

EIL580P-T

With through hollow shaft

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



Overview

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

- Size \varnothing 58 mm
- Precise optical sensing (interpolated)
- Output signal level programmable (TTL or HTL)
- Through hollow shaft 15 mm
- Connection radial M12
- Pulses per revolution 1...65536, programmable
- High protection up to IP65
- High resistance to shock and vibrations
- **Insulated Bearings as standard**



Technical data

Technical data - electrical ratings

Voltage supply	4.75...30 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption w/o load	\leq 70 mA
Initializing time	\leq 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	\leq 300 kHz (TTL) \leq 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 (range)	\varnothing 50 mm
Shaft type	15 mm (through hollow shaft)
Protection EN 60529	IP 65 (without shaft seal)
Operating speed	\leq 3000 rpm (+20 °C, IP 67) \leq 6000 rpm (+20 °C, IP 65)
Starting torque	\leq 0.025 Nm (+20 °C, IP 65) \leq 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
Weight approx.	300 g

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Terminal assignment

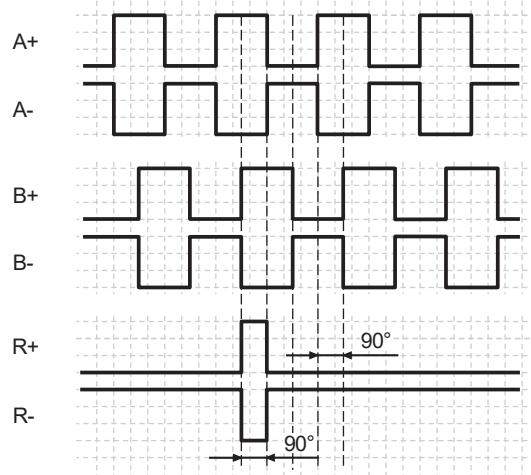
Flange connector M12, 8-pin

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

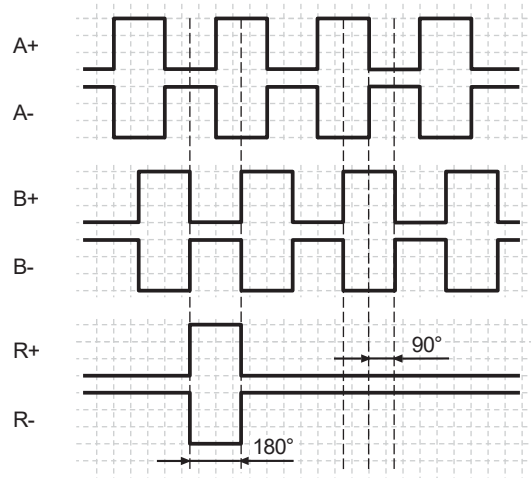


Output signals

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	$\geq 2.5 \text{ V}$
Output level Low	$\leq 0.5 \text{ V}$
Load	$\leq 20 \text{ mA}$

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

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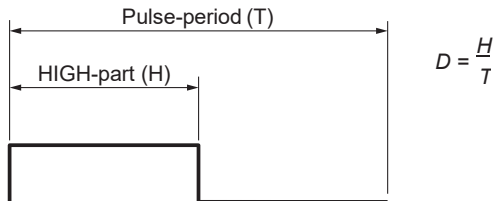
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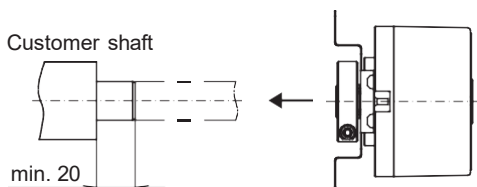
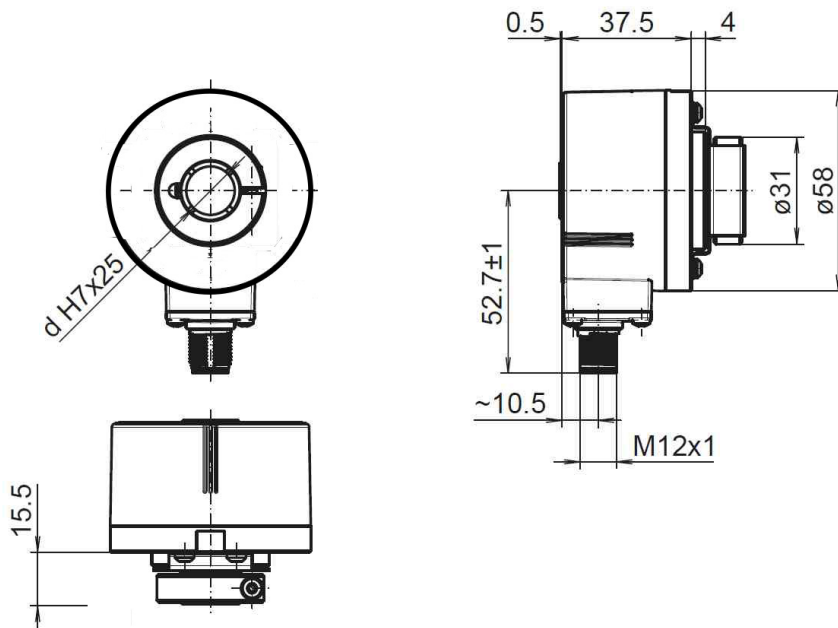
Duty cycle

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



Clamping ring at A-side: Through hollow shaft

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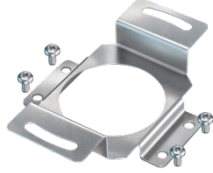


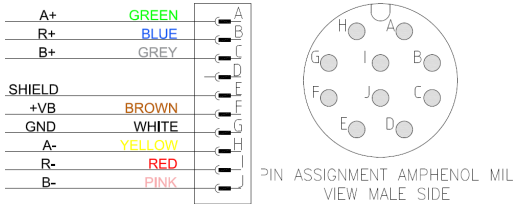
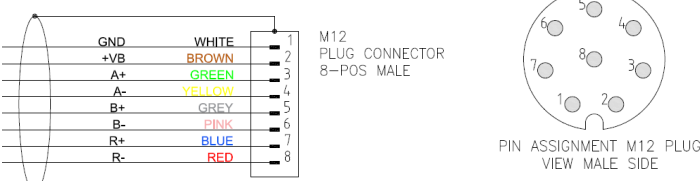


Ordering code Encoder

Code	Part Number	Programmed Binay Signal	Note
02160	11728631	2048 ppr HTL	Default factory configuration
02160A		1024 ppr TTL	
02160A1		2048 ppr TTL	
02160A2		4096 ppr TTL	
02160A3		8192 ppr TTL	
02160A4		16384 ppr TTL	
02160B		1024 ppr HTL	
02160B2		4096 ppr HTL	
02160B3		8192 ppr HTL	
02160B4		16384 ppr HTL	

Other non-binary programming available upon request \ order

Accessories

Code	Article	Note
02176/1	Mounting Bracket Kit 046 Fixing hole dia. 63 mm 11100198	
02176/2	Mounting Bracket Kit 006 Fixing hole dia. 74 – 94 mm M4 / M5 11066083	
02176/4	Mounting Bracket Kit 021 Fixing hole dia. 65 - 281 mm M4 11073119	
328003027	Adapter cable M12 (F) 8pins – Amphenol (M) MIL 10pins Length 0.5 mt 	Right Angle Female M12, Shielded Cable
328003028	Extension cable M12 (F) 8pins – M12 (M) 8pins Length 0.5mt 	Right Angle Female M12, Shielded Cable