

LAKES REGION WATER CO. INC.

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Hours: Monday through Friday, 8:30am to 4:30pm

October 2, 2023

Adrew J. Harmon, Esq.
Department of Energy
21 South Fruit Street, Suite 10
Concord, NH 03301

Ref: Proposed “En 600 Water Service Rules”

Hearings Officer Harmon:

Lakes Region recommends that the Department of Energy consider a number of minor technical amendments in its re-adoption of the former PUC rules due to changes in industry practices since those rules were adopted by the Commission many years ago. In particular, Lakes Region recommends that the Department give consideration to the following:

- **Amend Proposed Rule En 603.02** to recognize that the Commission has previously approved waivers of the requirement for metered service, particularly in cases where Lakes Region has acquired small developer-built systems which were unmetered. As a result, Lakes Region’s approved Tariff provides for service to be provided these systems at an unmetered rate. Lakes Region expects to transition its unmetered systems to metered service over time as set forth in its recent settlement agreement with the Department of Energy in Docket No. 20 – 187. However, the transition to fully metered service is an on-going process that needs to be carefully coordinated with other capital projects required to maintain service, replace infrastructure and maintain regulatory compliance. As a result, this Rule should recognize that unmetered service may continue in cases where it is authorized under an existing, approved tariff.
- **Amend Proposed Rule En 605.03** to include language providing that meters should be calibrated in accordance with the manufacturer’s technical specifications. The Commission’s former rules were written during a time when meters were mechanical and required calibration on an on-going basis. The technology used in today’s meters has changed considerably such that meter calibration is no longer required. For example, Lakes Region currently uses iPerl Smart Water Meters in many of its systems which rely on electromagnetic flow measurement and do not require calibration. These meters come with a 20-year accuracy guarantee from the manufacturer. See iPerl Data Sheet, attached. These meters offer many operational benefits, including alarms for leaks, backflow, low battery and other conditions. If accuracy concerns were to arise, a meter would be replaced.

Thank you for your consideration of these comments. I hope they are helpful in the Department's review of its rules. If you have any questions, please contact me.

Sincerely,

/s/ Leah Valladares

Leah Valladares

Utility Manager



iPERL Smart Water Meter

Electromagnetic Flow Measurement System

Sensus iPERL® smart water meters are designed to capture both lost water and lost revenue. The innovative magnetic technology delivers unmatched low flow registration and minimal pressure loss. With no moving parts, iPERL maintains its accuracy over a 20 year lifetime and is equipped with smart water alarms - delivering the intelligence you need to quickly resolve issues in the field.

Industry Leading Performance

The patented measurement technology of the iPERL water meter provides continuous and enhanced accuracy ranges at both low and high flows and perpetual accuracy over the life of the product. The iPERL meter has a 20-year accuracy warranty and a 20-year battery life guarantee. Over this 20-year lifespan, your iPERL will measure just as accurately as the day it was installed.

Construction

The iPERL meter body is available in two versions. The first version has a flow tube that is comprised entirely of composite polymer. The second version is comprised of lead-free bronze alloy with a composite polymer core. Both versions use the same thermal polymer shell with the same electronic register inside.

Electronic Register

The 9-digit hermetically-sealed electronic register with LCD display was designed to eliminate dirt, water, and moisture contamination in pit settings. The large, easy-to-read display includes AMI/AMR digits, direction of flow, units of measure, and empty pipe detection. The AMI/AMR digits and units of measure are fully programmable. The register also provides user configurable data logging.

Solid State Electromagnetic Technology

By avoiding the use of a mechanical measuring element inside the flow tube, metering performance is linear over the entire flow range - ensuring no reduction in accuracy at any flow rate over the life of the meter. The iPERL meter uses our patented remanent magnetic field technology - requiring far less energy and delivering superior accuracy.

Tamperproof

The integrated construction of the iPERL water meter prevents removal of the register to obtain free water. The magnetic tamper and low field alarms will both indicate any attempt to tamper with the magnetic field of the iPERL meter. The meter communication alarm indicates a possible cut cable.

Alarms

Quick resolution of field issues is made possible with smart water alarms including leak detection, reverse flow, empty pipe, magnetic tamper and low battery. When integrated with our FlexNet® communication network, remotely gathering and transmitting data has never been more reliable or profitable.

FEATURES

- 5/8", 5/8" x 3/4", 3/4" and 1" sizes available in potable and reclaim versions
- 3/4" and 1" available in residential fire service (UL 327b)
- Starts registering flow as low as 0.03 gpm (0.007 m³/hr)
- Can be installed horizontally, vertically or diagonally
- Compatible with current Sensus AMI/AMR systems

BENEFITS

- Maximize investment with iPERL's electromagnetic technology, which delivers a 20-year accuracy warranty, with no required maintenance, and no loss in accuracy over 20 years
- Smart alarms detect issues such as leaks, reverse flow, empty pipe, etc.
- Improve low flow accuracy to drive additional revenue

iPERL Smart Water Meter

Electromagnetic Flow Measurement System

Smart Alarms

iPERL meters have many configurable smart alarms designed to protect your utility's investment, enhance customer service, and monitor/optimize distribution systems. These alarms include:

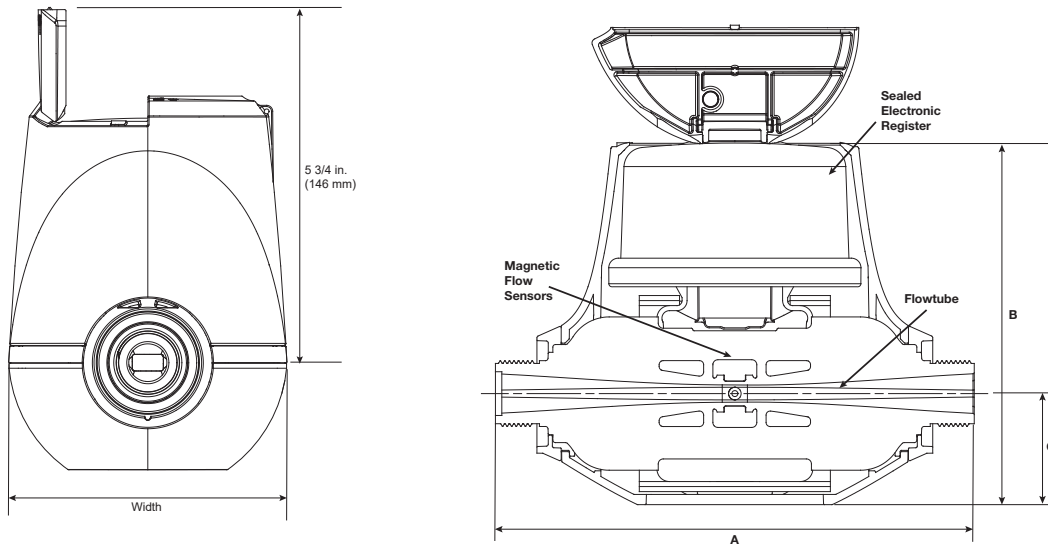
- **Empty Pipe**
Detects the absence of water in the flow tube and sends an alert. Allows you to identify main breaks downstream and water shortages for quicker resolution to ensure water availability. This alarm can also indicate the water meter has been removed from service, or notify you of potential tamper.
- **Tampering**
Detect magnetic interference to reduce apparent water losses and protect against unauthorized activities.
- **Customer Leak**
Detect continual consumption of water over a period of time to indicate downstream leaks. This protects your utility, infrastructure and customers through alarm notifications that can reduce water loss and leak adjustment costs.
- **Low Battery**
Replace your meters before they stop recording consumption through alerts indicating battery capacity to the meter or valve is running low.
- **Reverse Flow**
Keep untreated water from re-entering your distribution system and deter tampering attempts through an alarm triggered when reverse flow is detected at the meter.

SPECIFICATIONS

Service	Measurement of potable and reclaim water, and Residential Fire Service (UL 327b). 0-100% humidity. Fully submersible. IP68+ rated.			
Temperature Ranges	Water operating: 33 °F (0.55 °C) to 80 °F (26.7 °C) Ambient air operating: -22 °F (-30 °C) to 140 °F (60 °C) Storage air: -30 °F (-34.4 °C) to 158 °F (70 °C)			
Starting Flow	5/8" (DN 15 mm) size: 0.03 gpm (0.007 m3/h)	5/8" x 3/4" (DN 15x20 mm) size: 0.03 gpm (0.007 m3/h)	3/4" (DN 20 mm) size: 0.03 gpm (0.007 m3/h)	1" (DN 25 mm) size: 0.11 gpm (0.025 m3/h)
Low Flow Range (±3%)	5/8" (DN 15 mm) size: >0.10 gpm (0.025 m3/hr) to <0.18 gpm (0.041 m3/hr)	5/8" x 3/4" (DN 15 mm) size: >0.10 gpm (0.025 m3/hr) to <0.18 gpm (0.041 m3/hr)	3/4" (DN 20 mm) size: >0.10 gpm (0.025 m3/hr) to <0.18 gpm (0.041 m3/hr)	1" (DN 25 mm) size: >0.3 gpm (0.068 m3/hr) to <0.4 gpm (0.09 m3/hr)
Normal Water Operating Flow Range (±1.5%)	5/8" (DN 15 mm) size: 0.18 to 25 gpm (0.04 to 5.7 m3/hr)	5/8" x 3/4" (DN 15x20 mm) size: 0.18 to 35 gpm (0.04 to 8.0 m3/hr)	3/4" (DN 20 mm) size: 0.18 to 35 gpm (0.04 to 8.0 m3/hr)	1" (DN 25 mm) size: 0.4 to 55 gpm (0.09 to 12.5 m3/hr)
Maximum Operating Pressure	5/8", 5/8" x 3/4", and 3/4" size: 200 psi (13.8 bar) 1" size: 175 psi (12.1 bar)			
Measurement Technology	Solid state electromagnetic flow			
Register	Hermetically sealed, 9-digit programmable electronic register			
Capacity	10,000,000 gallons, 1,000,000 cubic feet or 100,000 m3 capacity			
Register Resolution	.01 gallons/imperial gallons, .001 cubic foot, or .0001 m3			
Conformance to Standards	Meets the requirements of NSF 61, Annex G and NSF 372. Exceeds the most current revision of AWWA Standard C-715.			
Materials	External housing - Thermal polymer Flowtube - Composite polymer or a bronze alloy flowtube with a composite polymer internal core		Electrode - Silver/silver chloride Register cover - Hermetically sealed glass	

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DIMENSIONS AND NET WEIGHTS

Meter Size	A	B	C	Spud Ends	NPSM Thread Size	Width	Net Weight
5/8" (DN 15 mm)	7-1/2" (190 mm)	6-1/10" (155mm)	1-3/4" (44 mm)	5/8" (15 mm)	3/4" (20 mm)	4-1/2" (114 mm)	3.1 lb. (1.4 kg)
5/8" x 3/4" (DN 15mm x 20 mm)	7-1/2" (190 mm)	6-1/10" (155mm)	1-3/4" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.1 lb. (1.4 kg)
3/4" Short (DN 20 mm)	7-1/2" (190 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.1 lb. (1.4 kg)
3/4" (DN 20 mm)	9" (229 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.2 lb. (1.45 kg)
1" (DN 25 mm)	10-3/4" (273 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	1" (25 mm)	1-1/4" (32 mm)	4-1/2" (114 mm)	3.3 lb. (1.5 kg)

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Head Loss Curves

