

## Flow Sensors for Measuring Volume Flow in Heating & Cooling Systems

### Features

- Reinforced bearings
- High measuring stability
- Compatible with MW-MD integrator



### Specification

Fluid temp. range	10 to 120°C (safety margin 130°C)
Body material	GG25 Grey cast iron, epoxy coated
Flanges	DIN2501 PN16
Max. working pressure	16bar

#### Pulsed output specification:

Switch type	Reed switch proximity sensor
Contracts	Volt free
Max. load current	500mA
Max. switching voltage	180Vdc
Max. contact rating	10W
Connection type	Flying lead
Lead length	2 Meters

### Product Codes

<b>MW-F-50</b>	50mm Flanged Qp15 <sup>3</sup> /h
<b>MW-F-60</b>	65mm Flanged Qp25 <sup>3</sup> /h
<b>MW-F-80</b>	80mm Flanged Qp40 <sup>3</sup> /h
<b>MW-F-100</b>	100mm Flanged Qp60 <sup>3</sup> /h
<b>MW-F-125</b>	125mm Flanged Qp100 <sup>3</sup> /h
<b>MW-F-150</b>	150mm Flanged Qp150 <sup>3</sup> /h
<b>MW-F-200</b>	200mm Flanged Qp250 <sup>3</sup> /h

## An Introduction to Flow Parts for Metering

Sontay offer flow parts for two distinct applications.

### Flow parts for water

Denoted as "water meters" - are used specifically for sanitary water only, i.e. water without additives or chemical treatment, and are designed for non-continuous flow, such as domestic cold and hot water supplies. The total daily flow should not exceed 3 hours, over a 6 year period. Volumetric flows higher than this can lead to increased wear in the bearings of the impellor, causing inaccuracies in reading. Note also that water meters have a narrow fluid temperature range, typically between 0°C to +90°C for hot water meters and 0°C to +30°C for cold water meters.

### Flow parts for heating

Denoted as "flow sensors" - can be used with chemically treated water, and are designed for continuous or very high duty cycle flow conditions typically found in hot water heating systems. Flow sensors have a wider fluid temperature range than water meters, typically between 0°C to +120°C.

### Note:

Because of these distinct differences, only flow parts designed specifically for heat metering should be used for heat metering applications. Although water meters can, in theory, be used for heat meter applications, Sontay cannot warranty water meters if used in this manner.

## Definitions

- Qs, the upper limit of the flow-rate, is the highest flow-rate at which the heat meter shall function for short periods (< 1h / day; < 200 h / year), without the maximum permissible errors being exceeded.
- Qp, the permanent flow-rate, is the highest flow-rate at which the heat meter shall function continuously without the maximum permissible errors being exceeded.
- Qi, the lower limit of the flow-rate, is the lowest flow-rate above which the heat meter shall function without the maximum permissible errors being exceeded.

## Technical Overview

The MW-FS range of flow sensors are meters especially designed for the special conditions in heating and cooling circuits. The pulse transmission takes place via the tried and tested reed-contact and is thus, compatible with the MW-MD.

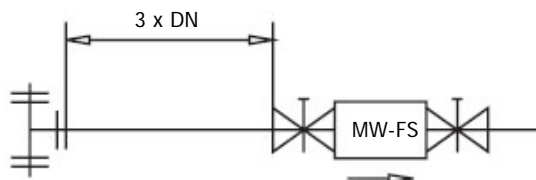
The special construction and the material design guarantee long-term measuring stability and high reliability. All of the flow sensors are designed for temperatures up to 120°C with safety up to 130°C.

MW-FS flow sensors (DN50 to 200) can be installed horizontally or vertically. They are characterised by extremely low starting flows with high measuring accuracy and excellent measuring stability – even in the most extreme of situations. This applies for the upper, as well as the lower measuring ranges.

## Installation & Location

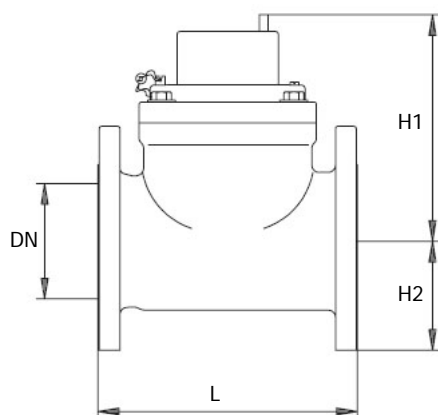
Water meters should always be fitted with a minimum of 3x pipe diameter upstream.

For example, a 65mm water meter would have 195mm before the meter as straight pipe. This is to ensure accurate reading by reducing water turbulence. Ideally a straight pipe section of at least 2 x DN is required down stream.



It is recommended as good practice to fit a removable filter element (strainer) before a water meter to protect the mechanism.

## Dimensions & Performance Data (continued)



	MW-F-50	MW-F-65	MW-F-80	MW-F-100	MW-F-125	MW-F-150	MW-F-200
H1	141	141	141	200	200	244	244
H2	75	82.5	94	110	125	135	163
L	200	200	225	250	250	300	350
DN	50	65	80	100	125	150	200
Bolt holes	4	4	8	8	8	8	8/ 12
Weight	10	11	13.34	15.53	21	40	50

All measurements mm unless otherwise stated.

	MW-xF-50	MW-xF-65	MW-xF-80	MW-xF-100	MW-xF-125	MW-CF-150	MW-CF-200
Upper Limit (m <sup>3</sup> /h)	60	60	90	180	250	300	500
Permanent (m <sup>3</sup> /h)	15	25	40	60	100	150	250
Lower limit (m <sup>3</sup> /h)	0.6	1	3.2	2	3	8	10

## Terms Of Reference

### Upper limit (maximum) flow-rate - $Q_s$

The highest flow-rate at which the water meter is required to operate in a satisfactory manner for a short period of time without deterioration.

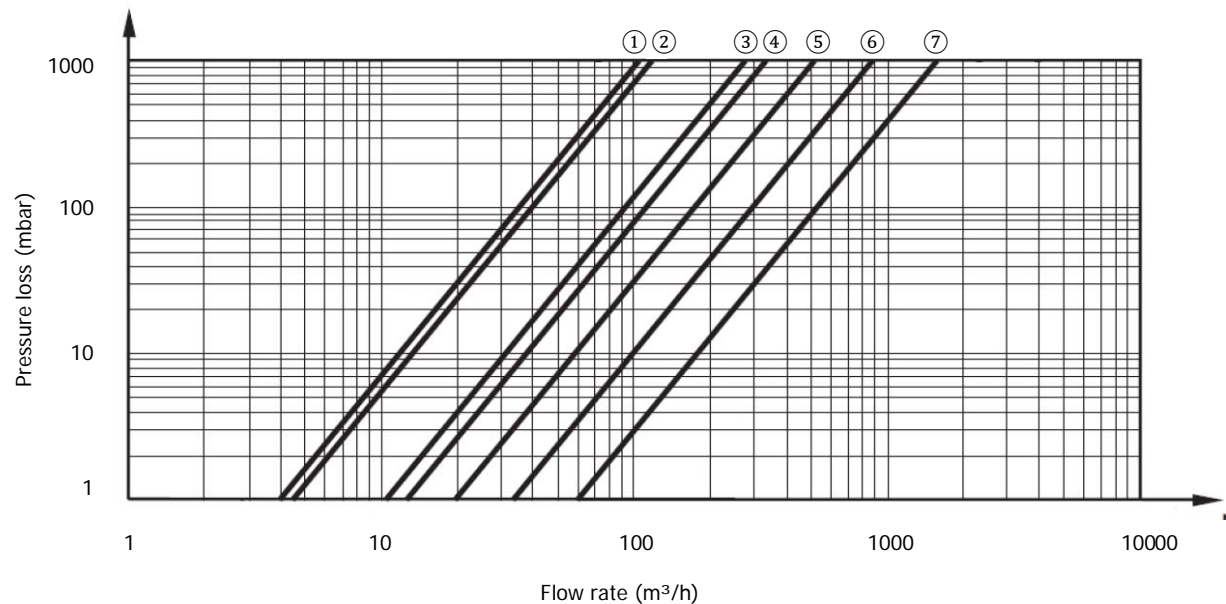
### Permanent (Nominal) flow-rate - $Q_p$

Flow-rate at which the water meter is required to operate under normal conditions of use, e.g. under steady and/or intermittent flow conditions.

### Lower limit (minimum) flow-rate - $Q_l$

The lowest flow-rate at which the water meter is required for the meter to function

## Error Curves & Head Loss Tables



- ①  $Q_n$  15  $m^3/h$
- ②  $Q_n$  25  $m^3/h$
- ③  $Q_n$  40  $m^3/h$
- ④  $Q_n$  60  $m^3/h$
- ⑤  $Q_n$  100  $m^3/h$
- ⑥  $Q_n$  150  $m^3/h$
- ⑦  $Q_n$  250  $m^3/h$