



Intelis™ wSource™

Smart Ultrasonic Water Meter

Intelis™ wSource™ is an ultrasonic meter dedicated to residential, commercial and industrial areas. It connects easily to multiple data collection systems and generate extensive data from the water network. Associating a low-to-no maintenance solid-state mechanism with field-tested robustness, the new Intelis smart water meter is setting the stage for new standards of metrology excellence in harsh environmental conditions. Featuring a rich and comprehensive data set including configurable alarms, it charts the course for operational efficiency and water conservation initiatives.



A step into the future of metrology

Sole meter MID-certified for R1000, Intelis™ wSource™ establishes a new standard in precision for measuring water consumption.



Ready for off-road adventures, All-Conditions billing

With extreme care spent on its design, the new Intelis smart water meter maintains the highest level of accuracy in the most challenging conditions from hard waters to intermittent water supply regardless of its installation conditions.



Built For The Long Run

Intelis™ wSource™ is built with electronics that last and exploits the full potential of solid-state technology to deliver long-lasting performance, with a battery lifetime intended for up to 22 years of use.



MANAGING WATER WITH ITRON'S WATER END-TO-END SOLUTION

Smart metering for flexibility:

- Remote reading
- Precise billing
- Real-time alarms

Data collection for simplicity:

- Customer awareness
- Workforce management
- Network as a service

Advanced analytics for efficiency:

- Visibility to the health of distribution system
- Reduce real and apparent losses

KEY FEATURES

- » DN15-50
- » wM-Bus / LoRa / SigFox / OMS 868MHz
- » NFC Local Communications
- » R1000 Accuracy (MID class 2)
- » R500 Accuracy (MID class 1) for DN15-20
- » 22 years battery lifetime
- » Compatible with harsh installation conditions



Connected now, connected tomorrow

Intelis™ wSource™ is interoperable with open standards and non-proprietary communication protocols. Connected today to your AMR system, it will grow alongside your business and support your transition to AMI tomorrow.



Keep your customer service in the know

Intelis™ wSource™ provides timely notifications and alarms to your teams in charge of customer satisfaction.

Its full set of configurable alarms is the starting point of an enhanced user experience.



The 4Ds Promise, Deep Data Driving Decisions

Meaningful decisions start with granular understanding. Intelis™ wSource™ generates data and natively renders actionable insights for informed decision-making. Its rich data set includes meter right sizing, leakage quantification and customer profiling.

ENVIRONMENTAL-ECO DESIGN

A life cycle assessment study has been carried out to ensure the proper design of the new Intelis smart meter. It can be easily recycled at the end of the product life, as it can be dismantled into separate components (batteries, circuit board, brass) that each have their own recycling circuits.



INTEROPERABLE WITH OPEN-STANDARDS (with out-of-the-box connectivity options)



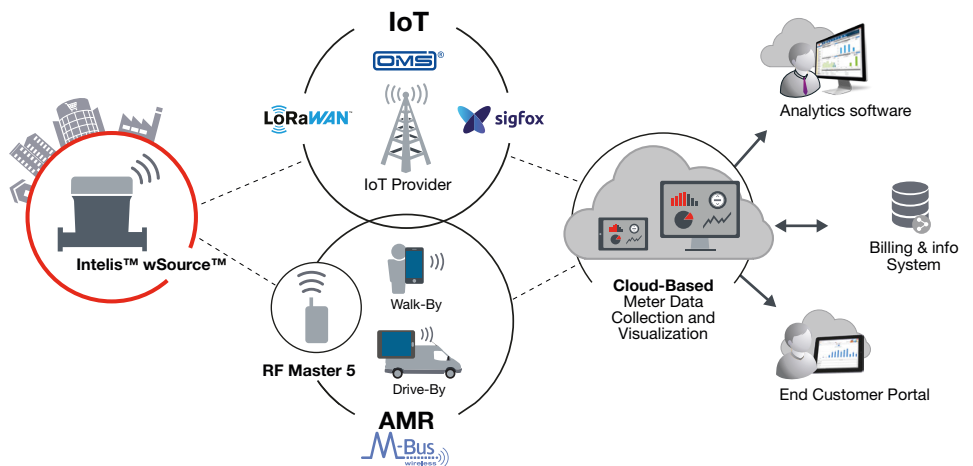
IoT Networks (Sigfox® or LoRaWAN™)

Connect smart water meters to networks dedicated to the Internet of Things (IoT) using LoRaWAN™ or Sigfox® or OMSv4 technologies.



Automated Meter Reading (AMR)

Wirelessly collect data from meters either in walk-by or drive-by mode using Itron's RF Master 5 or third party RF Masters (compatible with EN 13757-3 & 4). Eliminates the need for physical access to the meter.



EXTENDED DATA SET



Billing Index & Consumption Data Logging

Daily billing and custom billing functions along with precise consumption data logging up to 15min resolution



Flow Distribution

Precise monitoring of the distribution flow including periodic minimum and maximum values



Backflow / Reverse Flow

Detection and quantification of backflow to help assess water quality and/or sanitary risk



Alerts

Alarms are generated when important events are detected, such as:

- » Leakage at customer side (continuous flow)
- » Tamper attempt (dismantling)
- » Blocked meter (zero consumption)
- » Oversize/undersize
- » Freeze risk



Diagnostics

Good system performance is ensured via monitoring of:

- » Battery level
- » Configuration settings
- » Clock synchronization in LoRaWAN and wM-Bus

Technical Specifications

| Nominal Diameter DN | | mm | 15 | | 20 | | 25 | 32 | 40 | 50 | |
|--|---------|--------|--|-------|-------|------|---------------------|--------|--------|------|-------|
| | | inches | 1/2" | | 3/4" | | 1" | 1 1/4" | 1 1/2" | 2" | |
| In compliance with MID - (2014/32/EU) | | | 160 to 1000 class 2 & 160 to 500 class 1 | | | | 160 to 1000 class 2 | | | | |
| MID Accuracy Ratio (Q3/Q1) all positions | | | LNE 37882 | | | | LNE 37882 | | | | |
| MID type Approval Number | | | LNE 37882 | | | | LNE 37882 | | | | |
| Nominal Flow Rate | (Q3) | m³/h | 1.6 | 2.5 | 2.5 | 4 | 6.3 | 10 | 10 | 16 | 25 |
| Standard Production Ratio* | (Q3/Q1) | | 500 | 800 | 500 | 800 | 400 | 400 | 400 | 400 | 400 |
| Minimum Flow Rate | (Q1) | l/h | 3.2 | 3.125 | 5 | 5 | 15.75 | 25 | 25 | 40 | 62.5 |
| Transitional Flow Rate | (Q2) | l/h | 5 | 5 | 8 | 8 | 25.2 | 40 | 40 | 64 | 100 |
| Overload Flow Rate | (Q4) | m³/h | 2 | 3.125 | 3.125 | 5 | 7.9 | 12.5 | 12.5 | 20 | 31.25 |
| Pressure Loss Class at Q3 | | bar | 0.25 | 0.40 | 0.25 | 0.63 | 0.4 | 0.63 | 0.63 | 0.4 | 0.63 |
| Real Pressure Loss at Q3 | | bar | 0.16 | 0.38 | 0.17 | 0.44 | 0.255 | 0.61 | 0.61 | 0.31 | 0.59 |
| Maximum Admissible Pressure | MAP | bar | 0.1 / 16 | | | | | | | | |
| Sensitivity Class | | | UOD0 (Seal restriction, Elbow, Ball Valve) | | | | | | | | |
| Water Operating Temperature | T | °C | +0.1 / +50 | | | | | | | | |
| Climatic Environment | | °C | -25 / +70 | | | | | | | | |

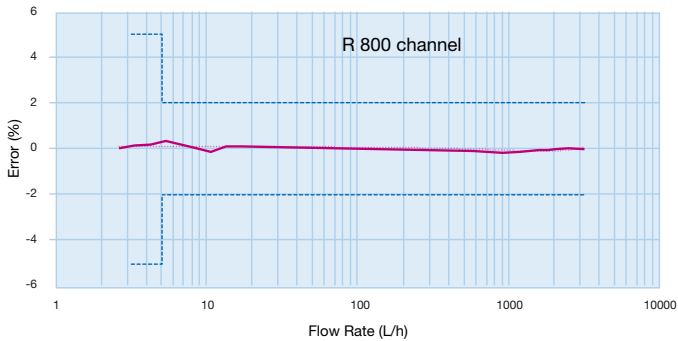
* Other Ratios available under specific request

Other Characteristics

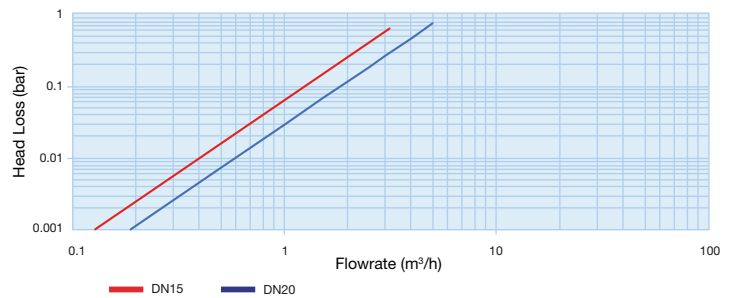
| | | | | | | | | | | |
|--------------------------------------|-----|---------------|---|---|---|---------------|---|---|----|------------|
| Indication Range* | m³ | 999999.999 | | | | 999999.999 | | | | 9999999.99 |
| Minimum Scale Interval** | l | 1 | | | | 1 | | | | 10 |
| Typical Starting Flow Rate | l/h | 1 | 1 | 2 | 2 | 6 | 6 | 6 | 15 | 15 |
| Testing Pressure | bar | 25 | | | | 25 | | | | |
| Maximum Accidental Water Temperature | °C | 70 (<1h/week) | | | | 70 (<1h/week) | | | | |

* Comma configurable under specific request - ** 0.001 liter in test mode

TYPICAL ACCURACY CURVE Q3=2,5 M³/H



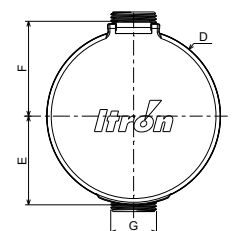
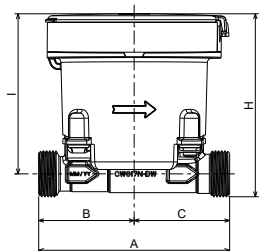
HEAD LOSS



Dimensions

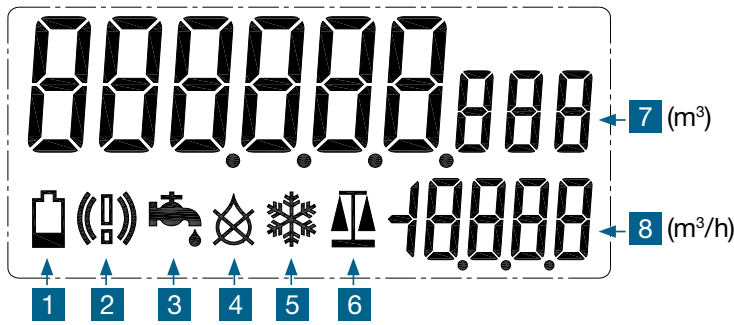
| Nominal Diameter | mm | 15 | | | | | | | 20 | | 25 | 32 | 40 | 50 | |
|----------------------|--------|---------|-----|-----|------|-----------------|-------|-------|-------|-----------|-----------|-------|-----------|------|------|
| A | mm | 105* | 110 | 115 | 134* | 165 | 170 | 115 | 105* | 130 | 190 | 260 | 260 | 300 | 300 |
| G | inches | G 3/4 B | | | | G 7/8 B x 3/4 B | | | G 1 B | G 1 1/4 B | G 1 1/2 B | G 2 B | G 2 1/2 B | | |
| B | mm | 52.5 | 55 | | | | 52.5 | 65 | 130 | 150 | | | | | |
| C | mm | 52.5 | 55 | 60 | 79 | 110 | 115 | 60 | 52.5 | 65 | 125 | 130 | | 150 | |
| D | mm | ø 100 | | | | | | | ø 100 | | | | | | |
| E | mm | 51 | | | | | | | 51 | | | | | | |
| F | mm | 54.5 | | | | | | | 54.5 | | | | | | |
| H | mm | 105.2 | | | | 107.1 | 111.2 | 122.6 | 125.6 | 137.1 | 144.9 | | | | |
| H (w/o Lid) | mm | 101.2 | | | | 103.1 | 107.2 | 118.6 | 121.6 | 133.1 | 140.9 | | | | |
| I | mm | 92 | | | | 94.7 | 101.7 | 107.4 | | | | | | | |
| I (w/o Lid) | mm | 88 | | | | 90.7 | 97.7 | 103.4 | | | | | | | |
| Weight (2 batteries) | gr | 667 | 674 | 679 | 698 | 731 | 737 | 695 | 729 | 766 | 845 | 1405 | 1480 | 2225 | 2365 |
| Weight (3 batteries) | gr | 690 | 697 | 702 | 721 | 754 | 760 | 718 | 752 | 789 | 868 | 1423 | 1503 | 2248 | 2388 |

* Bodies version on demand (L105 - 134 DN15 & L105 DN20)



MULTIFUNCTIONAL DISPLAY

- » Easy to read display
- » Visual Alarms



- | | | |
|----------------------------------|--------------------------------|---|
| 1 Battery Level Indicator | 3 Leakage Indicator | 7 Main Index Indicator 8/9 digits |
| 2 System Alarm Indicator | 4 Air in pipe Indicator | 8 Flowrate Unit Indicator |
| 5 Freezing Indicator | 6 Test mode Indicator | |

Local Reading



Connectivity Specifications

Radio Frequency Features

| | |
|-------------------|---|
| Protocol | wM-Bus T2, C2 (EN 13757-3 & 4) / LoRaWAN™ / Sigfox® |
| Modulation | FSK, BPSK (Sigfox®), CSS (LoRa®) |
| Frequency carrier | 868 MHz ISM Band |
| Radiated power | < 25 mW |

Functional Specifications

| | |
|--------------------------------|--|
| Protection / Relative Humidity | IP 68* / 0 to 100% humidity - Floodable |
| Environmental condition | Indoor / outdoor (Pit, Direct sunlight...)** / Intermittent water supply - B/O |
| Electromagnetic class | E2 |
| Operating temperature | -10°C / +55°C |
| Accidental temperature | -20°C / +70°C |

* IPX8: Under 2 meters during 2 months @ 50°C water temperature

** For direct sunlight exposure the Lid is mandatory

Battery Features

| | |
|------------------|---|
| Battery lifetime | 15 years (2 cells)- 22 years (3 cells)* |
| Power source | Lithium batteries |

* Depends on connectivity mode and reporting interval. / Environmental condition

Connectivity Certifications

- » LoRaWAN R1.0.2
- » Sigfox V2.10.0
- » OMS v4.1.2



COMPLIANCE

- » Compliant with Directive 2014/53/EU on RF Spectrum usage
- » MID, ISO4064, R-49
- » ACS, KTW, W270, WRAS
- » RoHs, WEEE2, **CE**
- » IP68 certified according to EN 60529
- » Compliant with 2002/95/EC on non usage of hazardous substances in electrical and electronic equipment
- » Wireless M-Bus according to EN 13757-3 & 4



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Woltex M

Woltex M is a horizontal Woltmann meter available as MID approved in sizes from DN 50 to 300mm. Recognized for its robustness the woltex M range is dedicated to all applications around water distribution where high reliability and accuracy is requested.

FEATURES AND BENEFITS

- » Sensitivity class U0D0
- » Hermetically sealed register (copper can/mineral glass envelope)
- » Approved interchangeable mechanisms allow maintenance of on-site existing bodies, with preserved CE marking on the whole instrument according to the provisions of 2014/32/EU Directive.
- » Pre-equipped through Cyble as a standard
- » Excellent resistance to corrosion with 300 microns epoxy coating

Reliability of the Measurement

Woltex is ensuring accurate and reliable data collection in a large scope of flow-rates typical of water network applications.

Insensitivity to flow perturbation

The design of Woltex M range has been improved to achieve the sensitivity class U0D0, thanks to a new integrated stabilizer.

Endurance & Peak Flow Resistance

This extended range of measurement is the result of more than twenty years experience in Horizontal Woltmann design, from the first hydrodynamically balanced helix patent in 1985 still resulting in unmatched endurance capabilities to the use of high quality materials.

Ease of Installation, Read and Maintenance

Woltex M range is available in various lengths and connections to minimize installation costs. Interchangeable approved mechanisms allows easy maintenance without re-calibration. Ease of read in the toughest environments (ie: flooded pits) is secured by orientable hermetically sealed register (copper can/mineral glass envelope).

Communication Device

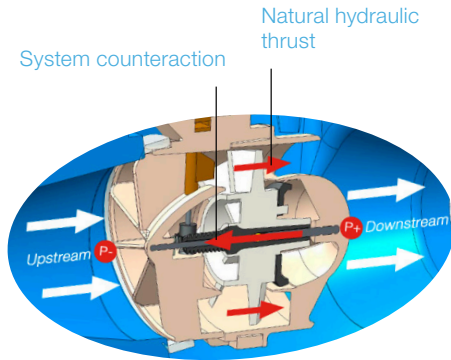
Pre-equipped for future communication through Cyble.

WORKING PRINCIPLE

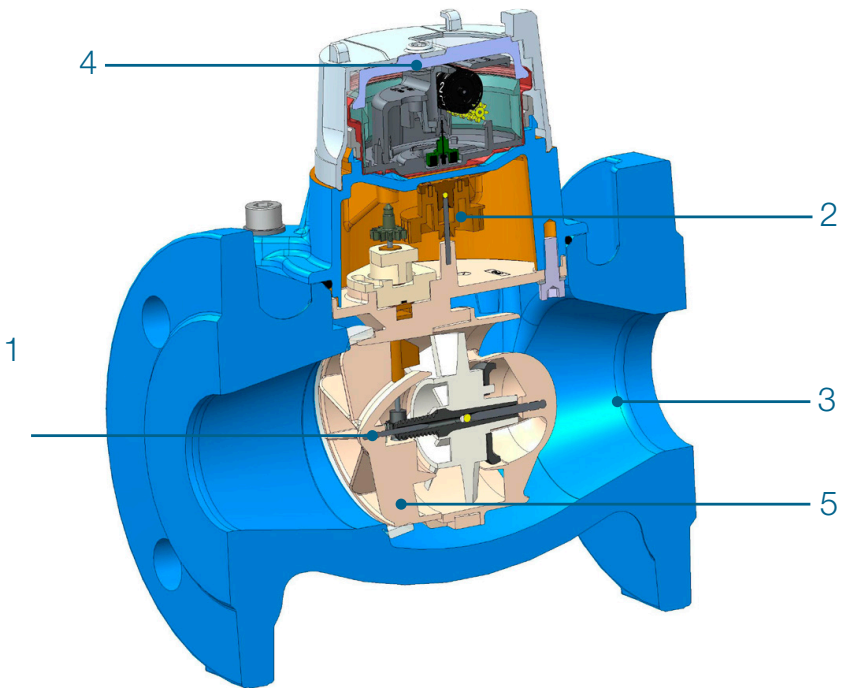
The water velocity is rotating the horizontal axis propeller. Special shape of its inlet and outlet bearing **1** is counteracting the natural hydraulic thrust applied on the propeller then preventing any downstream pivot wear.

The hydrodynamic balance proved its ability for more than 30 years. This results in a meter able to withstand sustained high flows without impacting low flow accuracy.

The propeller rotation is transmitted by a protected transmission and direct magnetic coupling **2** to the register. The cast iron body **3** is durably protected against the effects of corrosion by epoxy powder coating. The hermetically sealed copper can/mineral glass register **4** is safeguarding the read and integrity of the indicator in the toughest environments (flooded pits, mechanical tampering attempts, ...). New stabilizer design **5** for DN 50/65/80 mm.



Hydrodynamic balance of helix



Woltex M totalizer from DN 50 to DN80



Woltex M totalizer from DN100 to DN300

COMMUNICATION

Woltex M is supplied pre-equipped with Cyble Target

Allows communication and remote reading through:

- » Walk-by & Drive-By Systems
- » Pulse output (Cyble Sensor)
- » Radio frequency LoRaWAN & Sigfox networks (Cyble 5)

These Cyble modules allow the Woltex M meter to be connected with various associated systems like our supervision system WaterMind (see specific leaflet).

They are particularly adapted to commercial and industrial applications where a need for frequent meter monitoring is expressed especially in hard-to-read locations.

Key Advantages of Cyble Technology

- » No need for additional investment on the meter to implement remote reading
- » Itron standardized meter interface, irrespective of meter technology and widely spread on Itron water meters range
- » Reliable electronic switching (no wear or bouncing)
- » Reverse flow management
- » Field proven technology with a 25 years experience
- » Not affected by magnetic tampering

METROLOGICAL CHARACTERISTICS

Typical Performance

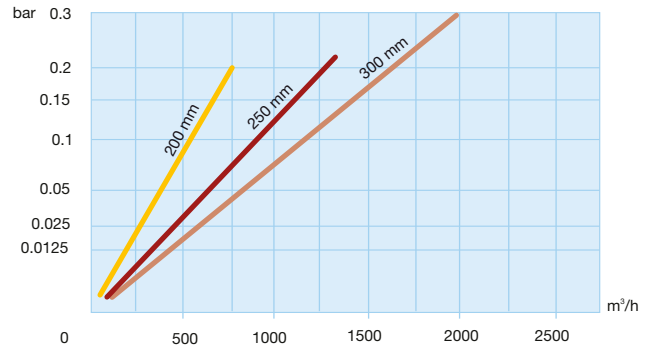
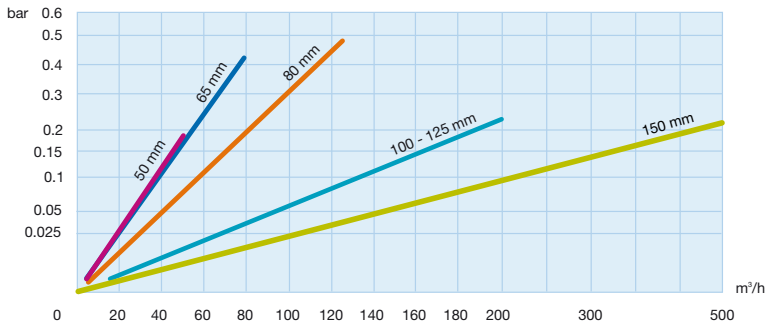
| Nominal diameter (DN) | mm | 50 | 65 | 80 | 100/125 | 150 | 200 | 250 | 300 | |
|---------------------------------------|--------|------------|------|------|---------|-------------|------|------|------|--|
| | inches | 2" | 2" ½ | 3" | 4" | 6" | 8" | 10 | 12 | |
| Starting flowrate* | m³/h | 0.19 | 0.22 | 0.25 | 0.38 | 0.4 | 1.6 | 3 | 10 | |
| Accuracy ± 2% from* | m³/h | 0.4 | 1 | 1.2 | 1.5 | 1.6 | 3.5 | 5 | 15 | |
| Accuracy ± 5% from* | m³/h | 0.35 | 0.5 | 0.75 | 0.9 | 1 | 2.5 | 3.5 | 12 | |
| Admissible peak flow (10' max) | m³/h | 90 | 160 | 250 | 300 | 700 | 1000 | 1500 | 2500 | |
| Max. admissible flowrate (continuous) | m³/h | 50 | 79 | 125 | 200 | 500 | 788 | 1250 | 2000 | |
| Head loss at Q3 | bar | 0.09 | 0.27 | 0.31 | 0.15 | 0.14 | 0.12 | 0.12 | 0.2 | |
| Max. admissible temperature | °C | 30 | | | | | | | | |
| Climatic environment temperature | °C | 70 | | | | | | | | |
| Max. admissible pressure | bar | 20 | | | | | | | | |
| Min. Verification scale interval | L | 0.2 | 0.2 | 0.2 | 0.2 | 2 | 2 | 2 | 2 | |
| Indicating range m³ | m³ | 999 999.99 | | | | 9 999 999.9 | | | | |
| Sensitivity Class | | UODO | | | | UODO | | | | |
| Cyble HF pulse weight | L | 10 | 10 | 10 | 10 | 100 | 100 | 100 | 100 | |

* Average values.

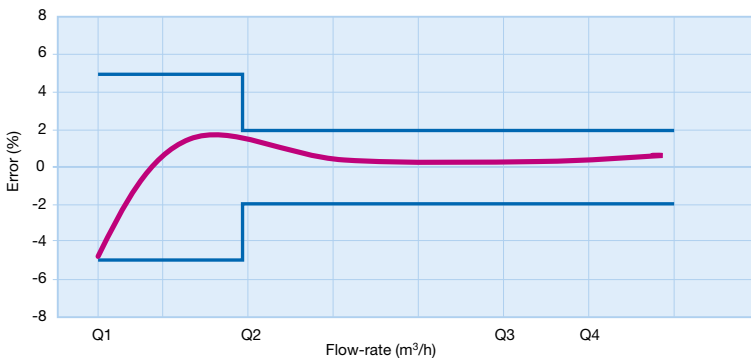
MID Approval Values

| Nominal diameter (DN) | mm | 50 | 65 | 80 | 100/125 | 150 | 200 | 250 | 300 |
|-----------------------------------|--------|-----------|------|------|---------|------|-------|-------|-------|
| | inches | 2" | 2" ½ | 3" | 4" | 6" | 8 | 10 | 12 |
| Q3 Permanent flow rate | m³/h | 40 | 63 | 100 | 160 | 400 | 400 | 1000 | 1600 |
| Q4 Overload flow rate | m³/h | 50 | 79 | 125 | 200 | 500 | 787,5 | 1250 | 2000 |
| Q2 Transitional flowrate | m³/h | 0.64 | 1 | 1.60 | 1.60 | 4.00 | 25.20 | 40.00 | 32.00 |
| Q1 Minimum flowrate | m³/h | 0.4 | 0.63 | 1.00 | 1.00 | 2.50 | 15.75 | 25.00 | 20.00 |
| MID approval ratio | | 100 | 100 | 100 | 160 | 160 | 40 | 40 | 80 |
| Production ratio | | 100 | 100 | 100 | 100 | 100 | 40 | 40 | 80 |
| Maximum admissible Pressure (MAP) | bar | 20 | | | | | | | |
| Pressure Loss Class at Q3 | bar | 0.16 | 0.4 | 0.4 | 0.4 | 0.16 | 0.25 | 0.25 | 0.25 |
| Mid Approval number | | LNE-23696 | | | | | | | |
| Max. temperature | °C | 30 | | | | | | | |

HEAD LOSS



ACCURACY CURVE



Cyble RF fitted on Woltex M Inlet stabilizer for DN100 and DN150.

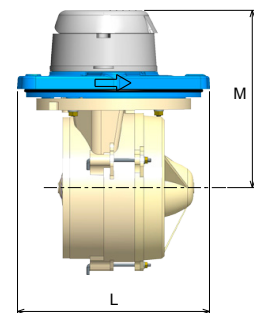
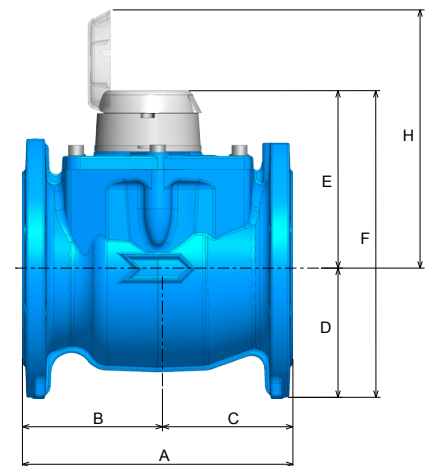
Dimensions

| Nominal diameter (DN) | | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | |
|-----------------------|-------------------|-----------------|------|------|------|------|------|-----------------------|-----|-----|-----|
| | mm inches | 2" | 2" ½ | 3" | 4" | 5" | 6" | 8 | 10 | 12 | |
| End connection* | | Flange PN 10/16 | | | | | | Flange PN 10 or PN 16 | | | |
| > Meter | | | | | | | | | | | |
| A (length) | ISO | mm | 200 | 200 | 200 | 250 | 250 | 300 | 350 | 450 | 500 |
| | DIN | mm | 200 | 200 | 225 | 250 | - | 300 | | | |
| | AS (Australia/UK) | mm | 311 | - | 413 | - | - | - | | | |
| B | | mm | 100 | 100 | 100 | 111 | 111 | 139 | 164 | 214 | 200 |
| C | | mm | 100 | 100 | 100 | 139 | 139 | 161 | 186 | 236 | 300 |
| D | | mm | 82.5 | 92.5 | 100 | 110 | 110 | 142.5 | 171 | 204 | 230 |
| E | | mm | 142 | 142 | 142 | 169 | 169 | 194 | 220 | 195 | 342 |
| F | | mm | 224 | 234 | 242 | 279 | 279 | 339 | 391 | 399 | 564 |
| H | | mm | 222 | 222 | 222 | 309 | 309 | 395 | 420 | 395 | 729 |
| Weight | | Kg | 11.4 | 12.6 | 14.1 | 19.5 | 19.5 | 34 | 55 | 75 | 175 |
| > Mechanism | | | | | | | | | | | |
| L | | mm | 119 | 119 | 119 | 166 | 166 | 212 | 332 | 256 | 350 |
| I (max. width) | | mm | 148 | 148 | 148 | 182 | 182 | 273 | 276 | 276 | 426 |
| M | | mm | 142 | 142 | 142 | 169 | 241 | 194 | 195 | 195 | 342 |
| Weight | | Kg | 3 | 3 | 3 | 5.4 | 5.4 | 7.8 | 8,5 | 8,5 | 54 |

* Other drillings are available, under request

INSTALLATION REQUIREMENTS

- » Woltex M could be installed regardless of position.
- » Installation of a strainer upstream of the meter is recommended to protect the hydraulics against raw particles (see Itron strainer leaflet).
- » In case of particular installation conditions, we recommend the installation of a flow straightener directly upstream of the meter to cancel the effects of hydraulic perturbations on Horizontal Woltmann accuracy (see Itron installation leaflet).



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