

## 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

<b>Sizes</b>	DN50...300 Q3 40...1,600 (EW1710) Q3 25...1,000 (EW1711)	<b>Electromagnetic class</b>	E1
<b>Medium</b>	Potable water	<b>Measuring process</b>	Mechanical counter with Woltman WP type flow measurement
<b>Temperature class</b>	EW1710: T30, T50 EW1711: T130	<b>Display</b>	Six-digit roller counter with three dials for decimal places
<b>Medium temperature</b>	EW1710: 0.1...30°C EW1711: 0.1...130°C	<b>Display unit</b>	m <sup>3</sup>
<b>Ambient temperature</b>	5...55°C	<b>Display range</b>	DN50...125: 10 <sup>6</sup> m <sup>3</sup> DN150...300: 10 <sup>7</sup> m <sup>3</sup>
<b>Water pressure class</b>	MAP16 (max. 16bar)	<b>Increments</b>	DN50...125: 0.0005m <sup>3</sup> DN150...250: 0.005m <sup>3</sup> DN300: 0.05m <sup>3</sup>
<b>Op. pressure range</b>	0.3...16bar	<b>Acceptable error</b>	±5% (Q <sub>1</sub> ≤Q≤Q <sub>2</sub> ) ±2% (Q <sub>2</sub> ≤Q≤Q <sub>4</sub> for 0.1≤T≤30°C ±3% (Q <sub>2</sub> ≤Q≤Q <sub>4</sub> for T>30°C)
<b>Pressure loss class</b>	ΔP16 (max. 16kPa)	<b>Installation position</b>	H, V (horizontal, vertical)
<b>Protection class</b>	IP66		
<b>Environmental class</b>	B		
<b>Mechanical class</b>	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>										
<b>Minimum (Q<sub>1</sub>)</b>	m <sup>3</sup> /h	0.4	0.5	0.63	0.8	1.6	2	5	10	16
<b>Transition (Q<sub>2</sub>)</b>	m <sup>3</sup> /h	0.64	0.8	1	1.3	2.5	3.2	8	16	26
<b>Permanent (Q<sub>3</sub>)</b>	m <sup>3</sup> /h	<b>40</b>	<b>63</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>	<b>1,000</b>	<b>1,600</b>
<b>Overload (Q<sub>4</sub>)</b>	m <sup>3</sup> /h	50	78.8	125	200	313	500	788	1,250	2,000
<b>Dynamic range</b>	Q <sub>3</sub> /Q <sub>1</sub>	R100	R125	R160	R200	R160	R200	R125	R100	R100
<i>Additional flow data</i>										
<b>Starting flow</b>	m <sup>3</sup> /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>										
<b>Minimum (Q<sub>1</sub>)</b>	m <sup>3</sup> /h	0.63	1	1.58	2.5	4	6.3	10	25	40
<b>Transition (Q<sub>2</sub>)</b>	m <sup>3</sup> /h	1	1.6	2.5	4	6.4	10	16	40	64
<b>Permanent (Q<sub>3</sub>)</b>	m <sup>3</sup> /h	<b>25</b>	<b>40</b>	<b>63</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>	<b>1,000</b>
<b>Overload (Q<sub>4</sub>)</b>	m <sup>3</sup> /h	31.25	50	78.8	125	200	313	500	788	1,250
<b>Dynamic range</b>	Q <sub>3</sub> /Q <sub>1</sub>	R40	R40	R40	R40	R40	R40	R40	R25	R25
<i>Additional flow data</i>										
<b>Starting flow</b>	m <sup>3</sup> /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 (Q<sub>2</sub>) and permanent flow rate (Q<sub>3</sub>)
- The flow rate may not drop below minimum (Q<sub>1</sub>) or exceed overload flow rate (Q<sub>4</sub>) at any time

## Function

### Counter

The counter contains a five-digit roller counter for values of whole m<sup>3</sup> and dials for tenth, hundredth and thousandth parts of m<sup>3</sup>. 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

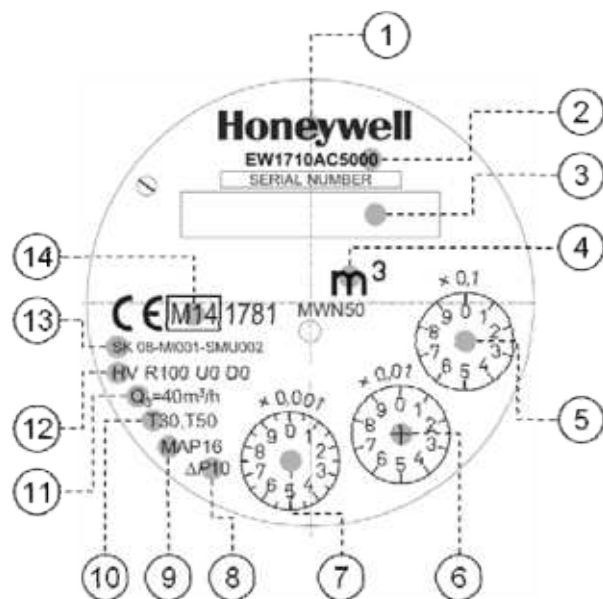


Fig. 2. Frontplate contents of EW1710AC5000

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 <sub>3</sub>
12	Dynamic range / flow profile resistance class
13	Approval number
14	CE mark

## Dimensions

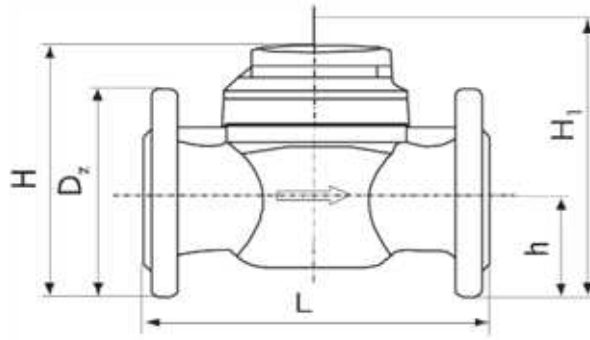


Fig. 3. Dimensions

Table 5. Dimensions EW171 Series

DN Size	Length L	Height H	Height H <sub>1</sub>	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 H<sub>1</sub> = 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
<b>EW1710A</b> Bulk water meters for cold water	50	40m <sup>3</sup> /h	200mm	EW1710AC5000
	65	63m <sup>3</sup> /h	200mm	EW1710AC5600
	80	100m <sup>3</sup> /h	225mm	EW1710AC6500
	100	160m <sup>3</sup> /h	250mm	EW1710AC7300
	125	250m <sup>3</sup> /h	250mm	EW1710AC8100
	150	400m <sup>3</sup> /h	300mm	EW1710AC8500
	200	630m <sup>3</sup> /h	350mm	EW1710AC8900
	250	1,000m <sup>3</sup> /h	450mm	EW1710AC9100
	300	1,600m <sup>3</sup> /h	500mm	EW1710AC9200
<b>EW1711A</b> Bulk water meters for warm water	50	25m <sup>3</sup> /h	200mm	EW1711AC5000
	65	40m <sup>3</sup> /h	200mm	EW1711AC5600
	80	63m <sup>3</sup> /h	225mm	EW1711AC6500
	100	100m <sup>3</sup> /h	250mm	EW1711AC7300
	125	160m <sup>3</sup> /h	250mm	EW1711AC8100
	150	250m <sup>3</sup> /h	300mm	EW1711AC8500
	200	400m <sup>3</sup> /h	350mm	EW1711AC8900
	250	630m <sup>3</sup> /h	450mm	EW1711AC9100
	300	1,000m <sup>3</sup> /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

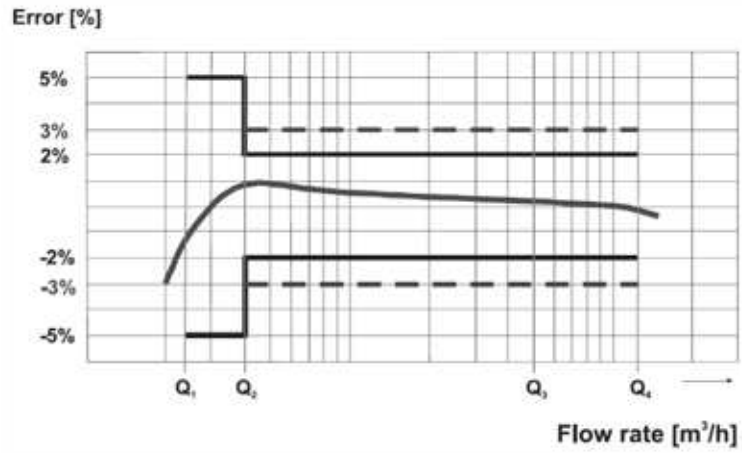


Fig. 4. Accuracy chart EW171 Series

### Flow Diagram

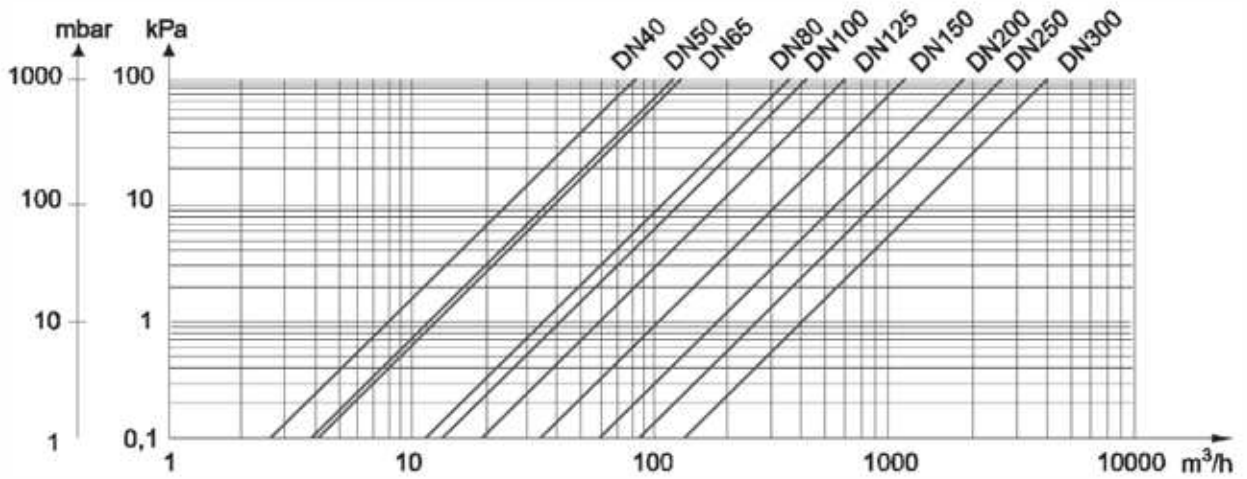


Fig. 5. Pressure drop diagram EW171 Series