Series 20

- Incremental rotary encoder with a solid shaft diameter of 6mm
- Square housing, small design and normal degree of protection
- Maximum 500 pulses per revolution
- For simple industrial requirements
- Accessories from page 78

**Mechanical specifications**

- **Housing/Flange:** Zinc die-casting - cadmium-plated
- **Shaft:** Stainless steel
- **Bearing:** Deep groove ball bearing
- **Weight:** Approx. 0.5 kg
- **Protection type:** IP 41 according to DIN 40050
- **Max. speed:** 3,000 U/min
- **Moment of inertia:** 10 gcm²
- **Torque:** Approx. 0.4 Ncm
- **Max. shaft load:** Axial 5 N, radial 3 N

**Electrical specifications**

- **Max. pulse frequency:** 25 kHz
- **Perm. temperature range:** -30°...+70° C
- **Power supply:** 10 V ... 30 V DC
- **Max. current consumption:** 80 mA (without load)
- **Max. output load:** 30 mA (per channel)
- **Residual ripple:** Max. ±5% U₀
- **Power supply:** 5 V DC ± 5%
- **Max. current consumption:** 80 mA

**Mechanical dimensions**

![Mechanical dimensions diagram]
Incremental Rotary Encoder

**Signal outputs**

A — Two square pulse trains offset by 90° el,
B — with channel A lagging in clockwise rotation.
0 — Reference pulse 0 once per revolution, position and length optional.

All channels can also be executed inversely.

**Pin configuration**

<table>
<thead>
<tr>
<th>Connection type 5-core cable</th>
<th>- Volts</th>
<th>+ Volts</th>
<th>A</th>
<th>B</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection type 9414/08 connector</td>
<td>Pin 1</td>
<td>Pin 2</td>
<td>Pin 3</td>
<td>Pin 4</td>
<td>Pin 5</td>
</tr>
<tr>
<td>Connection type 9412/05 connector</td>
<td>Pin 1</td>
<td>Pin 2</td>
<td>Pin 3</td>
<td>Pin 4</td>
<td>–</td>
</tr>
</tbody>
</table>

**Order reference**

Series 20 2 — Number of pulses 1 … 500

 Shaft 2 = 6 mm

 Signal output

 5 = A
 7 = A, B
 9 = A, B, 0
 6 = A, 0

 Connection type

 (see page 78)

 6 = Cable connection
 5 = Connector 9414 / 08
 8 = Connector 9412 / 05

 Output circuit

 0 = NPN
 1 = Push-pull $U_a = 10 \ldots 30V$ DC / max. 30 mA
 3 = TTL
 5 = PNP