

Sizing of Hot Water Meters

1. Go to the Endress Hauser web page: <https://www.us.endress.com/en>
2. Click on "Go to Applicator"

The screenshot shows the top navigation bar of the Endress+Hauser website. It includes links for 'About us', 'Media', 'Events', 'Career', 'Product tools', 'Downloads', 'Contact', and 'E-direct'. On the right side, there are icons for a shopping cart (labeled '0'), 'MyAccount', and a search icon (labeled 'Search'). Below the navigation bar, there is a 'USA' dropdown menu. The main header features the 'Endress+Hauser' logo with the tagline 'People for Process Automation' and a navigation menu with 'Industries', 'Products', 'Solutions', and 'Services'. The main banner image shows a person sitting on a rock at sunset, with a white text box on the left containing the text: 'New possibilities, new experiences. Personal and digital. e-Commerce now on endress.com! More information »'. Below the text box are four numbered tabs: '01', '02', '03', and '04'.

Product finder

Our product finder helps you to search for suitable measuring devices, software or system components via product characteristics. Applicator leads you through an individual product selection via application parameters.

[Go to product finder](#)

[Go to Applicator](#)

Sizing of Hot Water Meters

While in the 'Applicator' page

3. Select 'Flow' under the 'Product Sizing'

4. Select 'Liquids/Gas/Steam'

The screenshot shows the 'Applicator' web interface for Endress+Hauser. The page title is 'Product selection via application parameters'. The main navigation bar includes 'Home', 'Help', and 'Contact'. The 'Your Industry' section lists six categories: Chemical, Water & Wastewater, Food & Beverage, Life Sciences, Oil & Gas, and Power & Energy, each with a representative image. The 'Product Selection' section is titled 'Best matching your application requirements' and features a grid of dropdown menus for Level, Pressure, Flow, Temperature, Analysis, Density, Viscosity, Software, and System Products. The 'Product Sizing' section is titled 'Perfectly supporting your dimensioning' and features a grid of dropdown menus for Level, Pressure, Flow, and Temperature. The 'Flow' dropdown menu is expanded, showing options: Liquids/Gas/Steam, Density/Concentration, and Teqwave concentration app finder. The 'Liquids/Gas/Steam' option is highlighted with an orange arrow and a box containing the number '4.'. Below the dropdowns, there is a link: 'Find the best fitting flow successor device'.

Sizing of Hot Water Meters

5. Select 'Monitoring/Control' under 'Measuring task'

6. Select 'Water' and then 'Water, process' under 'Fluid'

Product selection via application parameters Close X

Applicator Endress+Hauser EH

Home Help Contact v

Sizing Flow Dimensioning of flowmeters

Sizing

General parameters

Measuring task i Monitoring/Control v 5. Principle/Sensor i -- choose v

Fluid i -- choose v Find ... a.

Standard/State i

TAG i

User hint

Please select in the following order:

1. Measuring task
2. Fluid
3. Principle/Sensor
4. Transmitter

Then, the process requires:

Reset

Fluid Category	Fluid Name
Liquids	Water Ethylene Glycol 30%
Liquids	Water Ethylene Glycol 60%
Liquids	Water, Chemical effluent
Liquids	Water, de-ionised
Liquids	Water, degassed
Liquids	Water, highly purified
Liquids	Water, potable
Liquids	Water, process
Liquids	Water, purified
Liquids	Water, Sea
Gases	
Natural gases	
Liquid gases	
Cryogenic liquids	
Steam	
Organic substances (e.g. Hydrocarbons)	
Inorganic substances (e.g. Acids, Alkalis)	
Foods	
Non-Newtonian fluids	

Sizing of Hot Water Meters

7. Select 'Electromagnetic (Promag)' and then 'Promag P (100, 200, 300, 500)' under 'Principle/Sensor'

Product selection via application parameters Close X

Applicator Endress+Hauser

Home Help Contact

Sizing Flow Dimensioning of flowmeters

General parameters

Measuring task: Monitoring/Control

Fluid: Water, process

Standard/State: IAPWS

TAG:

User hint

Please select in the following order:

1. Measuring task
2. Fluid
3. Principle/Sensor
4. Transmitter

Then, the process requirements can be entered!

Find ...

New generation

- Picomag
- Promag D (400)
- Promag L (400)
- Promag W (400, 500, 800)
- Promag H (100, 200, 300, 500)
- Promag E (100)
- Promag P (100, 200, 300, 500)**

Current generation

- Promag D (10)
- Promag L (10)

Promag P (100, 200, 300, 500)

Generation 3

Model

7.

Reset

Sizing of Hot Water Meters

8. Select '100' under 'Transmitter'

Product selection via application parameters Close X

Applicator Endress+Hauser

Home Help Contact

Sizing Flow Dimensioning of flowmeters

Sizing

General parameters

Measuring task Principle/Sensor Generation

Fluid Transmitter Model

Standard/State Flow meter

TAG Extended Order Code 8.

1 Message(s)

Process data

	minimum	nominal	maximum	Unit
Requested flow (min/nom/max)	<input type="text"/>	<input type="text"/>	<input type="text"/>	USGPH <input type="text"/>
Pressure (at)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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9. In the 'TAG', write the name of the project preceded by HW that stands for Hot Water.
10. Selection of units: USGPM for flow, 'psi_g' for pressure, and '°F' for temperature.

Product selection via application parameters Close

Home Help Contact

Measuring task: Monitoring/Control ▼ Principle/Sensor: Promag P (100, 200, 30) ▼ Generation 3

Fluid: Water, process ▼ Properties Transmitter: 100 ▼ Model: 0 ▼

Standard/State: IAPWS ▼ Liquid Flow meter: Promag P 100

TAG: HW_PROJECT_NAME ▼ Extended Order Code: 5P1B??- ????

1 Message(s)

	minimum	nominal	maximum	Unit
Requested flow (min/nom/max)	<input type="text"/>	<input type="text"/>	<input type="text"/>	USGPM ▼
Pressure (at min/nom/max flow)	<input type="text"/>	<input type="text"/>	<input type="text"/>	psi_g ▼
Temp. (at min/nom/max flow)	<input type="text"/>	<input type="text"/>	<input type="text"/>	°F ▼

Sizing of Hot Water Meters

11. Using the peak flow, fill the 'Requested flow' cells: minimum, nominal, and maximum.

Maximum = Peak Flow
Minimum = 10% of peak flow
Nominal = 80% of peak flow

Example: hot water peak flow = 100 gpm (designer)
Minimum = 10 gpm
Nominal = 80 gpm
Maximum = 100 gpm

Product selection via application parameters

	minimum	nominal	maximum	Unit
Requested flow (min/nom/max)	10	80	100	USGPM
Pressure (at min/nom/max flow)	70	70	70	psi_g
Temp. (at min/nom/max flow)	90	90	90	°F
Density	62.127	62.127	62.127	lb/ft3
Viscosity	0.76472	0.76472	0.76472	cSt
Vapor pressure	0.699	0.699	0.699	psi_a
Design pressure (min/max)	70		70	psi_g
Design Temp. (min/max)	90		90	°F

	nominal	maximum	Unit	
Requested flow	10	80	100	USGPM
Flow velocity	1.054	8.434	10.54	ft/s
Measured error Volume	0.81	0.54	0.53	%
Meas. error alt. Vol.	0.82	0.28	0.26	%
Reynolds no.	21 009	168 070	210 088	
Meter size	2"			

12. Contact OSU Energy Services.

13.

14.

Good engineering practice - no PED class

Print Sizing Sizing Energy Add to Cart Reset

12. Contact OSU Utilities Engineering in order to obtain the nominal pressure. It depends on the location of the project.

13. The nominal temperature used for sizing hot water (HW) meters is 90 °F.

14. Verify 'Flow velocity' stays into the range between 3.3 and 8.2 ft/s. Change the 'Meter size' if it is necessary to keep the 'Flow velocity' in this range.

From this point, please follow steps 15 through 18 of the "Sizing Domestic Water" document.