

Hermetic, chemically inert pump series Micro annular gear pump m zr[®]-7255 for mini plant- and micro reaction technology

Product Launch
ACHEMA 2006



- **Highest resistance to corrosion**
oxidizing and reducing media, acids and bases
- **Long service life**
wear-resistant diamond gears with tungsten carbide core
- **Hermetically sealed**
magnetic pump coupling (NdFeB)
- **Compact, chemically inert pump head**
146 mm long, HASTELLOY[®]-C22, SSIC, diamond
- **Precision motor and user-friendly control**
dynamic EC servomotor with encoder and microcontroller, RS-232 or CAN-Bus, analog, I/O
- **Precise dosage, low pulsation**
rotary micro annular gear technology, no valves

The m zr-7255 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 ele-

ments being made of synthetic diamond with a tungsten carbide core, the pump shows the highest chemical resistance and an outstanding resistance to wear. Thanks to the use of SSIC (pressureless sintered silicon carbide) as

bearing and shaft material, a magnetic coupling, and case components made out of HASTELLOY[®] C-22, this pump will take up any challenge in chemical industry applications.

Application fields

- mini plant technology
- microreaction technology

Technical data

Flow rate	0,048 – 288 ml/min
Smallest dosage volume	5 µl
Displacement volume	48 µl
Differential pressure range	0 – 40 bar (580 psi)
Max. inlet pressure	80 bar *
Operation temperature	-5 ... +60 °C (-20 ... +150 °C *)
Viscosity range	0,5 – 1000 mPas
Dosage precision	< 1 % (Coefficient of variation CV)
Pulsation	< 6 %
Rotation speed	1 – 6000 U/min
Fluid supply	1/8" NPT internal thread, on the side
Wetted parts	Pump case HASTELLOY [®] C-22; seals FFKM (Kalrez [®] Spectrum [™] 6375); shaft/bearing sintered silicon carbide (SSIC); rotors and wetted functional elements CVD diamond coated hard metal
Electrical interface	8-pole connector NdFeB magnetic coupling
Drive and control	DC-servomotor, 24 V DC, 44 W, with microcontroller
Interface	0–10 V, 0 (4) –20 mA, RS-232, 1 digital input/output, optional: CAN-Bus
Measurements (L x B x H)	146 x 70 x 72 mm
Weight	ca. 3300 g

Customized version on demand..

* Additional modules / depending on operating parameters

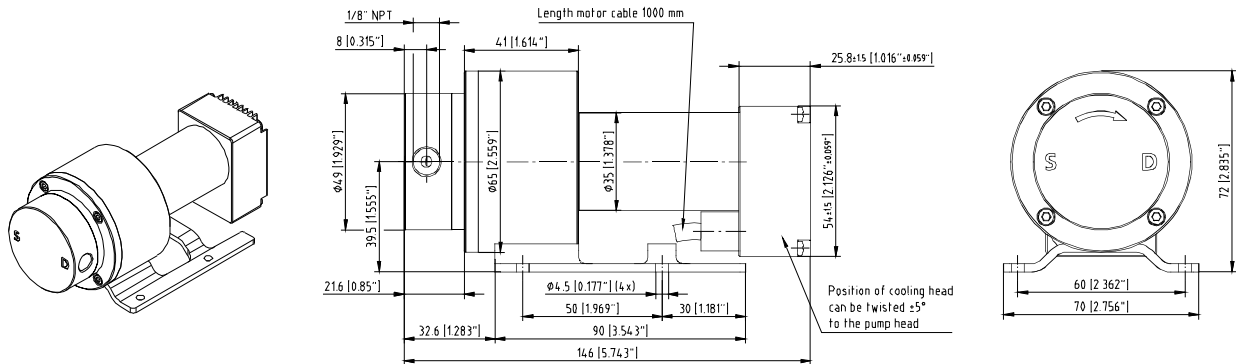
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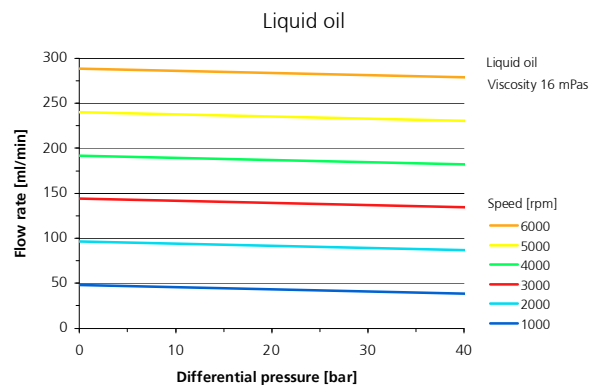
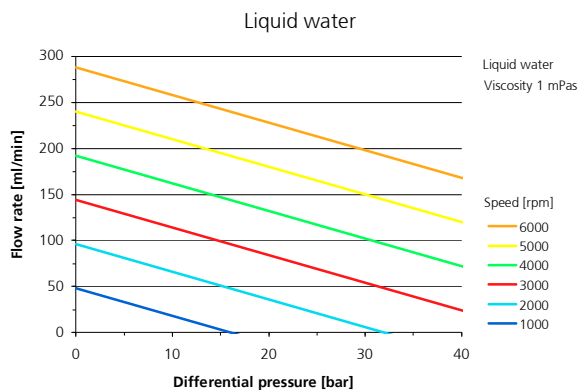
e-mail info@hnp-mikrosysteme.de
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Measurements

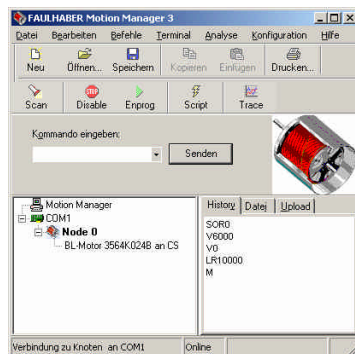


Subject to technical changes..

Flow charts



Control and software



- speed and position control for continuous and discrete dispensing tasks
- RS-232, CANopen connection interfaces to PC or SPC
- analog input 0-10 V, 0 (4)-20 mA
- monitoring of voltage, temperature and power supply to the motor
- connection board with potentiometer for rotation speed control, 9-pole interface plug, CE-conform
- EEPROM program memory
- simple ASCII command language for parameter setting (speed profile) and programming of the motor
- programming with Windows® software »Motion Manager«
- online dynamic drive analysis
- power supply according to DIN45323 with a plug socket or a terminal screw
- simultaneous operation of up to 255 pumps through RS-232 with additional multiplexer modules

Item/Article number

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Pump mzf-7255 with fluid supply on the side 1/8" NPT, CE-conform pump-housing connection board S-G05, programmable EC-drive with adjustable rotation speed and position, with integrated microcontroller, control software »Motion Manager«, zero-modem cable

Optional equipment

Fluid supply accessories
Heat isolation module
Multiplexer module

Threaded fluid connectors, tubes, filters etc.
Enables to keep the temperature of the fluid at up to 150 °C
Simultaneous operation of up to 255 pumps through a common RS-232 interface

Micro annular gear pumps (and housings) are protected by assigned patents: EP 852 674 B1, US 6,179,596, US 6,520,757 B1, DE 198 43 161. In the US, Europe and Japan are additional patents pending. mzf® is a registered German trademark of HNP Mikrosysteme GmbH. Teflon® is a registered trademark of DuPont. Viton® is a registered trademark of DuPont Dow Elastomers. HASTELLOY® is a registered trademark of Haynes International, Inc. PEEK™ is a registered trademark of Victrex plc. Kalrez® Spectrum™ is a registered trademark of DuPont.