Unimag PE

Single-jet Turbine Water Meter Ready for Remote Reading Equipment

MID VERSION

The application of systems in support of data collection has become more and more important in metering activities.
With Unimag PE, Itron succeed in the realization of a new versatile water meter for residential use able to be easily transformed anytime in an advanced communicating device.

METER WORKING PRINCIPLE

Extra Dry Technology

The meter combines the turbine single-jet technology with the proven reliability of the extra dry register.

No register parts are in contact with the water passing through the meter. Thanks to magnetic transmission the turbine is the only component moving into water.

Metrological Performance

The meter is approved MID R80 when used in horizontal position, R40 in all other mounting positions.

Excellent accuracy also at low flow rate proven by a low starting flow value.

Main Features

- Special material bearings
- Excellent reliability
- Compact design
- 8 rollers register 360° rotating for an easy reading
- Filter inserted in the inlet pipe
- Cold and Warm water versions
- Ready for Remote Reading Equipment

Optional Features

- Non return valve inserted in the outlet
- Customized marking

Standard Compliance

- EN14154
- ISO 4064
- MID - 2004/22/EC

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^{RF}.

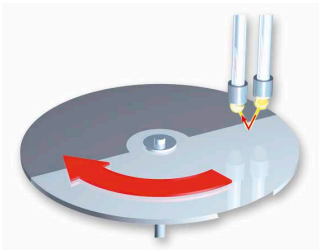
Advantages

Clear advantages derive from Opto-Electronic technology:

- Most modern, neither magnets nor reed-switch
- Safe results through electronic transmission so to avoid 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.

FEATURES AND BENEFITS

- Opto-Electronic system
  - Safe and highly reliable working principle thanks to magnet-free transmission elements.



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.

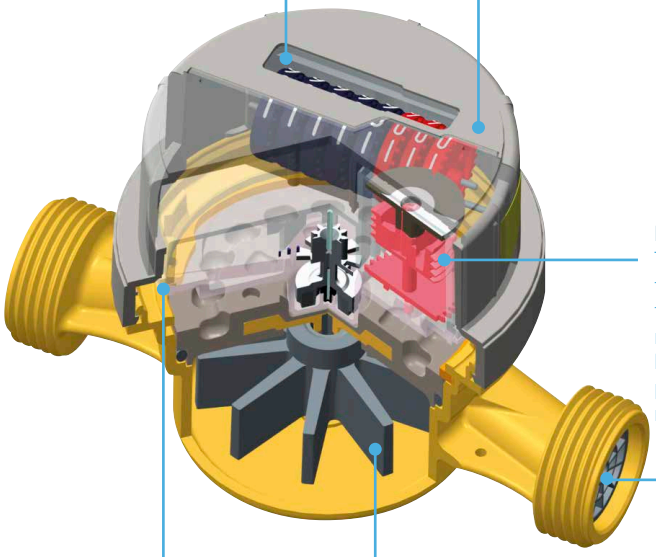
Transmission between the two parts is achieved by magnetic coupling, without any mechanic connection between the wet and the dry parts.

Cold water version

Warm water version

Safe reading
Eight numbered rollers to ensure easy and error-free reading

Robustness
Shock resistant thermoplastic Optical target protected by a dummy module for pre-equipment



Pre-Equipment
The proven Optical target allows the meter to be integrated into a remote reading system by attaching the relevant pulse, Mbus or Equascan module

Filter

Extra Dry
All gears and rollers are enclosed inside the hermetically sealed case
No moving parts except the turbine are in contact with the water

Enhanced materials
Hard synthetic sapphire and enhanced technical polymers are used to ensure best wear resistance and sensitivity of the rotating parts

Potentiality of the EquaScan AMR interface
- Optimised reading and billing without the necessity of accessing the meter
- Leak detection
- Enhanced Data
- Reverse flow detection
- Fraud detection

KEY ADVANTAGES OF THE EQUASCAN TECHNOLOGY

- » No need for additional investments on the meter itself to implement remote reading
- » Complete system portfolio from the radio module to the meter reading software and Master RF to enable walk by reading
- » Wireless M-Bus compliant
- » Back flow management
- » Not sensitive to magnetic fields
- » Perfect index correlation
- » For further info, refer to the specific leaflet

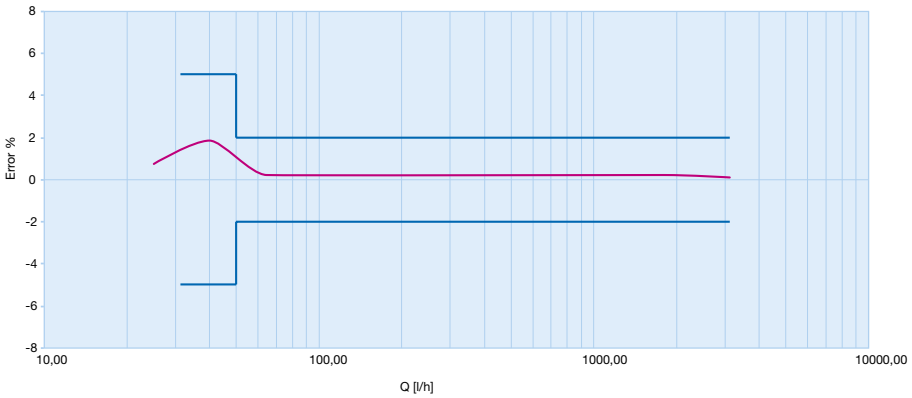
Technical characteristics

Nominal diameter (DN)		mm inches	Cold Water 15 ½"	 20 ¾"	Warm Water 15 ½"	 20 ¾"
MID approval			LNE 27129			
MID Metrology class (horizontal)	(Q3/Q1)		80		80	
MID Metrology class (other positions)			40		40	
Water Temperature Range	(T)	°C	0.1-50		30-90	
Starting Flow Rate		L/h	8.5	12	8.5	12
Minimum Flow Rate	(Q1)	L/h	31	50	31	50
Transitional Flow Rate	(Q2)	L/h	50	80	50	80
Permanent Flow Rate	(Q3)	m^3/h	2.5	4	2.5	4
Overload Flow Rate	(Q4)	m^3/h	3.12	5	3.12	5
Max Pressure Loss Class at Q3		bar	0.63	0.63	0.63	0.63
Maximum Admissible Pressure	MAP	bar	16			
Flow Sensitivity Class			U0/D0			
Indicating Range		m^3/h	99999.999			
Minimum Scale Interval	(I)		0.05			
Mechanical Enironment Class			M1			
Climatic Environment	(T)	°C	-10/+70			
Pre-equipment for communication			Opto-Electronic Technology			

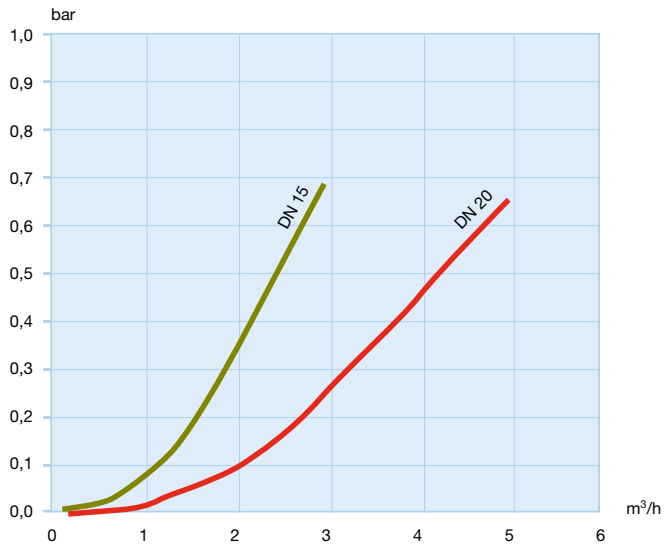
Tot Unimag PE Cold water version

Tot Unimag PE Warm water version

TYPICAL ACCURACY CURVE



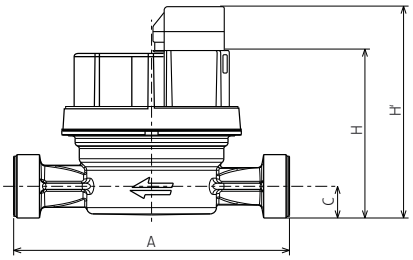
HEAD LOSS CURVE



Dimensions

Nominal diameter (DN)	mm	15	20
Meter Thread		G ¾" B	G 1" B
A	mm	80 - 110	130
B	mm	73	
C	mm	13	17
D	mm	38	
E	mm	31	
H	mm	71	74
H'	mm	89	92

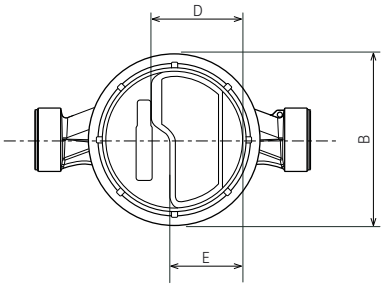
Dimensions



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 mm² / 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.



Dummy Module for pre-equipment

To be easily replaced with the effective Pulse Module, M-Bus Module or EquaScan wMIU[RF].

EQUASCAN SYSTEM ARCHITECTURE

Join us in creating a more **resourceful world**.
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