



# Unimag+ PE

The allocation choice

Unimag+ PE is a new Single Jet water meter especially designed for use in apartments. With its modular register, it can be transformed anytime into a communicating device and integrated into the Itron data collection solution.

## FEATURES AND BENEFITS

- » Pre-equipped for communication:
  - Sub-Metering radio mobile and fixed network
  - Wired pulse and M-bus output
- » Suitable for all installations and use:
  - Compact, short length
  - Cold and hot water
  - Composite and brass bodies
- » Accuracy performance:
  - Stable and long term accuracy
  - Reduced risk of meter blocked
  - Low starting flow
- » Robustness to tampering:
  - Enhanced magnetic and mechanical protection

## The Technology

Unimag+ PE is a velocity meter with turbine Single-Jet principle combined with the well-known Itron extra-dry register technology. No parts of the register are in contact with the water flow.

## Metrological Performance

The meter exceeds the MID accuracy Ratio 100 for horizontal position, and keeps R63 for vertical position.

Excellent accuracy at low flow rate, with a low starting flow value to detect little leakages.

## New features

- » The hydraulic with double pivoting principle has been conceived to increase the resistance against particles deposit and assure more constant accuracy over time. With more error curve stability, Unimag+ PE is able to count flow rate below 8 l/h, thanks to frictionless materials used for bearings and contacts.
- » The body is available in composite and brass materials to answer different customer requirements. For both, the Itron severe internal and field validation protocols assure equivalent robustness to high network pressure (PN16 bar), water hammers, external environmental conditions and high water temperatures.
- » The meter is protected by magnetic tampering interferences through a design which has been validated against most known standardized magnets. Additional magnetic shielding is available as option.
- » A security ring has been placed under the cap to provide better resistance and more evidence to mechanical fraud tampering.

## Easy reading

- » Clear and high contrast serial number
- » 360° possible rotation of the register for comfortable reading in any position
- » 8 numbered rollers with high contrast for easy and error-free reading up to 99999,999 m<sup>3</sup>

## Compliance with Standards

- » Metrology, approved according to:
  - MID - 2014/32/EU
  - ISO 4064
  - EN 14154
- » Materials
  - Unimag+ PE use certified materials specific for contact with potable water (ACS-FRA, KIWA-NL, KTW-DE)
  - All meter materials are compliant with RoHS normative.
- » Manufacturing, 100 percent manufactured in the EEC
  - ISO 9001
  - ISO 14001
  - MID H1

**PRODUCT CHARACTERISTICS**

Unimag+ PE is composed of two main sections: the hydraulic part that allows the measurement of the water flow and the register that totalizes and displays the measured water volume.

The transmission between the two parts is achieved by magnetic coupling, without any mechanical connection between the wet and the dry parts.

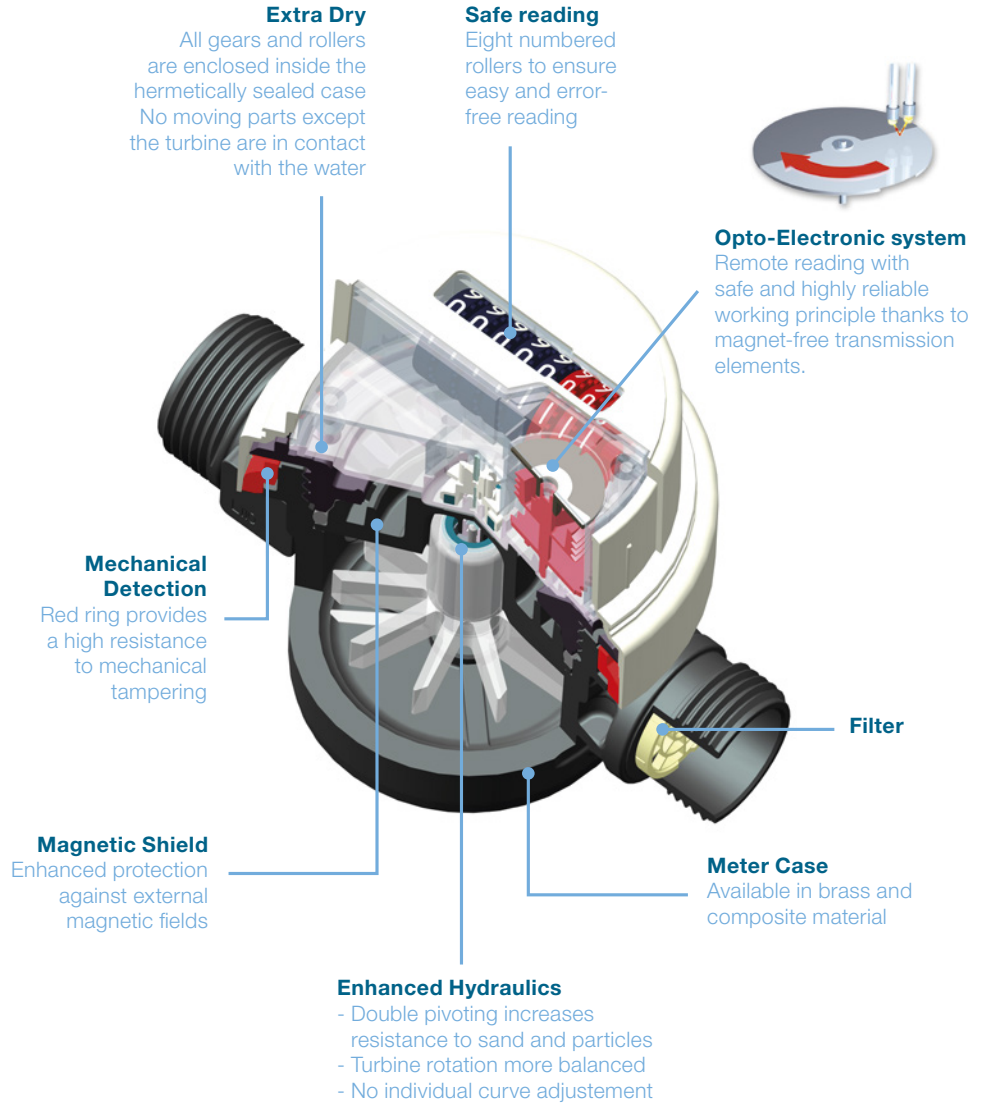


**Brass Case**

- Compliant with DIN normative for low lead brass (DIN 50930-6:2013-10).
- Material traceability.



**Composite Case**



**KEY ADVANTAGES OF COMPOSITE MATERIAL**

- » Lighter (30 percent less of brass) and Ergonomic
- » More suitable to be used with potable water lead free)
- » Not affected by corrosion (dezincification immunity)
- » Theft deterrent

**MATERIAL CHARACTERISTICS**

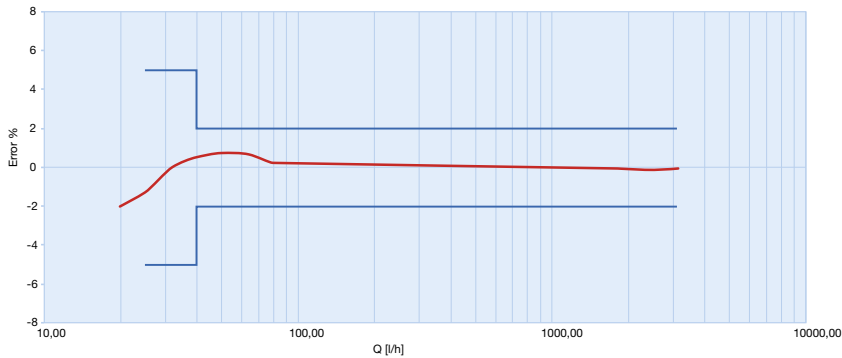
- » Polymer fiber glass reinforced
- » High resistance to chemicals
- » High dimensional stability to temperature
- » Robustness to handling and installation

## Technical characteristics

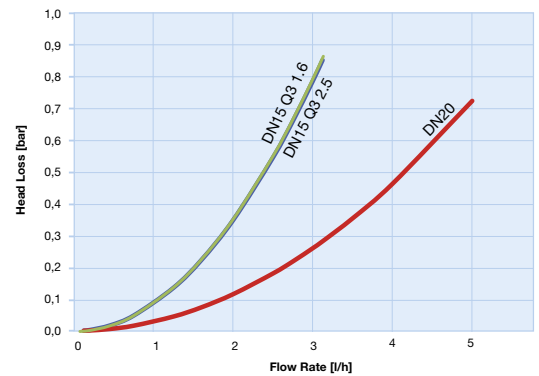
Nominal diameter (DN)		mm	15				20	
MID approval			LNE - 33564					
Water Temperature Range	(T)	°C	T30 - T50	T30/90 - T90	T30 - T50	T30/90 - T90	T30 - T50	T30/90 - T90
MID Metrology class (horizontal)	(Q3/Q1)		80	63	125	100	125	100
MID Metrologica Ratio (other positions)*			40*	40*	63	63	63	63
Permanent Flow Rate	(Q3)	m <sup>3</sup> /h	1.6	1.6	2.5	2.5	4	4
Overload Flow Rate	(Q4)	m <sup>3</sup> /h	2	2	3.125	3.125	5	5
Minimum Flow Rate	(Q1)	L/h	20	25.40	20	25	32	40
Transitional Flow Rate	(Q2)	L/h	32	40.63	32	40	51.20	64
Starting Flow Rate		L/h	<8			<11		
Max Pressure Loss Class at Q3		bar	0.25	0.25	0.63	0.63	0.63	0.63
Maximum Admissible Pressure	MAP	bar	16**					
Indicating Range		m <sup>3</sup> /h	99999.999					
Minimum Scale Interval		L	0.05					
Mechanical Environment Class			M1 / B***					
Climatic Environment		°C	-25°C.... +70°C					
Flow Sensitivity Class U0/D0			U0/D0					
Pre-equipment for communication			Itron Full Set of Communication Devices					

\*According to ISO4046:2017 | \*\*MAP10 for hot water composite body | \*\*\*B according to EN14154-1:2005+A2:2011

### TYPICAL ACCURACY CURVE Q3=2,5 m<sup>3</sup>/h - R100



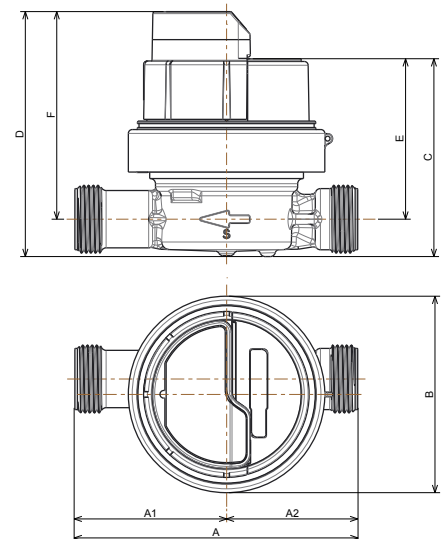
### HEAD LOSS



### Dimensions

Nominal diameter (DN)	mm	15 Brass	15 Composite	20 Brass
Meter Thread		G 3/4" - G 7/8" - G 1" - M22	G 3/4"	G 1"
A	mm	80 - 100 - 105 - 110 - 115 - 130	80 - 110	115 - 130
A1	mm	37 - 49 - 54 - 59 - 64 - 74.3	37 - 59	59.3 - 74.3
A2	mm	43 - 51 - 51 - 51 - 51 - 55.7	43 - 51	55.7 - 55.7
B	mm	76	76	76
C	mm	77	79	79
D	mm	95	98	97
E	mm	62	62	62
F	mm	81	81	81

\* For other lengths, contact your local Itron representative



## Remote Module Features

	Pulse	M-Bus	EquaScan
Power supply		3V Lithium Battery	
Typical battery life*		12 years	
Protection		IP65	
Cable length	1 m (+5 cm / -0 cm)		Wireless
Execution	2 wires - PVC - type LIYY		RF
Cable section	2 x 0.25 mm <sup>2</sup> / ext. d = 3.6 mm		-
Operating Temperature		+5°C to +55°C	
Protocol	-	EN 1434-3	EN 13757-3/-4 Wireless M-Bus
Addressing	-	Primary and secondary mode	-
Transmission speed	-	300 to 9600 baud rate	-
Weight of Pulse	1, 10 or 100 liters / pulse	-	-

\* Under normal applications within the specified working temperature range.

## COMMUNICATING DEVICE

### Detection Working Principle

It is based on the reflecting capacity of the pointer disk assembled on top of one register wheel.

Once the module is applied, the count of the meter is transferred over the disk to the electronics and conveyed by cable, by M-Bus or by EquaScan wMIU<sup>RF</sup>.

### Advantages

Clear advantages derive from Opto-Electronic technology:

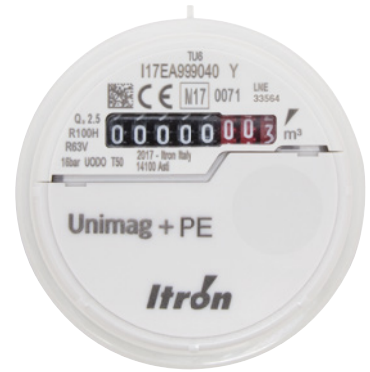
- » Most modern, neither magnets nor reed-switch
- » Safe results through electronic transmission without data manipulation

- » Detection of flow direction with compensation of counting backwards
- » IP65 protection also suitable for installation under wet conditions
- » Basic register without extra investments at the beginning can be easily equipped in field for further remote reading application.

## ACCESSORIES

- » Brass connection set
- » Liner extensions
- » Non-return valve
- » Connection plastic seal

## EQUASCAN SYSTEM ARCHITECTURE



Unimag+ PE Cold water version



Unimag+ PE Warm water version

## Dummy Module for pre-equipment



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