Product information

Filter series F-MI4 · 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-MI4 is available in two different configurations. The »inlet filter«, without an external housing, is directly immersed in the liquid. The »inline filter« in the maintenance-friendly »T-design« is designed to be installed downstream in the feed line, i.e. directly before the pump and 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 directly on the filter. This allows to detect pending maintenance or cleaning of the filter as well as a closed supply line. To avoid sedimentation and cross-contamination the filters have small dead volumes and are manufactured with smooth surfaces (Ra 0.8).

Advantages

- Corrosion-resistant materials: stainless steel 316L and FPM, FFPM or EPDM
- Metal filter elements: without solder or adhesives
- High filtration performance and small size: pleated filter elements for low pressure drops even at high flow rates and viscosities
- Configuration variety: different filter fineness and sealing materials
- User-friendly and economical: filter elements can be cleaned or replaced

Technical data

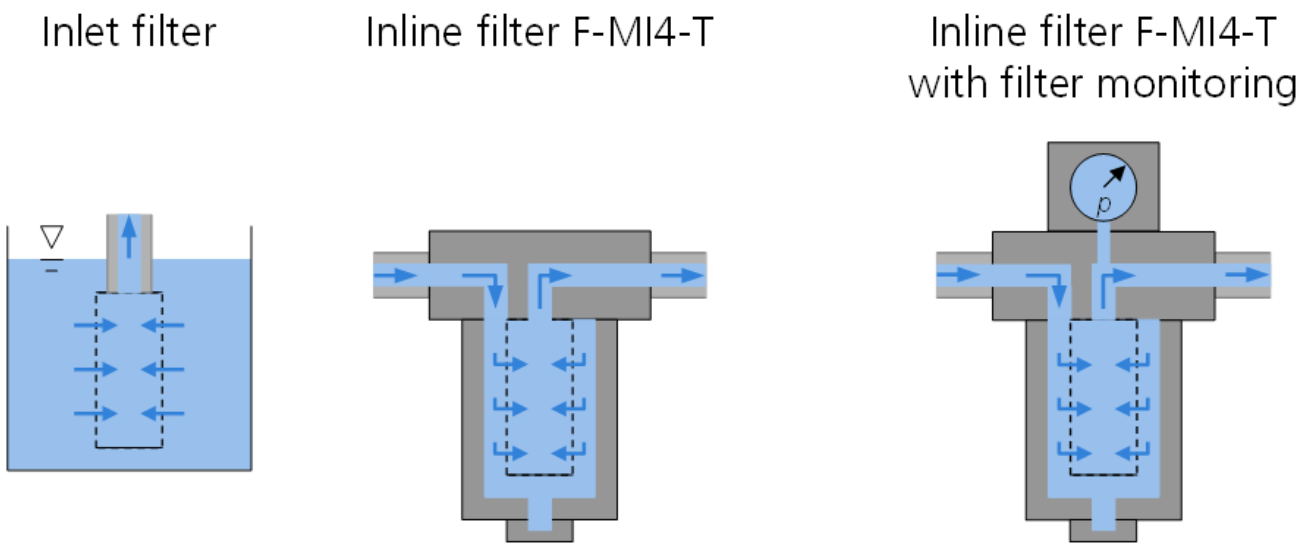
Type	Inlet filter Inline filter (T-shape)
Liquid temperature range	Inlet filter: -200 … +275 °C [-328 … +527 °F] Inline filter: -10 ... +140 °C (-50 ... +260 °C) * [+14 … +284 °F (-58 … +500 °F)] *
Differential pressure range	Inlet filter: - Inline filter: max. 20 bar [290 psi]
Operating pressure	Inlet filter: - Inline filter: max. 200 bar [2900 psi] **
Seal materials	Inlet filter: - Inline filter: FPM, FFPM, EPDM
Materials	stainless steel 316L
Internal volume	Inlet filter: - Inline filter (T-shape): 195 ml [11,9 in^3]
Dimensions (Ø x H)	Inlet filter: Ø 44 x 106 mm [Ø 1.732 x 4.173 in] Inline filter (T-shape): Ø 80 x 174 mm [Ø 3.15 x 6.85 in] (Servicing height for filter element exchange 115 mm [4.53 in])
Fluid connection	cylindrical internal thread G 1/2"
Filter fineness	Inlet filter: 10 µm; optional: 25 µm, 100 µm Inline filter (T-shape): 10 µm; optional: 25 µm, 50 µm, 100 µm
Filter area	407 - 450 cm^2 [63.09 - 69.75 in^2] ***
Weight	Inlet filter: approx. 350 g [12.35 oz] Inline filter (T-shape): approx. 3100 g [109.35 oz]
Remarks	* depending on seal material ** depending on operating temperature *** depending on filter fabric

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.

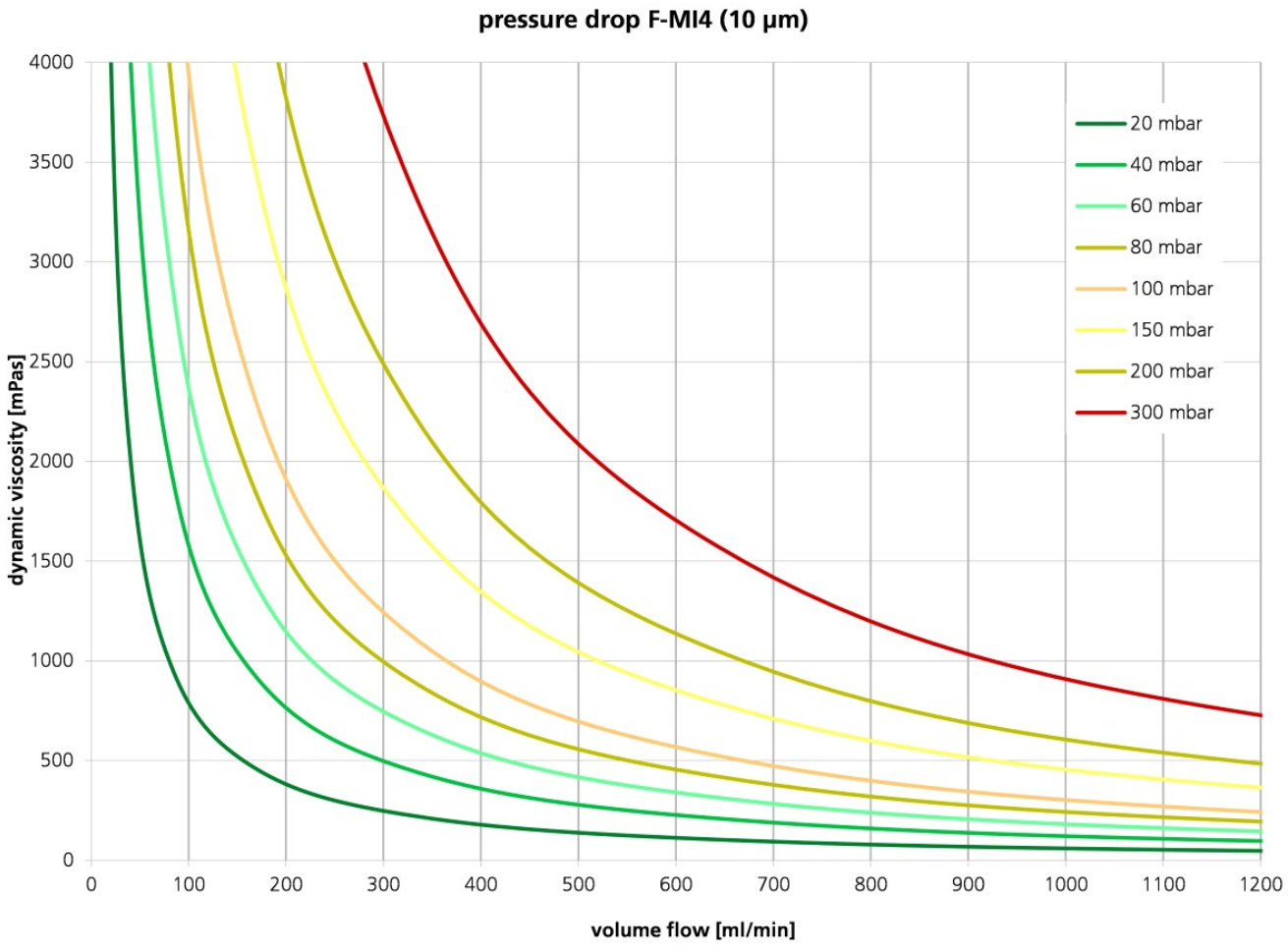
Accessories

- Filter Monitoring
- Flange connection HYG

Functional principle

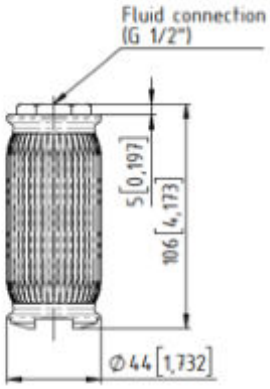


Characteristics

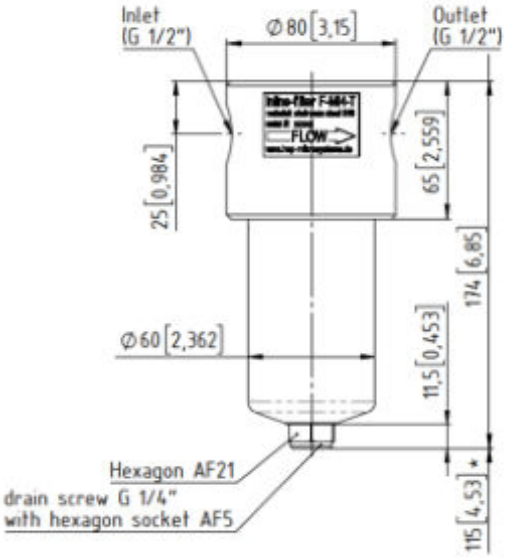


Dimensions

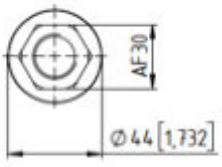
Inlet filter
F-MI4

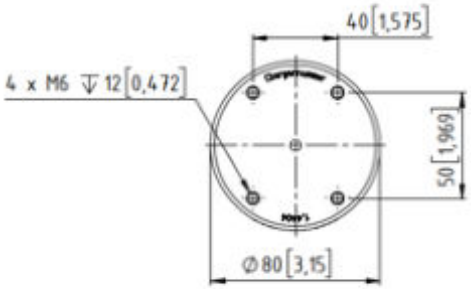


Inline filter
F-MI4-T



* Servicing height for filter element exchange





Dimensions are millimeters next to [inches]

Accessories

- Electrical heating module
- Filter monitoring
- Mounting bracket (for Inline filter in T-shape)

Patents and trademarks

Micro annular gear pumps (and housings) are protected by assigned patents: EP 1 354 135 B1; US 7,698,818 B2; DE 10 2011 001 041 B4; CN 103 348 141 B; US 10,012,220 B2; CN 103 732 921 B; US 9,404,492 B2; US 6,520,757 B1.
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