# Mechanical Meter

新疆西部联合数字产业发展有限公司

Welle Digital Technology CO., Ltd.

# Contents

# 1. Single-jet Water Meter

## 1.1 Single-jet Dry Type

### 1.1.1 Single Jet Dry Type Water Meter

- **Introduction:**

The single jet dry type water meter features a dry-type vacuum sealing design for long-term clear and stable readings, unaffected by water quality or environmental factors. Its built-in anti-magnetic drive mechanism ensures accurate and reliable measurement, adapting to complex water environments. Ideal for home water supply, commercial buildings, industrial pipelines, and HVAC systems.

- **Features:**

1. Dry dial, Vacuum sealed to keep clean reading for long time.
2. Available for cold water 0~50℃ and hot water 50℃~90℃.
3. Magnetic transmission.
4. Antimagnetic type.
5. 360° Rotating dial.

- **Work Condition:**

1. Water temperature≤50℃; hot water meters≤ 90℃.
2. Water pressure≤1MPa(PN:1.6MPa/16bar).
3. ΔP≤0.1MPa.

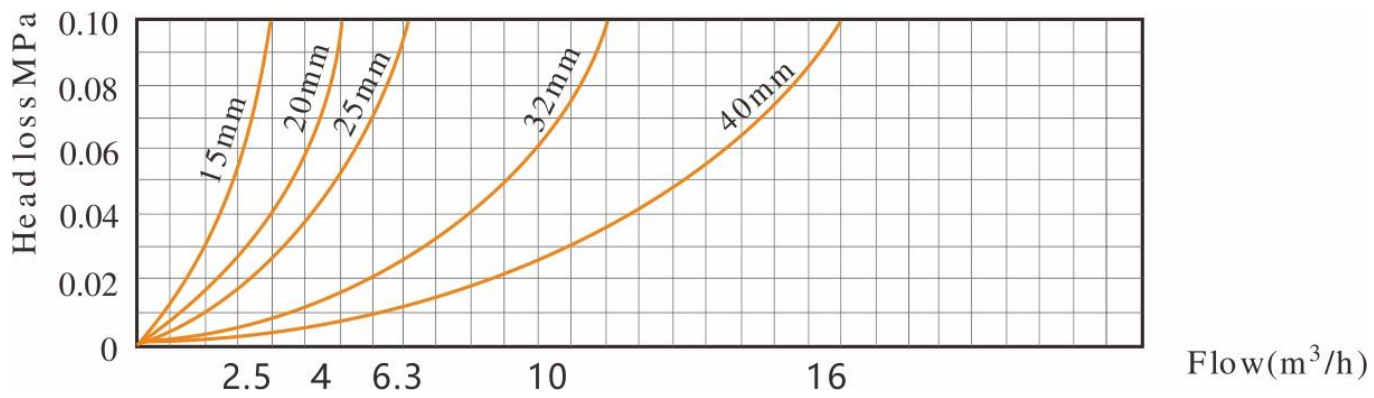
- **Accuracy:**

1. From minimum flow-rate(qmin) inclusive, to transitional flow-rate(qt) exclusive:±5%.
2. From transitional flow-rate(qt) inclusive, to overload flow-rate(qs) exclusive:±2%(Hot water meter: ±3%).

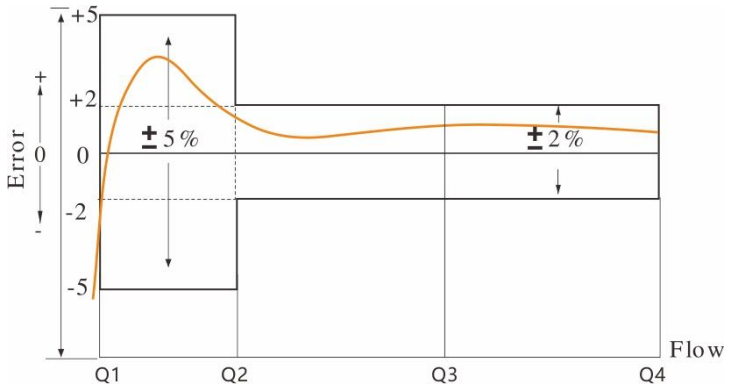
- **Upon Request:**

1. Remote transmission device can be added upon request.
2. Pulse output 10L/Pulse.

- **Head Loss**



- **Flow Error**




- **Dimension**

| Model Number | | WD-13D3 | WD-20D3 | WD-32D3 | WD-32D3 | WD-40D3 |
|---|---|---|---|---|---|---|
| Length L(mm): | | 110/115 | 130 | 160 | 160 | 200 |
| Size | mm | 15 | 20 | 25 | 32 | 40 |
| L | mm | 110/115 | 130 | 160 | 160 | 200 |
| L+unions | mm | 169/174 | 218 | 260 | 272 | 316 |
| H | mm | 80.5 | 83 | 91.5 | 119 | 119 |
| W | mm | 80 | 80 | 80 | 102 | 102 |
| D | inch | 3/4 | 1 | 1.25 | 1.5 | 2 |
| Connection Thread: | | G 3/4B | G 1B | G1 1/4B | G1 1/2B | G 2B |
| Weight | with unions kg | 0.4/0.42 | 0.83 | 1.3 | 2.1 | 2.6 |
| | without unions kg | 0.28/0.30 | 0.6 | 0.9 | 1.5 | 1.8 |

- **Technical Specification**

| Model Number | WD-13D3 | | | WD-20D3 | | | WD-32D3 | | | WD-32D3 | | | WD-40D3 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nominal diameter (DN) [mm] | 15 | | | 20 | | | 25 | | | 32 | | | 40 | | |
| Ratio Q3/Q1 | R80 | R100 | R160 | R80 | R100 | R160 | R80 | R100 | R160 | R80 | R100 | R160 | R80 | R100 | R160 |
| Overload flow rate (Q4) [m³/h] | 3.125 | 3.125 | 3.125 | 5 | 5 | 5 | 7.875 | 7.875 | 7.875 | 12.5 | 12.5 | 12.5 | 20 | 20 | 20 |
| Permanent flow rate (Q3) [m³/h] | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 6.3 | 6.3 | 6.3 | 10 | 10 | 10 | 16 | 16 | 16 |
| Transitional flow rate (Q2) [m³/h] | 0.05 | 0.04 | 0.025 | 0.08 | 0.064 | 0.04 | 0.126 | 0.1008 | 0.063 | 0.2 | 0.13 | 0.1 | 0.32 | 0.256 | 0.16 |
| Minimum flow rate (Q1) [m³/h] | 0.03125 | 0.025 | 0.015625 | 0.05 | 0.04 | 0.025 | 0.07875 | 0.063 | 0.039375 | 0.125 | 0.1 | 0.0625 | 0.2 | 0.16 | 0.1 |
| Accuracy class | 2 | | | | | | | | | | | | | | |
| Temperature class | T50 | | | | | | | | | | | | | | |
| Water pressure classes | MAP 16 | | | | | | | | | | | | | | |
| Pressure-loss classes | △P63 | | | | | | | | | | | | | | |
| Indicating range [m³] | 99999 | | | | | | | | | | | | | | |
| Resolution [m³] | 0.00005 | | | | | | | | | | | | | | |
| Flow profile sensitivity classes | UO D0 | | | | | | | | | | | | | | |
| Orientation limitation | H | | | | | | | | | | | | | | |

### 1.1.2 Single-jet Super Dry Cold Water Meter

- **Introduction:**

Single-jet Super Dry Cold Water Meter features long-lasting durability, energy-efficient safety, and easy maintenance. It is ideal for residential buildings, small commercial pipelines, and municipal cold water metering in decentralized water supply systems.

- **Features:**

1. Magnetic drive with super dry type register.
2. Non Return Valve for selecting.
3. Magnetic shield for external magnet protection.
4. Outside calibration device.
5. Rotary Register with 8 Rollers.
6. Inclined register.

- **Product Size:**

DN15, DN20

### 1.1.3 Single-jet Dry Dial Water Meter

- **Introduction:**

This compact single-jet dry dial water meter fits both residential and commercial pipelines, designed for cold water measurement applications. With its clear and intuitive dial display, it serves as a cost-effective solution for water management and energy consumption monitoring.

- **Features:**

1. Dry register and register with 8 numbered roller.
2. Brass body can be painted or nickel coated.
3. High accuracy.
4. Measuring unit is $m^3$ .
5. The meters conform to ISO4064 Standard Class B.

- **Work Condition:**

1. Water temperature≤30℃; hot water meter ≤90℃.

2. Water pressure≤1MPa(PN:1.6MPa/16bar).
3. ΔP≤0.1MPa.

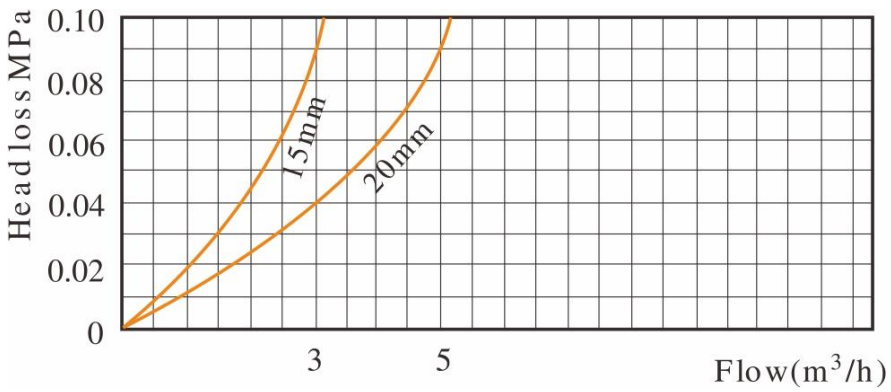
- **Accuracy:**

1. From minimum flow-rate(qmin) inclusive, to transitional flow -rate(qt) exclusive:±5%.
2. From transitional flow -rate(qt) inclusive, to overload flow -rate(qs) exclusive:±2%(Hot water meter: ±3%).

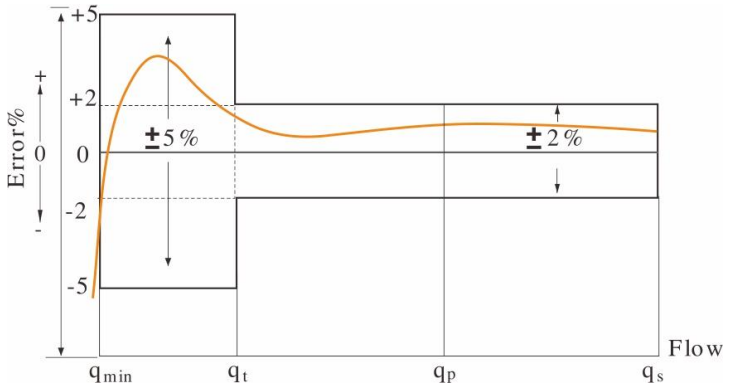
- **Upon Request:**

1. Remote transmission device can be added upon request.
2. Pulse output :IL, 10L.

- **Head Loss**




- **Error Curve**




- **Dimension**

| Nominal Size DN (mm) | Class of Measurement | Overload Flowrate Qs ($m^3/h$) | Permanent Flowrate Qp ($m^3/h$) | Transitional Flowrate Qt (l/h) | Minimum Flowrate Qmin (l/h) |
|---|---|---|---|---|---|
| **15** | B | 3 | 1.5 | 120 | 30 |
| **20** | B | 5 | 2.5 | 200 | 50 |

- **Technology Specification**

| Type | Size (mm) | Length (mm) L | Width (mm) W | Height (mm) H | Connecting Thread D (inch) |
|---|---|---|---|---|---|
| **WD(R)-13D6** | **15** | **80/110** | **70** | **72.5** | **G 3/4B** |
| **WD(R)-20D6** | **20** | **130** | **70** | **72.5** | **G 1B** |

## 1.2 Single-jet Wet Type

### 1.2.1 Single-jet Wet Type Water Meter (Brass)

- **Introduction:**

This water meter is suitable for residential and small commercial applications, maintaining stable measurement performance over long-term use. Designed with high accuracy, it ensures precise water flow measurement while offering excellent durability and adaptability to various environments.

- **Features:**

1. Mechanism drive.
2. Wet type register.
3. Non Return Valve for selecting.

- **Product size:**

DN15,DN20,DN25,DN32

# 2. Multi-jet Water Meter

## 2.1 Multi-jet Wet Type

### 2.1.1 Multi-jet Liquid-sealed Water Meter

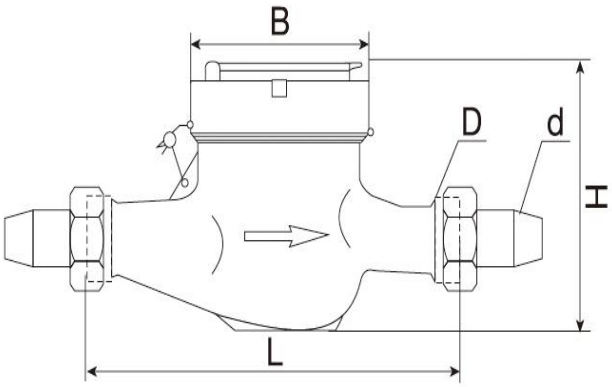
- **Introduction:**

This Multi-jet liquid-sealed water meter utilizes liquid seal technology to ensure stable measurement performance, adapting to diverse water quality and operational conditions. Widely applied in industrial pipelines, building water supply systems, and cold-region water networks.

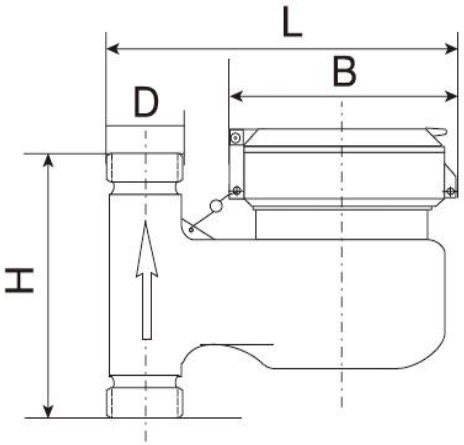
- **Performance Features**

| | | | |
|---|---|---|---|
| **Temperature Level** | T30/T70/T90 | **Flow Field Sensitivity Level** | U0/D0 |
| **Pressure Level** | MAP10/MAP16 | **Accuracy Level** | Level 2 |
| **Pressure Loss Level** | Δp63 | | |

- **Dimension Diagram**




Horizontal Installation




Vertical Installation

- **Dimension**

| Diameter DN | Length L | Width B | Height H | Connection Type | | Weight |
|---|---|---|---|---|---|---|
| | mm | | | d | D | Kg |
| Horizontal Installation | | | | | | |
| 15 | 165 | 94 | 112.5 | R1/2 | G3/4B | 1.5 |
| 20 | 195 | 94 | 114 | R3/4 | G1B | 1.8 |
| 25 | 225 | 98 | 124 | R1 | G1 1/4B | 2.4 |
| 32 | 230 | 98 | 124 | R1 1/4 | G1 1/2B | 3 |
| 40 | 245 | 124 | 154 | R1 1/2 | G2B | 5 |
| 50 | 280 | 165 | 179 | ① | | 9.5 |
| Vertical Installation | | | | | | |
| 15 | 144 | 98 | 100 | R1/2 | G 3/4B | 1.6 |
| 20 | 152 | 98 | 100 | R3/4 | G1B | 1.8 |
| 25 | 164 | 104 | 110 | R1 | G1 1/4B | 2.5 |

①Flange connection according to GB/T17241.6-2008/XG1-2011.

D = ϕ165, D1 = ϕ125.

Note: The dimensions and weight are for reference only, and the actual product shall prevail.

- **Technical Specification**

| Diameter DN | Q3/Q1 | Overload Flowrate Q4 | Nominal Flowrate Q3 | Transitional Flowrate Q2 | Minimum Flowrate Q1 | Minimum Reading (Min) | Maximum Reading (Max) |
|---|---|---|---|---|---|---|---|
| | | m³/h | | L/h | | m³ | |
| 15 | 160 | 3.125 | 2.5 | 25 | 15.6 | 0.00001 | 999999 |
| | 125 | | | 32 | 20 | | |
| | 100 | | | 40 | 25 | | |
| 20 | 160 | 5 | 4 | 40 | 25 | | |
| | 125 | | | 51.2 | 32 | | |
| | 100 | | | 64 | 40 | | |
| 25 | 160 | 7.875 | 6.3 | 63 | 39.4 | | |
| | 125 | | | 80.6 | 50.4 | | |
| | 100 | | | 100.8 | 63 | | |
| 32 | 160 | 12.5 | 10 | 100 | 62.5 | | |
| | 125 | | | 128 | 80 | | |
| | 100 | | | 160 | 100 | | |
| 40 | 160 | 20 | 16 | 160 | 100 | | 9999999 |
| | 125 | | | 204.8 | 128 | | |
| | 100 | | | 256 | 160 | | |
| 50 | 160 | 31.25 | 25 | 250 | 156.3 | | |
| | 125 | | | 320 | 200 | | |
| | 100 | | | 400 | 250 | | |

Maximum permission error:

For the lower zone (Q1≤Q < Q2), the maximum permission error is ±5%.

For the upper zone (Q2 <Q≤Q4), the maximum permission error is ±2%.

## 2.1.2 Multi-Jet Wet Type Residential Water Meter

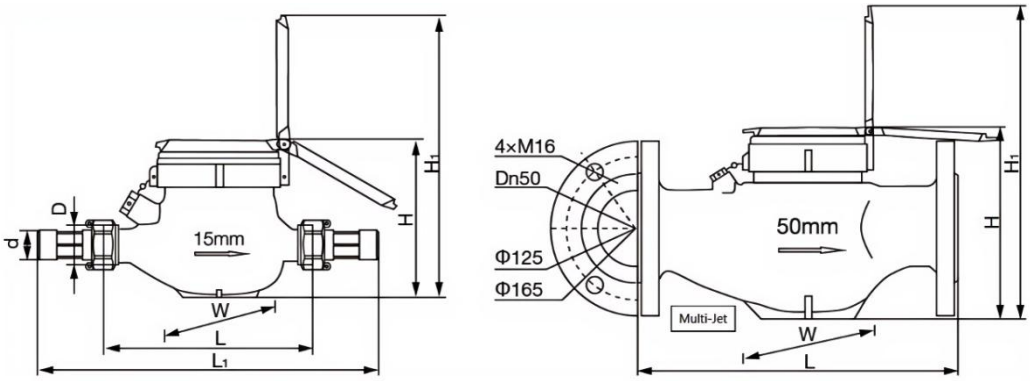
- **Introduction:**

This is impeller (turbine) water meter with wet type register for residential application with sizes from DN15 to DN50 and meets to the requirements of Directive 2004/22/EC on measuring instruments and of European Standard EN14154.

- **Features:**

1. Corrosion Resistance: All the materials selected by resistance to corrosion.
2. High Stability: The impeller is the only moving parts in contact with water permitting the most reliable.
3. Extra Inlet Filter: The filter at the inlet of the meter body permits cleaning it without breaking the metro logical seal.
4. Non Return Valve to avoid the reserve flow Rate as option.

- **Dimension Diagram**




- **Dimension**

| Size (mm) | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 | DN50-Flange |
|---|---|---|---|---|---|---|---|
| L | 165 | 190 | 260 | 260 | 300 | 300 | 300 |
| L1 | 259 | 294 | 380 | 384 | 384 | 448 | / |
| D | G3/4B | G1B | G1 1/4B | G1 1/2B | G1 1/2B | G2 1/2B | / |
| d | R1/2 | R3/4 | R1 | R1-1/4 | R1-1/2 | R2 | / |
| H | 107.5 | 107.5 | 117.5 | 117.5 | 141.5 | 177 | 184 |
| H1 | 191 | 191 | 206.5 | 206.5 | 256.5 | 292 | 299 |
| W | 94 | 94 | 98 | 98 | 122 | 145 | 165 |

L1 : the total length with connection and the gasket without compression.

Option: Different length ofthe Water Meter under different size.

- **Technical Specification**

| DN | mm | 15 | 20 | 25 | 32 | 40 | 50 |
|---|---|---|---|---|---|---|---|
| R | Q3/Q1 | 160 | | | 160 | | |
| Q4 | m³/h | 3.125 | 5 | 7.875 | 12.5 | 20 | 31.25 |
| Q3 | m³/h | 2.5 | 4 | 6.3 | 10 | 16 | 25 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Q2** | **l/h** | 25 | 40 | 63 | 100 | 160 | 250 |
| **Q1** | **l/h** | 15.625 | 25 | 39.375 | 62.5 | 100 | 156.25 |
| **Max reading** | **m3** | 99999.9999 | | | | 999999.9999 | |
| **Min reading** | **Liter** | 0.05 | | | | | |
| **Pressure loss** | **Δp** | Δp<63 | | | | | |
| **Max Pressure** | **MAP** | MAP16 | | | | | |
| **Max Temperate** | **℃** | T30/T50 | | | | | |

For different Q3 and R, Please contact with us.

### 2.1.3 Stainless Steel Multi-jet Wet Type Water Meter

- **Introduction:**

The casing of this series of water meters is made of stainless steel materials with ultra-high corrosion resistance and high strength. It is processed through a patented structural design and special molding techniques, offering the characteristic of being reusable multiple times. Under normal operating conditions, the overall cost of use is no higher than that of cast iron casings. It completely solves the issue of secondary contamination of tap water caused by the casing, contributing to environmental protection and the conservation of non-ferrous metal mineral resources.

This series of water meters complies with the safety evaluation standards for drinking water distribution equipment and protective materials, making it a healthy and environmentally friendly flow meter for measuring the total volume of water. It can be used for measuring the volume of purified water.

- **Features:**

1. Maximum allowable working pressure: 1.0 MPa.
2. Maximum allowable working temperature: Cold water meter 30°C, hot water meter 90°C.
3. Measuring characteristics: Class 2 water meter (accuracy level 2).
4. The maximum allowable error of the water meter within the water temperature range of 0.1°C to 30°C is +2% in the high range (Q2 ≤ Q ≤ Q4) and +5% in the low range (Q1 ≤ Q < Q2). When the water temperature exceeds 30°C, the maximum allowable error in the high range becomes +3%, while the low range remains ±5%.
5. DN15~25 cold and hot water meter dimensions and main performance parameters.

- **Dimension**

| Nominal Diameter DN mm | Length mm | Width mm | | Height mm | | Nominal Flowrate (Q3) | Transitional Flowrate (Q2) | Minimum Flowrate (Q1) | Connection Thread |
|---|---|---|---|---|---|---|---|---|---|
| | | Small Mechanism | Large Mechanism | Small Mechanism | Large Mechanism | $m^3/h$ | | Pipe Joint | Connecting Nut |
| **15** | 165 | 80 | 85 | 100 | 105 | 2.5 | Q3/Q1=50、63、80、100、125、160 | R1/2 | G3/4 |
| **20** | 195 | 80 | 85 | 100 | 105 | 4.0 | | R3/4 | G1 |
| **25** | 225 | 80 | —— | 104 | —— | 6.3 | Q2/Q1=1.6 | R1 | G11/4 |

## 2.2 Multi-jet Dry Type

### 2.2.1 Multi-jet Dry Type Water Meter

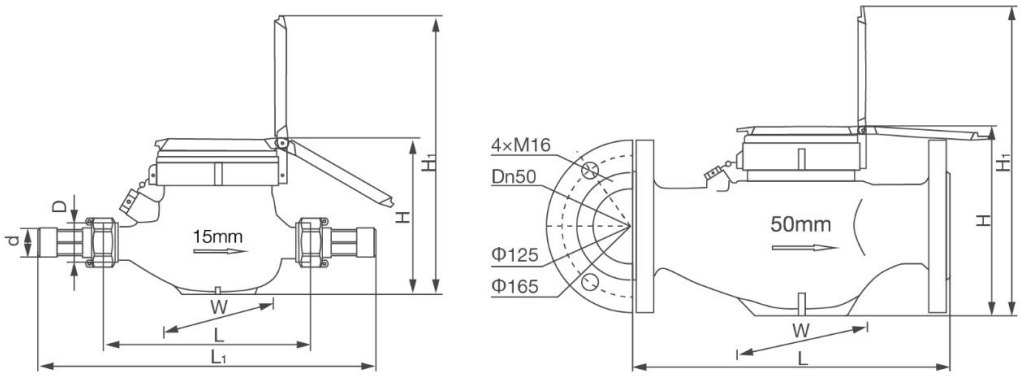
- **Introduction:**

This water meter is impeller (turbine) water meter with dry type register for residential application with sizes from DN15 to DN50 and meets to the requirements of Standard lS0 4064.

- **Features:**

1. Corrosion Resistance: All the materials selected by resistance to corrosion.
2. Anti-interference: The conception of the Magnetic Protection to against the external influences.
3. Directly Reading: The indicator register is of 5 Rollers (Dn40/Dn50 with 6 Rollers) and 4 Pointers.
4. Extra Inlet Filter: The inlet & filter prevents water meter from any effect by grit and particulates.
5. Non Return Valve: To avoid the reserve low rate as option.
6. IP68: A copper can super Dry register with lP68 protection as option.

- **Dimension Diagram**




- **Dimension**

| Size(mm) | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 | DN50-Flange |
|---|---|---|---|---|---|---|---|
| L | 165/190 | 190 | 260 | 260 | 300 | 300 | 300 |
| $L_1$ | 259/284 | 294 | 380 | 384 | 431 | 448 | / |
| D | G3/4B | G1B | G1-1/4B | G1-1/2B | G2B | G2-1/2B | / |
| d | R1/2 | R3/4 | R1 | R1-1/4 | R1-1/2 | R2 | / |
| H | 107.5 | 107.5 | 117 | 118 | 151 | 151(brass) 176 (iron) | 176(brass) 181(iron) |
| $H_1$ | 191 | 191 | 206.5 | 206.5 | 258 | 258(brass) 283 (iron) | 283(brass) 288 (iron) |
| W | 95 | 95 | 100 | 100 | 122 | 122(brass) 145(iron) | 138(brass) 145(iron) |

L1 : the total length with connection and the gasket without compression.

- **Technical Specification**

| DN | mm | 15 | 20 | 25 | 32 | 40 | 50 |
|---|---|---|---|---|---|---|---|
| R | Q3/Q1 | 80 | | | 80 | | |
| Q4 | m³/h | 3.125 | 5 | 7.875 | 12.5 | 20 | 31.25 |
| Q3 | m³/h | 2.5 | 4 | 6.3 | 10 | 16 | 25 |
| Q2 | l/h | 25 | 40 | 63 | 100 | 160 | 250 |
| Q1 | l/h | 15.625 | 25 | 39.375 | 62.5 | 100 | 156.25 |
| Max.reading | m³ | 99999.9999 | | | 999999.9999 | | |
| Min.reading | Liter | 0.05 | | | | | |
| Pressure loss | △p | △p<63 | | | | | |
| Max,Pressure | MAP | MAP16 | | | | | |
| Max,Temperate | ℃ | T30/T50 | | | | | |

Maximum Permission Error:

For the lower zone (Q1≤Q≤Q2): maximum permission error is +5%.

For the upper zone (Q2≤Q≤Q4): maximum permission error is +2%(T≤30°C),maximum permission error is +3% (30°C<T≤50°C).

## 2.3 Multi-jet Semi-Dry Type

### 2.3.1 Liquid Sealed Multi-jet Semi-dry Water Meter

- **Introduction:**

Liquid Sealed Water Meter ensures high water supply safety, delivers accurate and durable measurement, and is suitable for industrial pipelines, agricultural irrigation, and municipal water supply systems in high-pressure complex environments.

- **Features:**

1. Plastic body.
2. Non Return Valve for selecting.
3. Mechanical drive with protection liquid-filled register.

- **Product size:**

DN15, DN25, DN25, DN32, DN40, DN50.

### 2.3.2 Liquid Sealed Multi-jet Semi-dry Water Meter

- **Introduction:**

Liquid Sealed Water Meters are designed for pipe diameters ranging from DN15 to DN50, specifically tailored for industrial pipelines, agricultural irrigation, and municipal water supply systems. Mechanical drive with protection liquid filled register.

- **Features:**

1. Strongest and reliable plastic body material.
2. Non Return Valve for selecting.

- **Product size:**

DN15, DN25,DN25.

# 3. Volumetric Water Meter

## 3.1 Vertical Installation

### 3.1.1 Brass Multi-jet Domestic Water Meter (Vertical Installation)

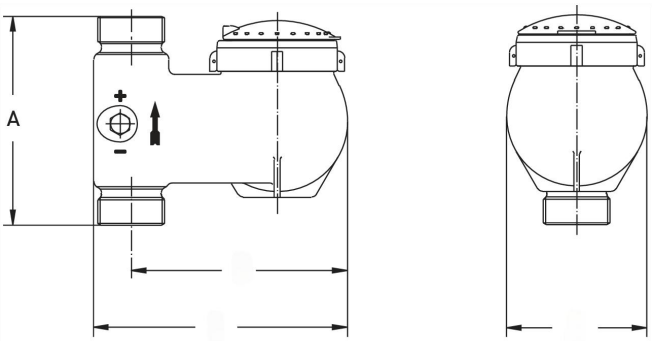
- **Introduction:**

This domestic water meter is suited for consumption reading of low to middle flow rate measurement typically in the utilities sector.

- **Features:**

1. Multijet impeller wheel, super dry-dial, magnetic coupling.
2. Q3 2,5: Measuring range R100, Q3 4-25: Measuring range R160.
3. Easy to read roller counter due to large white figures on black background.
4. 5 dial resolution without comma place.
5. Maximum operation pressure PN 16 bar, Maximum operating temperature 30 °C.
6. High grade wear resistant and corrosion proof materials.
7. Inlet strainer.
8. Reconditionable and recyclable execution.
9. Materials suited for contact with potable water.
10. Conformity according to European Measuring Instruments (MID).

- **Dimension Diagram**



- **Dimension**

| Dimension | | | Vertical | | | |
|---|---|---|---|---|---|---|
| Length without couplings | A | mm | 105 | 150 | 150 | 200 |
| Length with couplings | | mm | 197 | 242 | 262 | 332 |
| Meter depth | B | mm | 148 | 169 | 183 | 226 |
| Meter depth from pipe centre line | C | mm | 130 | 143 | 156 | 190 |
| Meter width | D | mm | 95 | 98 | 101 | 139 |

- **Technical Specification**

| | | | | | |
|---|---|---|---|---|---|
| Nominal diameter DN | mm | 20 | 25 | 32 | 40 |
| Connection thread on meter | Inch | 1 | 1 1/4 | 1.5 | 2 |
| Connection thread on coupling | Inch | 3/4 | 1 | 1 1/4 | 1 1/2 |
| Operating pressure PN | bar | 16 | 16 | 16 | 16 |
| Nominal flow rate Q3 | $m^3/h$ | 4 | 6.3 | 10 | 16 |
| Overload flow rate$^3$ Q4 | $m^3/h$ | 5 | 7875 | 12.5 | 20 |
| Transitional flow rate±2% Q2 | $m^3/h$ | 0.04 | 0.063 | 0.1 | 0.16 |
| Minimum flow rate ±5% Q1 | $m^3/h$ | 0.025 | 0.039 | 0.062 | 0.1 |
| Smallest readable volume | l | 0.05 | 1.05 | 2.05 | 3.05 |
| Maximum register reading | $m^3$ | 100000 | 100000 | 100000 | 100000 |
| Temperature | max. ℃ | 30 | 30 | 30 | 30 |
| Measuring range | | R160 | R160 | R160 | R160 |

### 3.1.2 Brass Volumetric Rotary Piston Water Meter (Vertical Installation)

- **Introduction:**

This water meter is designed to measure, record, and display the volume of cold water passing through the pipeline.

- **Features:**

1. Adopting volumetric rotary piston principle of measurement, high precision.
2. Register is sealed in the capsule with special liquid ensure a clear reading.Check valve can keep back the backflow.

- **Dimension**

| Item No | L1 Over Length | Length | W | Connection Thread | |
|---|---|---|---|---|---|
| | | | | D | d |
| WDH-15 | 210mm | 115mm | 85mm | G 3/4 | R 1/2 |
| WDH-20 | 235mm | 130mm | 85m m | G1 | R |
| WDH-25 | 321mm | 200mm | 105mm | G1 1/4 | R1 |
| WDH-32 | 325mm | 200mm | 105mm | G1 1/2 | R 1/2 |

- **Technical Specification**

| Item No | Size | R Flow turndown | Q4 Max Flow | Q3 Nominal Flow | Q2 Transitional Flow | Q1 Min Flow | Min Reading | Max Reading |
|---|---|---|---|---|---|---|---|---|
| | mm | Q3/Q1 | $m^3/h$ | | L/h | | $m^3$ | |
| WDH-15E | 15 | 160 | 3.125 | 2.5 | 25 | 15.6 | 0.00005 | 99999 |
| | | 200 | 3.125 | 2.5 | 20 | 12.5 | 0.00005 | 99999 |

### 3.1.3 Stainless Steel Volumetric Water Meter (Vertical Installation)

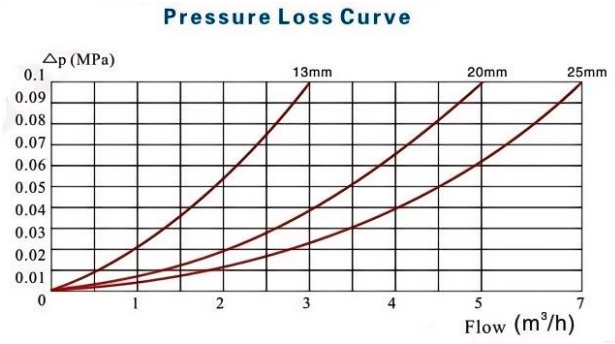
- **Introduction:**

Stainless Steel Volumetric Water Meter is a rotarypiston water meter with the mechanical transmission and liquid-sealedregister, for residential application in sizes 15mm to 25mm for cold water.

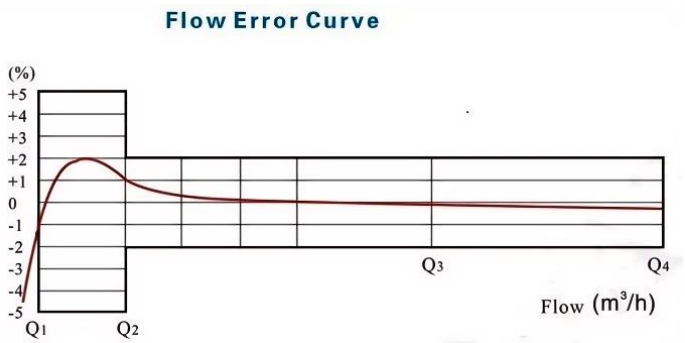
- **Features:**

1. Ensures high sensitivity and accurate registration throughout a wide flow range.
2. magnetic fielMechanical transmission movement with the maximum reliability; no influence from the external d.
3. Liquid-sealed register. The rollers are protected by a special liquid, encapsulated from water, ensures a clearing reading in any operating conditions.
4. Corrosion resistant body.
5. Low starting flow rate.
6. Suitable for any position installation.
7. Internal on return valve to avoid the reserve flow rate.
8. Internal strainer. Standard Compliance Technical data conforms to ISO 4064 Class C, R160, R200 standard.

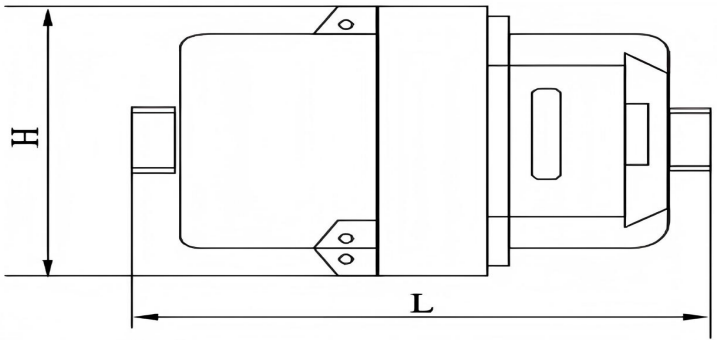
- **Pressure Loss**




- **Flow Error**



- **Dimension Diagram**




- **Dimension**

| Meter Size | Length (L) | Length (L1) | Width (W) | Connecting Thread |
|---|---|---|---|---|
| mm | mm | | | D |
| 15 | 115 | 209 | 91 | G 3/4B |
| 20 | 130 | 234 | 96 | G 1B |
| 25 | 170 | 290 | 112 | G1 1/4B |

- **Technical Specification**

| Size | Class | Qmax Maximum Flowrate | Qn Nominal Flowrate | Qt Transitional Flowrate | Qmin Min Flowrate | Min Reading | Max Reading |
|---|---|---|---|---|---|---|---|
| | | $m^3/h$ | | L/h | | $m^3$ | |
| 15 | C | 3 | 1.5 | 25 | 15.625 | 0.00002 | 9999 |
| | D | | | 20 | 12.5 | | |
| 20 | C | 5 | 2.5 | 40 | 25 | 0.00002 | 9999 |
| | D | | | 32 | 20 | | |
| 25 | C | 7 | 3.5 | 63 | 39.375 | 0.00002 | 9999 |
| | D | | | 50.4 | 31.5 | | |

## 3.2 Horizontal Installation

### 3.2.1 Horizontal Volumetric Rotary Piston Indoor Water Meter

- **Introduction:**

This is a horizontal volumetric water meter with the mechanical transmission and dry register, for residential application in sizes 15mm-20mm for cold water.

- **Features:**

1. Ensures high sensitivity and accurate registration throughout a wide flow range.
2. Low starting flow rate and excellent metrological performance.
3. Magnetic drive, lower transmission resistance.
4. Magnetic shield use for external magnetic field protection.

5. Evacuated and sealed dry dial register ensures clear reading.
6. Internal strainer.
7. Inlet strainer Standard Compliance Technical data conforms to ISO 4064 Class C, Class D, R160, R200 and R315 standard.
8. Optional Features .
9. Meter body: Brass, plastic for selecting.
10. Can be equipped with reed switch option.

- **Working Conditions:**

1. Water temperature: ≤50ºC for cold water meter.
2. Water temperature: ≤90ºC for hot water meter.
3. Water pressure: ≤1MPa or 1.6MPa optional (10bar or 16bar optional).

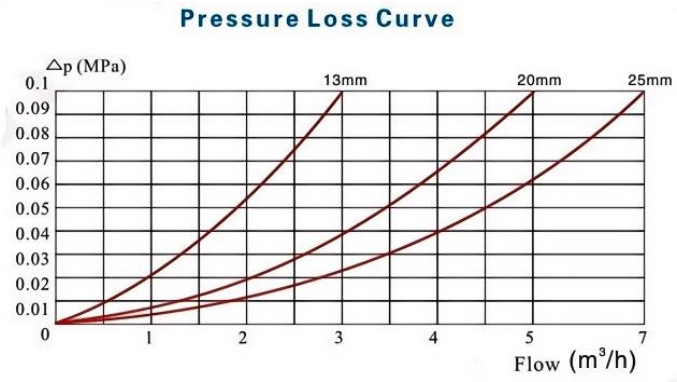
- **Installation requirements:**

1. The meter can be installed in any position.
2. Pipeline must be flushed before installation.
3. The meter should be constantly full of water during operation.
4. The meter must be installed with the direction of the flow as indicated by the arrow cast in the meter body.

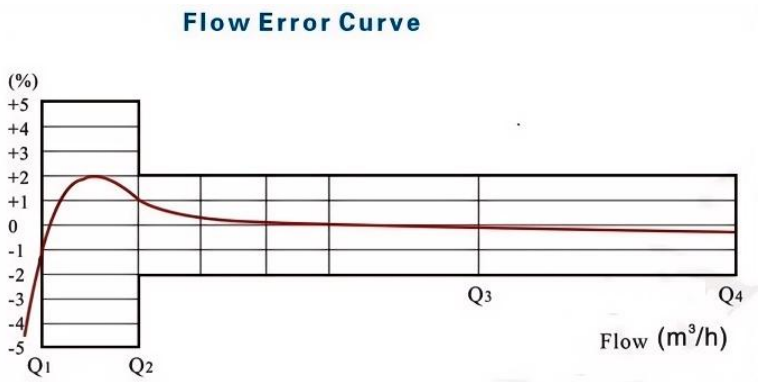
- **Maximum Permissible Error:**

1. In the lower zone from Qmin(Q1) inclusive up to but excluding Qt (Q2) is ±5%.
2. In the upper zone from Qt(Q2) inclusive up to and including Qmax(Q4) is ±2%(cold water meter).
3. In the upper zone from Qt(Q2) inclusive up to and including Qmax (Q4) is ±3% (hot water meter).

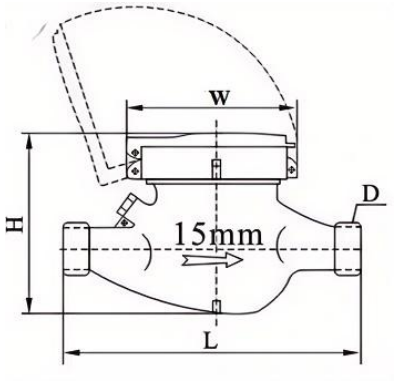
- **Pressure Loss**




- **Flow Error**



- **Dimension Diagram**




- **Dimension**

| Meter Size | Length (L) | Width (W) | Height(H) | Connecting Thread |
|---|---|---|---|---|
| mm | mm | | | D |
| 15 | 165 | 95 | 115 | G3/4B |
| 20 | 190 | 100 | 121 | G1B |

L1: the total length with connection and the gasket without compression.

- **Technical Specification**

| Size | Class | Q4 Maximum flow | Q3 Nominal flow | Q2 Transitional flow | Q1 Min flow | Min reading | Max reading |
|---|---|---|---|---|---|---|---|
| DN(mm) | Class | $m^3/h$ | | L/h | | $m^3$ | |
| 15 | R160 | 3.125 | 2.5 | 25 | 15.625 | 0.00005 | 99999 |
| | R200 | 3.125 | 2.5 | 20 | 12.5 | 0.00005 | 99999 |
| 20 | R160 | 5 | 4 | 40 | 25 | 0.00005 | 99999 |
| | R200 | 5 | 4 | 32 | 20 | 0.00005 | 99999 |

### 3.2.2 Horizontal Dry-type Volumetric Meter

- **Introduction:**

This is a horizontal volumetric water meter with the mechanical transmission and dry register, for residential application in sizes 15mm-20mm for cold water.

- **Features:**

1. Ensures high sensitivity and accurate registration throughout a wide flow range.
2. Low starting flow rate and excellent metrological performance.
3. Magnetic drive, lower transmission resistance.
4. Magnetic shield use for external magnetic field protection.

5. Evacuated and sealed dry dial register ensures clear reading.
6. Internal strainer.
7. Inlet strainer Standard Compliance Technical data conforms to ISO 4064 Class C, Class D, R160, R200, R315 standard.

- **Working Conditions:**

1. Water temperature: ≤50ºC for cold water meter
2. Water pressure: ≤1MPa or 1.6MPa optional (10bar or 16bar optional)

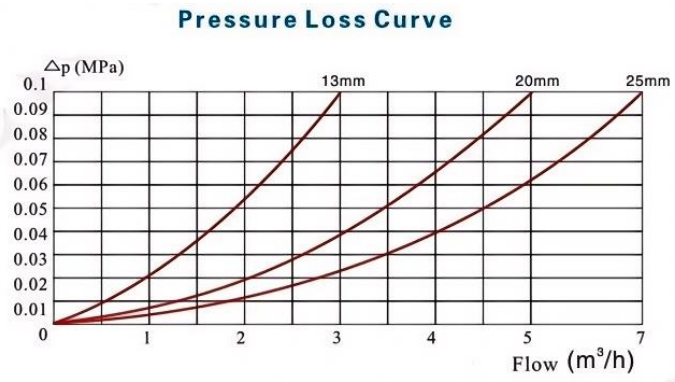
- **Installation requirements:**

1. The meter can be installed in any position.
2. Pipeline must be flushed before installation.
3. The meter should be constantly full of water during operation.
4. The meter must be installed with the direction of the flow as indicated by the arrow cast in the meter body.

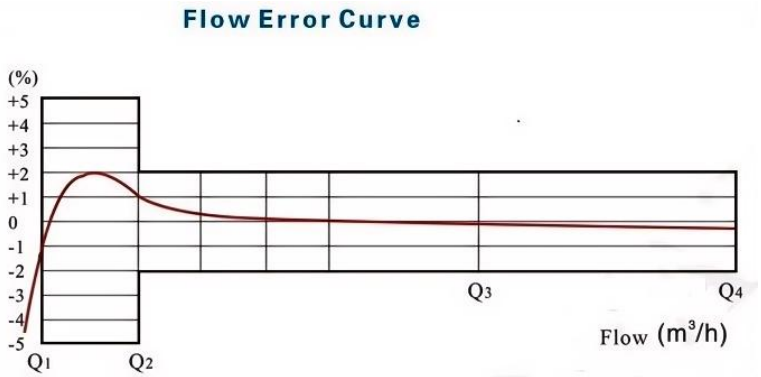
- **Maximum Permissible Error:**

1. In the lower zone from Qmin(Q1) inclusive up to but excluding Qt (Q2) is ±5%.
2. In the upper zone from Qt(Q2) inclusive up to and including Qmax(Q4) is ±2%(cold water meter).

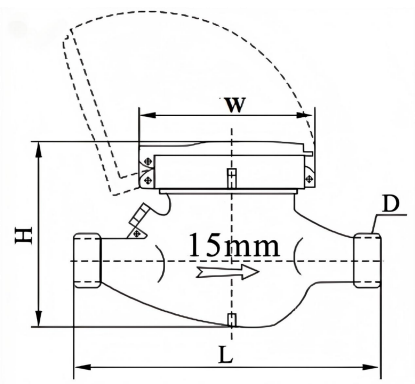
- **Pressure Loss**




- **Flow Error**




- **Dimension Diagram**



- **Dimension**

| Meter Size | Length(L) | Width(W) | Height(H) | Connection Thread | Weight |
|---|---|---|---|---|---|
| mm | mm | | | D | kg |
| 15 | 165 | 94 | 107.5 | G 3/4B | 0.54 |
| 20 | 190 | 94 | 107.5 | G 1B | |

- **Technical Specification**

| Size | Class | Q4 | Q3 | Q2 | Q1 | Min reading | Max reading |
|---|---|---|---|---|---|---|---|
| | | Maximum Flowrate | Nominal Flowrate | Transitional Flowrate | Min Flowrate | | |
| DN(mm) | | $m^3/h$ | | L/h | | $m^3$ | |
| 15 | R160 | 3.125 | 2.5 | 25 | 15.625 | 0.00005 | 99999 |
| | R200 | | | 20 | 12.5 | | |
| | R315 | | | 12.7 | 7.94 | | |
| 20 | R160 | 5 | 4 | 40 | 25 | 0.00005 | 99999 |
| | R200 | | | 32 | 20 | | |
| | R315 | | | 20.32 | 12.7 | | |

# 4. Woltman Water Meter

## 4.1 Horizontal Installation

### 4.1.1 Horizontal Woltman Helix Water Meter

- **Introduction**

The Woltman helix water meter, designed for horizontal installation, is a leading choice in turbine water metering devices. It features a helical-shaped impeller parallel to or coinciding with the water pipeline axis. This design ensures precision and ease in water flow measurement.

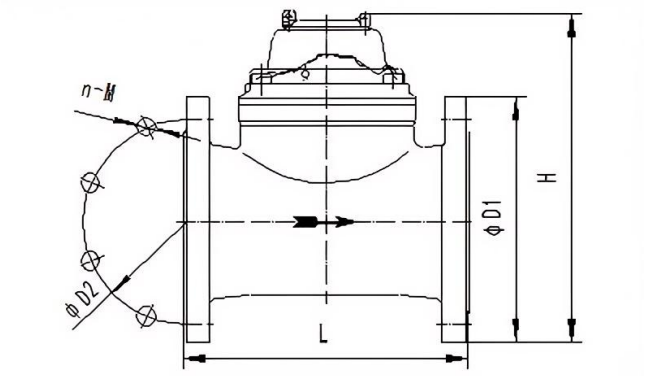
- **Features**

1. The indicator mechanism utilizes magnetic transmission to safeguard against magnetic interference.
2. Features a dry dial with vacuum sealing, ensuring fog-free and clear readings over time.
3. Removable structure simplifies maintenance and repair without needing to detach the meter housing from the pipeline.
4. Built with selected high quality materials for consistent and reliable operation.
5. Customization available with an optional remote pulse output, catering to specific user needs.

- **Working Conditions**

1. Efficient performance with low pressure loss.
2. Suitable for cold water (up to 50°C) and hot water (up to 90°C), except for wet and liquid-sealed meter types.
3. Water pressure ≤1MPa or 1.6MPa.

- **Dimension Diagram**




- **Dimension**

| Model | Length L | Height H | External diameter of flange D1 | Bolt circle diameter D2 | Connection bolt n-M |
|---|---|---|---|---|---|
| | mm | mm | mm | mm | mm |
| WDHW-40 | 200 | 208 | 150 | 110 | 4-M16 |
| WDHW-50 | 200 | 215 | 165 | 125 | 4-M16 |
| WDHW-65 | 200 | 215 | 185 | 145 | 4-M16 |
| WDHW-80 | 225 | 279 | 200 | 160 | 8-M16 |
| WDHW-100 | 250 | 289 | 220 | 180 | 8-M16 |
| WDHW-125 | 250 | 299 | 250 | 210 | 8-M16 |
| WDHW-150 | 300 | 319 | 285 | 240 | 8-M20 |
| WDHW-150D | 300 | 360 | 285 | 240 | 8-M20 |
| WDHW-200 | 350 | 346 | 340 | 295 | 8-M20 |
| WDHW-20OD | 350 | 385 | 340 | 295 | 12-M20(MAP16) |
| WDHW-250D | 450 | 430 | 395 | 350 | 12-M20 |
| | 450 | 450 | 405 | 355 | 12-M24(MAP16) |
| WDHW-30OD | 500 | 480 | 445 | 400 | 12-M20 |
| | 500 | 478 | 460 | 410 | 2-M24(MAP16) |

- **Technical Specification**

| Nominal Diameter | Q3/Q1 | Overload Flowrate Q4 | Permanent Flowrate Q3 | Q2/Q1 | Transitional Flowrate Q2 | Minimal Flowrate Q1 | Resolution of reading | | Maximum reading | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | P type | M type | P type | M type |
| mm | | m³/h | m³/h | | m³/h | | m³ | | | |
| 40 | 50 | 31.3 | 25 | 1.6 | 0.8 | 0.5 | 0.0005 | 0.0002 | 999999 | 999999 |
| | 50 | 31.3 | 25 | 4 | 2 | 0.5 | | | | |
| | 80 | 31.3 | 25 | 1.6 | 0.5 | 0.32 | | | | |
| | 80 | 31.3 | 25 | 4 | 1.28 | 0.32 | | | | |
| 50 | 50 | 31.3 | 25 | 1.6 | 0.8 | 0.5 | | | | |
| | 50 | 31.3 | 25 | 4 | 2 | 0.5 | | | | |
| | 80 | 31.3 | 25 | 1.6 | 0.5 | 0.32 | | | | |
| | 80 | 31.3 | 25 | 4 | 1.28 | 0.32 | | | | |
| 65 | 50 | 50 | 40 | 1.6 | 1.28 | 0.8 | | | | |
| | 50 | 50 | 40 | 4 | 3.2 | 0.8 | | | | |
| | 80 | 50 | 40 | 1.6 | 0.8 | 0.5 | | | | |
| | 80 | 50 | 40 | 4 | 2 | 0.5 | | | | |
| 80 | 50 | 78.75 | 63 | 1.6 | 2 | 1.26 | 0.002 | 0.002 | 9999999 | 9999999 |
| | 50 | 78.75 | 63 | 4 | 5.04 | 1.26 | | | | |
| | 80 | 78.75 | 63 | 1.6 | 1.3 | 0.79 | | | | |
| | 80 | 78.75 | 63 | 4 | 3.2 | 0.79 | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | 50 | 125 | 100 | 1.6 | 3.2 | 2 | | | | |
| | 50 | 125 | 100 | 4 | 8 | 2 | | | | |
| | 80 | 125 | 100 | 1.6 | 2 | 1.25 | | | | |
| | 80 | 125 | 100 | 4 | 5 | 1.25 | | | | |
| 125 | 50 | 200 | 160 | 1.6 | 5.12 | 3.2 | | | | |
| | 50 | 200 | 160 | 4 | 12.8 | 3.2 | | | | |
| | 80 | 200 | 160 | 1.6 | 3.2 | 2 | | | | |
| | 80 | 200 | 160 | 4 | 8 | 2 | | | | |
| 150 | 50 | 312.5 | 250 | 1.6 | 8 | 5 | | | | |
| | 50 | 312.5 | 250 | 4 | 20 | 5 | | | | |
| | 80 | 312.5 | 250 | 1.6 | 5 | 3.1 | | | | |
| | 80 | 312.5 | 250 | 4 | 12.4 | 3.1 | | | | |
| 200 | 50 | 500 | 400 | 1.6 | 12.8 | 8 | | | | |
| | 50 | 500 | 400 | 4 | 32 | 8 | | | | |
| | 80 | 500 | 400 | 1.6 | 8 | 5 | | | | |
| | 80 | 500 | 400 | 4 | 20 | 5 | | | | |
| 250 | 25 | 787.5 | 630 | 1.6 | 40.32 | 25.2 | 0.02 | 0.02 | 9999999 | |
| | 25 | 787.5 | 630 | 4 | 100.18 | 25.2 | | | | |
| | 50 | 787.5 | 630 | 1.6 | 20.16 | 12.6 | | | | |
| | 50 | 787.5 | 630 | 4 | 50.4 | 12.6 | | | | |
| 300 | 25 | 1250 | 1000 | 1.6 | 64 | 40 | | | | |
| | 25 | 1250 | 1000 | 4 | 160 | 40 | | | | |
| | 50 | 1250 | 1000 | 1.6 | 32 | 20 | | | | |
| | 50 | 1250 | 1000 | 4 | 80 | 20 | | | | |

## 4.2 Vertical Installation

### 4.2.1 Vertical Woltman Helix Water Meter

- **Introduction:**

This meter is known for its dynamic flow handling and minimal pressure impact. When water courses through this meter, it drives the uniquely shaped helical impeller in an axial flow, converting the water's velocity into a quantifiable volume displayed on the meter.

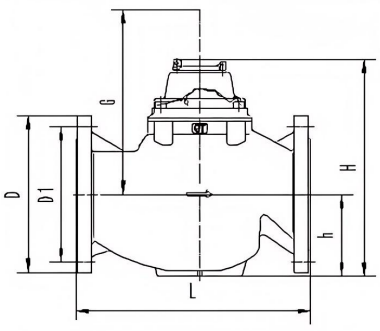
- **Working Conditions**

1. Suitable for cold water ≤50℃.
2. Water pressure ≤1MPa, 1.6MPa.
3. Upstream & downstream flow field sensitivity class: UO DO.

- **Features**

1. Vertical Woltman helix water meter reduces friction and enhances lifespan.
2. A stainless steel strainer is built into the meter, saving the cost and hassle of external filters.
3. Capable of handling a variety of flow rates, making it versatile for multiple applications.
4. Equipped to adapt to modern metering needs with options for remote data transmission.

- **Dimension Diagram**



- **Dimension**

| Model | Length | Height | | | Connecting flange GB/T17241.6-1998 | | |
|---|---|---|---|---|---|---|---|
| | L | H | h | G | External diameter of flange D | Bolt circle diameter D1 | Connection bolt n-M |
| | mm | | | | | | |
| 40 | 280 | 228 | 85 | 268 | 150 | 110 | 4-M16 |
| | 245 | 218 | 75 | 260 | Threaded connection G2B | | |
| 50 | 280 | 228 | 85 | 268 | 165 | 125 | 4-M16 |
| 65 | 200 | 235 | 85 | 280 | 185 | 145 | 4-M16 |
| 80S | 225 | 282 | 103 | 344 | 200 | 160 | 8-M16 |
| 80 | 370 | 282 | 103 | 344 | 200 | 160 | 8-M16 |
| 100S | 250 | 303 | 116 | 350 | 220 | 180 | 8-M16 |
| 100 | 370 | 303 | 116 | 350 | 220 | 180 | 8-M16 |
| 125 | 250 | 302 | 118 | 365 | 250 | 210 | 8-M16 |
| 150 | 500 | 430 | 155 | 565 | 285 | 240 | 8-M20 |
| 200 | 500 | 505 | 190 | 384 | 340 | 295 | 8-M20 |
| | 500 | 505 | 190 | 384 | 340 | 295 | 12-M20 (MAP16) |

- **Technical Specification**

| Nominal Diameter | Overload Flowrate Q4 | Permanent Flowrate Q3 | Q3/Q1 | Q2/Q1 | Transitional Flowrate Q2 | Minimal Flowrate Q1 | Maximum Reading | Resolution of Reading | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | P type | M type |
| mm | | | | | $m^3/h$ | | $m^3$ | | |
| 40<br>50<br>65 | 50 | 40 | 160 | 1.6 | 0.4 | 0.25 | 999999 | 0.0005 | 0.0002 |
| | | | | 6.3 | 1.6 | 0.25 | | | |
| | | | 200 | 1.6 | 0.32 | 0.2 | | | |
| | | | | 6.3 | 1.26 | 0.2 | | | |
| 80 | 78.8 | 63 | 160 | 1.6 | 0.64 | 0.4 | | | |
| | | | | 6.3 | 2.5 | 0.4 | | | |
| | | | 200 | 1.6 | 0.5 | 0.32 | | | |
| | | | | 6.3 | 2 | 0.32 | | | |
| 100<br>125 | 125 | 100 | 160 | 1.6 | 1 | 0.63 | | | |
| | | | | 6.3 | 3.97 | 0.63 | | | |
| | | | 200 | 1.6 | 0.8 | 0.5 | | | |
| | | | | 6.3 | 3.2 | 0.5 | | | |
| 150 | 313 | 250 | 160 | 1.6 | 2.56 | 1.6 | | | |
| | | | | 6.3 | 10 | 1.6 | | | |
| | | | 200 | 1.6 | 2 | 1.25 | | | |
| | | | | 6.3 | 7.9 | 1.25 | | | |
| 200 | 500 | 400 | 160 | 1.6 | 4 | 2.5 | | | |
| | | | | 6.3 | 16 | 2.5 | | | |
| | | | 200 | 1.6 | 3.2 | 2 | | | |
| | | | | 6.3 | 12.6 | 2 | | | |

## 4.3 Combination Installation

### 4.3.1 Combination Woltman Water Meter

- **Introduction:**

Our extensive experience in the water meter industry is reflected in our combination water meters, commonly known in the sector as compound water meters. These meters combine two different sizes, making them adaptable to a variety of water flow situations. They're designed to accurately measure water usage in both small and large pipelines, making them a reliable choice for places where water use fluctuates.

- **Applications**

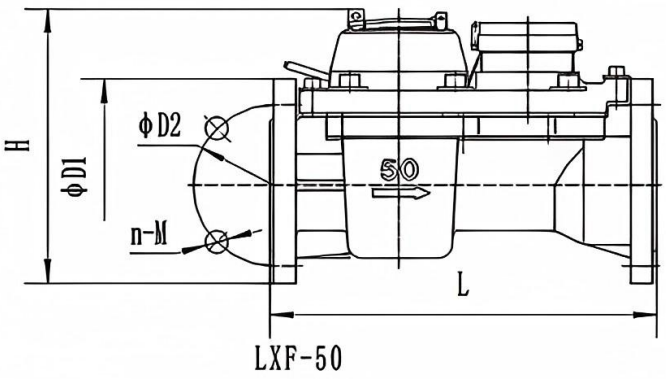
Combination water meters are used in situations with non-continuous, high-volume water supply. They are perfect for environments where water use varies significantly, experiencing frequent peaks and troughs in consumption.

- **Features**

Broad measurement scope: Ranging from the minimum flow of the bypass small diameter meter to the common flow of the large diameter main meter, achieving a range ratio of 1250 to 3000.

Innovative design: The meters feature a novel structure where the mechanism and flow conversion control valves are insertable and detachable, simplifying maintenance and cleaning.

- **Dimension Diagram**




- **Dimension**

| Nominal diameter | Length L | Width B | Height H | Connecting flange GB/T17241.6-1998 | | |
|---|---|---|---|---|---|---|
| mm | mm | mm | mm | External diameter of flange D1 | Bolt circle diameter D2 | Connection bolt n-M |
| 50 | 300 | —— | 213 | 165 | 125 | 4-M16 |
| 80 | 370 | 310 | 279 | 200 | 160 | 8-M16 |
| 100 | 370 | 330 | 289 | 220 | 180 | 8-M16 |
| 150 | 500 | 445 | 319 | 285 | 240 | 8-M20 |
| 200 | 550 | 516 | 383 | 340 | 295 | 8-M20 |

- **Technical Specification**

| Nominal Diameter | Overload Flowrate Q4 | Permanent Flowrate Q3 | Q3/Q1 | Q2/Q1 | Transitional Flowrate Q2 | Minimal Flowrate Q1 | Resolution of Reading | Maximum reading | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | P type | M type |
| | | | | | $m^3/h$ | | $m^3$ | | |
| 50 | 31.25 | 25 | 800 | 1.6 | 0.05 | 0.03 | 0.00005 | 99999; 999999 | 99999; 9999999 |
| 80 | 78.8 | 63 | 1250 | 1.6 | 0.08 | 0.05 | | | |
| | 78.8 | 63 | 1250 | 4 | 0.2 | 0.05 | | | |
| 100 | 125 | 100 | 1250 | 1.6 | 0.13 | 0.08 | | | |
| | 125 | 100 | 1250 | 4 | 0.32 | 0.08 | | | |
| 150 | 312.5 | 250 | 1250 | 1.6 | 0.32 | 0.2 | | | |
| | 312.5 | 250 | 1250 | 4 | 0.8 | 0.2 | | | |
| 200 | 500 | 400 | 1250 | 1.6 | 0.5 | 0.3 | | | |
| | 500 | 400 | 1250 | 4 | 1.3 | 0.3 | | | |

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