

iPERL

Static electromagnetic meter with remanent magnetic technology

Intelligent technology meets water management

Whether internet, telephony or electricity - intelligent network communications are all around us and offer almost unlimited possibilities. So why not apply the same principle to one of our most important resources - water.

Worldwide, water networks need to keep pace with the development of intelligent network communications to ensure they are up to date with demand-driven automation and load management that is standard in the smart grid.

Using a fixed AMI communications network (such as Sensus FlexNet™), iPERL can help identify potential issues, such as leakages in the network, enabling you to address them quickly. This saves your business time, money, improves targeting of field crews, and increases customer service levels.

TYPE APPROVAL

EU type examination certificate **DE-23-MI001-PTB003** based on the following regulations (guidelines, standards, normative documents)

- 2014/32/EU (MID)
 - OIML R49
 - EN 14154-4
 - ISO 4064
 - EN 14268
 - WELMEC
- 2014/53/EU (RED)
 - EN 301 489
 - EN 300 220
 - EN 60950
 - EN 62479

Certificates

- OIML Certificate of Conformity
- OMS Generation 4 Security Profile: A/B

Certificate of compliance for potable drinking water

- KTW/DVGW (D)
- WRAS (UK)
- ACS (F)
- KIWA (NL)
- Hydrocheck (B)

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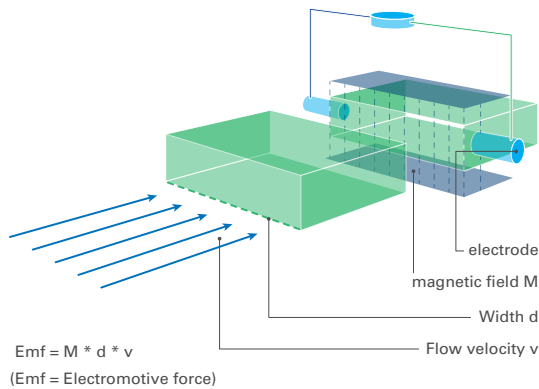
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Always accurate - the concept of iPERL

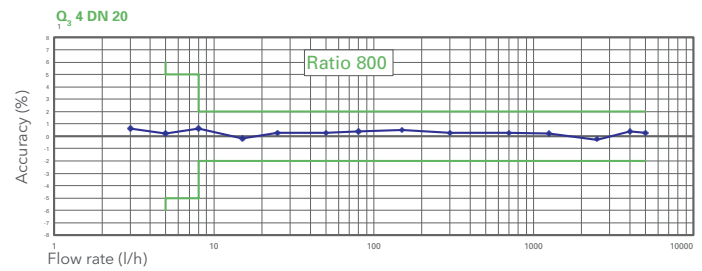
Sensus iPERL offers sustained R800 measurement accuracy for all sizes from DN15 to DN40 over its expected 15 year operational life¹⁾ when used for clean potable water:

- Operating ambient temperature range of +70 °C down to -10 °C, provided that a minimum water flow rate of 100 litre / hour is ensured to prevent freezing²⁾
- A water temperature range of +0.1 °C to +50 °C (70 °C special variant)
- Water conductivity down to 50 µS / cm
- Water pressure up to 16 bar
- As a special version available with ATEX approval
- MID certified in both flow directions up to R800

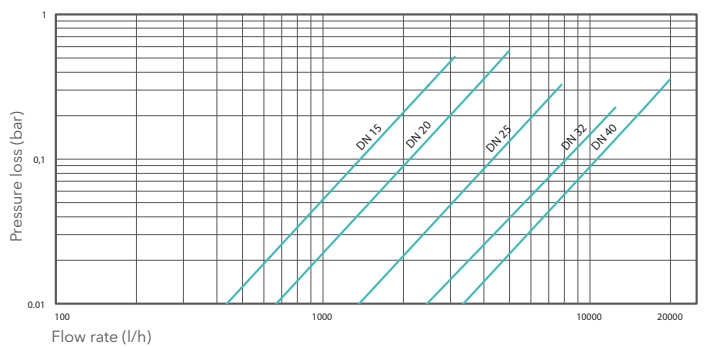
Unlike other solid state meters, iPERL uses remanent magnetic field technology which provides a linear measurement range even down to very low flow rates. The magnetic field acting on the water flowing through the flow channel generates an electrical voltage; this is proportional to the velocity of the water (principle of magnetic-inductive flow measurement).



Typical Accuracy Curve



Typical Pressure Loss Curve



TECHNICAL DATA

Nominal size	DN		DN (mm)				
			15	20	25	32	40
Permanent flow rate	Q ₃	m ³ /h	2.5	4	6.3	10	16
Starting flow rate		l/h	1	1.6	2.5	4	6.4
Saturation flow rate		m ³ /h	11.1	17.8	28	27.5	25
Ratio "R"	Q ₃ / Q ₁	R	800 ¹⁾				
Overload flow rate	Q ₄	m ³ /h	3.125	5	7.875	12.5	20
Minimum flow rate	Q ₁	l/h	3.13	5	7.88	12.5	20
Transitional flow rate	Q ₂	l/h	5	8	12.6	20	32

¹⁾ also available at R=160, 250, 400



¹⁾ Depending on the transmission settings of SensusRF resp. wM-Bus

²⁾ Battery life depending on the temperature time profile

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Constant metrological performance - independent of the installation position

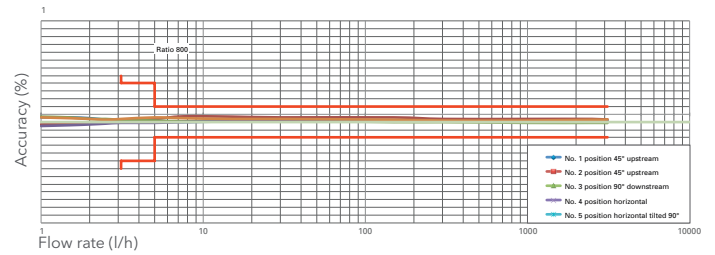
iPERL delivers constant accuracy in a wide range of installation conditions and can be installed in any orientation without the need for linear pipe leads in or out. iPERL also has an automatic detection of the direction of flow, further enabling the choice of installation positions when operated in accordance with the framework conditions as set out in MID (European Directive 2014/32/EU) and European standard EN 14154:2005+A2:2011.

Communication and data availability

iPERL is equipped with either a standards compliant low power 868 MHz or 433 MHz integrated radio technology. The innovative communications provide for walk-by / drive-by collection, plus the ability to interrogate meters for more detailed data, including the log of up to 2880 data points and alarms.

Along with Sensus radio, iPERL also offers an OMS certified broadcast platform. With Sensus radio a connection can be made to the Sensus FlexNet AMI system, allowing iPERL to migrate from walk-by / drive-by collection to a fixed network in the future without having to visit the meter.

Metrological performance, independent of any installation position



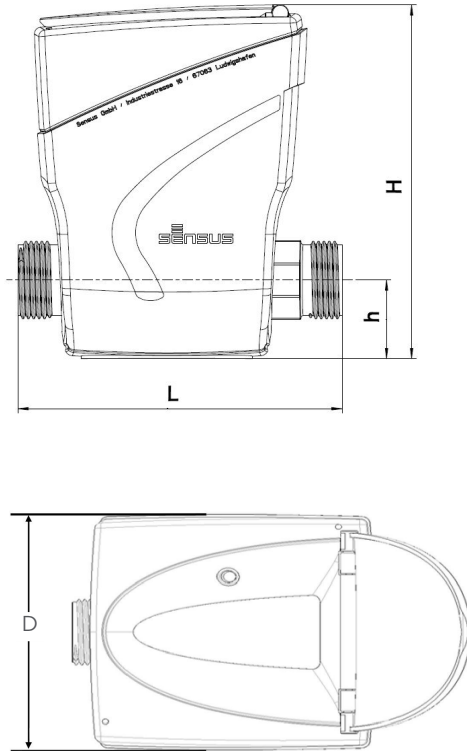
- iPERL can be installed in any orientation
- iPERL detects the direction flow automatically
- iPERL provides constant measurement accuracy over time



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Dimensional Diagram



DIMENSIONS AND WEIGHTS

Nominal Size	DN	mm	15	20	25	32	40
Length	L	mm	110 ¹⁾	105 ³⁾	198 ⁵⁾	260	300 ^{6,7)}
Width	D	mm	94	94	114	114	114
Height	H	mm	120	120	138	138	138
Height to pipe axis	h	mm	26	26	40	40	40
Tail Diameter		inch	¾" ²⁾	1" ⁴⁾	1¼"	1½"	2"
Weight		kg	0.85	0.85	1.65	1.65	1.75

¹⁾ also available in length 115, 134, 145, 165 and 170 mm

²⁾ also available in 7/8"x ¾" with length 115 mm

³⁾ also available in length 115, 130, 165, 190 and 220 mm

⁴⁾ also available in 1¼" x 1¼" with length 175 mm

⁵⁾ also available in length 260 mm

⁶⁾ also available in length 170, 245 and 270 mm

⁷⁾ also available in 270 and 300 mm with composite flanges (possibility of a installation into a bulk meter measuring point of DN50)



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