Product information
mzr-11548X1 · Modular pump series

Description
Micro annular gear pump mzr-11540 of the modular pump series operates with high dynamics, low pulsation and excellent precision in delivery as well as high repeatability in metering. The pump is suitable for low to high viscosity liquids and a differential pressure of up to 15 bar. It allows accurate displacement volumes starting at 100 µl in a metering time of 200 milliseconds. It also covers a flow rate range of 0.2 to 1,152 ml/min. The pump comes with lateral fluid connections or with a manifold version with frontal fluid connections.

Advantages
- High precision in metering and delivery
- Dynamic drive technology in regards to requirements with BLCD drive, BLCD drive with electronic module, stepper motor
- Broad viscosity range solvents, adhesives, water, grease, gel, colors
- Long service life wear-resistant tungsten carbide
- Low pulsation delivery, low shear stress rotary micro annular gear technology, no valves

Applications
- Mechanical engineering
- Chemical and pharmaceutical industry
- Process engineering
- Adhesives and sealants applications
- Spray-coating technology
- Coating technology
- Metering of different additives
- Filling technology
- Dosing of inks and colors
## Technical data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive version</td>
<td>DC-servomotor, brushless</td>
</tr>
<tr>
<td>Flow rate</td>
<td>1.92 - 1,152 ml/min</td>
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<tr>
<td>Smallest dosage volume</td>
<td>100 µl</td>
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<tr>
<td>Displacement volume</td>
<td>192 µl</td>
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<tr>
<td>Differential pressure range</td>
<td>0 - 10 bar (145 psi)</td>
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<tr>
<td>Maximum inlet pressure</td>
<td>15 bar (217.5 psi)</td>
</tr>
<tr>
<td>Liquid temperature range</td>
<td>-5 ... +60 °C (+23 ... +140 °F)</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>-5 ... +60 (+23 ... +140 °F) °C</td>
</tr>
<tr>
<td>Viscosity range</td>
<td>0.3 – 10,000 mPas</td>
</tr>
<tr>
<td>Precision CV</td>
<td>1 % (Coefficient of variation CV)</td>
</tr>
<tr>
<td>Fluid connection</td>
<td>3/8&quot; NPT, lateral; optional: manifold assembly M4</td>
</tr>
<tr>
<td>Wetted parts</td>
<td>stainless steel 316 L, tungsten carbide Ni-based; shaft sealing: graphite-reinforced PTFE, Alloy C276; static sealing: FKM, optional: EPDM, FFKM</td>
</tr>
<tr>
<td>Motor</td>
<td>DC-servomotor, brushless; rated voltage 36 V DC, power output 201 W, torque 192 mNm, IP 54</td>
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<tr>
<td>Velocity range</td>
<td>10 - 6,000 rpm</td>
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<tr>
<td>Positioning</td>
<td>1000 pulses/rev., analog hall sensors</td>
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<tr>
<td>Motor protection</td>
<td>motor current monitoring</td>
</tr>
<tr>
<td>Interface</td>
<td>6-pole plug for motor winding, 5-pole plug for hall sensors</td>
</tr>
<tr>
<td>Cable length</td>
<td>2 m</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>254 x 84 x 93 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 3.9 kg</td>
</tr>
<tr>
<td>Remarks</td>
<td>* Customized solutions on request.</td>
</tr>
</tbody>
</table>

### 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.

## Accessories

- Reservoir Plastic
- Electrical heating module
- Heat insulation module

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