ZHMH 01/* in Cartridge Design
Gear PD Flow Meters for Paints, Wax and Adhesives

This ZHM series excels in numerous models for various applications: e.g., paint versions with flat seals and single-ended shafts for an ideal purging quality. In addition, versions with special bearings are available for critical paints. As an option adapter plates can be supplied (see left picture below).

• The cartridge design of this follow-up model reduces the weight by another 50%. Therefore, the Cartridge-ZHM may be installed right behind the spray gun without adverse effects on the dynamic properties of the spray robot.

• The newly designed measuring kit provides a high resolution and allows for a precise measurement over a measuring range which would usually require two flow meters.

• The new flow meter can be completely purged within a few seconds and rapid colour changes are possible with no adverse effects on paints by residual sediments.

• The integral carrier-frequency pulse amplifier type VTE.CT or fibre-optic amplifier type FOP 60 allow for space-saving installation.

A legal protection of registered designs for the Cartridge-ZHM has been applied for.
Application

The cartridge ZHM is suitable to handle base paints, fillers, transparent and water-born coatings perfectly. It may also be used for wax and adhesives. The standard version has a carrier-frequency pulse amplifier which will precisely detect the r.p.m. of the gears. This happens without contact with the measuring medium and free of drag. The amplifier provides a digital output signal with a frequency directly proportional with the flow volume.

For applications in electrostatic spraying systems the fibre-optic amplifier FOP 60 is available. The fibre-optic principle guarantees for an interference-free signal transmission. All pickups are available with IS-approval for use in hazardous areas.

Technical Data

<table>
<thead>
<tr>
<th>Type</th>
<th>Measuring range*</th>
<th>K-factor</th>
<th>Linearity</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZHM 01/1</td>
<td>0.005 up to 2 ltr./min</td>
<td>26,500 pulses/ltr.</td>
<td>±0.7% of act. flow</td>
</tr>
<tr>
<td></td>
<td>0.005 up to 1 ltr./min</td>
<td>26,500 pulses/ltr.</td>
<td>±0.5% of act. flow</td>
</tr>
<tr>
<td>ZHM 01/2</td>
<td>0.020 up to 3 ltr./min</td>
<td>14,000 pulses/ltr.</td>
<td>±0.5% of act. flow</td>
</tr>
</tbody>
</table>

*The measuring ranges are valid for viscosities from 30 mm²/s onwards.

operating pressure: 40 bar with flat seals, 400 bar with O-ring
connections: bottom in- and outlet, dia 6 mm optionally: adapter plate lateral
threads G 1/4" or 1/8"
materials: stainless steel as per DIN 1.4305 (body) 1.4122 (gears) cf. AISI 303 or special materials 1.4571 (body) cf. AISI 316 Ti, 1.4122 (gears)
dimensions: see drawing on page 3
weights:
ZHM 01/1: 400 g
ZHM 01/2: 550 g
for total weight add amplifier
VTE-CT: 150 g
FOP 60: 190 g
VTER/P: 100 g
electrical data: see separate datasheets on VTE-CT, FOP 60 and VTER/P
Dimensional Drawings (mm) laterally in- and outlet G1/4"

ZHM 01/* with VTE.CT  ZHM 01/* with FOP 60  ZHM 01/* with VTER/P

**Bottom views**

![Bottom view diagram]

**Side views**

![Side view diagram]

**Top views**

![Top view diagram]

<table>
<thead>
<tr>
<th></th>
<th>A in mm</th>
<th>B in mm</th>
<th>C in mm</th>
<th>D in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZHM01/*-CT</td>
<td>65</td>
<td>75</td>
<td>50</td>
<td>142</td>
</tr>
</tbody>
</table>

Küppers Elektromechanik GmbH
Dimensional Drawings (mm) bottom in- and outlet M6

**Bottom views**

<table>
<thead>
<tr>
<th></th>
<th>ZHM 01/* with VTE.CT</th>
<th>ZHM 01/* with FOP 60</th>
<th>ZHM 01/* with VTER/P</th>
</tr>
</thead>
<tbody>
<tr>
<td>A in mm</td>
<td>50</td>
<td>58</td>
<td>50</td>
</tr>
<tr>
<td>B in mm</td>
<td>60</td>
<td>68</td>
<td>60</td>
</tr>
<tr>
<td>C in mm</td>
<td>35</td>
<td>43</td>
<td>35</td>
</tr>
<tr>
<td>D in mm</td>
<td>127</td>
<td>135</td>
<td>127</td>
</tr>
</tbody>
</table>

**Side views**

**Top views**

**Adapter plate (Option)**