HNP Mikrosysteme

Magnetic Hermetic Series

# Micro annular gear pump mzr®-2965

## Compact hermetic pump for discrete dosage


- **Hermetic pump design**
  pump without shaft seal
- **Magnetic drive**
  inner magnet system driven by rotating magnetic field
- **Integrated motion controller**
  programmable motion controller for speed and position control with RS-232 interface
- **Compact dimensions**
  diameter 22 mm, length 69 mm
- **Long service life**
  wear-resistant, ultra-hard materials

The micro annular gear pump mzr-2965 is suitable for handling crystallizing, oxygen or moisture sensitive liquids, because the pump has no shaft seal. This functionality is made possible thanks to a liquid-separating cup surrounding the magnetic drive. The compact dimension of this magnetic hermetic pump is achieved by a completely new product design and optimal matching with an integrated motion controller. This controller allow speed and position control for highly accurate dosage. With a diameter of 22 mm and 69 mm in length, the pump weighs 120 g. The pump handles flow rates from 0.03 to 18 ml/min with a high precision and low pulsation. The pump is suitable for applications where an avoidance of leakage and a long service life as well as low energy consumption are important requirements. The pump is supplied with a terminal box for speed control and LED status indicator.

### Applications

- Fuel cells
- Dosing of AdBlue
- Biotechnology
- Marine technology
- Metering of liquefied gases
- Aerospace industry
- Mobile analytics

### Technical data

| | |
|---|---|
| Flow rate | 0.03 – 18 ml/min |
| Smallest dosage volume | 10 µl |
| Displacement volume | 3 µl |
| Max. system pressure | 6 bar (87 psi) (60 bar (870 psi) *)<br>(inlet pressure + differential pressure) |
| Differential pressure range | 0 – 3 bar (44 psi) |
| Liquid temperature range | -15 … +60 °C |
| Viscosity range | 0.3 – 500 mPas |
| Velocity range | 10 – 6000 rpm |
| Fluid connection | slip fittings with outside diameter 2 mm<br>optional: manifold assembly M2.1 |
| Wetted parts | stainless steel 316L, 318LN, ceramics, tungsten carbide Ni-based, epoxy resin;<br>static seals: FPM, optional: EPDM, FFPM |
| Motor | canned BLDC-motor, 24 V DC, 6.4 W |
| Controller | integrated motion controller |
| Interface | 1x analog input 0 – 10 V, 1x digital input 24 V,<br>1x digitally programmable output, RS-232,<br>CANopen * |
| Electrical connection | 8-pole connector, Wago, cable length 1 m |
| Dimensions | diameter 22 mm, length 69 mm |
| Weight | approx. 120 g (manifold assembly approx. 145 g) |

*Customized solution on request.



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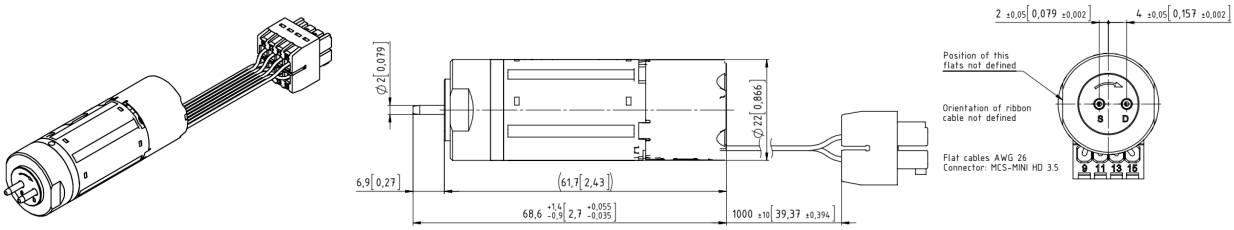
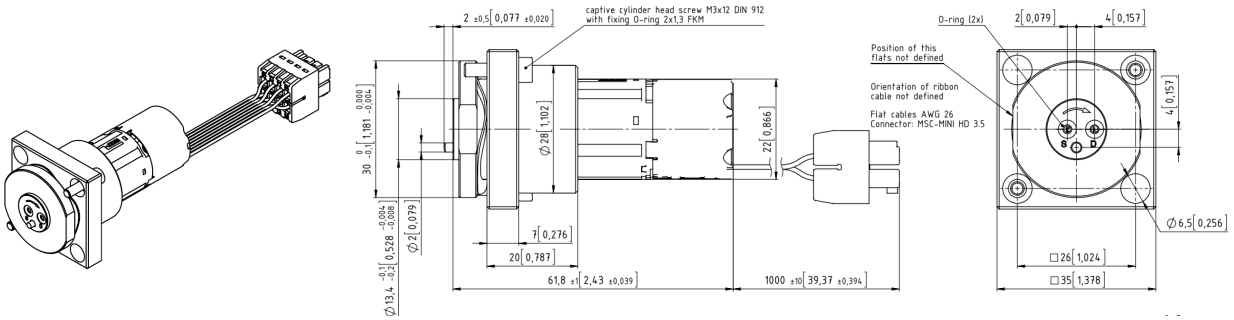
## Dimensions



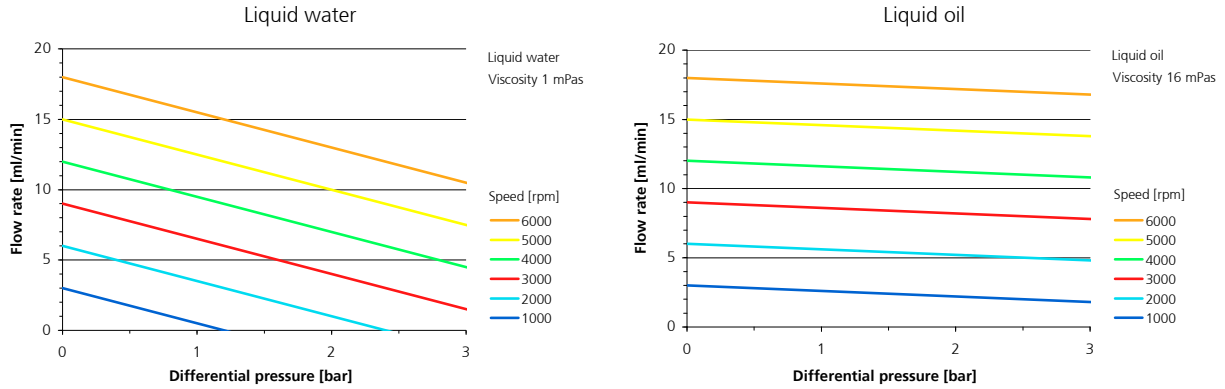

Configuration with slip fittings OD 2 mm




Configuration with manifold assembly M2.1

Subject to technical changes.

## Flow charts




## Terminal box S-G05

- compact plastic case
- is included the micro annular gear pump mzr-2965
- connector for supply voltage 24 V (5 – 30 V DC)
- integrated EMC module
- potentiometer for speed setting
- standard interfaces 0 – 10 V, 0(4) – 20 mA for speed setting
- RS-232, SUB-D plug, 9-pole
- two colored LED status indicator

## Item number

| | |
|---|---|
| 14 01 10 03 | magnetic hermetic series pump mzr-2965 with canned BLDC-motor, fluid connection slip fittings OD 2 mm, terminal box S-G05 |
| 14 01 10 02 | magnetic hermetic series pump mzr-2965 M2.1 with canned BLDC-motor, fluid connection manifold assembly M2.1, terminal box S-G05 |

## Accessories

| | |
|---|---|
| *Liquid supply accessories* | tubes, filters etc. |



09/18