

## Product information

### mzr-11558 · Hermetic inert pump series



#### Description

The mzr-11558 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 ceramics 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.

#### Advantages

- High resistance to corrosion  
oxidizing and reducing media, acids and bases
- Hermetically sealed  
magnetic coupling (NdFeB)
- Long service life  
wear-resistant tungsten carbide
- Chemically inert pump head  
alloy C22, SSiC, Al<sub>2</sub>O<sub>3</sub> and ZrO<sub>2</sub>-ceramics
- Dynamic precision motor  
brushless DC-motor with encoder
- High differential pressures  
achievable even for low viscosity liquids
- Precise dosage, low pulsation  
rotary micro annular gear technology, no valves

#### Applications

- Flow chemistry
- Microreaction technology
- Mini plant technology

## Technical data

|                             |  |
|-----------------------------|--|
| Flow rate                   | 0.192 - 1152 ml/min  |
| Smallest dosage volume      | 100µl  |
| Displacement volume         | 192µl  |
| Maximum system pressure     | 60 bar (870 psi) (200 bar (2900 psi) *) (inlet pressure + differential pressure)   |
| Differential pressure range | 0 – 60 bar   |
| Liquid temperature range    | -5 ... +60 °C (-20 ... +100 °C *)  |
| Viscosity range             | 0.3 - 1,000 mPas   |
| Precision CV                | < 1% (Coefficient of variation CV)   |
| Velocity range              | 1 - 6000 rpm   |
| Fluid connection            | 3/8" NPT internal thread, lateral  |
| Wetted parts                | Pump case alloy C22 (2.4602), optional: stainless steel 316L;<br>seals FFPM (Kalrez® Spectrum™ 6375), optional: FPM, EPDM;<br>shaft sintered silicon carbide (SSiC);<br>bearing and wetted functional parts Al <sub>2</sub> O <sub>3</sub> ceramics;<br>rotors TAZ composite ceramics, optional: tungsten carbide Ni-based |
| Motor                       | Brushless DC-motor, IP 54, 42 V DC, max. 368 W   |
| Encoder                     | 500 counts per turn, type HEDL 5640  |
| Electrical connection       | 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)      | 301 x 130 x 129 mm   |
| Weight                      | approx. 11000g   |
| Remarks                     | * with optional heat insulation module, Customized solutions on request.   |

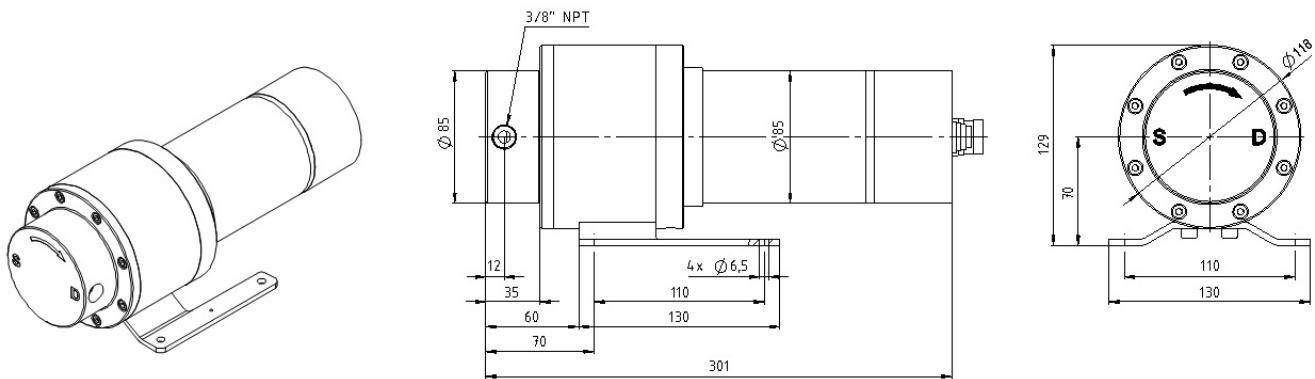
### Notice

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.

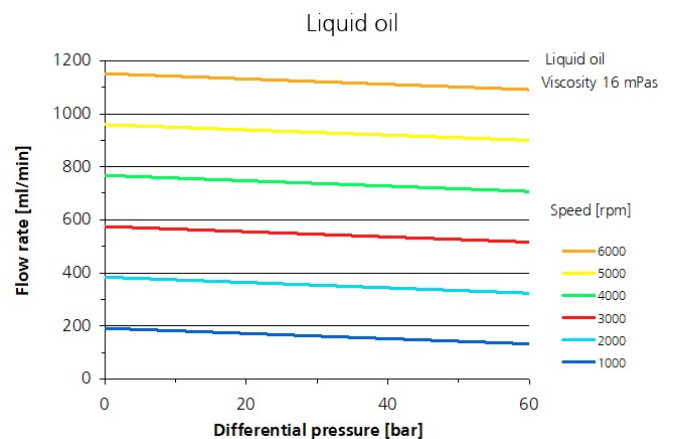
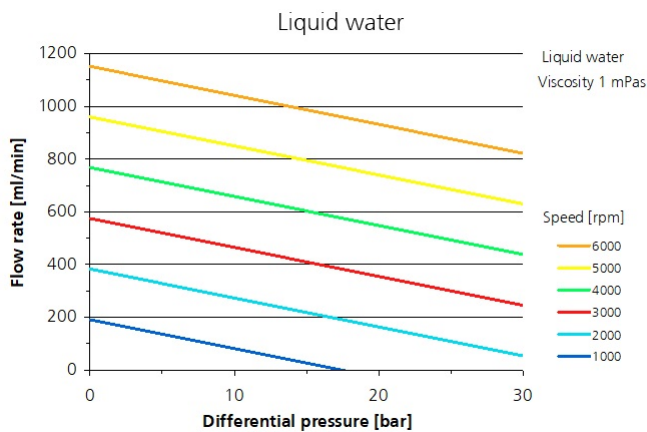
## Accessories

- Double shell heating module
- S-HP-E
- S-HV

## Dimensions



## Flow charts



## 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.

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