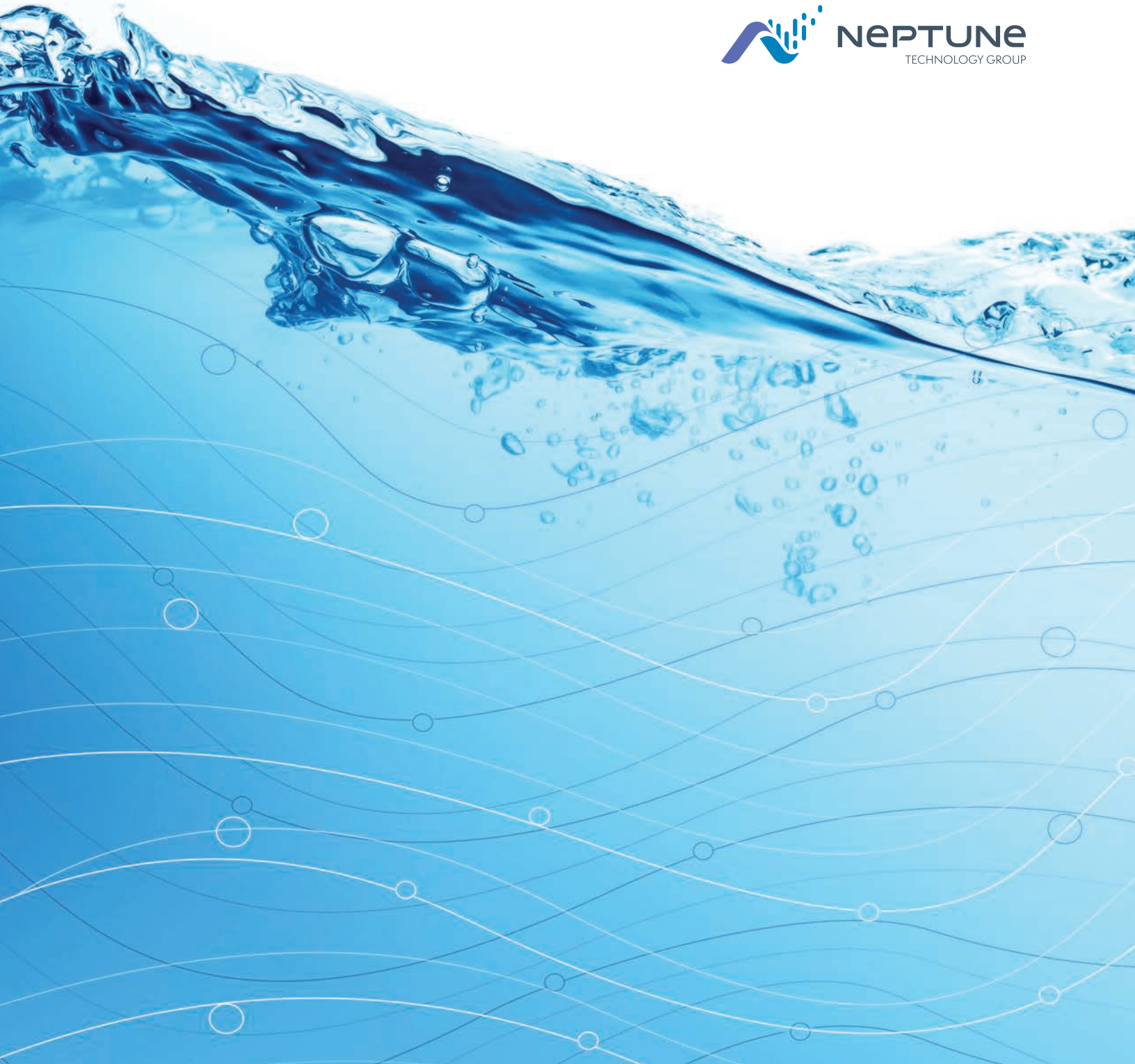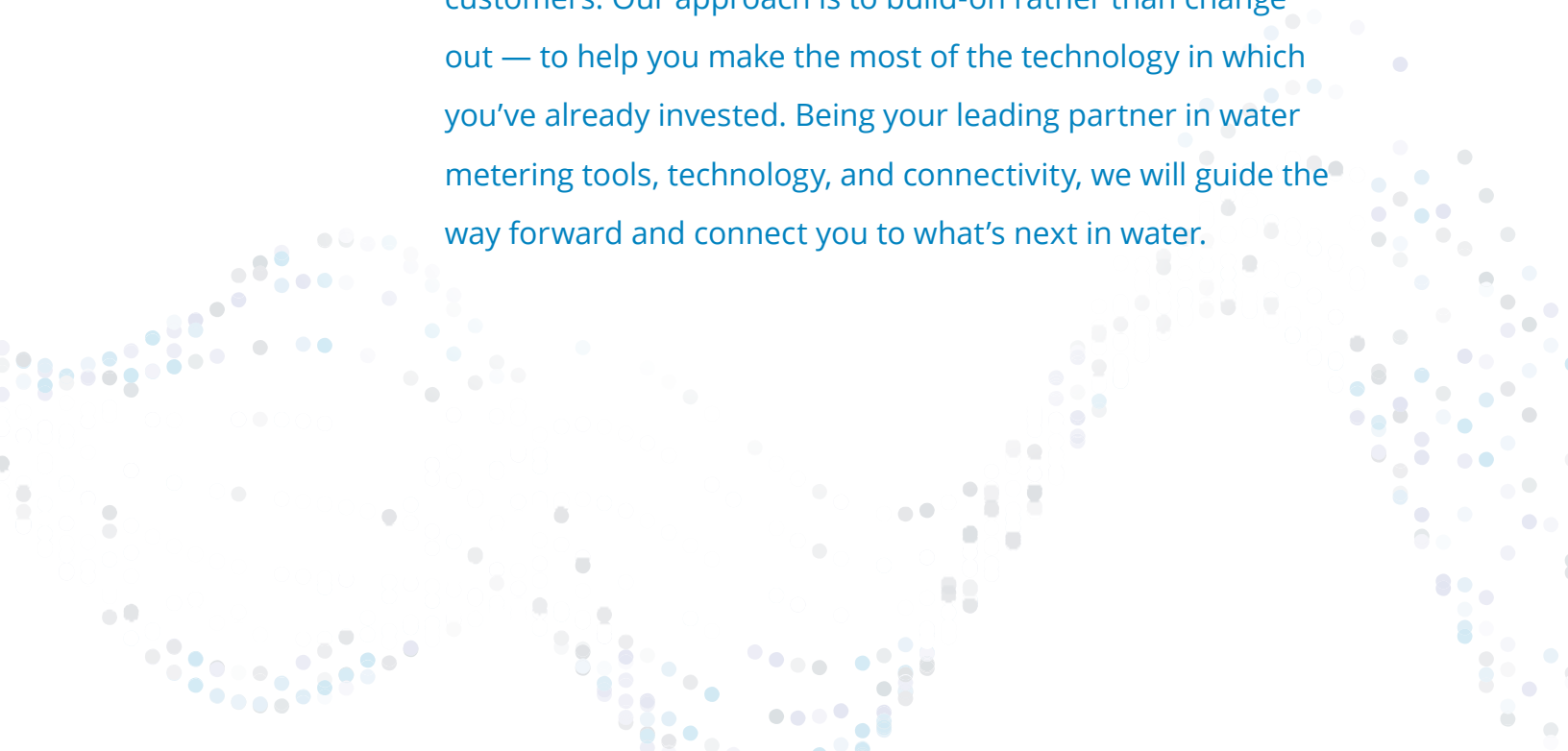# Product Catalog

NEPTUNE
TECHNOLOGY GROUP

Win Your Day with Technology Designed for the Business of Water.

With Neptune®, products aren't just products. They're solutions developed to work reliably and to respond to your needs as a water utility.

Neptune draws some of the best designers and engineers in the field of water technology to focus on innovations that are adaptive and that make processes more efficient. When you buy the Neptune brand, you can trust that every consideration has been made for an improved user experience with sustainable support.

At the core of Neptune's philosophy is our loyalty to our customers. Our approach is to build-on rather than change out — to help you make the most of the technology in which you've already invested. Being your leading partner in water metering tools, technology, and connectivity, we will guide the way forward and connect you to what's next in water.

Neptune® 360™ Data Management Platform

Manage, share, and secure your data easily with cloud-based software designed exclusively for the business of water.

Tailor your software for your utility using a data management platform that grows with you without added IT infrastructure costs. Move from your needs today to your needs tomorrow without separate independent software applications. Neptune® 360™ makes transitioning from a mobile metering system to a fixed network system an easy migration. Seamlessly integrate cross-functional needs to empower multiple departments with access to actionable data to optimize operational efficiency.

The intuitive, user-friendly design includes capabilities such as alert notifications, consumption and reporting modules, and mapping for individual accounts. Neptune 360 frees up your time and makes your job easier. All that's needed is access to an Internet web browser. You don't have to install anything. Just log on and it's all there.

Overview

- Neptune-managed system with no installation required
- Cloud-based solution, world-class data center
- Software designed exclusively for water
- 24/7 software system monitoring
- Utility retains data ownership
- Easy migration from mobile to fixed network
- Highest level security
- Disaster recovery/redundancy

Outcomes

- Access to data analytics anytime from anywhere to help your utility achieve your goals and objectives
- Minimal clicks to acquire critical information
- Increase utility and resource efficiencies without being encumbered with IT concerns
- Respond to your customers quickly with a solution focused on customer service
- Identify potential leaks, excessive consumption, and reverse flow to proactively resolve issues faster
- Integrate and easily share data seamlessly across utility departments
- One user interface for any read method — no matter if you are AMI, AMR, or a combination, all data can be viewed in a single user interface

Neptune® 360™ Mobile

Neptune® 360™ Mobile enables your personnel to manage and complete metering processes, syncing data from the field without having to go back to the office.

Use Neptune's BYOD ("Bring Your Own Device") technology to perform an RF test to ensure endpoints are transmitting with ample signal strength. Collect exception readings from meters that either have no radio

component or that are outside the AMI coverage radius. Use the Data Log to capture 96 days of hourly historical consumption.

No need to invest in specialized devices. Neptune 360 Mobile runs on equipment you already own and use every day, including smart phones and tablets.

Smart Meters

Neptune provides a solid foundation for Smart Water.

T-10® Residential Meters

Neptune T-10® meters are time proven for dependability and provide a wide effective flow range for maximum revenue.

• Meets or exceeds the latest AWWA C700 Standard

• Housed in a lead free bronze maincase — NSF/ANSI 61 and NSF/ANSI 372 certified, SDWA compliant

• Lifetime guarantee on meter body

• Positive displacement nutating disc measuring chamber

• Effective flow range

• Proprietary polymer measuring chamber materials maximize long-term accuracy

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

Neptune ProCoder™ and E-CODER® registers provide value-added features such as flags for leak, tamper, and reverse flow. Use Neptune® 360™ to generate billing, customer service, and operational reports.

ProCoder and E-CODER registers are available in two different configurations for specific applications — inside set and pit set.

E-CODER® Register

Create the foundation of a Smart Water meter network with a true absolute encoder, Neptune's E-CODER®, with 8-digit readings (absolute 9-digit meter readings on its display) and resolution down to 1/10th of a gallon.

Key Features

• Battery-independent metrology

• Leak detection

• No-flow and reverse-flow flag indicators by account

• Tamper detection and meter diagnostics

• Reduced water loss, maximum revenue generation

E-CODER®)R900*i*™

Increase efficiencies. Pinpoint possible tamper or water theft. Aid customer service. Utilize the data supplied by Neptune's E-CODER®)R900*i*™ to make confident, informed decisions. This combination absolute encoder register/radio frequency meter interface unit (RF MIU) provides two-way communications of advanced smart metering. Make migration from mobile to fixed network reading without site visits or reprogramming with the E-CODER)R900*i*'s interleaved mobile and high-power fixed network messages.

Key Features

• Simultaneous mobile and fixed reading capabilities

• 1 Watt fixed network message reduces AMI infrastructure costs

• Easy-to-install wireless package

• 96 days of hourly consumption activity

• Two-way communications

• Seamlessly integrated radio for easy installation — no external wires, reducing potential wire vandalism/damage

ProCoder™ Register

Non-contact LED absolute encoding technology ensures the odometer read exactly matches the remote read. Detect ultra-low flows and monitor direction of flow, using the ProCoder's extended resolution from the dial and sweep hand.

Key Features

- High-resolution remote meter reading
- Leak, tamper, reverse flow flags
- Detects ultra-low flows
- Easy-to-read 8-wheel mechanical odometer

ProCoder™)R900*i*™

It's easy to collect metering data using AMR/AMI communications simultaneously with Neptune's ProCoder™)R900*i*™. Its interleaved mobile and high-power fixed network messages allow for simple migration from walk-by to mobile to fixed network reading — and back again — without site visits or reprogramming.

Key Features

- Easy to install, no programming required
- 96 days of hourly consumption activity
- Leak, tamper, reverse flow detection
- No external wires, reducing potential wire vandalism/damage

MACH 10® Solid State Ultrasonic Water Meter

Ensure continued accuracy and performance over time — reducing Non-Revenue Water. The MACH 10® solid state ultrasonic meter features no moving parts to wear over time. Its high-resolution measurement enables your utility to capture extremely low flow rates. It combines solid state metrology with a corrosion-resistant, lead free, bronze maincase, built to withstand demanding service conditions — internal water pressure, rough handling during installation, and in-line piping stresses.

Key Features

- Sizes ⅝", ¾", 1", 1½", 2"
- Extended low-flow/upper-flow range and accuracy
- No special test mode required for bench testing
- Sustained accuracy over meter life
- Maintenance-free, fully-potted electronics and battery
- MACH 10®)R900*i*™ seamlessly integrates R900® radio for easy installation — no external wires, reducing potential wire vandalism/damage

Network-as-a-Service (NaaS) Solution

Get back to the business of water with a NaaS solution where AMI infrastructure is managed and monitored by Neptune over the life of the project.

Save time, labor, and money by outsourcing through Neptune. Your utility won't have to worry about design, installation, and ongoing operations and maintenance (O&M) for the life of the AMI project with Neptune's NaaS managed service, which offers:

- Reduced time and effort to deploy

- Optimized AMI network performance

- Improved infrastructure reliability and security

- Future-proof deployment with Neptune's R900® technology

- Supported AMI functionality with backup mobile AMR meter reading

Choose an open standards-based communication infrastructure designed to grow with you and your Smart Water initiatives.

Move forward with confidence and connect to what's next in water.

R900® Meter Interface Unit (MIU)

Eliminate the costs, frustration, and maintenance of deploying your own AMI network infrastructure. By deploying the R900® MIU technology throughout your service territory you can quickly reap the benefits of AMI without the burden of maintaining the complex network infrastructure.

The first LoRa Alliance™ certified solution for water AMI networks, the R900 solution leverages the LoRa® open-standards network and combined with Neptune's NaaS managed service, frees your utility to focus on core water needs. Take back your work day and focus on collecting meter data, reducing Non-Revenue Water, and providing exceptional customer service.

By using the innovative R900 MIU, mobile and fixed network messages are interleaved and continuously transmitted, thereby allowing your utility to maintain backup mobile reading capability with the same endpoints.

Key Features

• Easy migration to AMI through LoRa Network-as-a-Service (NaaS)

• Automatically authenticates to the appropriate fixed network

• Deploy with confidence — no hidden costs or required site visits to change the MIU from AMR to AMI

• On-demand wireless data logging and off-cycle readings

• Smart water endpoint with no field programming required

• Interleaved mobile and fixed network messaging supports AMR/AMI

• Available in pit or wall versions

• 96 days of hourly consumption data

Cellular MIU (CMIU™)

Reap the benefits of AMI with Neptune's CMIU™ solution that leverages 4G LTE cellular networks nationwide. Achieve complete coverage of your service territory with no operational burden and greatly improve access to meter readings by leveraging this Network-as-a-Service (NaaS) solution.

Because Neptune partners with the country's premier telecom companies, you can reliably collect meter reading and alarm data in your service territory with no worries for network investment, maintenance, or upgrades during the life of your AMI project.

Key Features

• 4G LTE cellular technology using AT&T or Verizon

• Eliminates maintenance, costs associated with AMI infrastructure

• Requires no endpoint programming which reduces labor costs

• Identifies potential theft and leaks with tamper and reverse flow detection

• Can be surgically deployed in select water applications or used as fill-in for hybrid NaaS AMI solutions

• Operating modes include:
  Basic – hourly data delivered every 24 hours
  Advanced – hourly data delivered every 4 hours
  Pro – 15-minute data delivered every hour

R900® System

Communicate crucial data with confidence using Neptune's innovative, field-proven R900® radio frequency technology.

R900® RF MIU

Reduce infrastructure costs with Neptune's R900® RF meter interface unit (MIU) while reading in mobile or fixed network modes. There's no need for separate reading systems, site visits, or any type of MIU reprogramming or re-configuration. Greatly improve access to meter readings, and more proactively identify and resolve customers' questions with detailed consumption information as well as alerts for leak or backflow.

A single radio frequency unit, Neptune's R900 MIU features an interleaved high-power, 1 Watt fixed network message to support AMI along with a low-power 100 mW message to support mobile meter reading. It is available in both wall and pit mount configurations.

Key Features

- Reduced AMI infrastructure costs

- Interleaved mobile and fixed network messages facilitate migration from AMR to AMI

- 96 days of hourly consumption activity

- On-demand, wireless data logging and off-cycle readings

R900® DATA COLLECTORS

Bring in all the metering information you need with ease, in a variety of modes.

R900® Gateway Fixed Data Collector

Collect metering data as well as daily leak, reverse flow, and days of no flow alerts from all communication-enabled meters using the R900® Gateway. Optimize your fixed network with high throughput reading performance software-defined radio (SDR) technology, with the power to process eight meter readings simultaneously and gather 360 readings per second. Choose the technology you need, where you need it — without special programming or reprogramming of MIUs as your utility migrates from walk-by/drive-by to fixed meter reading.

Key Features

• Supports 1 Watt fixed network message from R900® endpoints, reducing infrastructure costs

• No reprogramming of endpoints to enable fixed network reading

• Daily leak, reverse flow, and other alerts

• Maintains compatibility with existing R900s

R900® IoT Gateway

Deploy and operate your own Smart Water network with a ruggedized LoRaWAN™ Gateway that employs open-standards LoRaWAN protocol and network architecture. Benefit from end-to-end encryption of meter reading data from the meter to the host software platform. Leverage the R900® System to easily view collected metering data to identify loss and optimize efficiency.

Key Features

• Facilitates Migration to AMI with LoRa®

• Supports LoRa open-standards

• Provides for long range communications, superior coverage, and scalability

• Daily leak, reverse flow, and days of no flow alerts

MRX920™ Mobile Data Collector

Make meter reading automatic to take "feet off the street" using Neptune's reliable, accurate, and field-proven MRX920™ mobile data collector. Save days or even weeks in the field while helping improve meter reader safety. It also provides seamless compatibility with all generations of R900 MIUs. The MRX920 comes with Neptune software, which is capable of providing your meter readers with Esri®-powered mapping and wireless mobility, making valuable data available in real time as you read your system.

Key Features

• Esri-powered GIS maps show meter reading/flag status

• View and share consumption activity graphs onsite to address high bill complaints

R900® Belt Clip Transceiver (BCT) Walk-by Data Collector

Eliminate meter access issues and speed up retrieval of data with the R900® Belt Clip Transceiver. Reduce meter reading time, especially in high-density environments, thanks to the R900 BCT's two-way communications to the R900® MIU and exceptional radio frequency (RF) throughput. Perform impromptu service calls in the field by downloading log data and address customer service issues onsite without a separate truck roll, simply by pairing the R900 BCT with a handheld or mobile device running the Neptune® 360™ Mobile application.

Key Features

- Software-defined radio (SDR) for compatibility with future products
- Retrieve 96 days of hourly consumption data
- Wirelessly paired to a handheld or mobile device
- Multi-platform OS compatibility: Android or iOS

Neptune® 360™ Mobile Application for the R900 Belt Clip Transceiver

Save water, labor, and money with the Neptune 360 Mobile application. Available for use with Android and iOS devices you already own, this mobile application can also be paired with the R900 BCT to help reduce reading time and provide onsite consumption history views while in the field. Show customers the water they've used by the hour, aiding conservation initiatives, heading off bill complaints, and reducing additional truck rolls.

Key Features

- Supports manual keyed entry, probed, and mobile RF data entry
- Significantly reduces reading time when connected to R900 BCT
- Address high bill complaints in the field via consumption activity graphs

Commercial and Industrial Meters

Neptune commercial and industrial meters offer some of the widest flow ranges of any turbine meters on the market.

All Neptune turbine water meters meet or exceed the latest performance and accuracy requirements.

HP Turbine

Ensure accuracy at some of the widest flow ranges of any turbine meters on the market with Neptune's HP Turbine water meters.

Key Features

• Unitized Measuring Element (UME) allows quick, easy, in-line interchangeability

• Calibration vane allows field calibration of UME to lengthen service life, ensure accuracy

TRU/FLO®

Capture accurate reads with technology specially designed for extremely wide flow rate applications. Neptune's TRU/FLO® combines the low-flow sensitivity of a T-10® disc-type meter with the high-flow capacity of a turbine-type meter — ideal for installations such as apartment buildings, hotels, and hospitals.

Key Features

• Patented hydraulic valve transfers flow smoothly between low and high flow measurements

• Minimum accuracy loss in crossover range increases revenue

• UME makes maintenance easier, faster

HP Fire Service Turbine Stainless Steel (S)

The High Performance (HP) Fire Service Turbine Stainless Steel (S) meter offers some of the widest flow ranges of any fire service turbine meter on the market. All HP Fire Service Turbines meet or exceed the latest AWWA standards. Maximum continuous flow rates may be exceeded by as much as 25% for intermittent periods. The HP Fire Service Turbine S meter is designed to measure both domestic and fire service usage where flow rates are moderate to high.

Key Features

- Combines features of HP Fire Service Turbine with 300 series stainless steel body

- NSF/ANSI 61 and 372 certified, Underwriters Laboratory (UL) listed, and Factory Mutual (FM) approved for fire service use

- Meets or exceeds AWWA C703 Standard

- Includes attached fire service strainer

HP PROTECTUS® III Stainless Steel (S)

Measure extremely wide flow ranges with the HP PROTECTUS® III Stainless Steel fire service meter. Designed to measure both domestic and fire service water usage through a single water line. Ideal for installations such as warehouses, hotels, or hospitals where one water line may supply faucets or bathrooms as well as an automatic sprinkler system.

Key Features

- Measures wide flow ranges at 98.5%-101.5% accuracy

- Registers leaks, unauthorized use from fire service lines

- Combines low-flow sensitivity of disc meters with high-flow capacity of turbines

- Meets or exceeds AWWA C703 Standard

- NSF/ANSI 61 certified, Underwriters Laboratory (UL) listed, and Factory Mutual (FM) approved for fire service use

SEER®

Identify Non-Revenue Water at the water meter level with Neptune's SEER® (Statistical Evaluation for the Enhancement of Revenue) analysis tool. Highlight meter inaccuracies and prioritize which meters to repair or replace, projecting the return on investment (ROI) for each.

A typical utility's large commercial and industrial water meters make up less than 10 percent of its meter population — but between 40 and 60 percent of its revenue. Use SEER to prevent greater losses of money and water by replacing even a small number of large meters.

Key Features

• Analysis for large meters, residential positive displacement meters

• Identify meter replacement accuracy within a 95% confidence interval

• Identifies which meters need attention

• Establishes replacement meter priorities based on revenue gain and payback

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

**Neptune Technology Group
(Canada) Ltd.**
7275 West Credit Avenue
Mississauga, Ontario L5N 5M9
Canada Tel: 905-858-4211
Fax: 905-858-0428

Neptune Technology Group Inc.
Avenida Ejercito Nacional No 418
Piso 12, Despacho 1203
Colonia Polanco V Sección
C.P. 11560 Delegación, Miguel Hidalgo
Mexico D.F.
Tel: (55) 5203-5708, (55) 5203-4032,
       (55) 5203-5294