

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	≤ 10 s after power on
Interface	EtherCAT
Function	Multiturn
Steps per revolution	≤ 16384 / 14 bit
Number of revolutions	≤ 65536 / 16 bit
Absolute accuracy	$\pm 0.15^\circ$ ($+20 \pm 15^\circ\text{C}$) $\pm 0.25^\circ$ ($-40 \dots +85^\circ\text{C}$) (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	≤ 6000 rpm
Working distance	1.1 ± 0.9 mm axial / ≤ 0.3 mm eccentricity
Material	Housing: steel zinc-coated Flange: aluminium
Operating temperature	$-40 \dots +85^\circ\text{C}$ (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)

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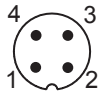
General information

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

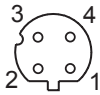
Pin	Assigned	Significance
1	+Vs	Voltage supply
2	d.u.	Do not connect
3	0 V	Ground
4	d.u.	Do not connect



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

EtherCAT (data line)

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



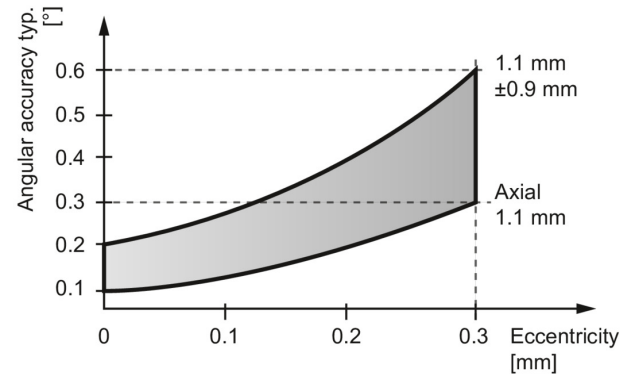
2 x flange connector M12 (female), D-coded

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	- Getriebefaktor (Rundachse) sowie Endlosbetrieb - Zeitstempel (Zeitpunkt der Positionsdatenerfassung) - Plausibilitätsprüfung der einstellbaren Parameter - Umfangreiche Diagnosefunktionen - Preset-Taster für Position - File Access over EtherCAT (FoE)
Prozessdaten	- Positionswert 32 Bit Input Daten mit/ohne Drehzahl 32 Bit - Umfangreiches Prozessdaten-Mapping
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.

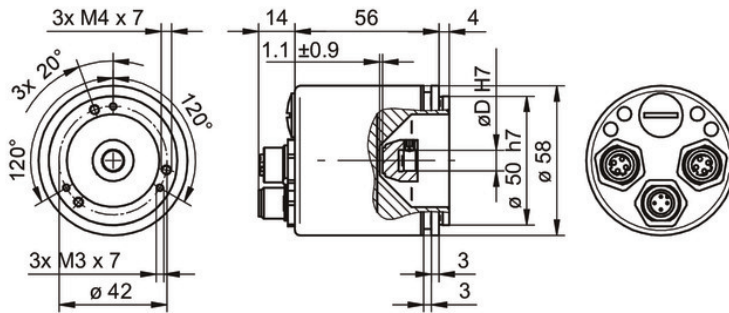


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Dimensions



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Ordering reference

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

Accessories

Mounting accessories

10252773 Clamp set ø15 mm