

FILTER SIZING SOFTWARE

USER GUIDE



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PASSION  PERFORM



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1 Product Description

The web-based software program will allow you to select the most suitable MP Filtri's Filters, as well as Bell Housing & Couplings, in accordance to your process design requirements. The program will automatically check your input design process prior to propose you the acceptable solutions and create an output in PDF report style format. The MP Filtri Selection Tool software program is easy to use with a flexible fast design method and provides improved layout formats with full descriptions.

2 Technical Features

2.1 Desktop version

Compatible browsers: Internet Explorer or later versions; Microsoft Edge or later versions; Chrome; Firefox (suggested)
Any other browser will be suitable.

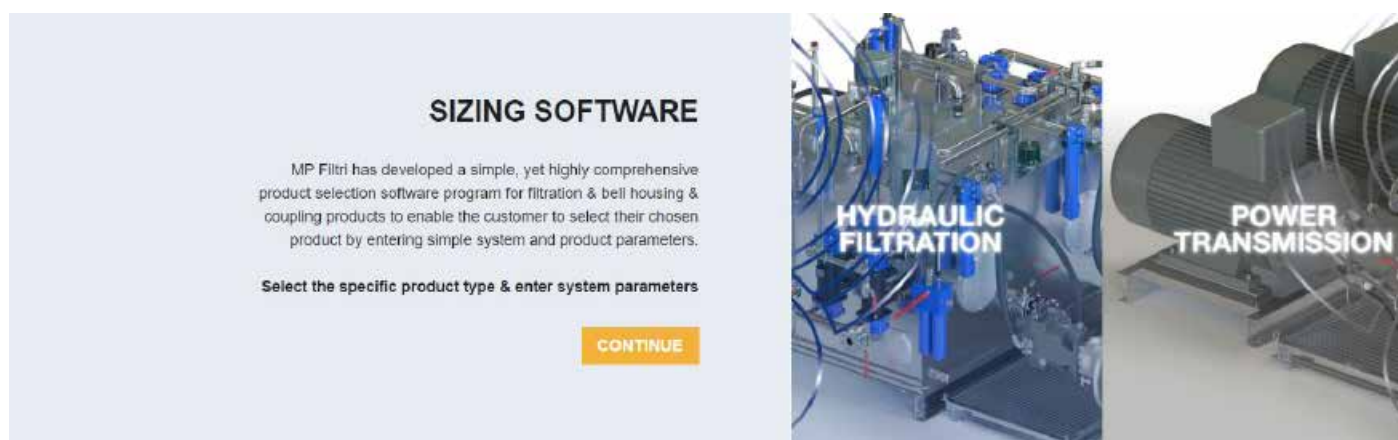
No specific additional software is required to enable the MP Filtri sizing software program to operate successfully.
Lists and reports will be generated as Microsoft Excel® files in .xls and .csv formats, available to be downloaded
Reports will be generated as .pdf files, available to be downloaded

2.2 Mobile version

Compatible browsers: Any

3 Web access links

The web-based is available at link: <https://www.mpfiltri.com/tools/>
by clicking on the button "**CONTINUE**" from the section "**SIZING SOFTWARE**":



Then, a log-in page will appear, where non-registered users shall input their data to register, while already registered users shall access with their credentials

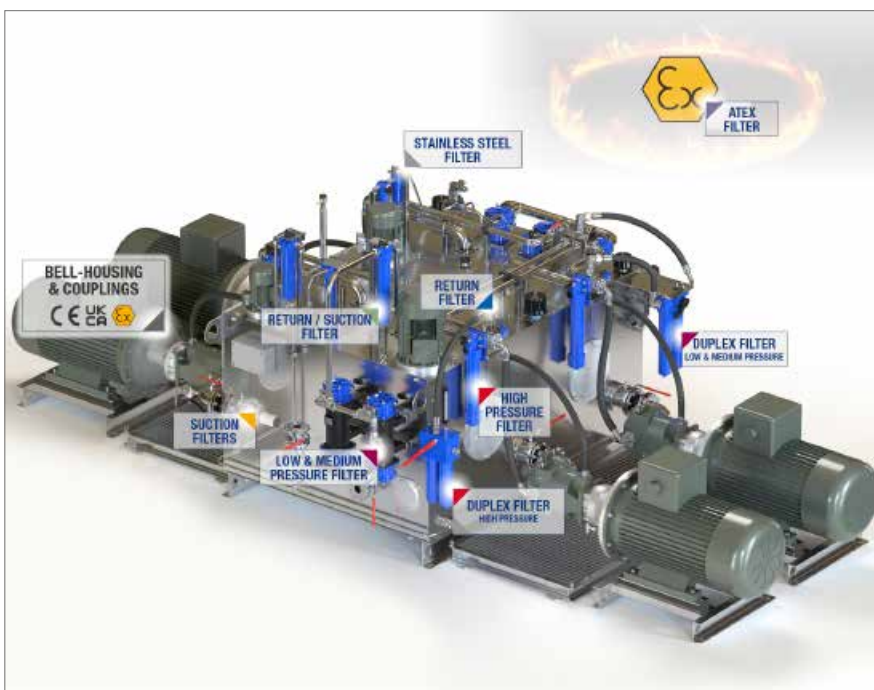
Registration I MP Filtri S.p.A.

LOGIN	REGISTER
<p>Welcome back! Please enter the following information:</p> <p>Username *</p> <input type="text" value="name.surname@gmail.com"/> <p>Password *</p> <input type="password" value="*****"/> <p>Login recover password</p>	<p>Don't have an account? Sign up free to use all our tools!</p> <p>Name *</p> <input type="text" value="Name"/> <p>Surname *</p> <input type="text" value="Surname"/> <p>E-mail *</p> <input type="text" value="name.surname@gmail.com"/>

After registration with your data, or accessing with your credentials (for already registered users) you will be directed to the page where you could still select the desired software tool:

<p>Headquarters MP Filtri S.p.A. Via 1° Maggio, 3 20042 Pessano con Bornago Milan - Italy</p> <p>T : + 39.02.95703.1 F : + 39.02.95741497 / +39.02.95740188 sales@mpfiltri.com VAT IT04221260153 REA MI-997440 Capital Stock: € 6.000.000</p>	<p>WELCOME Name Surname</p> <p>Start now by selecting the tool wanted:</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid gray; padding: 5px; text-align: center;">FILTER SIZING SOFTWARE</div> <div style="border: 1px solid gray; padding: 5px; text-align: center;">POWER TRANSMISSION SOFTWARE</div> <div style="border: 1px solid gray; padding: 5px; text-align: center;">SOFTWARE 3D</div> </div> <p style="text-align: center;"> LOGOUT MODIFY PROFILE </p>
---	--

When Power Transmission sizing software or 3D software are chosen, you will be redirected to the desired software or 3D viewer web page. Viceversa, for filter sizing, a specific product selection page will appear, showing the different products that can be selected:



4 Hydraulic Filtration Sizing - Main process data input

If one of the filter types has been selected to be sized, a dedicated web page will appear, with pre-selected filter type (still modifiable) already defined.

In the following example, the various steps for the selection of a “**HIGH PRESSURE**” filter will be simulated.

SUCTION	LOW & MEDIUM PRESSURE	HIGH PRESSURE
RETURN	RETURN/SUCTION	STAINLESS STEEL HIGH PRESSURE
DUPLEX LOW & MEDIUM PRESSURE	DUPLEX HIGH PRESSURE	ATEX

Product
-- Select --

Working Pressure (bar) *	Flow rate (l/min) *	⊕ DeltaP max (bar) *	DeltaP min (%-DeltaP max) *	Fluid Working Temperature (°C) *
Max 20	Max 3500	0.50 <small>Max 0.50</small>	-50 <small>-50% + -20%</small>	-25 + 110

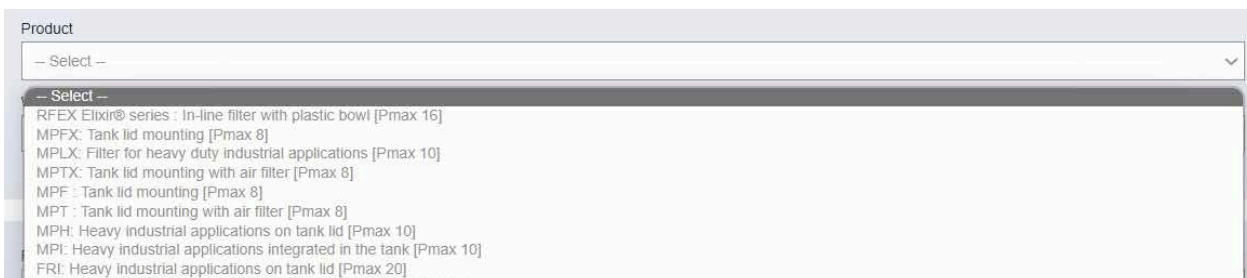
Fluid *	Fluid type *	Viscosity (cst) *	Viscosity (SUS) *
Filtration *	Connection Type *	Connection *	Connection Size

* required fields

CALCULATE

4.1 Type of product

In this optional field, it will be possible to directly choose the type of filter. The software will set the parameters based on the chosen filter. Obviously, this is an optional field. If not selected, the software will search all filter types within the selected macro category.



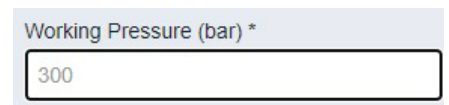
Product

-- Select --

- Select --
- RFEEX Elixir® series : In-line filter with plastic bowl [Pmax 16]
- MPFX: Tank lid mounting [Pmax 8]
- MPLX: Filter for heavy duty industrial applications [Pmax 10]
- MPTX: Tank lid mounting with air filter [Pmax 8]
- MPF : Tank lid mounting [Pmax 8]
- MPT : Tank lid mounting with air filter [Pmax 8]
- MPH: Heavy industrial applications on tank lid [Pmax 10]
- MPI: Heavy industrial applications integrated in the tank [Pmax 10]
- FRI: Heavy industrial applications on tank lid [Pmax 20]

4.2 Working Pressure input

In this field, please input the desired fluid working pressure (max limit of pressure value is pre-indicated by the software in this field). Such a value is indicated in bar, for all websites with the only exception of US version, where values are in psi.

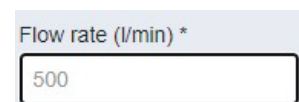


Working Pressure (bar) *

300

4.3 Flow rate input

In this field, please input the desired fluid flow rate (max limit of flowrate value is pre-indicated by the software in this field). Such a value is indicated in liters per minute (l/min), for all websites with the only exception of US version, where values are in gallons per minute (gpm).

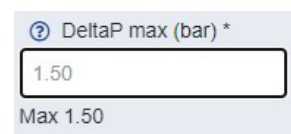


Flow rate (l/min) *

500

4.4 DeltaP max

In this field, please input the desired max DeltaP of the proposed filter solution (limit of max DeltaP value is pre-indicated by the software in this field). Such a value is indicated in bar, for all websites with the only exception of US version, where values are in psi.



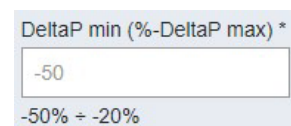
DeltaP max (bar) *

1.50

Max 1.50

4.5 DeltaP min

In this field, please input the desired min DeltaP of the proposed filter solution, as reduction percentage of the max DeltaP previously defined (**lower limit of min DeltaP value, equal to: -50% of max Delta P, is pre-indicated by the software in this field; such a value can be increased up to: -20% of max Delta P**). Such a value is indicated as percentage, and will be then calculate in absolute values in bar for all websites with the only exception of US version, where values will be then calculated in psi.



DeltaP min (%-DeltaP max) *

-50

-50% ÷ -20%

4.6 Fluid Working Temperature

In this field, please input the desired fluid working temperature (range of acceptable temperature values is pre-indicated by the software in this field). Such a value is indicated in degrees Celsius (°C), for all websites with the only exception of US version, where values are in degrees Fahrenheit (°F).

Fluid Working Temperature (°C) *

4.7 Fluid category

In this field, please choose the desired category for the fluid to be filtered (list of available fluid categories is indicated by the software as drop-down menu).

Fluid *

Select liquid type

- Select liquid type
- HFC - Water glycol
- HFD - Synthetic fluids
- HLP - Mineral oils

4.8 Fluid type with related viscosity

In this field, please choose the desired type for the fluid to be filtered (list of available fluid types is indicated by the software as drop-down menu, based on the pre-selected fluid category). Fields related to Viscosity (cst and SUS) will be automatically compiled by the software, based on the pre-selected Fluid Category and Fluid Working Temperature.

Fluid type *	Viscosity (cst) *	Viscosity (SUS) *
ISO VG 32 (SUS 151)	32	150

4.9 Filtration rating

In this field, please choose the desired filtration rating (list of available filtration rating is indicated by the software as drop-down menu).

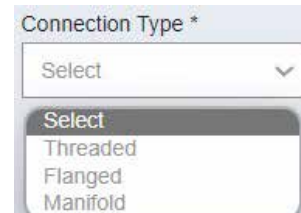
Filtration *

Select

- Select
- A03 - 3 µm absolute inorganic microfibre
- A06 - 6 µm absolute inorganic microfibre
- A10 - 10 µm absolute inorganic microfibre
- A16 - 16 µm absolute inorganic microfibre
- A25 - 25 µm absolute inorganic microfibre
- M25 - 25 µm nominal square wire mesh

4.10 Connection type

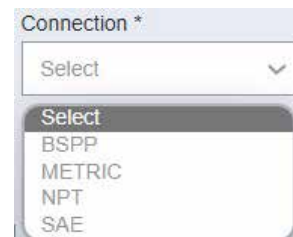
In this field, please choose the desired filter connection type (list of available connection types is indicated by the software as drop-down menu).



The screenshot shows a dropdown menu titled "Connection Type *". The menu is currently set to "Select" and is open, displaying the following options: "Threaded", "Flanged", and "Manifold".

4.11 Connection

In this field, please choose the desired filter connection (list of available connection is indicated by the software as drop-down menu based on the pre-selected "**connection type**").

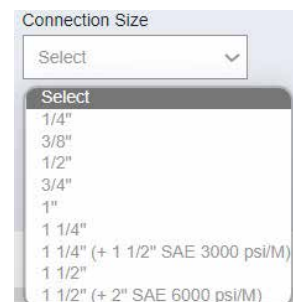


The screenshot shows a dropdown menu titled "Connection *". The menu is currently set to "Select" and is open, displaying the following options: "BSPB", "METRIC", "NPT", and "SAE".

4.12 Connection Size (optional)

In this field, please choose the desired filter connection size (list of available connection sizes is indicated by the software as drop-down menu based on the pre-selected "**connection**"). Such a field is not mandatory to be filled.

Now, by clicking on "**CALCULATE**" button, it is possible to check the filter solutions proposed by the software.



The screenshot shows a dropdown menu titled "Connection Size". The menu is currently set to "Select" and is open, displaying the following options: "1/4\"", "3/8\"", "1/2\"", "3/4\"", "1\"", "1 1/4\"", "1 1/4\" (+ 1 1/2\" SAE 3000 psi/M)", "1 1/2\"", and "1 1/2\" (+ 2\" SAE 6000 psi/M)".

5 Hydraulic Filtration Sizing - Results management

5.1 Input Data resume and selection results

The new web page will show first a recap of the selected process parameters, with calculated absolute value of the min DeltaP based on input data.

If these input data or results are not satisfactory, or there are no results available, it is possible to restart the selection by clicking on the “**NEW SEARCH**” button.





Working Pressure	300 (bar)	Fluid	HLP
Flow rate	<input type="text" value="500"/> (l/min)	Fluid type	ISO VG 32 (SUS 151)
DP min of the project	<input type="text" value="0.75"/> (bar)	Seal	A - NBR
DP max of the project	<input type="text" value="1.50"/> (bar)	Working Temperature	-25 ÷ 110 (°C)
Working Temperature	<input type="text" value="40"/> (°C)	Optional seals	V - FPM
Filtration	<input type="text" value="16 µm absolute inorganic microfibre"/> ▼	Working Temperature with options	-20 ÷ 110 (°C)
Connection Type	Threaded - BSPP	Viscosity	32 (cst) - 150 (SUS)

It is also possible to modify a specific field by inputting new values, and update the results page by clicking on the “**UPDATE**” button

Working Pressure	300 (bar)	Fluid	HLP
Flow rate	<input type="text" value="500"/> (l/min)	Fluid type	ISO VG 32 (SUS 151)
DP min of the project	<input type="text" value="0.75"/> (bar)	Seal	A - NBR
DP max of the project	<input type="text" value="1.50"/> (bar)	Working Temperature	-25 ÷ 110 (°C)
Working Temperature	<input type="text" value="40"/> (°C)	Optional seals	V - FPM
Filtration	<input type="text" value="16 µm absolute inorganic microfibre"/> ▼	Working Temperature with options	-20 ÷ 110 (°C)
Connection Type	Threaded - BSPP	Viscosity	32 (cst) - 150 (SUS)

Results are shown, as default, by DeltaP in descending order, starting from the closest one to the max DeltaP set, and only within the selected DeltaP range.

Show entries Search:

Image	Code	Pmax		Qmax		ΔP		Housing ΔP		Element ΔP		Connection	Seal	Link
		bar	psi	l/min	gpm us	bar	psi	bar	psi	bar	psi			
	FHP-350-4-B-A-A-2-A16P01	420	6090	503.50	133.2	1.49	21	1.07	15	0.42	6	G 1 1/2"	A	Adjustment Report
	FHP-350-4-B-V-A-2-A16P01	420	6090	503.50	133.2	1.49	21	1.07	15	0.42	6	G 1 1/2"	V	Adjustment Report
	FHP-500-3-B-A-F7-A16P01	420	6090	527.48	139.5	1.38	20	0.80	12	0.58	8	G 1 1/2" + 2" SAE 6000 psi/M	A	Adjustment Report
	FHP-500-3-B-V-F7-A16P01	420	6090	527.48	139.5	1.38	20	0.80	12	0.58	8	G 1 1/2" + 2" SAE 6000 psi/M	V	Adjustment

5.2 Results not found? Software can provide suggestions

In some cases, the software could not be able to provide suitable solutions because any configuration would have a calculated DeltaP lower than the set range. In these cases, as suggested by the software in a red-marked suggestion, to find available solutions it could be sufficient (if possible) to reduce the min DeltaP project input value, or to decrease the Fluid Working Temperature input value to increase viscosity and so increase accordingly the calculated DeltaP within the acceptable range. In this case, the software is able to provide you the maximum calculated DeltaP, to allow you to estimate how lower calculated DeltaP is from project input data.

Product	FMM 050	Fluid	HLP
Working Pressure	100 (bar)	Fluid type	ISO VG 32 (SUS 151)
Flow rate	<input type="text" value="20"/> (l/min)	Seal	A - NBR
DP min of the project	<input type="text" value="0.75"/> (bar)	Working Temperature	-25 ÷ 110 (°C)
DP max of the project	<input type="text" value="1.50"/> (bar)	Optional seals	V - FPM
Working Temperature	<input type="text" value="40"/> (°C)	Working Temperature with options	-20 ÷ 110 (°C)
Filtration	<input type="text" value="25 μm absolute inorganic microfibre"/>	Viscosity	32 (cst) - 150 (SUS)
Connection Type	Threaded - BSPP		

NEW SEARCH

UPDATE

Calculated DeltaP (max 0.47) < Project DeltaP min: if possible, it is recommended to decrease the DeltaPmin value and/or decrease the fluid temperature.

Viceversa, the software could not be able to provide suitable solutions because any configuration would have a calculated DeltaP bigger than the set range. In these cases, as suggested by the software in a red-marked suggestion, to find available solutions it should be necessary (if possible) to increase the max DeltaP project input value, or to increase the Fluid Working Temperature input value to reduce viscosity and so reduce accordingly the calculated DeltaP within the acceptable range. In this case, the software is able to provide you the minimum calculated DeltaP, to allow you to estimate how higher calculated DeltaP is from project input data.

Product	FMM 050	Fluid	HLP
Working Pressure	400 (bar)	Fluid type	ISO VG 32 (SUS 151)
Flow rate	<input type="text" value="150"/> (l/min)	Seal	A - NBR
DP min of the project	<input type="text" value="0.25"/> (bar)	Working Temperature	-25 ÷ 110 (°C)
DP max of the project	<input type="text" value="0.5"/> (bar)	Optional seals	V - FPM
Working Temperature	<input type="text" value="40"/> (°C)	Working Temperature with options	-20 ÷ 110 (°C)
Filtration	<input type="text" value="25 µm absolute inorganic microfibre"/>	Viscosity	32 (cst) - 150 (SUS)
Connection Type	Threaded - BSPP		

NEW SEARCH

UPDATE

Calculated DeltaP (min 1.67) > Project DeltaP max: if possible, it is recommended to increase the DeltaPmax value and/or increase the fluid temperature.

5.3 Results export and fine tuning

When available: result list, shown in the web page, can be exported as Microsoft® Excel .xls or .csv file.

If the number of available solutions is bigger than 400, the software automatically recommends to fine-tune results; anyway, independently from the number of available results, there is always the possibility to fine-tune them by choosing one (or more) of the proposed values from the drop-down menu within the fields:

The entered data fall within ranges that are too wide and for which there are innumerable solutions; please try to narrow down the selection fields.



Filter type: Valve: Seal:

DIN Standard: Indicator:

- Filter Type (if not already previously selected)
- Valve
- Seal
- DIN Standard
- Indicator



The results list will be then reduced according to the selected parameters.

Show entries Search:

Image	Code	Pmax		Qmax		ΔP		Housing ΔP		Element ΔP		Connection	Seal	Link
		bar	psi	l/min	gpm us	bar	psi	bar	psi	bar	psi			
	MPFX-100-3-B-A-G2-A25-HP01	8	116	153.40	40.6	0.49	7	0.09	1	0.40	6	G 3/4"	A	Adjustment Report
	MPFX-100-3-B-V-G2-A25-HP01	8	116	153.40	40.6	0.49	7	0.09	1	0.40	6	G 3/4"	V	Adjustment Report
	MPFX-100-3-E-A-G2-A25-HP01	8	116	153.40	40.6	0.49	7	0.09	1	0.40	6	G 3/4"	A	Adjustment Report
	MPFX-100-3-E-V-G2-A25-HP01	8	116	153.40	40.6	0.49	7	0.09	1	0.40	6	G 3/4"	V	Adjustment Report

5.4 Single result adjustment

Every single result of the proposed solution list can be manually adjusted by clicking on the “**Adjustment**” button at its right.

Image	Code	Pmax		Qmax		ΔP		Housing ΔP		Element ΔP		Connection	Seal	Link
		bar	psi	l/min	gpm/us	bar	psi	bar	psi	bar	psi			
	MPFX-100-3-B-A-G2-A25-HP01	8	116	153.40	40.6	0.49	7	0.09	1	0.40	6	G 3/4"	A	

By selecting such an option: a new window will appear, where user could manually modify

- Fluid Working Temperature

as well as one (or more) of the following fields from the proposed drop-down menu:

- Filter Size
- Filter Length
- Bypass
- Seal
- Connection
- Option1 (if available)
- Filtration
- Filter Element series (if available)
- Clogging Indicator



Filter Manual Configuration

Working Pressure (bar) 8	Flow rate (l/min) 150	
DeltaP min (bar) 0.25	DeltaP max (bar) 0.50	
Fluid Working Temperature (°C) <input type="text" value="40"/>	Fluid HLP	
Fluid type ISO VG 32 (SUS 151)	Viscosity (cst) 32	Viscosity (SUS) 150
Filtration 25 µm absolute inorganic microfibre		
Filter type MPFX	Size 100	Length 3
ByPass B	Seal A	Connection G2
	Filtration A25	Series H
× RESET		
Indicator <input type="text" value="BVR14P01 - Visual"/>		
Connection G 3/4"	Housing ΔP (bar) 0.09	

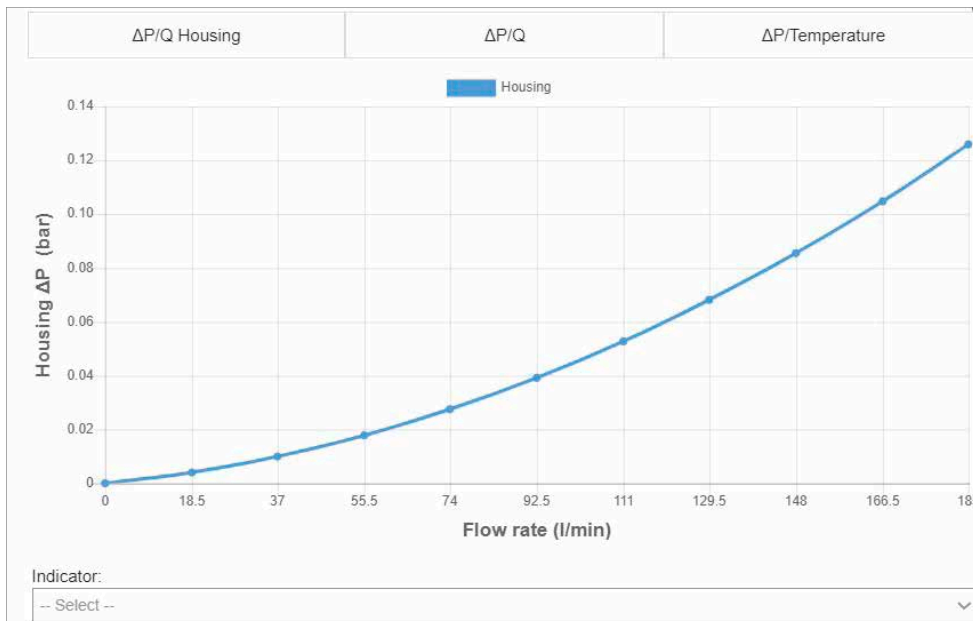
5.5 Report Generation and Saving

Result technical data can be created as .pdf file, featuring selected solution performance graphs, data summary and – if available – technical drawing in two ways:

- Directly after results calculation (see 4.2)
- or
- after result manual adjustment (see 4.3)

Image	Code	Pmax		Qmax		ΔP		Housing ΔP		Element ΔP		Connection	Seal	Link
		bar	psi	l/min	gpm us	bar	psi	bar	psi	bar	psi			
	MPFX-100-3-B-A-G2-A25-HP01	8	116	153.40	40.6	0.49	7	0.09	1	0.40	6	G 3/4"	A	

Example of a report page:



Result report file can be exported by clicking on **“SAVE PDF”** button, or even saved in a specific path of the user dedicated area, with information about: Customer reference, Application and Description, by clicking on **“SAVE SELECTION IN YOUR ARCHIVE”** button.



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