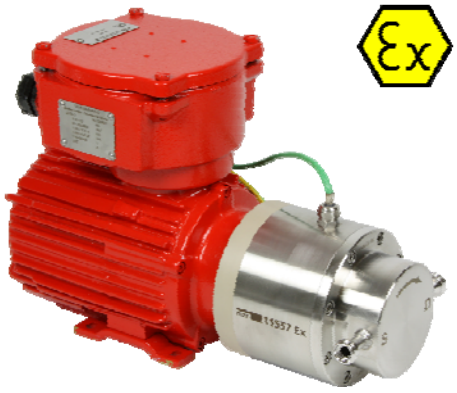
HNP Mikrosysteme

Hermetic, chemically inert pump series

Micro annular gear pump mzr®-11557 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 mzr-11557 Ex 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. Driven by a explosion-proof three-phase AC motor the pump covers the flow range from 58 ml/min to 1152 ml/min. 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.

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

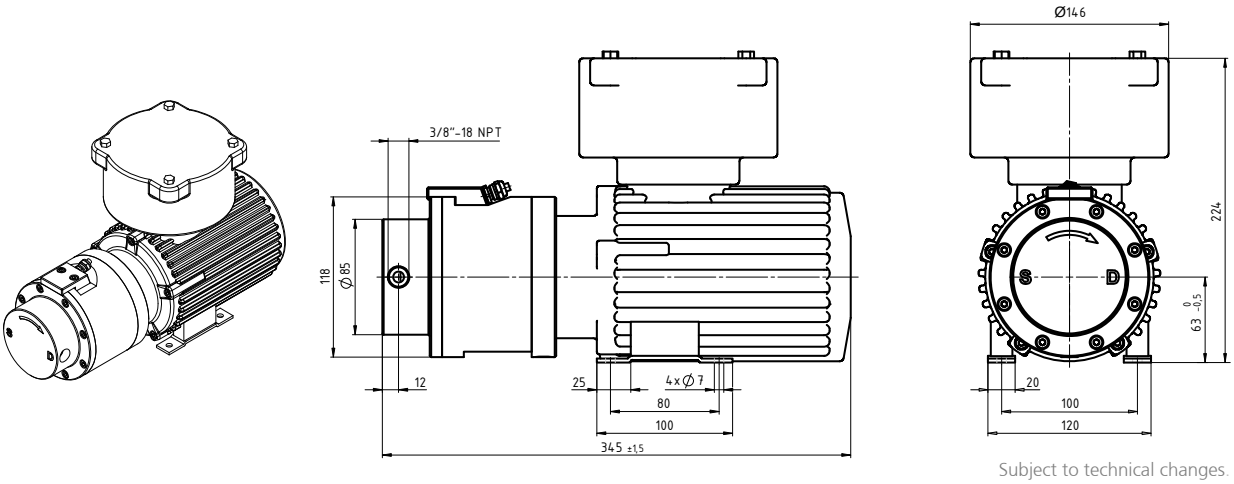
Flow rate	58 – 1152 ml/min (29 - 576 ml/min *)
Smallest dosage volume	100 µl
Displacement volume	192 µl
Max. system pressure	60 bar (870 psi) 200 bar * (2900 psi *) (inlet pressure+differential pressure)
Differential pressure range	0 – 30 bar (1 mPas); 0 – 60 bar (> 16 mPas)
Ambient temperature range	-20 … +40 °C (-55 … +60 °C *)
Liquid temperature range	-5 … +60 °C
Viscosity range	0.3 – 1,000 mPas
Ex-certification	CE Ex II 2G c IIB T3
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
Wetted parts	Pump case alloy C22 (2.4602), optional: stainless steel 316L; seals FFPM (Kalrez® Spectrum™ 6375), optional: FPM, EPDM; shaft sintered silicon carbide (SSiC); bearing and wetted functional parts Al_2O_3 ceramics; rotors partially stabilized ZrO_2, optional: tungsten carbide Ni-based
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)	345 x 146 x 224 mm
Weight	approx. 25 kg

* depending on accessories, customized solutions on request

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.

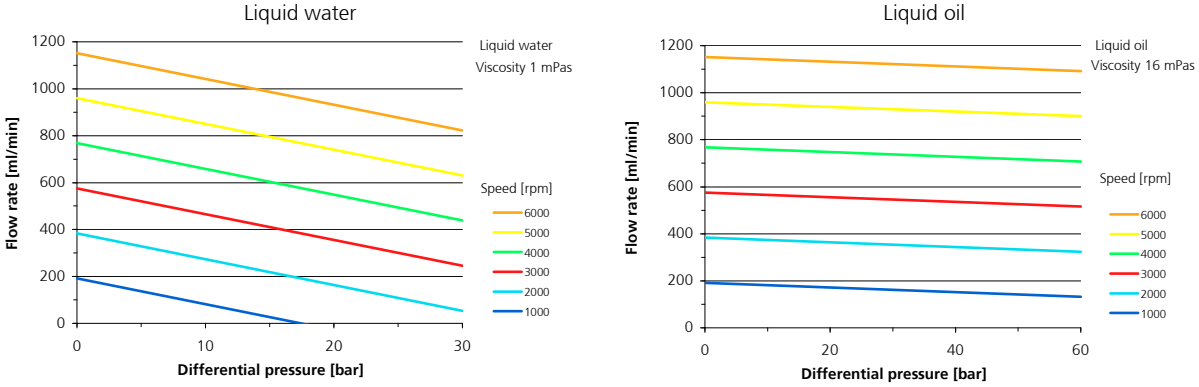
Contact
HNP Mikrosysteme GmbH
Bleicherufer 25 · D-19053 Schwerin
phone +49 385 52190-301
fax +49 385 52190-333
e-mail info@hnp-mikrosysteme.de
http://www.hnp-mikrosysteme.de

Dimensions



Subject to technical changes.

Flow charts



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

13 01 01 06	pump mzr-11557-hs S Ex, pump case stainless steel 316L, bearing, functional parts and rotors tungsten carbide Ni-based, AC-motor, lateral fluid connection 3/8" NPT
13 01 02 06	pump mzr-11557-cs S Ex, pump case stainless steel 316L, bearing and functional parts Al_2O_3, rotors partially stabilized ZrO_2, AC-motor, lateral fluid connection 3/8" NPT
13 01 03 06	pump mzr-11557-cy S Ex, pump case alloy C22, bearing and functional parts Al_2O_3, rotors partially stabilized ZrO_2, AC-motor, lateral fluid connection 3/8" NPT
13 01 04 06	pump mzr-11557-hy S Ex, pump case alloy C22, bearing, functional parts and rotors tungsten carbide Ni-based, AC-motor, lateral fluid connection 3/8" NPT

Accessories

Liquid supply accessories	threaded fluid connectors, tubes, filters etc.
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