

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



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 $\pm 15^\circ$ C) $\pm 0,25^\circ$ (-40...+85 $^\circ$ C) (see info working distance)
Sensing method	Magnetic
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Status indicator	4x LED integrated in housing

Technical data - mechanical design

Size (flange)	$\varnothing 58$ mm
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Optional

- Protection against corrosion CX (C5-M)

Technical data - mechanical design

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

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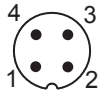
General information

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

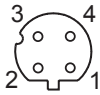
Pin	Assigned	Significance
1	+Vs	Voltage supply
2	d.u.	Do not connect
3	0 V	Ground
4	d.u.	Do not connect



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-



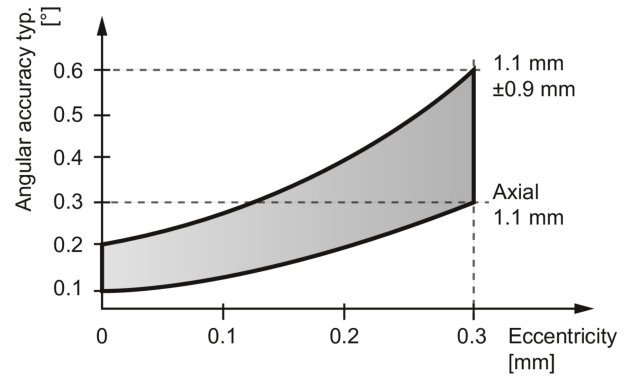
2 x flange connector M12 (female), D-coded

EtherCAT features

Bus protocol	EtherCAT
Device profile	Encoder-Profil CANopen® CiA 406 Vers. 4.0.2 from 18.08.2016
Operating modes	Free Run, Synchronous with SM3 Event, DC Mode (Distributed Clocks)
Cycle time	Min. 62.5 µs
Features	<ul style="list-style-type: none"> - Gear factor (round shaft) and endless loop mode - Time stamp (time of position data acquisition) - Plausibility check of the configurable parameters - Comprehensive diagnostic functions - Preset button for position - File Access over EtherCAT (FoE)
Process data	<ul style="list-style-type: none"> - Position value 32 bits input data with/without speed 32 bits - Extensive process data mapping
LED status indicator	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.

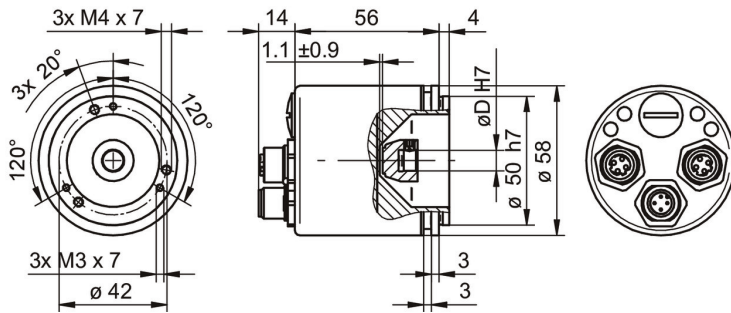


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Dimensions



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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	-40...+85 °C														A

Accessories

Mounting accessories

10252773 Clamp set ø15 mm

Connectors and cables

10160565	Cable connector/connector M12, EtherCAT, straight, 5 m
11174046	Cable connector M12, 4-pin, straight, D-coded, without cable (Z 185.S01)
11174047	Cable connector M12, 4-pin, angled, D-coded, without cable (Z 185.S02)
11202545	Cable connector M12, 4-pin, on both sides, D-coded, 1 m cable (Z 185.E01)
11202549	Cable connector M12, 4-pin, on both sides, D-coded, 2 m cable (Z 185.E02)
11034355	Cable connector M12, 4-pin, on both sides, D-coded, 5 m cable (Z 185.E05)
11202560	Cable connector M12, 4-pin, on both sides, D-coded, 10 m cable (Z 185.E10)
11034356	Female connector M12, 5-pin, A-coded, 5 m cable (Z 185.P05)
11212237	Female connector M12, 5-pin, A-coded, 10 m cable (Z 185.P10)