

## Product information

### mzr-2942 · Modular pump series



#### Description

The micro annular gear pump mzr-2942 of the modular series is suitable for dispensing and metering of aggressive or corrosive liquids. Equipped with oxide ceramic bearings, the material configuration of the pump body as well as of the rotors can be individually selected. Depending on the nature of the delivered liquid, a choice of different resistant components allows a customized configuration. The rotors are available in ZrO<sub>2</sub>-ceramics or in tungsten carbide. Alloy C22 and PEEK™ are the different housing options.

#### Advantages

- Chemically inert materials  
pump components in ceramics, tungsten carbide, alloy C22, alloy C276, PEEK™
- High dosage precision  
precision CV 1% at low volumes
- Long service life  
wear-resistant, ultra hard materials
- Compact dimensions  
length 90 mm, diameter 18 mm
- Dynamic smart drive and control  
DC precision motor with integrated encoder
- Low pulsation delivery, low shear stress  
rotary micro annular gear technology, no valves

#### Applications

- Analytical technology
- Biotechnology
- Microreaction technology
- Laboratory automation
- Medical technology

## Technical data

Flow rate	0.3 – 18 (min. 0.003 *)ml/min
Smallest dosage volume	0.5µl
Displacement volume	3µl
Differential pressure range	0 - 3 bar (43.5 psi)
Maximum inlet pressure	1 bar (15 psi)
Liquid temperature range	-20 ... +60 °C (-4 ... +140 °F)
Viscosity range	0.3 – 100 (max. 1,000 *)mPas
Precision CV	1% (Coefficient of variation CV)
Velocity range	100 – 6,000 (min. 1 *)rpm
Fluid connection	slip fittings with outside diameter 2 mm; optional: manifold assembly
Wetted parts	Alloy C22 (2.4602), optional: PEEK™; shaft ZrO2-ceramics; rotors partially stabilized ZrO2, epoxy resin; shaft seal: graphite-reinforced PTFE, alloy C276; static seals: FFPM, optional: FPM, EPDM
Motor	DC-motor with graphite brushes, assigned power rating 4.5 W, nominal voltage 24 V, digital magnet encoder 32 counts per turn
Electrical connection	10-pole connector
Dimensions (L x W x H)	Ø 18 mm, length 90 mm
Weight	approx. 65g
Remarks	* depending on accessories, Customized solutions on request.

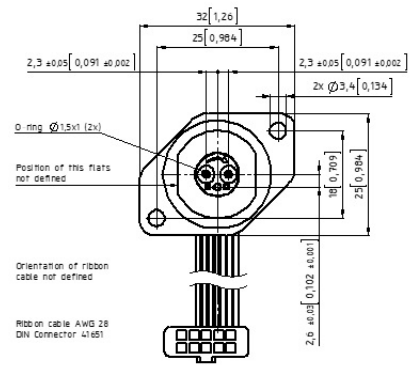
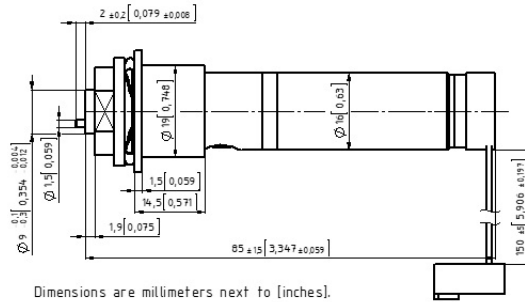
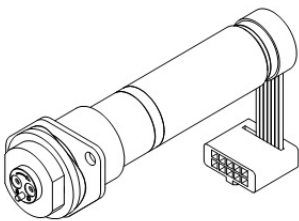
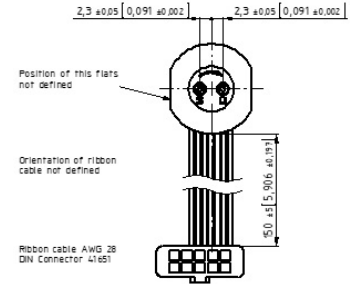
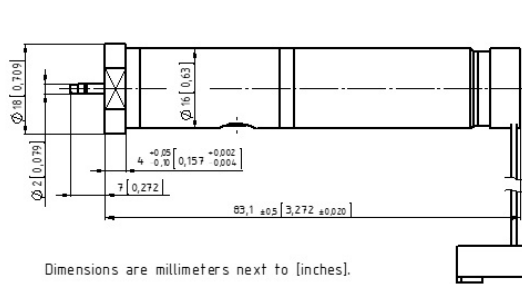
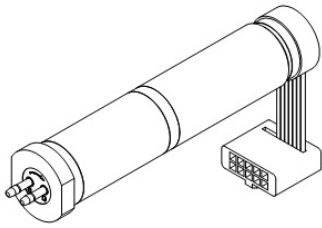
### Notice

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.

## Accessories

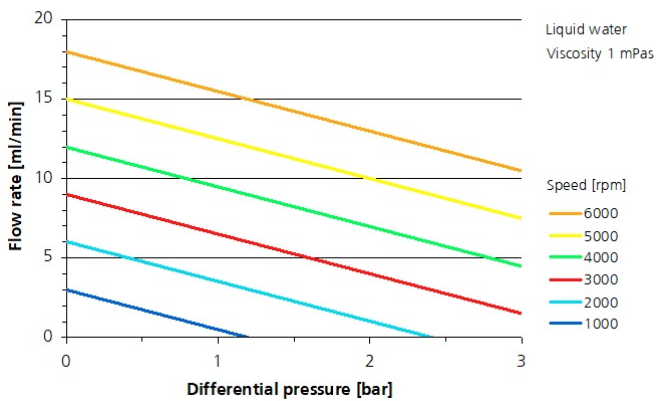
- Reduction gear
- S-KG
- S-ND
- m zr-Touch Control

## Dimensions

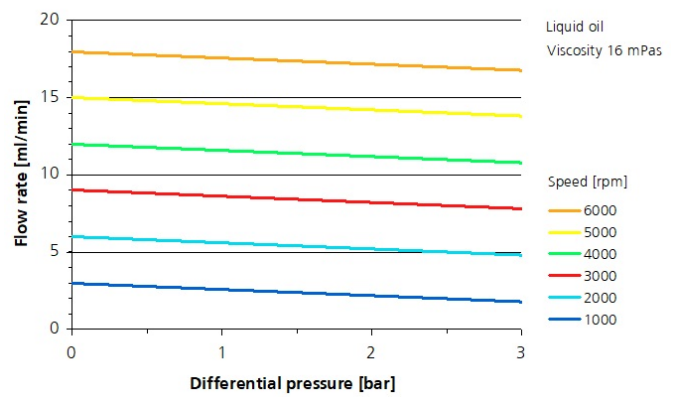


## Flow charts

Liquid water



Liquid oil



## 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.  
HNP M<sup>®</sup>, mzr<sup>®</sup>, MoDoS<sup>®</sup>,  $\mu$ -Clamp<sup>®</sup>,  $\mu$ Dispense<sup>®</sup>, Centrifluidic Technologies<sup>®</sup>, LiquiDoS<sup>®</sup>, smartDoS<sup>®</sup>, ColorDoS<sup>®</sup> are registered German trademarks of HNP Mikrosysteme GmbH.

## Contact

HNP Mikrosysteme GmbH  
Bleicherufer 25  
19053 Schwerin  
Germany

T +49 385 52190-300  
F +49 385 52190-333  
info@hnp-mikrosysteme.de

Last update 2019/08