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	DIN EN 61000-6-2
Emitted interference	DIN 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 DIN 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	DIN EN 60068-2-6 Vibration 30 g, 10-2000 Hz DIN 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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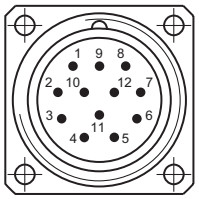
Terminal assignment

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

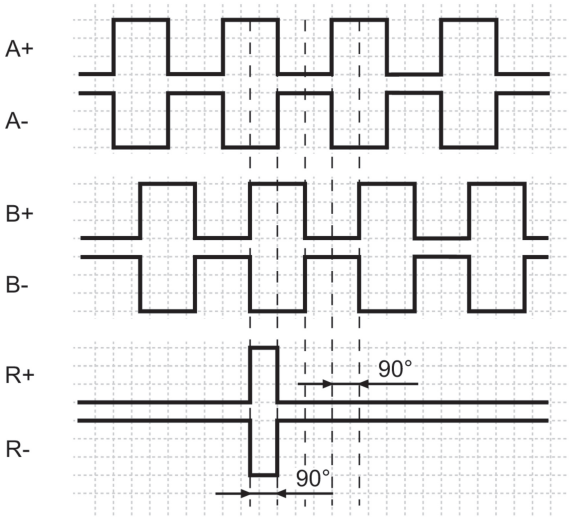
Flange connector M12, 8-pin

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

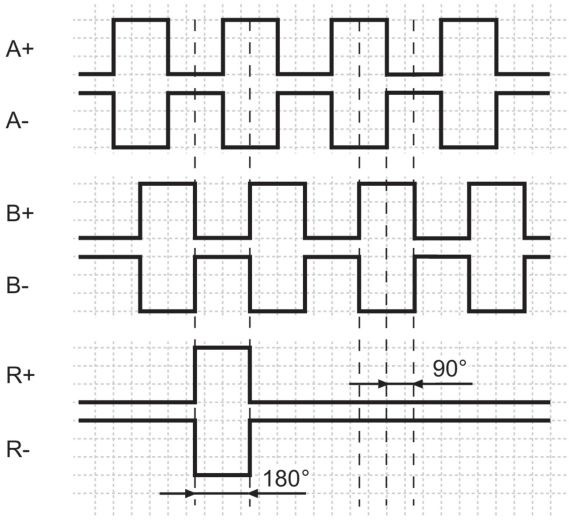


Output signals

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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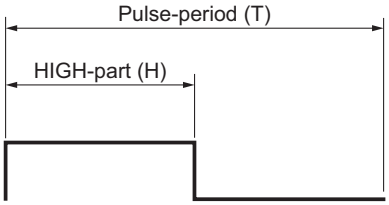
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Duty cycle

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.



$$D = \frac{H}{T}$$

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%	

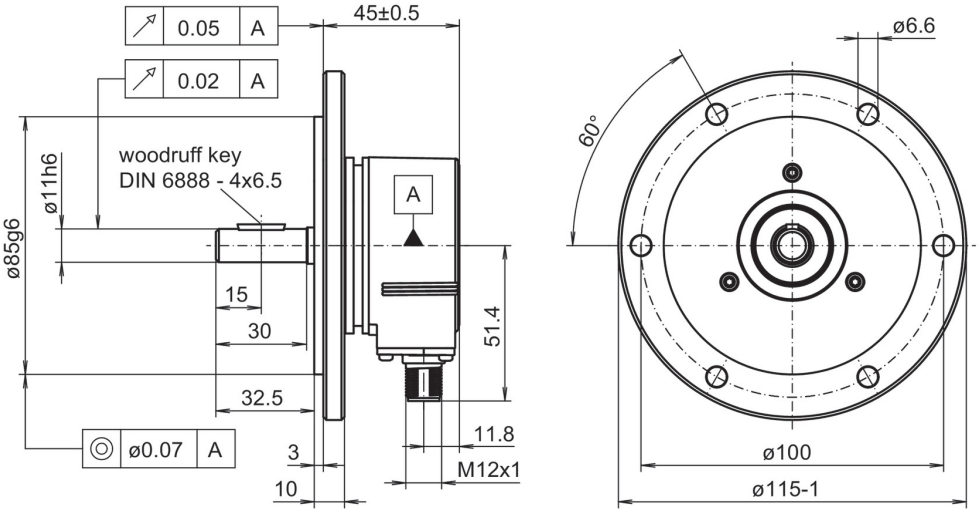
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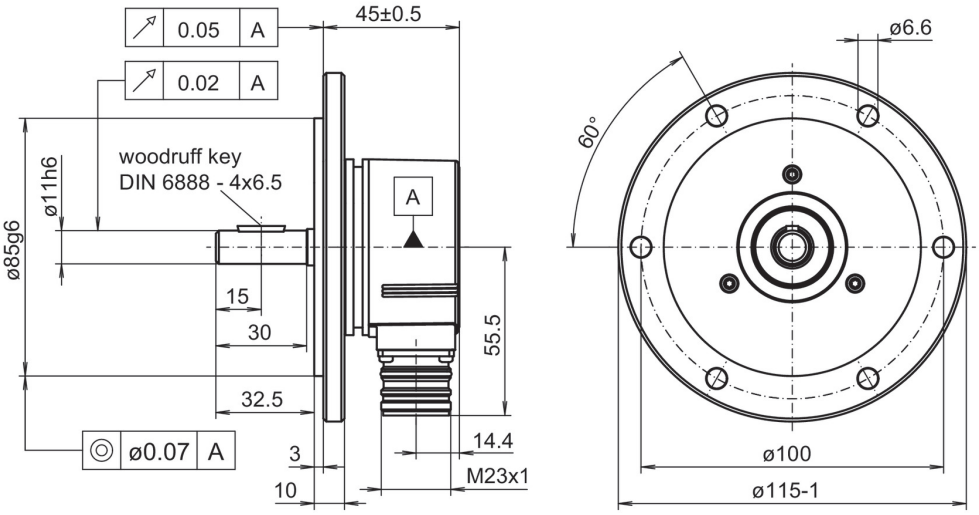
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Dimensions



EURO flange B10, flange connector M12, radial



EURO flange B10, flange connector M23, radial

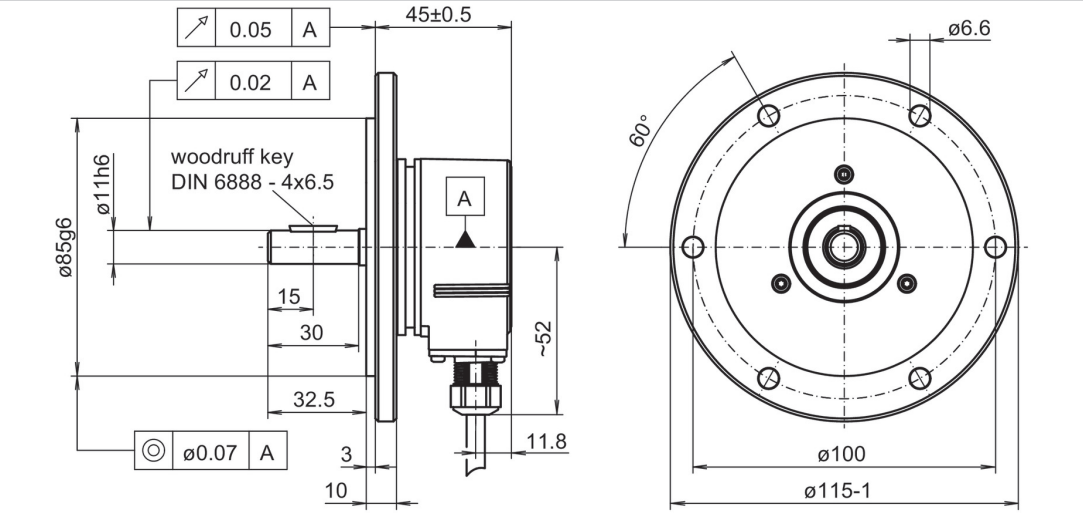
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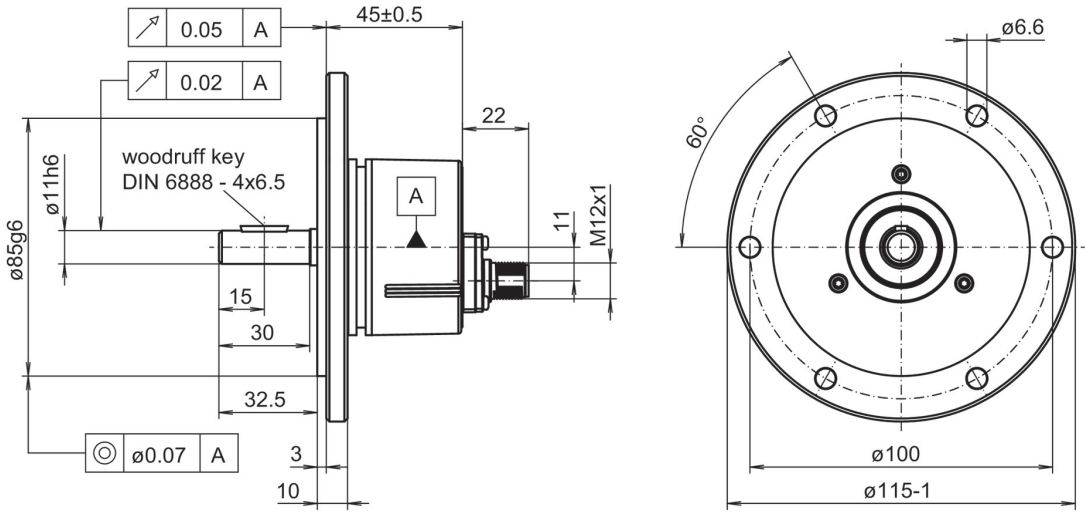
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Dimensions



EURO flange B10, cable radial



EURO flange B10, flange connector M12, axial

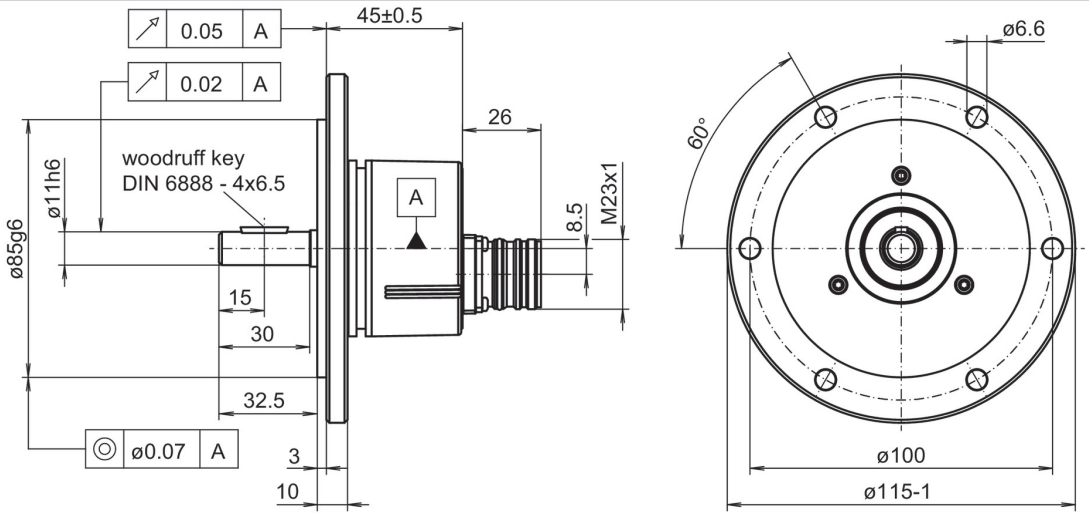
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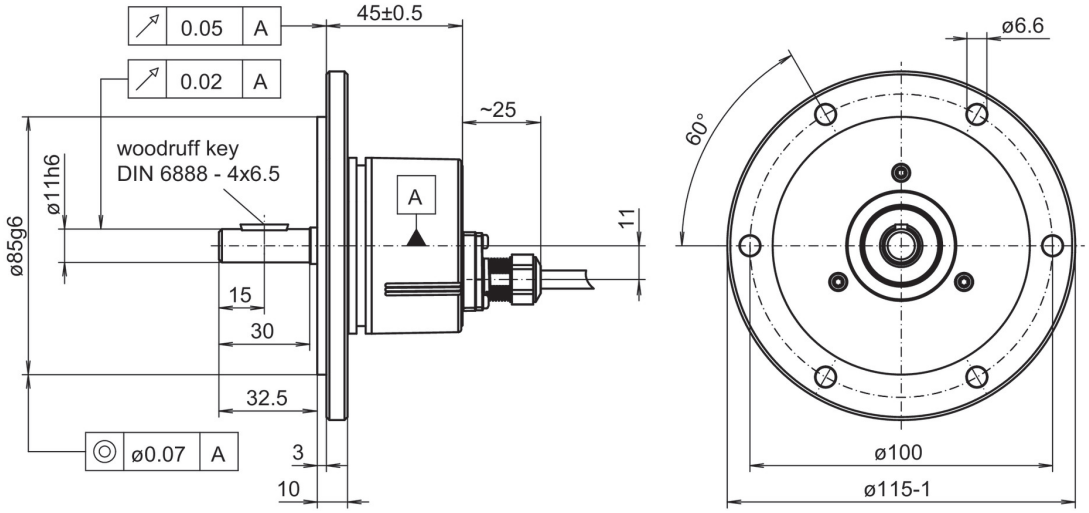
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Dimensions



EURO flange B10, flange connector M23, axial



EURO flange B10, cable axial

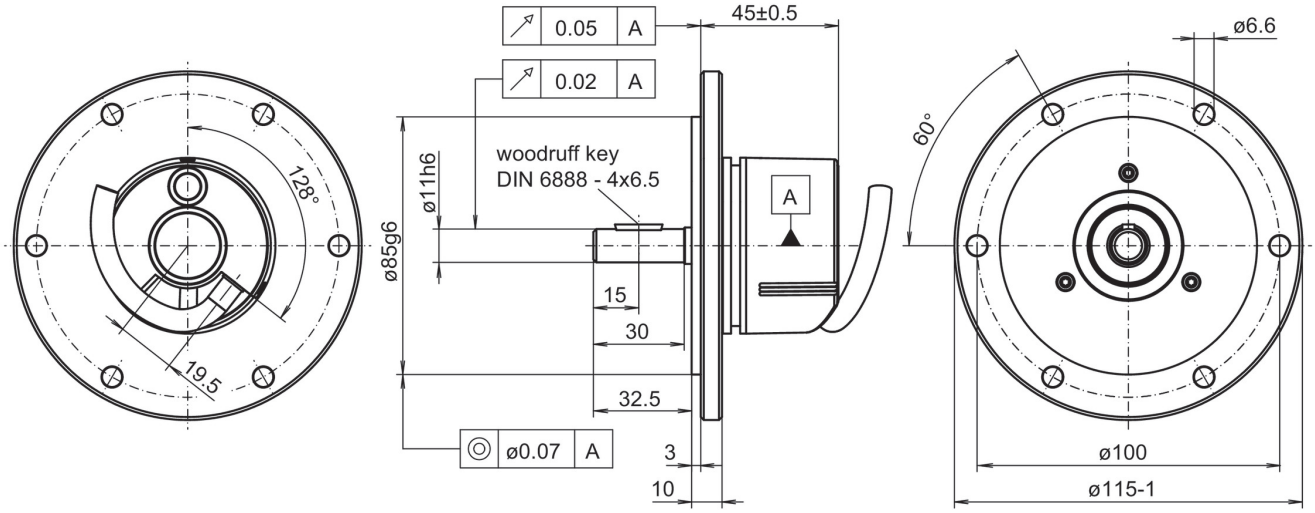
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Dimensions



EURO flange B10, cable tangential

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Ordering reference

	EIL580P-S	1	B1	.	####	######	F	.	01024	.	B
Product											
	EIL580P-S										
Flange											
EURO flange B10		1									
Specification solid shaft											
ø11 x 30 mm, with woodruff key			B1								
Protection											
IP 65					5						
IP 67					7						
Connection											
Cable radial, 1 m						R					
Cable radial, 2 m						L					
Flange connector M23, 12-pin, radial, male contacts, CCW						F					
Flange connector M12, 8-pin, radial, male, CCW						B					
Cable axial, 1 m						T					
Cable axial, 2 m						U					
Flange connector M23, 12-pin, axial, male, CCW						D					
Flange connector M12, 8-pin, axial, male, CCW						A					
Cable tangential, 1 m						P					
Cable tangential, 2 m						Q					
Voltage supply / output stages											
4.75...30 VDC, TTL/RS422, 6 channel (Vout = 5 VDC) - Factory setting HTL/push-pull 6 channel (Vout = Vin) - programmable by customer							F				
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)

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Accessories

Connectors and cables

10127844	Connection cable 2 m shielded with female connector M12, 8-pin, straight (ESG 34FH0200G)
10129332	Connection cable 5 m shielded with female connector M12, 8-pin, straight (ESG 34FH0500G)
10129333	Connection cable 10 m shielded with female connector M12, 8-pin, straight (ESG 34FH1000G)
11053961	Connection cable 2 m shielded with female connector M12, 8-pin, angled (ESW 33FH0200G)
11053962	Connection cable 5 m shielded with female connector M12, 8-pin, angled (ESW 33FH0500G)
10170054	Connection cable 10 m shielded with female connector M12, 8-pin, angled (ESW 33FH1000G)
11212849	Female connector M23, 12-pin, CW, with cable 1 m - EIL580P
11212870	Female connector M23, 12-pin, CW, with cable 2 m - EIL580P
11212871	Female connector M23, 12-pin, CW, with cable 5 m - EIL580P
11212872	Female connector M23, 12-pin, CW, with cable 10 m - EIL580P
11119280	Connection cable connector M12 / connector D-SUB, 0.2 m
11119720	Connection cable connector M12 / connector D-SUB, 1 m

Programming accessories

11120657	Handheld Programming Tool Z-PA-EI-H
11120547	PC Programming Tool Z-PA-EI-P

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