

Sizing of Domestic 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 Cart'), '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 Domestic 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 Primaries & Metals. The 'Product Selection' section is titled 'Best matching your application requirements' and includes dropdown menus for Level, Pressure, Flow, Temperature, and Analysis. The 'Product Sizing' section is titled 'Perfectly supporting your dimensioning' and includes 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 'Flow' dropdown, there is a link: 'Find the best fitting flow successor device'.

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

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

The screenshot shows the 'Sizing Flow' application interface for 'Dimensioning of flowmeters'. The 'General parameters' section includes the following fields:

- Measuring task:** Monitoring/Control (indicated by an orange arrow and box labeled '5.')
- Principle/Sensor:** -- choose
- Fluid:** -- choose (indicated by an orange arrow and box labeled '6.')
- Standard/State:** [Empty]
- TAG:** [Empty]

The 'Fluid' dropdown menu is open, showing a list of options. The 'Water' option is highlighted, and the 'Water, process' option is selected (indicated by an orange arrow and box labeled '6.').

User hint:

- Please select in the following order:
- 1. Measuring task
- 2. Fluid
- 3. Principle/Sensor
- 4. Transmitter

Then, the process requires...

Reset

Sizing of Domestic 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

Sizing

General parameters

Measuring task: Monitoring/Control

Fluid: Water, process

Standard/State: IAPWS

TAG:

Find ... Promag P (100, 200, 300, 500) Generation 3

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)

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!

Reset

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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" value=""/>
Pressure (at)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value=""/>

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9. In the 'TAG', write the name of the project preceded by DW that stands for Domestic Water.

10. Selection of units: USGPM for flow, 'psi_g' for pressure, and '°F' for temperature.

Product selection via application parameters Close X

Home Help Contact v

Measuring task *i* Monitoring/Control v Principle/Sensor *i* Promag P (100, 200, 30) v Generation 3

Fluid *i* ^{EST} Water, process v **Properties** Transmitter *i* 100 v Model *i* 0 v 

Standard/State *i* IAPWS v **Liquid** Flow meter *i* Promag P 100

TAG *i* DW_PROJECT_NAME Extended Order Code 5P1B??- ????

9.

1 Message(s) v

Process data *i* **Reference values**

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

10.

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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: domestic water peak flow = 100 gpm (designer)

Minimum = 10 gpm

Nominal = 80 gpm

Maximum = 100 gpm

Product selection via application parameters

Applicator

Endress+Hauser

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): 45 45 45 °F

Density: 62.436 62.436 62.436 lb/ft3

Viscosity: 1.41658 1.41658 1.41658 cSt

Vapor pressure: 0.1476 0.1476 0.1476 psi_a

Design pressure (min/max): 70 70 psi_g

Design Temp. (min/max): 45 45 °F

	minimum	nominal	maximum	Unit
Requested flow	10	80	100	USGPM
Flow velocity	0.422	3.378	4.223	ft/s
Measured error Volume	1.28	0.6	0.58	%
Meas. error alt. Vol.	1.75	0.39	0.36	%
Reynolds no.	7 178	57 424	71 780	

Meter size: 3" +

12. Contact OSU Energy Services.

13.

14.

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 domestic water (DW) meters is 45 °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.

Sizing of Domestic Water Meters

At this point the sizing of domestic water (DW) meter is complete. The next step is to print the results that shall be email to OSU Energy services for approval.

15. Select 'Print Sizing'

16. On the 'Applicator Print Settings' / 'Reports to print', select: 'Sizing', ' Fluid properties', 'Compare sensors (Flow)' 'Trisize (Flow)', and 'Chart'

The screenshot shows the 'Product selection via application parameters' interface. The 'Applicator Print Settings' dialog box is open, displaying the following settings:

- Page Format:** Page size: DIN A4; Page Margins [mm]: Top (0), Left (15), Bottom (0), Right (5); Orientation: Portrait; Language: English (English).
- Reports to print:** Selection and Sizing reports: Sizing, Condensed, Fluid properties, Compare sensors (Flow), Trisize (Flow), Chart, Corrosion info (Flow).

The 'Print Sizing' button at the bottom left is highlighted with a box labeled '15.'. The 'Bottom' margin field in the 'Page Format' section is highlighted with a box labeled '16.', with arrows pointing to the 'Sizing', 'Fluid properties', 'Compare sensors (Flow)', 'Trisize (Flow)', and 'Chart' checkboxes in the 'Reports to print' section.

Sizing of Domestic Water Meters

17. Download the pdf file

The screenshot shows a web application interface for 'Product selection via application parameters'. A central window titled 'DW_PROJECT_NAME' displays a PDF document titled 'Applicator Sizing - Flow'. The PDF content includes project details, a 'Sizing Sheet' table, and flowmeter information. A red box highlights the download icon in the PDF viewer's toolbar, with an arrow pointing to it and the number '17.'.

Applicator Sizing - Flow

Project :
Customer :
Contact person : Phone: C.Project No.:
eMail: Fax:

TAG : DW_PROJECT_NAME
Timestamp: --- Review number: ---
Sales order number:

Sizing Sheet

General Parameters

Fluid	Water, process
State	Liquid
Character	Clean
Abrasivity	Not abrasive
Fluid Group (PED)	Normal Fluid (Fluid group 2)
Fluid type	Newtonian
Atmospheric Pressure	Standard
14.696 psi_a	ASME (ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	10	80	100	USGPM
Pressure		70		psi_g
Temperature		45		°F
Density		62.436		lb/ft3
Viscosity		1.41658		cSt
Pressure (min/max)	70		70	psi_g
Temp. (min/max)	45		45	°F
Vapor Pressure	0.1476	0.1476	0.1476	psi_a

Flowmeter : Promag P 100
Flow Principle : Electromagnetic
Meter Size : 2"

18. Save the pdf file

The screenshot shows the same web application interface as above. A 'Save File' dialog box is overlaid on the PDF viewer, indicating that the user has chosen to save the PDF file. The dialog box contains the following information:

Opening DW_PROJECT_NAME.pdf

You have chosen to open:
DW_PROJECT_NAME.pdf
which is: Adobe Acrobat Document (75.9 KB)
from: https://portal.endress.com

What should Firefox do with this file?

Open with Adobe Acrobat DC (default)

Save File

Do this automatically for files like this from now on.

Buttons: OK, Cancel