

iPERL

Static electromagnetic meter with remnant 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.

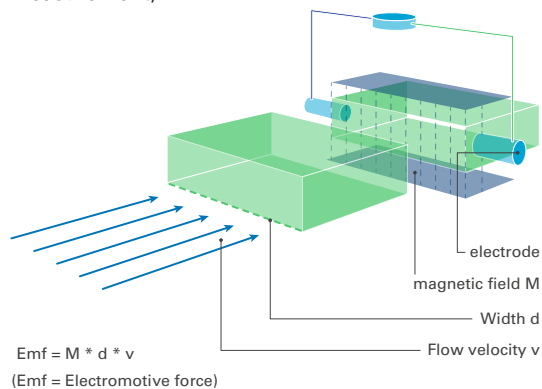
Always accurate - the concept of iPERL

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

- Operating ambient temperature range of +60 °C down to -15 °C, provided that a minimum water flow rate of 100 litre / hour is ensured to prevent freezing
- A water temperature range of +0.1 °C to +50 °C (70 °C*)
- Water conductivity down to 120 µS / cm
- Water pressure up to 16 bar

* special variant

Unlike other solid state meters, iPERL uses remnant 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).



Approvals

EC Design-examination Certificate

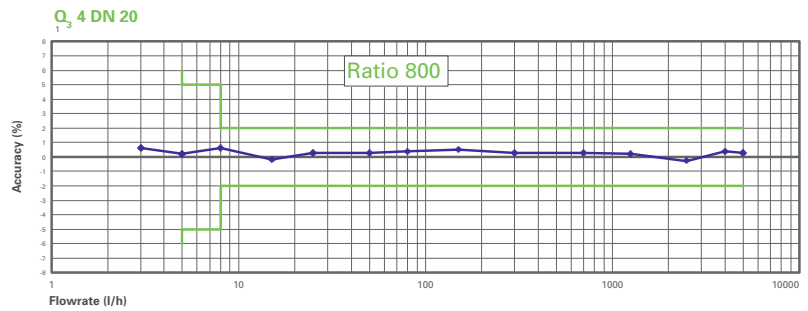
in conformity with

- 2014/32/EU (MID)
- EN 14154:2005+A2:2011
- OIML R49:2013
- ISO 4064:2014

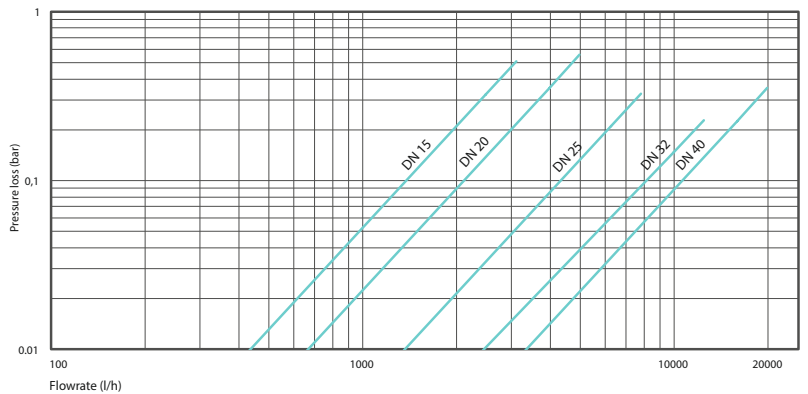
Drinking water approvals:

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

Measuring accuracy



Typical pressure loss curve



Technical data

Nominal size	DN		DN (mm)				
			15	20	25	32	40
Permanent flowrate	Q ₃	m ³ /h	2.5	4	6.3	10	16
Starting flowrate		l/h	1.6	2.5	4.0	6.4	10.0
Ratio "R"	Q ₃ /Q ₁	R	800				
Maximum flowrate	Q ₄	m ³ /h	3.125	5	7.875	12.5	20
Minimum flowrate	Q ₁	l/h	3.13	5	7.88	12.5	20
Transitional flowrate	Q ₂	l/h	5	8	12.6	20	32



Constant metrological performance - independent of the installation position

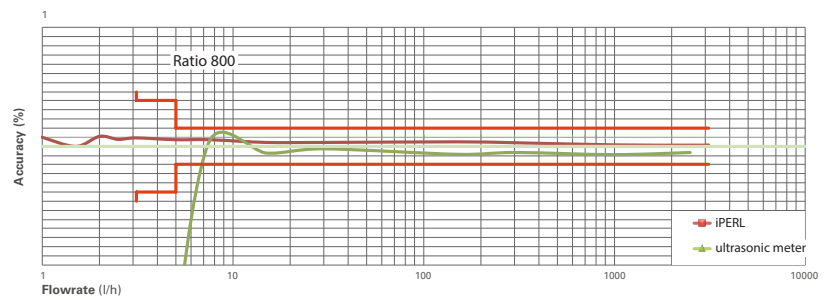
iPERL delivers constant accuracy in a wide range of installation conditions and can be installed in any orientation without the need for linear pipe leads in or out. iPERL also has an automatic detection of the direction of flow, further enabling the choice of installation positions when operated in 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. This provides for connection to the Sensus FlexNet AMI system, allowing iPERLs to migrate from walk-by / drive-by collection to a fixed network in the future without having to visit the meter.

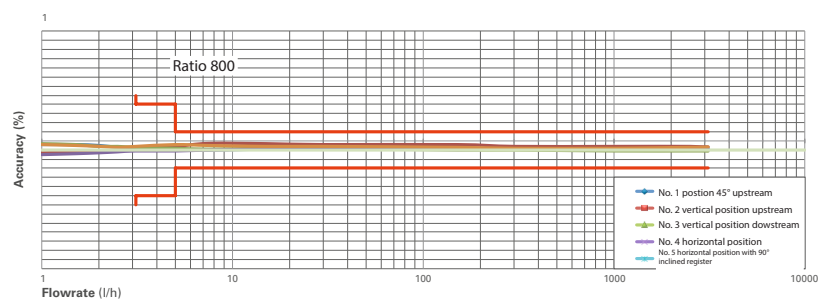
Performance curve of iPERL compared to an ultrasonic meter



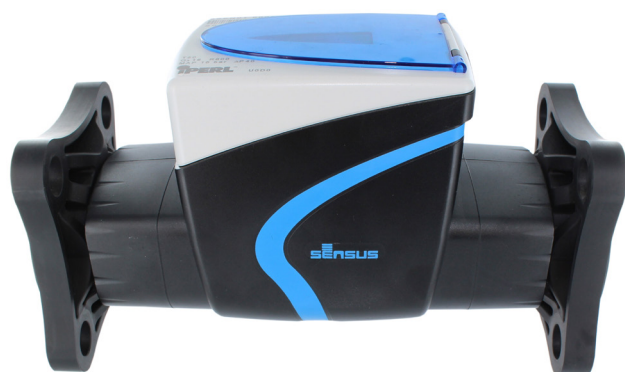
Overlaying the metrological performance curve of iPERL and a representative ultrasonic solid state flowmeter (green), demonstrates this extreme benefit.

Based on its outstanding metrological performance, iPERL ensures that the water utility accounts for the water supplied to the consumer, thus representing a considerable reduction in Non-Revenue Water.

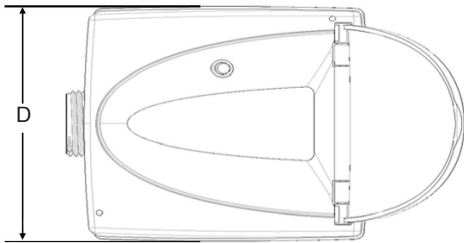
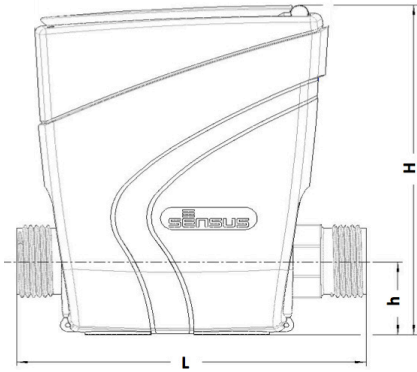
Metrological performance, independent of any installation position



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



Dimensional Diagram



Dimensions

Nominal Size	DN	mm	15	20	25	32	40
Length	L	mm	110 ⁽¹⁾	105 ⁽³⁾	198 ⁽⁴⁾	260	300 ^(5, 6)
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	3/4" ⁽²⁾	1"	1 1/4"	1 1/2"	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 3/4"

(3) also available in length 115, 153, 165, 190 and 220 mm

(4) also available in length 260 mm

(5) also available in length 245 and 270 mm

(6) also available with composite flanges (possibility of an installation into a bulk meter measuring point of DN50)



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