

High performance series

Micro annular gear pump mzr[®]-11507 Ex

Ex-pump for application in chemical and process technology



- **Ex-certification ATEX**
conform with EU Directive 94/9/EC
- **High dosage precision**
precision CV < 1 % at low volumes
- **Long service life**
wear-resistant tungsten carbide
- **Broad viscosity range**
water, solvents, adhesives, grease, gel
- **Compact dimensions**
length 358 mm
- **High differential pressures**
achievable also for low viscosity liquids
- **Low pulsation delivery, low shear stress**
rotary micro annular gear technology

The micro annular gear pump mzr-11507 Ex 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 an explosion-proof three-phase AC motor the pump has a compact design and covers the flow range from 58 ml/min to 1152 ml/min. The mzr-11507 Ex is suitable for continuous delivery 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 in chemical and process technology.

Applications

- Chemical processing
- Industrial and plant engineering
- Packaging
- Medical and pharmaceutical industry
- Mini plant technology
- Spray technology
- 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 | 58 – 1152 ml/min (29 - 576 ml/min *) |
| Smallest dosage volume | 100 µl |
| Displacement volume | 192 µl |
| Differential pressure range | 0 – 40 bar (580 psi) (1 mPas); 0 – 80 bar (> 16 mPas) |
| Max. inlet pressure | 10 bar (145 psi) |
| Ambient temperature range | -20 ... +40 °C (-55 ... +60 °C *) |
| Liquid temperature range | -5 ... +40 °C (-20 ... +120 °C *) |
| Viscosity range | 0.3 – 5,000 mPas (10,000 mPas *) |
| Ex-certification | CE II 2G c T4 X |
| Place of installation | Ex-area zone 1, 2 |
| Dosage precision | < 1 % Coefficient of Variation CV |
| Pulsation | 6 % |
| Speed range | 300 – 6000 rpm (150 – 3000 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 |
| Drive | three-phase AC motor, IEC-Size 063, 2 poles, IP 55, rated voltage 240/400 V, frequency 50 Hz, 250 W |
| Temperature protection | PTC-resistor, 6 pieces |
| Dimensions (L x W x H) | 358 x 120 x 224 mm |
| Weight | approx. 22 kg |

Customized solutions on request. * with optional modules or alternative motors

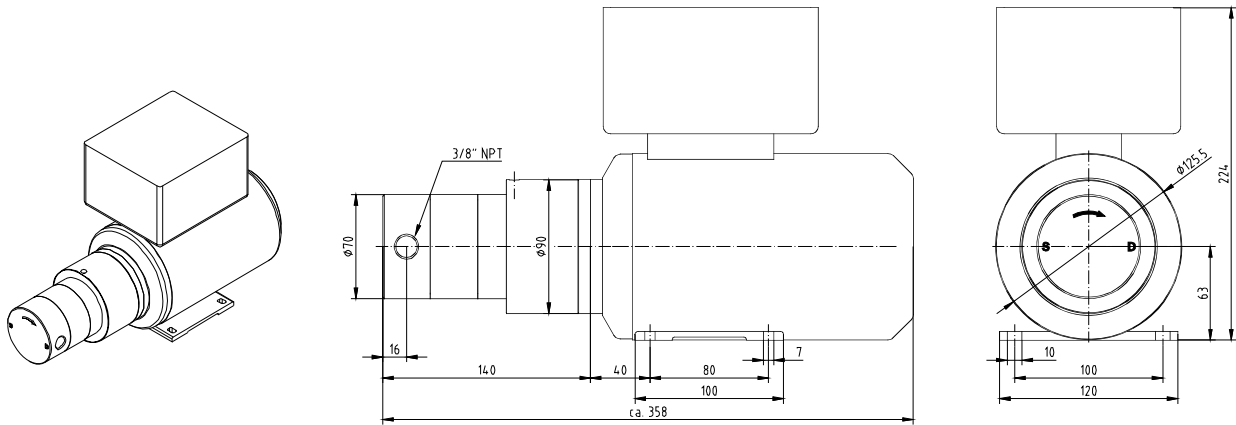
Contact

HNP Mikrosysteme GmbH
Bleicherufer 25 · D-19053 Schwerin

phone +49 385 52190-301
fax +49 385 52190-333

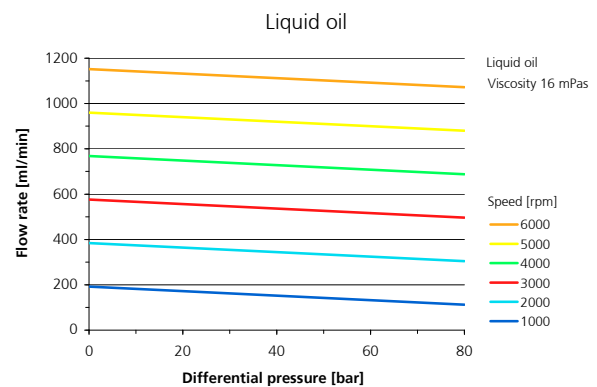
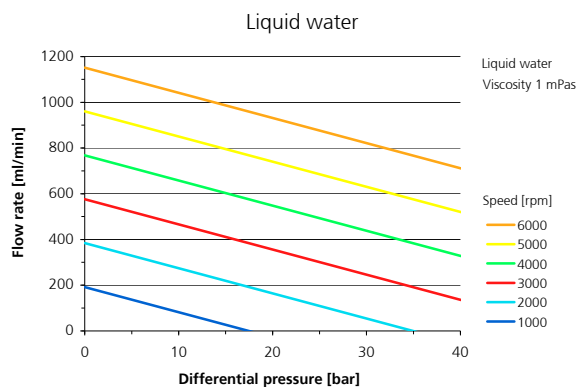
e-mail info@hnp-mikrosysteme.de
<http://www.hnp-mikrosysteme.de>

Dimensions



Subject to technical changes.

Flow charts



Control (optional)



- vector frequency inverter S-FI-M3 for speed control nominal voltage 400 V AC
- power 550 W
- speed range 300 – 6000 rpm
- output frequency 0 – 320 Hz
- frequency resolution 0.01 Hz
- alternative analog inputs for speed set: 0-10 V, 4-20 mA
- 6 digital I/O (24 V DC)
- protective class IP 20
- dimensions (H x W x D): 160 x 66 x 102 mm
- internal radio interference suppression filter
- external thermistor overload relay
- Item number: 66 04 01 30

Item number

10 03 01 41

pump mzr-11507 S Ex with three-phase AC motor, IEC-Size 063, lateral fluid connection 3/8" NPT

66 04 01 01

vector frequency inverter S-FI-M1, 400 V AC, 370 W, IP 20, 8 digital I/O (24 V DC), analog inputs for speed set: 0-10 V, 4-20 mA, external radio interference suppression filter external thermistor overload relay

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

Expanded temperature class

upgrading for temperature class T5 and T6, with additional sensors for permanent temperature monitoring

Alternative drives

Explosion-proof three-phase AC motor, IEC-Size 063 with 4 poles for continuous dosage of small flow rates (29 - 576 ml/min)

IEC-Size 071 2 poles/4 poles for continuous dosage of high viscous liquids (>5.000 mPas)

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