Series 70 – 140

- Absolute rotary-encoder with a solid shaft diameter of 12 mm
- Housing diameter 102 mm, extrem robust design and high degree of protection
- Maximum resolution 10 Bit
- For highest mechanical requirements
- Low torque
- Accessories from page 78

**Electrical specifications**

- Max. pulse frequency: 25 kHz
- Perm. temperature range: -30°...+70° C
- Power supply: 10 V...30 V DC
- Max. current consumption: 100 mA (without load)
- Max. output load: 40 mA (per channel)
- Residual ripple: max. ± 5% Uₘ

**Mechanical specifications**

- Housing: Zinc die-casting
- Shaft: stainless steel
- Bearing: Deep groove ball bearing
- Weight: approx. 1.2 kg
- Protection type: IP 54
- Max. speed: 6,000 U/min
- Torque: approx. 3 Ncm
- Max. shaft load: axial 30 N, radial 50 N

**Mechanical dimensions**

*Tolerance = h 6
All specification in millimeters*
## Output code

<table>
<thead>
<tr>
<th>Output code</th>
<th>Resolution</th>
<th>Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binary, BCD</td>
<td>2, 4, 8, 16, 32, 64, 128, 256, 512, 1024</td>
<td>Counting direction switchover (looking at the shaft)</td>
</tr>
<tr>
<td>Gray (beginning with 0)</td>
<td>2, 4, 8, 16, 32, 64, 128, 256, 512, 1024</td>
<td>Input open = right</td>
</tr>
<tr>
<td>Gray excess (beginning ≠ 0)</td>
<td>45, 90, 180, 360, 720</td>
<td>Input + U_B = left</td>
</tr>
</tbody>
</table>

### Pin configuration

| Connection type | GND | + U_B | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | Option |
|-----------------|-----|-------|---|---|---|---|---|---|---|---|---|---|---|-------|
| F (12 pol.)     | 1   | 2     | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10| 11| 12| -  | -     |
| F (16 pol.)     | 1   | 2     | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10| 11| 12| 13 | 14 | 15 | 16    |
| K (00)          | white | brown | green | yellow | gray | pink | blue | red | black | purple | gr/pin | bl/re | ws/qr | bridge | ws/yel | yel/bl |

* Binary, BCD, only 1024

## Order reference

- **A** = Gray [NPN]
- **B** = Gray [NPN]
- **C** = Gray [PNP]
- **D** = Gray [PNP]
- **E** = Bin [NPN]
- **F** = Bin [NPN]
- **G** = Bin [PNP]
- **H** = Bin [PNP]
- **I** = BCD [NPN]
- **L** = BCD [NPN]
- **K** = Cable output (00)
- **M** = BCD [PNP]
- **N** = BCD [PNP]
- **O** = BCD [PNP]
- **P** = Bin [NPN]
- **Q** = Bin [NPN]
- **R** = Bin [PNP]
- **S** = Bin [PNP]
- **T** = BCD [PNP]
- **U** = BCD [PNP]
- **V** = BCD [PNP]
- **W** = BCD [PNP]
- **X** = BCD [PNP]
- **Y** = BCD [PNP]
- **Z** = BCD [PNP]

**Coding + Count direction + Output**

- **A** = without
- **B** = Parity (uneven)
- **C** = Parity (even)
- **F** = Connector axial (12 pol., 16 pol.)
- **K** = Cable output (00)

**Order ref.:** NPN, PNP