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Data Sheet
WDS-10070-04

Metal iPERL Smart Water Meter

Electromagnetic Flow Measurement System

Maximize investment with iPERL electromagnetic technology, which delivers a 20-year accuracy warranty, with no required maintenance, and no loss in accuracy over 20 years.

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.
- Allows remote management, monitoring, and diagnosis.
- Logs up to 120 days of hourly consumption data.

Sensus metal 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 body is comprised of lead-free bronze alloy with a composite polymer core.

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.

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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.

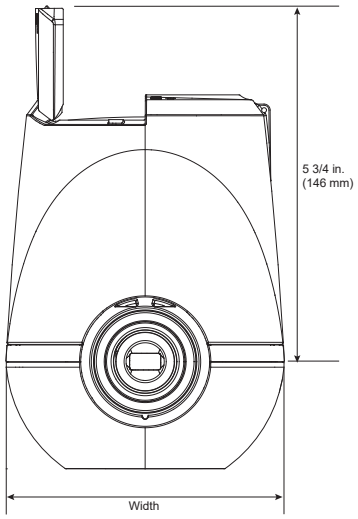
Smart Alarms

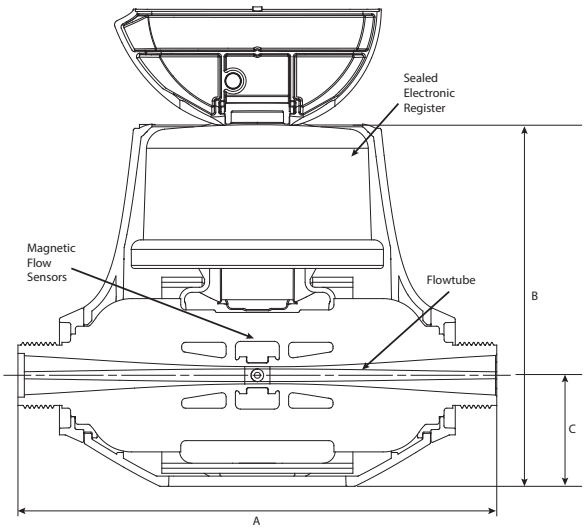
iPERL meters have many configurable smart alarms designed to protect your utility's investment, enhance customer service, and monitor/optimize distribution systems. When integrated with our FlexNet® communication network, remotely gathering and transmitting data has never been more reliable or profitable. 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.
- Continuous Flow
  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.
- Tampering
  Detect magnetic interference to reduce apparent water losses and protect against unauthorized activities.

Flow Ranges

Size	Starting flow	Low flow range (±3%)	Normal operating flow range (±1.5%)	Normal Test Flow limits per UL 327b listing (±1.5%)
5/8" (DN 15 mm)	0.03 gpm (0.007 m^3h)	>0.10 gpm (0.025 m^3/hr) to <0.18 gpm (0.041 m^3/hr)	0.18 to 25 gpm (0.04 to 5.7 m^3/hr)	
5/8" x 3/4" (DN 15x20 mm)	0.03 gpm (0.007 m^3h)	>0.10 gpm (0.025 m^3/hr) to <0.18 gpm (0.041 m^3/hr)	0.18 to 35 gpm (0.04 to 8.0 m^3/hr)	
3/4" (DN 20 mm)	0.03 gpm (0.007 m^3h)	>0.10 gpm (0.025 m^3/hr) to <0.18 gpm (0.041 m^3/hr)	0.18 to 35 gpm (0.04 to 8.0 m^3/hr)	2 to 30 gpm (0.5 to 6.8 m^3/hr)
1" (DN 25 mm)	0.11 gpm (0.025 m3/h)	>0.3 gpm (0.068 m3/h) to <0.4 gpm (0.09 m3/hr)	0.4 to 55 gpm (0.09 to 12.5 m3/hr)	2 to 50 gpm (0.5 to 11.4 m^3/hr)





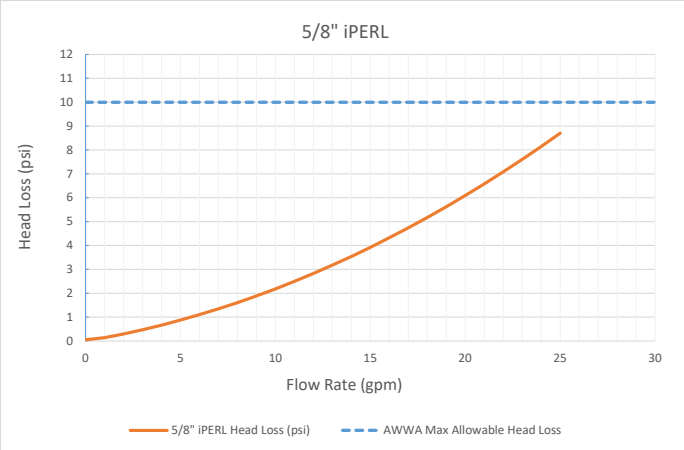
Dimensions and Net Weights

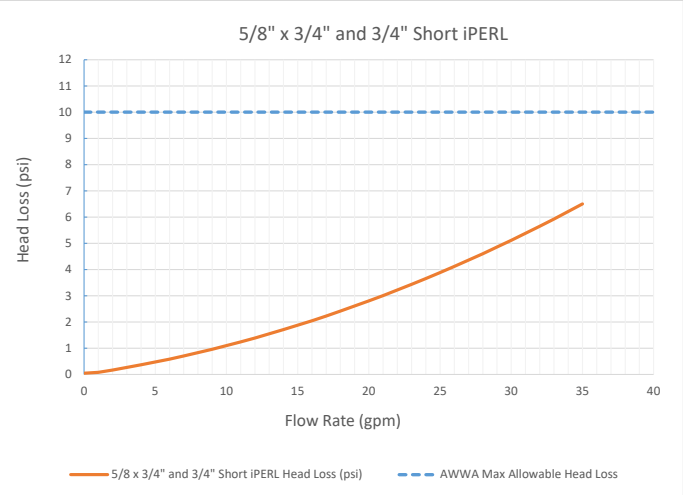
Size	A	B	C	Spud Ends	NPSM Thread Size	Width	Net Weight
5/8” (DN 15 mm)	7-1/2” (190 mm)	6-1/10” (155 mm)	1-3/4” (44 mm)	5/8” (15 mm)	3/4” (20 mm)	4-1/2” (114 mm)	4.9 lb. (2.2 kg)
5/8” x 3/4” (DN 15 mm x 20 mm)	7-1/2” (190 mm)	6-1/10” (155 mm)	1-3/4” (44 mm)	3/4” (20 mm)	1” (25 mm)	4-1/2” (114 mm)	4.9 lb. (2.2 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)	5.1 lb. (2.3 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)	5.2 lb. (2.4 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)	5.7 lb. (2.6 kg)

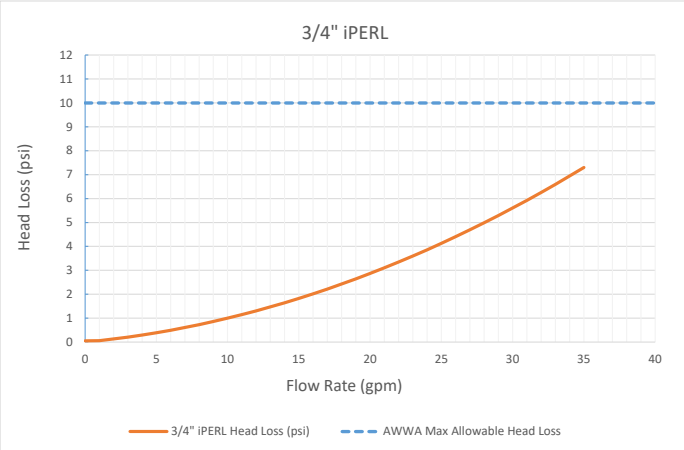
Specifications

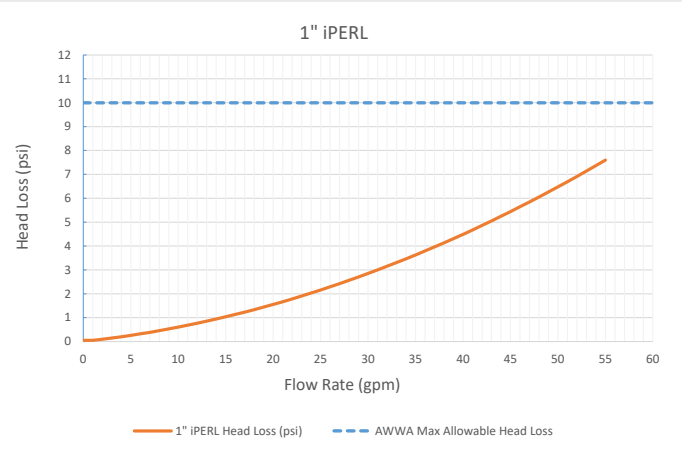
Service	Measurement of potable and reclaim water, and Residential Fire Service (UL 327b). 0-100% humidity. Fully submersible. IP68+ rated.		
Temperature Ranges	Water operating: 33 °F (0.55 °C) to 80 °F (26.7 °C)	Ambient air operating: -22 °F (-30 °C) to 140 °F (60 °C)	Storage air: -30 °F (-34.4 °C) to 158 °F (70 °C)
Sensor Accuracy	Pressure Sensor: ± 1.25% full scale for water temp 35-100 °F (0-200psi) Temperature Sensor: ± 2.00% full scale for water temp 35-100 °F (0-200psi)		
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 m^3 capacity.		
Register Resolution	.01 gallons/imperial gallons, .001 cubic foot, or .0001 m^3.		
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 – Bronze alloy with a composite polymer internal core Electrode – Silver/silver chloride Register cover – Hermetically sealed glass		

Head Loss Curves









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