

## Filter-pump functional module F-P

Functional module for micro annular gear pumps of low pressure series and modular series

Available  
March 2010



similar image

- **Low void volume**  
integration of micro annular gear pump and filter, short internal fluid connections
- **Compact dimensions, low weight**  
39 x 25 x 38.5 mm, approx. 255 g (resp. without pump)
- **Flexible use for mzr®-pumps of low pressure and modular series**  
mzr-2521, mzr-2921 or mzr-2542, mzr-2942, resp.
- **Wide range of volume flows**  
volume flows 0,15 – 9 ml/min resp. 0.3 – 18 ml/min
- **Safety of operation through wire mesh filter**  
protection of pump and downstream fluidic structures from contaminations
- **Easy replacement of pump and filter**  
mounting of pump via stainless steel sheet, one-piece screw-in filter

The filter-pump functional module F-P allows the combination of micro annular gear pump and filter with short direct connections. The void volume of this compact system is low and the expenses of connecting elements are obsolete. The integrated wire mesh filter with a mesh size of 10 µm

preventatively protects the pump as well as the downstream fluidic micro structures from contamination. Replacement of the easy accessible filter is uncomplicated, removing of the pump is unnecessary. The functional module can be used flexibly for several sizes of pumps of the low pressure and

modular pump series. The modules can ideally be used for precise and reliable discrete and continuous dosing of volume flows from 0.15 to 18 ml/min for applications in the field of analytical instrumentation, medical engineering and micro reaction technology as well as other areas.

### Application fields

- Analytical instrumentation
- Laboratory automation
- Diagnostics
- Biotechnology
- Micro reaction technology
- Research and Development

### Technical data

Flow rate	0.15 – 9 ml/min resp. 0.3 – 18 ml/min *
Differential pressure range	0 – 1.5 bar (22 psi) resp. 0 – 3 bar (44 psi) *
Max. inlet pressure	1 bar (15 psi)
Operating temperature range	-20 ... +60 °C (-4 ... +140 °F)
Viscosity range	0.3 – 100 mPas
Void volumes	Fluid channels 30 µl, filter volume 1.6 ml
Fluid connection	1/4"-28 UNF
Mounting parts	2x Ø3.4 mm, 2x M3x7
Filter	mesh wire filter with screw thread mesh size 10 µm, filter area 6 cm <sup>2</sup>
Wetted parts	filter: stainless steel 316L, epoxy resin; static seals: FPM, optional: FFPM manifold adapter: stainless steel 316L
Measurements (L x B x H)	39 x 25 x 38.5 mm (without pump)
Weight	ca. 255 g (without pump)

\* depending on pump

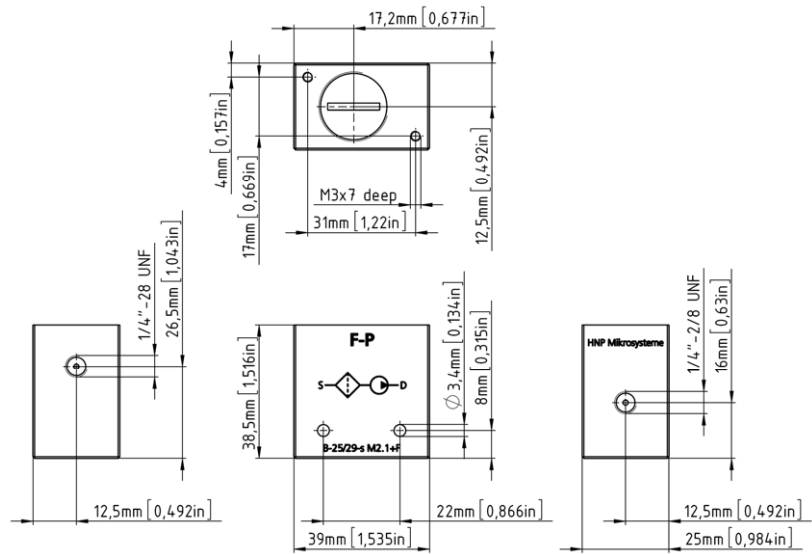
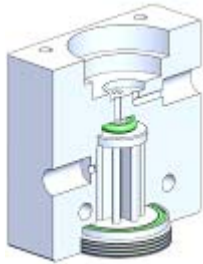
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## Measurements



Subject to technical changes.

## Item number

11 06 03 37	functional module F-P, stainless steel
11 01 02 04	pump m zr-2521 M2.1
11 02 02 04	pump m zr-2921 M2.1
12 01 00 06	pump m zr-2542-hy M2.1
12 01 00 07	pump m zr-2542-cy M2.1
12 02 00 10	pump m zr-2942-hy M2.1
12 02 00 11	pump m zr-2942-cy M2.1

Micro annular gear pumps (and housings) are protected by assigned patents: DE 198 43 161 C2, EP 1115979 B1, US 6,520,757 B1, EP 852674 B1, US 6,179,596 B1, EP 1354135, US 7,698,818 B2. Patents pending: EP 1807546, DE 10 2009 020 942.5-24, DE 10 2011 001 041.6. In the US, Europe and Japan additional patents are pending. m zr®, MoDoS®, µ-Clamp® are registered German trademarks of HNP Mikrosysteme GmbH.