

Absolute encoders - bus interfaces

Solid shaft with synchro flange

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

EAL580-SV - PROFINET - *OptoTurn*[®]



EAL580-SV with synchro flange

Features

- 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

Optional

- Button for Preset/Reset

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	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Status indicator	4x LED integrated in housing
Approvals	UL approval / E63076, Certified by PNO

Technical data - mechanical design

Size (flange)	ø58 mm
Shaft type	ø6 x 10 mm, solid shaft with flat
Flange	Synchro flange
Protection DIN EN 60529	IP 54, IP 65, IP 67
Operating speed	≤10000 rpm (mechanical) ≤6000 rpm (electric)
Starting acceleration	≤1000 U/s ²
Starting torque	≤0.03 Nm (+25 °C, IP 65/IP 67) ≤0.015 Nm (+25 °C, IP 54)
Rotor moment of inertia	20 gcm ²
Admitted shaft load	≤20 N axial ≤40 N radial
Materials	Housing: zinc diecast Flange: aluminium
Operating temperature	-40...+85 °C (see general information)
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration ±0.75 mm - 10-58 Hz 10 g - 58-2000 Hz DIN EN 60068-2-27 Shock 200 g, 3 ms
Weight approx.	500 g
Connection	Flange connector 3 x M12

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Part number

EAL580-S V 6 . W PT . 0. A

V	6	.	W	PT	.	0.	A
							<u>Operating temperature</u> A -40...+85 °C
							<u>Resolution</u> 1316 13 bit singleturn / 16 bit multiturn 1813 18 bit singleturn / 13 bit multiturn
							<u>Voltage supply</u> PT 10...30 VDC, PROFINET IO
							<u>Connection</u> W Flange connector 3 x M12, 4-pin, radial
							<u>Protection</u> 4 IP 54 5 IP 65 7 IP 67
							<u>Specification solid shaft</u> 6 ø6 x 10 mm, with flat
							<u>Flange</u> V Synchro flange, ø50 mm, M4

Optional: /6105 Button for Preset/Reset

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Accessories

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)

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)

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

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



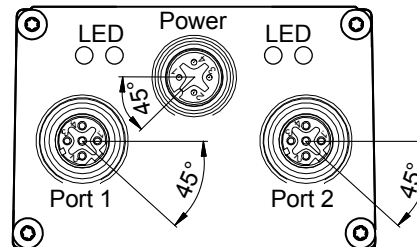
1 x flange connector M12 (male), A-coded

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



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.

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Dimensions

