Adapted to food and beverage – pharmaceutical – river – offshore applications,

Stainless steel encoder (316) with hygienic design,

Flanges and shaft adapted to the market needs,

Robustness and excellent resistance to shocks / vibrations,

Double ball bearings with safety lock system,

High protection level IP69K,

Universal electronic circuits from 5 to 30Vdc,

CANopen interface,

Available with incremental channels – 2048 points – 5 to 30 Vdc,

High performances in temperature –20°C to 85°C (-30°C option),

Optical technology, contactless,

High resolutions available: 8192 (13 bits) per turn,

Turn counting up to 65 536 (16 bits),

Adapted axial cable gland output.

### PXM5S10 DIMENSIONS

- **Shaft:** Stainless steel 316
- **Cover:** Stainless steel 316
- **Body:** Stainless steel 316

- **Bearing:** Double ball bearings

- **Maximal loads**
  - Axial: 250 N
  - Radial: 500 N

- **Theoretical mechanical lifetime:**
  - 10^9 turns
  - 50 N / 100 N: 12
  - 250 N / 500 N: 0.5

- **Permissible max. speed:** 4000 min\(^{-1}\)
- **Continuous max. speed:** 3000 min\(^{-1}\)

### MECHANICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Material</th>
<th>Shaft inertia (\leq 1.2 \times 10^{-6} \text{ kg.m}^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>Torque (\leq 90 \times 10^{-3} \text{ N.m})</td>
</tr>
<tr>
<td>Body</td>
<td>Shock (EN60068-2-27) (\leq 500 \text{ m.s}^{-2}) (during 6 ms)</td>
</tr>
<tr>
<td></td>
<td>Vibration (EN60068-2-6) (\leq 100 \text{ m.s}^{-2}) (10...2000 Hz)</td>
</tr>
<tr>
<td></td>
<td>Encoder weight (approx.) 0.600 kg</td>
</tr>
<tr>
<td></td>
<td>Protection (EN 60529) IP 69K</td>
</tr>
<tr>
<td></td>
<td>EMC EN 61000-6-4, EN 61000-6-2</td>
</tr>
<tr>
<td></td>
<td>Isolation 500V (1 min.)</td>
</tr>
<tr>
<td></td>
<td>Operating temperature (-20...+85^\circ \text{C (encoder T)})</td>
</tr>
<tr>
<td></td>
<td>Storage temperature (-20...+85^\circ \text{C})</td>
</tr>
</tbody>
</table>
**ELECTRICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Power supply</th>
<th>5 – 30Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>&lt; 1 s</td>
</tr>
<tr>
<td>Consumption (without load)</td>
<td>&lt; 50mA (at 24Vdc)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± ½ LSB (13 bits)</td>
</tr>
</tbody>
</table>

**PROGRAMMABLE PARAMETERS**

- **Resolution**: defines the resolution per revolution (0 to 8 192).
- **Global resolution**: total amount of codes for the encoder (2 to 536 870 912).
- **Transmission speed**: programmable from 10kBaud (1000m) to 1 Mbaud (40 m); value per default: 20 Kbaud.
- **Address**: define the software address of the encoder on the bus (1 to 127, value by default: id = 1).
- **Direction**: define the direction of count of the encoder,
- **RAX**: defines the value of its preset position (non turning shaft),
- **CAM**: Low and High Limits.

**COMMUNICATION MODES**

3 modes are available to interrogate the encoder:
- **POLLING mode**: (Response to a RTR message): The position value is only given upon request (SDO mode),
- **CYCLIC mode**: the encoder transmits its position in an asynchronous manner. The frequency of the transmission is defined by the programmable cyclical timer register from 0 to 65 535 ms,
- **SYNCHRO mode**: the encoder transmits its position on a synchronous demand by the master.

**CONNECTION**

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable</th>
<th>Green – Grey</th>
<th>Blue – Red</th>
<th>Yellow – Pink</th>
<th>Brown</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>BX</td>
<td>8230/020</td>
<td>CAN LOW</td>
<td>CAN GND</td>
<td>CAN HIGH</td>
<td>0V</td>
<td>+ 5/30Vdc</td>
</tr>
</tbody>
</table>

CAN GND and 0V are connected together (intern the encoder).

**Notas**: Refer to the bus standards for the maximal derivation length.

**ORDERING CODE** [Special versions upon request, for ex. special flanges/electronics/connections…]

<table>
<thead>
<tr>
<th>Range</th>
<th>Shaft Ø</th>
<th>Mechanics</th>
<th>Supply</th>
<th>Output</th>
<th>Code</th>
<th>Resolution</th>
<th>Nb of turns</th>
<th>Cable</th>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXM5S</td>
<td>10</td>
<td>AA 316 stainless steel / IP69K Hygienic design</td>
<td>5 to 30Vdc</td>
<td>BB CANopen</td>
<td>B Binary</td>
<td>8192 Points per turn (2^13)</td>
<td>65 536 turns (2^16)</td>
<td>BX 8230/020 PVC cable</td>
<td>A020 Axial 2 meters</td>
</tr>
</tbody>
</table>

**Ex**: PXM5S 10 / AA / P / BB / B // 13 // B16 // BX / A050

Made in France

Changes possible without further notice - Version 090608

BEI Sensors SAS
Espace Européen de l'Entreprise
9, rue de Copenhague
B.P. 70044 Schiltigheim
F 67013 Strasbourg Cedex

Tél : +33 (0) 3 88 20 80 80
Fax : +33 (0) 3 88 20 87 87
Mail : info@beisensors.com
Web : www.beisensors.com

---

OPTICAL CANopen MULTI-TURN ENCODERS, PXM5S – STAINLESS STEEL 316 - IP69K