

Filter-pump-valve functional module F-P-V

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



similar image

The filter-pump-valve functional module F-P-V allows the combination of micro annular gear pump, filter and valve with short direct connections for precise and reproducible dosing. 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 the pump is unnecessary. The functional module can be used flexibly for several sizes of pumps of the low pressure and modular pump series. Compared to the basic module F-P the module

format F-P-V features a small, chemically resistant 2/2-way shift valve, used for the almost backstroke free blockage of the fluid line to prevent the backflow of fluid through the pump. This functional module is especially well-suited for highly precise discrete dosing in aspirate and dispense mode.

- **Low void volume**
integration of micro annular gear pump, filter and valve
- **Compact dimensions, low weight**
39 x 31 x 88 mm, approx. 330 g (resp. without pump)
- **Flexible use for mzr®-pumps of low pressure and modular series**
mzr-2521, mzr-2921 resp. mzr-2542, mzr-2942
- **Wide range of volume flows**
volume flow 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
- **Chemical resistant miniature valve**
2/2-way-magnetic valve for precise and reproducible dosage and blockage of backflow of fluids
- **Easy replacement of pump and filter**
mounting of pump via stainless steel sheet, one-piece screw-in filter

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)
Liquid temperature range	+15 ... +50 °C (+59 ... +122 °F)
Viscosity range	0.3 – 10 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 ²

Contact

HNP Mikrosysteme GmbH
Bleicherufer 25 · D-19053 Schwerin

phone +49 385 52190-301
fax +49 385 52190-333

e-mail info@hnp-mikrosysteme.de
<http://www.hnp-mikrosysteme.de>

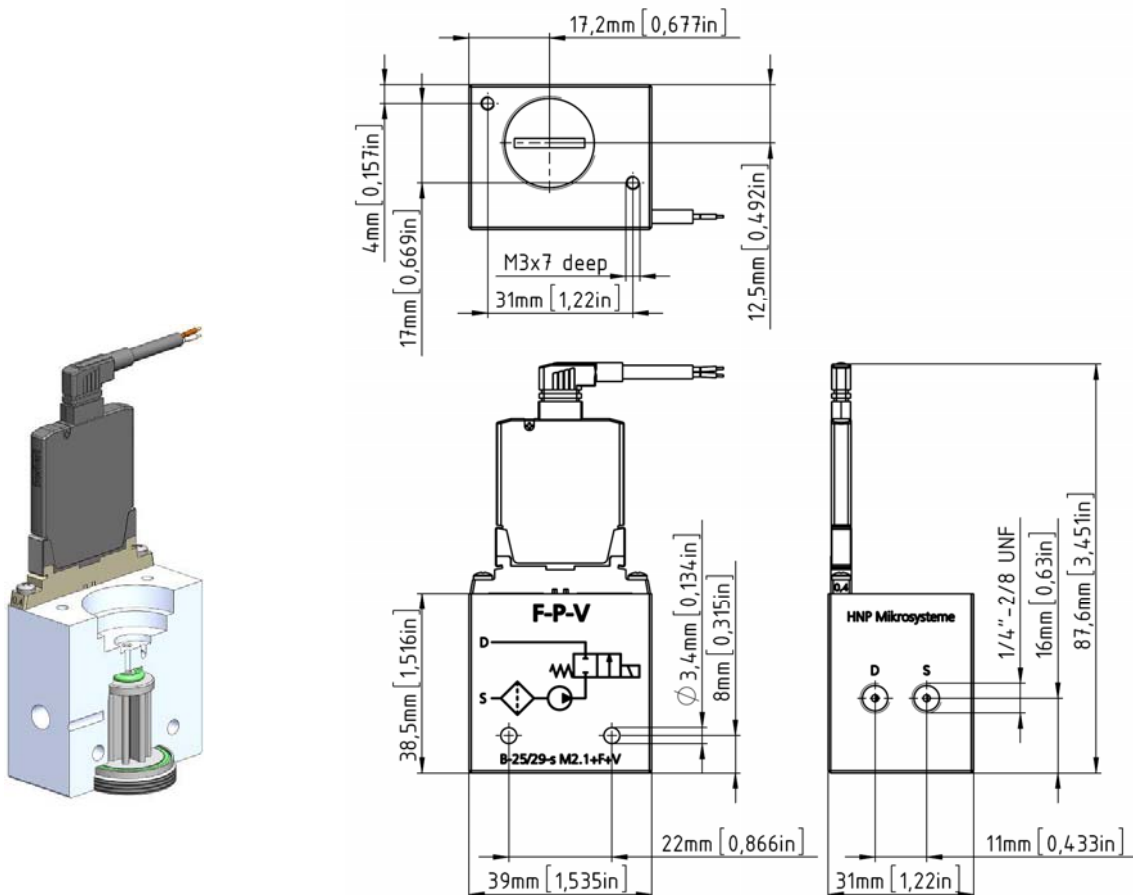
Even if single parameters are within the indicated performance range of technical data, certain parameter combinations may not be achievable. Single parameters may exceed their indicated performance range under adequate circumstances. For detailed evaluation please contact HNP Mikrosysteme. Actual performance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

Technical data

Valve	2/2 shift valve NC, pressure range 0 – 7 bar, operating voltage 24 V DC, assigned power rating 5.7 W (start up), 0.7 W (work), circuit time <5 ms
Wetted parts	filter: stainless steel 316L, epoxy resin; static seals: FPM, optional: FFPM manifold adapter: stainless steel 316L valve: PEEK™, FFPM
Dimensions (L x W x H)	39 x 31 x 88 mm (without pump)
Weight	ca. 330 g (without pump)

* depending on pump

Dimensions



Subject to technical changes.

Item number

11 06 03 38	functional module F-P-V, 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
11 06 03 39	upgrade for optional seals FFPM

Micro annular gear pumps (and housings) are protected by assigned patents: 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 DE 10 2011 001 041.6, PCT/IB2011/055108, EP 11 81 3388.3, US 13/884,088, CN 2011 8006 5051.7, HK 13 11 2934.9, DE 10 2011 051 486.4, PCT/EP2012/061514, EP 12 728264.8, US 9,404,492 B2, CN 2012 8003 8326.2. In the US, Europe and China additional patents are pending. m zr®, MoDoS®, µ-Clamp®, HNP M® are registered German trademarks of HNP Mikrosysteme GmbH.