Product information

Filter series F-MI1 · Filters

Description

Filters are used in fluidic systems to protect sensitive components from damage due to contamination and particles. For the safe operation of micro annular gear pumps and their precision-machined rotors, the use of a 10 µm meshed filter is recommended. With compact filter units made out of corrosion-resistant materials, with high filtration performance and different mesh sizes, HNP Mikrosysteme offers suitable filter solutions for all of its pump series.

The filter series F-MI1 is available in three different configurations. The »inlet filter«, without an external housing, is directly immersed in the liquid. The »inline filters« are designed to be installed downstream in the feed line, i.e. directly before the pump. The maintenance-friendly »T-design« offers the advantage of changing the filter element without having to uninstall the filter from the feed line, and the option to open the bottom for releasing medium or emptying the filter. Also, it is possible to implement a sensor for filter monitoring. This allows to detect pending maintenance or cleaning of the filter as well as a closed supply line. In the »T-version« the sensor is directly adaptable, for straight filters it can be integrated by adding a separate mounting block. To avoid sedimentation and cross-contamination the filters have very small dead volumes and are manufactured with smooth surfaces (Ra 0.8).

Advantages

- Corrosion-resistant materials: stainless steel 316L or alloy C22 and FPM, FFPM or EPDM
- Metal filter elements: without solder or adhesives
- High filtration performance and very small size: optimized filter element for a low pressure drop even at higher flow rates and viscosities
- Configuration variety: different body shapes and body materials, filter fineness and sealing materials
- User-friendly and economical: filter elements can be cleaned or replaced

Technical data

Type	Inlet filter Inline filter (straight, T-shape)
Liquid temperature range	Inlet filter: -200 … +260 °C [-328 … +500 °F] Inline filter: -10 ... +140 °C (-50 ... +230 °C) * [+14 … +284 °F (-58 … +446 °F)] *
Differential pressure range	Inlet filter: - Inline filter: max. 5 bar [72.5 psi]
Operating pressure	Inlet filter: - Inline filter: max. 200 bar [2900 psi]
Seal materials	Inlet filter: adapter from PTFE Inline filter: FPM, FFPM, EPDM
Materials	Inlet filter: stainless steel 316L; optional: alloy C22 Inline filter (straight): stainless steel 316L Inline filter (T-shape): stainless steel 316L; optional: alloy C22
Internal volume	Inlet filter: - Inline filter (straight): 7.5 ml [0.46 in³] Inline filter (T-shape): 11 ml [0.67 in³]
Dimensions (Ø x H)	Inlet filter: Ø 16 x 36 mm [Ø 0.63 x 1.417 in] Inline filter (straight): Ø 25 x 53 mm [Ø 0.984 x 2.087 in] Inline filter (T-shape): Ø 38 x 58 mm [Ø 1.496 x 2.28 in] (Servicing height for filter element exchange 35 [1.38 in])
Fluid connection	Inlet filter: adapter for tube OD 1/8" Inline filter: 1/8" NPT internal thread
Filter fineness	10 µm; optional: 25 µm **
Filter area	8.8 - 9.5 cm² [1.36 - 1.47 in²] **
Weight	Inlet filter: approx. 12 g [0.42 oz] Inline filter (straight): approx. 145 g [5.11 oz] Inline filter (T-shape): 275 - 300 g [9.70 - 10.59 oz] **
Remarks	* depending on seal material ** depending on material

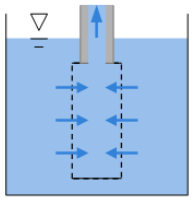
Notice
Even if single parameters are within the indicated performance range of technical data, certain parameter combinations may not be achievable. Single parameters may exceed their indicated performance range under adequate circumstances. For detailed evaluation please contact HNP Mikrosysteme. Actual performance may vary. Specifications are subject to change without notice. This document is subject to change without notice.

Accessories

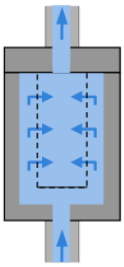
- Filter Monitoring

Functional principle

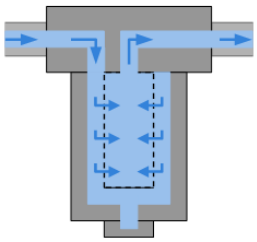
Inlet filter



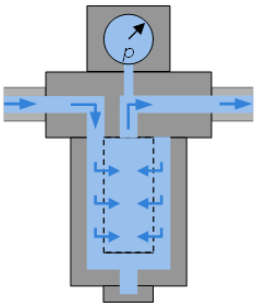
Inline filter F-MI1 (straight)



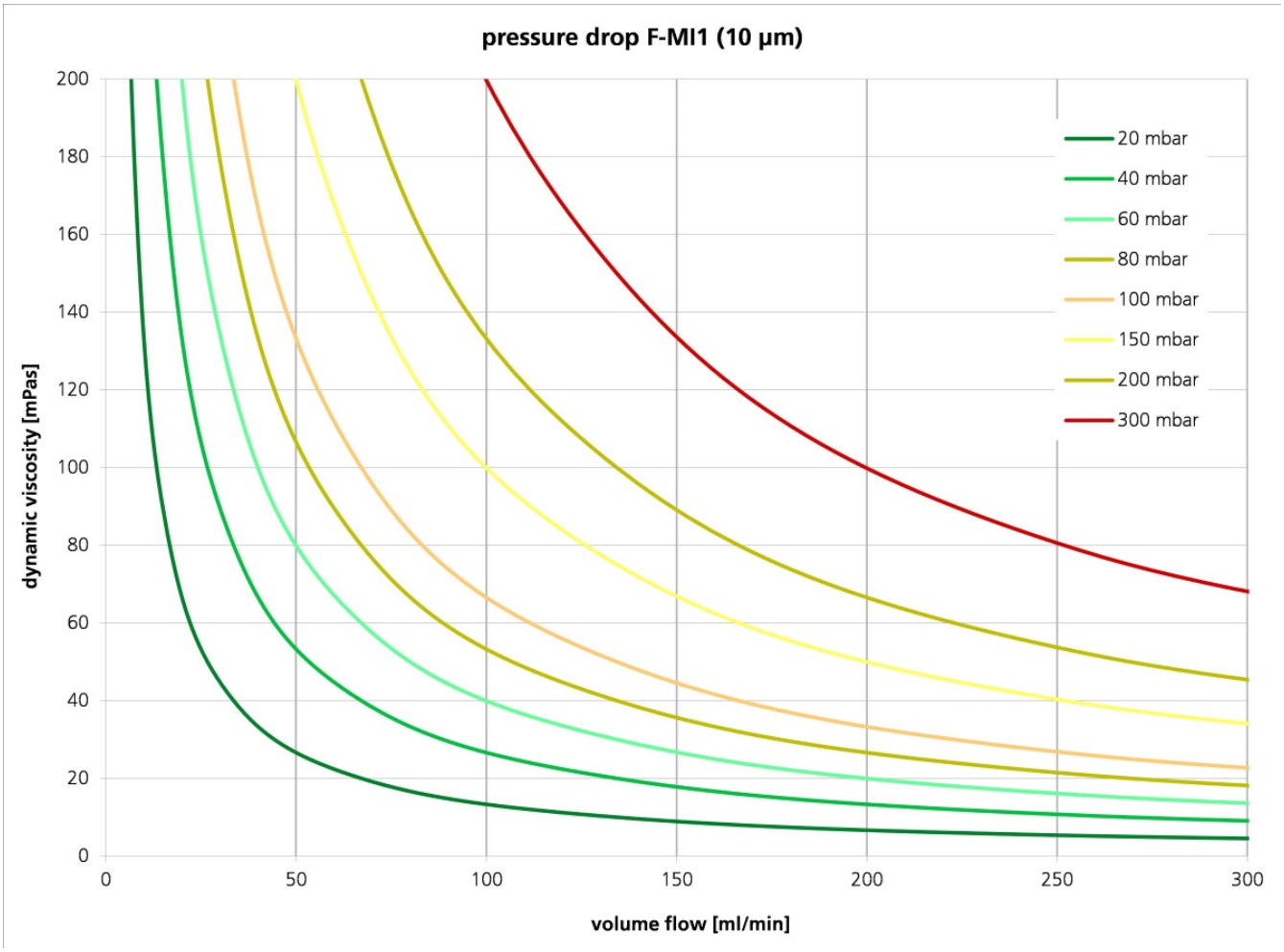
Inline filter F-MI1-T



Inline filter F-MI1-T with filter monitoring

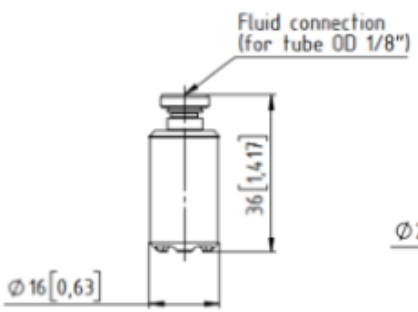


Characteristics

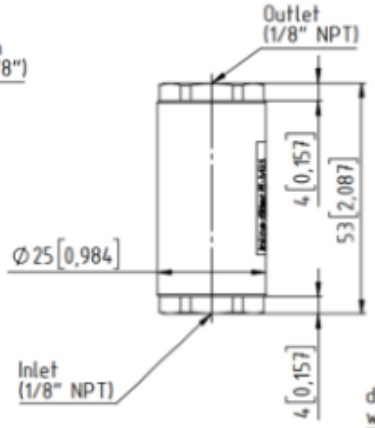


Dimensions

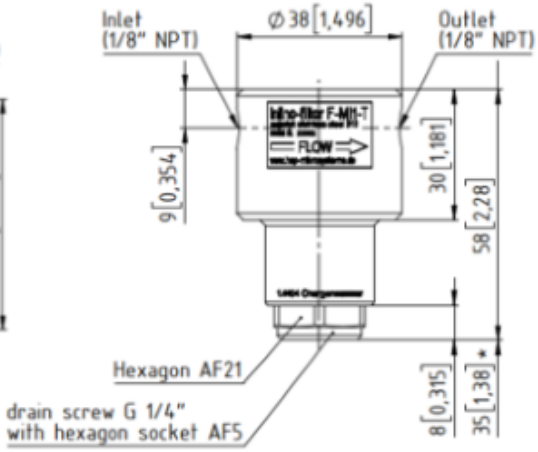
Inlet filter
F-MI1



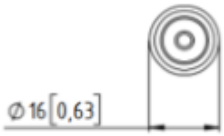
Inline filter
F-MI1

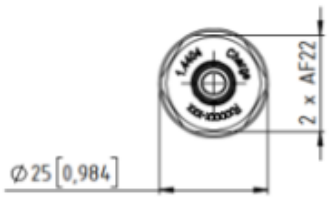


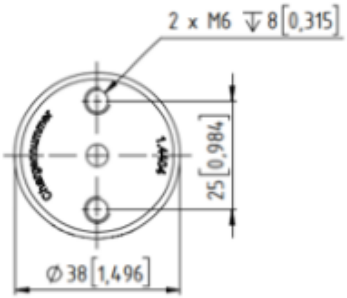
Inline filter
F-MI1-T



* Servicing height for filter element exchange







Dimensions are millimeters next to [inches]

Patents and trademarks

Our products are protected by the following national and international patents: DE 10 2018 129 631.2 B3; EP 3 884 162; CN 113 302 399 B; DE 10 2018 129 633.9 B3; EP 3 884 160; CN 113 272 553 B; DE 10 2018 129 634.7 B3; EP 3 884 527; DE 10 2018 129 635.5 B3; EP 3 762 165; DE 10146 793.1; EP 1 354 135 B1; US 7,698,818 B2; DE 10 2011 051 486 B4; EP 2 726 740 B1; US 9,404,492 B2; CN 103 732 921B; EP 2 640 977 B1; US 10,012,220 B2; CN 103 348 141 B; HK 1 185 648 B.
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