

## EIL580P-S1

Solid shaft with clamping flange

100...5000 pulses per revolution programmable (interpolated)



### Overview

A co-branded customized encoder made for ELSA Solutions by Baumer, specifically designed for motor feedback.

- Size ø58 mm
- Precise optical sensing
- Output signal level programmable (TTL or HTL)
- Standard REO444 interface
- Connection tangential
- Pulses per revolution 100...5000, programmable
- High protection up to IP 65
- High resistance to shock and vibrations



### Technical data

#### Technical data - electrical ratings

Voltage supply	4.75...30 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption w/o load	≤70 mA
Initializing time	≤ 30 ms after power on
Pulses per revolution	100 ... 5000
Reference signal	Zero pulse 90° ±10 %
Sensing method	Optical
Output frequency	≤300 kHz (TTL) ≤160 kHz (HTL)
Output signals	A+, B+, R+, A-, B-, R-
Output stages	TTL/RS422 HTL/push-pull
Programmable parameters	Output level TTL/HTL Pulse number 1...65536 Zero pulse width 90°/180° Zero pulse position Signal sequence
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	UL 508 / CSA 22.2

#### Technical data - mechanical design

Size (flange)	ø115 mm
Shaft type	Ø11 x 3 0 mm Solid Shaft with woodruff key
Admitted shaft load	≤40 N axial ≤80 N radial
Flange	Clamping flange
Protection EN 60529	IP 65 (without shaft seal)
Operating speed	≤6000 rpm (+20 °C, IP 67) ≤12000 rpm (+20 °C, IP 65)
Starting torque	≤0.015 Nm (+20 °C, IP 65) ≤0.02 Nm (+20 °C, IP 67)
Material	Housing: aluminium die-cast Flange: aluminium Solid shaft: stainless steel
Operating temperature	-40...+85 °C
Relative humidity	90 % non-condensing
Resistance	EN 60068-2-6 Vibration 30 g, 10-2000 Hz EN 60068-2-27 Shock 300 g, 6 ms
Connection	Cable
Weight approx.	485 g

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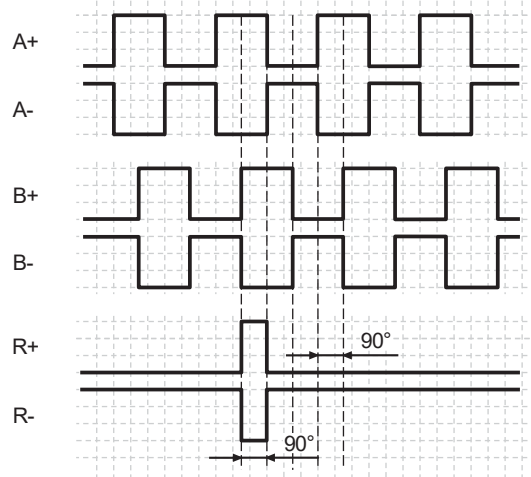
### Terminal assignment

#### Cable output

Pin	Assignment
1	GND
2	UB
3	A+
4	A-
5	B+
6	B-
7	R+
8	R-

### Output signals

Zero pulse electrical 90° A&B high  
(Factory setting at clockwise rotation (CW)  
in view of the encoder flange)



### Trigger level

Outputs	TTL/RS422
Output level High	$\geq 2.5 \text{ V}$
Output level Low	$\leq 0.5 \text{ V}$
Load	$\leq 20 \text{ mA}$

Outputs	HTL/Push-pull
Output level High	$\geq UB - 3 \text{ V}$
Output level Low	$\leq 1.5 \text{ V}$
Load	$\leq 20 \text{ mA}$

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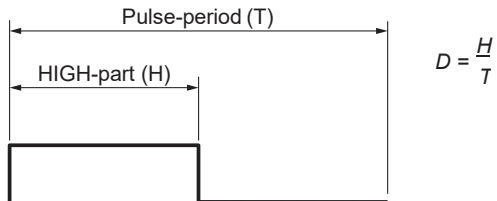
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## Duty cycle

The duty cycle (D) is defined as the time ratio between the HIGH pulse duration (H) and the pulse period (T).

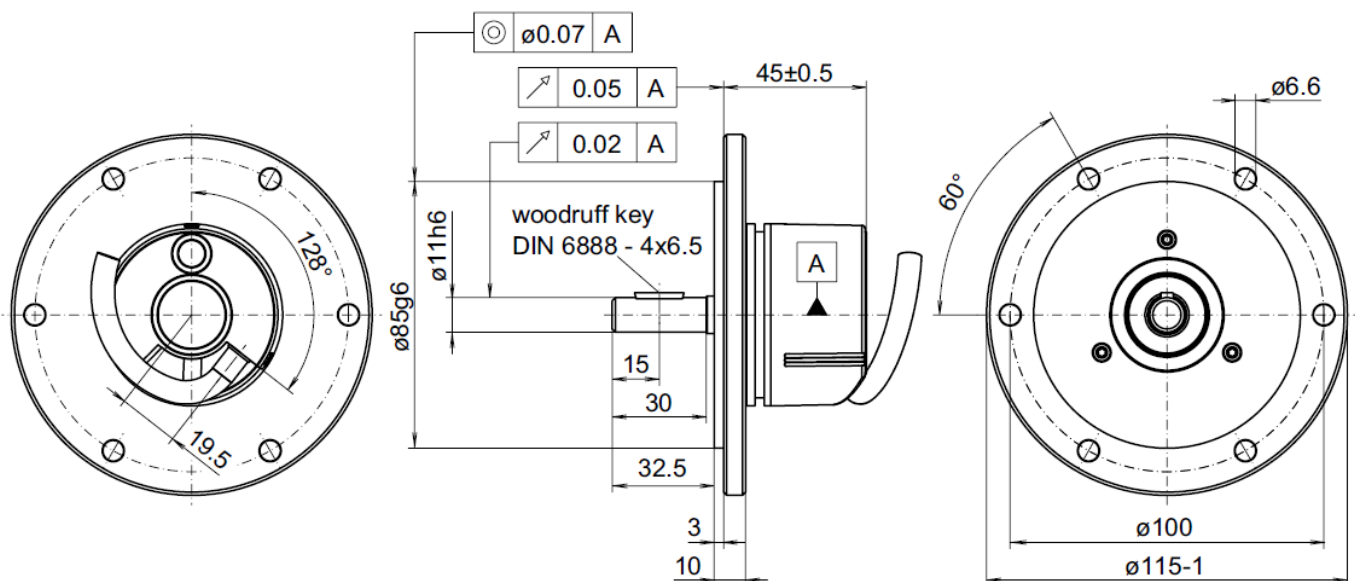
System-induced and depending on the pulse number, the measured values may vary which has an impact on speed and position acquisition. Binary pulse numbers are recommended for speed feedback.



Programmed pulse number	Scan ratio (D) (maximum)	Jitter (+/-) (maximum)
1...1023	45...55 %	5%
1024, 2048	45...55 %	5%
1025...5000	40...60 %	10%
8192, 16384	35...85 %	15%
5001...10000	22...78 %	28%
32768	25...75 %	25%
65536	15...85 %	35%
all other	Jitter[%]=(programmed pulse number -10000)*0,0007%+28%	

## Dimensions

### EURO flange B10, cable tangential



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**Ordering code**  
**Encoder**

Code	Part Number	Programmed Binay Signal	Note
<b>02161</b>	<b>11186728</b>	<b>2048 ppr HTL</b>	<b>Default factory configuration</b>
02161A		1024 ppr TTL	
02161A1		2048 ppr TTL	
02161A2		4096 ppr TTL	
02161B		1024 ppr HTL	
02161B2		4096 ppr HTL	

*Other non-binary programming available upon request \ order*