


Hermetic, chemically inert pump series 

Micro annular gear pump mzr[®]-6359 Ex, mzr[®]-7259 Ex

Ex-pump for application in chemical and process technology




- **Ex-certification ATEX**
conform with EU Directive 2014/34/EU
- **Compact, chemically inert**
length 280 mm, alloy C22, SiC, Al₂O₃ and ZrO₂ ceramics
- **Long service life**
wear-resistant ceramic components
- **Hermetically sealed**
magnetic coupling (NdFeB)
- **High dosage precision**
precision CV < 1 % at low volumes
- **Low pulsation delivery, low shear stress**
rotary micro annular gear technology, no valves

The micro annular gear pumps mzr-6359 Ex and mzr-7259 Ex of the hermetic inert pump series in its explosion proof version are used for highly precise, low pulsation small volume dosage even of aggressive and corrosive liquids.

The compact design combined with high achievable pressures are unique features. The pumps are applied in the field of chemical and process technology. Thanks to the use of rotors and functional elements being made of ceramics,

a magnetic coupling, and case components made out of alloy C22, this pump will take up any challenge in the chemical industry applications.

Technical data

	mzr-6359 Ex	mzr-7259 Ex
Flow rate	0.024 – 112 ml/min	0.048 – 225 ml/min
Smallest dosage volume	15 µl	30 µl
Displacement volume	24 µl	48 µl
Max. system pressure	80 bar (1160 psi) (inlet pressure + differential pressure)	80 bar (1160 psi) (inlet pressure + differential pressure)
Differential pressure range	0 – 15 bar (1 mPas), 0 – 40 bar (>16 mPas)	0 – 20 bar (1 mPas), 0 – 40 bar (>16 mPas)
Viscosity range	0.3 – 100 mPas	0.3 – 100 mPas
Pulsation	1,5 %	6 %
Precision (Coefficient of Variation CV)	< 1 %	
Ambient temperature range	0 ... +40 °C	
Liquid temperature range	-5 ... +60 °C (-20 ... +100 °C *)	
Fluid connection	1/8" NPT internal thread, lateral	
Ex-certification	 II 2G IIC c T4 X	
Place of installation	Ex-area zone 1, 2	
Wetted parts	Pump case alloy C22 (DIN 2.4602), optional: stainless steel 316L; seals FPM (Kalrez [®] Spectrum [™] 6375), optional: FPM, EPDM; shaft/bearing sintered silicon carbide (SiC); bearing and wetted functional parts Al ₂ O ₃ ceramics; rotors partially stabilized ZrO ₂ optional: tungsten carbide Ni-based	
Drive	DC-motor, 24 V DC, 2 A, 53 W, encoder: 500 counts per turn, type HEDL 5540	
Speed range	1 – 4700 rpm	
Cable length	10 m	
Weight	approx. 4900 g	

Customized solutions on request.

* with optional heat insulation module

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.

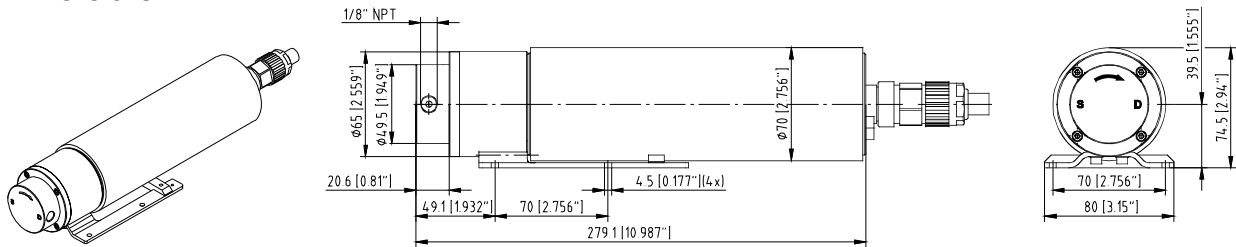
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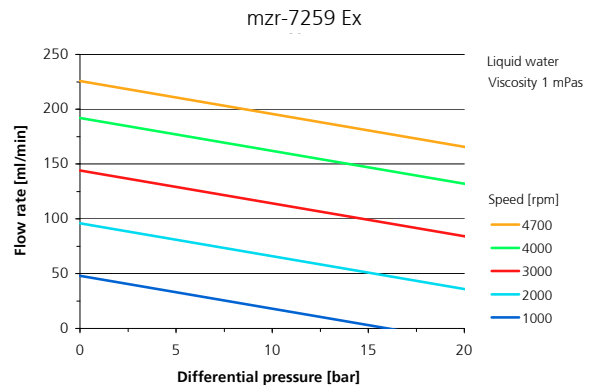
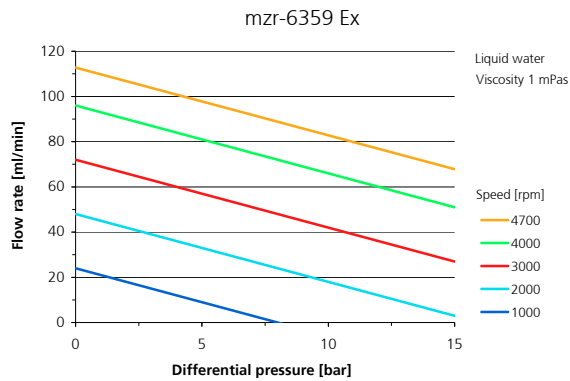
e-mail info@hnp-mikrosysteme.de
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Dimensions

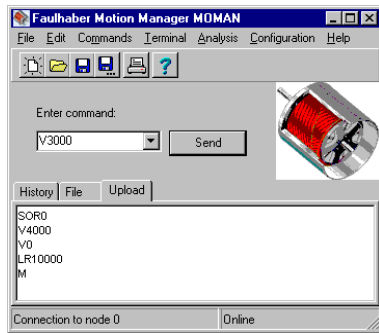


Subject to technical changes.

Flow charts



Control S-HD-KL (Accessories)



- speed and position control for continuous and discrete dispensing tasks
- terminal box with potentiometer for speed control
- RS-232 9-pole SUB-D connector to connect directly to a PC or a SPC
- analog input with terminal screw
- power supply with DIN 45323 socket, pin plug or terminal screw
- EEPROM program memory
- simple ASCII command language for parameter setting (velocity profiles) and programming of the motor
- programming with Windows® software »Motion Manager«
- temperature and current limiting
- online dynamic drive analysis
- simultaneous operation of up to 255 pumps with additional multiplexer modules

Item number

13 04 03 03	pump mzr-6359-cy S Ex with lateral fluid connectors 1/8" NPT, pump case alloy C22 (2.4602), bearing and functional parts Al ₂ O ₃ , rotors partially stabilized ZrO ₂
13 04 01 03	pump mzr-6359-hs S Ex with lateral fluid connectors 1/8" NPT, pump case stainless steel 316L, bearing, functional parts and rotors tungsten carbide Ni-based
13 03 03 03	pump mzr-7259-cy S Ex with lateral fluid connectors 1/8" NPT, pump case alloy C22 (2.4602), bearing and functional parts Al ₂ O ₃ , rotors partially stabilized ZrO ₂
13 03 01 03	pump mzr-7259-hs S Ex with lateral fluid connectors 1/8" NPT, pump case stainless steel 316L, bearing, functional parts and rotors tungsten carbide Ni-based
66 02 01 04	Controller S-HD-KL: programmable microcontroller-based control for continuous delivery and discrete dosage, installed outside of the Ex-area

Accessories

Liquid supply accessories	threaded fluid connectors, tubes, filters etc.
Heat insulation module	use for increased liquid temperature of up to 100 °C
Multiplexer module	simultaneous operation of up to 255 pumps with a single RS-232 interface

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®, HNPMP® are registered German trademarks of HNP Mikrosysteme GmbH. Kalrez® Spectrum™ is a registered trademark of DuPont.