

# EAM580-B - EtherCAT

Blind hollow shaft

Magnetic multiturn encoders 14 bit ST / 16 bit MT

## Overview

- Encoder 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	$\leq 10$ 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 $^\circ\text{C}$ )
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
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### Technical data - mechanical design

Shaft type	$\varnothing 10...15$ mm (blind hollow shaft)
Protection EN 60529	IP 65 (without shaft seal) IP 67 (with shaft seal)
Operating speed	$\leq 6000$ rpm
Starting torque	$\leq 2$ Ncm (+20 $^\circ\text{C}$ , IP 65) $\leq 2.5$ Ncm (+20 $^\circ\text{C}$ , IP 67)
Moment of inertia	46.75 gcm <sup>2</sup>
Material	Housing: steel zinc-coated Flange: aluminium Hollow shaft: stainless steel
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 250 g, 6 ms
Weight approx.	360 g
Connection	Flange connector 3 x M12

## Optional

- Protection against corrosion CX (C5-M)

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## General information

Self-heating interrelated to speed, protection, attachment method and ambient conditions as well electronics and supply voltage must be considered for precise thermal dimensioning. Self-heating is supposed to approximate 6 K (IP 65 protection) respectively 12 K (IP 67 protection) per 1000 rpm. 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

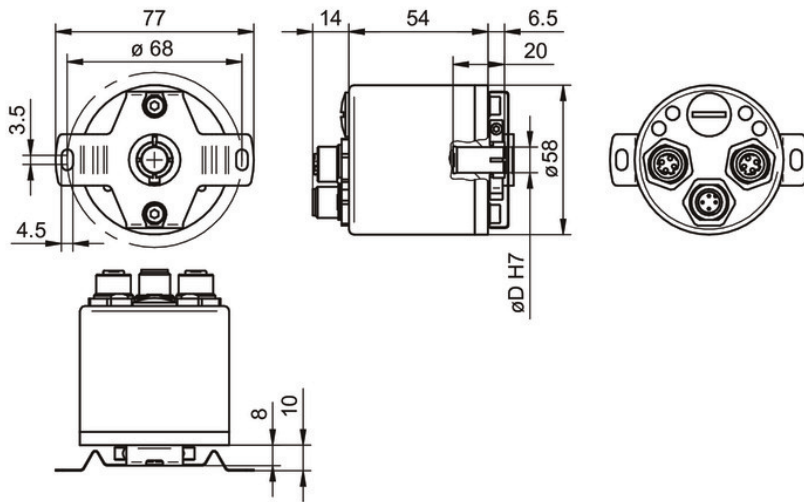
Bus protocol	EtherCAT
Device profile	Encoder-Profil CANopen® CiA 406 Vers. 4.0.2 from 18.08.2016
Operating modes	Free Run, Synchronous with SM3 Event, DC Mode (Distributed Clocks)
Cycle time	Min. 62.5 µs
Features	<ul style="list-style-type: none"> <li>- Gear factor (round shaft) and endless loop mode</li> <li>- Time stamp (time of position data acquisition)</li> <li>- Plausibility check of the configurable parameters</li> <li>- Comprehensive diagnostic functions</li> <li>- Preset button for position</li> <li>- File Access over EtherCAT (FoE)</li> </ul>
Process data	<ul style="list-style-type: none"> <li>- Position value 32 bits input data with/without speed 32 bits</li> <li>- Extensive process data mapping</li> </ul>
LED status indicator	2x Link/Activity, RUN, ERR

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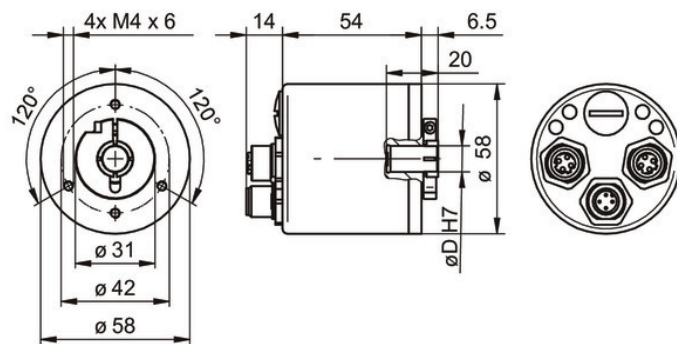
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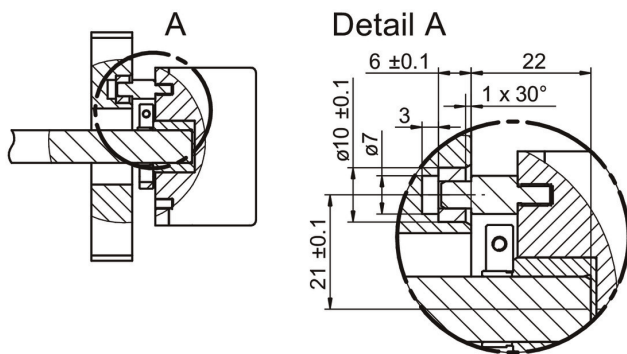
## Dimensions



EAM580, with stator coupling



EAM580, w/o stator coupling



Torque pin

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## Ordering reference

	EAM580	-	B	#	##	.	#	Y	EC	.	14	16	0	.	A
<b>Product</b>	EAM580														
<b>Shaft type</b>	Blind hollow shaft														
															B
<b>Flange (Hollow shaft)</b>	Without stator coupling														
	With stator coupling 68 mm														N
	Pin torque support 5 mm, axial														A
															E
<b>Blind hollow shaft</b>	ø10 mm, clamping ring, A-side														
	ø12 mm, clamping ring, A-side														A
	ø14 mm, clamping ring, A-side														C
	ø15 mm, clamping ring, A-side														E
															F
<b>Protection class</b>	IP 65														
	IP 67														5
															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

11136718 Set of spring washers - EAM580