HNP Mikrosysteme

High performance series

Micro annular gear pump mzr®-11508X1

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 309 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 mzr-11508X1 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 mzr-11508X1 is suitable for continuous delivery and discrete dosage of 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

Technical data

Flow rate	0.19 – 1152 ml/min
Smallest dosage volume	100 µl
Displacement volume	192 µl
Differential pressure range	0 – 30 bar (1 mPas), 0 – 30 bar (> 16 mPas)
Max. inlet pressure	10 bar (145 psi)
Operating temperature range	-5 … +60 °C (-20 … +120 °C *)
Viscosity range	0.3 – 50,000 (max. 100,000 mPas)
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-servomotor, IP 54, winding 36 V DC, output power 201 W, max. continuous torque 192 mNm
Positioning	1000 counts per turn, analog hall sensors
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)	309 x 108 x 124 mm
Weight	approx. 8 kg

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

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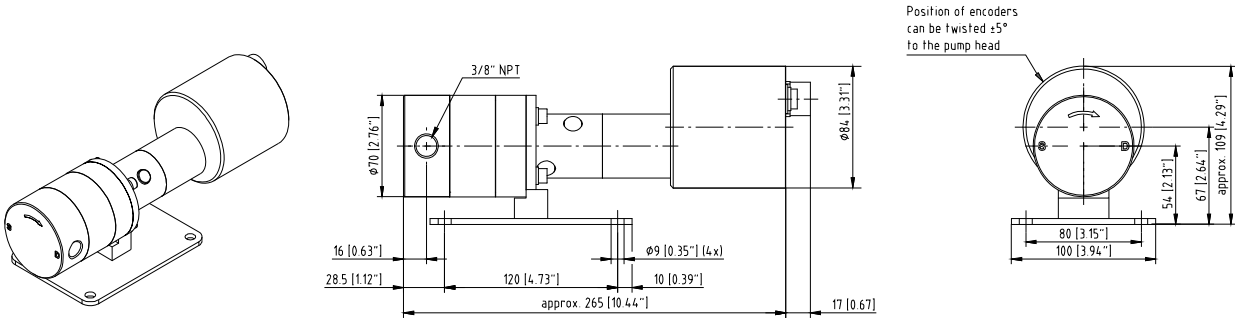
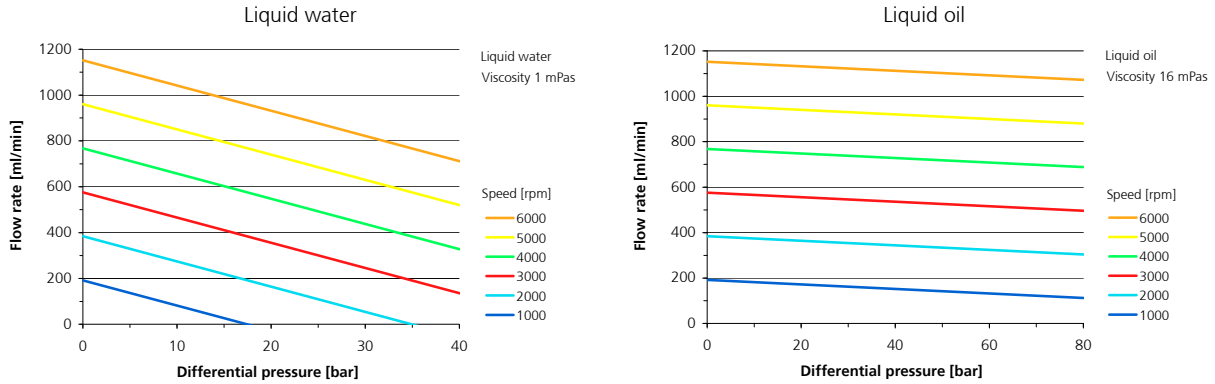
Dimensions



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 47	mzr-11508X1 S pump with brushless DC-motor, lateral fluid connection 3/8" NPT
10 03 01 48	mzr-11508X1 F pump with brushless DC-motor, frontal fluid connection 3/8" NPT

Accessories

Liquid supply accessories	threaded fluid connectors, tubes, filters etc.
Fluidic seal module	use of liquids sensitive to air or water or for vacuum applications
Heat insulation module	use for increased liquid temperature up to 120 °C
Heating module	active heating of the pump head up to 120 °C operating temperature
Power supply	power supply, assembly, 24 V DC, 5 A, input voltage: 230 V AC (100-120 / 210-240 V AC) item no. 92 00 23 06

Even if single parameters are within their indicated performance range, 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.

04/15