Baumer
Passion for Sensors

Incremental encoders/optoPulse

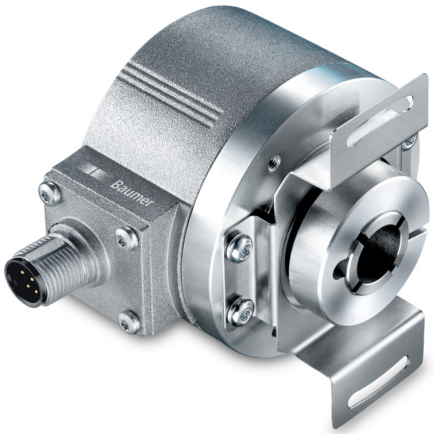
EIL580P-TT12.5FF.01024.B

With through hollow shaft, 1…65536 pulses per revolution programmable (interpolated system)

Article number: 11121821

Overview

- Size ø58 mm
- Precise optical sensing (interpolated)
- Output signal level programmable (TTL or HTL)
- Through hollow shaft, ø12 mm
- Flange connector M23, 12-pin CCW, radial
- Pulses per revolution 1...65536, programmable
- High protection IP 65
- 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	1024
Duty cycle	45…55 % typical at 1024, 2048 ppr (further see table Duty cycle)
Reference signal	Zero pulse, width 90° ±10 %
Sensing method	Optical
Output frequency	≤300 kHz (TTL)
Output signals	A+, B+, R+, A-, B-, R-
Output stages	TTL/RS422
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

Technical data - electrical ratings	
Emitted interference	EN 61000-6-3
Approval	UL 508 / CSA 22.2
Technical data - mechanical design	
Size (flange)	ø58 mm
Shaft type	ø12 mm (through hollow shaft)
Protection EN 60529	IP 65
Operating speed	≤6000 rpm (+20 °C, IP 65)
Starting torque	≤0.025 Nm (+20 °C, IP 65)
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 M23, 12-pin
Weight approx.	300 g

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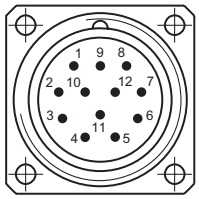
Terminal assignment

Flange connector M23, 12-pin

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

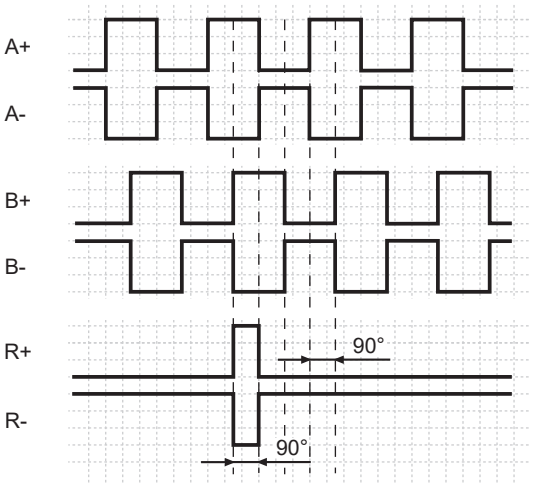
[1] The R-Set input is used to set the reference pulse (zero pulse) on the current shaft position.
R-Set = UB ≥ 200 ms



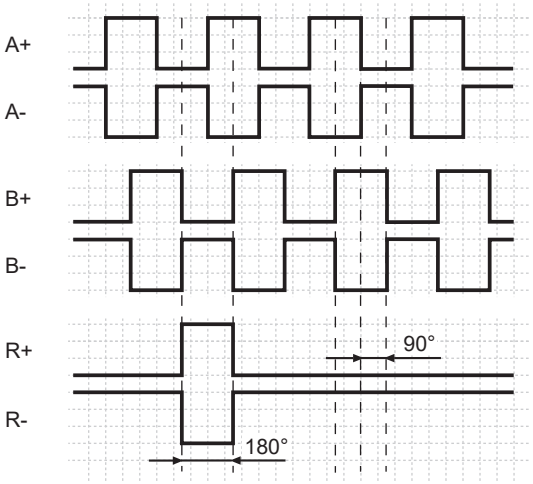
Flange connector M23,
pin contacts, 12-pin,
counterclockwise (CCW)

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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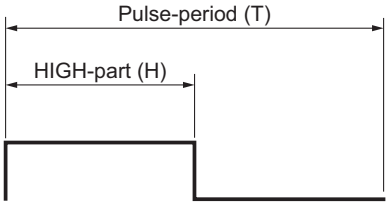
Duty cycle

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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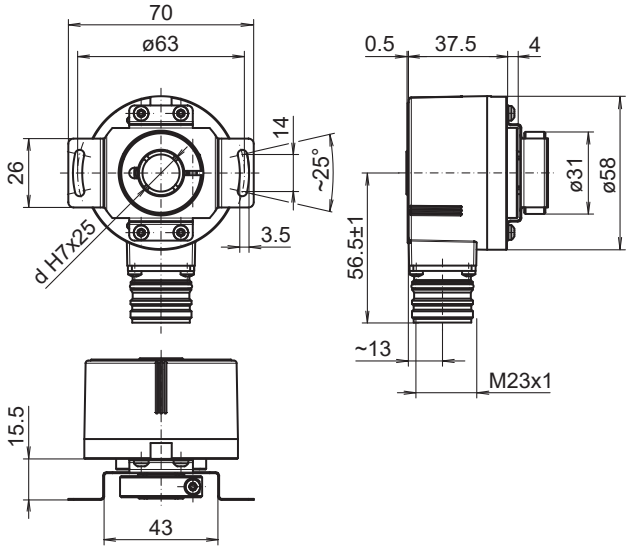
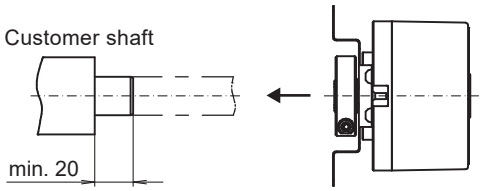
Dimensions



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



Clamping ring at A-side: Through hollow shaft