HNP Mikrosysteme

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 a 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

Technical data

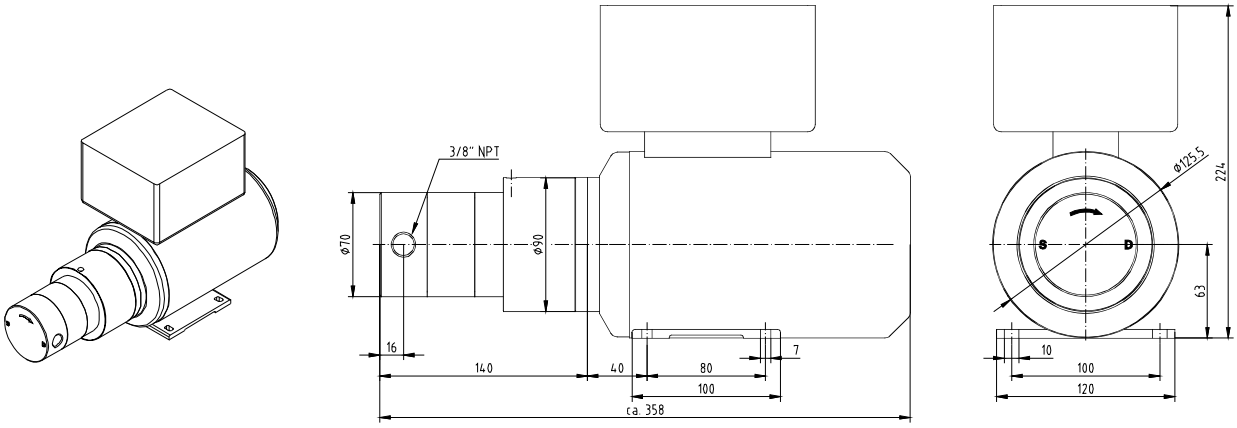
Flow rate	58 – 1152 ml/min (29 - 576 ml/min *)
Smallest dosage volume	100 µl
Displacement volume	192 µl
Differential pressure range	0 – 40 bar (580 psi) (1 mPas); 0 – 80 bar (> 16 mPas)
Max. inlet pressure	10 bar (145 psi)
Ambient temperature range	-20 … +40 °C (-55 … +60 °C *)
Liquid temperature range	-5 … +40 °C (-20 … +120 °C *)
Viscosity range	0.3 – 5,000 mPas (10,000 mPas *)
Ex-certification	CE Ex 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

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.

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

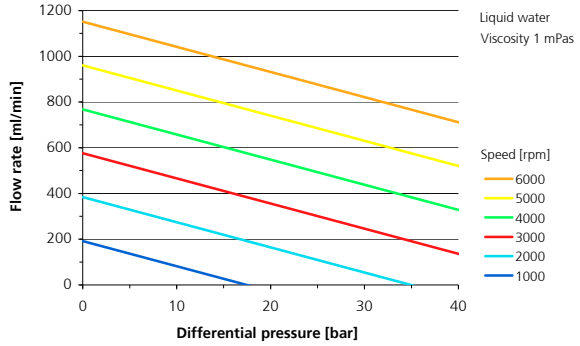
Dimensions



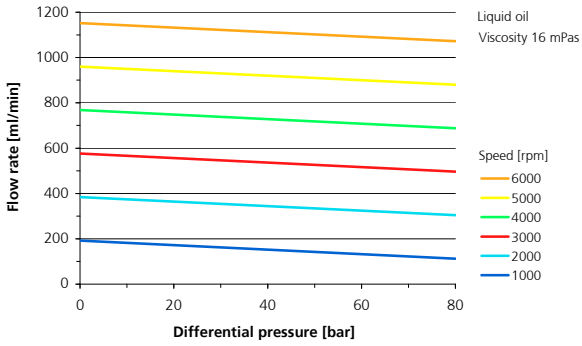
Subject to technical changes.

Flow charts

Liquid water



Liquid oil



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)

08/16