EAL580-SC - PROFINET

Solid shaft with clamping flange

Optical multiturn encoders max. 18 bit ST / 16 bit MT, PROFINET IO

Overview

- Absolute encoder multiturn
- Optical sensing method
- Max. resolution: singleturn 18 bit, multiturn 16 bit
- Clamping flange
- LED status display
- PROFINET IO
- 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	PROFINET IO
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 x 20 mm, solid shaft with flat
Flange	Clamping flange
Protection EN 60529	IP 54 IP 65 IP 67

Technical data - mechanical design	
Operating speed	≤10000 rpm (mechanical) ≤6000 rpm (electric)
Angular acceleration	≤2500 rad/s² (UB = 0 VDC) ≤500000 rad/s² (UB = 10...30 VDC)
Starting torque	≤0.03 Nm (+25 °C, IP 65 / IP 67) ≤0.015 Nm (+25 °C, IP 54)
Rotor moment of inertia	20 gcm²
Admitted shaft load	≤20 N axial ≤40 N radial
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/Reset

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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 approximates 4 K (IP 54 protection) respectively 6 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

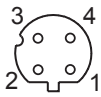
Voltage supply

Pin	Assigned	Significance
1	UB	Voltage supply
2	d.u.	Do not connect
3	GND	Ground
4	d.u.	Do not connect

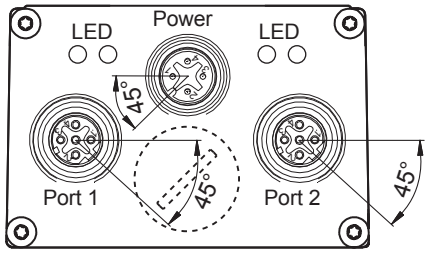
1 x flange connector M12 (male), A-coded

PROFINET (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



PROFINET features

Bus protocol	PROFINET IO
Device profile	Encoder Profil PNO 3.162 V4.1 und V3.1 PROFIdrive Profil PNO 3.172 V4.1
Real time classes	Realtime (RT) Class 1, IRT Class 3
Send clock	RT: 1 ms, 2 ms, 4 ms IRT: 250 µs, 500 µs, 1 ms, 2 ms, 4 ms
Update time	Min. 500 µs
Features	- 100 MBaud Fast Ethernet - Device replacement without interchangeable media - Media redundancy MRP - Gear factor / Round axis
Process data	- Position value 32 bit input data with/without rotation speed 16 or 32 bit - Telegrams 81-83 of PROFIdrive profile
LED status indicator	Link/Activity, Status, Error

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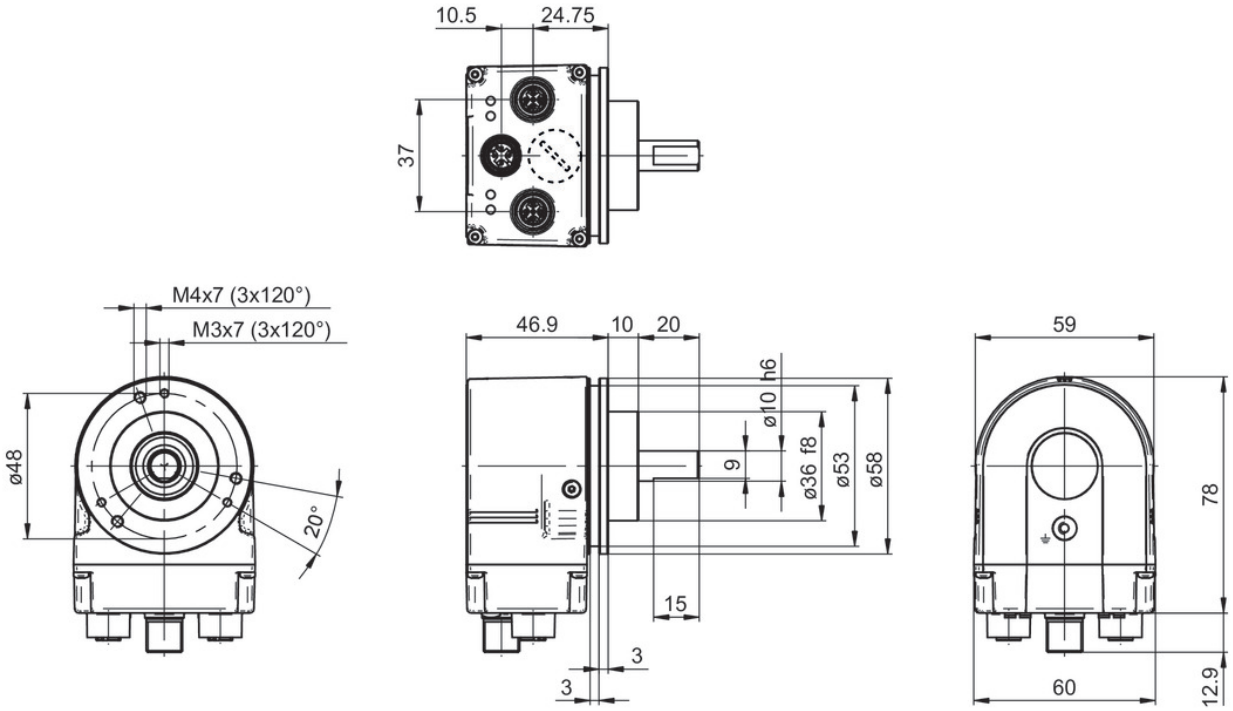
Dimensions



Clamping flange

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Ordering reference

	EAL580	-	S	C	0	#	W	PT	##	##	0	.	A
Product													
	EAL580												
Shaft type													
Solid shaft			S										
Flange (shaft)													
Clamping flange, centering collar ø36 x 10 mm, pitch circle diameter 48 mm - 3xM3/3xM4				C									
Shaft													
ø10 x 20 mm, with flat					0								
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, PROFINET IO								PT					
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	
11101781	Double loops coupling (D1=10 / D2=10)
11050507	Bellows coupling (D1=06 / D2=10)
11065923	Coupling CPS25 (L=19, D1=10 / D2=10)
11065922	Coupling CPS25 (L=19, D1=10 / D2=06)
10141132	Spring washer coupling (D1=6 / D2=10)
10141133	Spring washer coupling (D1=10 / D2=10)
11069337	Coupling CPS37 (L=24, D1=10 / D2=06)
11069340	Coupling CPS37 (L=24, D1=10 / D2=10)
11053277	Bellows coupling (D1=10 / D2=10)
11101893	Spring encoder arm
11177167	Self-tapping grounding screw (Z 119.100)
11065545	Set of eccentric fixings type A