

EW171 Series Woltman Bulk Water Meters

DN50...300 FOR COLD AND WARM POTABLE WATER APPLICATIONS

PRODUCT DATA



EW171, DN50



EW171, DN400

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GENERAL

Application

Honeywell EW171 Series Woltman water meters are used for volume measurement of cold or warm water in potable water networks. They are available for cold water up to 30°C (EW1710) or for warm water up to 130°C (EW1711).

They have a mechanical counter with rollers and dials and can be equipped with clip-on modules for remote readout applications. Clip-on modules are available for wired M-Bus, pulse out and RF (OMS, 848MHz). The clip-on modules are retrofittable.

Features

- Suitable for horizontal and vertical installation
- Low pressure loss
- Rugged design for longterm accuracy
- Retrofittable clip-on modules for remote readout

Design

EW171 Series water meters consist of:

- Mechanical counter
- Woltman WP type mechanical flow sensor
- Housing with flanges to PN16
- Optional clip-on module for remote readout

Materials

- Counter housing and lid made of dark plastic
- Flow sensor housing made of cast iron, painted blue (cold water version) or red (warm water version)

Approvals

EW171 Series bulk water meters have MID approval under approval number SK08-MI001-SMU002 (for cold water) and SK10-MI001-SMU013 (for warm water).



Fig. 1. EW171 Series main components

Table 1. EW171 Series main components

| Number | Component |
|--------|---------------------|
| 1 | Counter lid |
| 2 | Roller counter |
| 3 | Decimal place dials |
| 4 | Counter housing |
| 5 | Inlet |
| 6 | Flow sensor housing |
| 7 | Outlet |

TECHNICAL DETAILS

Specifications

| | | | |
|-----------------------------|--|------------------------------|--|
| Sizes | DN50...300 Q3 40...1,600 (EW1710) Q3 25...1,000 (EW1711) | Electromagnetic class | E1 |
| Medium | Potable water | Measuring process | Mechanical counter with Woltman WP type flow measurement |
| Temperature class | EW1710: T30, T50 EW1711: T130 | Display | Six-digit roller counter with three dials for decimal places |
| Medium temperature | EW1710: 0.1...30°C EW1711: 0.1...130°C | Display unit | m ³ |
| Ambient temperature | 5...55°C | Display range | DN50...125: 10 ⁶ m ³ DN150...300: 10 ⁷ m ³ |
| Water pressure class | MAP16 (max. 16bar) | Increments | DN50...125: 0.0005m ³ DN150...250: 0.005m ³ DN300: 0.05m ³ |
| Op. pressure range | 0.3...16bar | Acceptable error | ±5% (Q ₁ ≤Q≤Q ₂) ±2% (Q ₂ ≤Q≤Q ₄ for 0.1≤T≤30°C ±3% (Q ₂ ≤Q≤Q ₄ for T>30°C) |
| Pressure loss class | ΔP16 (max. 16kPa) | Installation position | H, V (horizontal, vertical) |
| Protection class | IP66 | | |
| Environmental class | B | | |
| Mechanical class | M1 | | |

Flow Data

Table 2. Flow rates EW1710, for cold water applications

| DN size | | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
|------------------------------------|--------------------------------|-----------|-----------|------------|------------|------------|------------|------------|--------------|--------------|
| <i>Flow rates according to MID</i> | | | | | | | | | | |
| Minimum (Q₁) | m ³ /h | 0.4 | 0.5 | 0.63 | 0.8 | 1.6 | 2 | 5 | 10 | 16 |
| Transition (Q₂) | m ³ /h | 0.64 | 0.8 | 1 | 1.3 | 2.5 | 3.2 | 8 | 16 | 26 |
| Permanent (Q₃) | m ³ /h | 40 | 63 | 100 | 160 | 250 | 400 | 630 | 1,000 | 1,600 |
| Overload (Q₄) | m ³ /h | 50 | 78.8 | 125 | 200 | 313 | 500 | 788 | 1,250 | 2,000 |
| Dynamic range | Q ₃ /Q ₁ | R100 | R125 | R160 | R200 | R160 | R200 | R125 | R100 | R100 |
| <i>Additional flow data</i> | | | | | | | | | | |
| Starting flow | m ³ /h | 0.15 | 0.2 | 0.25 | 0.25 | 0.5 | 1.0 | 1.5 | 3 | 8 |

Table 3. Flow rates EW1711, for warm water applications

| DN size | | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
|------------------------------------|--------------------------------|-----------|-----------|-----------|------------|------------|------------|------------|------------|--------------|
| <i>Flow rates according to MID</i> | | | | | | | | | | |
| Minimum (Q₁) | m ³ /h | 0.63 | 1 | 1.58 | 2.5 | 4 | 6.3 | 10 | 25 | 40 |
| Transition (Q₂) | m ³ /h | 1 | 1.6 | 2.5 | 4 | 6.4 | 10 | 16 | 40 | 64 |
| Permanent (Q₃) | m ³ /h | 25 | 40 | 63 | 100 | 160 | 250 | 400 | 630 | 1,000 |
| Overload (Q₄) | m ³ /h | 31.25 | 50 | 78.8 | 125 | 200 | 313 | 500 | 788 | 1,250 |
| Dynamic range | Q ₃ /Q ₁ | R40 | R40 | R40 | R40 | R40 | R40 | R40 | R25 | R25 |
| <i>Additional flow data</i> | | | | | | | | | | |
| Starting flow | m ³ /h | 0.25 | 0.3 | 0.35 | 0.6 | 1.1 | 2 | 4 | 8 | 15 |

Sizing

- EW171 Series water meters must be selected in such a way that typical system flow rates are between transition (Q₂) and permanent flow rate (Q₃)
- The flow rate may not drop below minimum (Q₁) or exceed overload flow rate (Q₄) at any time

Function

Counter

The counter contains a five-digit roller counter for values of whole m³ and dials for tenth, hundredth and thousandth parts of m³. It is flanged to the flow sensor housing.

Displayed value is cumulative (total) flow through the meter.

Flow Sensor

The Woltman technology of the flow sensor combines high measuring accuracy with long term stability and the capability of measuring high volumes at low pressure drop. The Woltman wheel is connected to the counter by a shaft and a magnetic coupling.

Installation

- Calming legs are not required unless bends, pumps or self-acting valves are placed before or after the meter. In such cases calming legs of straight pipe with a minimum length of 6 x DN before and 2 x DN after the meter are required
- All sizes may be installed in either horizontal or vertical position
- The meter must be installed in such a way that the counter faces up or sideways. It must not be installed in such a way that the counter faces downwards
- Avoid installation at highest point of system or system part as air may be trapped in meter
- During measurement meter must be completely filled with water

Remote Readout

EW171 Series water meters can be fitted with clip-on modules for remote readout applications. The clip-on modules are retrofittable and are attached by means of a standardised design which is identical for all sizes DN50...300. Mounting of the modules does not affect approval of the meter. The following modules are available:

- Wired M-Bus, according to EN13757-3
- Pulse output, open collector
- RF, according to OMS, 848MHz

Identification

Counter

- Six-digit roller counter with three dials for decimal places
- Marked with Honeywell logo, Honeywell OS-Number, approval number and key technical data according to requirements of MID
- Set into black plastic collar with lid

Flow Sensor

- Flanged flow sensor housing painted blue (EW1710) or red (EW1711) with DN size and flow arrow embossed on side

Front Panel Contents

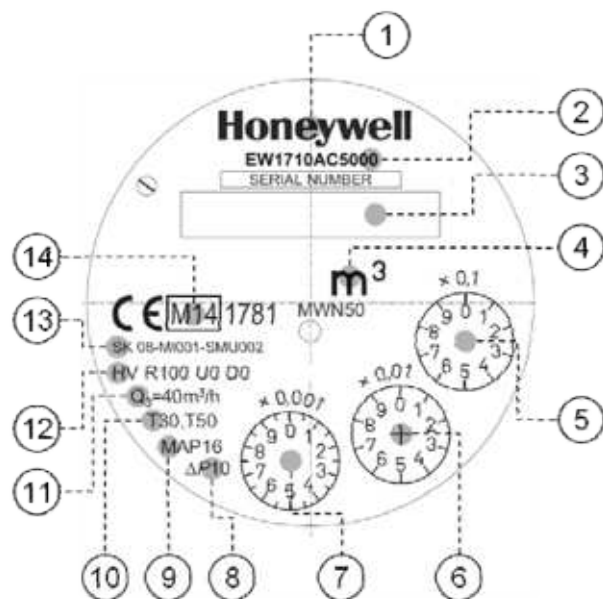


Fig. 2. Frontplate contents of EW1710AC5000

Table 4. EW171 Series frontpanel elements

| Number | Element |
|--------|---|
| 1 | Honeywell logomark |
| 2 | OS-Number |
| 3 | Roller counter |
| 4 | Unit |
| 5 | 0.1 x unit dial |
| 6 | 0.01 x unit dial |
| 7 | 0.001 x unit dial |
| 8 | Differential pressure at nominal flow |
| 9 | Maximum static pressure |
| 10 | Temperature class |
| 11 | Permanent flow Q ₃ |
| 12 | Dynamic range / flow profile resistance class |
| 13 | Approval number |
| 14 | CE mark |

Dimensions

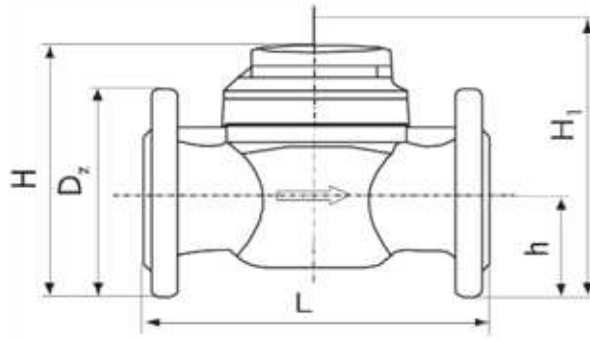


Fig. 3. Dimensions

Table 5. Dimensions EW171 Series

| DN Size | Length L | Height H | Height H ₁ | Height h | Diameter D | Weight |
|---------|-------------|-------------|--------------------------|-------------|---------------|--------|
| 50 | 200 | 187 | 287 | 72 | 165 | 10kg |
| 65 | 200 | 197 | 297 | 83 | 185 | 11kg |
| 80 | 225 | 219 | 239 | 95 | 200 | 14kg |
| 100 | 250 | 229 | 349 | 105 | 220 | 16kg |
| 125 | 250 | 257 | 377 | 120 | 250 | 18kg |
| 150 | 300 | 357 | 582 | 135 | 285 | 40kg |
| 200 | 350 | 382 | 607 | 160 | 340 | 51kg |
| 250 | 450 | 427 | 652 | 193 | 400 | 75kg |
| 300 | 500 | 497 | 722 | 230 | 460 | 103kg |

NOTE: All dimensions in mm unless stated otherwise
Height H₁ = space required for removal of measuring insert

ORDERING DETAILS

Ordering Information

Table 6. OS-Nos. (OS=Order Specification)

| Item | DN size | Permanent flow Q_3 | Length | OS-Number |
|---|---------|------------------------|--------|--------------|
| EW1710A Bulk water meters for cold water | 50 | 40m ³ /h | 200mm | EW1710AC5000 |
| | 65 | 63m ³ /h | 200mm | EW1710AC5600 |
| | 80 | 100m ³ /h | 225mm | EW1710AC6500 |
| | 100 | 160m ³ /h | 250mm | EW1710AC7300 |
| | 125 | 250m ³ /h | 250mm | EW1710AC8100 |
| | 150 | 400m ³ /h | 300mm | EW1710AC8500 |
| | 200 | 630m ³ /h | 350mm | EW1710AC8900 |
| | 250 | 1,000m ³ /h | 450mm | EW1710AC9100 |
| | 300 | 1,600m ³ /h | 500mm | EW1710AC9200 |
| EW1711A Bulk water meters for warm water | 50 | 25m ³ /h | 200mm | EW1711AC5000 |
| | 65 | 40m ³ /h | 200mm | EW1711AC5600 |
| | 80 | 63m ³ /h | 225mm | EW1711AC6500 |
| | 100 | 100m ³ /h | 250mm | EW1711AC7300 |
| | 125 | 160m ³ /h | 250mm | EW1711AC8100 |
| | 150 | 250m ³ /h | 300mm | EW1711AC8500 |
| | 200 | 400m ³ /h | 350mm | EW1711AC8900 |
| | 250 | 630m ³ /h | 450mm | EW1711AC9100 |
| | 300 | 1,000m ³ /h | 500mm | EW1711AC9200 |

Scope of Delivery

- EW170 Series water meter
- Installation and setup instructions

Accessories

Clip-on modules, suitable for all EW171



Wired M-Bus
Pulse output
RF

EW171C-MBUS
EW171C-PO
EW171C-RF

DIAGRAMS

Accuracy

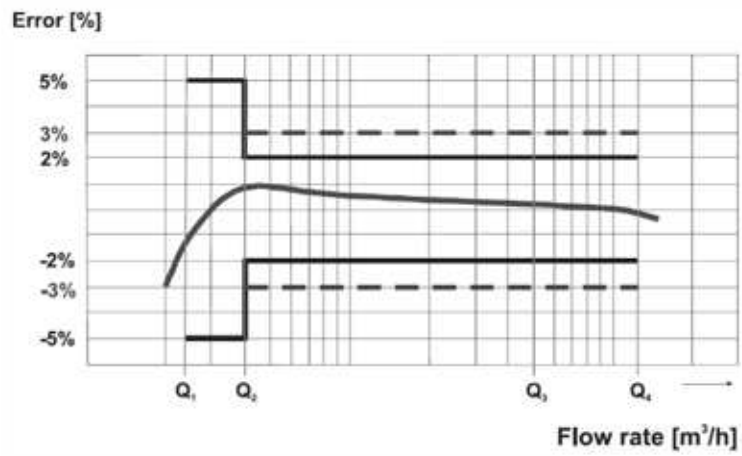


Fig. 4. Accuracy chart EW171 Series

Flow Diagram

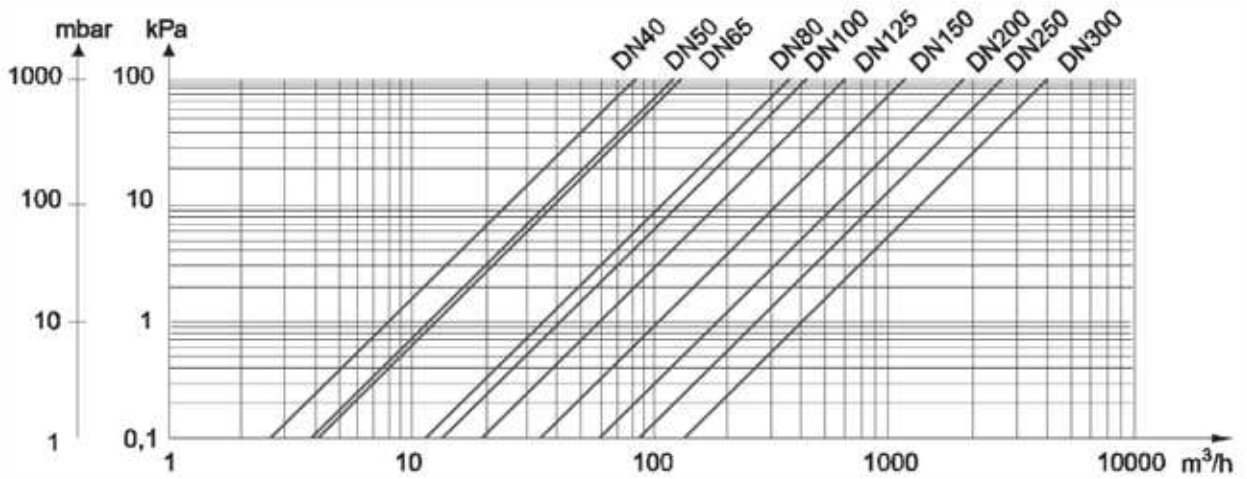


Fig. 5. Pressure drop diagram EW171 Series