

# EAM580-SY - EtherCAT

Solid shaft with synchro flange

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 $\pm 15^\circ$ C) $\pm 0.25^\circ$ (-40...+85 $^\circ$ 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
Shaft type	$\varnothing 6 \times 10$ mm, solid shaft with flat
Flange	Synchro flange

### Technical data - mechanical design

Protection EN 60529	IP 65 (without shaft seal) IP 67 (with shaft seal)
Operating speed	$\leq 6000$ rpm
Starting torque	$\leq 2$ Ncm (+20 $^\circ$ C, IP 65) $\leq 2.5$ Ncm (+20 $^\circ$ C, IP 67)
Moment of inertia	15.38 gcm <sup>2</sup>
Admitted shaft load	$\leq 40$ N axial $\leq 80$ N radial
Material	Housing: steel zinc-coated Flange: aluminium Hollow shaft: stainless steel
Operating temperature	-40...+85 $^\circ$ 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 3xM12

## 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

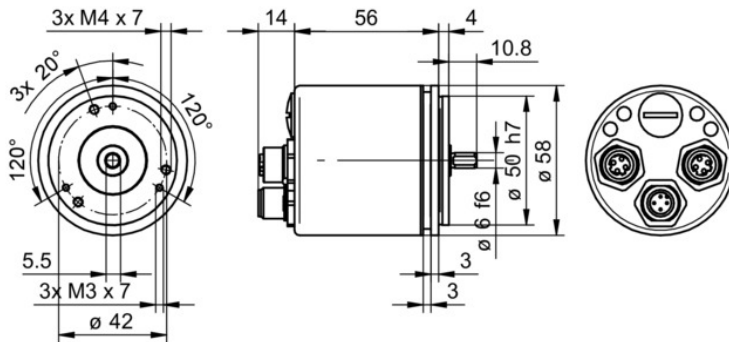
Bus protocol	EtherCAT
Device profile	Encoder-Profil CANopen® CiA 406 Vers. 4.0.2 from 18.08.2016
Operating modes	Free Run, Synchronous with SM3 Event, DC Mode (Distributed Clocks)
Cycle time	Min. 62.5 µs
Features	<ul style="list-style-type: none"> <li>- Gear factor (round shaft) and endless loop mode</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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## Dimensions



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## Ordering reference

	<b>EAM580</b>	-	<b>S</b>	<b>Y</b>	<b>6</b>	.	<b>#</b>	<b>Y</b>	<b>EC</b>	.	<b>14</b>	<b>16</b>	<b>0</b>	.	<b>A</b>
<b>Product</b>	EAM580														
<b>Shaft type</b>	Solid shaft		S												
<b>Flange (shaft)</b>	Synchro flange, centering collar ø50 x 4 mm, flute ø53 mm, pitch circle diameter ø42 - 3xM3/3xM4			Y											
<b>Shaft</b>	ø6 x 10 mm, with flat				6										
<b>Protection class</b>	IP 65							5							
	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
11050507	Bellows coupling (D1=06 / D2=10)
11065922	Coupling CPS25 (L=19, D1=10 / D2=06)
11065916	Coupling CPS25 (L=19, D1=06 / D2=06)
10141132	Spring washer coupling (D1=6 / D2=10)
10141131	Spring washer coupling (D1=6 / D2=6)
11069333	Coupling CPS37 (L=24, D1=06 / D2=06)
11069337	Coupling CPS37 (L=24, D1=10 / D2=06)
10117667	Mounting adaptor
10117668	Set of eccentric fixings for mounting clamp (10117667)