HNP Mikrosysteme

Hermetic, chemically inert pump series

Micro annular gear pump mzr®-7255

For mini plant and microreaction technology

- **High resistance to corrosion**
  oxidizing and reducing media, acids and bases
- **Long service life**
  wear-resistant ceramic components
- **Hermetically sealed**
  magnetic coupling (NdFeB)
- **Compact, chemically inert pump head**
  146 mm long, alloy C22, SSiC, Al_2O_3 and ZrO_2 ceramics
- **Precision motor and user-friendly control**
  dynamic DC-servomotor with encoder and microcontroller, RS-232 or CAN-Bus, analog, I/O
- **Precise dosage, low pulsation**
  rotary micro annular gear technology, no valves

The mzr-7255 micro annular gear pump of the hermetic and chemically inert series is, considering its almost universal suitability for aggressive and corrosive media, a revolution in the pump technology. Its rotors and functional elements being made of ceramics, the pump shows the highest chemical resistance and an outstanding resistance to wear. Thanks to the use of SSiC (pressureless sintered silicon carbide) as bearing and shaft material, a magnetic coupling, and case components made out of alloy C22 (DIN 2.4602), this pump will take up any challenge in the chemical industry applications.

Application fields

- Mini plant technology
- Microreaction technology

Technical data

Flow rate	0.048 – 288 ml/min
Smallest dosage volume	30 µl
Displacement volume	48 µl
Max. system pressure	80 bar (1160 psi) (inlet pressure+differential pressure)
Differential pressure range	0 – 20 bar (1 mPas); 0 – 40 bar (> 16 mPas)
Liquid temperature range	-5 … +60 °C (-20 … +150 °C *)
Viscosity range	0.3 – 1000 mPas
Dosage precision	< 1 % Coefficient of variation CV
Pulsation	< 6 %
Speed	1 – 6000 rpm
Fluid connection	1/8" NPT internal thread, lateral
Wetted parts	Pump case alloy C22 (2.4602), optional: stainless steel 316L; seals FFPM (Kalrez® Spectrum™ 6375), optional: FPM, EPDM; shaft/bearing sintered silicon carbide (SSiC); bearing and wetted functional parts Al_2O_3 ceramics; rotors partially stabilized ZrO_2, optional: tungsten carbide Ni-based
Coupling	8-pole NdFeB magnetic coupling
Drive and control	DC-servomotor, 24 V DC, 44 W, with microcontroller
Interface	0–10 V, 0 (4) –20 mA, RS-232, 1 digital input/output, optional: CAN-Bus
Dimensions (L x W x H)	146 x 70 x 72 mm
Weight	approx. 1650 g

Customized version on request.

* Additional modules / depending on operating parameters

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.

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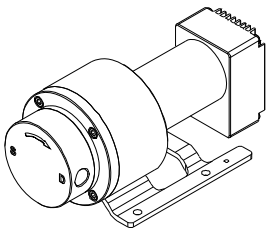
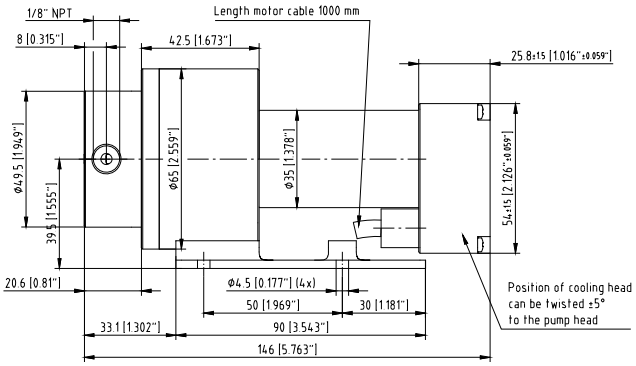
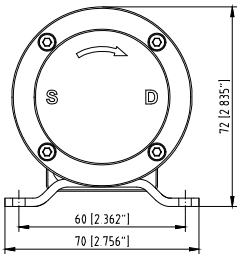
Dimensions

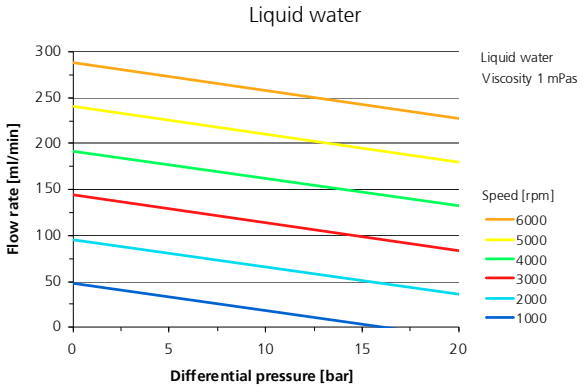


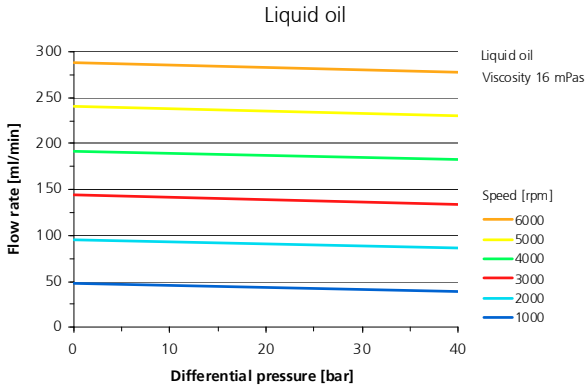




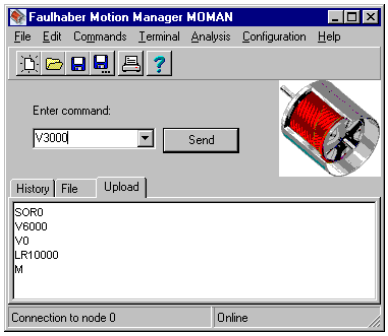
Subject to technical changes..

Flow charts





Control and software



- speed and position control for continuous and discrete dispensing tasks
- RS-232 connection interface to PC or SPC, optional CANopen
- analog input 0-10 V, 0 (4)-20 mA
- monitoring of voltage, temperature and power supply to the motor
- terminal box with potentiometer for speed control, 9-pole interface plug, CE-conform
- EEPROM program memory
- simple ASCII command language for parameter setting (speed profile) and programming of the motor
- programming with Windows® software »Motion Manager«
- online dynamic drive analysis
- power supply with a plug socket according to DIN45323 or a terminal screw
- simultaneous operation of up to 255 pumps via RS-232 with additional multiplexer modules

Item number

13 03 03 01	pump mzr-7255-cy, materials: alloy C22, Al_2O_3, stabilized ZrO_2
13 03 02 01	pump mzr-7255-cs, materials: stainless steel 316L, Al_2O_3, stabilized ZrO_2
13 03 04 01	pump mzr-7255-hy, materials: alloy C22, tungsten carbide Ni-based
13 03 01 01	pump mzr-7255-hs, materials: stainless steel 316L, tungsten carbide Ni-based

Optional equipment

Liquid supply accessories	threaded fluid connectors, tubes, filters etc.
Heat insulation module	enables to keep the temperature of the liquid at up to 150 °C
Multiplexer module	simultaneous operation of up to 255 pumps with a common RS-232 interface