

Low pressure series

Micro annular gear pump m zr[®]-7223

Dosing pump for analytical instrumentation



- **Compact dimensions**
diameter 25 mm, length 130 mm
- **Small dosage volumes, high flow rates**
smallest volume 30 µl – flow up to 288 ml/min
- **High dosage precision**
precision CV 1 % at low volumes
- **Long service life**
wear-resistant tungsten carbide
- **Pulseless delivery, low shear stress**
rotary micro annular gear technology

The compact micro annular gear pump m zr-7223 of the low pressure series is an innovative pump concept for use in analytical instrumentation. The pump generates a pulseless, highly

precise flow featuring low shear stress. It dispenses at a high precision the lowest volumes in microliter range. Due to its compact design small dimensions have been achieved.

The pump is suitable for dosage of low viscosity liquids such as deionized water, watery solutions, methanol, solvents, oil and lubricants.

Applications

- Analytical technology
- Fuel cells
- Biotechnology
- Laboratory automation
- In vitro diagnostics

Technical data

Flow rate	4.8 – 288 ml/min (min. 0.048 ml/min)
Smallest dosage volume	30 µl
Displacement volume	48 µl
Differential pressure range	0 – 5 bar (72,5 psi), 8 bar * (116 psi *)
Max. inlet pressure	1 bar (15 psi)
Pulsation	6 %
Operating temperature range	-20 ... +60 °C
Viscosity range	0.3 ... 100 mPas
Precision	1 % Coefficient of Variation CV
Speed range	100 – 6000 rpm (min. 1 rpm)
Fluid connection	1/4"–28 UNF optional: slip fittings with outside diameter 5 mm
Wetted parts	nickel-silver/ stainless steel 316L, ceramics, tungsten carbide Ni-based, epoxy resin shaft seal: graphite-reinforced PTFE, stainless steel 316L static seals: FPM, optional: EPDM, FFKM
Motor	DC-motor with graphite brushes, assigned power rating 20 W, nominal voltage 24 V, digital optical encoder 100 counts per turn
Electrical connection	10-pole connector
Measurements	diameter 25 mm, length 130 mm
Weight	approx. 370 g

Customized solutions on request. * for viscosities > 16 mPas

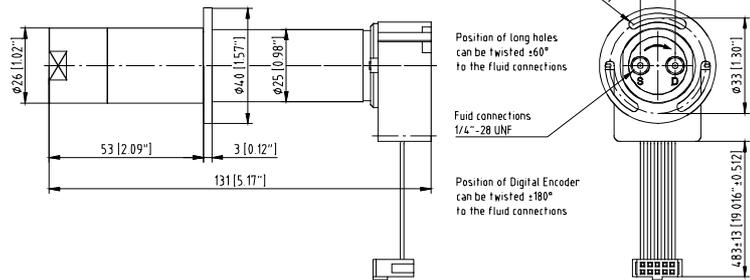
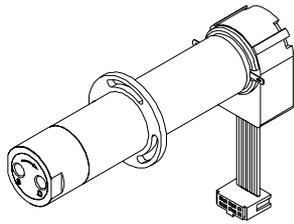
Contact

HNP Mikrosysteme GmbH
Juri-Gagarin-Ring 4 · D-19370 Parchim

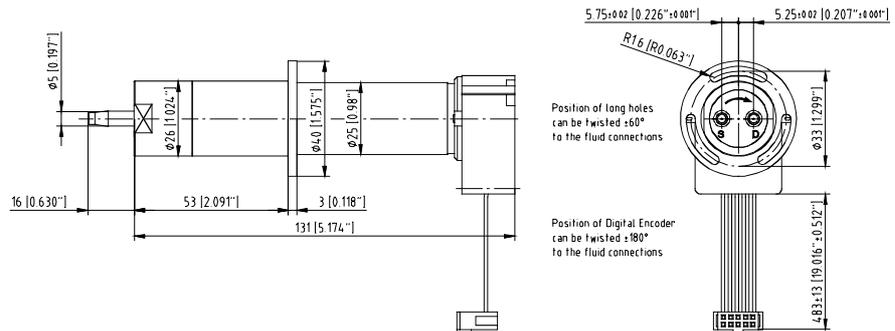
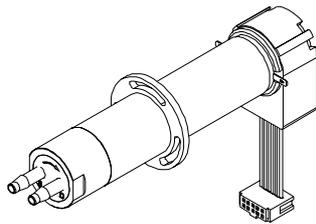
phone +49| 3871| 451-301
fax +49| 3871| 451-333

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

Measurements



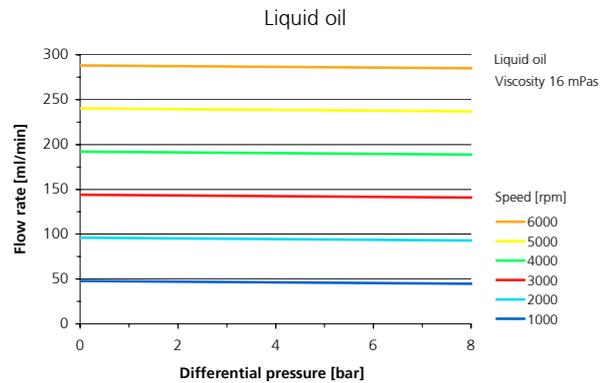
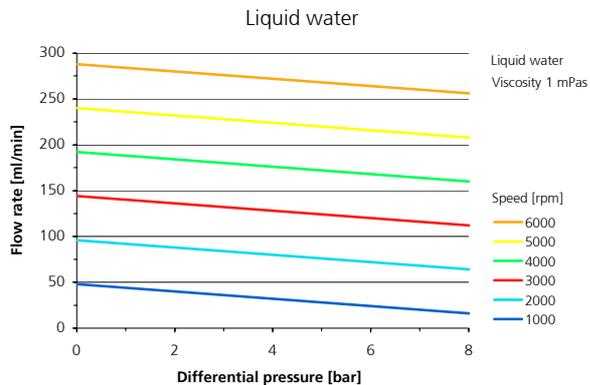
Configuration with fittings 1/4"–28 UNF



Configuration with slip fittings OD 5 mm

Subject to technical changes.

Flow charts



Item number

11 06 01 01	low pressure series pump mZR-7223 UNF with a DC-motor, encoder 100 counts per turn, fluid connection 1/4"–28 UNF
11 06 03 01	low pressure series pump mZR-7223 with a DC-motor, encoder 100 counts per turn, fluid connection slip fittings OD 5 mm

Accessories

Liquid supply accessories

Control

Console drive module

Multiplexer module

tubes, filters etc.

S-KD-23: control for continuous delivery

S-HD: programmable microcontroller-based control for continuous delivery and discrete dosage

diecast aluminum chassis mZR-S06 E for laboratory and testing

simultaneous operation of up to 255 pumps with a single RS-232 interface

Micro annular gear pumps (and housings) are protected by assigned patents: DE 198 43 161 C2, EP 1115979 B1, US 6,520,757 B1, EP 852674 B1, US 6,179,596 B1, EP 1354135. Patents pending: DE 101 46 793, US 10,466,792, DE 10 2004 052 866. In the US, Europe and Japan additional patents are pending. mZR® is a registered German trademark of HNP Mikrosysteme GmbH.



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