Product information

mzr-2521X1 · Low pressure pump series

Description

The compact micro annular gear pump mzr-2521X1 of the low pressure series is an innovative pump concept for use in analytical instrumentation. The pump generates a low pulsation, highly precise flow featuring low shear stress. It dispenses at a high precision the lowest volumes in microliter range. The compact design with a brushless motor as well as an integrated motion controller for speed and position control small dimensions are the characteristics of this variant of the low-pressure series. The pump is suitable for dosage of low viscosity liquids such as deionized water, watery solutions, methanol, solvents, oil and lubricants.

Advantages

- Small dosage volumes, high flow rates smallest volume 0.25 µl, flow up to 9 ml/min
- High dosage precision precision CV 1 % at low volumes
- Integrated motion controller programmable motor control for speed and position control with RS-232 interface
- Long service life wear-resistant tungsten carbide or ceramics
- Low pulsation delivery, low shear stress rotary micro annular gear technology

Applications

- Analytical instrumentation
- Laboratory automation
- In vitro diagnostics
- Fuel cells

Technical data

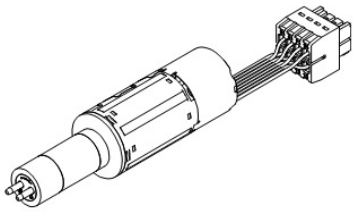
Flow rate	0.015 – 9 ml/min
Smallest dosage volume	0.25 µl
Displacement volume	1.5 µl
Differential pressure range	0 - 3 bar (43.5 psi)
Maximum inlet pressure	1 bar (15 psi)
Liquid temperature range	-20 ... +60 °C (-4 ... +140 °F)
Viscosity range	0.3 – 100 mPas
Precision CV	1 % (Coefficient of variation CV)
Velocity range	10 – 6,000 rpm
Fluid connection	slip fittings with outside diameter 2 mm, optional: manifold assembly M2.1
Wetted parts	stainless steel 316L, ceramics, tungsten carbide Ni based, epoxy resin, optional: alloy C22 (2.4602), ceramics; shaft seal: graphite-reinforced PTFE, stainless steel 316, optional: alloy C276 (2.4819); static seals: FPM, optional: EPDM, FFPM
Motor	brushless DC-Servomotor, 24 V; 6.4 W
Controller	integrated motion controller
Interface	0–10 V, RS-232, 1 digital input/output
Electrical connection	8-pole connector
Dimensions (L x W x H)	Ø 22 mm, length 89 mm
Weight	approx. 110 g (manifold assembly approx. 125 g)
Remarks	* Customized solutions on request.

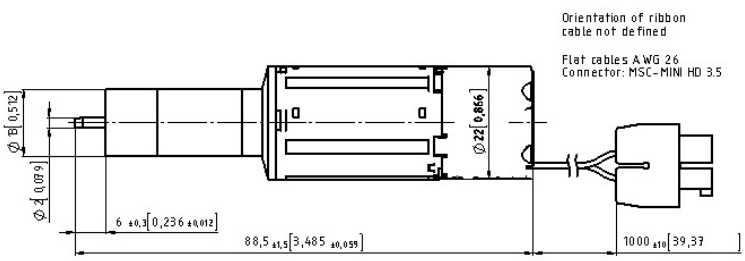
Notice
Even if single parameters are within the indicated performance range of technical data, certain parameter combinations may not be achievable. Single parameters may exceed their indicated performance range under adequate circumstances. For detailed evaluation please contact HNP Mikrosysteme. Actual performance may vary. Specifications are subject to change without notice. This document is subject to change without notice.

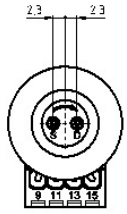
Accessories

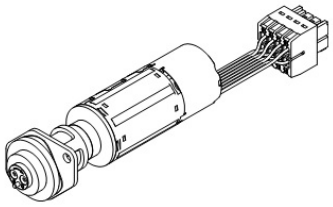
- Terminal box S-G05
- mzr-Touch Control

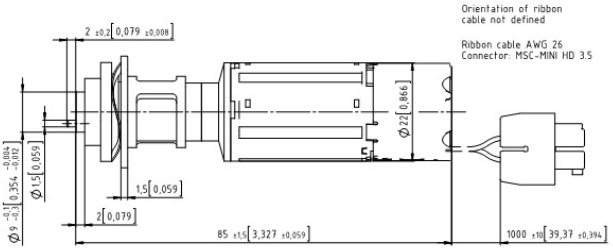
Dimensions

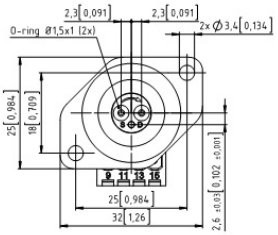


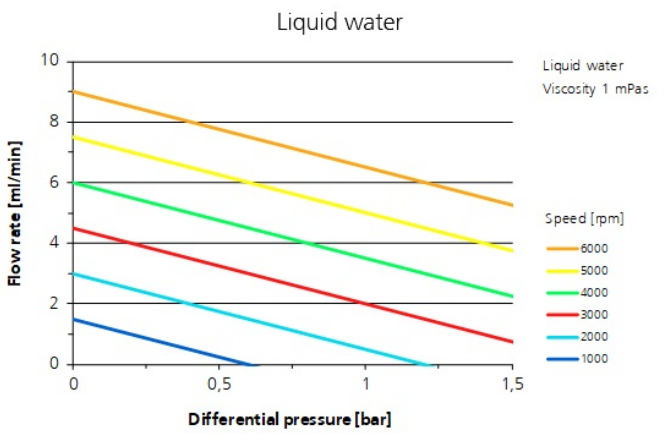

Orientation of ribbon cable not defined
Flat cables AWG 26
Connector: MSC-MINI HD 3.5
Ø 8 [0,512]
Ø 4 [0,079]
Ø 22 [0,866]
6 ±0,3 [0,236 ±0,012]
88,5 ±1,5 [3,485 ±0,059]
1000 ±10 [39,37]

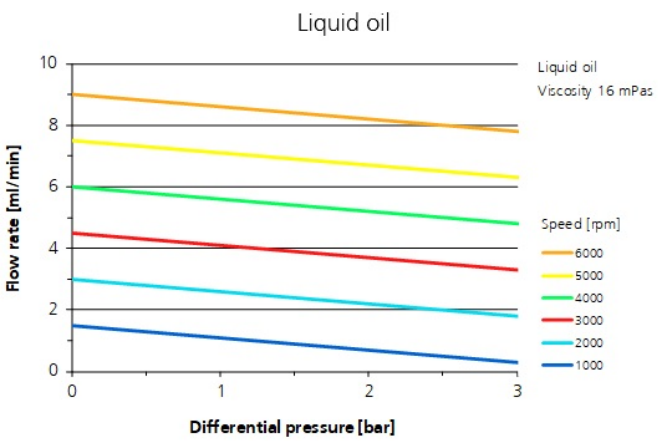

2,3
2,3
9
11
13
15




Orientation of ribbon cable not defined
Ribbon cable AWG 26
Connector: MSC-MINI HD 3.5
2 ±0,2 [0,079 ±0,008]
Ø 1,5 [0,059]
Ø 22 [0,866]
1,5 [0,059]
2 [0,079]
85 ±1,5 [3,327 ±0,059]
1000 ±10 [39,37 ±0,394]


2,3 [0,091]
2,3 [0,091]
O-ring Ø1,5x1 (2x)
2x Ø3,4 [0,134]
25 [0,984]
18 [0,709]
9
11
13
15
25 [0,984]
32 [1,26]


Liquid water
Liquid water
Viscosity 1 mPas
Speed [rpm]
6000
5000
4000
3000
2000
1000
Flow rate [ml/min]
Differential pressure [bar]
0
2
4
6
8
10
0
0,5
1
1,5


Liquid oil
Liquid oil
Viscosity 16 mPas
Speed [rpm]
6000
5000
4000
3000
2000
1000
Flow rate [ml/min]
Differential pressure [bar]
0
2
4
6
8
10
0
1
2
3

Patents and trademarks

Our products are protected by the following national and international patents: DE 10 2018 129 631.2 B3; EP 3 884 162; CN 113 302 399 B; DE 10 2018 129 633.9 B3; EP 3 884 160; CN 113 272 553 B; DE 10 2018 129 634.7 B3; EP 3 884 527; DE 10 2018 129 635.5 B3; EP 3 762 165; DE 10146 793.1; EP 1 354 135 B1; US 7,698,818 B2; DE 10 2011 051 486 B4; EP 2 726 740 B1; US 9,404,492 B2; CN 103 732 921B; EP 2 640 977 B1; US 10,012,220 B2; CN 103 348 141 B; HK 1 185 648 B.
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