



Model Number

ENI58IL-S**Q

Features

- Housing Ø 58 mm
- Solid shaft
- Square flange
- Up to 5000 ppr
- Universal output driver
- BlueBeam technology for ultimate precision

Description

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.

Technical data

General specifications

Detection type	photoelectric sampling
Linearity error	$\pm 0.025^\circ$
Pulse count	max. 5000
UL File Number	E223176 "For use in NFPA 79 Applications only", if UL marking is marked on the product.

Functional safety related parameters

MTTF _d	140 a
Mission Time (T _M)	20 a
L ₁₀	70 E+9 at 6000 rpm
Diagnostic Coverage (DC)	0 %

Electrical specifications

Operating voltage U _B	4.75 ... 30 V DC
No-load supply current I ₀	max. 50 mA

Output

Output type	push-pull or RS422 (universal output driver, output level depending on input voltage)
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	M12 connector, 8-pin M12 connector, 5 pin M23 connector, 12-pin 10-pin MIL connector 7-pin MIL connector
Cable	Ø6 mm, 4 x 2 x 0.14 mm ²

Standard conformity

Degree of protection	DIN EN 60529, IP65, IP67
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

Ambient conditions

Operating temperature	-40 ... 85 °C (-40 ... 185 °F), fixed cable -5 ... 85 °C (23 ... 185 °F), movable cable
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

Mechanical specifications

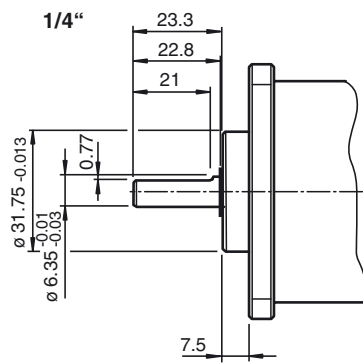
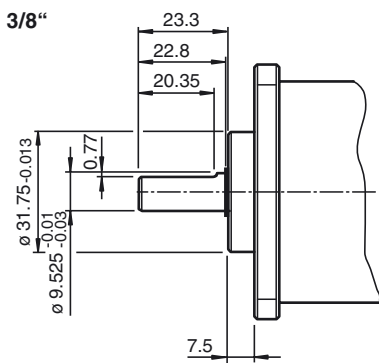
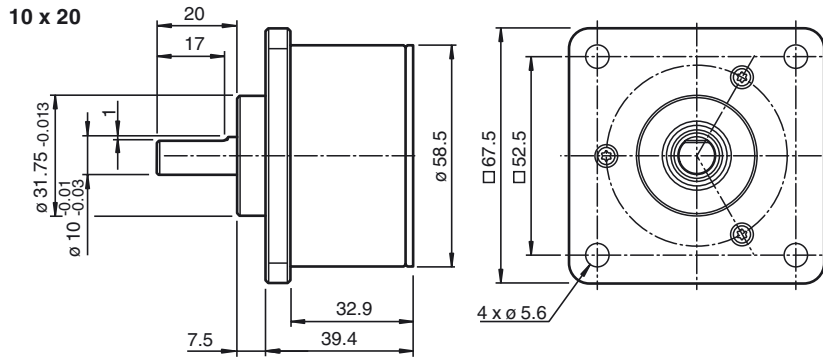
Material	
Housing	3.2315 aluminum (AlMgSi1, saltwater-proof)
Flange	3.2315 aluminum (AlMgSi1, saltwater-proof)
Shaft	Solid shaft Stainless steel
Mass	< 400 g without cable
Rotational speed	max. 12000 min ⁻¹ for IP65, max. 6000 min ⁻¹ for IP67
Moment of inertia	≤ 35 gcm ²
Starting torque	≤ 1.5 Ncm
Shaft load	
Axial	40 N at max. 6000 min ⁻¹ 10 N at max. 12000 min ⁻¹
Radial	80 N at max. 6000 min ⁻¹ 20 N at max. 12000 min ⁻¹

Approvals and certificates

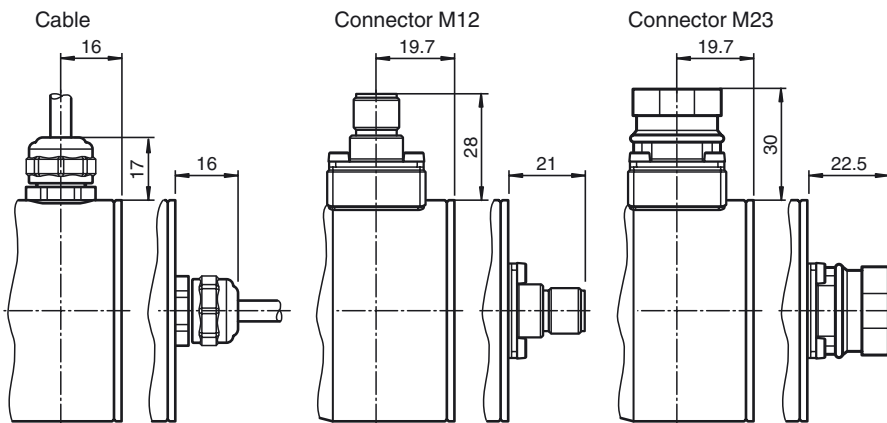
UL approval	cULus Listed, General Purpose, Class 2 Power Source, Type 1 enclosure, if UL marking is marked on the product, adapters providing field wiring on request
Maximum permissible ambient temperature	≤ 80 °C (≤ 176 °F)

Dimensions

Square flange with cable and connector M12, M23 (radial/axial) and MIL connector (axial)

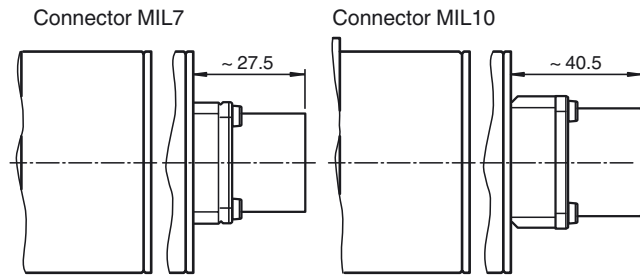


Connections

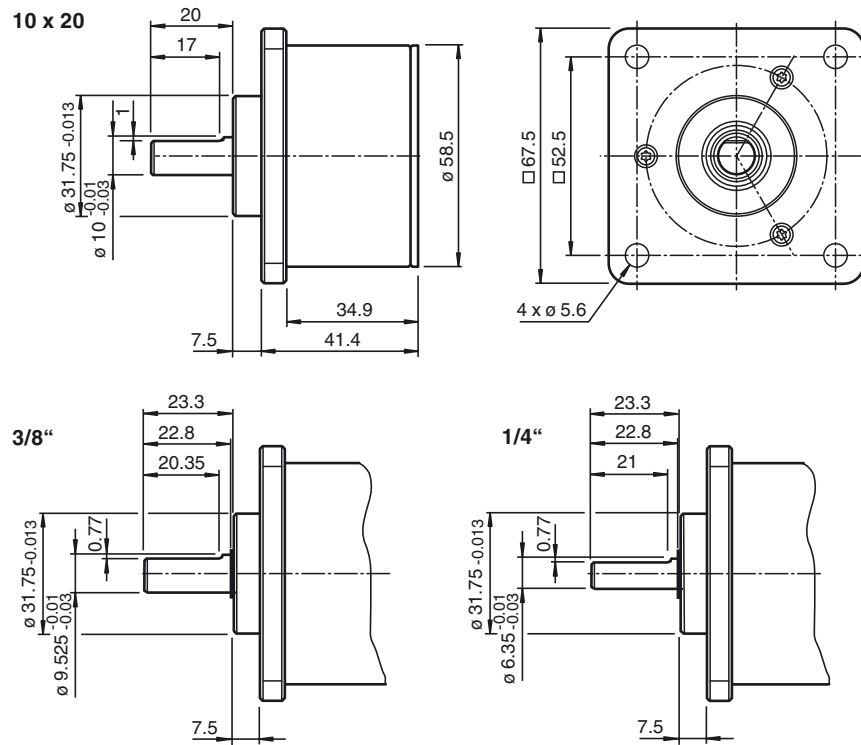


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Connections



Square flange with MIL connector (radial)



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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

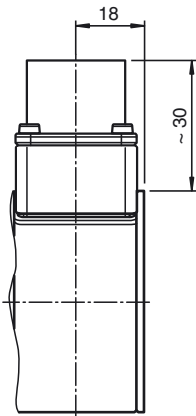
USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

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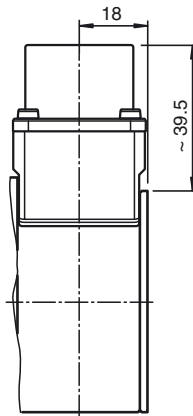
Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

Connections

Connector MIL7



Connector MIL10

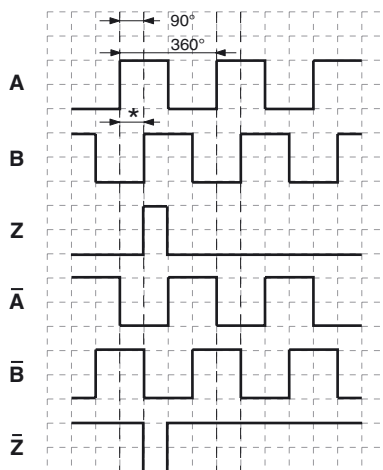


Electrical connection

Signal	Cable	Connector M23, 12-pin, clockwise/counterclockwise	Connector MIL7, 7-pin	Connector MIL10, 10-pin	Connector M12 x 1, 8-pin	Connector M12 x 1, 5-pin
GND	White	10	F	F	1	3
U _b	Brown	12	D	D	2	1
A	Green	5	A	A	3	2
B	Grey	8	B	B	5	4
A̅	Yellow	6	-	H	4	-
B̅	Pink	1	-	I	6	-
Z	Blue	3	C	C	7	5
Z̅	Red	4	-	J	8	-
NC	Violet	2	E	E	-	-
NC	Grey/Pink	7	-	-	-	-
NC	-	9	-	-	-	-
NC	Black	11	-	-	-	-
Screen	-	Housing	G	G	Housing	Housing
	<p>Note: Unused cores must be insulated individually before commissioning in order to avoid interference..</p>					

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Signal outputs



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

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Connection type

- C1** Cable, 1 m
- C2** Cable, 2 m
- C5** Cable, 5 m
- CA** Cable, 10 m
- AA** M23 device plug, clockwise (type 9416)
- AB** M23 device plug, counterclockwise (type 9416L)
- BE** M12 device plug, 8-pin (type V19)
- BD** M12 device plug, 5-pin (type V15)
- MA** MIL7 connector (type 9415)
- MB** MIL10 connector (type 9419)

Connection alignment

- A** axial
- R** radial

Electrical interface

- UD1** Universal output driver U_B 5 V ... 30 V
- UD2** RS422, U_B 5 V ... 30 V

Pulse count

0100, 0120, 0125, 0200, 0256, 0360, 0500, 1000, 1024, 1250, 1500, 1800, 2000, 2048, 2500, 3600, 4000, 4096, 5000

Degree of protection

- 5** IP65
- 7** IP67

Flange

- QA** Square flange

Shaft diameter

- 10** 10 x 20 mm
- U2** 1/4 inch
- U3** 3/8 inch

Shaft type

- S** Solid shaft

Version

- IL** Industrial Line

Size

- 58** Housing diameter 58 mm

Device type

- ENI** Incremental rotary encoder

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