POSICHRON®
PCQA23
Square Profile Housing with Profibus Output

POSICHRON® position sensor in square profile

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Easy installation with mounting brackets
- Wire-free position magnet
- Contact-free
- Also available with guided position magnet
- Multi-magnet operation
- Output PROFIBUS-DP

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>PROFIBUS Profile for encoders, class 2</td>
</tr>
<tr>
<td>Resolution</td>
<td>Measurement increments of 5 ... 1000 µm</td>
</tr>
<tr>
<td>Measurement response time</td>
<td>0.75 to 3.5 ms, depending on the measurement range, number of position magnets, preset function</td>
</tr>
<tr>
<td>Linearity</td>
<td>Ranges &gt;500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±3 µm</td>
</tr>
<tr>
<td>Measurement direction</td>
<td>Adjustable</td>
</tr>
<tr>
<td>Number of position magnets</td>
<td>1 ... 4</td>
</tr>
<tr>
<td>Housing material</td>
<td>AlMgSi1 / Zn / V4A</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP64 (with mating connectors only)</td>
</tr>
<tr>
<td>Shock</td>
<td>EN60068-2-27:1993, 50 g/11 ms, 100 shocks</td>
</tr>
<tr>
<td>Vibration</td>
<td>EN60068-2-6:1995, 20 g 10 Hz-2 kHz, 10 cycles</td>
</tr>
<tr>
<td>Connection</td>
<td>2 x connector M12 round, 5 pin, B-coded 1 x connector M8 round, 3 pin</td>
</tr>
<tr>
<td>EMC, temperature</td>
<td>Refer to output specification</td>
</tr>
</tbody>
</table>

Order Code PCQA23

Model Name

Measurement Range (in mm)
- 100 ... 5750 in 10 mm increments
- Other ranges on request

Output
- PROF2 = PROFIBUS-DP

Linearity
- L02 / L02MM / L10 (for definition see "Specifications" above)

Order example: PCQA23 - 2000 - PROF2 - L02

Order code mounting set (see page 3/4)  PCQA-BFS1
Order code position magnet (see page 4)  PCMAG...
Order code mating cable set (see page 6)  KABS...-PCQA23-PROF...M-LITZE
Dimensions in mm [inch]
Dimensions informative only.
For guaranteed dimensions consult factory.
Mounting set
PCQA-BFS1 with
mounting clamps

Option -BFW
Mounting brackets
for PCQA22 and
PCQA24

Note: The option -BFW can only be ordered with a new sensor, not separately! Applicable for sensor lengths up to 1000 mm.

Dimensions in mm [inch]
Dimensions informative only.
For guaranteed dimensions consult factory.

Order example: PCQA24 - 1000 - STSP - L10 - M12 - BFW
POSICHRON®
PCQA
Mounting Sets - Magnets

Option -BFW
Mounting brackets for PCQA23

PCMAG5
Standard magnet

PCMAG3
Guided magnet slider with internal position magnet

Dimensions in mm [inch]
Dimensions informative only.
For guaranteed dimensions consult factory.
Device profile: PROFIBUS profile for encoders class 2, following.
Transmission rate: 12 MBaud max.
Device master file: ASMQ0715.GSD
DP functions: SYNC, FREEZE
DP diagnostics: Error position marker
Slave address: 1 ... 125, adjustable by the Profibus Service
Slave default address: 125
Measurement direction: Adjustable, common for all position markers
Preset: Adjustable, individual or common
Resolution: Measurement steps 5 ... 1000 µm, adjustable
Number of position magnets: 1 ... 4
Excitation voltage: 22 ... 27 V DC, residual ripple 10 mVpp
Excitation current: Typ. 100 mA
Measurement cycle time: 0.75 ms to 3.5 ms, depending on the measurement range, the number of position magnets and used features
Operation temperature: -40 ... +85 °C
Stability (temperature): ±50 x 10^-6 / °C f.s.

When using multiple magnets the distance between two magnets must be min. 70 mm to identify the single magnets definitely.

Signal wiring:

<table>
<thead>
<tr>
<th>Connector pin</th>
<th>Signal name bus / cable color</th>
<th>Signal name excitation / cable color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VP +5 V output</td>
<td>+24 V</td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>Brown</td>
</tr>
<tr>
<td>3</td>
<td>Data GND</td>
<td>0 V (GND)</td>
</tr>
<tr>
<td>4</td>
<td>B</td>
<td>Shield</td>
</tr>
<tr>
<td>5</td>
<td>Shield</td>
<td>Black</td>
</tr>
</tbody>
</table>

View to sensor connectors
**POSICHRON® Accessories**

**Connector Cables**

**Connector/bus cable for POSICHRON® position sensors**
5 pin M12
CAN bus/DeviceNet

The 5-lead shielded cable is supplied with a female 5-pin M12 connector at one end and a male 5-pin M12 connector at the other end. Available lengths are 0.3 m, 2 m, 5 m and 10 m.

Order code:

- **KAB - XM - M12/5F/G - M12/5M/G**
- **IP69K: KAB - XM - M12/5F/G/69K - M12/5M/G/69K**

**T-piece for bus cable**
5 pin M12
CAN bus/DeviceNet

**KAB - TCONN - M12/5M - 2M12/5F**

**Terminating resistance**
5 pin M12
CAN bus/DeviceNet

**KAB - RTERM - M12/5M/G**

**Cable set for POSICHRON® position sensors PROFIBUS**

The cable set consists of one cable each of the following type:

- Cable set 1: Bus input, bus output, sensor excitation
- Cable set 2: Bus input, terminating resistor, sensor excitation

Available lengths are 2, 5 and 10 m

Order Code:

- **KABS1-PCQA23-PROF-XM-LITZE**
- **Length in m**

- **KABS2-PCQA23-PROF-XM-LITZE**
- **Length in m**

Separate cables on request.