

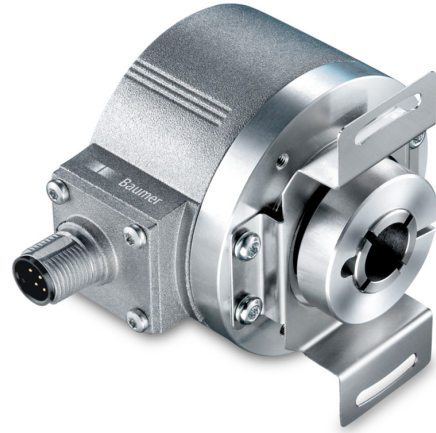
EIL580P-T

With through hollow shaft

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

Overview

- Size ø58 mm
- Precise optical sensing (interpolated)
- Output signal level programmable (TTL or HTL)
- Through hollow shaft, ø8...15 mm
- Connection 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)	ø58 mm
Shaft type	ø8...15 mm (through hollow shaft) ø9.52 mm (through hollow shaft) ø12.7 mm (through hollow shaft)
Protection EN 60529	IP 65 (without shaft seal) IP 67 (with shaft seal)
Operating speed	≤3000 rpm (+20 °C, IP 67) ≤6000 rpm (+20 °C, IP 65)
Starting torque	≤0.025 Nm (+20 °C, IP 65) ≤0.03 Nm (+20 °C, IP 67)
Material	Housing: aluminium die-cast Flange: aluminium
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 250 g, 6 ms
Connection	Flange connector M12, 8-pin Flange connector M23, 12-pin Cable
Weight approx.	300 g

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Terminal assignment

Flange connector M23, 12-pin / cable

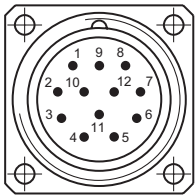
Pin	Core color	Assignment
1	pink	B-
2	–	–
3	blue	R+
4	red	R-
5	green	A+
6	yellow	A-
7	–	R-Set ¹⁾
8	grey	B+
9	–	–
10	white	GND
11	–	–
12	brown	UB

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.

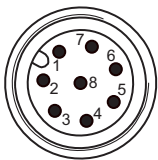
R-Set = UB ≥ 200 ms



Flange connector M23, pin contacts, 12-pin, counterclockwise (CCW)

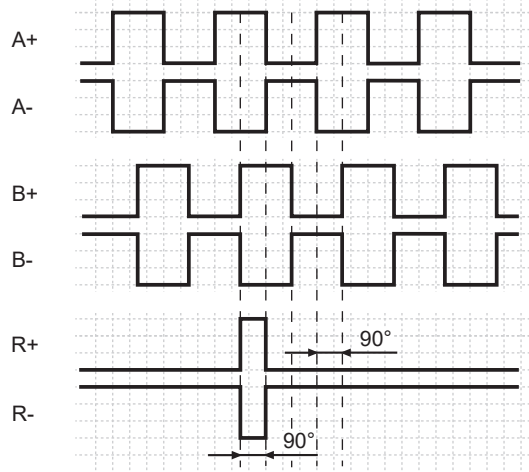
Flange connector M12, 8-pin

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

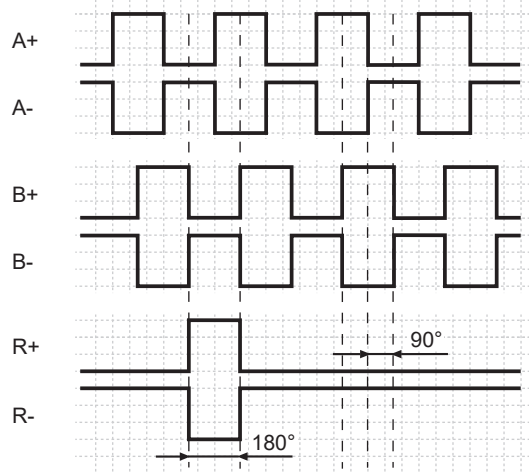


Output signals

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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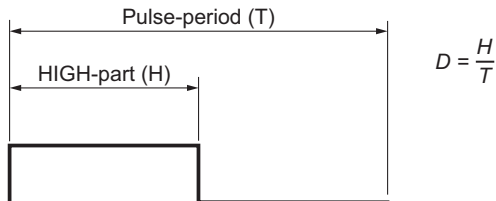
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Duty cycle

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.



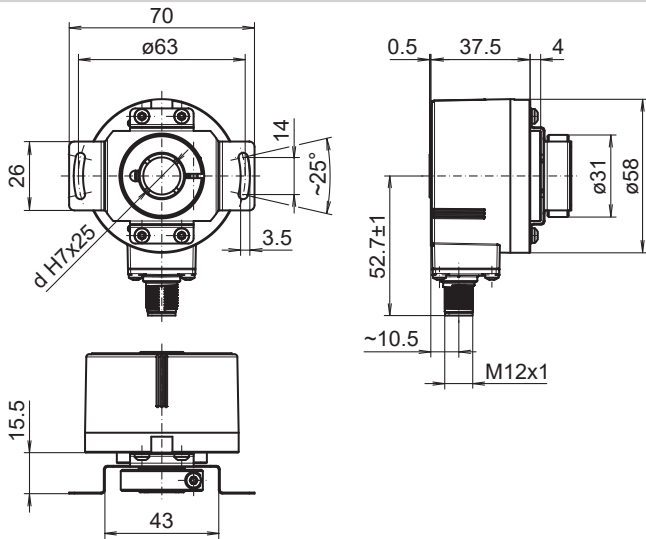
Programmed pulse number	Scan ratio (D) (maximum)	Jitter (+/-) (maximum)
1...1023	45...55 %	5%
1024, 2048	45...55 %	5%
1025...5000	40...60 %	10%
8192, 16384	35...85 %	15%
5001...10000	22...78 %	28%
32768	25...75 %	25%
65536	15...85 %	35%
all other	Jitter[%]=(programmed pulse number -10000)*0,0007%+28%	

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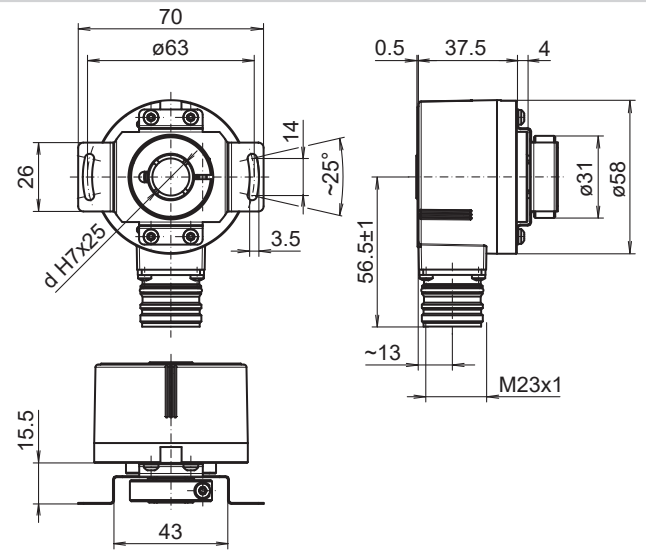
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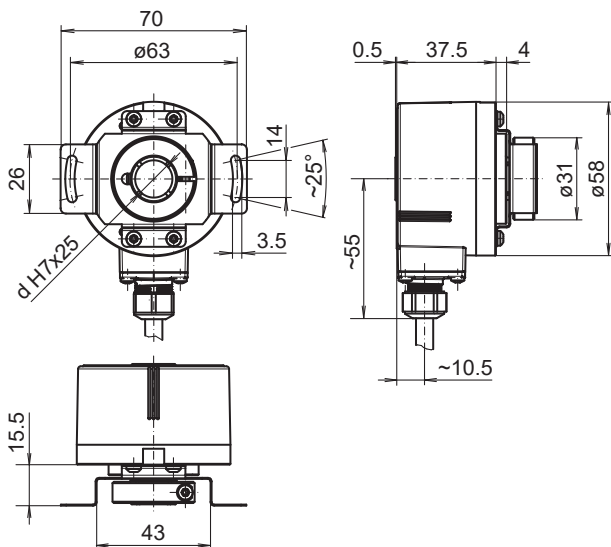
Dimensions



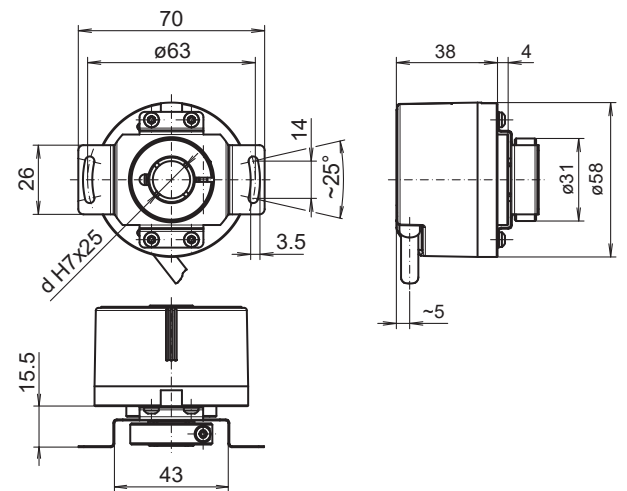
Clamping ring at A-side: Through hollow shaft, flange connector M12 radial



Clamping ring at A-side: Through hollow shaft, flange connector M23 radial



Clamping ring at A-side: Through hollow shaft, cable radial



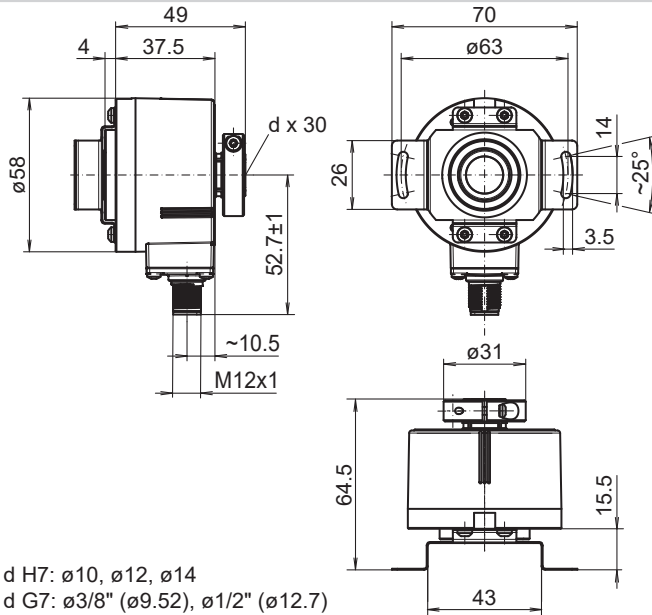
Clamping ring at A-side: Through hollow shaft, cable tangential

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With through hollow shaft

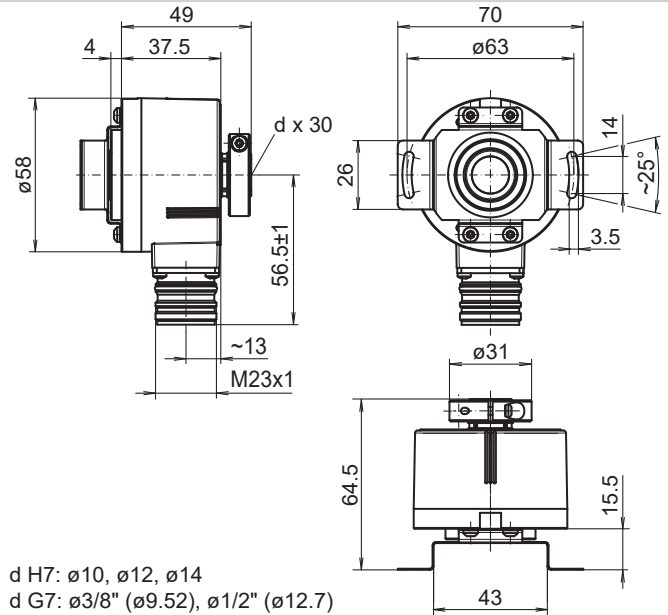
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Dimensions



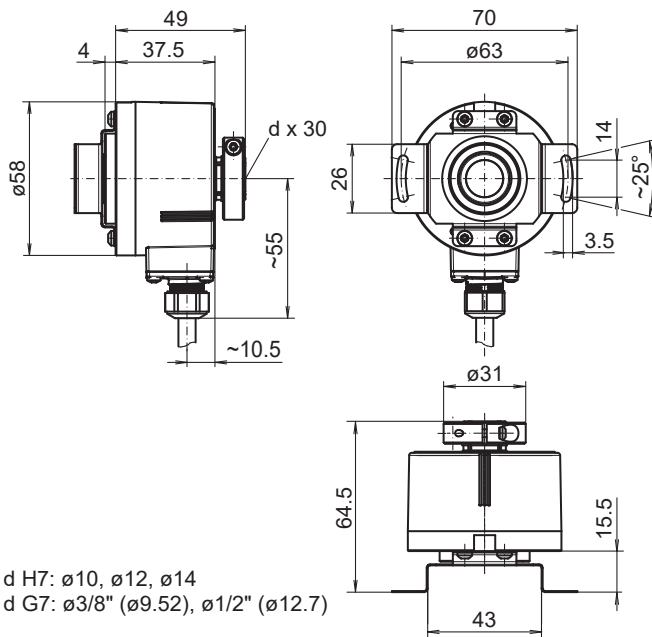
d H7: $\varnothing 10$, $\varnothing 12$, $\varnothing 14$
d G7: $\varnothing 3/8$ " ($\varnothing 9.52$), $\varnothing 1/2$ " ($\varnothing 12.7$)

Clamping ring at B-side: Through hollow shaft, flange connector M12 radial



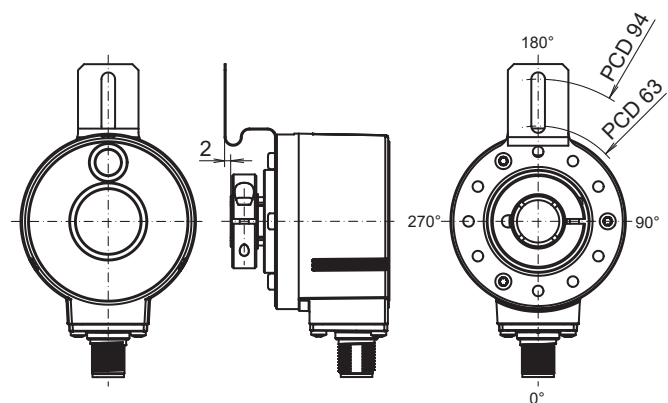
d H7: $\varnothing 10$, $\varnothing 12$, $\varnothing 14$
d G7: $\varnothing 3/8$ " ($\varnothing 9.52$), $\varnothing 1/2$ " ($\varnothing 12.7$)

Clamping ring at B-side: Through hollow shaft, flange connector M23 radial



d H7: $\varnothing 10$, $\varnothing 12$, $\varnothing 14$
d G7: $\varnothing 3/8$ " ($\varnothing 9.52$), $\varnothing 1/2$ " ($\varnothing 12.7$)

Clamping ring at B-side: Through hollow shaft, cable radial



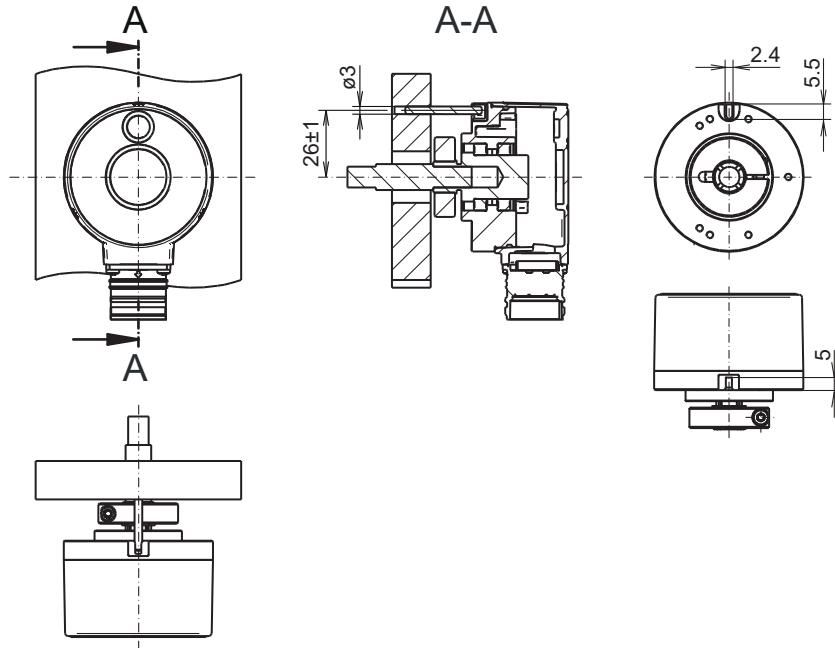
Flange version M: Mounting position torque support

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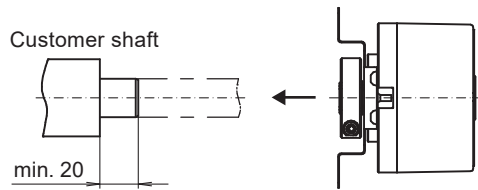
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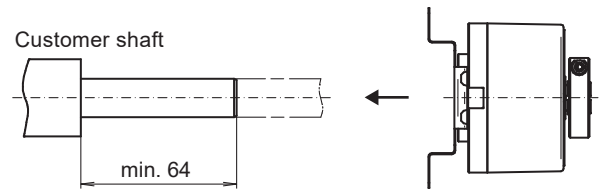
Dimensions



Flange version P: Pin torque support, axial, clamping ring at A-side



Clamping ring at A-side: Through hollow shaft



Clamping ring at B-side: Through hollow shaft

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Ordering reference

	EIL580P	-	T	#	##	.	#	##	#	.	01024	.	B
Product	EIL580P												
Shaft type													
Through hollow shaft			T										
Flange (Hollow shaft)													
Without stator coupling													N
With stator coupling, 1-armed, hole circle ø63...94 mm, M4, mounting position 180°													M
With stator coupling ø63 mm													T
Pin torque support 3 mm, axial/radial													P
Through hollow shaft													
ø8 mm, clamping ring, A-side													08
ø3/8" (ø9.52 mm), clamping ring, A-side													U3
ø10 mm, clamping ring, A-side													10
ø12 mm, clamping ring, A-side													12
ø1/2" (ø12.7 mm), clamping ring, A-side													U4
ø14 mm, clamping ring, A-side													14
ø15 mm, clamping ring, A-side													15
ø3/8" (ø9.52 mm), clamping ring, B-side													V3
ø10 mm, clamping ring, B-side													B0
ø12 mm, clamping ring, B-side													B2
ø1/2" (ø12.7 mm), clamping ring, B-side													V4
ø14 mm, clamping ring, B-side													B4
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 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)

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Accessories

Mounting accessories

11066083	Torque arm, 1-arm (mounting kit 006)
11073119	Torque arm, 1-arm (mounting kit 021)
11067367	Torque arm, 1-arm (mounting kit 028)
11100198	Stator coupling, 2-armed (mounting kit 046)
11113210	Torque arm, 1-arm (mounting kit 047)
11124300	Torque arm, 1-arm (mounting kit 048)
11155325	Rigid mounting plate, 1-arm (mounting kit 099)
11106627	Fan cover clip 8 mm
11094674	Clamping ring 12/31/ 8 M3 8.8
11094675	Clamping ring 17/31/ 8 M3 8.8
11116921	Insulating sleeve \varnothing 10 mm/ \varnothing 12 mm/25 mm long
11116923	Insulating sleeve \varnothing 12 mm/ \varnothing 14 mm/25 mm long

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