

# EAM580-K - PROFINET

Encoder kit

Magnetic multiturn encoders 14 bit ST / 16 bit MT

## Overview

- Encoder kit multiturn / PROFINET IO
- Precise magnetic sensing
- Resolution max. 30 bit (14 bit ST, 16 bit MT)
- Angular accuracy up to  $\pm 0.15^\circ$
- High protection up to IP 67
- High resistance to shock and vibrations
- LED status display
- Magnetic rotor included in delivery



## Technical data

### Technical data - electrical ratings

|                       |  |
|-----------------------|--|
| Voltage supply        | 10...30 VDC  |
| Consumption typ.      | 90 mA (24 VDC, w/o load)   |
| Initializing time     | $\leq 10$ s after power on   |
| Interface             | PROFINET IO  |
| Function              | Multiturn  |
| Steps per revolution  | $\leq 16384$ / 14 bit  |
| Number of revolutions | $\leq 65536$ / 16 bit  |
| Absolute accuracy     | $\pm 0.15^\circ$ (+20 $\pm 15^\circ\text{C}$ )<br>$\pm 0.25^\circ$ (-40...+85 $^\circ\text{C}$ ) (see info working distance) |
| Sensing method        | Magnetic   |
| Interference immunity | EN 61000-6-2   |
| Emitted interference  | EN 61000-6-4   |
| Status indicator      | 4x LED integrated in housing   |
| Approval              | UL approval / E217823  |

### Technical data - mechanical design

|                       |   |
|-----------------------|---|
| Size (flange)         | $\varnothing 58$ mm   |
| Shaft type            | $\varnothing 6$ mm (magnet bore)<br>$\varnothing 8$ mm (magnet bore)<br>$\varnothing 12$ mm (magnet bore) |
| Protection EN 60529   | IP 67   |
| Operating speed       | $\leq 6000$ rpm   |
| Working distance      | $1.1 \pm 0.9$ mm axial / $\leq 0.3$ mm eccentricity   |
| Material              | Housing: steel zinc-coated<br>Flange: aluminium   |
| Operating temperature | -40...+85 $^\circ\text{C}$ (see general information)  |
| Relative humidity     | 95 %  |
| Resistance            | EN 60068-2-6<br>Vibration 30 g, 10-2000 Hz<br>EN 60068-2-27<br>Shock 500 g, 1 ms                          |
| Weight approx.        | 250 g   |
| Connection            | Flange connector 3 x M12  |

## Optional

- Protection against corrosion CX (C5-M)

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## General information

Self-heating correlated to installation and ambient conditions as well as to electronics and supply voltage must be considered for precise thermal dimensioning. Operating the encoder close to the maximum limits requires measuring the real prevailing temperature at the encoder flange.

## Terminal assignment

### Voltage supply

| Pin | Assigned | Significance   |
|-----|----------|----------------|
| 1   | +Vs      | Voltage supply |
| 2   | d.u.     | Do not connect |
| 3   | 0 V      | Ground         |
| 4   | d.u.     | Do not connect |



1 x flange connector M12 (male), A-coded

### PROFINET (data line)

| Pin | Assigned | Significance       |
|-----|----------|--------------------|
| 1   | TxD+     | Transmission data+ |
| 2   | RxD+     | Receiving data+    |
| 3   | TxD-     | Transmission data- |
| 4   | RxD-     | Receiving data-    |



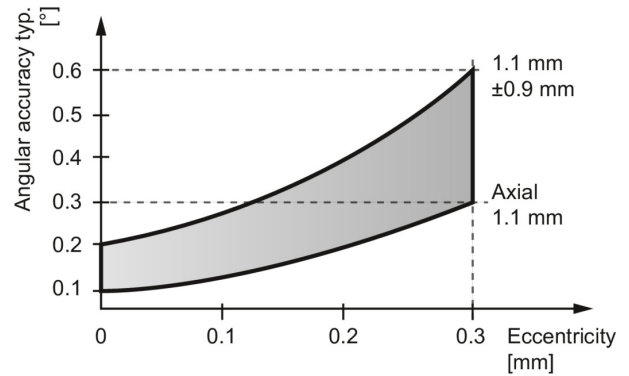
2 x flange connector M12 (female), D-coded

## PROFINET features

|                      |   |
|----------------------|---|
| Bus protocol         | PROFINET IO   |
| Device profile       | Encoder Profil PNO 3.162 V4.1 und V3.1<br>PROFIdrive Profil PNO 3.172 V4.1  |
| Real time classes    | Realtime (RT) Class 1, IRT Class 3  |
| Send clock           | RT: 1 ms, 2 ms, 4 ms<br>IRT: 250 µs, 500 µs, 1 ms, 2 ms, 4 ms   |
| Update time          | Min. 500 µs   |
| Features             | - 100 MBaud Fast Ethernet<br>- Device replacement without interchangeable media<br>- Media redundancy MRP<br>- Gear factor / Round axis |
| Process data         | - Position value 32 bit input data with/without rotation speed 16 or 32 bit<br>- Telegrams 81-83 of PROFIdrive profile                  |
| LED status indicator | Link/Activity, Status, Error  |

## Working distance

The ideal working distance of the magnet related to the encoder is at an eccentricity of 0 mm and an axial distance of 1.1 mm. Deviation affects the accuracy as shown in following diagram.

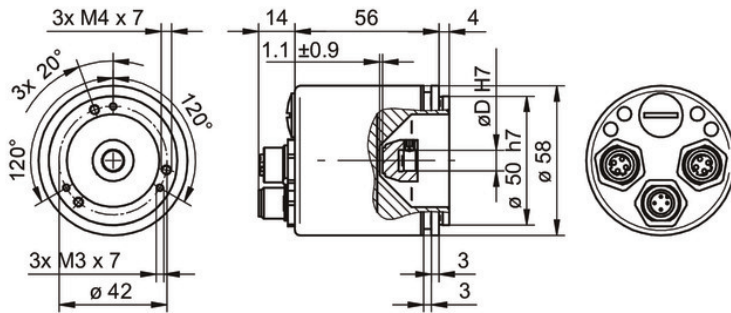


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## Dimensions



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## Ordering reference

|                                      |   |   |   |   |    |   |   |   |    |    |    |    |    |   |   |
|--------------------------------------|---|---|---|---|----|---|---|---|----|----|----|----|----|---|---|
|                                      | <b>EAM580</b>   | - | K | Y | ## | . | 7 | Y | PT | .  | 14 | 16 | 0  | . | A |
| <b>Product</b>                       | EAM580  |   |   |   |    |   |   |   |    |    |    |    |    |   |   |
| <b>Shaft type</b>                    | Kit   |   |   | K |    |   |   |   |    |    |    |    |    |   |   |
| <b>Flange (kit)</b>                  | Servoflansch, Nut ø53 mm, M3/M4   |   |   | Y |    |   |   |   |    |    |    |    |    |   |   |
| <b>Magnet holder / bore diameter</b> | ø6 mm   |   |   |   |    |   | 6 |   |    |    |    |    |    |   |   |
|                                      | ø8 mm   |   |   |   |    |   | 8 |   |    |    |    |    |    |   |   |
|                                      | ø12 mm  |   |   |   |    |   | C |   |    |    |    |    |    |   |   |
| <b>Protection class</b>              | IP 67   |   |   |   |    |   |   | 7 |    |    |    |    |    |   |   |
| <b>Connection</b>                    | Flange socket axial M12, 4-pin, female contacts, CW, 1 x M12, 4-pin, male contacts, CCW |   |   |   |    |   |   |   | Y  |    |    |    |    |   |   |
| <b>Voltage supply / interface</b>    | 10...30 VDC, PROFINET IO  |   |   |   |    |   |   |   |    | PT |    |    |    |   |   |
| <b>Resolution Singleturn</b>         | 14 Bit  |   |   |   |    |   |   |   |    |    |    | 14 |    |   |   |
| <b>Resolution Multiturn</b>          | 16 Bit  |   |   |   |    |   |   |   |    |    |    |    | 16 |   |   |
| <b>Resolution supplement</b>         | No option   |   |   |   |    |   |   |   |    |    |    |    |    |   | 0 |
| <b>Operating temperature</b>         | -40...+85 °C  |   |   |   |    |   |   |   |    |    |    |    |    |   | A |

## Accessories

### Mounting accessories

10252773 Clamp set ø15 mm