

Deliver To: From: Adam Arevalo Comments:

FERGUSON WATERWORKS #1423

Price Quotation

Phone: 916-381-6100

Fax: 916-455-3402

Bid No: B469758
Bid Date: 10/25/22
Quoted By: AA

Cust Phone: 916-381-6100
Terms: CASH ON DEMAND

Customer: CASH SALE ACCT - #1423
CVS - SACRAMENTO STORE
SACRAMENTO, CA 95826-6008

Ship To: CUSTOMER PICK-UP

Cust PO#:

Job Name: FORESTVILLE WD CELL

Item	Description	Quantity	Net Price	UM	Total
SP-NED2B22RHG2	5/8X3/4 T10 MTR P/C USG BRZ BTM	857	125.000	EA	107125.00
N13966400	PIT W/ INT ANTENNA 6 FT CBL POTTED	857	134.000	EA	114838.00
SP-NED2C22RHG2	3/4 T10 MTR 9LL P/C USG BRZ BTM	87	185.000	EA	16095.00
N13966400	PIT W/ INT ANTENNA 6 FT CBL POTTED	87	134.000	EA	11658.00
NED2F22RHG2	1 T10 MTR ECDR BRZ USG	38	269.000	EA	10222.00
N13966400	PIT W/ INT ANTENNA 6 FT CBL POTTED	38	134.000	EA	5092.00
NED2H11RHG2	1-1/2 T10 MTR ECDR USG	3	638.000	EA	1914.00
N13966400	PIT W/ INT ANTENNA 6 FT CBL POTTED	3	134.000	EA	402.00
NED2J11RHG2	2 T10 MTR ECDR USG	3	743.000	EA	2229.00
N13966400	PIT W/ INT ANTENNA 6 FT CBL POTTED	3	134.000	EA	402.00
	METERS & CELL ENDPOINTS				269977.00

SP-N13980302	N360 & FIRSTNET 501-1000	1	10758.130	EA	10758.13
SP-NMY360PORTAL	NEPTUNE CUSTOMER PORTAL YEARLY SOFTWARE	1	5555.560	EA	5555.56
	----				16313.69
N13980002	360 AMI SET UP FEE	1	1806.000	EA	1806.00
SP-N13980004	NEPTUNE 360 8 HR ONSITE TRAINING ONE TIME FEES	1	0.000	EA	0.00
	----				1806.00
	READING HARDWARE				
N13302100	R900 BELT CLIP TRANSCEIVER V3	1	5125.000	EA	5125.00
N13655100	MRX920 MOBILE DATA COL V4	1	8300.000	EA	8300.00

Net Total: \$301521.69
Tax: \$26383.19
Freight: \$0.00
Total: \$327904.88



HOW ARE WE DOING? WE WANT YOUR FEEDBACK!

Scan the QR code or use the link below to
complete a survey about your bids:

<https://survey.medallia.com/?bidsorder&fc=1423&on=411383>

FERGUSON WATERWORKS #1423
Price Quotation

Fax: 916-455-3402

11:40:42 NOV 07 2022

Reference No: B469758

Quoted prices are based upon receipt of the total quantity for immediate shipment (48 hours). SHIPMENTS BEYOND 48 HOURS SHALL BE AT THE PRICE IN EFFECT AT TIME OF SHIPMENT UNLESS NOTED OTHERWISE. QUOTES FOR PRODUCTS SHIPPED FOR RESALE ARE NOT FIRM UNLESS NOTED OTHERWISE.

CONTACT YOUR SALES REPRESENTATIVE IMMEDIATELY FOR ASSISTANCE WITH DBE/MBE/WBE/SMALL BUSINESS REQUIREMENTS.

Seller not responsible for delays, lack of product or increase of pricing due to causes beyond our control, and/or based upon Local, State and Federal laws governing type of products that can be sold or put into commerce. This Quote is offered contingent upon the Buyer's acceptance of Seller's terms and conditions, which are incorporated by reference and found either following this document, or on the web at <https://www.ferguson.com/content/website-info/terms-of-sale>
Govt Buyers: All items are open market unless noted otherwise.

LEAD LAW WARNING: It is illegal to install products that are not "lead free" in accordance with US Federal or other applicable law in potable water systems anticipated for human consumption. Products with *NP in the description are NOT lead free and can only be installed in non-potable applications. Buyer is solely responsible for product selection.

WATER FLOW RATE NOTICE: Lavatory Faucets with flow rates over 0.5 GPM are not allowed for 'public use' in California.

COVID-19 ORDER: ANY REFERENCE TO OR INCORPORATION OF EXECUTIVE ORDER 14042 AND/OR THE EO-IMPLEMENTING FEDERAL CLAUSES (FAR 52.223-99 AND/OR DFARS 252.223-7999) IS EXPRESSLY REJECTED BY SELLER AND SHALL NOT APPLY AS SELLER IS A MATERIALS SUPPLIER AND THEREFORE EXEMPT UNDER THE EXECUTIVE ORDER.



HOW ARE WE DOING? WE WANT YOUR FEEDBACK!

Scan the QR code or use the link below to
complete a survey about your bids:

<https://survey.medallia.com/?bidsorder&fc=1423&on=411383>



A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

T-10[®] METER

SIZES: 1 ½" and 2"



Construction

Every Neptune[®] T-10[®] water meter meets or exceeds the latest AWWA C700 Standard. Its nutating disc, positive displacement principle has been time-proven for accuracy and dependability since 1892, ensuring maximum utility revenue.

The T-10 water meter consists of three major assemblies: a register, a lead free, high-copper alloy maincase, and a nutating disc measuring chamber.

The T-10 meter is available with a variety of register types. For reading convenience, the register can be mounted in one of four positions on the meter.

The corrosion-resistant, lead-free, high-copper alloy maincase will withstand most service conditions: internal water pressure, rough handling, and in-line piping stress.

The innovative floating chamber design of the nutating disc measuring element protects the chamber from frost damage while the unique chamber seal extends the low-flow accuracy by sealing the chamber outlet port to the maincase outlet port. The nutating disc measuring element utilizes corrosion-resistant materials throughout and a thrust roller to minimize wear.

Warranty

See Neptune Meter Warranty Statement for warranty details.

When desired, maintenance is easily accomplished either by replacement of major assemblies or individual components.

KEY FEATURES

Register

- Magnetic-driven, low-torque registration ensures accuracy
- Impact-resistant register
- High-resolution, low-flow leak detection
- Bayonet-style register mount allows in-line serviceability
- Tamperproof seal pin deters theft
- Date of manufacture, size, and model stamped on dial face

Lead Free Maincase

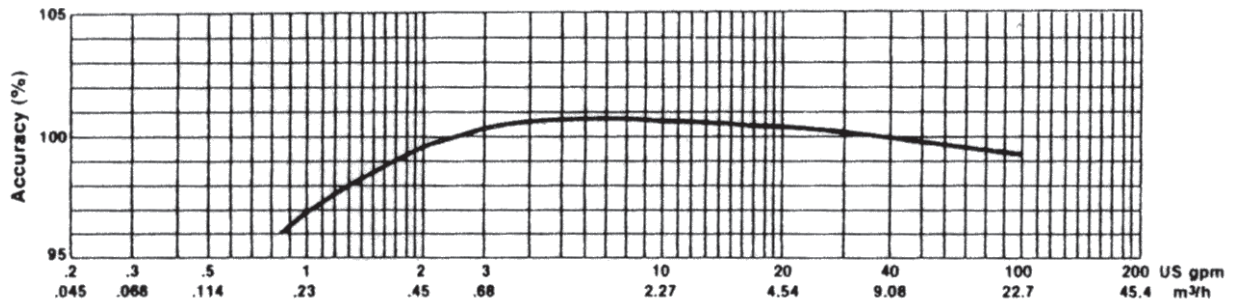
- Made from lead free, high-copper alloy
- NSF/ANSI 61 Certified
- NSF/ANSI 372 Certified
- Lifetime guarantee
- Resists internal pressure stresses and external damage
- Handles in-line piping variations and stresses
- Lead free, high-copper alloy provides residual value vs. plastic

Electrical grounding continuity

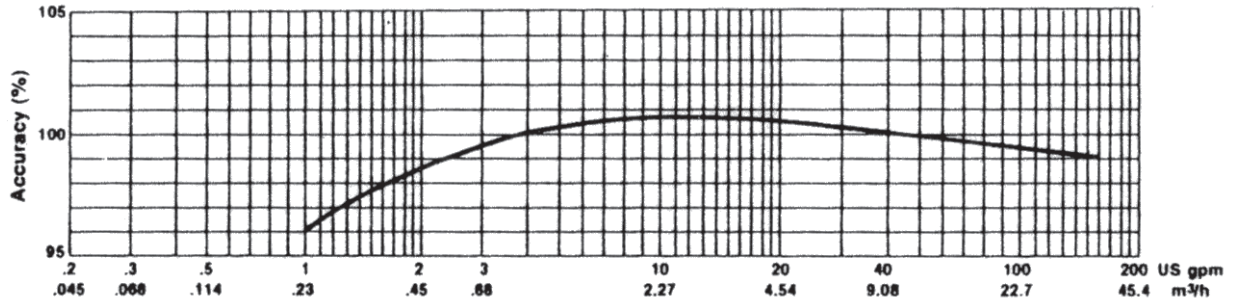
Nutating Disc Measuring Chamber

- Positive displacement
- Widest effective flow range for maximum revenue
- Proprietary polymer materials maximize long-term accuracy
- Floating chamber design is unaffected by meter position or in-line piping stresses

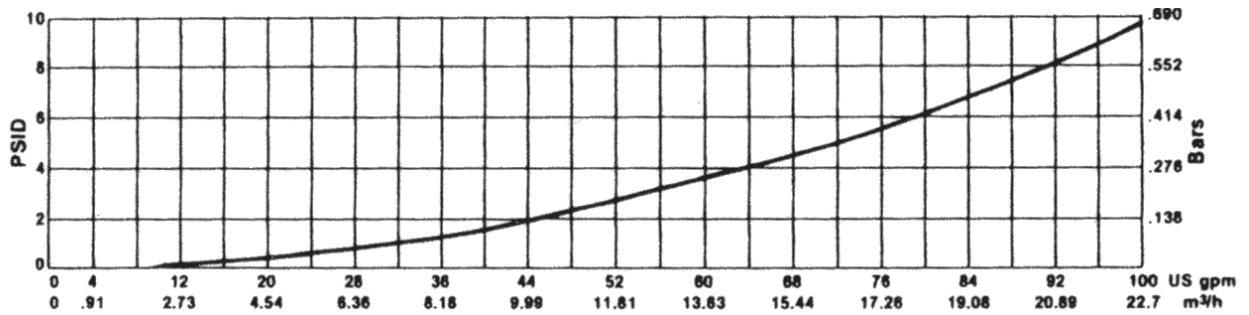
1 1/2" Accuracy



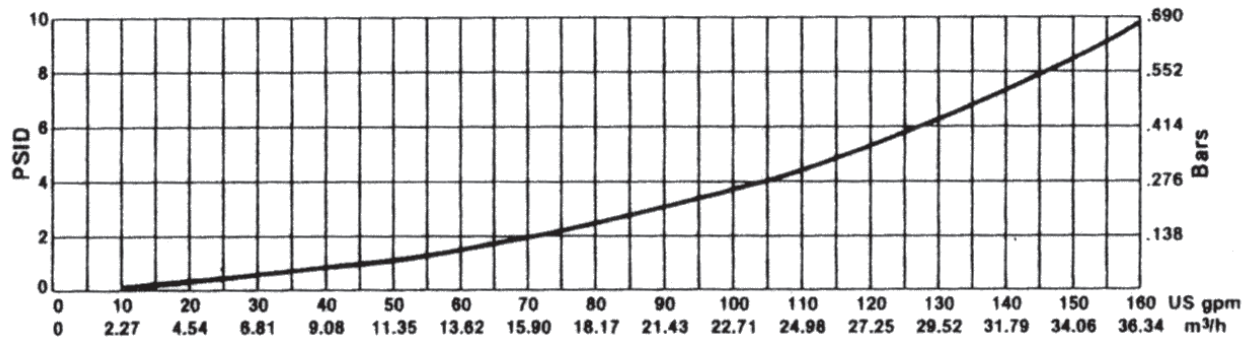
2" Accuracy



1 1/2" Pressure Loss



2" Pressure Loss



These charts show typical meter performance. Individual results may vary.

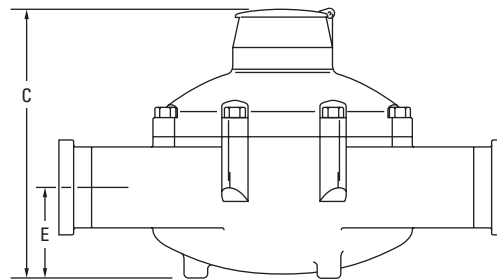
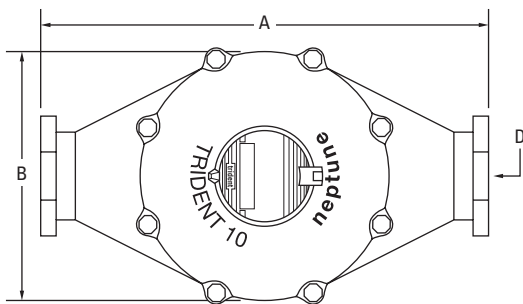
Operating Characteristics

Meter Size	Normal Operating Range @100% Accuracy (±1.5%)	AWWA Standard	Low Flow @ 95% Accuracy
1 1/2"	2 to 100 US gpm 0.46 to 22.73 m ³ /h	5 to 100 US gpm 1.1 to 22.7 m ³ /h	3/4 US gpm 0.17 m ³ /h
2"	2 1/2 to 160 US gpm 0.57 to 36.36 m ³ /h	8 to 160 US gpm 1.8 to 36.3 m ³ /h	1 US gpm 0.23 m ³ /h

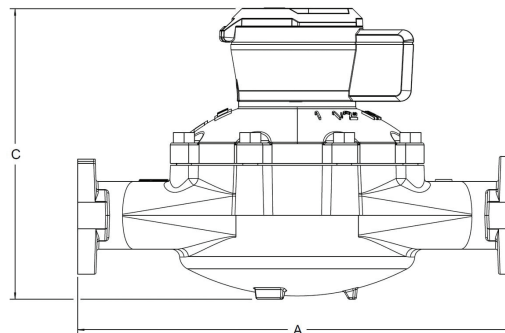
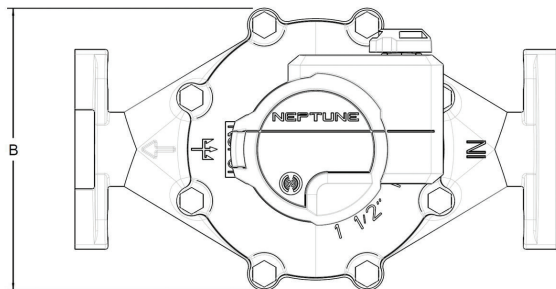
Dimensions

Meter Size	A in/mm	B in/mm	C-Std. in/mm	C-ARB in/mm	C-E-CODER®) R900i™ or ProCoder™) R900i™	D-Threads per inch	D-Thread Type	E in/mm	Weight lbs/kg
1 1/2" Screw End	12 5/8 321	8 1/16 205	8 1/8 206	8 13/16 220.3	8 3/8 213	11 1/2	1 1/2 NPT	2 9/16 65	31 14.1
1 1/2" Flanged End	13 330	8 1/16 205	8 1/8 206	8 13/16 220.3	8 3/8 213	—	—	2 9/16 65	35 15.9
2" Screw End	15 1/4 387	9 7/16 240	9 5/16 237	9 15/16 248.4	9 1/2 241	11 1/2	2" NPT	3 1/8 79	40 18.1
2" Flanged End	17 432	9 7/16 240	9 5/16 237	9 15/16 248.4	9 1/2 241	—	—	3 1/8 79	44 20.0

T-10 With Standard Register



T-10 With E-CODER®)R900i™ or ProCoder™)R900i™ Pit Register



Guaranteed Systems Compatibility

All T-10 meters are guaranteed adaptable to our ARB[®]V, ProRead[™] (ARB VI), ProCoder[™], E-CODER[®] (ARB VII), E-CODER[®]R900i[™], E-CODER[®]R450i[™], E-CODER[®]L900i[™], TRICON[®]/S, TRICON/E[®]3, and Neptune ARB[®] Utility Systems[™] without removing the meter from service.

Registration

ProRead Registration (per sweep hand revolution)		1 ½"	2"
100	US Gallons	✓	✓
100	Imperial Gallons	✓	✓
10	Cubic Feet	✓	✓
1	Cubic Metre		✓
.01	Cubic Metre	✓	
Register Capacity ProRead, ProCoder, and E-CODER		1 ½"	2"
100,000,000	US Gallons	✓	✓
100,000,000	Imperial Gallons	✓	✓
10,000,000	Cubic Feet	✓	✓
100,000	Cubic Metres	✓*	
1,000,000	Cubic Metres	✓**	✓
E-CODER High Resolution (8-digit reading)		1 ½"	2"
1	US Gallons	✓	✓
1	Imperial Gallons	✓	✓
0.1	Cubic Feet	✓	✓
0.01	Cubic Metres		✓
0.001	Cubic Metres	✓	
ProCoder High Resolution (8-digit reading)		1 ½"	2"
1	US Gallons	✓	✓
1	Imperial Gallons	✓	✓
0.1	Cubic Feet	✓	✓
0.01	Cubic Metres	✓	✓

*ProRead and E-CODER only **ProCoder only

Specifications

Certification

- NSF/ANSI 61, NSF/ANSI 372

Application

- Cold water measurement of flow in one direction

Maximum Operating Water Pressure

- 150 psi (1,034 kPa)

Maximum Operating Water Temperature

- 80°F

Measuring Chamber

- Nutating disc technology design made from proprietary synthetic polymer

Options

Sizes

- 1 ½" flanged or threaded end
- 2" flanged or threaded end

Units of Measure

- U.S. gallons, imperial gallons, cubic feet, cubic metres

Register Types

- Direct reading: Bronze box and cover
- Remote reading: ProRead Absolute Encoder, ProCoder, E-CODER, E-CODER)R900i, E-CODER)R450i, E-CODER)L900i, TRICON/S, TRICON/E3

- Reclaim

Measuring Chamber

- Synthetic polymer

Companion Flanges

- Lead free, high-copper alloy

Environmental Conditions

- Operating temperature: +33°F to +49°F (0°C to +65°C)
- Storage temperature: +33°F to +158°F (0°C to +70°C)

Test Ports

- 1" (optional)



#winyourday
neptunetg.com

Neptune Technology Group
1600 Alabama Highway 229
Tallahassee, AL 36078
800-633-8754 f 334-283-7293



A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

MRX920™ Mobile Data Collector and MX900™ Software

Make Reading Success and Efficiency Automatic

Reliable, accurate, and field-proven, the Neptune® MRX920™ mobile data collector – along with its MX900™ meter routes and mapping software – has helped water utilities across North America streamline, automate, and increase operational efficiencies. As part of Neptune's R900® System, the MRX920 helps transform data into actionable information that helps identify hidden causes of loss and optimize operational efficiency.

Strapped to the seat of your utility vehicle, the MRX920 reads up to fifty (50) meters simultaneously as your meter reader cruises down the streets. And in conjunction with the routes-integrated/Esri®-powered MX900 mapping, meter reading is automatic, fast, and effortless for your meter readers, accurate with less manpower deployed for your utility.

The MRX920 comes with Bluetooth capability, so your meter readers have the option of wirelessly updating routes and uploading the latest readings to the host system remotely and in near real-time without having to return to the office^{1,2}.

Additionally, Neptune has ported its well-established R900 radio frequency (RF) architecture to the latest release of MRX920 using software-defined radio (SDR) technology. This means all Neptune data collection systems have a common, core code base which translates to faster availability of new features and functionalities for your utility.

Make Migration to Other Technology Simple

The R900 System is designed to easily accommodate and support past generations of meters, encoder registers, and data collectors – while at the same time giving your utility the flexibility to incorporate future innovations as needed. The MRX920 is no exception, providing seamless compatibility with all generations of R900 MIUs. Its industry-leading performance can save days or even weeks for your meter reading routes, and new features within its MX900 software, such as Esri-powered mapping and wireless mobility, make valuable data available in real time as you read your system. Feel free to phase in these new features and equipment at your own pace, secure in the knowledge that Neptune will support your future needs without leaving you with stranded assets.



KEY BENEFITS

Reduced Meter Reading Time

- Reads up to fifty (50) meters simultaneously

Simple Access to Actionable Data

- Esri-powered GIS maps¹ show meter reading and flag status
- Wireless mobility – communicate meter reading data back to Neptune® 360™ in real time¹
- User-configurable advanced filtering shows you only the information you need
- Data logging and off-cycle reads without physical access to the meters

Analyze Data at the Source

- View data logging graphs in the field and share with homeowner to address high bill complaints
- Identify high/low audit status failures
- Receive leak, reverse flow, and days of no flow alerts from E-CODER®-equipped meters

¹ Optional MX900™ Mapping and Mobility module required. Mobile computing device recommended and not included.

Save Your Utility – and Your Customers – Time and Money

While the R900 System always allows your utility to migrate forward to implement fixed network data collectors, or backward to use RF technology for individual off-cycle readings or data logging, using the MRX920 and MX900 software as a part of your system makes for fast and simple access to information that can provide effective resolutions to customers' water-related issues. With detailed consumption data in hand while working in the field, along with proactive alerts of leaks and backflow conditions, you can enhance customer service. In the process, you can even preempt high bill complaints, reduce delinquent payments, and eliminate write-offs.

Specifications

Physical Specifications

- Dimensions:
8" (width) x 3.15" (height) x 11" (length excluding connections and handle)
- Weight: ~5 lbs

Electrical Specifications

- Power consumption: < 1A
- Power supply: 12V DC via vehicle power source adapter

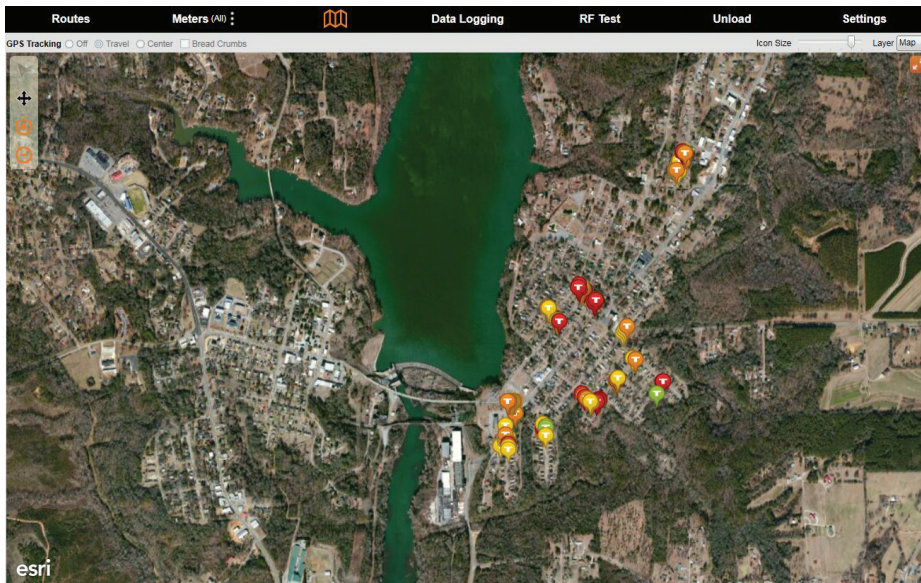
Date	Reading	Consumption
02/11/2016	314350.6	57.7
02/10/2016	314292.9	35.8
02/09/2016	314257.1	52.8
02/08/2016	314204.3	20.2
02/07/2016		
02/06/2016		
02/05/2016		
02/04/2016		
02/03/2016		
02/02/2016		
02/01/2016		
01/31/2016		
01/30/2016		
01/29/2016	313578.3	104.6
01/28/2016	313474.8	52.8
01/27/2016	313421.2	38.7
01/26/2016	313383.3	46.7
01/25/2016	313336.6	73.8

Neptune recommends the following mobile computing hardware specifications for optimal performance:

- 12.1" XGA (800 x 600) minimum
- 89-key keyboard
- Operating System:
 - Windows® 7 Professional 32 & 64
 - Windows® 8 Professional 32 & 64
 - Windows® 8.1 Professional 64
 - Windows® 10 Professional 64
- .Net Framework 4.5 or higher
- Processor: Intel Pentium 1.7 Ghz or faster processor
- Memory: 1 GB minimum
- Communication
 - Internal 802.11 b/g wireless LAN
 - Windows Wireless Connection Manager (if Bluetooth connection to the receiver is desired, Bluetooth v2.1 + EDR required)
- USB 2.0
- GPS receiver (required for the mapping and mobility module)
- Minimum of 2 GB of available hard drive space

Environmental Conditions

- Operating temperature:
-4°F to +122°F (-20°C to +50°C)
- Storage temperature:
-40°F to +185°F (-40°C to +85°C)
- Operating humidity: 5 to 95% non-condensing relative humidity





A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

R900[®] Belt Clip Transceiver

Automate Measurement to Activate Operational Efficiency

As part of the Neptune[®] R900[®] System, the R900[®] Belt Clip Transceiver (R900 BCT) is your utility personnel's partner in mobile meter reading and in-field customer support and is now iOS compatible.

The R900 BCT's two-way communications to the R900[®] MIU eliminate meter access issues and speed up retrieval of valuable data logging information – up to 96 days of historical hourly consumption data from an individual account. In addition, its exceptional radio frequency (RF) throughput reduces meter reading time, especially in high-density environments. Field personnel can even read R900s while performing maintenance or other tasks when taking advantage of the R900 BCT's unattended operations mode. These automated features ensure you collect accurate data that can be turned into meaningful information – to help improve accuracy, identify hidden causes of loss, and optimize the efficiency of your operations.

Move Ahead with Backward Compatibility and Forward Innovation

The R900 BCT, as with the rest of the Neptune R900 System, works with past generations of equipment while remaining flexible to incorporate innovations as needed. The R900 BCT maintains support to read previous generations of R900 MIUs yet introduces powerful software-defined radio (SDR) technology to support the new advanced two-way features of the R900 System. Now, the R900 BCT is capable of reading electric, bubble-up ERT[®] devices and processing SCM or SCM+ message files that these ERT devices transmit. This gives utilities the freedom of equipping with just the R900 BCT to read both water and electric meters.

So, go ahead and phase in new features and equipment at your own pace with confidence that Neptune will support your future needs without leaving you with stranded assets.

Present Consumption Data in the Field for Proactive Customer Service

Simplified access to critical information means your utility can provide even more proactive customer service. Pairing the R900 BCT with a handheld device or a mobile device running Neptune software, your personnel can maximize their efficiency in the field, with the flexibility to perform impromptu service calls and address customer service issues on-site without a separate truck roll[!]. With the data literally in hand, they can share data logging graph information with homeowners. This on-the-spot, on-site presentation of how much water they used and when, helps head off customer complaints regarding high water bills, reduce delinquencies, and avoid write-offs.



KEY BENEFITS

Increases meter reading efficiency

- Increased RF throughput capabilities which reduce reading time in high-density R900 environments
- Two-way communications to R900 MIU which reduces time required to retrieve data logging information
- Unattended operations mode allows utility personnel to read R900s while performing other non-meter-reading-related job functions

No stranded assets

- Compatible with all generations of R900 MIUs
- Probe compatibility with Advantage and Pocket ProReader
- Connects via Bluetooth to Trimble Nomad or Trimble Ranger for meter reading
- Connects via Bluetooth to Android or iOS mobile devices for in-field customer support
- Software-defined radio technology enables the R900 BCT to be updated for compatibility with future products

KEY BENEFITS CONTINUED

Reads ERT devices

- Compatible with Itron electric ERT technology (bubble-up ERTs only)
- Processes SCM and SCM+ message format

Analyze data at the source with either a smart phone or tablet

- Test-read R900s in the field or before installation to obtain reading and E-CODER® flag events
- Retrieve 96 days of hourly interval data logging information
- View graph of data logging intervals in the field
- Share data logging graph information with homeowner to address high bill complaints

Specifications

Communication

- Bluetooth 2.1 or later and USB handheld software compatibility with N_SIGHT® version 4.7 or later

Power Supply

- Rechargeable lithium-ion battery pack – 5000 mAh capacity
- Field-replaceable, recommended replacement every 2 years

Memory

- 4GB SD card

Device Compatibility

- Trimble Nomad 900B/900LE/1050B/1050LE, Trimble Ranger 3, and Android/iOS mobile devices¹

Indicators

- Four LEDs identify Bluetooth communication, RF status, mode status, and battery status

Dimensions

- Height: 3.58" (9.1 cm)
- Width: 1.66" (4.22 cm)
- Length: 5.75" (14.6 cm)

Weight

- 1.1 lbs. (499g) including rechargeable battery

Temperature Range

- Operating: -4°F to +122°F (-20°C to +50°C)
- Storage: -40°F to +185°F (-40°C to +85°C)

Accessories

- Spare battery
- Spare battery charger
- Belt clip
- SD card
- 12V USB vehicle power cable

Warranty

- One-year comprehensive warranty
- Hardware maintenance contracts available

Receiver Channels: 50

Number of Simultaneous Channels: 8

Approvals

- FCC Class B
- IC

Mode Overview	Normal	Unattended Operations	USB Mass Storage
Bluetooth Pairing to Devices	Required	N/A	No. Used for firmware updates and transfer of data via USB from SD card to Neptune software
Trimble Nomad 900B/900LE/ 1050B/1050LE Compatible	Yes	N/A	
iOS App Compatible	Yes ¹	N/A	
Android App Compatible	Yes ¹	N/A	
R900 Compatible	Yes	Yes	
Advantage / Pocket ProReader Compatible	Yes	No	
Data Logging Compatible	Yes	No	
SD Card Data Storage	Yes	Yes	

¹Contact Neptune Customer Support for the latest device and operating system compatibilities.



#winyourday
neptunetg.com

Neptune Technology Group
1600 Alabama Highway 229
Tallahassee, AL 36078
800-633-8754 f 334-283-7293

AMI Your Way

Neptune® R900® System: Cellular Endpoint



Neptune's cellular endpoint allows you to progress at your own pace to AMI when integrated into your Neptune® R900® System. Neptune's cellular endpoint provides all of the benefits of an advanced meter reading solution without the operational burden of network infrastructure while allowing you to protect existing asset investments. An easily deployable AMI solution, the cellular endpoint allows you to start collecting actionable meter data immediately. Powered by the FirstNet® cellular network, you are assured a reliable, highly secure, and easy-to-deploy AMI data solution for both current and future needs.

- No AMI fixed network infrastructure installation, maintenance, operations, or upgrade costs for the life of the deployment.
- Seamless integrations with existing R900 technology for a flexible AMI solution.
- Access all of your meter data from anywhere at any time with Neptune® 360™.
- Improve operations and customer service with real-time, high-resolution AMI data and advanced analytics.
- Automatically recover from network outages with 96 days of stored data.

FirstNet®, Built with AT&T

- Two-way solution using the FirstNet® LTE-M cellular technology helps ensure robust coverage.
- Prioritized connectivity, even during natural disasters, protects against commercial traffic congestion.
- Network resources and mobile cell sites can be dispatched during disaster recovery to support network connectivity.
- Sensitive information is highly secure on the FirstNet® network.

Specifications

Environmental Conditions

- Operating temperature:
-22°F to +149°F (-30°C to +65°C)
- Storage temperature:
-40°F to +158°F (-40°C to +70°C)
- Operating humidity:
100% condensing

Antennas

- Wall: standard internal antenna
- Pit: internal or external antenna

Encoded Register Compatibility

- Neptune® MACH 10®, ARB®V, ProRead™, E-CODER®, and ProCoder™
- Sensus ECR II, ICE, iPerl, Electronic Register and OMNI
- Hersey/Mueller Translator
- Badger ADE, HR E|LCD, E-Series
- Elster/AMCO InVision (Sensus protocol version)

Operation

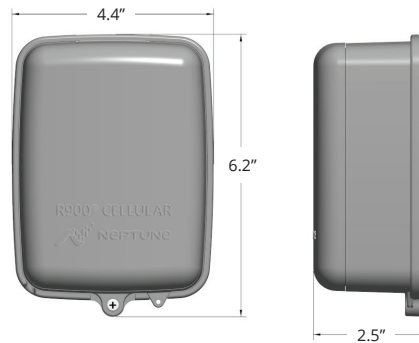
- Four cellular LTE-M transmissions per day
- Mobile 900 MHz backup transmissions
- Verify installation via the cellular endpoint manager tool
- 15-minute interval data with automatic back-fill
- Priority alerts
- Configurable transmission windows

Warranty

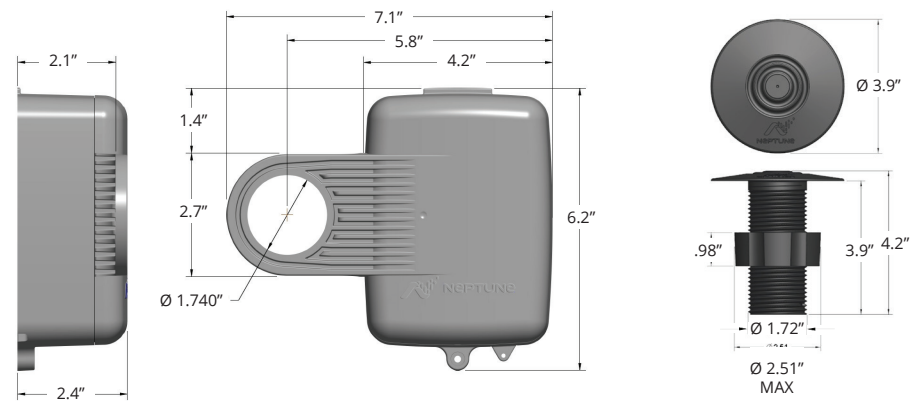
- Neptune provides a limited warranty for performance, materials, and workmanship. See warranty statement for details.

Dimensions

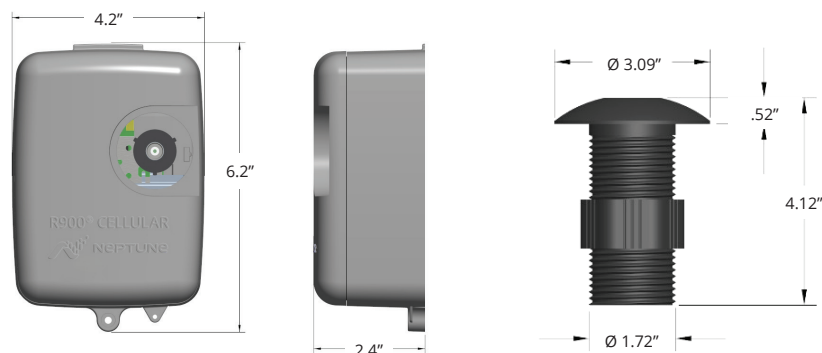
Wall Endpoint



Pit Endpoint (Internal Antenna)



Pit Endpoint with External Through-the-Lid Antenna



©2021 AT&T Intellectual Property. FirstNet, First Responder Network Authority, and FirstNet logo are registered trademarks and service marks of FirstNet, an independent authority within the U.S. Department of Commerce. All other marks are the property of their respective owners.

©2021 Neptune Technology Group Inc. All Rights Reserved. The trademarks, logos and service marks displayed in this document herein are the property of Neptune Technology Group Inc., its affiliates or other third parties. Availability and technical specifications are subject to change without notice. 21-005826 PS R900 CELLULAR ENDPOINT-US 07.21



Neptune Technology Group
1600 Alabama Highway 229
Tallahassee, AL 36078
800-633-8754 f 334-283-7293



A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

T-10 Meter

SIZES $\frac{5}{8}$ " , $\frac{3}{4}$ " , AND 1"

Every T-10® water meter meets or exceeds the latest AWWA C700 Standard. Its nutating disc, positive displacement principle has been time-proven for accuracy and dependability since 1892, ensuring maximum utility revenue.

Construction

The T-10 water meter consists of three major assemblies: a register, a lead free, high-copper alloy maincase, and a nutating disc measuring chamber.

The T-10 meter is available with a variety of register types. For reading convenience, the register can be mounted in one of four positions on the meter.

The corrosion-resistant maincase will withstand most service conditions; internal water pressure, rough handling, and in-line piping stress.

The innovative floating chamber design of the nutating disc measuring element is unaffected by meter position or in-line piping stresses while the unique chamber seal extends the low-flow accuracy by sealing the chamber outlet port to the maincase outlet port. The nutating disc measuring element utilizes corrosion-resistant materials throughout and a thrust roller to minimize wear.

Warranty

Neptune® provides a limited warranty for performance, materials, and workmanship. See warranty statement for details.

Guaranteed Systems Compatibility

All T-10 water meters are guaranteed adaptable to our ProRead™, AutoDetect, ProCoder™, E-CODER®, E-CODER®)R900i™, E-CODER®)R450i™, ProCoder™)R900i™, TRICON®/S, TRICON/E®3, and Neptune meter reading systems without removing the meter from service.



KEY FEATURES

REGISTER

Magnetic-driven, low-torque registration ensures accuracy

Impact-resistant register

High-resolution, low-flow leak detection

Bayonet-style register mount allows in-line serviceability

Tamperproof seal pin deters theft

Date of manufacture, size, and model stamped on dial face

LEAD FREE MAINCASE

NSF/ANSI 372, NSF/ANSI 61

Lifetime guarantee

Resists internal pressure stresses and external damage

Handles in-line piping variations and stresses

Provides residual value vs. plastic or composite

Electrical grounding continuity

NUTATING DISC MEASURING CHAMBER

Positive displacement

Widest effective flow range for maximum revenue

Proprietary polymer materials maximize long-term accuracy

Floating chamber design is unaffected by meter position or in-line piping stresses

Specifications

- NSF/ANSI 372, NSF/ANSI 61
- National Type Evaluation Program (NTEP) certification

Application

- Cold water measurement of flow in one direction in residential service applications

Maximum Operating Water Pressure

- 150 psi (1034 kPa)

Maximum Operating Water Temperature

- 80°F

Measuring Chamber

- Nutating disc technology design made from proprietary synthetic polymer

Options

Sizes

- $\frac{5}{8}$ " , $\frac{5}{8}$ " x $\frac{3}{4}$ "
- $\frac{3}{4}$ " , $\frac{3}{4}$ " SL, $\frac{3}{4}$ " x 1"
- 1" , 1" x 1 $\frac{1}{4}$ "

Units of Measure:

- U.S. gallons, imperial gallons, cubic feet, cubic metres

Register Types

- Direct reading: bronze box and cover (standard)

Remote Reading:

- ProRead, ProCoder, E-CODER, E-CODER)R900i, E-CODER)R450i, ProCoder™)R900i™, TRICON/S, TRICON/E3

- Reclaim

Bottom Caps

- Synthetic polymer ($\frac{5}{8}$ " only)
- Cast iron
- Lead free, high-copper alloy

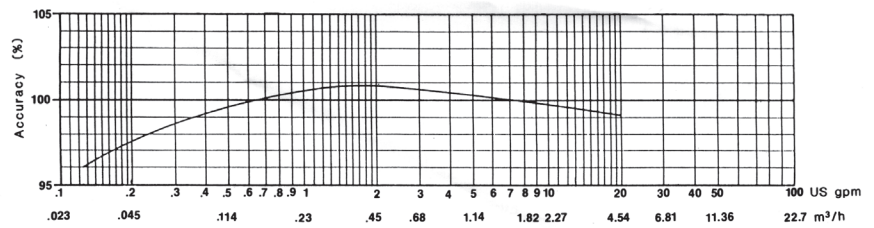
Connections

- Lead free, high-copper alloy, straight or bent

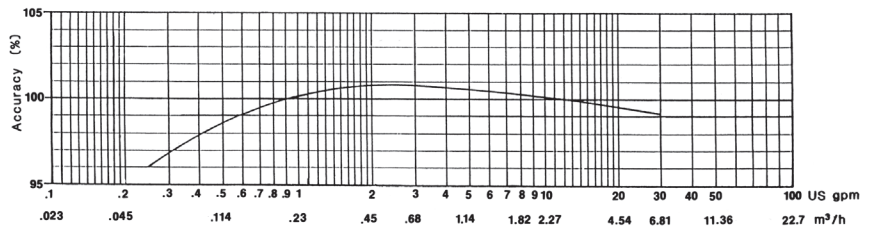
Environmental Conditions

- Operating temperature:
+33° F to +149° F (0° C to +65° C)
- Storage temperature:
+33° F to +158° F (0° C to +70° C)

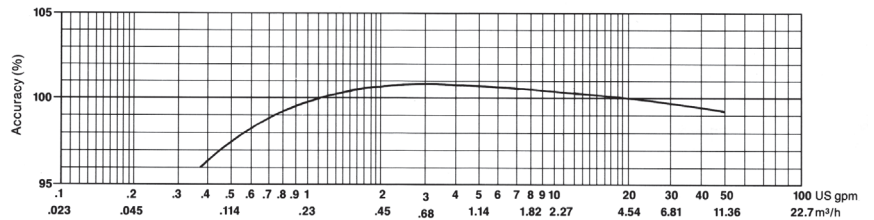
$\frac{5}{8}$ " ACCURACY



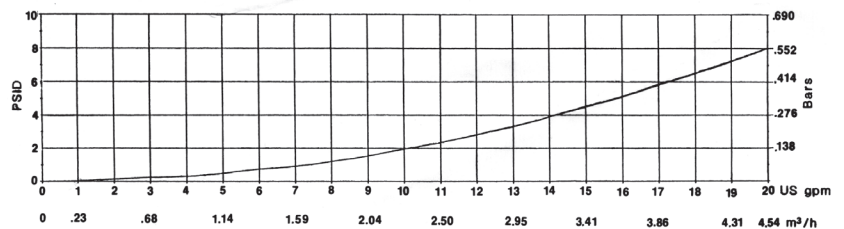
$\frac{3}{4}$ " ACCURACY



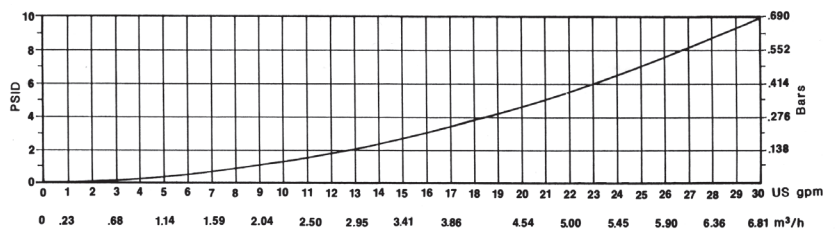
1" ACCURACY



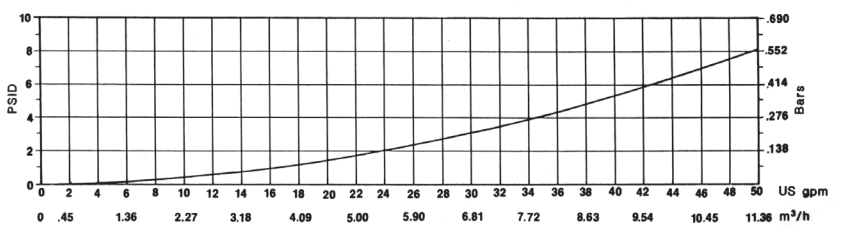
$\frac{5}{8}$ " PRESSURE LOSS



$\frac{3}{4}$ " PRESSURE LOSS



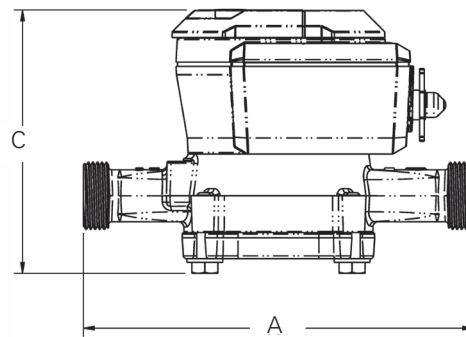
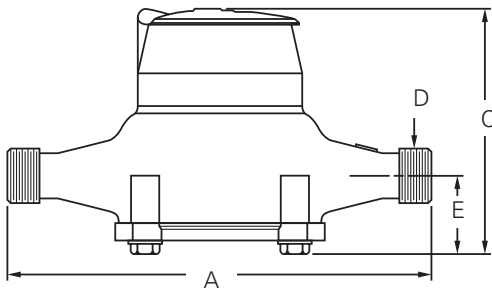
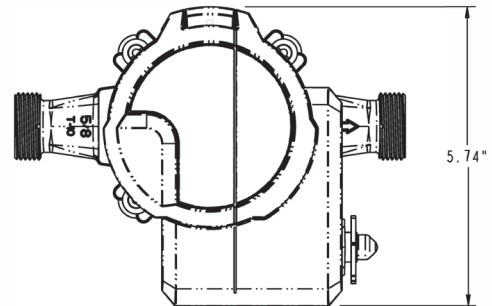
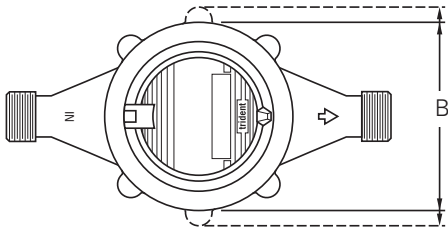
1" PRESSURE LOSS



These charts show typical meter performance. Individual results may vary.

Dimensions

Meter Size	A	B	C					D-	E-	Weight lbs/kg
	in/mm	in/mm	Std. in/mm	ARB in/mm	ProCoder™ or E-CODER®	ProCoder™) R900i™ or ProCoder™) R450i™	E-CODER®) R900i™ or E-CODER®) R450i™	NPSM Thread	in/mm	
5/8"	7 1/2 191	3 5/8 92	4 3/8 111	5 1/4 133	5 1/4 133	5 1/4 133	5 1/4 133	3/4" - 14"	1 1/2 38	3 1/4 1.4
5/8" x 3/4"	7 1/2 191	3 5/8 92	4 3/8 111	5 1/4 133	5 1/4 133	5 1/4 133	5 1/4 133	1" - 11 1/2"	1 1/2 38	3 3/8 1.5
Pre 2011 5/8"	7 1/2 191	3 5/8 92	4 7/8 124	5 1/2 146	5 1/2 139	5 1/2 139	5 1/2 139	3/4" - 14"	1 5/8 41	3 3/4 1.7
Pre 2011 5/8" x 3/4"	7 1/2 191	3 5/8 92	4 7/8 124	5 1/2 146	5 1/2 139	5 1/2 139	5 1/2 139	1" - 11 1/2"	1 5/8 41	4 1.8
3/4"	9 229	4 3/8 111	5 1/2 140	6 1/4 159	6 1/4 159	6 1/4 159	6 1/4 159	1" - 11 1/2"	1 7/8 48	6 2.7
3/4" SL	7 1/2 191	4 3/8 111	5 1/2 140	6 1/4 159	6 1/4 159	6 1/4 159	6 1/4 159	1" - 11 1/2"	1 7/8 48	5 1/2 2.5
3/4" x 1"	9 229	4 3/8 111	5 1/2 140	6 1/4 159	6 1/4 159	6 1/4 159	6 1/4 159	1 1/4" - 11 1/2"	1 7/8 48	6 1/2 2.9
1"	10 3/4 273	6 1/2 165	6 3/8 162	7 178	7 178	7 178	7 178	1 1/4" - 11 1/2"	2 1/8 54	9 3/4 4.4
1" x 1 1/4"	10 3/4 273	6 1/2 165	6 3/8 162	7 178	7 178	7 178	7 178	1 1/2" - 11 1/2"	2 1/8 54	10 1/4 4.6



Operating Characteristics

Meter Size	Normal Operating Range @ 100% Accuracy (+/- 1.5%)	AWWA Standard	Low Flow @ 95% Accuracy
5/8"	1/2 to 20 US gpm 0.11 to 4.55 m ³ /h	1 to 20 US gpm 0.23 to 4.5 m ³ /h	1/8 US gpm 0.03 m ³ /h
3/4"	3/4 to 30 US gpm 0.17 to 6.82 m ³ /h	2 to 30 US gpm 0.45 to 6.8 m ³ /h	1/4 US gpm 0.06 m ³ /h
1"	1 to 50 US gpm 0.23 to 11.36 m ³ /h	3 to 50 US gpm 0.68 to 11.4 m ³ /h	3/8 US gpm 0.09 m ³ /h

Registration

ProRead Registration (per sweep hand revolution)		5/8"	3/4" & 1"
10	US Gallons	√	√
10	Imperial Gallons	√	√
1	Cubic Foot	√	√
0.1	Cubic Metre	√	√
Register Capacity ProRead, ProCoder, and E-CODER		5/8"	3/4" & 1"
10,000,000	US Gallons	√	√
10,000,000	Imperial Gallons	√	√
1,000,000	Cubic Feet	√	√
100,000	Cubic Metres	√	√
ProCoder and E-CODER High Resolution (8-digit reading)		5/8"	3/4" & 1"
0.1	US Gallons	√	√
0.1	Imperial Gallons	√	√
0.01	Cubic Feet	√	√
0.001	Cubic Metres	√	√



#winyourday
neptunetg.com

Neptune Technology Group
1600 Alabama Highway 229
Tallahassee, AL 36078
800-633-8754 f 334-283-7293



Quotation

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: May 29, 2022
 QUOTED BY: Kathy Richards
 REQUESTED BY: Tony Lopes
 PHONE: 707-887-1551
 EMAIL: tlopes@forestvillewd.com

BILL TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

SHIP TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

Subject to review: 12/31/2022

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	Meter replacement project	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days
QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT
857	5/8"x3/4" E-Series G2 Ultrasonic meter, lead free bronze housing, US Gal, 5' Twist Tight connector	\$ 179.75	\$ 154,045.75
	3/4"x7-1/2" E-Series Ultrasonic meter, SS housing, US Gal, 5' Twist Tight connector	\$ 197.50	\$ -
87	3/4"x9" E-Series Ultrasonic meter, SS housing, US Gal, 5' Twist Tight connector	\$ 211.50	\$ 18,400.50
38	1" E-Series Ultrasonic meter, SS housing, US Gal, 5' Twist Tight connector	\$ 233.00	\$ 8,854.00
3	1-1/2" E-Series Ultrasonic meter, 13" lay length, 2-bolt elliptical flange, SS housing, US Gal, 5' Twist Tight connector	\$ 565.00	\$ 1,695.00
3	2" E-Series Ultrasonic meter, 17" lay length, 2-bolt elliptical flange, SS housing, US Gal, 5' Twist Tight connector	\$ 761.00	\$ 2,283.00
SUBTOTAL			\$ 185,278.25
SALES TAX			\$ 15,748.65
FREIGHT			included
TOTAL			\$ 201,026.90

Sales Tax: 8.50% Sonoma County
 *sales tax charged at rate in effect at time of order, point of delivery

Est. Lead Time: To be provided at time of order.



Quotation

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: May 29, 2022
 QUOTED BY: Kathy Richards
 REQUESTED BY: Tony Lopes
 PHONE: 707-887-1551
 EMAIL: tlopes@forestvillewd.com

BILL TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

SHIP TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

Subject to review: 12/31/2022

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	Meter replacement project	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days
QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT

Notes and Assumptions:

If applicable, sales tax and freight, if included on the proposal, is an estimate and will be recalculated based on rates and tax status in effect at time of invoicing.

Actual lead time to be provided at time of order

To aid in processing your order, please include the Quote number on the PO that is submitted for this proposal

Badger Meter provides certification files to help manage meter and endpoint inventory and to maintain meter accuracy data. The standard method of delivery for this information is via electronic mail. Any deviations from our standard format, or any custom file formats, will be considered on a time and material basis.

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

THANK YOU FOR YOUR BUSINESS!!

Estimated ship dates subject to change based upon component availability, as a result of global supply chain constraints or credit review.

This acknowledgement is made subject to the terms and conditions found on our web-site: <https://www.badgermeter.com/terms-and-conditions>

Terms and conditions related to service units, training, and professional services can be found here:

<https://badgermeter.com/service-units-terms-and-conditions>



Quotation

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: May 29, 2022
 QUOTED BY: Kathy Richards
 REQUESTED BY: Tony Lopes
 PHONE: 707-887-1551
 EMAIL: tlopes@forestvillewd.com

BILL TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

SHIP TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

Subject to review: 12/31/2022

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	ORION Cellular reading solution	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days
QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT
	BEACON Cellular SaaS Starter Kit #ORI-MP-00721-EN		
	1. One time setup and training fees		
1	BEACON Engagement Fee Setup and licensing of BEACON online portfolio Price reflects 25% promotional program discount	\$ 3,000.00	\$ 3,000.00
1	Billing Integration #66220-005 Work conducted by Badger Meter to integrate the customer's billing system with BEACON. Note: Fees charged by a customer's billing vendor for an interface file are separate and are the responsibility of the customer Price reflects 25% promotional program discount	\$ 1,462.50	\$ 1,462.50
1	Training - Getting Started with BEACON AMA #69328-201 This course covers a walkthrough of the BEACON software functionality, user interface and billing cycle/billing integration	\$ 1,175.00	\$ 1,175.00
Subtotal - one time setup and training fees			\$ 5,637.50
	II. ORION Cellular NaaS (network as a service) radio endpoints		
988	ORION LTE-M Cellular endpoint, 8" Twist Tight connector, thru lid install kit	\$ 126.00	\$ 124,488.00
SUBTOTAL			\$ 130,125.50
SALES TAX			\$ 10,581.48
FREIGHT			included
TOTAL			\$ 140,706.98

Sales Tax: 8.50% Sonoma County
 *sales tax charged at rate in effect at time of order, point of delivery
 Est. Lead Time: To be provided at time of order.



Quotation

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: May 29, 2022
 QUOTED BY: Kathy Richards
 REQUESTED BY: Tony Lopes
 PHONE: 707-887-1551
 EMAIL: tlopes@forestvillewd.com

BILL TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

SHIP TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

Subject to review: 12/31/2022

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	ORION Cellular reading solution	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days
QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT

	<u>IV. Annual Subscription fee/service unit</u>		
11856	#68886-104 subscription fee service unit	\$ 0.89	\$ 10,551.84
	988 meters x 12 months = 11,856 total units		

Notes and Assumptions:

If applicable, sales tax and freight, if included on the proposal, is an estimate and will be recalculated based on rates and tax status in effect at time of invoicing.

Actual lead time to be provided at time of order

To aid in processing your order, please include the Quote number on the PO that is submitted for this proposal

Badger Meter provides certification files to help manage meter and endpoint inventory and to maintain meter accuracy data. The standard method of delivery for this information is via electronic mail. Any deviations from our standard format, or any custom file formats, will be considered on a time and material basis.

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

THANK YOU FOR YOUR BUSINESS!!

Estimated ship dates subject to change based upon component availability, as a result of global supply chain constraints or credit review.

This acknowledgement is made subject to the terms and conditions found on our web-site: <https://www.badgermeter.com/terms-and-conditions>

Terms and conditions related to service units, training, and professional services can be found here:

<https://badgermeter.com/service-units-terms-and-conditions>



Quotation

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: May 29, 2022
 QUOTED BY: Kathy Richards
 REQUESTED BY: Tony Lopes
 PHONE: 707-887-1551
 EMAIL: tlopes@forestvillewd.com

BILL TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

SHIP TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

Subject to review: 12/31/2022

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	BEACON Mobile meter reading system	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days

QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT
	Getting Started with BEACON SaaS Mobile Program		
	#ORI-MP-02238-EN, price code H		
	1. One time setup and training fees		
1	BEACON Engagement Fee	\$ 1,400.00	\$ 1,400.00
	Setup and licensing of BEACON online portfolio		
	Price reflects 65% promotional program discount		
1	Billing Integration #66220-005	\$ 682.50	\$ 682.50
	Work conducted by Badger Meter to integrate the customer's billing system with BEACON.		
	Note: Fees charged by a customer's billing vendor for an interface file are separate and are the responsibility of the customer		
	Price reflects 65% promotional program discount		
1	Training - BEACON AMA for Mobile Solutions #69328-301	\$ 1,425.00	\$ 1,425.00
	This course covers the full functionality of the mobile meter reading process utilizing ORION Mobile Read and Field Director		
Subtotal - one time setup and training fees			\$ 3,507.50



Quotation

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: May 29, 2022
 QUOTED BY: Kathy Richards
 REQUESTED BY: Tony Lopes
 PHONE: 707-887-1551
 EMAIL: tlopes@forestvillewd.com

BILL TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

SHIP TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

Subject to review: 12/31/2022

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	BEACON Mobile meter reading system	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days

QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT
	II. Data Collection Hardware		
	*Hardware prices include 36 month hardware warranty		
1	Trimble T10 Tablet for BEACON AMA Mobile Solution	\$ 4,025.00	\$ 4,025.00
1	ME Mobile Transceiver kit with magnetic mount external antenna	\$ 2,725.00	\$ 2,725.00
	<u>Optional - utility supplied tablet:</u>		
	Utility supplied tablet (meets specifications)	tbd	
	ME Mobile Transceiver kit with magnetic mount external antenna	\$ 2,725.00	\$ -
Subtotal - Reading equipment			\$ 6,750.00
	III. ORION ME Mobile drive by radio endpoints		
988	ORION ME drive-by radio endpoint, 8" Twist Tight connector, under lid install kit	\$ 105.50	\$ 104,234.00
988	12" Fiberglass rod, pointed one end (for install under lid)	\$ 1.00	\$ 988.00
Subtotal -ORION ME drive-by radio endpoints			\$ 105,222.00
TOTAL			\$ 114,165.87



Quotation

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: May 29, 2022
 QUOTED BY: Kathy Richards
 REQUESTED BY: Tony Lopes
 PHONE: 707-887-1551
 EMAIL: tlopes@forestvillewd.com

BILL TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

SHIP TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

Subject to review: 12/31/2022

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	BEACON Mobile meter reading system	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days

QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT
	IV. Annual License and hosting Year 1		
	Prices reflect 65% promotional program YEAR 1 discount		
12	Mobile Read Module License #68886-501	\$ 17.50	\$ 210.00
24	User Login License #68886-502 *calculated 2 ea. Login users	\$ 8.75	\$ 210.00
	12 quantity = month in a year		
11856	Mobile Hosting Fee #68886-301	\$ 0.04	\$ 414.96
	988 meters x 12 months = 11,856 total units		
Subtotal -Annual License & Hosting - YEAR 1			\$ 834.96

Summary:

Subtotal - one time setup and training fees	\$ 3,507.50
Subtotal - Reading equipment	\$ 6,750.00
Subtotal -ORION ME drive-by radio endpoints	\$ 105,222.00
SALES TAX	\$ 9,517.62
Subtotal -Annual License & Hosting - YEAR 1	\$ 834.96
TOTAL	\$ 125,832.08

Sales Tax: 8.50% Sonoma County
 *sales tax charged at rate in effect at time of order, point of delivery



Quotation

940 Riverside Pkwy #30
 West Sacramento, CA 95605
 PHONE: 877-348-0700
 FAX: 707-575-0700

CREATED DATE: May 29, 2022
 QUOTED BY: Kathy Richards
 REQUESTED BY: Tony Lopes
 PHONE: 707-887-1551
 EMAIL: tlopes@forestvillewd.com

BILL TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

SHIP TO: Forestville Water District
 6530 Mirabel Rd.
 Forestville, CA 95436

Subject to review: 12/31/2022

SALESPERSON	PROPOSAL SUBJECT	SHIPPING TERMS	PAYMENT TERMS
Kathy Richards	BEACON Mobile meter reading system	Prepay/No Charge For Shipments > \$35,000 FCA Factory/Warehouse	Net 30 Days

QTY	PRODUCT DESCRIPTION	UNIT PRICE	AMOUNT
	<u>V. Annual License and hosting Year 2+</u>		
12	Mobile Read Module License #68886-501	\$ 50.00	\$ 600.00
24	User Login License #68886-502 *calculated 2 ea. Login users	\$ 25.00	\$ 600.00
	12 quantity = month in a year		
11856	Mobile Hosting Fee #68886-301	\$ 0.10	\$ 1,185.60
	988 meters x 12 months = 11,856 total units		
Subtotal -Annual License & Hosting - YEAR 2			\$ 2,385.60

Notes and Assumptions:

If applicable, sales tax and freight, if included on the proposal, is an estimate and will be recalculated based on rates and tax status in effect at time of invoicing.

Actual lead time to be provided at time of order

To aid in processing your order, please include the Quote number on the PO that is submitted for this proposal

Badger Meter provides certification files to help manage meter and endpoint inventory and to maintain meter accuracy data. The standard method of delivery for this information is via electronic mail. Any deviations from our standard format, or any custom file formats, will be considered on a time and material basis.

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

THANK YOU FOR YOUR BUSINESS!!

Estimated ship dates subject to change based upon component availability, as a result of global supply chain constraints or credit review.

This acknowledgement is made subject to the terms and conditions found on our web-site: <https://www.badgermeter.com/terms-and-conditions>

Terms and conditions related to service units, training, and professional services can be found here:

<https://badgermeter.com/service-units-terms-and-conditions>



Badger Meter

BEACON® Advanced Metering Analytics

Mobile Solution

OVERVIEW

The BEACON® Advanced Metering Analytics (AMA) mobile solution from Badger Meter is built on a century of water metering experience, combining our intuitive BEACON AMA software suite with our proven ORION® communication technologies to prepare you for the future.

SOFTWARE APPLICATIONS

BEACON Advanced Metering Analytics (AMA)

The BEACON AMA software suite brings greater visibility and utility management control. With tools beyond meter reading, BEACON AMA software offers targeted Advanced Metering Analytics in a secure hosted platform. The innovative software puts metering data to work with easy-to-use data tools for the utility to increase efficiency in day-to-day utility operations and address demands for actionable intelligence.

- Customizable dashboards to deliver information in a format matched to utility requirements
- Ability to set unique alert conditions to define and monitor exceptions
- Automatic software upgrades
- Integration with your utility systems: billing, work order, inventory, Customer Relationship Management (CRM) and Geographic Information Systems (GIS)

BEACON AMA Field Application Suite

The BEACON AMA Field Application Suite handles field assignments and data collection with ease and efficiency.

BEACON AMA Field Director

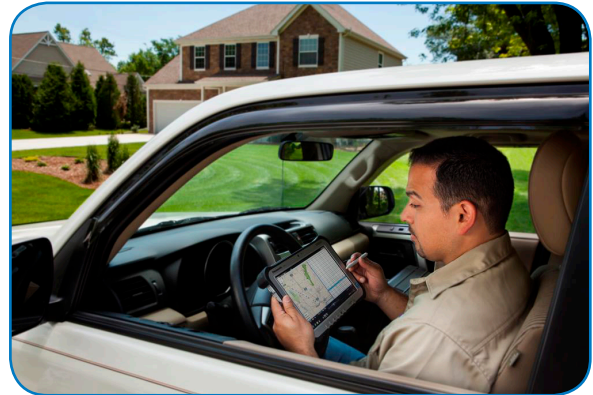
The BEACON AMA Field Director web-based application is designed for utilities to manage meter reader field assignments and monitor the read collection process. Dispatchers can update meter reading assignments and monitor their completion from the office.

ORION Mobile Read

ORION Mobile Read is a browser-based application designed for utility meter route reading. Meter reading field assignments and reading data are automatically synchronized with the cloud-based BEACON AMA software anytime an Internet connection is established, so meter readers do not have to come into the office to receive assignments or deliver reading data.

ORION Endpoint Utility

ORION Endpoint Utility software is a client-based troubleshooting application for programming and quick read of ORION Migratable (ME), Fixed Network (SE) and Classic (CE) endpoints. The software can also be used to extract and view historical interval data from endpoints with data profile functionality using IR or RF technology for ORION SE/ME/CE or SE/ME endpoints respectively.



HARDWARE

The BEACON AMA mobile solution features high-powered ORION meter endpoints and a data collector that is both mobile and rugged to deliver precise daily meter information. The mobile solution is comprised of the following hardware:

ORION Endpoints

Compatible with BEACON AMA, ORION endpoints are integral elements of the mobile solution.

- ORION ME endpoints are two-way water endpoints for mobile applications. ORION ME endpoints are easily upgraded from mobile to fixed network data collection without rolling a truck or reprogramming the endpoint, preparing you for the future.
- ORION CE endpoints are one-way water endpoints designed for mobile meter reading.

Trimble® T10 Tablet

The Trimble T10 Windows®-based tablet is built for highly mobile operations like meter reading. The T10 tablet operates in every environment—from intense heat and sunlight, to pouring rain and freezing temperatures. Together with an ORION mobile transceiver kit or ORION mobile receiver kit, the T10 tablet is compatible with the BEACON AMA mobile solution, including ORION Mobile Read and the ORION Endpoint Utility software. Refer to the T10 hardware specifications on next page or download the Trimble T10 Tablet datasheet (<http://download.trimblewater.com/t10.pdf>) for more information.

ORION Mobile Transceiver, Receiver

The ORION FHSS (frequency hopping spread spectrum) mobile transceiver and mobile receiver are portable devices designed for use with ORION software applications. The transceiver and receiver both feature a plug-and-play design that can be easily maintained and operated. When connected, the ORION mobile transceiver supports RF collection of meter reading data from ORION ME and SE endpoints, while the ORION mobile receiver supports ORION CE endpoints. Also refer to the *ORION ME Mobile Transceiver* and *ORION CE Mobile Receiver Application Data Sheets*, available in the Resource Library at www.badgermeter.com.

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 hosted BEACON AMA software suite provides utilities with regular updates, long-term support and maintenance. Comprehensive training is provided at the time of system deployment. To maintain best practices, a library of online videos and options for web-based training and support are also available. Once deployed, our technical support specialists may be contacted by phone, email and web to provide ongoing, utility-friendly support. Additionally, Badger Meter offers extended customized training to further enhance user expertise.

TECHNICAL REQUIREMENTS

BEACON AMA and Field Director

Developed as hosted software platforms, BEACON AMA and Field Director are cloud-based software applications accessed through a standard web browser. User logins provide secure access. Field assignment data is synchronized with ORION Mobile Read on the mobile collection device through a wireless or wired Internet connection. Internet access is required.

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®.

Field Director requires the latest version of Google Chrome.

ORION Mobile Read

ORION Mobile Read is a browser-based application that requires the latest version of Google Chrome and runs on the Trimble T10 tablet, or on a Utility-supplied tablet/laptop, which meets or exceeds the specifications listed in the table below. An ORION mobile transceiver or mobile receiver kit is required for collection of mobile meter reading data. Secure user logins limit access to field assignments.

Tablet/Laptop Specifications

NOTE: The Trimble T10 tablet offered by Badger Meter meets or exceeds all the Utility-Supplied Tablet/Laptop Requirements listed below.

	Trimble T10 Tablet Specifications	Utility-Supplied Tablet/Laptop Requirements
Operating System	Windows 10 IoT Enterprise	Windows 10 Pro (recommended), Windows 7 Pro (minimum*)
Memory	8 GB RAM	8 GB RAM (recommended), 4GB (minimum)
CPU	Intel Core i7	Intel Core i7 (recommended), i5 or i3 (minimum), or equivalent
Storage	256 GB SSD	128 GB, SATA or SSD
Connectivity	Bluetooth® 4.0 LE; Wi-Fi 802.11ac, 2.4 GHz/5GHz dual band; 4G LTE multi-carrier (Utility-supplied data plan required to activate)	Bluetooth® 3.0; Intel WiFi; Gobi or other 3G or LTE wireless (Utility-supplied data plan)
GPS (required for mapping functions)	On-board NMEA com-based GPS capability	On-board NMEA com-based GPS capability; External GPS receiver may be used if it meets system requirements
Display	10.1 in, 10-point capacitive multi-touch; Active pen support; daylight readable; LED backlight, scratch-resistant screen	Touch-capable; daylight readable
Audio	Built-in microphone and speaker; Audio jack 3.5mm	Built-in microphone and speaker; Audio jack 3.5mm
Camera	5.0 MP (rear-facing) and webcam	—
Battery	Long lasting lithium-ion battery pack, 11.4V, 5400 mAh, hot swappable	Long lasting lithium-ion battery pack
USB port	One (1) USB port	One (1) USB port**
Ruggedized	MIL-STD-810G certified; IP65-certified	Rugged device recommended
Accessories	Digital pen with tether, Hand strap, Screen protectors (x2), A/C charger***	—

*Limited compatibility and support for Windows 7 Pro operating system. Depending on age of device, upgrade to Windows 10 Pro may be required.

**Use of Utility-supplied USB hub or second USB port is required for simultaneous connection and usage of ORION ME Mobile Transceiver Kit and ORION CE Mobile Receiver Kit.

***A limited number of T10 tablet accessories are available from Badger Meter. Refer to the *Trimble T10 Tablet Parts List* available at www.badgermeter.com for more information.

ORION Endpoint Utility

ORION Endpoint Utility is a client application that runs natively on a Windows-based device with Windows 7 or higher. An IR communication cable is required for IR programming functions, and an ORION mobile transceiver or mobile receiver kit is required for performing RF quick reads, or two-way RF communications (ORION ME/SE endpoints only).

SMART WATER IS BADGER METER

Trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2019 Badger Meter, Inc. All rights reserved.

www.badgermeter.com

The Americas | Badger Meter | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400
 México | Badger Meter de las Americas, S.A. de C.V. | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882
 Europe, Eastern Europe Branch Office (for Poland, Latvia, Lithuania, Estonia, Ukraine, Belarus) | Badger Meter Europe | ul. Korfantego 6 | 44-193 Knurów | Poland | +48-32-236-8787
 Europe, Middle East and Africa | Badger Meter Europa GmbH | Nurlinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0
 Europe, Middle East Branch Office | Badger Meter Europe | PO Box 341442 | Dubai Silicon Oasis, Head Quarter Building, Wing C, Office #C209 | Dubai / UAE | +971-4-371 2503
 Asia Pacific | Badger Meter | 80 Marine Parade Rd | 19-07 Parkway Parade | Singapore 449269 | +65-63464836
 Switzerland | Badger Meter Swiss AG | Mittelholzerstrasse 8 | 3006 Bern | Switzerland | +41-31-932 01 11



Badger Meter

BEACON® Advanced Metering Analytics EyeOnWater® Consumer Engagement



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.

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.

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.**

Making Water Visible®

BEACON, EyeOnWater, Making Water Visible and ORION are registered trademarks of Badger Meter, Inc. Other trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.
© 2016 Badger Meter, Inc. All rights reserved.

www.badgermeter.com

The Americas | Badger Meter | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400
México | Badger Meter de las Americas, S.A. de C.V. | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882
Europe, Middle East and Africa | Badger Meter Europa GmbH | Nurtinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0
Europe, Middle East Branch Office | Badger Meter Europe | PO Box 341442 | Dubai Silicon Oasis, Head Quarter Building, Wing C, Office #C209 | Dubai / UAE | +971-4-371 2503
Czech Republic | Badger Meter Czech Republic s.r.o. | Mařikova 2082/26 | 621 00 Brno, Czech Republic | +420-5-41420411
Slovakia | Badger Meter Slovakia s.r.o. | Racianska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01
Asia Pacific | Badger Meter | 80 Marine Parade Rd | 21-06 Parkway Parade | Singapore 449269 | +65-63464836
China | Badger Meter | 7-1202 | 99 Hangzhong Road | Minhang District | Shanghai | China 201101 | +86-21-5763 5412



Badger Meter

ORION® Water Endpoints

Migratable Endpoint

DESCRIPTION

The ORION® Migratable endpoint (ME) is a two-way water endpoint for mobile applications with the capability of migrating to fixed network mode to support future utility capabilities.

In addition to providing the current and snapped daily reading, the endpoint two-way functionality allows users to capture data profile information wirelessly, without having to directly access the endpoint, during the normal reading process. An ORION Migratable endpoint is easily upgraded to an ORION Fixed Network endpoint (SE) through a software license.

The ORION Migratable 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 been providing comprehensive Advanced Metering Analytics (AMA) for interval meter reading and data capture using both one-way and two-way communications.

FUNCTIONALITY

Operation: The endpoint continuously monitors the encoder circuit. At predetermined intervals, the endpoint broadcasts the totalized reading value along with other meter data to the mobile collection devices.

Activation: The endpoints offer a Smart Activation feature. All ORION endpoints are shipped in an inactive, non-transmitting state. 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.

Broadcast Mode: Once activated, the endpoints begin transmitting in mobile priority mode. After installation, using the endpoint two-way communication, an endpoint transmits its meter data every six seconds.

Data Profiling: The endpoints store up to 90 days of hourly historical interval meter data within nonvolatile memory.

Output Message: The endpoint broadcasts its unique serial number, current meter reading, daily snapped meter reading and applicable status indicators for mobile reading collection.



APPLICATION

Configurations: Available in integral, remote or endpoint-only configurations, the endpoint can be deployed in indoor, outdoor and pit applications. The endpoint electronics and battery assembly are fully encapsulated in epoxy for environmental integrity.

Meter Compatibility: When attached to a Badger Meter 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 and M-Series® Electromagnetic flow meters.

Encoder Compatibility: The endpoint is suitable for use with all Badger Meter encoders as well as the following Badger Meter approved three-wire encoder registers that have a manufacture date of 2000 or newer, are programmed into the AMR/AMI three-wire output mode and have three-wires connected: Elster C700 Digital, 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. (H); 1.75 in. (W) at top; 2.125 in. (W) at bottom
Broadcast Frequency MHz Band	FCC regulated 902...928 MHz frequency hopping modulation
Operating Temperature Range	-40...60° C (-40...140° F) based on storage and meter reading.
Storage and Meter Reading	RF output may be reduced by extremely low temperatures. The water meter should not be subjected to temperatures below freezing.
Humidity	0...100% condensing
Battery	One (1) lithium thionyl chloride C cell (nonreplaceable)
Battery Life	20 years (calculated)

Construction: All ORION Migratable endpoints are housed in an engineered polymer enclosure with an ORION RF board, battery and antenna. To assure 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 Migratable 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.

Range: Transmission reception depends on a number of factors: topographical features, a building's construction materials and obstacles such as buildings, trees, vegetation and fences. Temporary conditions, such as a vehicle parked near the endpoint or heavy rain or snow, could also affect reception. These factors need to be considered when installing and communicating with the endpoint using a handheld or mobile reading system. For a more in-depth discussion, see the white paper, *Understanding RF Propagation of AMR/AMI Systems*, available at www.badgermeter.com.

FEATURES

Communication Type	Two-Way
Application Type	Control/Monitor
Reading Interval Type	Midnight/Now
Encoder Compatibility	Absolute/Incremental
Mobile Reading	✓
Migratable to Fixed Network	*
Premise Leak Detection	✓
Cut-Wire Indication	✓
Reverse Flow Indication (Absolute Encoder)	✓
No Usage Indication	✓
Encoder Error (Absolute Encoder)	✓
Low Battery Indication	✓
Remote Programming	✓
Remote Clock Synchronization	✓
Firmware Upgrades	✓

* Can be upgraded with migration license.

License Requirements: ORION Migratable endpoints comply with Part 15 of the FCC Rules. No license is required by the utility to operate an ORION meter reading system.

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

Caution: Changes or modifications to the equipment that are not expressly approved by Badger Meter could void the user's authority to operate the equipment.

Making Water Visible®

E-Series, M-Series, Making Water Visible, ORION and Recordall are registered trademarks of Badger Meter, Inc. Other trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2016 Badger Meter, Inc. All rights reserved.

www.badgermeter.com

The Americas | Badger Meter | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400
 México | Badger Meter de las Americas, S.A. de C.V. | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882
 Europe, Middle East and Africa | Badger Meter Europa GmbH | Nurtinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0
 Europe, Middle East Branch Office | Badger Meter Europe | PO Box 341442 | Dubai Silicon Oasis, Head Quarter Building, Wing C, Office #C209 | Dubai / UAE | +971-4-371 2503
 Czech Republic | Badger Meter Czech Republic s.r.o. | Mařikova 2082/26 | 621 00 Brno, Czech Republic | +420-5-41420411
 Slovakia | Badger Meter Slovakia s.r.o. | Racianska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01
 Asia Pacific | Badger Meter | 80 Marine Parade Rd | 21-06 Parkway Parade | Singapore 449269 | +65-63464836
 China | Badger Meter | 7-1202 | 99 Hangzhong Road | Minhang District | Shanghai | China 201101 | +86-21-5763 5412
 Switzerland | Badger Meter Swiss AG | Mittelholzerstrasse 8 | 3006 Bern | Switzerland | +41-31-932 01 11