Modular Ring Rotary Encoder
MSR 5x MK

For applications at the robotic, on printers and on roundtables

Technical data:

<table>
<thead>
<tr>
<th>Encoder type</th>
<th>Grating pitch</th>
<th>Maximum peripheral-velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSR 50-40 MK</td>
<td>200 µm</td>
<td>16 m/s</td>
</tr>
<tr>
<td>MSR 54-41 MK</td>
<td>200 µm</td>
<td>16 m/s</td>
</tr>
</tbody>
</table>

Square wave Line Driver signals with integrated subdividing

<table>
<thead>
<tr>
<th>Encoder type</th>
<th>Grating pitch</th>
<th>Edge distance at max. peripheral-velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSR 51-46 MK</td>
<td>200 µm</td>
<td>&gt; 600 ns</td>
</tr>
<tr>
<td>MSR 52-47 MK</td>
<td>200 µm</td>
<td>&gt; 300 ns</td>
</tr>
<tr>
<td>MSR 53-45 MK</td>
<td>200 µm</td>
<td>&gt; 100 ns</td>
</tr>
<tr>
<td>MSR 55-45 MK</td>
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</tr>
<tr>
<td>MSR 59-45 MK</td>
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</table>

Resolution = \( \frac{360° \times \text{Grating pitch}}{\text{Da} \times \pi \times 4 \times \text{Subdividing}} \)

Resolution ["]
Grating pitch [mm] = 0.2 mm
Da = shaft diameter [mm] = 7.2 mm
Subdividing with integrated Subdividing Electronics

Available diameter:
Ø110 mm to Ø500 mm
Smaller or larger diameter on request

Reference mark (RI):
One Reference mark at any location
Distance coded Reference marks (AK) on request

Permissible vibration: 150 m/s² (40 to 2000 Hz)
Permissible shock: 750 m/s² (8 ms)

Permissible temperature:
-20°C to +70°C (storage), 0°C bis +50°C (operation)

Weight (approx.)
300 g (scanning head with 3 m cable)

Output:
- sinusoidal voltage signals MSR 50-40 MK
  - Encoder signals: 0,6 to 1,2 Vss, typical 1 Vss
  - with terminating resistor Zo = 120 Ω
  - Reference pulse: 0,2 to 0,85 Vss, typical 0,4 V
  - with terminating resistor Zo = 120 Ω

Power supply: +5 V ±5%, max. 90 mA

Connection options:
CNC or Control feedback

Max. output frequency: 80 kHz (with 3 m cable)

Output:
- sinusoidal micro-current signals MSR 54-41 MK
  - Encoder signals: 7 to 16 µA, typical 11,5 µA at 1 KΩ
  - Reference pulse: 2 to 8 µA, typical 5 µA at 1 KΩ

Power supply: +5 V ±5%, max. 90 mA

Connection options:
any external ZE-V Subdividing Electronics or Programmable Error Correction PKE or directly suitable NC or DRO

Max. output frequency: 80 kHz (with 3 m cable)

Output:
- square wave signals via Line Driver RS 422 standard
  or single ended with integrated Subdividing Electronics
  - times 5 = MSR 51-46 MK
  - times 10 = MSR 52-47 MK
  - times 25 = MSR 53-45 MK
  - times 50 = MSR 55-45 MK
  - times100 = MSR 59-45 MK

Power supply: +5 V ±5%, max. 200 mA

Connection options:
directly to suitable NC or DRO

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Dimensions:

Mounting instruction:
1. press measuring tape ring on dead stop
2. remove hexagon socket set screws
3. tighten clamping screws

Important: Do not adjust screws with white masking lacquer

X = shaft diameter

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