

EIL580P-S1

Solid shaft with EURO flange B10

1...65536 pulses per revolution programmable (interpolated system)

Overview

- Size ø58 mm
- Precise optical sensing (interpolated)
- Output signal level programmable (TTL or HTL)
- EURO flange B10
- Connection axial, radial or tangential
- Pulses per revolution 1...65536, programmable
- High protection up to IP 67
- 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	1 ... 65536
Duty cycle	45...55 % typical at 1024, 2048 ppr (further see table Duty cycle)
Reference signal	Zero pulse 90° or 180°
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 30 mm solid shaft with woodruff key
Admitted shaft load	≤40 N axial ≤80 N radial
Protection EN 60529	IP 65 (without shaft seal) IP 67 (with 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...+100 °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	Flange connector M12, 8-pin Flange connector M23, 12-pin Cable
Weight approx.	485 g

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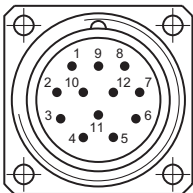
Terminal assignment

Flange connector M23, 12-pin / cable

Pin	Core color	Assignment
1	pink	B-
2	—	—
3	blue	R+
4	red	R-
5	green	A+
6	yellow	A-
7	—	R-Set ¹⁾
8	grey	B+
9	—	—
10	white	GND
11	—	—
12	brown	UB

Screen: Connected to housing

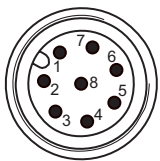
Cable data: PUR, [4x2x0,14 mm²], bending radius >45,8 mm, outer diameter 6.1 mm



¹⁾ The R-Set input is used to set the reference pulse (zero pulse) on the current shaft position.
R-Set = UB ≥ 200 ms

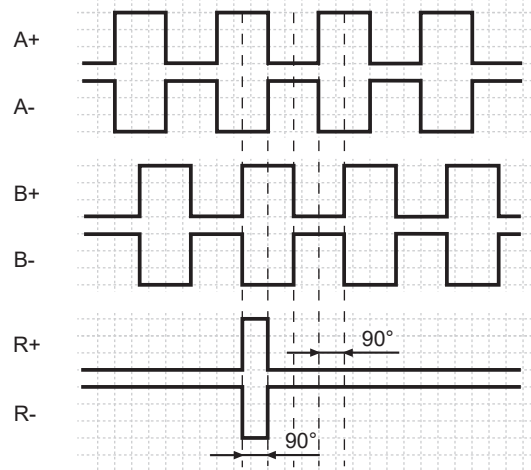
Flange connector M12, 8-pin

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

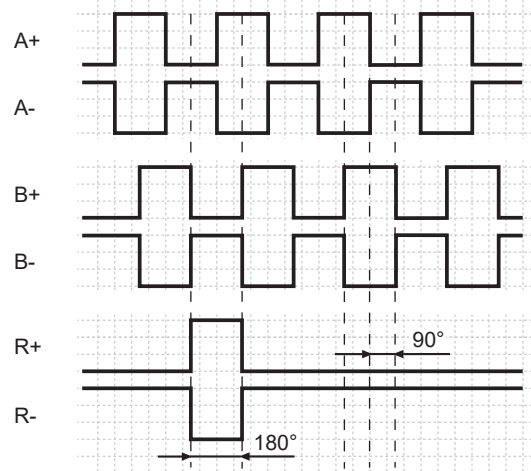


Output signals

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



Zero pulse electrical 180° B low
(at clockwise rotation (CW)
in view of the encoder flange)



Trigger level

Outputs	TTL/RS422
Output level High	≥2.5 V
Output level Low	≤0.5 V
Load	≤20 mA

Outputs	HTL/Push-pull
Output level High	≥UB -3 V
Output level Low	≤1.5 V
Load	≤20 mA

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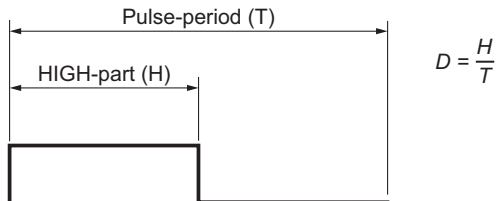
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Duty cycle

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.



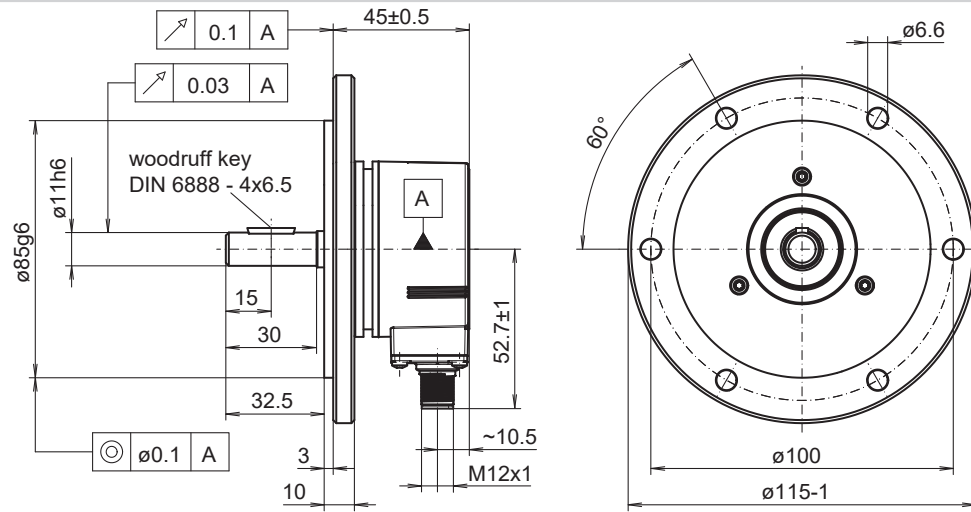
Programmed pulse number	Scan ratio (D) (maximum)	Jitter (+/-) (maximum)
1...1023	45...55 %	5%
1024, 2048	45...55 %	5%
1025...5000	40...60 %	10%
8192, 16384	35...85 %	15%
5001...10000	22...78 %	28%
32768	25...75 %	25%
65536	15...85 %	35%
all other	Jitter[%]=(programmed pulse number -10000)*0,0007%+28%	

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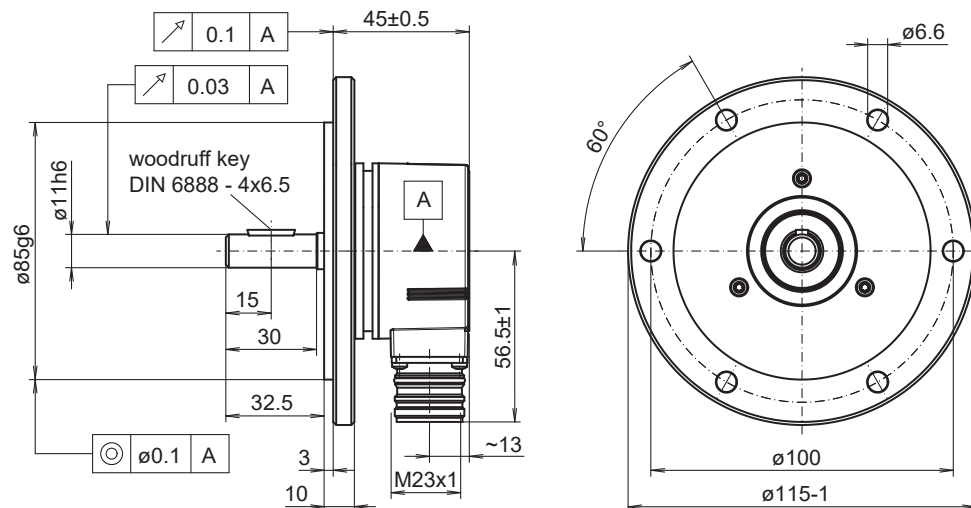
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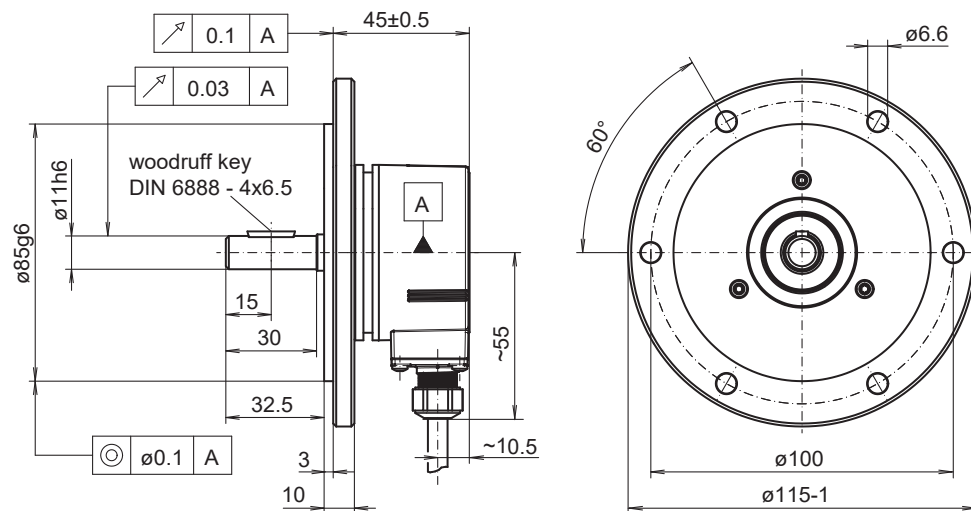
Dimensions



EURO flange B10, flange connector M12, radial



EURO flange B10, flange connector M23, radial



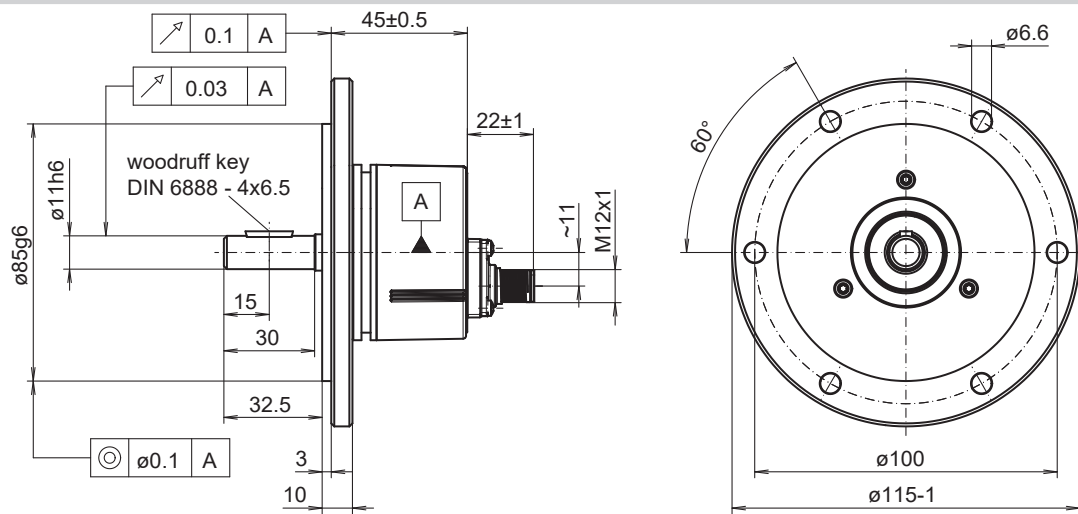
EURO flange B10, cable radial

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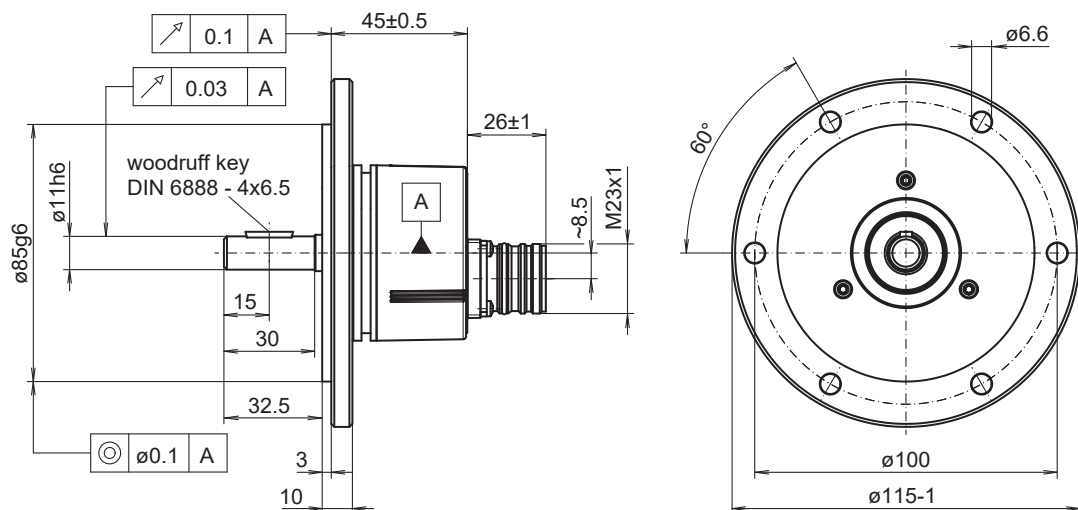
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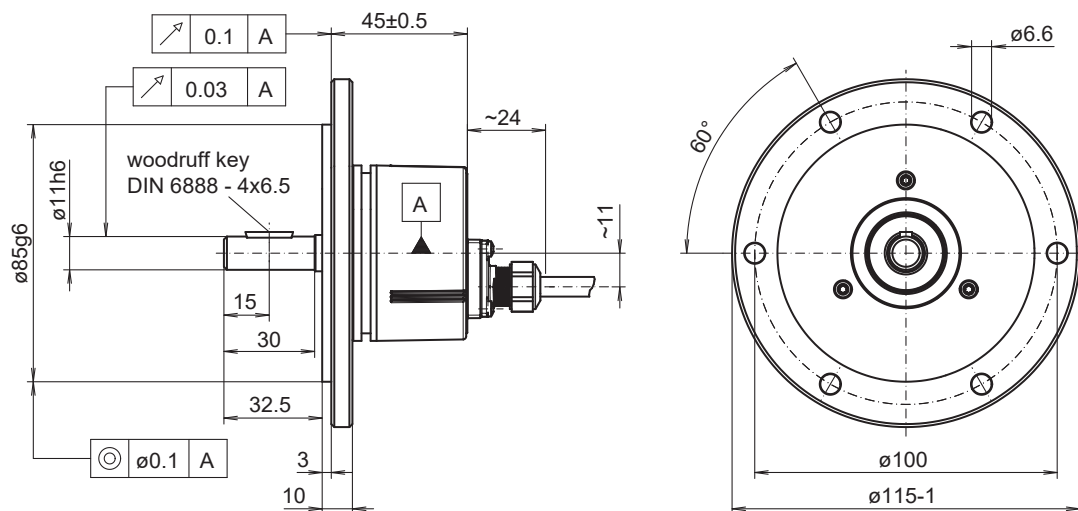
Dimensions



EURO flange B10, flange connector M12, axial



EURO flange B10, flange connector M23, axial



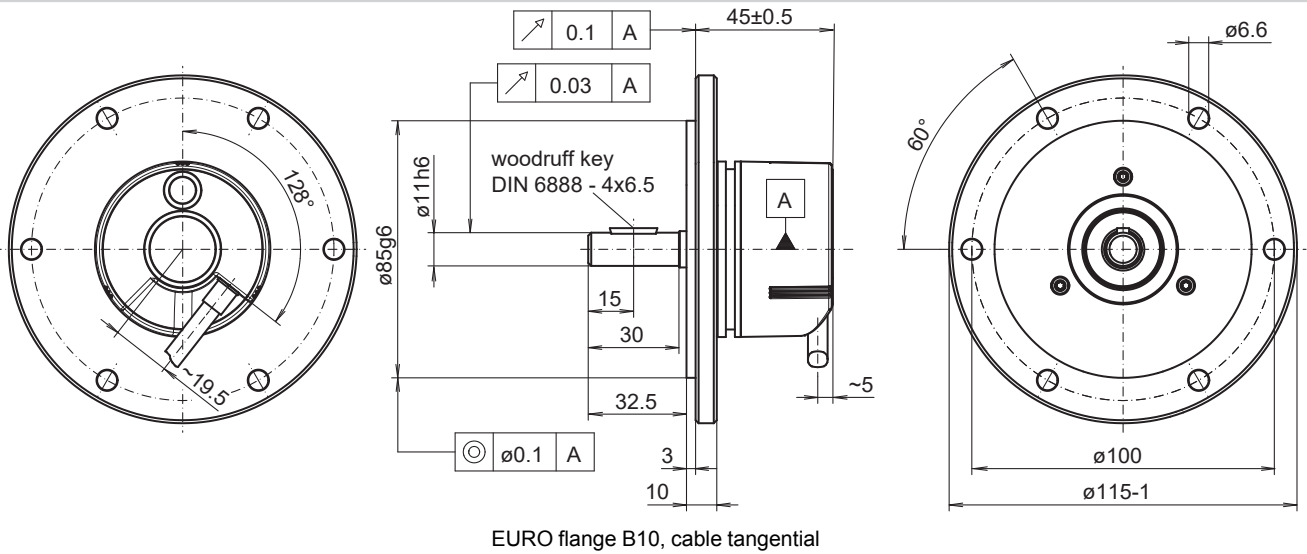
EURO flange B10, cable axial

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Ordering reference

	EIL580P	-	S	1	B1	.	#	##	#	.	01024	.	B
Product	EIL580P												
Shaft type													
Solid shaft				S									
Flange (shaft)													
Euro flange B10, centering collar Ø85 x 3 mm, pitch circle diameter 100 mm - 6 x Ø6.6				1									
Shaft													
Ø11 x 30 mm, with woodruff key 4 x 6.5					B1								
Protection class													
IP 65											5		
IP 67											7		
Connection													
Cable radial, 1 m												R	
Cable radial, 2 m												L	
Flange socket radial, M23, 12-pin, male contacts, CCW												F	
Flange socket radial, M12, 8-pin, male contacts, CCW												B	
Cable axial, 1 m												T	
Cable axial, 2 m												U	
Flange socket axial, M23, 12-pin, male contacts, CCW												D	
Flange socket axial, M12, 8-pin, male contacts, CCW												A	
Cable tangential, 1 m												P	
Cable tangential, 2 m												Q	
Voltage supply / output													
4,75...30 VDC, TTL/RS422 6 channel (Vout=5V)												F	
4,75...30 VDC, HTL/push pull, 6 channel (Vout=Vin)												Q	
Pulses programmable													
1...65536 programmable (factory setting: 1024)												01024	
Operating temperature													
-40...+100 °C													B

(Factory setting: 1024 ppr, Vout = 5 VDC TTL, signal sequence A leading B (CW), zero pulse 90° A&B high)

Accessories

Mounting accessories

- Spring disk coupling K 35 (shaft Ø6...12 mm)
- Spring disk coupling K 50 (shaft Ø11...16 mm)
- Spring disk coupling K 60 (shaft Ø11...22 mm)

Programming accessories

- 11120657 Handheld Programming Tool Z-PA-EI-H
- 11120547 PC Programming Tool Z-PA-EI-P
- 11119280 Connection cable connector M12 / connector D-SUB, 0.2 m
- 11119720 Connection cable connector M12 / connector D-SUB, 1 m
- 11119257 Connection cable connector M23 (CW) / connector D-SUB, 0.2 m
- 11119723 Connection cable connector M23 (CW) / connector D-SUB, 1 m