter reading solutions and products

B. PROPOSED STAFF

- Certified as a Badger Meter Training and Technical Support Specialist, as well as a Certified Itron Fixed Network Installer and Project Manager

Mountain States Pipe & Supply, California Technical Support Manager and Implementation Specialist, May 2003-December 2004

- Provided technical support regarding metering products and technology
- Assisted customers in leveraging meter reading technology system
- Developed presentations for California Water Association seminars

Badger Meter, Lead Technology Trainer, October 1998-May 2003

- Responsible for management of Technical Training team
- Created training manuals and presentations for new and existing products

United States Navy, Machinist Mate Chief Petty Officer (MMC), May 1977-August 1998

- Ships Maintenance Manager: USS Carr (2 years) database management experience
- Force Equal Opportunity Advisor: CUSL (3 years) Multi-command EO/Drug & Alcohol Programs
- Quality Assurance Officer: USS Shenandoah (4 years) Supervised 20 inspectors
- MM Advanced Technical Training School Manager: Great Lakes Training Command (3 years)
- Outside Machine Shop Supervisor: USS Orion (2 years) supervised 65 people
- Ships Power Plant Operator: USS Guam (3 years)
- Submarine Nuclear Power Plant Operator: USS Tecumseh (2 years)
- Initial Navy Training-Nuclear Power School (2 years)

Accomplishments

Over the course of Dennis' career in the water industry, he has implemented and trained upwards of 300 new customers on metering products and solutions. Dennis was instrumental in the development of the National Meter & Automation brand since its beginnings in 2004. He has also presented at numerous Water Association seminars and training sessions.

B. PROPOSED STAFF

Mark Leveille

Regional Manager

Office: 414-371-6196

Cell: 518-569-6250

mleveille@badgermeter.com



Summary of Qualifications

Mark Leveille is the Regional Manager for the central region of the United States for Badger Meter. Over the course of Mark's professional career, he has developed a diverse background in sales, marketing, and manufacturing management – specifically in providing industrial flow measurement and control solutions in markets, such as water and wastewater; chemical, oil, and gas; building automation/HVAC; and light and heavy industrial. Furthermore, Mark has expertise in the areas of profit management, sales channel management, and operational management. Given Mark's professional experience in the flow measurement industry, he serves as a valuable partner with his utility customers in delivering and implementing localized metering solutions.

Professional Experience

Badger Meter, Regional Manager, 2018-present

- Leads dynamic team of Account Managers and Solution Architects in meeting the flow measurement needs of utility customers
- Expands Badger Meter brand throughout the central United States

Badger Meter, Director of Sales Latin America, 2013-2017

- Director of sales serving as a key member of an executive team developing sales strategy for multiple brands of flow measurement and control products
- Responsible for developing and achieving annual sales goals and expense budgets by formulating marketing strategies, executing brand planning, and implementing business development approaches to drive revenue growth
- Implemented Sales Support Managers to assist Regional and Account Managers with technical presentation and after sales support

B. PROPOSED STAFF

Racine Federated, Inc., *Strategic Accounts Manager, 2011-2013*

- Identified national or otherwise strategic accounts with the potential to sell flow measurement
- Gained acceptance into Rockwell Automation's Encompass Partnership Program, increasing brand recognition with Rockwell Automations' North American distributors, solution providers and end users which allowed Racine Federated to compete with major competitors and offer a complete automation solution
- Established a sliding scale discount structure to foster partnership between traditional sales representatives and system integrators to sell and support flow measurement solutions for building automation systems
- Maximized marketing partnerships programs with key accounts, participating in local and national tradeshow, printed and electronic media programs

Racine Federated, Inc., *Northeast Regional Sales Manager, 2006-2011*

- Managed individual sales representative companies and direct accounts to achieve and surpass annual sales goals
- Responsible for management of sales throughout territory in eastern states, from Maryland to Maine and eastern Canada
- Established annual sales contracts and performed annual reviews of representative companies within territory
- Developed improvement plans and target accounts based on SWOT (Strength, Weakness, Opportunity and Threat) analysis

Preso Meters Corp., *General Manager, 1992-2006*

- Managed all operations and sales for flow meter manufacturer
- Implemented ISO 9001 Quality Assurance Program
- Trained sub-contractors to allow for rapid increase of production capacity to meet delivery demands for large projects
- Dominated the Alberta oil sands industry for differential flow meter sales, becoming the flow meter of choice for Shell Oil and achieved preferred vendor status for Bechtel and Fluor Canada
- Developed a welder certification program to achieve high quality standards

Accomplishments

Throughout Mark's professional career, he has been integral to successes in the flow measurement industry: he achieved historic high annual sales for Latin America in 2015; he transitioned the most advanced water utility in Mexico, SAPAL in Leon, Mexico, from ORION CE to ORION SE; and he sold the largest single project of Badger Meter differential pressure meters to the Shell upgrade plant in Fort McMurray, Alberta

B. PROPOSED STAFF

Jordan Sharp
Manager-Branch Operations

Office: 512-781-7302
jsharp@nationalmeter.com



Summary of Qualifications

Jordan Sharp is the Manager of Branch Operations for the distribution warehouse National Meter in San Marcos, Texas. Prior to leading the branch operations in Texas, Jordan worked as an Inside Sales Specialist for National Meter, providing both sales support and project management to utility customers of Badger Meter products and technology. Jordan received a Business Degree in Project Management from California State University, Chico. Before joining National Meter, Jordan gained valuable experience in the water treatment industry as an Estimator and Project Manager for KG Walters Construction in Santa Rosa, California.

Education & Associations

California State University-Chico, *Bachelor of Science in Business and Project Management*, 2013

Professional Experience

Badger Meter, Inc. DBA National Meter & Automation, *Manager-Branch Operations*, 2016-present

- Manages day-to-day operations of Texas warehouse by overseeing inventory, distribution of goods, and quality assurance of facility performance
- Trains, supervises, and tracks performance of new employees

Badger Meter, Inc. DBA National Meter & Automation, *Inside Sales Specialist*, 2015-2016

- Provided sales support to account managers and customers on quotes, orders, and inventory availability
- Worked as project manager for meter installation, change out, and turnkey projects

KG Walters Construction, *Estimator and Project Manager*, 2015

- Completed take-offs and managed schedules for the construction of water treatment plants

B. PROPOSED STAFF

Cartel Electronics, Account Manager, 2014-2015

- Learned complete portfolio of company's manufacturing processes and capabilities

OG Packing, Procurement Management Crew, 2012-2013

- Managed team of packing line workers and collaborated with upper management to coordinate efficient line processes

Accomplishments

As an Inside Sales Specialist for National Meter, Jordan successfully managed major meter installation projects, such as the turnkey meter change out and AMR system upgrade for Riverbank, California and the installation and complete meter change out for Valley of the Moon, California. Furthermore, Jordan managed and oversaw the opening of the Texas branch of National Meter, which opened in San Marcos, Texas in 2016.

B. PROPOSED STAFF

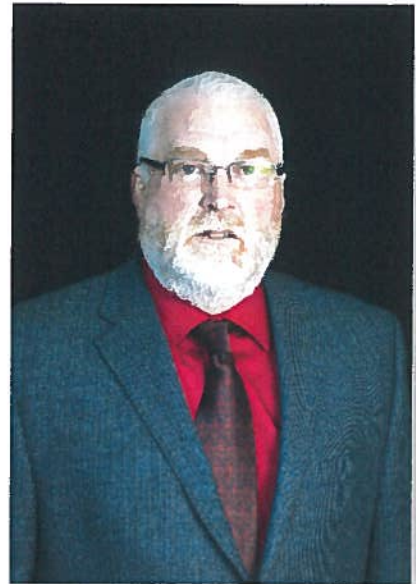
Mike Riha

Manager – Training Support

Office: 414-371-6216

Cell: 414-803-8168

mriha@badgermeter.com



Summary of Qualifications

Mike Riha began his career with Badger Meter in June 1999 as an AMR Implementation Specialist. In this role, he trained customers on how to operate and manage their AMR systems. Mike was then promoted to Manager of Training Support and now supervises the training support staff of Badger Meter. He ensures all training documents are developed and updated as new products are launched and legacy products are improved. In addition to managing Badger Meter trainers and training programs, he manages distributor trainers that are certified on Badger Meter products. Prior to joining Badger Meter, Mike was the Superintendent of Training for the United States Air Force at the Minot Air Force Base in North Dakota. Given Mike's education in business administration and his breadth of professional experience in training and support, Mike is key to the success of Badger Meter's outreach to customers in growing their knowledge and understanding of Badger Meter products.

Education & Associations

Community College of the US Air Force, *Associate's Degree in Electro-Mechanical Engineering*, 1997

Herzing University, *Bachelor's Degree in Business Administration*, 2009

Professional Experience

Badger Meter, *Manager of Training Support*, 2007-present

- Manages Badger Meter trainers and distributor trainers
- Ensures all training procedures and documents are accurate
- Interfaces with the software engineering group to resolve issues

B. PROPOSED STAFF

Badger Meter, Lead Trainer Application Services, 2005-2007
Trainer for Application Services, 1999-2005

- Performed customer AMR installations and trainings

United States Air Force, Minot AFB, North Dakota, Superintendent of Training

- Managed instructors who trained for various portions of ICBM systems
- Controlled all training documents, hardware and software programs, including training simulators and missile sites designated as training facilities

Accomplishments

Mike has been involved in the development of training material, billing interface file documentation, and setup and feature improvements for BEACON Advanced Metering Analytics (AMA) software since its release. He has personally completed over 50 interfaces between multiple billing vendors and BEACON.

Mike was a key trainer for the Northern Kentucky Water District where he performed multiple training sessions on meter installation, endpoint wire splicing, route management software, mobile meter reading devices, and handheld meter reading devices.

Mike has worked with the Washington Suburban Sanitation Commission (WSSC) in Maryland and with the City of Chicago, Illinois in setting up and maintaining ORION and CONNECT systems.

Mike has completed training on a variety of Badger Meter products including legacy products such as ACCESSplus, TRACE, and Dialog. He plays an integral role in gathering software improvements from trainers and customers and then working with software engineering to develop new product features.

C. COST PROPOSAL



Every drop counts.

FORM A
Price Schedule

COST PROPOSAL				
QTY	SIZE	Product Description	UNIT PRICE	EXTENDED AMOUNT
2000	5/8" x 3/4"	Badger Meter Recordall* Disc Meters M25, HRE-LCD, Orion Cellular LTE	\$ 189.10	\$ 378,200.00
5	1"	Badger Meter Recordall* Disc Meters M55, HRE-LCD, Orion Cellular LTE	\$ 266.26	\$ 1,331.30
3	2"	Badger Meter Recordall* Disc Meters M170, HRE-LCD, Orion Cellular LTE	\$ 627.92	\$ 1,883.76
2	6"	Badger Meter Recordall* Compound Series Meter, (2)HRE-LCD, Orion Cellular LTE	\$ 4,090.97	\$ 8,181.94
1	Software	BEACON* AMA Software - includes BEACON engagement fee, 1 year service units	\$ 24,500.86	\$ 24,500.86
1	Training	On-site Training	\$ 1,800.00	\$ 1,800.00
TBD	5/8" x 3/4" Alternate option	*E-Series* Ultrasonic Plus Meter with Integrated Shutoff Valve *Available upon release	\$425.00	\$425.00

Due to continuous improvements and redesign of our products and technology solutions, we reserve the right to provide our newest product solutions as an alternate to the proposed products provided they are in conformance with the requirements of the specifications and do not exceed the prices quoted



Badger Meter

BEACON® Advanced Metering Analytics

Managed Solution

OVERVIEW

The BEACON® Advanced Metering Analytics (AMA) managed solution from Badger Meter brings a new level of utility optimizing information to light. The managed solution approach combines our intuitive BEACON AMA software suite with the proven ORION® communication technologies to give you greater visibility and control over utility management.

Configured for your utility, the BEACON AMA managed solution utilizes two-way communications to deliver a simple, yet powerful end-to-end-solution.

Built-in infrastructure management services and a system design that keeps you in step with technology advancements, allows you to do what you do best—manage your water utility. Plus, built-in consumer engagement tools help enhance customer service, increase satisfaction and reduce costs.

SOFTWARE APPLICATIONS

BEACON Advanced Metering Analytics (AMA)

With tools beyond meter reading and network management, BEACON AMA software offers targeted Advanced Metering Analytics. BEACON AMA software puts interval meter data to work to increase efficiency in day-to-day utility operations and address demands for actionable intelligence.

- **Problem solver** – User intuitive data tools place the power of water consumption data at your fingertips, allowing you to rapidly respond to customer inquiries and quickly resolve—and even eliminate—many billing issues.
- **Customized design** – A customizable dashboard delivers information configured to user security access level in a format matched to the utility's individual requirements, providing data management integrity, security and control.
- **Works with you** – Integration with utility systems—billing, work order, inventory, Customer Relationship Management (CRM) and Geographic Information Systems (GIS)—streamlines and improves utility operations without disrupting the current utility billing interface file transfer process.
- **Find out fast** – Alert conditions can be set to monitor and notify users of system exceptions, including continuous flow, for faster leak detection.
- **Innovation at your service** – Secure, hosted platform with automatic software upgrades ensures the latest technology and features are always available.

EyeOnWater®

The BEACON AMA software suite includes informative consumer outreach tools to improve customer service consisting of the EyeOnWater consumer engagement website, smartphone mobile apps, and email or SMS text alerts, providing easy access to personal consumption data and alerts to potential leaks. With these tools, water consumers are able to view their usage activity, and gain greater understanding and control of what they use and the value you provide.



HARDWARE

The BEACON AMA managed solution is built on the proven ORION system for interval data capture and two-way communication. The solution employs cellular endpoints which, as they leverage the public cellular network and require no proprietary gateways to operate, dramatically reduce infrastructure requirements compared to a traditional fixed network. This speeds installations and simplifies expansion as a system evolves.

- **High resolution data** – ORION endpoints are programmed to automatically broadcast 15-minute meter reading and event data to the BEACON software on a daily basis. The high resolution data helps identify potential customer-side leaks and other anomalies in water use, and provides the utility with a potent tool to enhance its customer service. Optionally, endpoints can be reprogrammed over the air via the network to collect data and transmit more frequently.
- **Two-way communication** – BEACON software communicates with ORION Cellular endpoints to accomplish a number of system tasks, including requesting additional information from the endpoint and synchronizing the internal endpoint clock. If needed, the ORION two-way system architecture sends upgrades to the endpoint firmware over the air via the network, utilizing the powerful BEACON AMA software suite.
- **Data integrity** – Each message from the ORION Cellular endpoint is securely transported to the BEACON AMA software via Virtual Private Network (VPN) using Advanced Encryption Standards (AES) 256.

SECURITY

BEACON AMA is ISO 27001 certified and SOC 2 examined for security, availability and confidentiality.

TECHNICAL SUPPORT AND TRAINING

Configured for the utility, the safe and secure BEACON AMA managed solution provides utilities with regular software updates, long-term support and maintenance. Comprehensive training is provided at the time of system deployment. To maintain best practices, a library of online resources and options for web-based training and support are also available. Once deployed, our technical support specialists can be contacted by phone, email and web to provide ongoing, customer-friendly support.

Additionally, Badger Meter offers extended customized training to further enhance user expertise.

TECHNICAL REQUIREMENTS

BEACON AMA

Developed as a hosted software platform, BEACON AMA is a cloud-based application accessed through a standard web browser. Internet access is required. User logins provide secure access.

BEACON AMA supported web browsers include the latest and next previous major releases of Google® Chrome, Microsoft® Edge, Mozilla® Firefox®, Microsoft® Internet Explorer® (IE 11 only); and Apple® Safari®.

EyeOnWater Consumer Engagement

The EyeOnWater consumer engagement website is a cloud-based application accessed through a standard web browser. Internet access is required. Water consumer user logins provide secure access to their information.

Supported web browsers include the latest and next previous major releases of Google® Chrome, Microsoft® Edge, Mozilla® Firefox®, Microsoft® Internet Explorer® (IE 11 only); and Apple® Safari®.

EyeOnWater smartphone applications require Android 6.0 or iOS 9.1 or later, and can be downloaded from Google Play or the Apple Store.

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Badger Meter

**BEACON® Advanced Metering Analytics
EyeOnWater® Consumer Engagement**



EyeOnWater® is a consumer engagement application that goes beyond traditional monthly statements to connect utilities and their customers like never before. Available exclusively through BEACON® AMA, EyeOnWater enables utility customers to view and understand their usage profile through easy-to-understand consumption graphs and provides a simple method to establish alerts to better manage their water use.

Literally putting water usage data in the palm of consumers' hands, EyeOnWater mobile apps bring the power of the online portal to your customer's iOS device or Android smartphone.

Direct Water Consumption Data

Gives utility customers direct access to their water consumption data, allowing them to easily view, understand and manage their water usage.

Improved Customer Service

Improved customer service and reduced calls to the utility.

Promotes Water Conservation

Promotes changes in behavior related to water conservation.

Features:

- Secure, cloud-based – ISO 27001 certified and SOC 2 examined for security, availability and confidentiality
- Hourly, daily, monthly, and yearly data and charts
- Temperature and precipitation overlays
- Week-over-week consumption comparisons
- Configurable leak alerts by email or SMS text
- Web-based consumer portal, plus Android and iOS mobile apps

**Better information. Better utility management.
Clearly Better.**

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Badger Meter

BEACON® Advanced Metering Analytics Managed Solution



The BEACON® Advanced Metering Analytics (AMA) managed solution from Badger Meter combines the intuitive BEACON AMA software suite with proven ORION® communication technology, giving water utilities greater visibility and control over utility management. Badger Meter's managed solution approach utilizes two-way communications – leveraging cellular and fixed networks – to deliver a simple yet powerful end-to-end solution. Built-in infrastructure management services and flexible system design eliminate maintenance and technology concerns.

Increased Visibility Through Analytics

AMA provides proactive intelligence for optimal utility management.

Enhanced Customer Service

Powerful data tools provide greater water usage visibility to you and your customers.

Focus on Water Management

We provide the hosted software platform, system maintenance and software support and allow you to focus on what you do best.

Future-Proof Technology

Our system design provides the flexibility to keep you in step with technology advancements.

Features:

- Customizable dashboards to deliver information in a format matched to your requirements
- Ability to set unique alert conditions to define and monitor exceptions
- Customer service tools, including a consumer engagement website and smart phone/tablet apps, enable access to individual customer information
- Secure, cloud-based – ISO 27001 certified and SOC 2 examined for security, availability and confidentiality
- Automatic software upgrades
- Integration with your utility systems: billing, work order, inventory, Customer Relationship Management (CRM), and Geographic Information Systems (GIS)

**Better information. Better utility management.
Clearly Better.**

Making Water Visible®

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Badger Meter

BEACON® AMA Managed Solution Pricing Terms and Conditions

The following Terms & Conditions apply to BEACON® AMA managed solution services sold by Badger Meter, Inc. ("Badger Meter") or one of its authorized distributors to a utility or non-utility customer ("Customer") and are in addition to those found at <https://www.badgermeter.com/certifications-legal/> and as appropriate, the BEACON General Agreement and/or BEACON Master Agreement executed by Customer.

ONE-TIME FEES

BEACON ENGAGEMENT FEE

A one-time BEACON AMA Engagement Fee, invoiced by Badger Meter or one of its authorized distributors, is required for all BEACON AMA managed solution deployments. This fee includes licensing of the BEACON AMA software, setup and activation of Customer's BEACON AMA portfolio, and assistance implementing an initial billing interface file. Fees charged to a Customer by its utility billing vendor for an interface file are separate and are the responsibility of the Customer.

SERVICE UNITS

Recurring service fees are based on asset type and assessed monthly ("Service Units"). Asset types are identified by unique Service Unit part numbers as represented in this section. Service Units will be invoiced by Badger Meter or one of its authorized distributors.

MANAGED SOLUTION SUBSCRIPTION FEE SERVICE UNITS

Customers deploying a BEACON AMA managed solution will be assessed managed solution Subscription Fee Service Units, which include Customer's access to the BEACON AMA software, software updates, hosting of Customer's metering data, and technical support. Managed solution Subscription Fee Service Units (68886-101, 68886-104 and 68886-201) will be assessed monthly, per eligible managed solution endpoint in Customer's BEACON AMA portfolio. A managed solution endpoint will consume one or more Service Units each month, based on data interval and call-in frequency, and will be assessed on the 26th of each month. Service Units will be consumed for any managed solution endpoint which has been activated or is more than six months past its original manufacturer ship date. Service Unit price may vary if purchase increment is changed.

FIXED NETWORK GATEWAY TRANSCIEVERS (if applicable)

Supply, installation, backhaul communication and maintenance of ORION® fixed network gateway transceivers deployed as part of a Badger Meter managed solution are included in the managed solution endpoint pricing and monthly subscription fee Service Units.

EyeOnWater® CONSUMER ENGAGEMENT

An EyeOnWater® License is included for BEACON AMA managed solutions. The license includes software licensing, setup and activation of EyeOnWater consumer engagement module for managed solution accounts in Customer's BEACON AMA portfolio. The Customer is required to have appropriate data fields provided from billing software to support EyeOnWater. Fees charged to a Customer by its utility billing vendor for interface file are separate and are the responsibility of the Customer.

SERVICE UNIT PRICING AND PAYMENT

Customer will be required to submit a PO to Badger Meter or one of its authorized distributors for applicable Service Units. Initial Service Unit pricing will be held for the first 36-month term at quoted purchase increment, then subject to change thereafter.

Service Units may be purchased in Customer-defined increments except where minimum multiple purchase increments have been stated. Reorder increments will be established at time of initial purchase and may be modified at a later date. Service Unit price may vary if purchase increment is changed.

Service Unit pricing is Net to Customer and will be invoiced by Badger Meter or one of its authorized distributors based on Customer-defined Service Unit purchase increments or minimum multiple purchase increments as noted. Service Unit part numbers are denoted as 68886 and have been included in this document for cross reference with Customer pricing proposal.

Service Units will be consumed on a monthly basis, as applicable to each asset type.

Service Units are non-refundable and non-transferable to another entity without Badger Meter approval.

Service Units may be converted to like-valued, or higher, Service Units of a different asset type with Badger Meter approval.

Service Units expire ten (10) years from date of purchase. Expired Service Units will be forfeited unless converted prior to expiration.

Upon termination of a Customer's BEACON AMA services, for whatever cause, unused Service Units will be forfeited if not converted to Badger Meter or National Meter & Automation future purchase credit within ninety (90) days.

Failure to renew services at term expiration, or pay for services invoiced by Badger Meter or one of its authorized distributors, may result in termination of services and limited access to Customer's BEACON AMA portfolio at the discretion of Badger Meter.

Once deactivated by the network carrier, ORION Cellular endpoints cannot be reactivated.

REPLACEMENT OF ENDPOINTS UNDER NETWORK GUARANTEE

The following applies only to endpoints replaced under the network guarantee described in the ORION Cellular LTE Endpoints Managed Solution warranty document (ORI-WR-02596-EN), BEACON AMA Managed Solution with ORION Cellular CDMA N and Fixed Network (SE) Water Endpoints warranty document (BEA-WR-02097-EN), or with ORION Cellular CDMA and Fixed Network (SE) Water Endpoints warranty document (BEA-WR-00719-EN). For those endpoints replaced under the network guarantee, the Customer shall be responsible for fees related to communication, including the most recently published replacement endpoint activation fee to initiate endpoint communication, and a minimum of 60 Service Units per replacement endpoint, 12 per year for five (5) years. Purchase fees for a minimum of 12 Service Units per endpoint will be billed at the time replacement endpoints are shipped, and will thereafter be billed annually in 12-unit increments at a minimum per endpoint.

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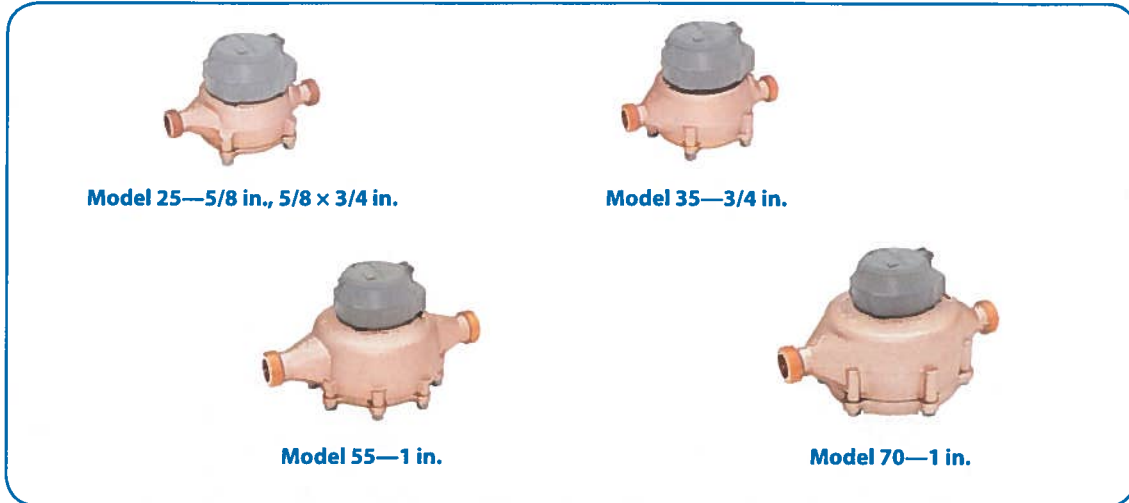
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Badger Meter

Recordall® Disc Meters

Lead-Free Bronze Alloy, Sizes 5/8, 5/8 x 3/4, 3/4 & 1 inch
NSF/ANSI Standards 61 and 372 Certified



DESCRIPTION

The Recordall Disc Series meters meet or exceed the most recent revision of AWWA Standard C700 and are available in a lead-free bronze alloy. The meters comply with the lead-free provisions of the Safe Drinking Water Act, are certified to NSF/ANSI Standards 61 and 372 (Trade Designations: M25-LL, M35-LL, M55-LL, M70-LL) and carry the NSF-61 mark on the housing. All components of the lead-free bronze alloy meter (housing, measuring element, seals, and so on) comprise the certified system.

Applications: For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only.

Operation: Water flows through the meter's strainer and into the measuring chamber where it causes the disc to nutate. The disc, which moves freely, nutates on its own ball, guided by a thrust roller. A drive magnet transmits the motion of the disc to a follower magnet located within the permanently sealed register. The follower magnet is connected to the register gear train. The gear train reduces the disc nutations into volume totalization units displayed on the register or encoder face.

Operating Performance: The Recordall Disc Series meters meet or exceed registration accuracy for the low flow rates (95%), normal operating flow rates ($100 \pm 1.5\%$), and maximum continuous operation flow rates as specifically stated in AWWA Standard C700.

Construction: Recordall Disc meter construction, which complies with ANSI/AWWA standard C700, consists of three basic components: meter housing, measuring chamber and permanently sealed register or encoder. The meter is available in a lead-free bronze alloy with externally-threaded spuds. A corrosion-resistant engineered polymer material is used for the measuring chamber.

Magnetic Drive: Direct magnetic drive, through the use of high-strength magnets, provides positive, reliable and dependable register coupling for straight-reading or AMR/AMI meter reading options.

Tamper-Proof Features: Unauthorized removal of the register or encoder is inhibited by the option of a tamper detection seal wire screw, TORX® tamper-resistant seal screw or the proprietary tamper-resistant keyed seal screw. Each can be installed at the meter site or at the factory.

Maintenance: Badger Meter Recordall Disc Series meters are designed and manufactured to provide long-term service with minimal maintenance. When maintenance is required, it can be performed easily either at the meter installation or at any other convenient location.

To simplify maintenance, the register, measuring chamber, and strainer can be replaced without removing the meter housing from the installation. No change gears are required for accuracy calibration. Interchangeability of parts among like-sized meters and meter models also minimizes spare parts inventory investment. The built-in strainer has an effective straining area of twice the inlet size.

Connections: Tailpieces/Unions for installations of meters on various pipe types and sizes, including misaligned pipes, are available as an option.

Meter Spud and Connection Sizes

Model	Size Designation (in.)	x	"L" Laying Length (in.)	"B" Bore Dia. (in.)	Coupling Nut and Spud Thread (in.)	Tailpiece Pipe Thread (NPT) (in.)
25	5/8	x	7-1/2	5/8	3/4 (5/8)	1/2
	5/8 x 3/4	x	7-1/2	5/8, 3/4	1 (3/4)	3/4
35	3/4	x	7-1/2	3/4	1 (3/4)	3/4
	3/4	x	9	3/4	1 (3/4)	3/4
	3/4 x 1	x	9	3/4	1-1/4 (1)	1
55	1	x	10-3/4	1	1-1/4 (1)	1
70	1	x	10-3/4	1	1-1/4 (1)	1

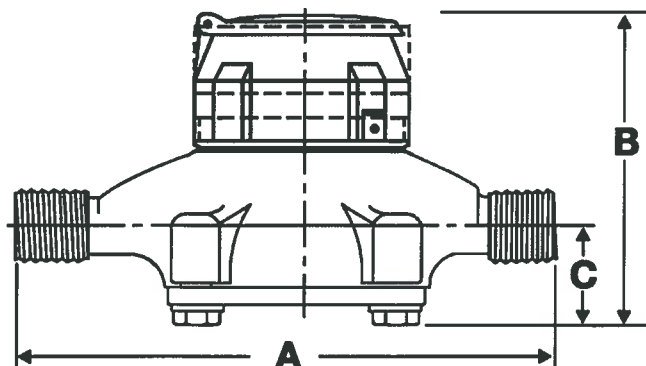
SPECIFICATIONS

	Model 25 (5/8 in. & 5/8 x 3/4 in.)	Model 35 (3/4 in.)	Model 55 (1 in.)	Model 70 (1 in.)
Typical Operating Range (100% ± 1.5%)	0.5...25 gpm (0.11...5.7 m ³ /hr)	0.75...35 gpm (0.17...7.9 m ³ /hr)	1...55 gpm (0.23...12.5 m ³ /hr)	1.25...70 gpm (0.28...16 m ³ /hr)
Low Flow	0.25 gpm (0.057 m ³ /hr) Min. 98.5%	0.375 gpm (0.085 m ³ /hr) Min. 97%	0.5 gpm (0.11 m ³ /hr) Min. 95%	0.75 gpm (0.17 m ³ /hr) Min. 95%
Maximum Continuous Operation	15 gpm (3.4 m ³ /hr)	25 gpm (5.7 m ³ /hr)	40 gpm (9.1 m ³ /hr)	50 gpm (11.3 m ³ /hr)
Pressure Loss at Maximum Continuous Operation	5/8 in. size: 3.5 psi @ 15 gpm (0.24 bar @ 3.4 m ³ /hr) 5/8 x 3/4 in. size: 2.8 psi @ 15 gpm (0.19 bar @ 3.4 m ³ /hr)	5 psi @ 25 gpm (0.37 bar @ 5.7 m ³ /hr)	3.4 psi @ 40 gpm (0.23 bar @ 9.1 m ³ /hr)	6.5 psi @ 50 gpm (0.45 bar @ 11.3 m ³ /hr)
Maximum Operating Temperature	80° F (26° C)			
Maximum Operating Pressure	150 psi (10 bar)			
Measuring Element	Nutating disc, positive displacement			
Meter Connections	Available in NL bronze and engineered polymer to fit spud thread bore diameter sizes:			
	5/8 in. size: 5/8 in. (DN 15 mm) 5/8 x 3/4 in. size: 3/4 in. (DN 15 mm)	3/4 in. (DN 20 mm)	1 in. (DN 25 mm)	1 in. (DN 25 mm)

MATERIALS

	Model 25 (5/8 in. & 5/8 x 3/4 in.)	Model 35 (3/4 in.)	Model 55 (1 in.)	Model 70 (1 in.)
Meter Housing	Lead-free bronze alloy			
Housing Bottom Plates	Lead-free bronze alloy, cast iron, engineered polymer	Cast iron, lead-free bronze alloy		
Measuring Chamber	Engineered polymer			
Disc	Engineered polymer			
Trim	Stainless steel			
Strainer	Engineered polymer			
Disc Spindle	Stainless steel	Stainless steel	Engineered polymer	Stainless steel
Magnet	Ceramic	Ceramic	Polymer bonded	Ceramic
Magnet Spindle	Stainless steel	Stainless steel	Engineered polymer	Stainless steel
Register Lid and Shroud	Engineered polymer, bronze			

DIMENSIONS



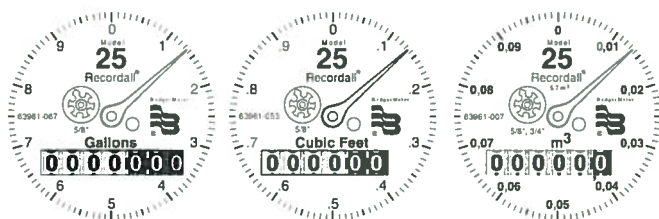
Meter Size	Model	A Laying Length	B Height Reg.	C Centerline Base	Width	Approx. Shipping Weight
5/8 in. (15 mm)	25	7-1/2 in. (190 mm)	4-15/16 in. (125 mm)	1-11/16 in. (42 mm)	4-1/4 in. (108 mm)	4-1/2 lb (2 kg)
5/8 in. x 3/4 in. (15 mm)		7-1/2 in. (190 mm)	4-15/16 in. (125 mm)	1-11/16 in. (42 mm)	4-1/4 in. (108 mm)	4-1/2 lb (2 kg)
3/4 in. (20 mm)	35	7-1/2 in. (190 mm)	5-1/4 in. (133 mm)	1-5/8 in. (41 mm)	5 in. (127 mm)	5-1/2 lb (2.5 kg)
3/4 in. (20 mm)		9 in. (229 mm)	5-1/4 in. (133 mm)	1-5/8 in. (41 mm)	5 in. (127 mm)	5-3/4 lb (2.6 kg)
3/4 in. x 1 in. (20 mm)		9 in. (229 mm)	5-1/4 in. (133 mm)	1-5/8 in. (41 mm)	5 in. (127 mm)	6 lb (2.7 kg)
1 in. (25 mm)	55	10-3/4 in. (273 mm)	6 in. (152 mm)	2-1/32 in. (52 mm)	6-1/4 in. (159 mm)	8-3/4 lb (3.9 kg)
1 in. (25 mm)	70	10-3/4 in. (273 mm)	6-1/2 in. (165 mm)	2-5/16 in. (59 mm)	7-3/4 in. (197 mm)	11-1/2 lb (5.2 kg)

REGISTERS / ENCODERS

Standard—Sweep-Hand Registration

The standard register is a straight-reading, permanently sealed magnetic drive register. Dirt, moisture, tampering and lens fogging problems are eliminated. The register has a six-odometer wheel totalization display, 360° test circle with center sweep hand, and flow finder to detect leaks. Register gearing is made of self-lubricating engineered polymer, which minimizes friction and provides long life. The multi-position register simplifies meter installation and reading. The register capacity is 10,000,000 gallons (1,000,000 ft³, 100,000 m³).

A Model 25 register is used in the following example:



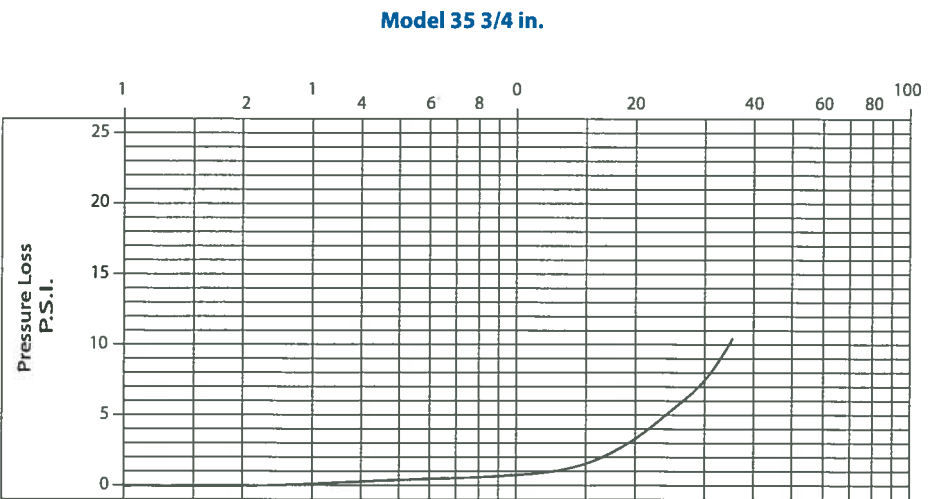
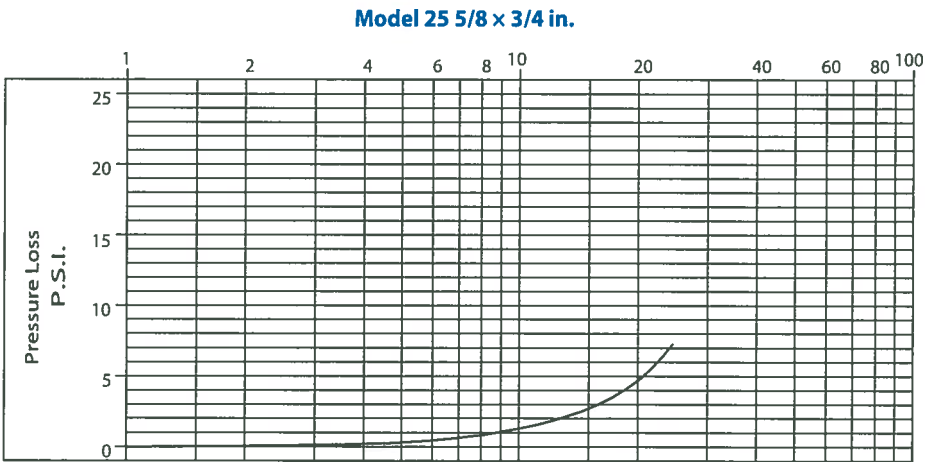
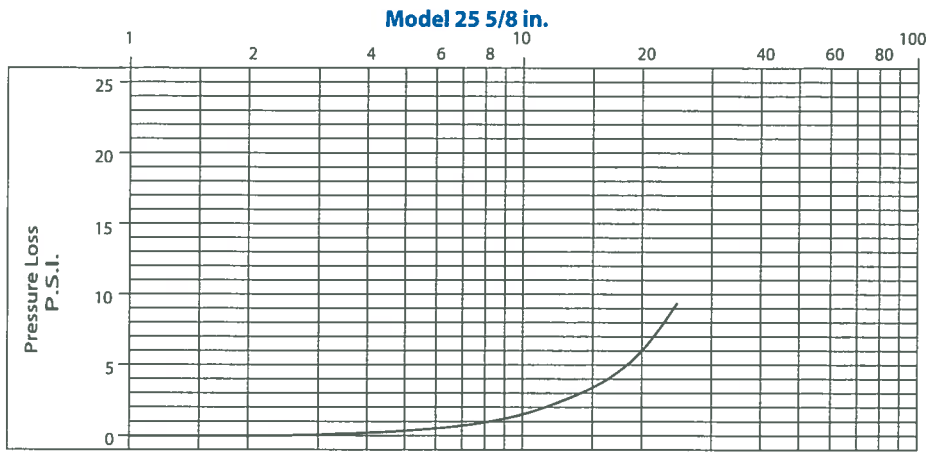
Model	Gallon	Cubic Feet	Cubic Meter
25 (5/8 in.)	10	1	0.1/0.01
25 (5/8 x 3/4 in.)	10	1	0.1/0.01
35	10	1	0.1
55	10	1	0.1
70	10	1	0.1

Optional—Encoders for AMR/AMI Reading Solutions

AMR/AMI solutions are available for all Recordall Disc Series meters. All reading options can be removed from the meter without disrupting water service. Badger Meter encoders provide years of reliable, accurate readings for a variety of applications and are also available pre-wired to Badger Meter approved AMR/AMI solutions. See details at www.badgermeter.com.

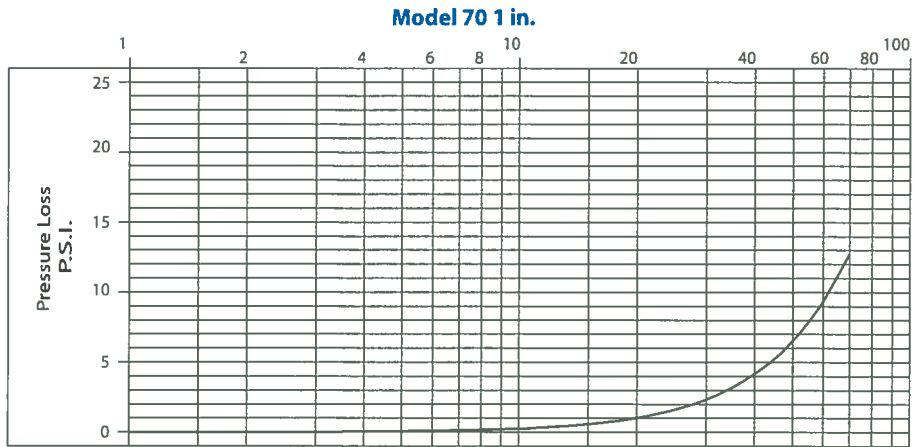
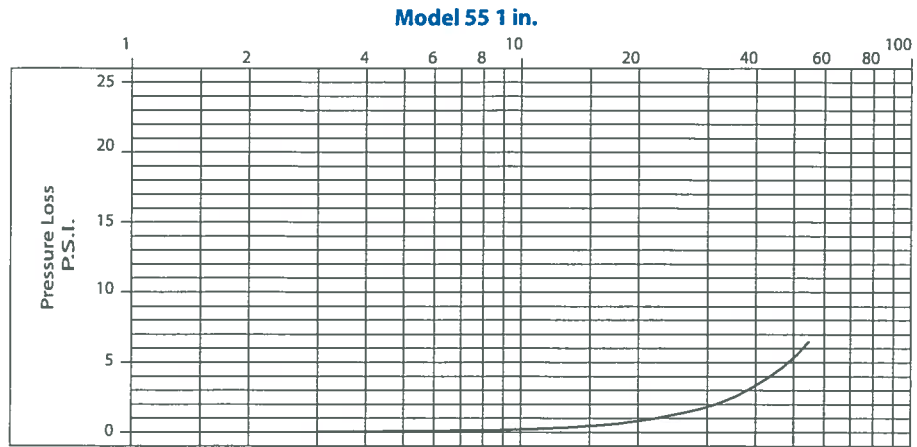
PRESSURE LOSS CHARTS

Rate of Flow in Gallons per Minute



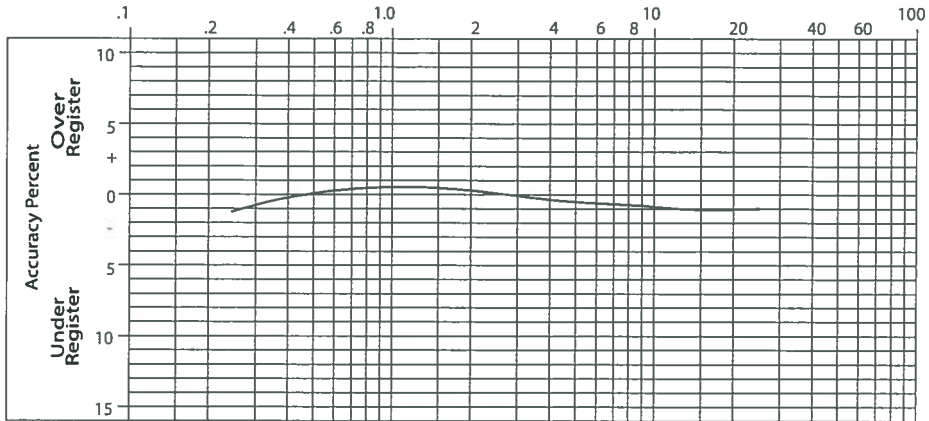
PRESSURE LOSS CHARTS (CONTINUED)

Rate of Flow in Gallons per Minute

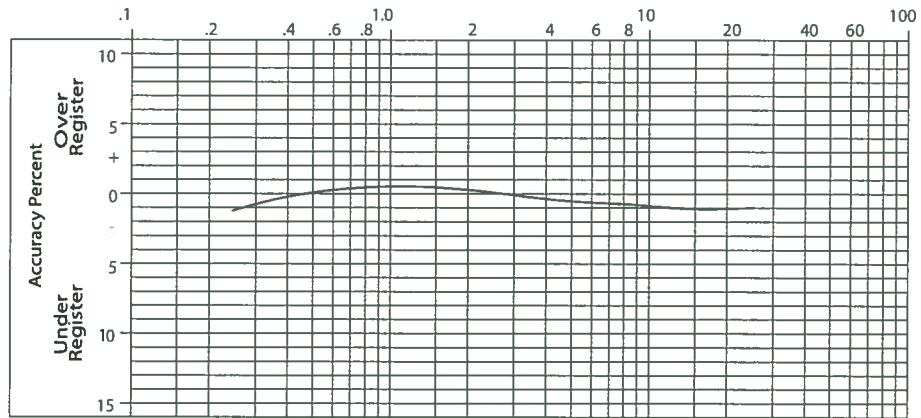


ACCURACY CHARTS

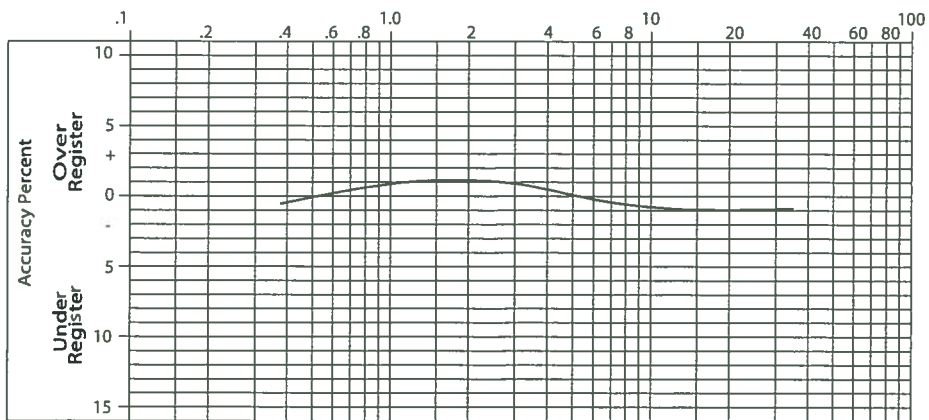
Model 25 5/8 in.



Model 25 5/8 x 3/4 in.

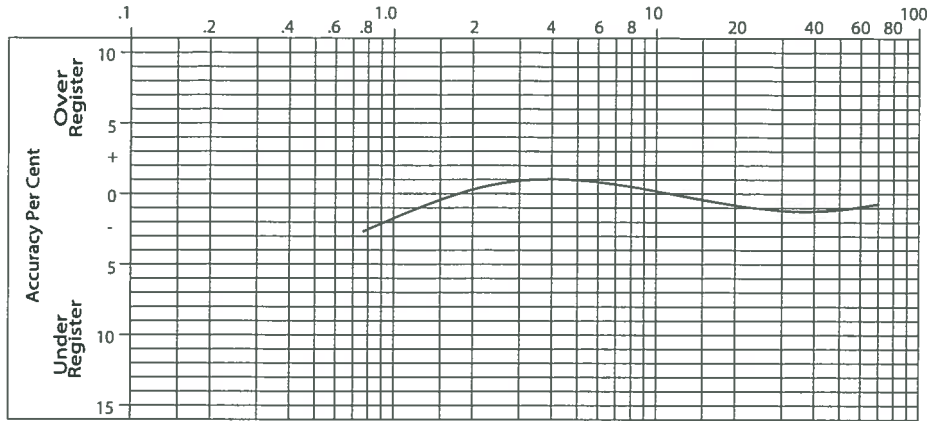


Model 35 3/4 in.

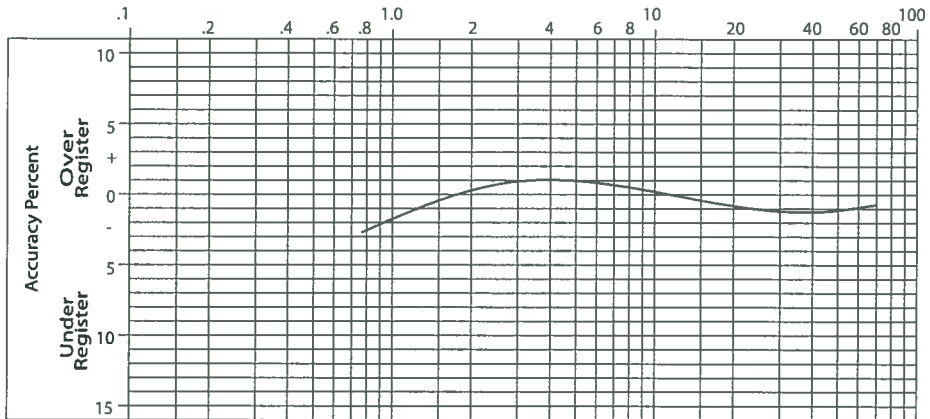


ACCURACY CHARTS (CONTINUED)

Model 55 1 in.



Model 70 1 in.



Making Water Visible®

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Badger Meter

Lead-Free Bronze Disc Meters

PRODUCTS COVERED

This warranty shall apply to all Recordall® Lead-Free Bronze Disc Meters, models LP through 170, when used to measure potable water, including the registers and encoders used with these meters (collectively "Product") sold on or after November 1, 2012. This warranty is extended only to utilities, municipalities, other commercial users and authorized Badger Meter, Inc. distributors, hereafter referred to as "Customer" and does NOT apply to consumers or any person or entity who is not an original customer of Badger Meter or its authorized distributors.

MATERIALS AND WORKMANSHIP

Badger Meter warrants Product to be free from defects in materials and workmanship appearing within the following time frames and those listed in the table below:

Housings

Twenty-five (25) years and six (6) months after shipment from Badger Meter.

Local Registers Supplied with the Meters Listed Herein

Twenty-five (25) years and six (6) months after shipment from Badger Meter.

	AWWA New Meter Accuracy	AWWA Repaired Meter Accuracy (AWWA M6 Manual)	Badger Meter Extended Low Flow Meter Accuracy
Recordall Meter Model, Size	<i>The meter product will meet or exceed new meter accuracy standards set forth in AWWA Standard C700 for the following periods:</i>	<i>The meter product will meet or exceed repaired meter accuracy standards set forth in AWWA Manual M-6, Chapter 5, Table 5.3 for the following periods:</i>	<i>Badger Meter further warrants the meter product to meet or exceed the following extended low flow accuracies in excess of AWWA standard:</i>
Model LP, 5/8" and 5/8" x 3/4"	Five (5) years from date of shipment or registration of 750,000 gallons, whichever occurs first.	Fifteen (15) years from date of shipment or registration of 2,500,000 gallons, whichever occurs first, with a 20 gpm safe maximum operating capacity and a 10 gpm maximum rate for continuous operation.	—
Model 25, 5/8" and 5/8" x 3/4"	Five (5) years from date of shipment or registration of 750,000 gallons, whichever occurs first.	Fifteen (15) years from date of shipment or registration of 2,500,000 gallons, whichever occurs first, with a 25 gpm safe maximum operating capacity and a 15 gpm maximum rate for continuous operation.	Badger Meter warrants Product low flow accuracy of 98.5% at a rate of 1/4 gpm and low flow accuracy of 95.0% at a rate of 1/8 gpm for five (5) years from date of shipment or registration of 675,000 gallons, whichever occurs first.
Model 35, 3/4"	Five (5) years from date of shipment or registration of 750,000 gallons, whichever occurs first.	Fifteen (15) years from date of shipment or registration of 2,500,000 gallons, whichever occurs first, with a 35 gpm safe maximum operating capacity and a 25 gpm maximum rate for continuous operation.	Badger Meter warrants Product low flow accuracy of 97% at a rate of 3/8 gpm for five (5) years from date of shipment or registration of 675,000 gallons, whichever occurs first.
Model 55, 1"	Five (5) years from date of shipment or registration of 1,000,000 gallons, whichever occurs first.	Fifteen (15) years from date of shipment or registration of 3,000,000 gallons, whichever occurs first, with a 55 gpm safe maximum operating capacity and a 40 gpm maximum rate for continuous operation.	Badger Meter warrants Product low flow accuracy of 95% at a rate of 1/2 gpm for three (3) years from date of shipment or registration of 575,000 gallons, whichever occurs first.
Model 70, 1"	Five (5) years from date of shipment or registration of 1,100,000 gallons, whichever occurs first.	Fifteen (15) years from date of shipment or registration of 3,250,000 gallons, whichever occurs first, with a 70 gpm safe maximum operating capacity and a 50 gpm maximum rate for continuous operation.	Badger Meter warrants Product low flow accuracy of 95% at a rate of 3/4 gpm for three (3) years from date of shipment or registration of 1,100,000 gallons, whichever occurs first.
Model 120, 1-1/2"	Two (2) years from date of shipment or registration of 1,600,000 gallons, whichever occurs first.	Fifteen (15) years from date of shipment or registration of 5,600,000 gallons, whichever occurs first, with a 120 gpm safe maximum operating capacity and a 80 gpm maximum rate for continuous operation.	Badger Meter warrants Product low flow accuracy of 95% at a rate of 1-1/4 gpm for two (2) years from date of shipment or registration of 1,440,000 gallons, whichever occurs first.
Model 170, 2"	Two (2) years from date of shipment or registration of 2,100,000 gallons, whichever occurs first.	Fifteen (15) years from date of shipment or registration of 10,400,000 gallons, whichever occurs first, with a 170 gpm safe maximum operating capacity and a 100 gpm maximum rate for continuous operation.	Badger Meter warrants Product low flow accuracy of 95% at a rate of 1-1/2 gpm for two (2) years from date of shipment or registration of 1,890,000 gallons, whichever occurs first.

PRODUCT RETURNS

Any Product proved to the satisfaction of Badger Meter to have failed the foregoing warranties will, at the option of Badger Meter, be repaired or replaced without charge to the Customer. The obligation hereunder of Badger Meter shall be limited to such repair and replacement and shall be conditioned upon Badger Meter receiving written notice of any alleged defect within ten (10) days after its discovery. This exclusive remedy shall not be deemed to have failed its essential purpose so long as Badger Meter is willing and able to replace defective products or issue a credit to purchaser within a reasonable time of proof to Badger Meter that a defect is involved. Product returns must be shipped by the Customer prepaid F.O.B. to the nearest Badger Meter factory or distribution center. The Customer shall be responsible for all direct and indirect costs associated with removing original product and reinstalling the repaired or replacement Product.

LIMITS OF LIABILITY

This warranty shall not apply to Product repaired or altered by any party other than Badger Meter. The foregoing warranty applies only to the extent that the Product is installed, serviced and operated strictly in accordance with AWWA Standard C700 and AWWA M6 Manual. The warranty shall not apply and shall be void with respect to Product exposed to conditions other than those detailed in Badger Meter Product technical literature and Installation and Operation Manuals (IOMs), or which have been subject to vandalism, negligence, accident, acts of God, improper installation, operation or repair, alteration, or other circumstances which are beyond the reasonable control of Badger Meter. With respect to Product not manufactured by Badger Meter, the warranty obligations of Badger Meter shall in all respects conform and be limited to the warranty extended to Badger Meter by the supplier.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (except warranties of title).

Any description of the Product, whether in writing or made orally by Badger Meter or Badger Meter agents, specifications, samples, models, bulletins, drawings, diagrams, engineering sheets or similar materials used in connection with any Customer's order are for the sole purpose of identifying the Product and shall not be construed as an express warranty. Any suggestions by Badger Meter or Badger Meter agents regarding use, application, or suitability of the Product shall not be construed as an express warranty unless confirmed to be such in writing by Badger Meter.

Exclusion of Consequential Damages and Disclaimer of Other Liability. The liability of Badger Meter with respect to breaches of the foregoing warranty shall be limited as stated herein. The liability of Badger Meter shall in no event exceed the contract price. **BADGER METER SHALL NOT BE SUBJECT TO AND DISCLAIMS: (1) ANY OTHER OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR OF WARRANTY, (2) ANY OBLIGATIONS WHATSOEVER ARISING FROM TORT CLAIMS (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR ARISING UNDER OTHER THEORIES OF LAW WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY BADGER METER, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATING THERETO, AND (3) ALL CONSEQUENTIAL, INCIDENTAL, AND CONTINGENT DAMAGES WHATSOEVER.**

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Legacy Document Number RD-W-4-AWWA-EN



Badger Meter

Recordall® Compound Series Meter

Lead-Free Bronze Alloy, Sizes 2", 3", 4" & 6"
NSF/ANSI Standards 61 and 372 Certified

DESCRIPTION

The Recordall Compound Series meters meet or exceed the most recent revision of AWWA Standard C700 and are available in a lead-free bronze alloy. The Compound Series meters comply with the lead-free provisions of the Safe Drinking Water Act, are certified to NSF/ANSI Standards 61 and 372 (Trade Designation: LL-NS) and carry the NSF-61 mark on the housing. All components of the lead-free bronze alloy meter (housing, measuring element, seals, and so on) comprise the certified system.

Badger Meter Recordall® Compound Series meters combine two metering technologies in one innovative package. A positive displacement chamber measures low flow, while a turbine chamber records high flow.

Offered in four sizes, the Compound Series meter features:

- Patented design that eliminates the need for a trigger valve and maintains crossover accuracy.
- Permanently sealed, tamper-resistant register or encoder.
- Meters and encoders that are compatible with Badger Meter AMR/AMI systems and other approved reading technologies

Badger Meter ORION® and GALAXY® AMR/AMI meter reading systems are available for all Compound Series meters. Itron® ERT reading systems are also available. An optional summator can be provided as an integral part of the register assembly. All register options are removable from the meter without disrupting water service.

TAMPER-PROOF FEATURES

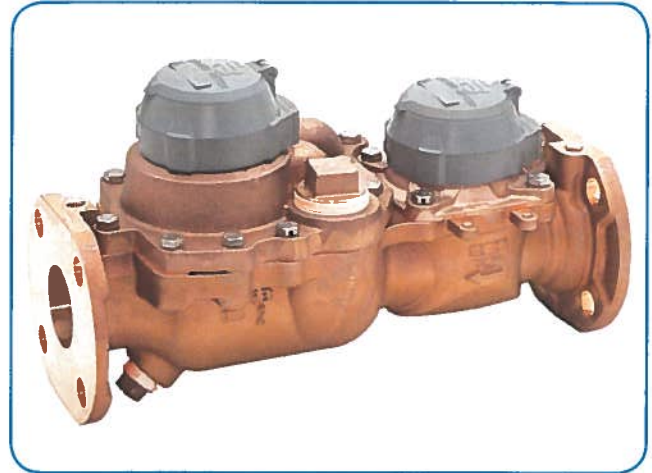
Unauthorized removal of the register or encoder is inhibited by the use of an optional tamper detection seal wire screw, TORX® tamper-resistant seal screw or the proprietary tamper-resistant keyed seal screw. Each can be installed at the meter site or at the factory.

APPLICATIONS

Use the Recordall Compound meter for measuring potable cold water in commercial and industrial applications where flow is in one direction only. The meter is an ideal choice for facilities that experience rapid and wide fluctuations in water demand, such as hospitals, universities, residential complexes and manufacturing or processing facilities.

OPERATION

At low flow rates, the Compound Series meter diverts water up through a bypass to the disc chamber. Leaving the chamber's outlet port, water flows beyond the turbine element and main valve. As the flow rate increases, a pressure differential is created that opens the main valve. The water then flows straight through the turbine chamber. In addition, a portion still flows through the disc chamber before exiting the meter.



Rotor and disc movements are transmitted by magnetic drive couplings to individual register odometers. The direct magnetic drive provides a positive, reliable and dependable register coupling for straight-reading or remote reading options. The self-lubricating thermoplastic register gearing is designed to minimize friction and provide long life.

OPERATING PERFORMANCE

The Recordall Compound Series meets or exceeds registration accuracy for low, normal operating, maximum continuous operation, and changeover flow rates as specified in AWWA Standard C702.

CONSTRUCTION

The Recordall Compound Series meter's construction complies with ANSI and AWWA C702 standards. It consists of three basic components: meter housing, interchangeable measuring elements, and sealed direct reading registers. The measuring element consists of the disc measuring chamber, turbine head assembly, and high flow valve assembly. To simplify maintenance, the registers and measuring elements can be removed without removing the meter housing from the line.

METER INSTALLATION

The meter is designed for installations where flow is in one direction only. A separate strainer is required to ensure optimum flow conditioning and protection of the measuring element. Companion flanges for installation of meters on various pipe types and sizes are available in cast iron or NL bronze as an option.

REGISTERS / ENCODERS

Standard—Sweep-Hand Registration

The standard register is a straight-reading, permanently sealed magnetic drive register. Dirt, moisture, tampering and lens fogging problems are eliminated. The register has a six-odometer wheel totalization display, 360° test circle with center sweep hand, and flow finder to detect leaks. Register gearing is made of self-lubricating engineered polymer, which minimizes friction and provides long life. The multi-position register simplifies meter installation and reading. The register capacity is 100,000,000 gallons (10,000,000 ft³, 1,000,000 m³).

Optional—Encoders for AMR/AMI Reading Solutions

AMR/AMI solutions are available for all Recordall Compound Series meters. All reading options can be removed from the meter without disrupting water service. Badger Meter encoders provide years of reliable, accurate readings for a variety of applications and are also available pre-wired to Badger Meter approved AMR/AMI solutions. See details at www.badgermeter.com.

SPECIFICATIONS

Compound Series Model	2" (50 mm)	3" (80 mm)	4" (100 mm)	6" (150 mm)
Meter Flanges, Class 150	2" elliptical or round	3" round	4" round	6" round
	(50 mm)	(80 mm)	(100 mm)	(150 mm)
Typical Operating Range	0.5...200 gpm	0.5...450 gpm	0.75...1000 gpm	0.75...2000 gpm
(100% ± 1.5%)	(0.1...45 m ³ /h)	(0.1...102 m ³ /h)	(0.17...227 m ³ /h)	(0.17...454.4 m ³ /h)
Low Flow Registration (95% minimum)	0.25 gpm (0.06 m ³ /h)	0.25 gpm (0.06 m ³ /h)	0.375 gpm (0.09 m ³ /h)	0.375 gpm (0.09 m ³ /h)
Maximum Continuous Flow	170 gpm (38.3 m ³ /h)	400 gpm (90.3 m ³ /h)	800 gpm (181.6 m ³ /h)	1500 gpm (340.5 m ³ /h)
Pressure Loss at Maximum Continuous Flow	5.4 psi at 170 gpm	6.0 psi at 400 gpm	11.0 psi at 800 gpm	9.3 psi at 1500 gpm
	(0.38 bar at 38.3 m ³ /h)	(0.41 bar at 90.3 m ³ /h)	(0.75 bar at 181.6 m ³ /h)	(0.64 bar at 340.5 m ³ /h)
Crossover Flow Rate, Typical	12 gpm	12 gpm	20 gpm	30 gpm
Pressure Loss at Crossover	3.5 psi (0.24 bar)	4.0 psi (0.28 bar)	4.0 psi (0.28 bar)	5.0 psi (0.35 bar)
Minimum Crossover Accuracy	97%	97%	97%	95%
Maximum Operating Pressure	150 psi (10 bar)			
Maximum Operating Temperature	105° F (41° C)			
Test Plug	1-1/2"		2"	

Materials

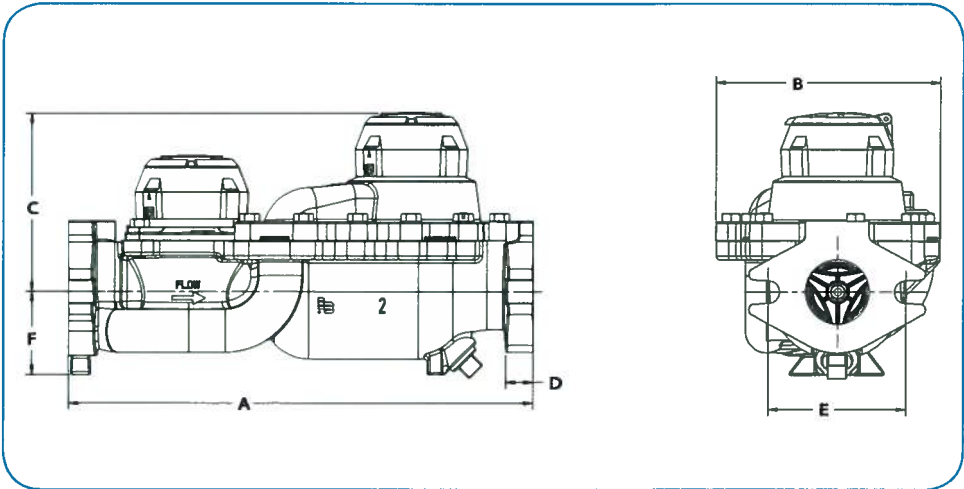
Meter Housing & Cover	Lead-free bronze alloy
Turbo Cast Head	Lead-free bronze alloy
Nose Cone & Straightening Vanes	Thermoplastic
Rotor	Thermoplastic
Rotor Radial Bearings	Lubricated thermoplastic
Rotor Thrust Bearing	Sapphire jewels
Rotor Bearing Pivots	Passivated 316 stainless steel
Calibration Mechanism	Stainless steel & thermoplastic
Measuring Chamber & Disc	Thermoplastic
High Flow Valve	Stainless steel & thermoplastic
Magnets	Ceramic
Register Lens	Glass
Register Housing & Cover	Thermoplastic or bronze
Trim	Stainless steel
Drain Plug (3/4")	Stainless steel or lead-free bronze alloy
Test Plug	Stainless steel or lead-free bronze alloy

PHYSICAL DIMENSIONS

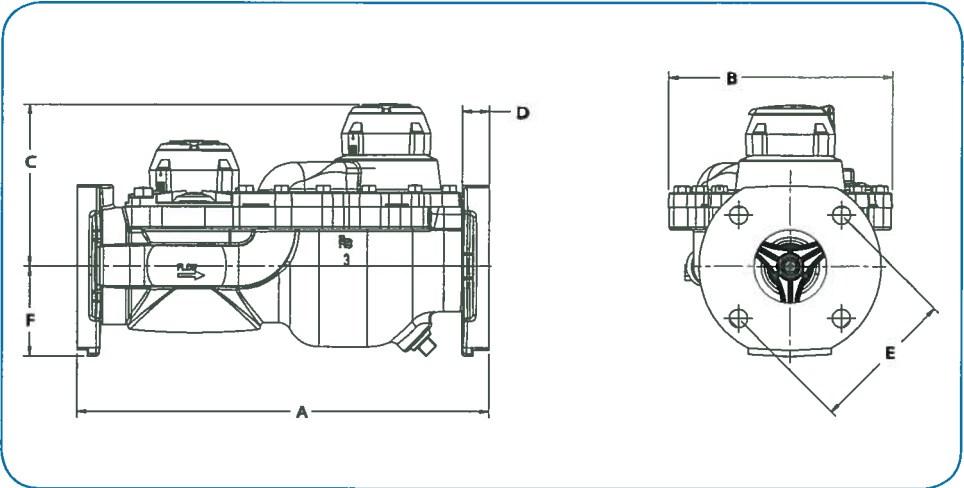
Compound Series Model	2" Elliptical (50 mm)	2" Round (50 mm)	3" (80 mm)	4" (100 mm)	6" (150 mm)
Meter & Pipe Size	2" (50 mm)		3" (80 mm)	4" (100 mm)	6" (150 mm)
Net Weight	45 lb (20 kg)		51 lb (23 kg)	85 lb (38 kg)	152 lb (69 kg)
Shipping Weight	63 lb (29 kg)		79 lb (36 kg)	120 lb (54 kg)	200 lb (90 kg)
Length (A)	15-1/4" * (387 mm)		17" (432 mm)	20" (508 mm)**	24" (610 mm)
Width (B)	7-3/8" (187 mm)		8-1/2" (216 mm)	9-1/8" (232 mm)	12-3/8" (314 mm)
Height (C)	5-7/8" (149 mm)		6-5/8" (168 mm)	7-1/4" (184 mm)	8-7/8" (225 mm)
Flange (D)	5/8" (16 mm)		3/4" (19 mm)	7/8" (22 mm)	15/16" (24 mm)
Bolt Circle (E)	4-1/2" (114 mm)	4-3/4" (121 mm)	6" (152 mm)	7-1/2" (191 mm)	9-1/2" (241 mm)
Centerline (C) to Base (F)	2-3/4" (70 mm)		3-5/8" (92 mm)	4-1/4" (108 mm)	5-3/8" (137 mm)
Number of Bolts	2	4	4	8	8

* Adapter available to increase total length to 17" (432 mm).
 **Adapter available to increase total length to 24" (610 mm).

Elliptical Flange (2" Only)

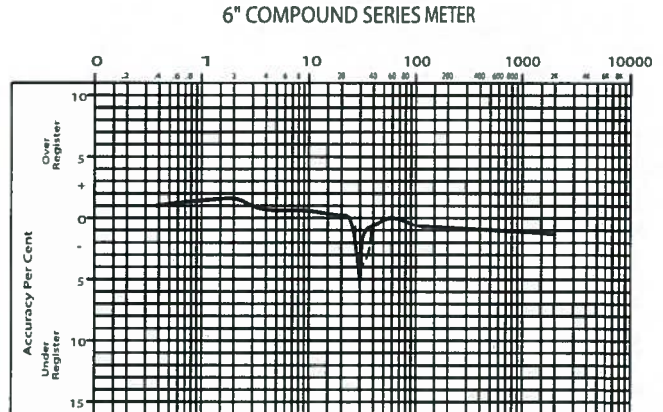
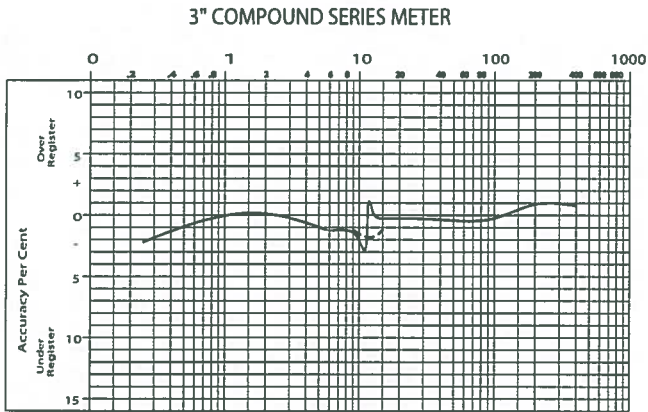
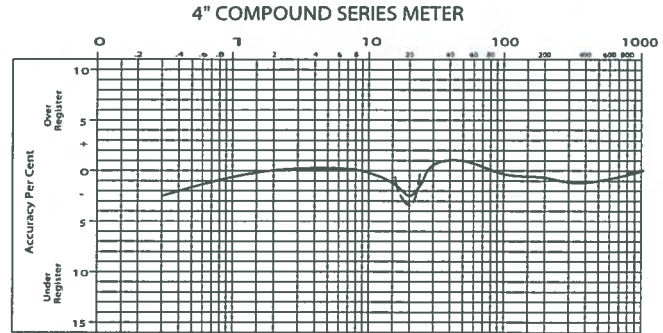
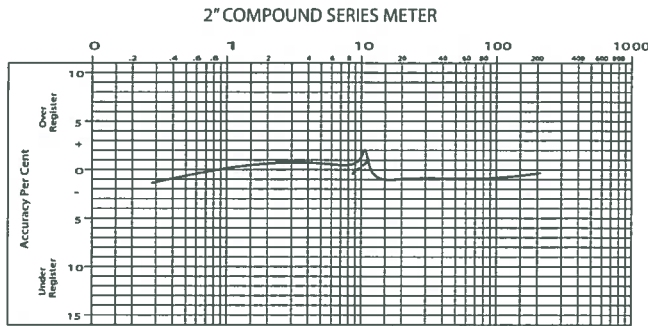


Round Flange



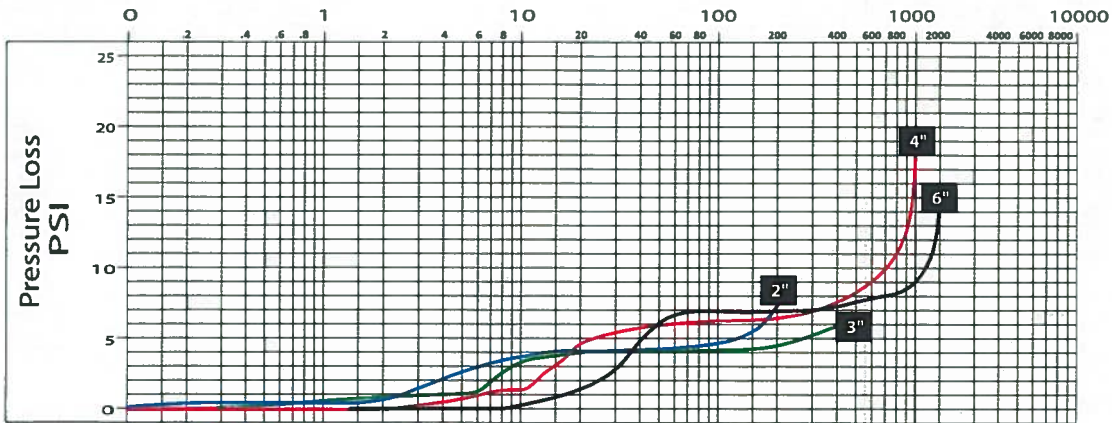
ACCURACY CHARTS

Rate of flow in gallons per minute (gpm)



PRESSURE LOSS CHART

Rate of flow in gallons per minute (gpm)



Making Water Visible®

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Badger Meter

Recordall® Compound Series Meters Sizes 2"...6"

PRODUCTS COVERED

This warranty shall apply to all Recordall® Compound Series Meters, sizes 2"...6", and the local registers used with these meters (collectively "Product") sold on or after July 1, 2013. This warranty is extended only to utilities, municipalities, other commercial users and authorized Badger Meter, Inc. distributors, hereafter referred to as "Customer" and does NOT apply to consumers or any person or entity who is not an original customer of Badger Meter or its authorized distributors.

MATERIALS AND WORKMANSHIP

Badger Meter warrants Product to be free from defects in materials and workmanship appearing within the following time frames:

Bronze Housings

One (1) year and six (6) months after shipment from Badger Meter.

Local Registers for Low Flow Registration (Disc Measuring Element)

Supplied with the Meters Listed Herein

Twenty-five (25) years and six (6) months after shipment from Badger Meter.

Local Registers for High Flow Registration (Turbo Measuring Element)

Supplied with the Meters Listed Herein

Five (5) years and six (6) months after shipment from Badger Meter.

METER ACCURACY

The meter Product will meet or exceed accuracy standards of AWWA Standard C702 for one (1) year and six (6) months after shipment from Badger Meter.

PRODUCT RETURNS

Any Product proved to the satisfaction of Badger Meter to have failed the foregoing warranties will, at the option of Badger Meter, be repaired or replaced without charge to the Customer. The obligation hereunder of Badger Meter shall be limited to such repair and replacement and shall be conditioned upon Badger Meter receiving written notice of any alleged defect within ten (10) days after its discovery. This exclusive remedy shall not be deemed to have failed its essential purpose so long as Badger Meter is willing and able to replace defective products or issue a credit to purchaser within a reasonable time of proof to Badger Meter that a defect is involved. Product returns must be shipped by the Customer prepaid F.O.B. to the nearest Badger Meter factory or distribution center. The Customer shall be responsible for all direct and indirect costs associated with removing original product and reinstalling the repaired or replacement Product.

LIMITS OF LIABILITY

This warranty shall not apply to Product repaired or altered by any party other than Badger Meter. The foregoing warranty applies only to the extent that the Product is installed, serviced and operated strictly in accordance with AWWA Standard C702 and AWWA M6 Manual. The warranty shall not apply and shall be void with respect to Product exposed to conditions other than those detailed in Badger Meter Product technical literature, or which have been subject to vandalism, negligence, accident, acts of God, improper installation, operation or repair, alteration, or other circumstances which are beyond the reasonable control of Badger Meter. With respect to Product not manufactured by Badger Meter, the warranty obligations of Badger Meter shall in all respects conform and be limited to the warranty extended to Badger Meter by the supplier.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (except warranties of title).

Any description of the Product, whether in writing or made orally by Badger Meter or Badger Meter agents, specifications, samples, models, bulletins, drawings, diagrams, engineering sheets or similar materials used in connection with any Customer's order are for the sole purpose of identifying the Product and shall not be construed as an express warranty. Any suggestions by Badger Meter or agents of Badger Meter regarding use, application, or suitability of the Product shall not be construed as an express warranty unless confirmed to be such in writing by Badger Meter.

Exclusion of Consequential Damages and Disclaimer of Other Liability. The liability of Badger Meter with respect to breaches of the foregoing warranty shall be limited as stated herein. The liability of Badger Meter shall in no event exceed the contract price. **BADGER METER SHALL NOT BE SUBJECT TO AND DISCLAIMS: (1) ANY OTHER OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR OF WARRANTY, (2) ANY OBLIGATIONS WHATSOEVER ARISING FROM TORT CLAIMS (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR ARISING UNDER OTHER THEORIES OF LAW WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY BADGER METER, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATING THERETO, AND (3) ALL CONSEQUENTIAL, INCIDENTAL, AND CONTINGENT DAMAGES WHATSOEVER.**

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Legacy Document #: RCS-W-1-EN



Badger Meter HR-E[®] LCD Encoder

DESCRIPTION

Applications: The High Resolution encoder (HR-E LCD) is a fully electronic, solid-state encoder with no moving parts. It is designed for use with all current Badger Meter Recordall[®] Disc, Turbo Series, Compound Series, Combo Series and Fire Service meters and assemblies. The HR-E LCD provides connectivity with Badger Meter ORION[®] and GALAXY[®] AMR/AMI endpoints and other AMR/AMI technology solutions approved by Badger Meter.

NOTE: For more detailed information, refer to the document *HR-E LCD Encoder User Manual*, available at www.badgermeter.com.

Field Programmable: The HR-E LCD encoder comes standard as factory programmed to customer specifications, with the option for field programming the unit of measure, meter type, meter model, digit resolution from the encoder, billing units, and rate-of-flow time and units. Programming is performed through the IR port via a computer.

Electronic Resolution: Standard encoded output from the HR-E LCD is nine digits.

Status Indicators: Status indicators are sent as part of the encoder extended message to AMR/AMI systems such as ORION Cellular, Fixed Network and Migratable endpoints that are capable of receiving an extended message. The details can also be read through an IR interface.

Mounting: Icons on the HR-E LCD encoder face indicate encoder status and alarm conditions. The fully potted encoder assembly has a bayonet mount compatible with all Recordall Disc, Turbo Series, Compound Series, Combo Series and Fire Series meters and assemblies. The bayonet mount positions the encoder in any of four orientations for visual reading convenience. The HR-E LCD encoder can be removed from the meter without disrupting water service.

Magnetic Drive Communication: The HR-E LCD encoder detects movement of the wet side meter magnet with magnetic sensors to provide reliable and dependable encoded communication.

Tamper-resistant Features: Unauthorized removal of the HR-E LCD encoder is inhibited by a tamper-resistant Torx seal screw. Torx seal screws are provided as standard accessories. Optional proprietary tamper-proof screws are also available.

Magnetic sensors detect and report an attempted encoder removal. In addition, the HR-E LCD encoder is resistant to magnetic tampering. The encoder detects an attempted tamper—as well as encoder removal—and sends a tamper alarm in either situation. Approved endpoints capable of receiving the alarms, such as ORION Cellular, Fixed Network and Migratable endpoints, can then report the tamper condition to the meter reading software.



SPECIFICATIONS

Encoder type	Straight reading, permanently sealed, electronic LCD absolute encoder with field-programmable option
Encoder display	Status indicators, unit of measure, billing units, automatic toggle between 9-digit and 6-digit consumption (segmented leak detector in this mode), rate of flow, meter model
Unit of measure	U.S. gallons, Imperial gallons, cubic feet, cubic meters, and liters clearly identified on register face
Flow rate	Seconds, minutes, and hours
Numerals	7 mm (0.28 in.) high
Weight	11 ounces
Humidity	0...100% condensing
Temperature	Storage: -40...60° C (-40...140° F) Max. ambient for 1 hr: 72° C (150° F) Electronics & Display: -10...60° C (14...140° F)
Status indicators	Electronic and visual icons for: meter functioning correctly, meter alarm (indicates temperature limits exceeded, magnetic tamper or encoder removal), reverse flow, suspected leak, 30-day no usage, end of battery life
Signal output	Industry standard ASCII format
Signal type	Three-wire synchronous for AMR/AMI solutions Red = clock/power; Black = ground; Green = data
Battery	Lithium thionyl chloride AA cell, fully encapsulated within encoder housing
Battery Life	20 years (calculated)

Construction: The housing of the HR-E LCD encoder is constructed of an engineered polymer enclosure and a polycarbonate lens. For long-term performance, the enclosure is fully encapsulated, weatherproof, and UV-resistant to withstand harsh environments and to protect the electronics in flooded or submerged pit applications. An epoxy potting (patent pending) comprises the encoder bottom. Due to this unique sealing, the HR-E LCD exceeds all applicable requirements of AWWA Standard C706 and C707.

Wire Connections: The HR-E LCD encoder is available with an in-line connector for easy connection and installation to AMR/AMI endpoints. It is also available with a flying lead for a field splice connection, or fully prewired to an AMR/AMI endpoint.

Operating Characteristics: The HR-E LCD encoder is shipped in storage mode so a meter status alarm is not triggered. In storage mode, the meter model screen is displayed. Upon sensing two revolutions of the meter magnet, the encoder goes into normal operation mode. The display then automatically toggles between these four modes:

- 9-digit consumption displays for 45 seconds.
- 6-digit consumption (segmented leak detector in this mode) displays for 5 seconds.
- Rate of flow displays for 5 seconds.
- Meter model displays for 5 seconds.

DIMENSIONAL DRAWINGS

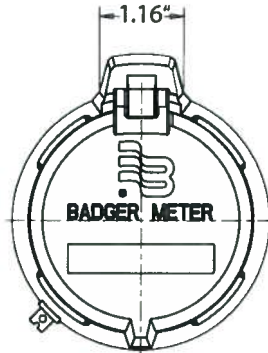


Figure 1: Top view

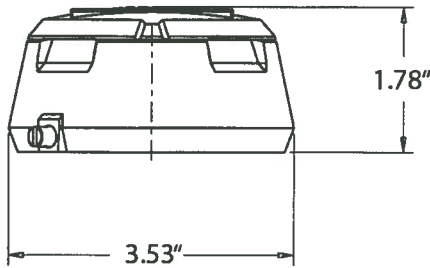


Figure 2: Front view

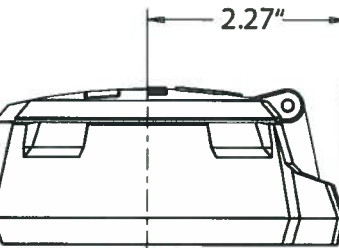


Figure 3: Left side view

MEASUREMENT RESOLUTION

The electronic encoder output resolution of the HR-E LCD is as noted below.

Recordall Disc Series	Size (in.)	9-dial encoder output (gal)	9-dial encoder output (ft³)	9-dial encoder output (m³)
LP	5/8, 5/8 x 3/4	0.01	0.001	0.0001
M25	5/8, 5/8 x 3/4	0.01	0.001	0.0001
M35	3/4	0.01	0.001	0.0001
M40	1	0.01	0.001	0.0001
M55	1	0.01	0.001	0.0001
M70	1	0.01	0.001	0.0001
M120	1-1/2	0.1	0.01	0.001
M170	2	0.1	0.01	0.001

Recordall Turbo Series	Size (in.)	9-dial encoder output (gal)	9-dial encoder output (ft³)	9-dial encoder output (m³)
T160	1-1/2	0.1	0.01	0.001
T200	2	0.1	0.01	0.001
T450	3	0.1	0.01	0.001
T1000	4	0.1	0.01	0.001
T2000	6	1	0.1	0.01
T3500	8	1	0.1	0.01
T5500	10	1	0.1	0.01
T6200	12	10	1	0.01
T6600	16	10	1	0.01
T10000	20	10	1	0.01

Recordall Compound Series	Size (in.)	9-dial encoder output (gal)	9-dial encoder output (ft³)	9-dial encoder output (m³)
High Side T200	2	0.1	0.01	0.001
Low Side M25	2	0.01	0.001	0.0001
High Side T450	3	0.1	0.01	0.001
Low Side M25	3	0.01	0.001	0.0001
High Side T1000	4	0.1	0.01	0.001
Low side M35	4	0.01	0.001	0.0001
High Side T2000	6	1	0.1	0.01
Low Side M35	6	0.01	0.001	0.0001
High Side T3500	8	1	0.1	0.01
Low side M120	8	0.1	0.01	0.001

NOTE: For Fire Service Meters and Assemblies, please refer to appropriate Disc and TSM information provided above.

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Badger Meter

HR-E[®] LCD

High Resolution ELCD encoder

PRODUCTS COVERED

This Badger Meter warranty shall apply to the High Resolution ELCD encoder (HR-E LCD) ("Product"), sold on or after April 20, 2016. The warranty is extended only to utilities, municipalities, or other commercial users, and authorized Badger Meter, Inc. (Badger Meter[®]) distributors, hereinafter referred to as "Customer," and does NOT apply to consumers or any person or entity who is not an original customer of Badger Meter or its authorized distributors.

MATERIALS AND WORKMANSHIP

Badger Meter warrants the Product to be free from defects in materials and workmanship appearing within ten (10) years and six (6) months after shipment from Badger Meter.

PRODUCT RETURNS

Product failures must be proven and verified to the satisfaction of Badger Meter. The Badger Meter obligation hereunder shall be limited to such repair and replacement and shall be conditioned upon Badger Meter receiving written notice of any asserted defect within 10 (ten) days after its discovery. If the defect arises and a valid claim is received within the Warranty Period, at its option, Badger Meter will either (1) exchange the Product with a new, used or refurbished Product that is at least functionally equivalent to the original Product, or (2) refund the purchase price of the Product.

Product returns must be shipped by the Customer prepaid F.O.B. to the nearest Badger Meter factory or distribution center. The Customer shall be responsible for all direct and indirect costs associated with removing the original Product and reinstalling the repaired or replacement Product. A replacement Product assumes the remaining warranty of the original Product, or ninety (90) days from the date of replacement, whichever provides longer coverage.

LIMITS OF LIABILITY

This warranty shall not apply to any Product repaired or altered by any party other than Badger Meter. The foregoing warranty applies only to the extent that the Product is installed, serviced and operated strictly in accordance with Badger Meter instructions. The warranty shall not apply and shall be void with respect to a Product exposed to conditions other than those detailed in applicable technical literature, or which have been subject to vandalism, negligence, accident, acts of God, improper installation, operation or repair, alteration, or other circumstances which are beyond the reasonable control of Badger Meter.

With respect to products not manufactured by Badger Meter, the warranty obligations of Badger Meter shall in all respects conform and be limited to the warranty extended to Badger Meter by the supplier.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (except warranties of title).

Any description of a Product, whether in writing or made orally by Badger Meter or its agents, specifications, samples, models, bulletins, drawings, diagrams, engineering sheets or similar materials used in connection with any Customer's order are for the sole purpose of identifying the Product and shall not be construed as an express warranty. Any suggestions by Badger Meter or its agents regarding use, application or suitability of the Product shall not be construed as an express warranty unless confirmed to be such, in writing, by Badger Meter.

EXCLUSION OF CONSEQUENTIAL DAMAGES AND DISCLAIMER OF OTHER LIABILITY

Badger Meter liability with respect to breaches of the foregoing warranty shall be limited as stated herein. Badger Meter liability shall in no event exceed the contract price. BADGER METER SHALL NOT BE SUBJECT TO AND DISCLAIMS: (1) ANY OTHER OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR OF WARRANTY, (2) ANY OBLIGATIONS WHATSOEVER ARISING FROM TORT CLAIMS (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR ARISING UNDER OTHER THEORIES OF LAW WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY BADGER METER, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATING THERETO, AND (3) ALL CONSEQUENTIAL, INCIDENTAL AND CONTINGENT DAMAGES WHATSOEVER.

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Legacy document number: LCD-W-01



Badger Meter

ORION® Water Endpoints

Cellular LTE Endpoint

DESCRIPTION

The ORION® Cellular endpoint is an innovative, two-way water endpoint that utilizes existing cellular infrastructure to efficiently and securely deliver meter reading data to the utility via the reliable cellular network.

The Cellular endpoint is a member of the time-tested ORION family of products from Badger Meter, designed for maximum flexibility. Since 2002, the ORION product family has provided comprehensive Advanced Metering Analytics (AMA) for interval meter reading and data capture using both one-way and two-way communications.

FUNCTIONALITY

Operation: The endpoint communicates with the encoder and captures readings and meter status information. At a predetermined interval, the endpoint broadcasts readings, status, and event data via the cellular network, and the information is captured and analyzed using BEACON AMA software.

Activation: All ORION Cellular LTE endpoints are shipped in an inactive, non-transmitting state. The endpoints offer a Smart Activation feature. After the endpoint is installed, it begins broadcasting data when the encoder senses the first usage of water. No field programming or tools are required to activate the endpoint. Alternatively, an IR fob can be used to activate the endpoint and verify the encoder connection. With proper installation, successful endpoint function can be confirmed through a web app demonstrating that communication has been verified to both the encoder and to the network.

Broadcast Mode: The endpoint broadcasts fixed network reading data through the secure existing cellular network within the service area. The endpoint also transmits a mobile message to support troubleshooting in the field.

Data Storage: The endpoint stores 42 days of 15-minute data.

Output Message: The endpoint broadcasts its unique serial number, meter reading data, and applicable status indicators. Each message is encrypted to meet Advanced Encryption Standard (AES) 256.



APPLICATION

Configurations: The endpoint is a multi-purpose endpoint that can be deployed in indoor, outdoor and pit applications. The electronics and battery assembly are fully encapsulated in epoxy for environmental integrity. The endpoint is available with a connector assembly for ease of installation.

Meter Compatibility: When attached to a Badger Meter high resolution encoder, the endpoint is compatible with all current Badger Meter Recordall® Disc, Turbo Series, Compound Series, Combo Series and Fire Service meters and assemblies, and with E-Series® Ultrasonic, E-Series® Ultrasonic Plus, and M-Series® Electromagnetic flow meters.

Encoder Compatibility: The endpoint is suitable for use with Badger Meter high resolution encoders as well as the following Badger Meter approved three-wire encoder registers that have a manufacture date of 2005 or newer, are programmed into the AMR/AMI three-wire output mode, and have three-wires connected: Elster InVISION and ScanCoder® encoders and evoQ4 meter (encoder output); Hersey® Translator; Master Meter® Octave® Ultrasonic meter encoder output; Metron-Farnier Hawkeye; Mueller Systems 420 Solid State Register (SSR) LCD; Neptune® ProRead, E-Coder® and ARB-V®; and Sensus® Electronic Register encoder (ECR) and ICE.

SPECIFICATIONS

Dimensions	5.125 in. (130 mm) (H)
	1.75 in. (44 mm) Diameter at top
	2.625 in. (W) x 2.875 in. (D) at base
	67 mm (W) x 73 mm (D) at base
Broadcast Network	LTE cellular network, with fallback to 3G where LTE is unavailable. Mobile backup frequency is FCC-regulated 902...928 MHz frequency hopping modulation
Operating Temperature Range	
• Storage, Meter Reading and Mobile Backup	-40...60° C (-40...140° F)
• Cellular Communications	-20...60° C (-4...140° F)
Humidity	0%...100% condensing
Battery	One (1) lithium thionyl chloride D cell (nonreplaceable)

FEATURES

Communication Type	Two-way
Application Type	Control/Monitor
Reading Interval Type	15-minute
Encoder Compatibility	Absolute
Fixed Network Reading	✓
Premise Leak Detection	✓
Cut-Wire Indication	✓
Reverse Flow Indication	✓
No Usage Indication	✓
Encoder Error	✓
Low Battery Indication	✓
Remote Programming	✓
Remote Clock Synchronization	✓
Firmware Upgrades	✓

Construction: All ORION Cellular endpoints are housed in an engineered polymer enclosure with an ORION RF board, battery and antenna. To ensure long-term performance, the enclosure is fully potted to withstand harsh environments and to protect the electronics in flooded or submerged pit applications.

Wire Connections: ORION Cellular endpoints are available with in-line connectors (Twist Tight or Nicor®) for easy installation and connection to compatible encoders/meters. The endpoints are also available with flying leads for field splice connections. Other wire connection configurations may be available upon request.

License Requirements: ORION Cellular LTE endpoints comply with Part 15, Part 22, Part 24, and Part 27 of the FCC Rules. No license is required by the utility to operate an ORION meter reading system. This device complies with Industry Canada license-exempt RSS standard(s).

Transportation: The Federal Aviation Administration prohibits operating transmitters and receivers on all commercial aircraft. The ORION Cellular endpoint is considered an operating transmitter and cannot be shipped by air.

Warning: To reduce the possibility of electrical fire and shock hazards, never connect the cable from the endpoint to any electrical supply source. The endpoint cable provides SELV low voltage limited energy power to the load and should only be connected to passive elements of a water meter register.

Caution: The endpoint batteries are *not* replaceable. Users should make no attempt to replace the batteries. Changes or modifications to the equipment that are not expressly approved by Badger Meter could void the user's authority to operate the equipment.

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Badger Meter

ORION® Water Products

with BEACON AMA®

PRODUCTS

This warranty shall apply to Badger Meter ORION® series AMR/AMI Water Endpoints, Endpoint Assemblies, reading hardware, and software for a BEACON® AMA system, sold on or after June 20, 2018.

ORION series AMR/AMI Water Endpoints include Fixed Network (SE), Migratable (ME), and Classic (CE). Endpoint Assemblies are Water Endpoints factory-connected to Badger Meter HR-E® LCD, and HR-E® encoders.

This warranty is not transferable and is extended only to utilities, municipalities, other commercial users and authorized distributors, hereafter referred to as "Customer" and does NOT apply to consumers or any person or entity who is not an original Customer of Badger Meter or its authorized distributors.

MATERIAL AND WORKMANSHIP

Badger Meter warrants all ORION series AMR/AMI Water Endpoints, Endpoint Assemblies, reading hardware and software, hereafter referred to as "Product(s)" as listed below, to be free from defects in material and workmanship for the time period stated.

ORION Water Endpoints ^{1,2}	20 years and 6 months after shipment
ORION Endpoint Assemblies ¹	20 years and 6 months after shipment
Panasonic® Toughpad® Tablet ³	3 years after shipment
Panasonic Toughbook® Laptop for BEACON AMA Mobile Solution ³	3 years after shipment
Trimble® Ranger 7 Handheld ³	3 years after shipment
Trimble® Ranger 7 ORION ME, CE Modules ³	3 years after shipment
ORION Mobile Migratable (ME) Transceiver Kit ³ or Classic (CE) Receiver Kit ³	3 years after shipment
Trimble® Ranger 3 Handheld ³ and Charging Cradle	3 years after shipment
ORION Fixed Network (SE) Gateway Transceiver	1 year after shipment

¹ Water Endpoints, Endpoint Assemblies and Endpoint batteries— collectively ORION Water Endpoint Products—are warranted to be free from defects in material and workmanship for twenty (20) years and six (6) months after shipment from Badger Meter. Badger Meter will repair or replace, at its discretion, a non-performing ORION Water Endpoint Product at no cost during the first ten (10) years, and at a prorated price during the last ten (10) years of the warranty. Badger Meter will apply these prorated price discounts to the ORION Water Endpoint Product list prices at the time of ORION Water Endpoint Product return and according to the following prorated price discount schedule: Years 11 through 12 - 75% discount; Years 13 through 15 - 50% discount; Year 16 - 40% discount; Year 17 - 30% discount; Year 18 - 20% discount; and Years 19 through 20 - 10% discount. Replacement Products are warranted for and under the balance of the original applicable Product warranty.

² ORION Water Endpoints that are sold factory-connected to an E-Series® meter are warranted per the 20-year proration shown above. Refer to the appropriate E-Series Ultrasonic Meter warranty for meter, electronics and battery coverage.

³ Batteries, antennas, cables and accessories warranty is limited to 12 months from the date of shipment.

PRODUCT RETURNS

Product failures must be proven and verified to the satisfaction of Badger Meter. The Badger Meter obligation hereunder shall be limited to such repair and replacement and shall be conditioned upon Badger Meter receiving written notice of any asserted defect within 10 (ten) days after its discovery. This exclusive remedy shall not be deemed to have failed its essential purpose so long as Badger Meter is willing and able to replace the defective Product for the Customer within a reasonable time, after receipt of proof that a defect is involved. Product returns must be shipped by the Customer prepaid F.O.B. to the nearest Badger Meter factory or distribution center. The Customer shall be responsible for all direct and indirect costs associated with removing the Product and reinstalling the repaired or replacement Product.

LIMITS OF LIABILITY

This warranty shall not apply to any Product repaired or altered by any Party other than Badger Meter. The foregoing warranty applies only to the extent that the Product is installed, serviced and operated strictly in accordance with Badger Meter instructions. The warranty shall not apply and shall be void with respect to Products exposed to conditions other than those detailed in Product technical literature or which have been subject to vandalism, negligence, accident, acts of God, improper installation, operation or repair, alteration or other circumstances which are beyond the reasonable control of Badger Meter. With respect to products not manufactured by Badger Meter, the warranty obligations of Badger Meter shall in all respects conform and be limited to the warranty extended to Badger Meter by the supplier.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (except warranties of Title).

Any description of the Product, whether in writing or made orally by Badger Meter or its agents, specifications, samples, models, bulletins, drawings, diagrams, engineering sheets or similar materials used in connection with any Customer's order are for the sole purpose of identifying the Product and shall not be construed as an express warranty. Any suggestions by Badger Meter or its agents regarding use, application or suitability of the Product shall not be construed as an express warranty unless confirmed to be such, in writing, by Badger Meter.

Exclusion of Consequential Damages and Disclaimer of Other Liability

The liability of Badger Meter with respect to breaches of the foregoing warranty shall be limited as stated herein. Badger Meter's liability shall in no event exceed the contract price. BADGER METER SHALL NOT BE SUBJECT TO AND DISCLAIMS: (1) ANY OTHER OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR OF WARRANTY, (2) ANY OBLIGATIONS WHATSOEVER ARISING FROM TORT CLAIMS (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR ARISING UNDER OTHER THEORIES OF LAW WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY BADGER METER, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATING THERETO, AND (3) ALL CONSEQUENTIAL, INCIDENTAL AND CONTINGENT DAMAGES WHATSOEVER.

Making Water Visible®

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Badger Meter

E-Series® Ultrasonic Plus Meter with Integrated Shutoff Valve

5/8 × 3/4 in., 3/4 × 7-1/2 in., 3/4 × 9 in. and 3/4 × 1 × 9 in.

DESCRIPTION

The E-Series® Ultrasonic Plus meter uses solid-state ultrasonic transit time technology to measure cold potable water and incorporates an integrated shutoff valve into the lay length of the meter. The integrated valve allows remote shutoff and partial shutoff of water service in residential utility applications.

Authorized utility personnel can actuate the valve via a command sent from BEACON® AMA (Advance Metering Analytics) to an ORION® Cellular LTE endpoint connected to the E-Series Ultrasonic Plus meter.

BEACON AMA displays the status of the valve (open, partial or closed) and upon a command to transition the valve, confirms the success of that actuation. Status of the valve is also indicated on the physical meter via a position-indicating LED.

E-Series Ultrasonic Plus meters comply with the lead-free provisions of the Safe Drinking Water Act, are certified to NSF/ANSI Standards 61 and 372, and carry the NSF 61 marking. All components of the stainless steel meter (housing, measuring element, seals & valve) comprise the certified system. E-Series Ultrasonic Plus meters comply with the applicable portions of the most recent revision of AWWA Standard C700.

All electronic components utilized in the meter and RF Transceiver design comply with applicable FCC Part 15 standards and AWWA C707 for encoded remote reading systems.

Features

- Delivers precision accuracies with extended flow ranges
- Gate valve integrated into standard lay length of meter—no cut-ins required
- Patent pending magnetically coupled valve to extend field life
- Patented flow restriction valve technology support open, closed and utility-selectable partially closed options (US Patent No. 8,539,827)
- Does not require infrastructure
- Valve position-indicating LED
- Flexible and modular design allows installing the meter first, valve later—in the field
- Field-serviceable valve
- Fully submersible—electronics completely encapsulated to withstand harsh, flooded pit environments
- Low pressure loss
- Easy to read, 9-digit display presents consumption, rate of flow, reverse flow indication and alarms
- High resolution industry standard ASCII encoder protocol



APPLICATIONS

The E-Series Ultrasonic Plus meter provides a cost-effective, non-confrontational, safe method for water utilities to temporarily restrict an end consumer's water service. The most common application is for authorized utility personnel to close or inhibit water service to repeat delinquent accounts to encourage prompt payment from the property owner. Other applications may include opening or closing the valve as tenants change, or accommodating end-customer requests for temporary water restriction.

CONSTRUCTION

The E-Series Ultrasonic Plus meter consists of a stainless steel, lead-free meter housing, an engineered polymer and stainless steel metering insert, a meter-control circuit board with associated wiring, LCD, and battery.

The gate valve incorporated into the outlet side of the meter is designed to be field serviceable. The internal valve components (lead screw, gate, magnetic follower) are accessible by removal of the power control module (potted motor, battery, and PCB) and valve bonnet.

The meter's electronic components are housed and fully potted within a molded, engineered polymer enclosure, which is permanently attached to the meter housing. The transducers extend through the stainless steel housing and are sealed by O-rings.

The metering insert holds the stainless steel ultrasonic reflectors in the center of the flow area, enabling turbulence-free water flow through the tube and around the ultrasonic signal reflectors. The metering insert's patented design virtually eliminates chemical buildup on the reflectors, providing long-term metering accuracy.

OPERATION & PERFORMANCE

As water flows into the measuring tube, ultrasonic signals are sent consecutively, in forward and reverse directions of flow. Velocity is then determined by measuring the time difference between the measurement in the forward and reverse directions. Total volume is calculated from the measured flow velocity using water temperature and pipe diameter. The LCD display shows total volume and alarm conditions and can toggle to display rate of flow.

A battery powered DC motor module drives the dry-side magnetic coupling that is completely separated from the pressure vessel. The dry-side magnet couples to a mating wet-side magnetic assembly consisting of a magnetic disc, lead screw, and gate. The combined dry-side and wet-side magnetic coupling transfers torque from the motor to turn the lead screw inside the pressure vessel, which ultimately drives the gate into the open, closed, or partially closed positions based on a command prompted by the connected ORION Cellular LTE endpoint via BEACON AMA. If necessary, actuation of the valve can be also be performed at the meter site.

System screens within BEACON AMA indicate the position of the valve and record the date and time for all valve actuations. In addition, the position of the valve can also be determined by physical inspection of the meter via the valve position LED.

INSTALLATION

The E-Series Ultrasonic Plus meter is completely submersible and can be installed using horizontal or vertical piping, with flow in the up direction.

The meter will not measure flow when an empty pipe (flow sensors are not fully submerged) condition is experienced.

SPECIFICATIONS

E-Series Ultrasonic Meter Size	5/8 in. x 3/4 in. (15 mm)	3/4 in. (20 mm)
Operating Range	0.1...25 gpm	0.1...32 gpm
Extended Low-Flow Rate	0.05 gpm	0.05 gpm
Maximum Continuous Operation	25 gpm	32 gpm
Pressure Loss	4 psi at 15 gpm	2.8 psi at 15 gpm
Reverse Flow - Maximum Rate	4 gpm	4 gpm
Operating Performance	In the normal temperature range of 45...85° F (7...29° C), new meter consumption measurement is accurate to: <ul style="list-style-type: none"> • ±1.5% over the normal flow range • ±3.0% from the extended low flow range to the minimum flow value 	
Storage Temperature	- 40...140° F (- 40...60° C)	
Maximum Ambient Storage (Storage for One Hour)	150° F (72° C)	
Measured-Fluid Temperature Range	34...140° F (1°...60° C)	
Humidity	0...100% condensing; meter is capable of operating in fully submerged environments.	
Maximum Operating Pressure of Meter Housing	175 psi (12 bar)	
Register Type	Straight reading, permanently sealed electronic LCD; digits are 0.28" (7 mm) high.	
Register Display	<ul style="list-style-type: none"> • Consumption (up to nine digits) • Rate of flow • Alarms • Unit of measure factory programmed for gallons, cubic feet and cubic meters 	
Register Capacity	<ul style="list-style-type: none"> • 10,000,000 gallons • 1,000,000 cubic feet • 100,000 cubic meters 	
Totalization Display Resolution	<ul style="list-style-type: none"> • Gallons: 0.XX • Cubic feet: 0.XXX • Cubic meters: 0.XXXX 	
Meter Battery	3.6-volt lithium thionyl chloride battery is fully encapsulated within the register housing and is not replaceable; 20-year battery life.	
Valve Battery	3.6-volt lithium thionyl chloride battery within the power module. Battery is replaceable by replacing the entire power module; 20-year battery life, based upon 240 actuations.	

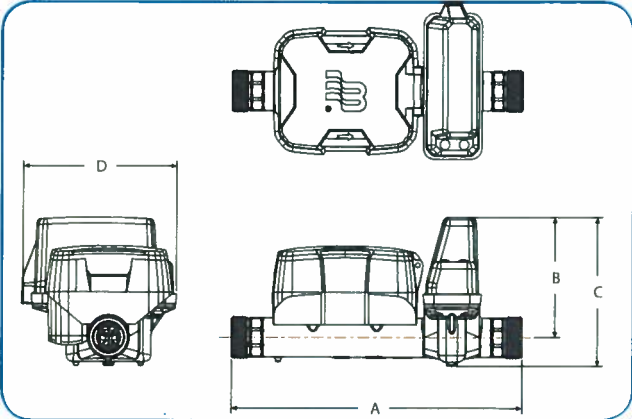
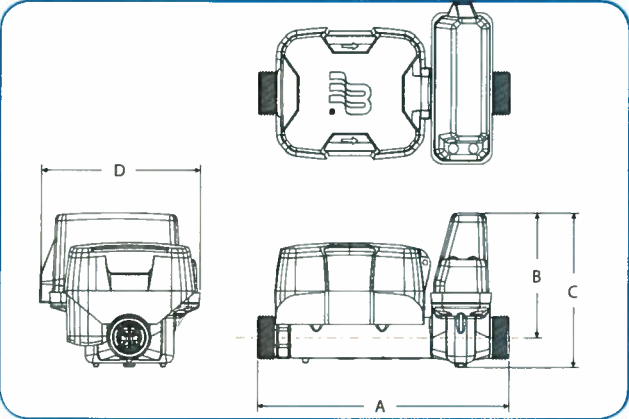
MATERIALS

Meter Housing	316 stainless steel
Valve Bonnet	316 stainless steel
Bonnet Seal	Viton O-ring
Register Housing	Engineered Polymer
Power Control Module Housing	Engineered Polymer
Gate	PTFE
Power Screw	316 Stainless steel

PHYSICAL DIMENSIONS

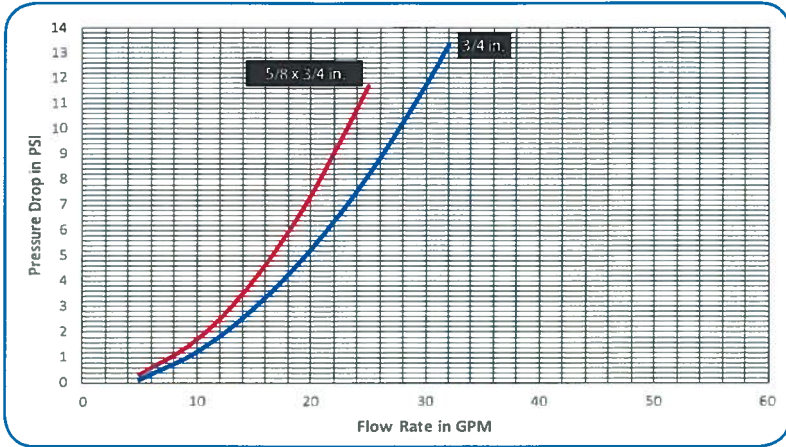
E-Series Ultrasonic Meter Size	5/8 in. x 3/4 in. (15 mm)	3/4 in. (20 mm)
Size Designation X Lay Length	5/8 in. x 3/4 in. x 7-1/2 in.	3/4 in. x 7-1/2 in. or 3/4 in. x 9 in.
Weight (without AMR)	4.2 lb	3/4 in. x 7-1/2 in., 4.2 lb or 3/4 in. x 9 in., 4.4 lb
See illustration below for Measurement Designations.		
Length (A)	7.5 in.	7.5 in. or 9.0 in.
Height (B)	3.69 in.	3.69 in.
Height (C)	4.57 in.	4.57 in.
Width (D)	4.728 in.	4.728 in.
Bore Size	3/4 in.	3/4 in.
Coupling Nut & Spud Thread	1 in. x 11-1/2 NPSM	1 in. x 11-1/2 NPSM
Tailpiece Pipe Thread (NPT)	3/4 in.	3/4 in.
Service Pipe Thread (NPT)	3/4 in.	3/4 in.

Measurement Designations



PRESSURE LOSS CHART

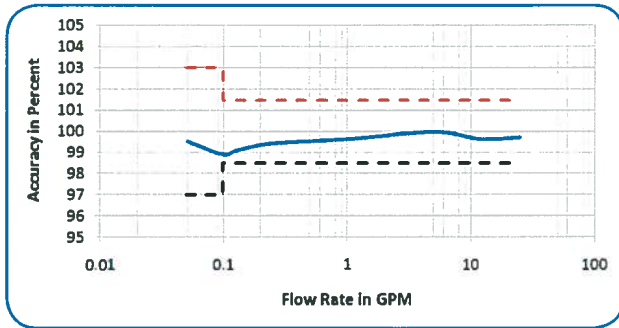
Typical Rate of Flow in Gallons per Minute (gpm)



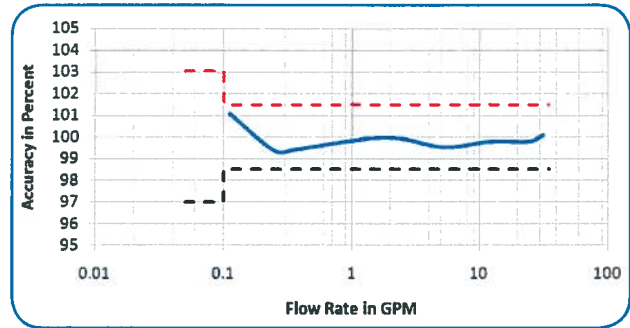
ACCURACY CHARTS

Typical Curve—Rate of Flow in Gallons per Minute (gpm)

5/8 x 3/4 in. Meter



3/4 in. Meter



Making Water Visible®

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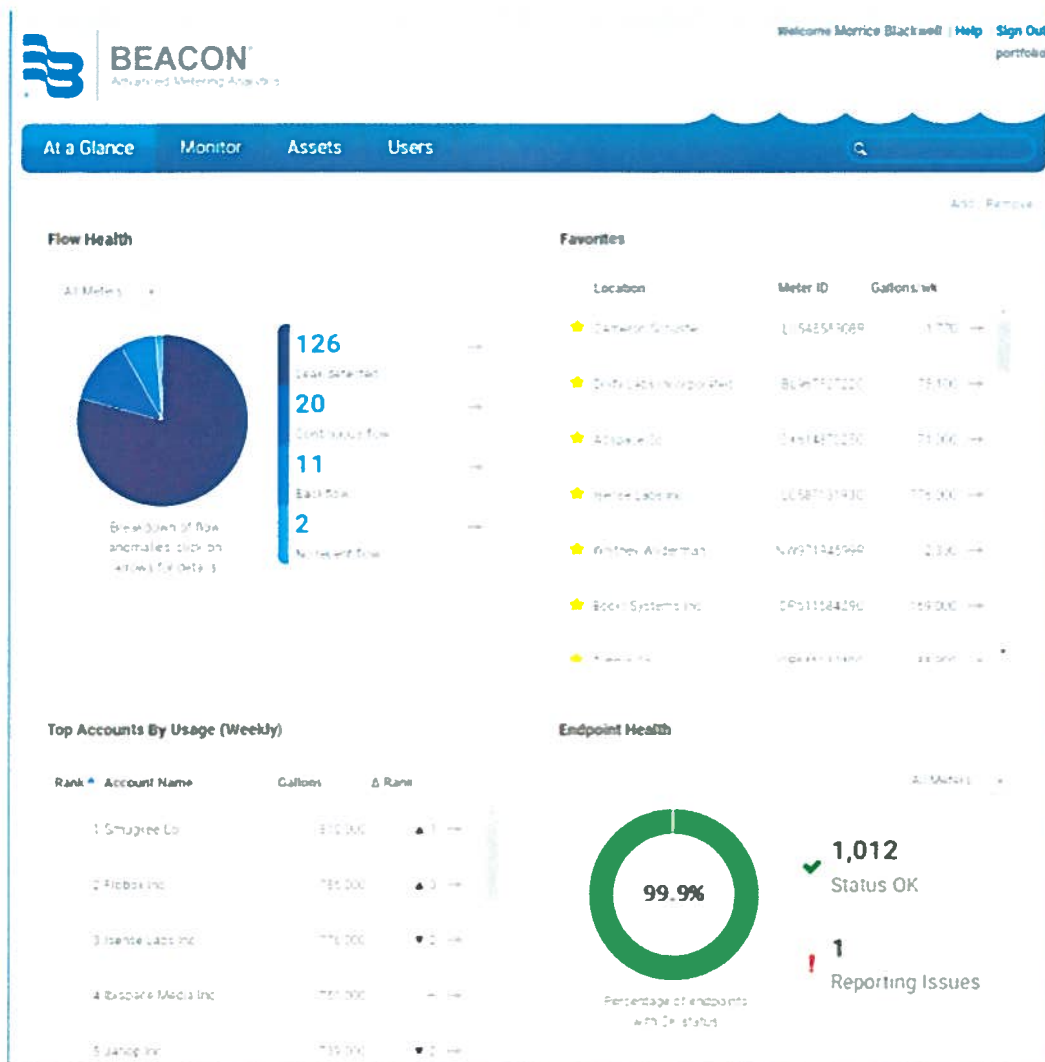
D. PROJECT APPROACH



Every drop counts.

D. PROJECT APPROACH

BEACON Advanced Metering Analytics (AMA) presents many opportunities for customization to address Webb County's business needs. From the needs of the overall utility (units of measure, reporting filters and weather overlays) down to the dashboard customization of individual users, (filter selections and widget choices,) BEACON AMA allows input from each utility so that the customization will fit their unique requirements. For example, if the County wants to implement a program to find potential leaks, the BEACON AMA customized dashboard can proactively identify accounts with continuous profiles. In addition, Webb County can customize alerts to notify key personnel when specific conditions occur at a particular account.



D. PROJECT APPROACH

Leveraging AMI

Leveraging the existing public cellular network, this solution requires no utility-owned infrastructure such as gateways or repeaters, nor is an FCC license required. The system can be deployed immediately on key revenue accounts or in a systematic route-by-route manner, allowing Webb County to begin to capture the benefits of the solution immediately.

The BEACONAMA managed solution brings a new level of utility-optimizing information to light. The meter data available with BEACON AMA will improve your utility's operations in numerous ways. In addition to providing timely and accurate billing information, the system quickly flags vandalized or tampered meter endpoints, assists in your conservation efforts, and flags accounts that may have usage anomalies. Additionally, utility customer service is greatly improved when daily meter reading data is made easily accessible to help quickly answer customer questions and resolve billing disputes.

Depending on Webb County's operational procedures and/or labor costs, bottom line savings can be improved in the following areas:

- Improved accuracy of new meters means increased revenue
- The reduction of meter reading services costs
- Elimination of costs associated with final billing reads
- Managed solution approach allows system to be deployed immediately
- Decreased IT and server support requirements allow IT resources to concentrate on other critical utility tasks
- Increased customer service efficiency through optimized customer engagement
- Reduction of vehicle and gas expenses as they relate to meter reading
- Labor savings: routes being read automatically via the office versus in the field
- Decreased workman's compensation claims
- Increased data assists in system leak detection
- Current meter reader personnel can now work on other task and system maintenance

The BEACON AMA managed solution does not require use of traditional, proprietary fixed network data collectors, which minimizes the amount of hardware, infrastructure and maintenance required for the system.

The BEACON AMA system uses a managed solution approach and two-way communications – using ORION fixed and cellular endpoints – to deliver a simple yet powerful end-to-end solution.

Built-in infrastructure management services and endpoint upgrades are available upon renewal of a second 10 year managed service contract.

D. PROJECT APPROACH

The BEACON AMA managed solution software suite puts meter reading data to work to address your utility's demands for actionable information – and improve utility operations in the process. Features include:

- Customizable dashboards to deliver information in a format matched to your utility's requirements
- Unique alert conditions to define and monitor exceptions
- Consumer engagement tools including online access and smartphone apps to enable access to individual customer information
- Secure, hosted platform
- Automatic software updates
- Integration with your billing system

With these options, the BEACON AMA managed solution can be applied to all services, or to immediately get started with the most important commercial or industrial customers today.

To future-proof this investment, and keep current with industry changes, Badger Meter provides the latest software communication technology as it is developed, tested and available.

Managed solution software updates are automatically available upon release. As a hosted solution, there are no software updates to load or patches to install. To help understand changes, the "What's New" feature indicates an update has occurred, and briefly describes the changes that have been implemented.

ORION Cellular endpoints employ a number of features to ensure that data is reliably transmitted and received, that the integrity of the data is maintained, and that data cannot be captured or altered by unauthorized users. For example, ORION Cellular endpoints utilize secure and robust encryption. Specifically, the ORION Cellular endpoint is protected from cyber-breach or attack in a number of ways, including:

- The use of LTE cellular technology to transmit its data
- All transmitted data is encrypted using secure 256-bit Advanced Encryption Standard (AES) encryption
- All data transmissions are encoded using a Badger Meter proprietary algorithm

Additionally, today's cellular networks are designed to provide optimal coverage as well as overlap (self-healing algorithms) in coverage so that users do not drop communication sessions. This same optimized coverage applies to the radio propagation of the ORION Cellular endpoint. If for some reason the data is not successfully transmitted to BEACON AMA the software automatically requests the missing data at the next endpoint communication

D. PROJECT APPROACH

Each ORION Cellular endpoint stores up to 42 days of 15-minute interval data (4,032 data points). As a standard, the BEACON AMA cloud-based server stores the past three years of reading data interval information from all endpoints in the system. Utilities may export and archive their data at any time. For an additional fee, more years of data storage may be added to the BEACON AMA cloud-based server.

In a successful communication cycle, the endpoint transmits its data and receipt of that data is acknowledged by BEACON. Occasionally an endpoint communication cycle may be unsuccessful or incomplete. When this occurs, the system leverages its two-way communication capability to backfill missing read and event data during a subsequent communication cycle.

As a hosted software platform, BEACON AMA provides Webb County secure access to its data from any computer, smartphone or tablet with an Internet connection and permits the County to manage user access through roles you choose to assign. In addition, the consumer engagement tools (customer portal) will support your goals of creating staff efficiencies, increasing customer service levels, satisfying customer demand for product, and supporting water efficiency efforts.

The BEACON AMA software suite transforms Webb County's meter reading data into proactive intelligence and enhances the County's overall operations. Here are a few examples of the benefits the County can expect by implementing BEACON AMA:

- Increased visibility through analytics
- Simple leak detection
- Conservation tools for both the County and its customers
- Enhanced customer service
- Focus on water management
- Future-proof technology
- Lower upfront and ongoing system cost
- Easier compliance reporting

Simply stated, BEACON AMA provides water utilities with all the benefits of traditional two-way fixed solutions without the cost associated with proprietary fixed network infrastructure, ongoing infrastructure maintenance fees and technology complexities.

We provide the County with the tools you need to run your utility, and we manage the solution.

To further simplify things, the managed solution is all-encompassing and includes access to the BEACON AMA software as a Service (SaaS), EyeOnWater consumer engagement portal and mobile apps (Android and iOS), hosting of the County's metering data, cellular data communication, and technical support. Additionally, as described in the ORION Cellular LTE warranty document, we provide a 20-year network performance guarantee.

D. PROJECT APPROACH

Service & Support

As part of your BEACON AMA managed solution deployment, our Milwaukee-based technical support team can assist you remotely. By connecting to your BEACON AMA hosted solution via the Internet, Badger Meter's technical support team can directly analyze and troubleshoot any difficulties.

Direct support phone service is available Monday through Friday from 7:30 a.m. to 5:00 p.m. CST. After-hours support is available seven days a week. For calls made during after hours, customers will typically receive a response within 30 minutes. If an issue arises that cannot be resolved over the phone or through an Internet support session, we can provide onsite technical support.

All Field Sales Support Specialists have been factory trained and certified. Working in conjunction with the Milwaukee-based technical support team, we are able to provide Webb County with a full complement of assistance.

Choosing National Meter as your partner not only brings innovative technology to Webb County, it also delivers the finest service and support in the industry. As part of our ISO certification and continued commitment to quality and customer satisfaction, we regularly survey our customers and those of our competitors. Our customers have a high willingness to recommend our products and services to other utilities, which is documented in results from independent research throughout 2017. This research also shows that we excel in other levels of customer satisfaction, which far outpace our competitors.

We recognize the responsibility and trust required to ensure a successful deployment of Webb County's system. Between our industry-leading technology solution and our personalized service and support, National Meter is perfectly positioned to collaborate as a key partner with Webb County on its upcoming metering project.

E. ADDITIONAL REQUIRED DOCUMENTS



Every drop counts.

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

Badger Meter, Inc. DBA National Meter & Automation

2 Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information is being disclosed.

None

Name of Officer

4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes

No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

Yes

No

5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

6 Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7 Korrine L. Fleming
Signature of vendor doing business with the governmental entity
Assistant Secretary

September 14, 2018
Date

CERTIFICATION
REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY
EXCLUSION FOR COVERED CONTRACTS

PART A.

Federal Executive Orders 12549 and 12689 require the Texas Department of Agriculture (TDA) to screen each covered potential contractor to determine whether each has a right to obtain a contract in accordance with federal regulations on debarment, suspension, ineligibility, and voluntary exclusion. Each covered contractor must also screen each of its covered subcontractors.

In this certification "contractor" refers to both contractor and subcontractor; "contract" refers to both contract and subcontract.

By signing and submitting this certification the potential contractor accepts the following terms:

1. The certification herein below is a material representation of fact upon which reliance was placed when this contract was entered into. If it is later determined that the potential contractor knowingly rendered an erroneous certification, in addition to other remedies available to the federal government, the Department of Health and Human Services, United States Department of Agriculture or other federal department or agency, or the TDA may pursue available remedies, including suspension and/or debarment.
2. The potential contractor will provide immediate written notice to the person to which this certification is submitted if at any time the potential contractor learns that the certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
3. The words "covered contract", "debarred", "suspended", "ineligible", "participant", "person", "principal", "proposal", and "voluntarily excluded", as used in this certification have meanings based upon materials in the Definitions and Coverage sections of federal rules implementing Executive Order 12549. Usage is as defined in the attachment.
4. The potential contractor agrees by submitting this certification that, should the proposed covered contract be entered into, it will not knowingly enter into any subcontract with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Department of Health and Human Services, United States Department of Agriculture or other federal department or agency, and/or the TDA, as applicable.

Do you have or do you anticipate having subcontractors under this proposed contract?

Yes

No

5. The potential contractor further agrees by submitting this certification that it will include this certification titled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion for Covered Contracts" without modification, in all covered subcontracts and in solicitations for all covered subcontracts.
6. A contractor may rely upon a certification of a potential subcontractor that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered contract, unless it knows that the certification is erroneous. A contractor must, at a minimum, obtain certifications from its covered subcontractors upon each subcontract's initiation and upon each renewal.
7. Nothing contained in all the foregoing will be construed to require establishment of a system of records in order to render in good faith the certification required by this certification document. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
8. Except for contracts authorized under paragraph 4 of these terms, if a contractor in a covered contract knowingly enters into a covered subcontract with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the federal government, Department of Health and Human Services, United States Department of Agriculture, or other federal department or agency, as applicable, and/or the TDA may pursue available remedies, including suspension and/or debarment.

PART B. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION FOR COVERED CONTRACTS

Indicate in the appropriate box which statement applies to the covered potential contractor:

- The potential contractor certifies, by submission of this certification, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract by any federal department or agency or by the State of Texas.
- The potential contractor is unable to certify to one or more of the terms in this certification. In this instance, the potential contractor must attach an explanation for each of the above terms to which he is unable to make certification. Attach the explanation(s) to this certification.

Name of Contractor	Vendor ID No. or Social Security No.	Program No.
Badger Meter DBA National Meter & Automation	39-0143280	



Signature of Authorized Representative

September 14, 2018

Date

Korrine L. Fleming

Printed/Typed Name and Title of
Authorized Representative

CERTIFICATION REGARDING FEDERAL LOBBYING
(Certification for Contracts, Grants, Loans, and Cooperative Agreements)

PART A. PREAMBLE

Federal legislation, Section 319 of Public Law 101-121 generally prohibits entities from using federally appropriated funds to lobby the executive or legislative branches of the federal government. Section 319 specifically requires disclosure of certain lobbying activities. A federal government-wide rule, "New Restrictions on Lobbying", published in the Federal Register, February 26, 1990, requires certification and disclosure in specific instances.

PART B. CERTIFICATION

This certification applies only to the instant federal action for which the certification is being obtained and is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$100,000 for each such failure.

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No federally appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
2. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with these federally funded contract, subcontract, subgrant, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions. (If needed, contact the Texas Department of Agriculture to obtain a copy of Standard Form-LLL.)

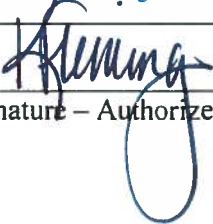
3. The undersigned shall require that the language of this certification be included in the award documents for all covered subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all covered subrecipients will certify and disclose accordingly.

Do you have or do you anticipate having covered subawards under this transaction?

- Yes
 No

Name of Contractor/Potential Contractor	Vendor ID No. or Social Security No.	Program No.
Not Applicable	Not applicable	

Name of Authorized Representative	Title
Korrine L. Fleming	Assistant Secretary



Signature – Authorized Representative

September 14, 2018

Date

**WEBB COUNTY PURCHASING DEPT.
QUALIFIED PARTICIPATING VENDOR CODE OF ETHICS
AFFIDAVIT FORM**

Wisconsin
STATE OF ~~TEXAS~~ *
Milwaukee
COUNTY OF ~~WEBB~~ *

KNOW ALL MEN BY THESE PRESENTS:

BEFORE ME the undersigned Notary Public, appeared Korrine L. Fleming
the herein-named "Affiant", who is a resident of Milwaukee County, State
of Wisconsin and upon his/her respective oath, either individually and/or behalf of their
respective company/entity, do hereby state that I have personal knowledge of the following facts,
statements, matters, and/or other matters set forth herein are true and correct to the best of my
knowledge.

*I personally, and/or in my respective authority/capacity on behalf of my company/entity do hereby
confirm that I have reviewed and agree to fully comply with all the terms, duties, ethical policy
obligations and/or conditions as required to be a qualified participating vendor with Webb
County, Texas as set forth in the Webb County Purchasing Code of Ethics Policy posted at the
following address: <http://www.webbcountytexas.gov/PurchasingAgent/PurchasingEthicsPolicy.pdf>*

*I personally, and/or in my respective authority/capacity on behalf of my company/entity do hereby
further acknowledge, agree and understand that as a participating vendor with Webb County,
Texas on any active solicitation/proposal/qualification that I and/or my company/entity failure to
comply with the Code of Ethics policy may result in my and/or my company/entity disqualification,
debarment or make void my contract awarded to me, my company/entity by Webb County. I agree
to communicate with the Purchasing Agent or his designees should I have questions or concerns
regarding this policy to ensure full compliance by contacting the Webb County Purchasing Dept.
via telephone at (956) 523-4125 or e-mail to the Webb County Purchasing Agent to
joel@webbcountytexas.gov.*

Executed and dated this 14th day of September, 2018.



Signature of Affiant

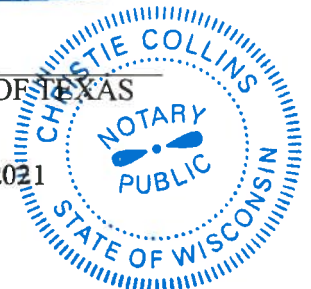
Korrine L. Fleming

Printed Name of Affiant/Company/Entity

SWORN to and subscribed before me, this 14th day September, 20 18



NOTARY PUBLIC, STATE OF TEXAS
Christie Collins
Commission expires - May 16, 2021

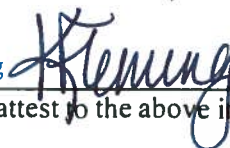


PROOF OF NO DELINQUENT TAXES OWED TO WEBB COUNTY

Name _____ owes no delinquent property taxes to Webb County.

Badger Meter, Inc. DBA National Meter & Automation owes no property taxes as a business in Webb County.
(Business Name)

_____ owes no property taxes as a resident of Webb County.
(Business Owner)

Korrine L. Fleming 
Person who can attest to the above information

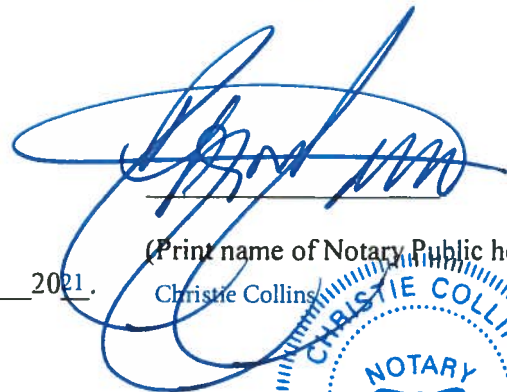
*** SIGNED NOTORIZED DOCUMENT AND PROOF OF NO DELINQUENT TAXES TO WEBB COUNTY.**

The State of Texas
County of Webb

Before me, a Notary Public, on this day personally appeared Korrine L. Fleming, **know to me** (or proved to me on the oath of _____ to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this 14th day of September 2018.

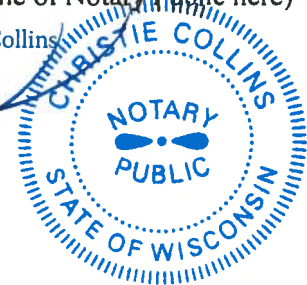
Notary Public, State of ~~Texas~~ ^{Wisconsin}

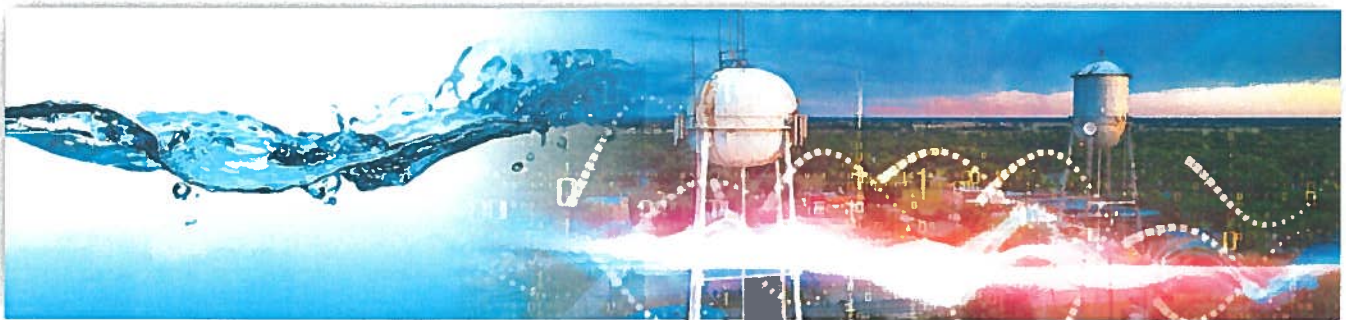


(Print name of Notary Public here)

Christie Collins

My commission expires the 16th day of May 2021.





Making Water Visible®

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