

EAL580-SV - PROFINET

Solid shaft with synchro 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
- Synchro 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	ø6 x 10 mm, solid shaft with flat
Flange	Synchro flange
Protection EN 60529	IP 54 IP 65 IP 67

Technical data - mechanical design

Operating speed	≤10000 rpm (mechanical) ≤6000 rpm (electric)
Starting acceleration	≤1000 U/s²
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 3 x M12

Optional

- Button for Preset/Reset

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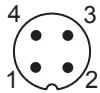
General information

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 approximate 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



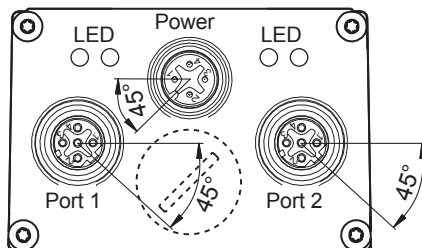
1 x flange connector M12 (male), A-coded

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

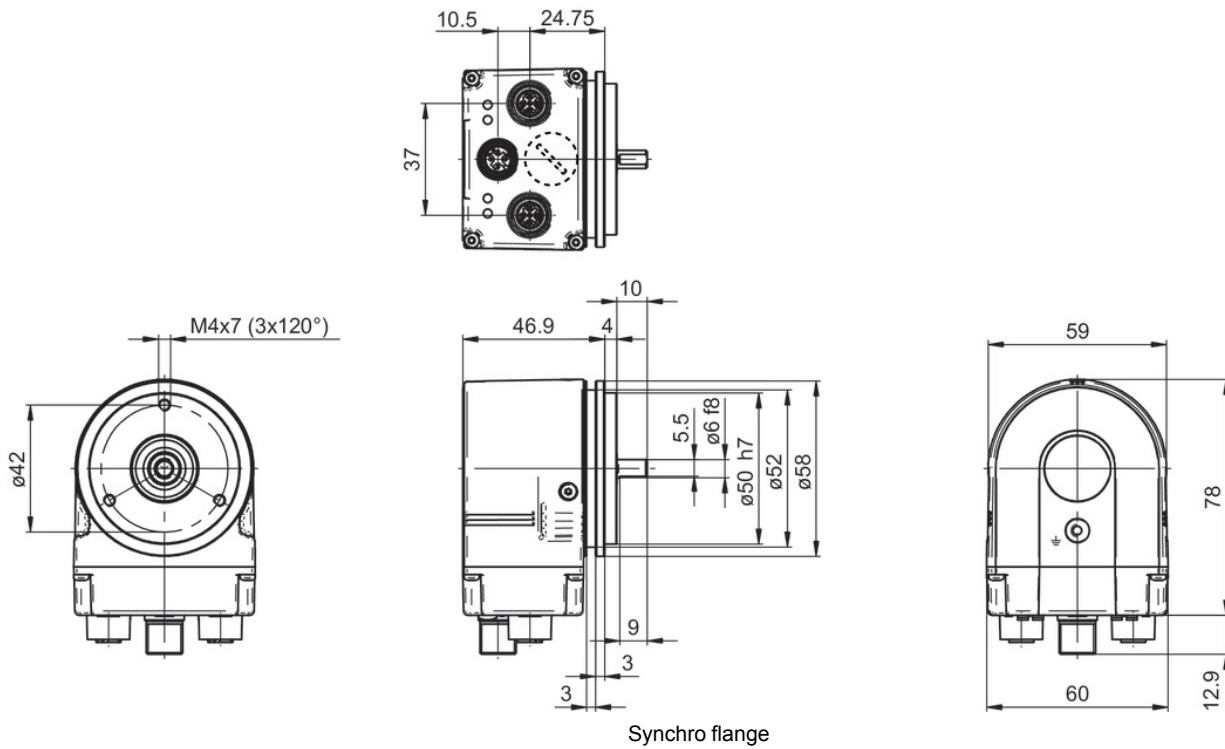
Bus protocol	PROFINET IO
Device profile	Encoder Profil PNO 3.162 V4.1 und V3.1 PROFIdrive Profil PNO 3.172 V4.1
Real time classes	Realtime (RT) Class 1, IRT Class 3
Send clock	RT: 1 ms, 2 ms, 4 ms IRT: 250 µs, 500 µs, 1 ms, 2 ms, 4 ms
Update time	Min. 500 µs
Features	- 100 MBaud Fast Ethernet - Device 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



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Ordering reference

	EAL580	-	S	V	6	.	#	W	PT	.	##	##	0	.	A
Product	EAL580														
Shaft type															
Solid shaft			S												
Flange (shaft)															
Synchro flange, ø52 mm, M4				V											
Shaft															
ø6 x 10 mm, with flat					6										
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															A
-40...+85 °C															

Accessories

Mounting accessories

10117669	Eccentric fixing, single (Z 119.006)
10117667	Mounting adaptor for encoders with synchro flange (Z 119.015)
10158124	Bearing flange for encoders with synchro flange (Z 119.035)
11177167	Self-tapping grounding screw (Z 119.100)
10141132	Spring washer coupling D1=6 / D2=10 (Z 121.C01)
10141131	Spring washer coupling D1=6 / D2=6 (Z 121.C02)
11034143	Slit coupling D1=06 / D2=06 (Z 121.D01)

Connectors and cables

11034355	Cable connector M12, 4-pin, on both sides, D-coded, 5 m cable (Z 185.E05)
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)
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)