

EAL580-B - EtherCAT

Blind hollow shaft

Optical multiturn encoders 18 bit ST / 16 bit MT, EtherCAT

Overview

- Absolute encoder multiturn
- Optical sensing method
- Max. resolution: singleturn 18 bit, multiturn 16 bit
- Blind hollow shaft
- LED status display
- EtherCAT
- Maximum resistant against magnetic fields



Technical data

Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤100 mA (24 VDC)
Interface	EtherCAT
Function	Multiturn
Steps per revolution	≤262144 / 18 bit (adjustable)
Number of revolutions	≤65536 / 16 bit (adjustable)
Total resolution	≤ 31 bit
Absolute accuracy	±0.01 ° (ST 18 bit / MT 13 bit) ±0.025 ° (ST 13 bit / MT 16 bit)
Sensing method	Optical
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-4
Status indicator	4x LED integrated in housing
Approval	UL approval / E63076

Technical data - mechanical design

Size (flange)	ø58 mm
Shaft type	ø10...15 mm (blind hollow shaft)

Technical data - mechanical design

Protection EN 60529	IP 54 IP 65 IP 67
Operating speed	≤6000 rpm (mechanical) ≤6000 rpm (electric)
Angular acceleration	≤2500 rad/s ² (UB = 0 VDC) ≤500000 rad/s ² (UB = 10...30 VDC)
Starting torque	≤0.04 Nm (+25 °C, IP 54)
Rotor moment of inertia	20 gcm ²
Material	Housing: zinc diecast Flange: aluminium
Operating temperature	-40...+85 °C (see general information)
Relative humidity	95 % non-condensing
Resistance	EN 60068-2-6 Vibration ±0.75 mm - 10-58 Hz, 10 g - 58-2000 Hz EN 60068-2-27 Shock 100 g, 2 ms
Weight approx.	500 g
Connection	Flange connector 3xM12

Optional

- Button for Preset

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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 7 K (IP 54 protection) respectively 8 K (IP 65 / 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	UB	Voltage supply
2	d.u.	Do not connect
3	GND	Ground
4	d.u.	Do not connect



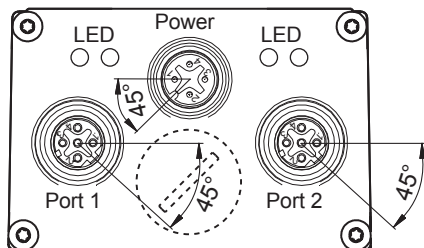
1 x flange connector M12 (male), A-coded

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

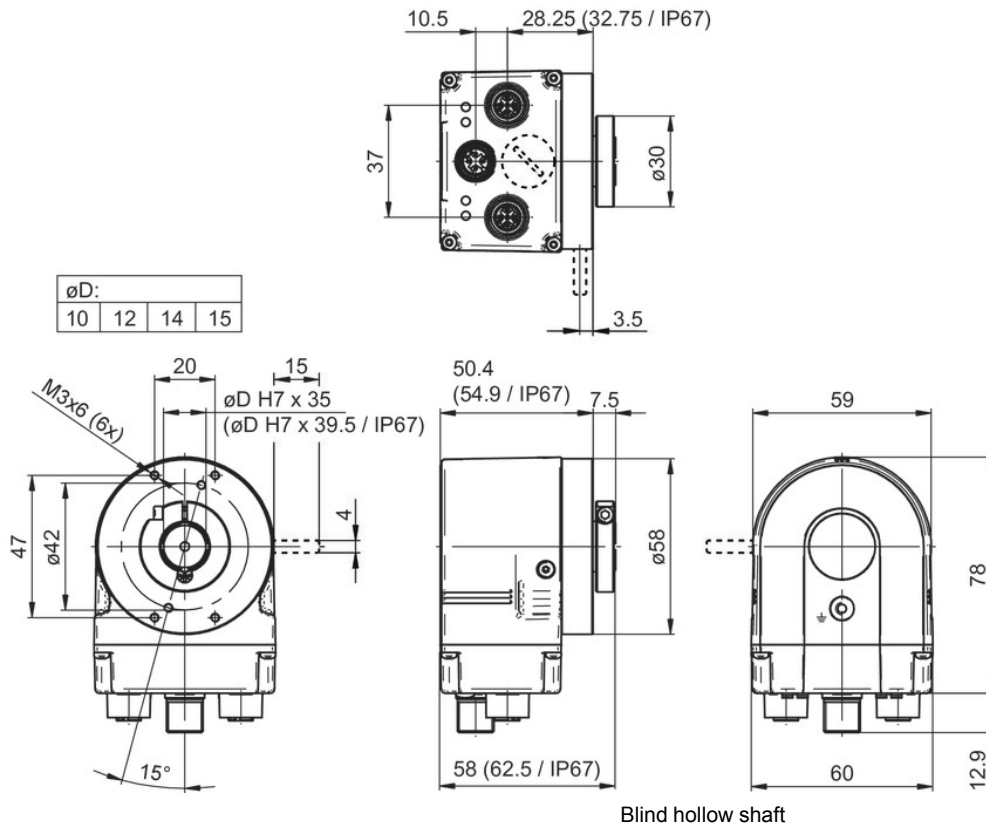
Bus protocol	EtherCAT
Device profile	Encoder-Profil CANopen® CiA 406 Vers. 4.0.2 from 18.08.2016
Operating modes	Free Run, Synchronous with SM3 Event, DC Mode (Distributed Clocks)
Cycle time	Min. 62.5 µs
Features	<ul style="list-style-type: none"> - Gear factor (round shaft) and endless loop mode - Time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

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Dimensions



øD:			
10	12	14	15

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Ordering reference

	EAL580	-	B	#	##	.	#	W	EC	.	##	##	0	.	A
Product	EAL580														
Shaft type	Blind hollow shaft			B											
Flange (Hollow shaft)	Without stator coupling			N											
	Pin torque support 4 mm, radial			B											
Blind hollow shaft	ø10 mm, clamping ring, A-side				A										
	ø12 mm, clamping ring, A-side				C										
	ø14 mm, clamping ring, A-side				E										
	ø15 mm, clamping ring, A-side				F										
Protection class	IP 54							4							
	IP 65							5							
	IP 67							7							
Connection	Flange socket radial, 2 x M12, 4-pin, female contacts, D-coded, 1 x M12, 4-pin, male contacts, A-coded								W						
Voltage supply / interface	10...30 VDC, EtherCAT									EC					
Resolution Singleturn	13 Bit												13		
	18 Bit												18		
Resolution Multiturn	13 Bit													13	
	16 Bit													16	
Resolution supplement	No option														0
Operating temperature	-40...+85 °C														A

Accessories

Mounting accessories

10139345	Torque support by rubber buffer for encoders with 15 mm pin (Z 119.041)
11066120	Torque arm, 1-arm (mounting kit 056)
10165157	Spring coupling for encoders with ø58 mm housing, hole distance 73 mm (Z 119.072)
11034121	Spring coupling for encoders with ø58 mm housing, hole distance 68 mm (Z 119.073)
11034123	Spring coupling for one-side attachment, length 115 mm (Z 119.076)
11003562	Spring coupling for encoders with ø58 mm housing, hole distance 63 mm (Z 119.082)
11201396	Spring coupling, hole distance 32.5 mm (Z 119.101)
11177167	Self-tapping grounding screw (Z 119.100)