

## Magnetic Hermetic Series

### Micro annular gear pump mzs®-2961

Compact hermetic pump for continuous dosage



- **Hermetic pump design**  
pump without shaft seal
- **Magnetic drive**  
inner magnet system driven by rotating magnetic field
- **Integrated controller**  
supply voltage 24 V DC,  
speed control by analog input 0 – 10 V
- **Compact dimensions**  
diameter 22 mm, length 69 mm
- **Long service life**  
wear-resistant, ultra-hard materials

The micro annular gear pump mzs-2961 is suitable for handling crystallizing, oxygen or moisture sensitive liquids, because the pump has no shaft seal. This functionality is made possible thanks to a liquid-separating cup surrounding the magnetic drive. The compact dimension of this

magnetic hermetic pump is achieved by a completely new product design and optimal matching with an integrated speed controller. With a diameter of 22 mm and 69 mm in length, the pump weighs 115 g. The pump handles flow rates from 1.2 to 18 ml/min with a high

precision and low pulsation. The pump is suitable for applications where an avoidance of leakage and a long service life as well as low energy consumption are important requirements. The pump is supplied with a terminal box for speed control and LED status indicator.

#### Applications

- Fuel cells
- Dosing of AdBlue
- Biotechnology
- Marine technology
- Metering of liquefied gases
- Aerospace industry
- Mobile analytics

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

Flow rate	1.2 – 18 ml/min
Displacement volume	3 µl
Max. system pressure	6 bar (87psi) (60 bar (870 psi)*) (inlet pressure + differential pressure)
Differential pressure range	0 – 3 bar (44 psi)
Liquid temperature range	-15 ... +60 °C
Viscosity range	0.3 – 500 mPas
Velocity range	400 – 6000 rpm
Fluid connection	slip fittings with outside diameter 2 mm optional: manifold assembly M2.1
Wetted parts	stainless steel 316L, 318LN, ceramics, tungsten carbide Ni-based, epoxy resin; static seals: FPM, optional: EPDM, FFKM
Motor	canned BLDC-motor, 24 V DC, 8.9 W
Controller	integrated speed controller
Interface	0 – 10 V
Electrical connection	6-pole connector, Micro-Fit
Dimensions	diameter 22 mm, length 69 mm
Weight	approx. 115 g (manifold assembly approx. 145 g)

\* Customized solution on request.

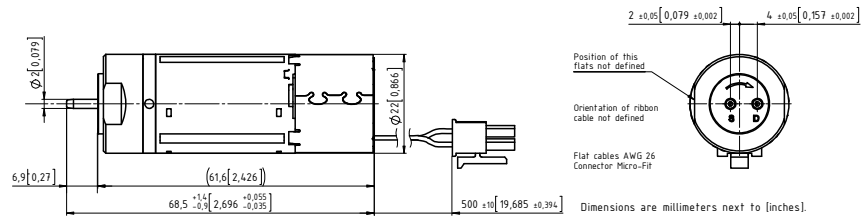
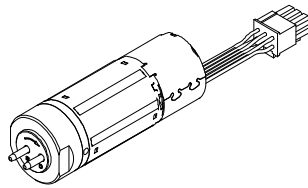
#### Contact

HNP Mikrosysteme GmbH  
Bleicherufer 25 · D-19053 Schwerin

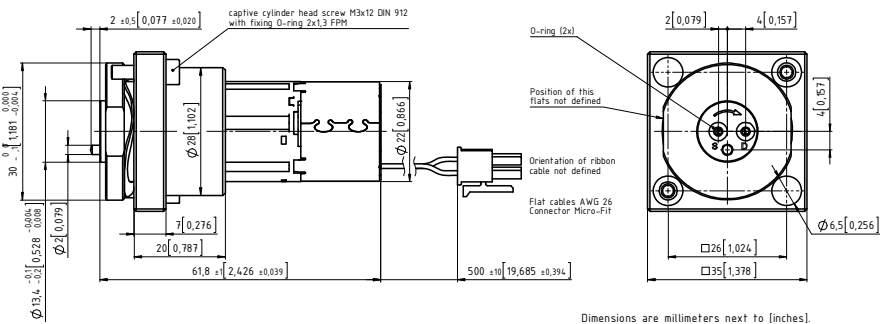
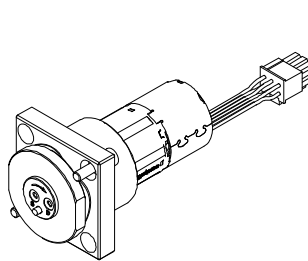
phone +49 385 52190-301  
fax +49 385 52190-333

e-mail [info@hnp-mikrosysteme.de](mailto:info@hnp-mikrosysteme.de)  
<http://www.hnp-mikrosysteme.de>

## Dimensions



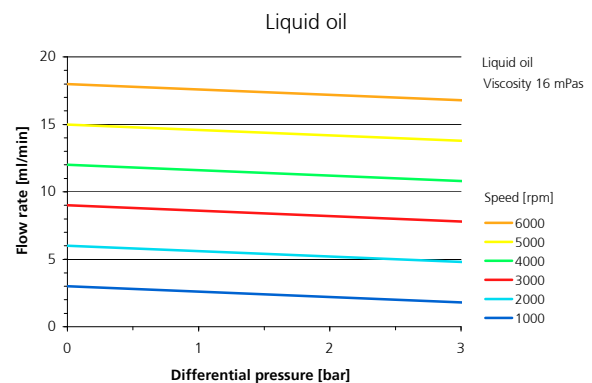
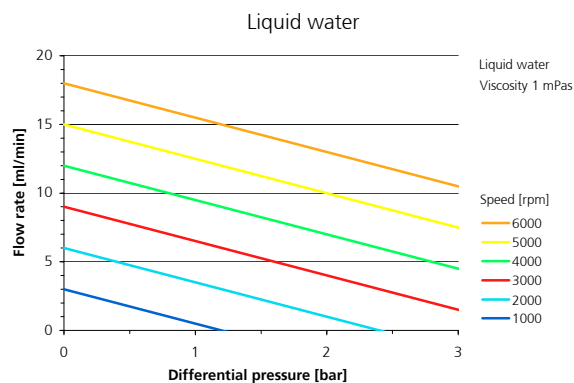
Configuration with slip fittings OD 2 mm



Configuration with manifold assembly M2.1

Subject to technical changes.

## Flow charts



## Terminal box S-G61



- compact plastic case
- comes with the micro annular gear pump mzt-2961
- connector for supply voltage 24 V (12 – 28 V DC)
- integrated protective circuit
- potentiometer for speed setting
- analog input 0 – 10 V for speed setting
- direction input
- 1 speed-proportional frequency output with 2-color LED

## Item number

14 01 10 04

magnetic hermetic series pump mzt-2961 with canned BLDC-motor, fluid connection slip fittings OD 2 mm, terminal box S-G61

14 01 10 01

magnetic hermetic series pump mzt-2961 M2.1 with canned BLDC-motor, fluid connection manifold assembly M2.1, terminal box S-G61

## Accessories

Liquid supply accessories

tubes, filters etc.

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. mzt®, MoDoS®, µ-Clamp®, HNPM® are registered German trademarks of HNP Mikrosysteme GmbH.