EIL580P-S1 - M23 CW

Solid shaft with EURO flange B10, flange connector M23 CW

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 flange connector M23 CW axial oder radial
- 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

Technical data - electrical ratings	
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 M23, 12-pin
Weight approx.	485 g

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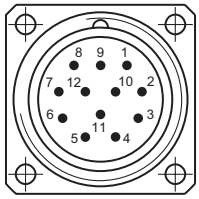
Terminal assignment

Flange connector M23, 12-pin, clockwise (CW)

Pin	Assignment
1	B-
2	–
3	R+
4	R-
5	A+
6	A-
7	R-Set [1]
8	B+
9	–
10	GND
11	–
12	UB

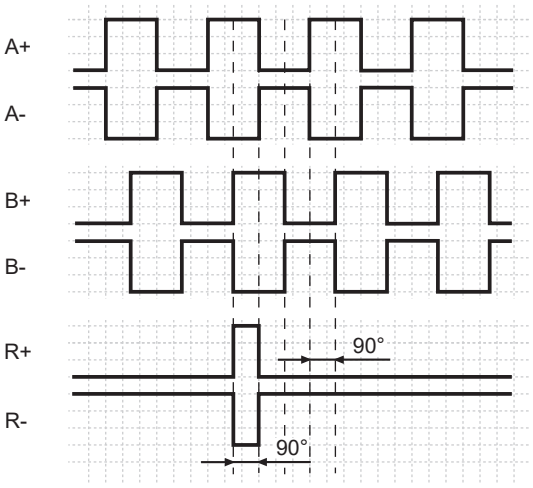
[1] The R-Set input is used to set the reference pulse (zero pulse) on the current shaft position.
R-Set = UB ≥ 200 ms



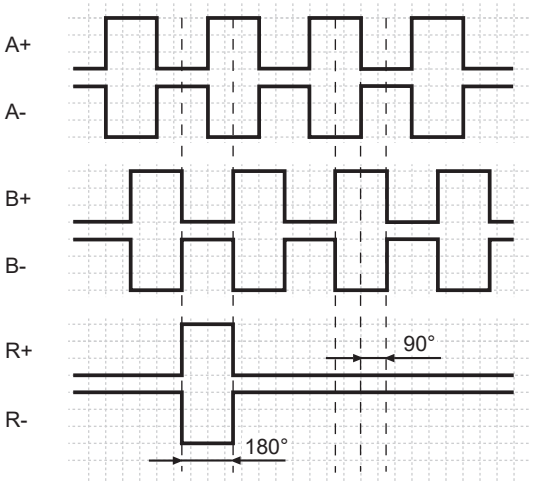
Flange connector M23, pin contacts,
12-pin, clockwise (CW)

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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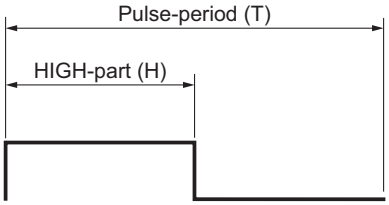
Duty cycle

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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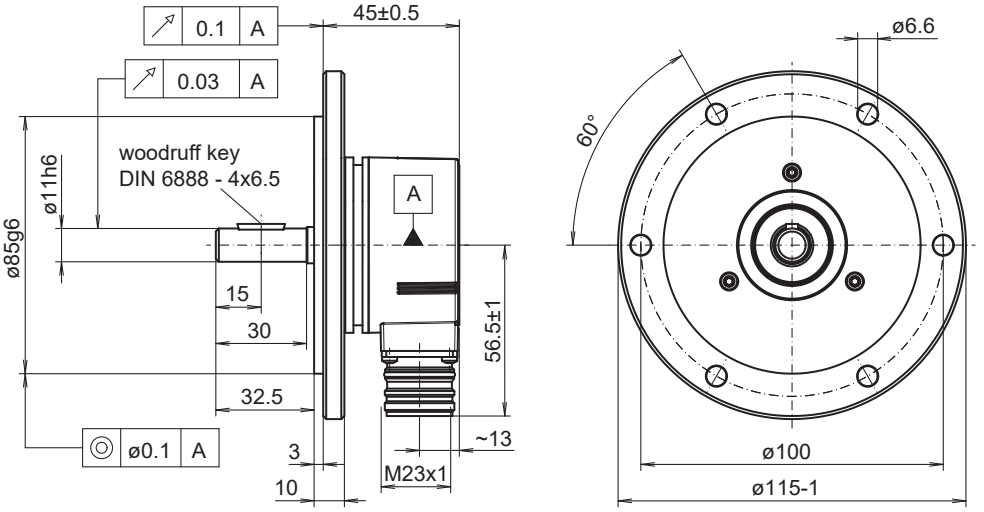
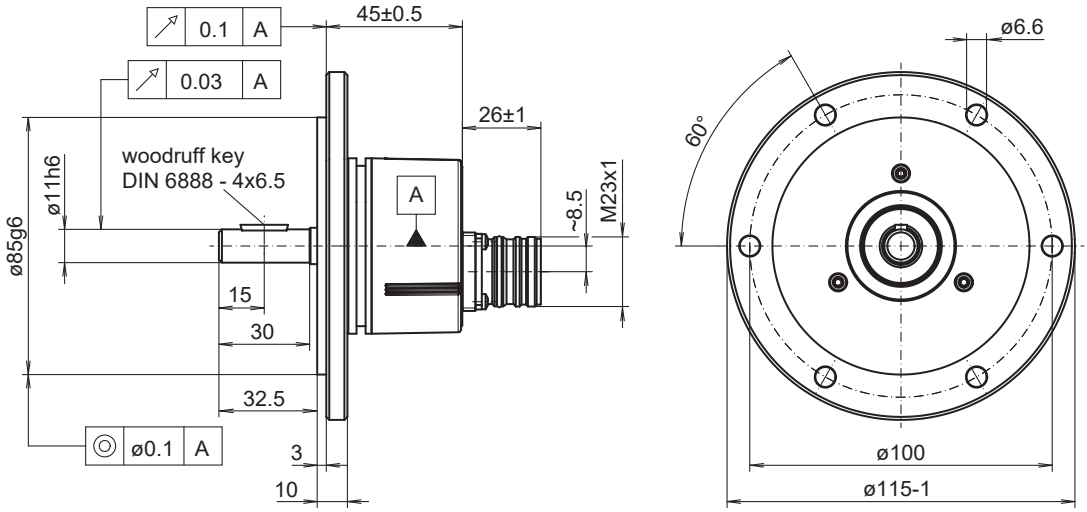
Dimensions



EURO flange B10, flange connector M23, radial



EURO flange B10, flange connector M23, axial

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Ordering reference

	EIL580P	-	S	1	B1	.	#	##	F	.	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													
Flange socket radial, M23, 12-pin, male contacts, CW								E					
Flange socket axial, M23, 12-pin, male contacts, CW								C					
Voltage supply / output													
4,75...30 VDC, TTL/RS422 6 channel (Vout=5V)									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)

Programming accessories	
11120657	Handheld Programming Tool Z-PA-EI-H
11120547	PC Programming Tool Z-PA-EI-P
11222569	Connection cable connector M23 (CCW) / connector D-SUB, 0.2 m
11222570	Connection cable connector M23 (CCW) / connector D-SUB, 1 m