

High performance series

## Micro annular gear pump mzr<sup>®</sup>-7208X1

For industrial production and process technology



- **High dosage precision**  
precision CV < 1% at low volumes
- **High differential pressures**  
achievable even for low viscosity liquids
- **Long service life**  
wear-resistant tungsten carbide
- **Broad viscosity range**  
methanol, water, solvents, adhesives, grease, gel
- **Compact measurements**  
length 211 mm
- **Dynamic precision motor**  
brushless DC-motor with encoder
- **Pulseless delivery, low shear stress**  
rotary micro annular gear technology

The micro annular gear pump mzr-7208X1 covers the flow rate range 0.048-288 ml/min. To the main assets of the device belong high precision, pulseless, low volume dosage even of non-lubricating liquids or at high

pressures. Driven by a high-power DC-servomotor the pump allows dosage in a broad viscosity range and shows small, economic dimensions. The mzr-7208X1 targets applications in industrial production and process technology.

The pump has been designed for continuous delivery and discrete dosage of water, watery solutions, solvents, methanol, oil, lubricants, adhesives, inks and paints as well as other high viscosity liquids.

### Applications

- Chemical processing
- Industrial and plant engineering
- Packaging
- Medical and pharmaceutical industry
- Mini plant technology
- Spraying
- Dispensing of adhesives
- Ink and paint dosage
- Vacuum applications

### Technical data

Flow rate	0.048 – 288 ml/min
Smallest dosage volume	30 µl
Displacement volume	48 µl
Differential pressure range	0 – 40 bar (580 psi), 0 – 150 bar * (2175 psi *)
Max. inlet pressure	5 bar (73 psi) (10 – 40 bar **)
Liquid temperature range	-5 ... +60 °C (-20 ... +150 °C **)
Viscosity range	0.3 – 50,000 mPas (max. 100,000 mPas)
Precision	< 1 % Coefficient of Variation CV
Pulsation	< 6 %
Speed range	1 – 6000 rpm
Fluid connection	1/8" NPT internal thread, lateral optional 1/8" NPT internal thread, frontal
Wetted parts	stainless steel 316L (1.4404/1.4435), tungsten carbide Ni-based; shaft seal: graphite-reinforced PTFE, stainless steel 316L; static seals: FPM, optional: EPDM, FFPM
Motor	brushless DC-servomotor, IP 54, winding 36 V DC, output power 201 W, max. continuous torque 192 mNm
Positioning	1000 counts per turn, analog hall sensors
Measurements (L x B x H)	211 x 84 x 93 mm
Weight	approx. 1500 g

Customized solutions on request.

\* for viscosity > 16 mPas

\*\* with optional fluidic seal module, heat insulation module, heating module

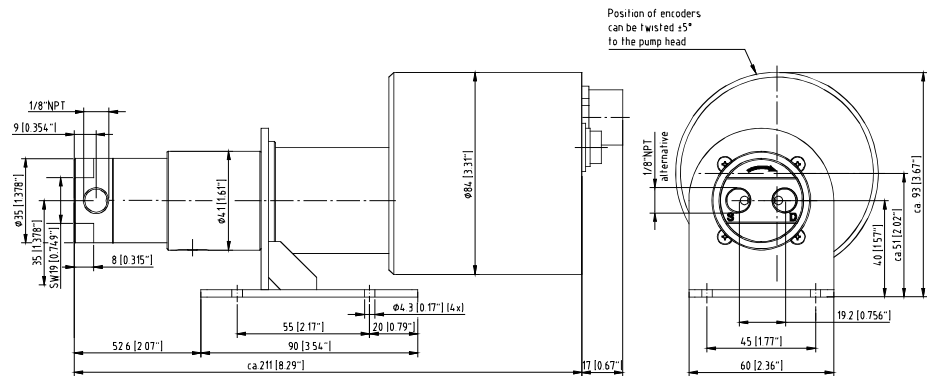
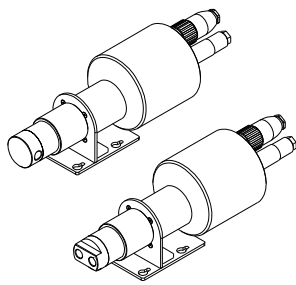
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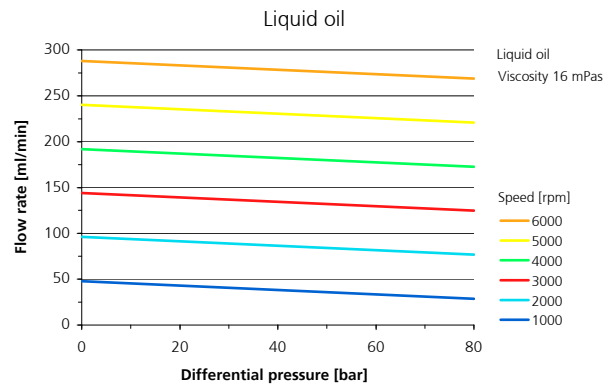
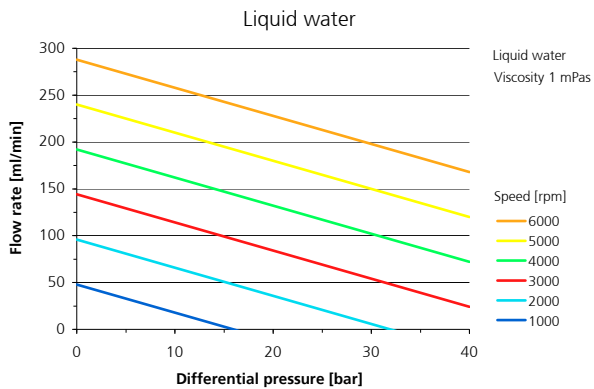
e-mail info@hnp-mikrosysteme.de  
http://www.hnp-mikrosysteme.de

## Measurements

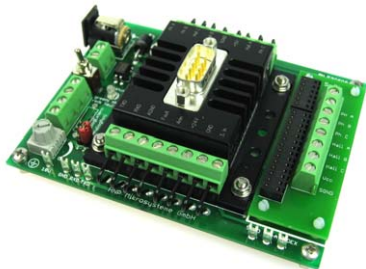


Subject to technical changes.

## Flow charts



## Control and software (optional)



- speed and position control S-BL for continuous and discrete dispensing tasks
- power supply with DIN 45323 socket or screw terminal
- RS-232 9-pole SUB-D connector for direct connection to a PC or a SPC
- analog input 0-10 V, 0 (4)-20 mA with screw terminal
- EEPROM program memory
- temperature and current limiting
- simple ASCII command language for the parameter setting (velocity profiles) and programming of the motor
- programming with Windows® software »Motion Manager«
- online dynamic drive analysis
- simultaneous operation of up to 255 pumps with additional multiplexer modules
- item no. 66 02 01 05

## Item number

10 03 01 49  
10 03 01 50

mzr-7208X1 S pump with brushless DC-servomotor, lateral fluid connection 1/8" NPT  
mzr-7208X1 F pump with brushless DC-servomotor, frontal fluid connection 1/8" NPT

## Accessories

Liquid supply accessories  
Fluidic seal module  
Heat insulation module  
Heating module  
Power supply

threaded fluid connectors, tubes, filters etc.  
use of liquids sensitive to air or water or for vacuum applications  
use for increased liquid temperature up to 150 °C  
active heating of the pump head up to 150 °C operating temperature  
power supply, assembly, 480 W, 48 V DC, 10 A, input voltage: 3 x 400 V AC  
item no. 68 01 05 00

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