

# Incremental rotary encoder

## ENI58IL-S10QA5-1250UD2-RMY:01

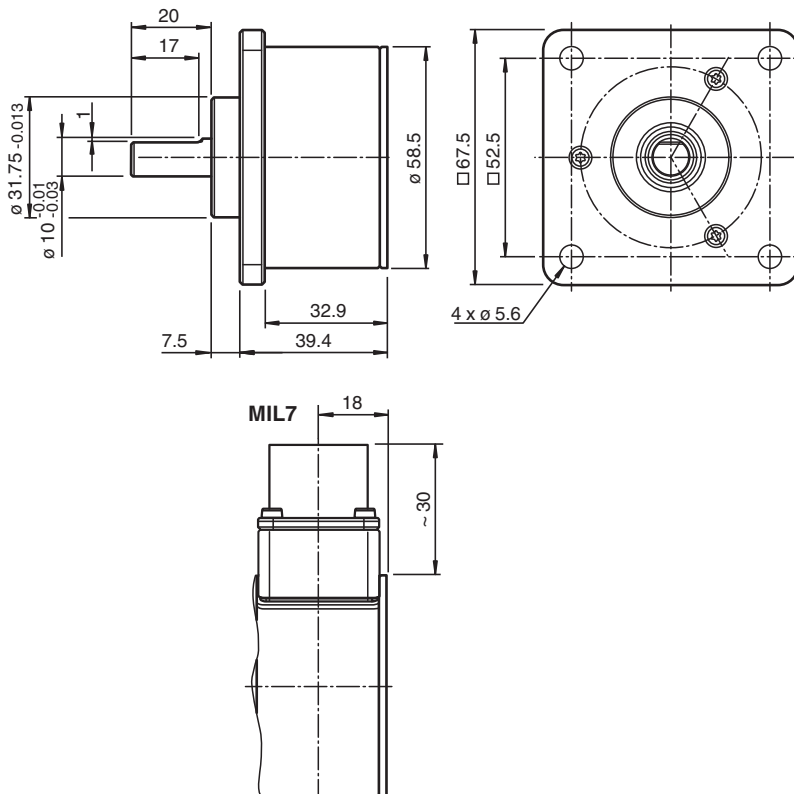
- Housing Ø 58 mm
- Solid shaft
- Square flange
- 1250 pulses
- RS 422 interface
- BlueBeam technology for ultimate precision
- Phase position A before B ccw, with view onto the shaft



### Function

The ENI58IL impresses with its modular design, which is available over all mechanical and electrical interfaces. The ENI58IL is the best solution for all common applications, coupled with its high robustness, high reliability and versatility. With the high-precision BlueBeam technology and innovative housing design, the ENI58IL is the new market standard for incremental encoders.

### Dimensions



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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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## Technical Data

General specifications		
Detection type		photoelectric sampling
Linearity error		$\pm 0.025^\circ$
Pulse count		1250
UL File Number		E223176 "For use in NFPA 79 Applications only", if UL marking is marked on the product.
Functional safety related parameters		
MTTF <sub>d</sub>		140 a
Mission Time (T <sub>M</sub> )		20 a
L <sub>10</sub>		70 E+9 at 6000 rpm
Diagnostic Coverage (DC)		0 %
Electrical specifications		
Operating voltage	U <sub>B</sub>	4.75 ... 30 V
No-load supply current	I <sub>0</sub>	max. 50 mA
Output		
Output type		RS422, Incremental
Load current		max. per channel 40 mA , short-circuit protected, reverse polarity protected
Output frequency		max. 400 kHz
Rise time		300 ns
Phase position A to B		
Pulse counts < 3600		90 ° ± 9 ° electrical
Pulse counts ≥ 3600		90 ° ± 15 ° electrical
Duty cycle		1/2 ± 10 %
Connection		
Connector		7-pin MIL connector
Standard conformity		
Degree of protection		DIN EN 60529, IP65
Climatic testing		DIN EN 60068-2-78 , no moisture condensation
Emitted interference		EN 61000-6-4:2007/A1:2011
Noise immunity		EN 61000-6-2:2005
Shock resistance		DIN EN 60068-2-27, 300 g, 6 ms
Vibration resistance		DIN EN 60068-2-6, 30 g, 10 ... 2000 Hz
Approvals and certificates		
UL approval		cULus Listed, General Purpose, Class 2 Power Source, Type 1 enclosure , if UL marking is marked on the product. adapters providing field wiring on request
Maximum permissible ambient temperature		max. 80 °C (max. 176 °F)
Ambient conditions		
Operating temperature		-40 ... 85 °C (-40 ... 185 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Material		
Housing		3.2315 aluminum (AlMgSi1, saltwater-proof)
Flange		3.2315 aluminum (AlMgSi1, saltwater-proof)
Shaft		Solid shaft Stainless steel
Mass		< 400 g without cable
Rotational speed		max. 12000 min <sup>-1</sup>
Moment of inertia		≤ 35 gcm <sup>2</sup>
Starting torque		≤ 1.5 Ncm
Shaft load		
Axial		40 N at max. 6000 min <sup>-1</sup> 10 N at max. 12000 min <sup>-1</sup>
Radial		80 N at max. 6000 min <sup>-1</sup> 20 N at max. 12000 min <sup>-1</sup>

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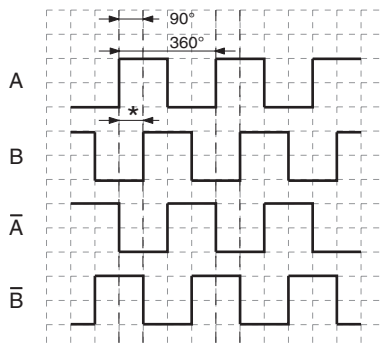
**Connection**

Signal	Connector MIL7, 7-pin
GND	F
U <sub>b</sub>	D
A	A
B	B
$\bar{A}$	C
$\bar{B}$	E
Shielding	G

A diagram of a 7-pin connector. The pins are arranged in a circle. The labels are: A (top), B (top-right), C (right), G (right), E (bottom-right), D (bottom), and F (bottom-left).

**Operation**

**Signal outputs**



↻ cw - with view onto the shaft  
 phase relationships electrical  
 \* 1 Measuring step is 90° electrical

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