

# EAL580-B - PROFINET

Blind hollow shaft

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
- Blind hollow shaft
- 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...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)
Starting acceleration	≤1000 U/s <sup>2</sup>
Starting torque	≤0.04 Nm (+25 °C, IP 54)
Rotor moment of inertia	20 gcm <sup>2</sup>
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 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



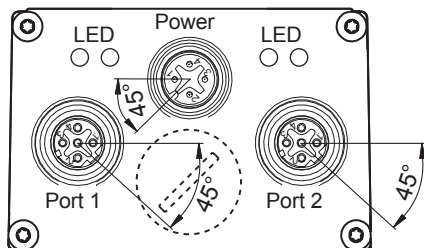
1 x flange connector M12 (male), A-coded

### 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

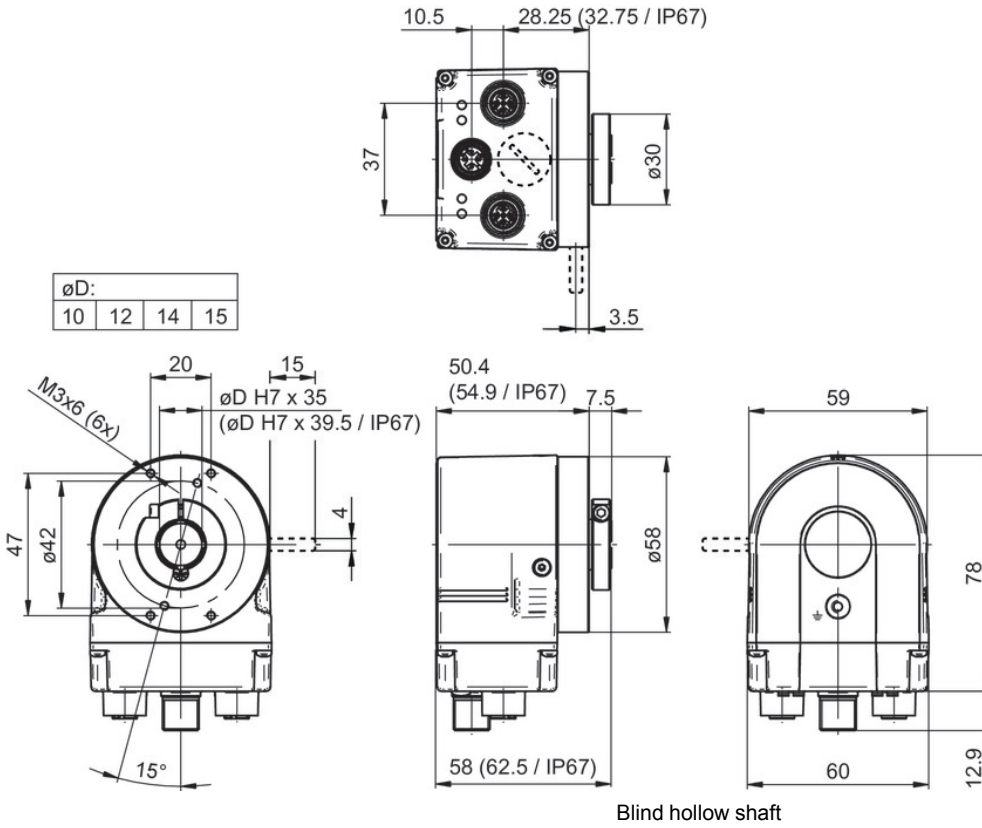
Bus protocol	PROFINET IO
Device profile	Encoder Profil PNO 3.162 V4.1 und V3.1 PROFIdrive Profil PNO 3.172 V4.1
Real time classes	Realtime (RT) Class 1, IRT Class 3
Send clock	RT: 1 ms, 2 ms, 4 ms IRT: 250 µs, 500 µs, 1 ms, 2 ms, 4 ms
Update time	Min. 500 µs
Features	- 100 MBaud Fast Ethernet - Device 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	-	B	#	##	#	W	PT	##	##	0	.	A
<b>Product</b>	EAL580												
<b>Shaft type</b>	Blind hollow shaft		B										
<b>Flange (Hollow shaft)</b>	Without stator coupling			N									
	Pin torque support 4 mm, radial			B									
<b>Blind hollow shaft</b>	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							
<b>Protection class</b>	IP 54							4					
	IP 65							5					
	IP 67							7					
<b>Connection</b>	Flange socket radial, 2 x M12, 4-pin, female contacts, D-coded, 1 x M12, 4-pin, male contacts, A-coded								W				
<b>Voltage supply / interface</b>	10...30 VDC, PROFINET IO									PT			
<b>Resolution Singleturn</b>	13 Bit										13		
	18 Bit										18		
<b>Resolution Multiturn</b>	13 Bit											13	
	16 Bit												16
<b>Resolution supplement</b>	No option												0
<b>Operating temperature</b>	-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)