



Technical Guide W8.19

Aquadis+

Excellence in volumetric water metering

With more than twenty million units installed worldwide, a new release of Aquadis+ has been conceived to exceed accuracy and reliability for all residential applications.

FEATURES AND BENEFITS

- » Proven long-term performance: with unchanged design and materials of the unique measuring chamber architecture, Aquadis+ maintains high efficiency and maximises the water volume measured over time.
- » New design features include
 - Improved magnetic transmission: with focus on very low flow detection and measurement, Aquadis+ can now reach a dynamic range of R800 in all positions (Q3 2,5 m³/h), in compliance with the latest edition of ISO4064 standard.
 - Enlarged cover and new look: wider cover to guarantee legal marking regulatory compliance

Complete portfolio

- » Aquadis+ is available in several variants to fit the majority of worldwide installations and conditions of use
 - DN 15 and 20 mm in-line body, several lengths available
 - DN 15 and DN20 manifold (concentric)
 - Body in brass and composite materials
 - Registers in plastic with wiper and optional mineral glass version for tough environment

Smart Metering

Aquadis+ is smart metering ready, making it possible to mount a plug-and-play Cyble communicating module at any time.

Approvals and Standards

- » Aquadis+ is approved as a measuring instrument for billing applications according with:
 - MID, Directive 2014/32/EU of the European Parliament
 - International Standard EN ISO 4064
 - Recommendations OIML R49
- » Aquadis+ is compliant with regulations for products to be used in contact with water intended for human consumption.
 - ACS (France)
 - WRAS (United Kingdom)
 - Belgaqua (Belgium)
 - Kiwa (Netherlands)
 - KTW - DVGW W270 (Germany)
 - DM174 (Italy) (non-exhaustive list)
- » Aquadis+ is compliant with the directive (2011/65/EU) for Restriction on Hazardous Substances - RoHS2

PRODUCT CHARACTERISTICS

Aquadis+ is a volumetric water meter with piston principle combined with the well-known Itron extra-dry register technology.

No parts of the register are in contact with the water flow.

- 1 Hermetically Sealed Register* (Counter)** Glass lens and copper-can register, condensation and water proof (IP 68), allows permanent readability

* option for plastic case, for specific applications

- 2 Ready for reliable smart metering** Cyble target with the proven Cyble technology allows to create a reliable digital signal enabling smart water metering

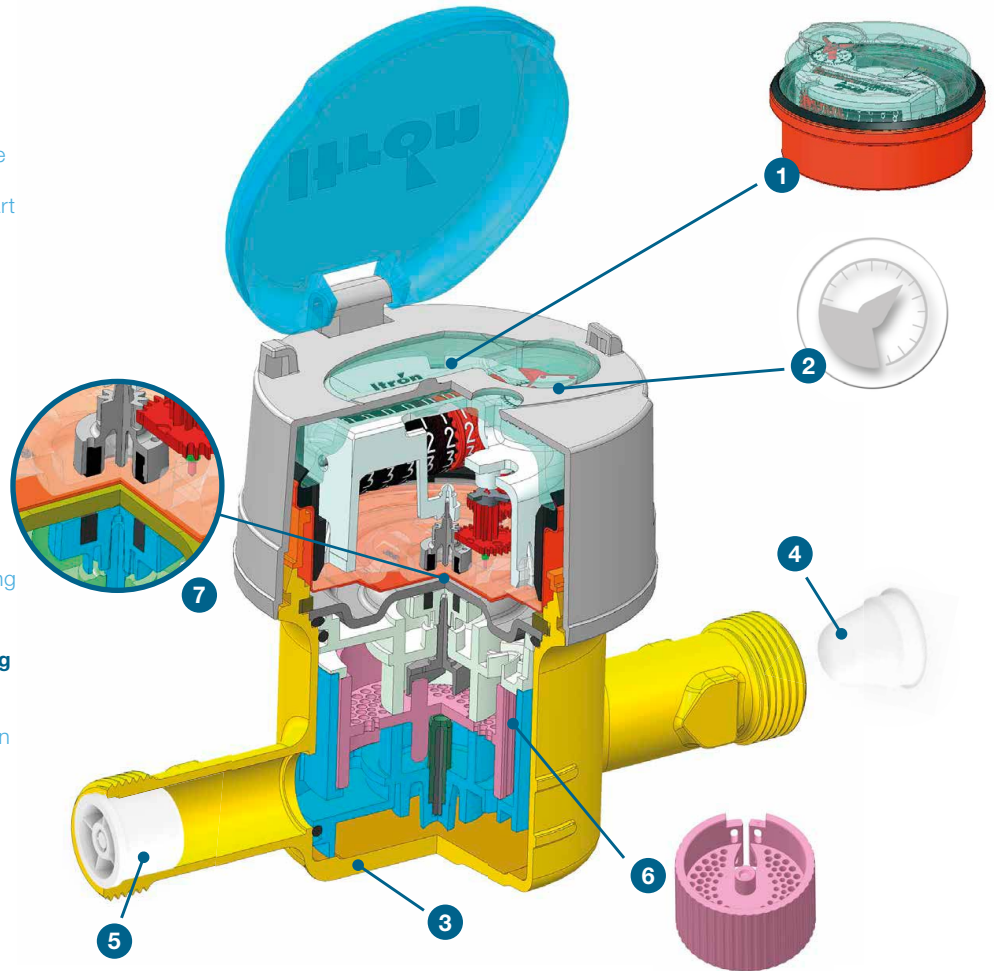
- 3 Robust Case** Brass or thermoplastic material High resistance to pressure

- 4 Effective and Easy - Maintenance Filter** Designed to contain major particles, easy to clean

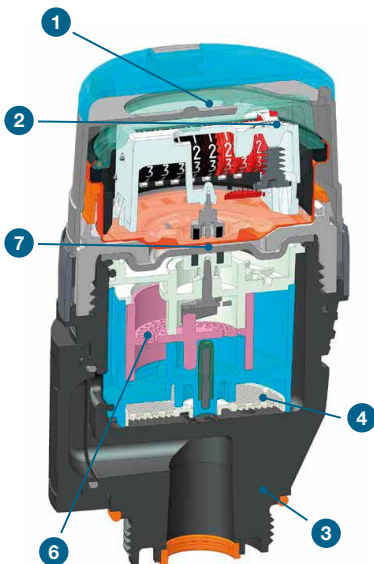
- 5 Back-Flow prevention** All in-line body versions are compatible with a non-return spring type valve

- 6 Outstanding Accuracy and Long Term Performance** Hydro-dynamically balanced piston obtained by a unique design of measuring elements enables detection of extremely low flows and also long-lasting accuracy

- 7 Enhanced magnetic transmission** Optimize low flow accuracy and aging



Brass, In-line version



Composite, manifold version

KEY ADVANTAGES OF COMPOSITE MATERIAL

- » Lighter (30% less of brass) and ergonomic
- » More suitable to be used with potable water (lead free)
- » Not affected by corrosion (desincification immunity)
- » No value for theft

MATERIAL CHARACTERISTICS

- » Reinforced polymer fiber glass
- » High resistance to chemicals
- » High dimensional stability to temperature
- » Robustness to handling and installation

Technical Specifications

| Nominal Diameter (DN) | mm | 15 or 20 | 20 |
|-----------------------|--------|--------------|------|
| | inches | 1/2" or 3/4" | 3/4" |

In compliance with MID

| | | | |
|--------------------------------------------|---------|-------------------|------------------------------|
| MID Accuracy Ratio (Q3/Q1) - all positions | | 50 / 800 | 63 / 400 |
| MID Type Approval Number | | LNE 34003 | LNE 16467 |
| Nominal Flow Rate | (Q3) | m ³ /h | 1.6 2.5 2.5 4.0 |
| Standard Production Ratio (*) | (Q3/Q1) | | 100 160 100 160 |
| Minimum Flow Rate | (Q1) | l/h | 16 15.6 25 25 |
| Transitional Flow Rate | (Q2) | l/h | 25.6 25 40 40 |
| Overload Flow Rate | (Q4) | m ³ /h | 2 3.125 3.1 5 |
| Pressure Loss Class at Q3 | | bar | 0.25 0.63 0.25 0.63 |
| Maximum Admissible Pressure (MAP) | | bar | 16 16 |
| Operating Temperature (T) | | °C | 0.1 / 50 0.1 / 50 |
| Climatic Environment | | °C | 5 / 55 5 / 55 |

(*) Other Ratios available under specific request

Other Characteristics

| | | | |
|--------------------------------------|----------------|---------------|---------------|
| Indication Range | m ³ | 99999,999 | 99999,999 |
| Minimum Scale Interval | l | 0.02 | 0.02 |
| Typical Starting Flow Rate | l/h | 1 | 2 |
| Accuracy +/- 5% | l/h | 3 | 5 |
| Accuracy +/- 2% | l/h | 5 | 8 |
| Testing Pressure | bar | 25 | 25 |
| Maximum Accidental Water Temperature | °C | 60 (<1h/week) | 60 (<1h/week) |

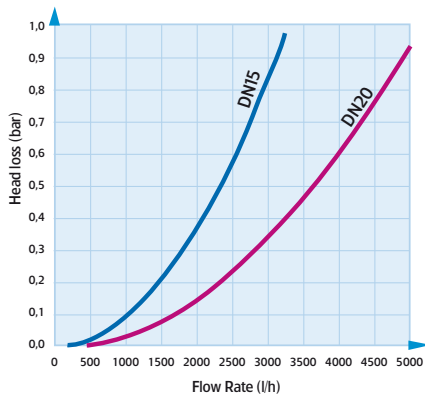


Aquadis+ Register available in plastic and mineral glass versions

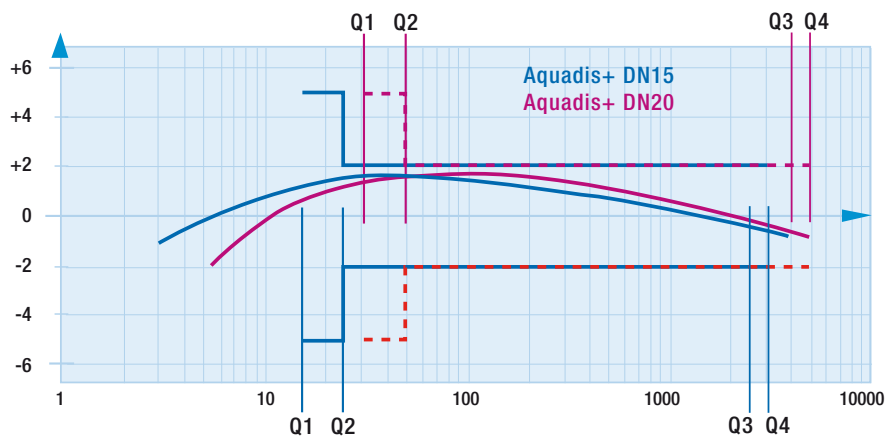


Aquadis+ DN20

HEAD LOSS



TYPICAL ACCURACY CURVE ACCORDING WITH R160 ISO 4064 CHANNEL



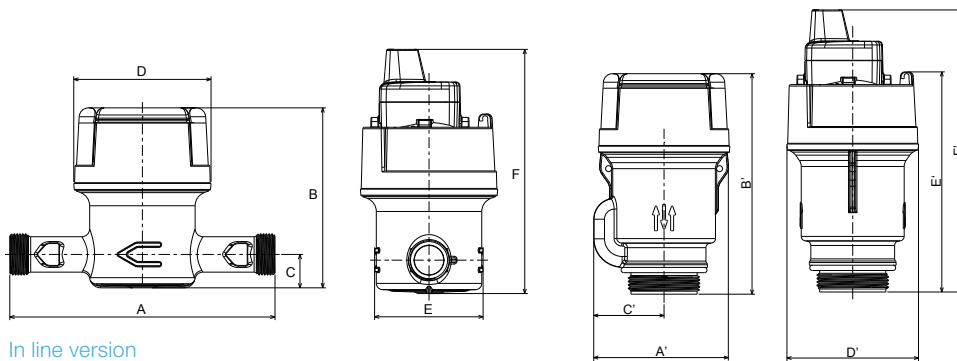
The dynamic range is defined as the ratio (R) between the nominal and the minimum flowrates.



Aquadis+ Composite

Dimensions

| | | | |
|------------------|--------|-----------------------------|-----------------------|
| Nominal Diameter | mm | 15 or 20 | 20 |
| Meter Thread | inches | G 3/4 | G 1" |
| | mm | 20 x 27 | 26 x 34 |
| A | mm | 105/110/115/ 134/165/170 | 130/165/190 |
| B | mm | 115 | 143 |
| C | mm | 21 | 20 |
| D | mm | 88 | 88 |
| E | mm | 68 | 70 |
| F | mm | 157 | 186 |
| Manifold | | Q3=2.5m ³ /h | Q3=4m ³ /h |
| A' | mm | 90 | 101 |
| B' | mm | 148 | 159 |
| C' | mm | 47 | 50.5 |
| D' | mm | 88 | 101 |
| E' | mm | 147 | 157 |
| F' | mm | 190 | 201 |



In line version

Manifold version



Cyble RF (wireless, radio frequency)

CYBLE TECHNOLOGY

This proven technology for smart metering allows to mount a Cyble module on a water meter and has the following key advantages:

- » Simple & robust installation by clip-in (either pre-installation or retrofit)
- » Perfect correlation of the digital index
- » Reliable electronic detection principle (no wear or bounce)
- » Not sensitive to magnetic fields (reduce risk of tampering)

OPTION

Aquadis+ meters may be fitted with:

- » Cyble modules from the factory
- » Non return-valve for outlet pipe (EN 13959)
- » Removable cap
- » Connection set (delivered separately)

SMART METERING SOLUTIONS

Cyble modules allow communication through a large range of advanced and reliable data collection solutions (AMR & AMI), along with a rich dataset.

- » Walk-by & Drive-By Systems
- » Radian Fixed Network
- » M-Bus & wireless M-Bus systems (OMS)
- » LoRaWAN & Sigfox networks dedicated to the IoT (Cyble4IoT)
- » Systems based on universal pulse outputs



Wired Cyble (Sensor & M-Bus)



Aquadis+ equipped with cyble 4IoT