

High performance series

## Micro annular gear pump m zr<sup>®</sup>-11508

For industrial production and process technology



- **High dosage precision**  
precision CV < 1% at low volumes
- **Long service life**  
wear-resistant tungsten carbide
- **Broad viscosity range**  
methanol, water, solvents, adhesives, grease, gel
- **Dynamic precision motor**  
brushless DC-motor with encoder
- **Compact dimensions**  
length 333,3 mm
- **High differential pressures**  
achievable even for low viscosity liquids
- **Low pulsation delivery, low shear stress**  
rotary micro annular gear technology

The micro annular gear pump m zr-11508 is equipped with tungsten carbide rotors and bearings. Hard construction material and precision manufacturing techniques guarantee excellent dosage precision, high service life and

wear resistance for low volume dosage of non-lubricating liquids. Driven by a high-power DC-motor the pump has a compact design and covers the flow range from 0.19 ml/min to 1152 ml/min. The m zr-11508 is suitable for contin-

uous delivery and discrete dosage of low and high viscosity liquids. It achieves high differential pressures and provides a low pulsation flow. Its robustness and the available accessories make it suitable for challenging applications.

### 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

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	0.19 – 1152 ml/min
Smallest dosage volume	100 µl
Displacement volume	192 µl
Differential pressure range	0 – 40 bar (1 mPas), 0 – 100 bar (> 16 mPas)
Max. inlet pressure	10 bar (145 psi)
Liquid temperature range	-5 ... +60 °C (-20 ... +120 °C *)
Viscosity range	0.3 – 150,000 mPas
Dosage precision	< 1 % Coefficient of Variation CV
Pulsation	< 6 %
Speed range	1 – 6000 rpm
Fluid connection	3/8" NPT internal thread, lateral optional 3/8" NPT internal thread, frontal
Wetted parts	stainless steel 316L (1.4435), tungsten carbide Ni-based; shaft seal: graphite-reinforced PTFE, alloy C276 (2.4819); static seals: FPM, optional: EPDM, FFPM
Motor	brushless DC-motor, IP 54, 42 V DC, max. 368 W
Encoder	500 counts per turn, type HEDL 5640
Interface	motor cable length 3 m, 6-pole plug for motor winding, 12-pole plug for encoder and hall sensors
Dimensions (L x W x H)	333,3 x 110 x 125 mm
Weight	approx. 8 kg

Customized solutions on request. \* with optional heat insulation module, heating module

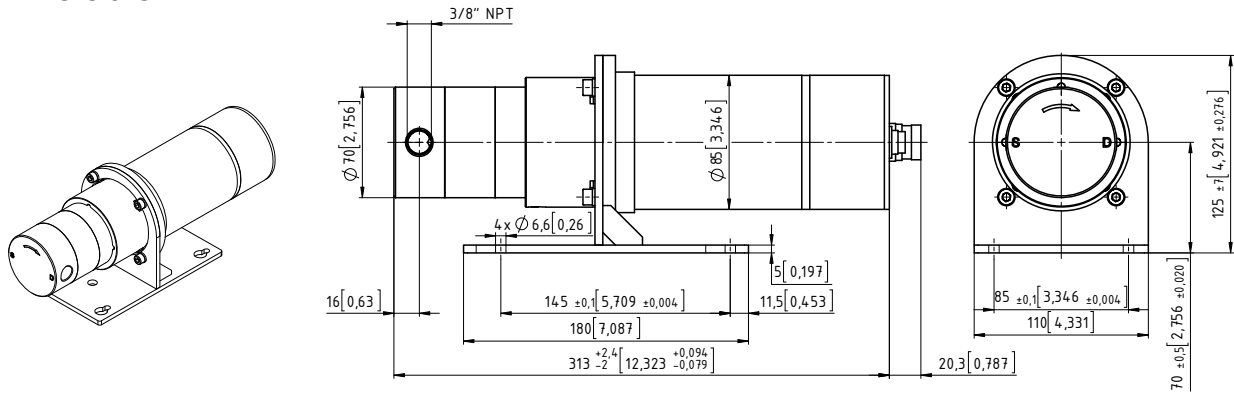
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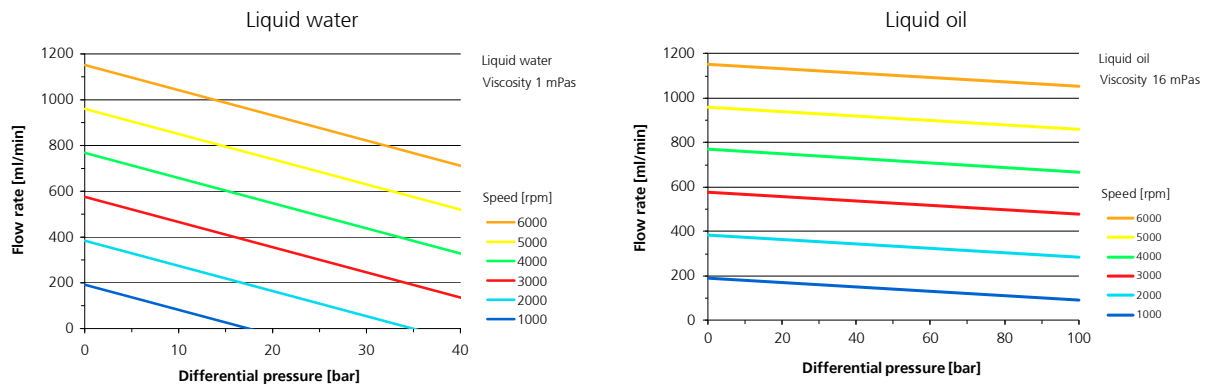
e-mail [info@hnp-mikrosysteme.de](mailto:info@hnp-mikrosysteme.de)  
<http://www.hnp-mikrosysteme.de>

## Dimensions



Subject to technical changes.

## Flow charts



## Control and software (optional)



- speed control S-HV for continuous delivery tasks
- servo-amplifier in a rugged aluminum case
- supply voltage 11 – 70 V DC, nominal current up to 10 A (optional max. current 20 A)

- speed range 10 – 6000 rpm
- internal potentiometer for speed control (optional external potentiometer)
- item no. 66 03 01 01



- speed and position control S-HP-E for continuous and discrete dispensing tasks
- 4-Q-DC servo amplifier in a rugged aluminum case
- supply voltage 20 – 55 V DC, nominal current up to 10 A

- speed range 1 – 6000 rpm
- standard interface: RS-232, CANopen
- software »Composer«
- 10 digital inputs 24 V DC
- 5 digital outputs 24 V DC
- item no. 66 04 01 24

## Item number

10 03 01 37  
10 03 01 38

mzs-11508 S pump with brushless DC-motor, lateral fluid connection 3/8" NPT  
mzs-11508 F pump with brushless DC-motor, frontal fluid connection 3/8" 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 120 °C  
active heating of the pump head up to 120 °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: 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. mzs®, MoDoS®, µ-Clamp®, HNPMP® are registered German trademarks of HNP Mikrosysteme GmbH.