

# EAM580-K - EtherCAT

Encoder kit

Magnetic multiturn encoders 14 bit ST / 16 bit MT

## Overview

- Encoder kit multiturn / EtherCAT
- 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	EtherCAT
Function	Multiturn
Steps per revolution	$\leq 16384$ / 14 bit
Number of revolutions	$\leq 65536$ / 16 bit
Absolute accuracy	$\pm 0.15^\circ$ ( $+20 \pm 15^\circ\text{C}$ ) $\pm 0.25^\circ$ ( $-40...+85^\circ\text{C}$ ) (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) $\varnothing 8$ mm (magnet bore) $\varnothing 12$ 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 Flange: aluminium
Operating temperature	$-40...+85^\circ\text{C}$ (see general information)
Relative humidity	95 %
Resistance	EN 60068-2-6 Vibration 30 g, 10-2000 Hz EN 60068-2-27 Shock 500 g, 1 ms
Weight approx.	250 g
Connection	Flange connector 3 x M12

## Optional

- Protection against corrosion CX (C5-M)

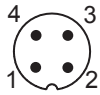
## General information

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

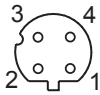
Pin	Assigned	Significance
1	+Vs	Voltage supply
2	d.u.	Do not connect
3	0 V	Ground
4	d.u.	Do not connect



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

### EtherCAT (data line)

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



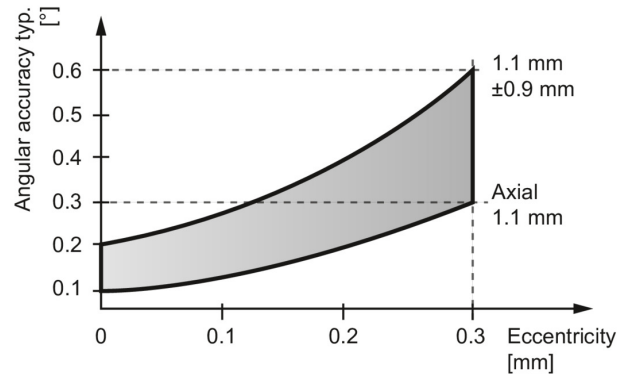
2 x flange connector M12 (female), D-coded

## EtherCAT features

Bus-Protokoll	EtherCAT
Geräteprofil	Encoder-Profil CANopen® CiA 406 Vers. 4.0.2 vom 18.08.2016
Betriebsarten	Free Run, Synchronous with SM3 Event, DC Mode (Distributed Clocks)
Zykluszeit	Min. 62,5 µs
Merkmale	<ul style="list-style-type: none"> <li>- Getriebefaktor (Rundachse) sowie Endlosbetrieb</li> <li>- Zeitstempel (Zeitpunkt der Positionsdatenerfassung)</li> <li>- Plausibilitätsprüfung der einstellbaren Parameter</li> <li>- Umfangreiche Diagnosefunktionen</li> <li>- Preset-Taster für Position</li> <li>- File Access over EtherCAT (FoE)</li> </ul>
Prozessdaten	<ul style="list-style-type: none"> <li>- Positionswert 32 Bit Input Daten mit/ohne Drehzahl 32 Bit</li> <li>- Umfangreiches Prozessdaten-Mapping</li> </ul>
LED-Statusanzeige	2x Link/Activity, RUN, ERR

## 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.

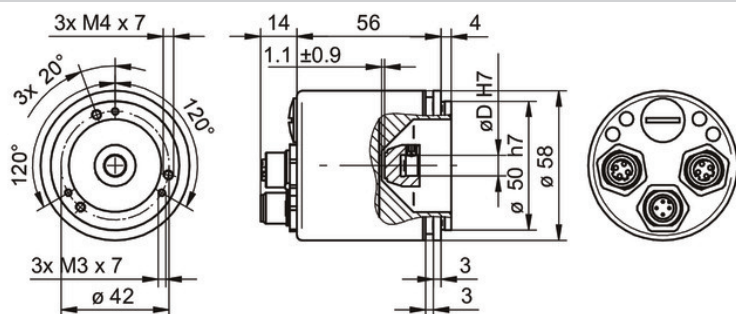


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## Dimensions



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## Ordering reference

	<b>EAM580</b>	<b>-</b>	<b>K</b>	<b>Y</b>	<b>##</b>	<b>.</b>	<b>7</b>	<b>Y</b>	<b>EC</b>	<b>.</b>	<b>14</b>	<b>16</b>	<b>0</b>	<b>.</b>	<b>A</b>
<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, EtherCAT								EC						
<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