



Incremental rotary encoder ENI58IL-H

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

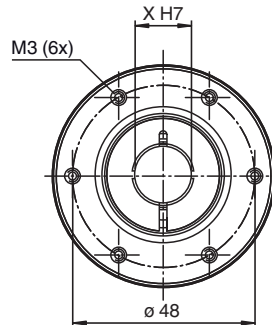
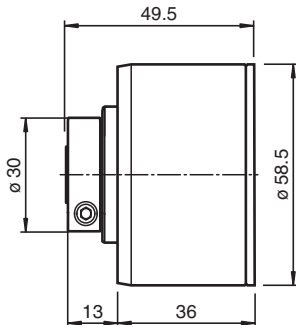


Function

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.

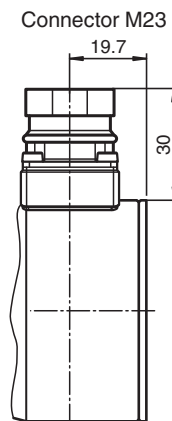
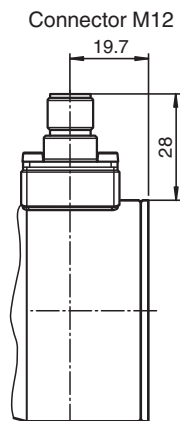
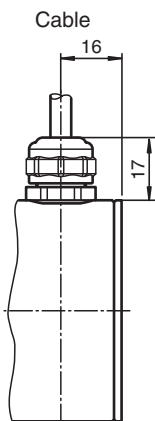
Dimensions

Hollow shaft with cable and connector M12, M23



Hollow shaft	X [mm]
Ø 3/8"	Ø 9.525
Ø 1/2"	Ø 12.7
Ø 1/4"	Ø 6.35
Ø 15	Ø 15
Ø 14	Ø 14
Ø 12	Ø 12
Ø 10	Ø 10
Ø 8	Ø 8
Ø 6	Ø 6

Connections



Release date: 2022-12-12 Date of issue: 2022-12-12 Filename: t182003_eng.pdf

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

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

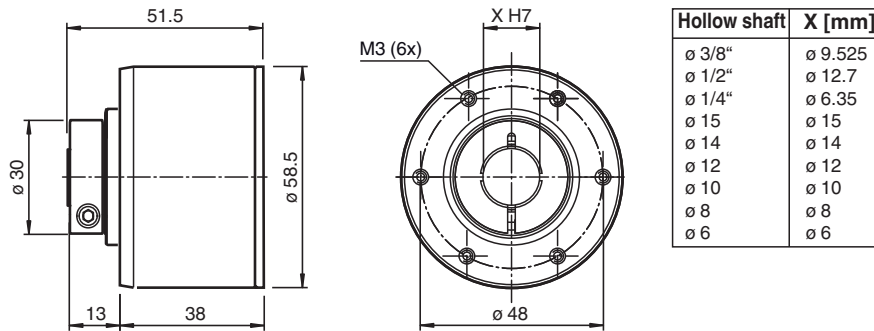
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fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
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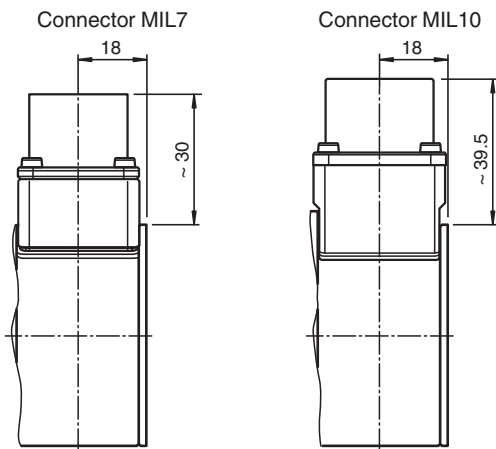
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Dimensions

Hollow shaft with connector MIL7, MIL10



Connections



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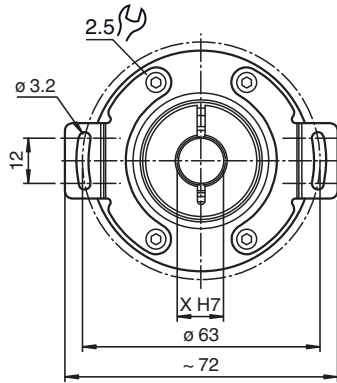
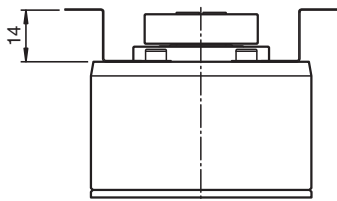
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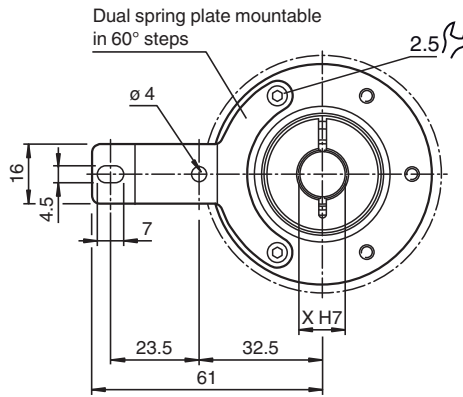
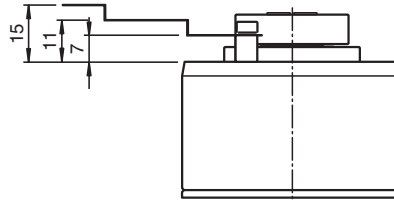
Dimensions

Spring plates DA / BA / JA / LA

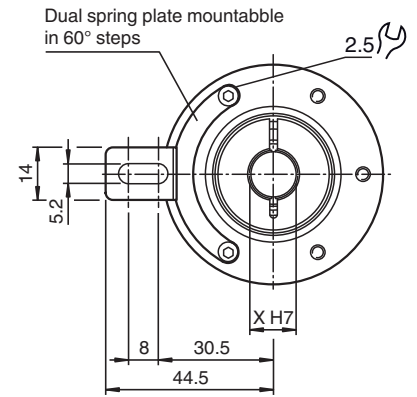
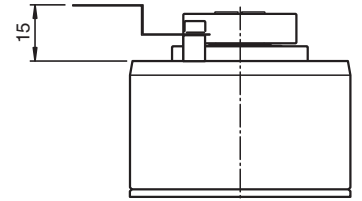
DA
for more accurate measuring tasks



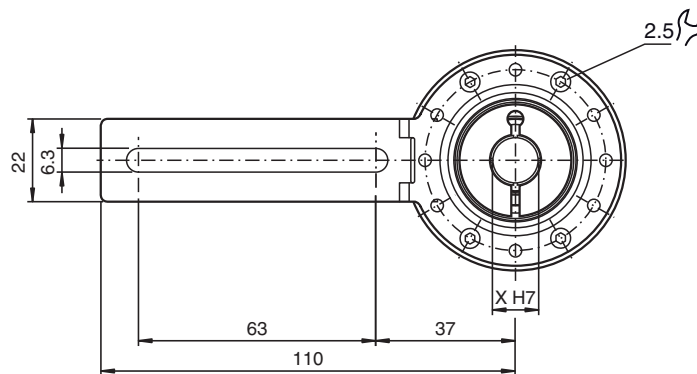
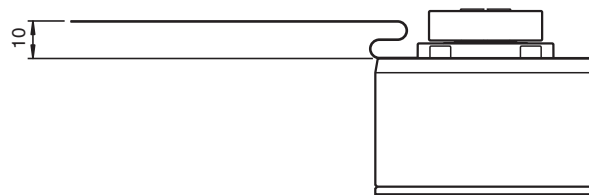
BA
for standard application



JA
for confined installation space



LA
for larger distance to mounting point



Technical Data

General specifications

Detection type	photoelectric sampling
Linearity error	± 0.025 °
Pulse count	max. 5000

Functional safety related parameters

MTTF _d	140 a
Mission Time (T _M)	20 a
L ₁₀	15 E+9 at 3000 rpm

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Technical Data

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		$90^\circ \pm 9^\circ$ electrical
Pulse counts \geq 3600		$90^\circ \pm 15^\circ$ electrical
Duty cycle		$1/2 \pm 10\%$
Connection		
Connector		M12 connector, 8-pin M12 connector, 5 pin M23 connector, 12-pin 10-pin MIL connector 7-pin MIL connector
Cable		$\varnothing 6$ mm, 4 x 2 x 0.14 mm ² Fixed cable with M12 plug, 5-pin Fixed cable with M12 plug, 8-pin
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
Approvals and certificates		
UL approval		E223176 , cULus Listed, General Purpose, Class 2 Power Source, Type 1 enclosure , if UL marking is marked on the product. For use in NFPA 79 Applications only. 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) , 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		Hollow shaft Stainless steel
Mass		< 300 g without cable
Rotational speed		max. 6000 min ⁻¹ for IP65 , max. 3000 min ⁻¹ for IP67
Moment of inertia		≤ 70 gcm ²
Starting torque		≤ 1.5 Ncm for IP65 , ≤ 3 Ncm for IP67
Shaft load		
Angle offset		max. 1 °
Axial offset		max. 1 mm

Type Code

Structure of the type code

E	N	I	5	8	I	L	-	H	(1)	(1)	(2)	(2)	(3)	-	(4)	(4)	(4)	(4)	(5)	(5)	(5)	-	R	(6)	(6)
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Type Code

ENI		Device type
ENI		Incremental rotary encoder
58		Size
58		Housing diameter 58 mm
IL		Version
IL		Industrial Line
H		Shaft type
H		Hollow shaft
(1) (1)		Shaft diameter
08		8 mm
10		10 mm
12		12 mm
14		14 mm
15		15 mm
U2		1/4 inch
U3		3/8 inch
U4		1/2 inch
(2) (2)		Flange
BA		Spring plate, single long
JA		Spring plate, single short
DA		Dual spring plate
LA		Spring plate, single extra long
(3)		Degree of protection
5		IP65
7		IP67
(4) (4) (4) (4)		Pulse count
0025		25 pulses
0100		100 pulses
0120		120 pulses
0125		125 pulses
0200		200 pulses
0256		256 pulses
0360		360 pulses
0500		500 pulses
1000		1000 pulses
1024		1024 pulses
1250		1250 pulses
1500		1500 pulses
1800		1800 pulses
2000		2000 pulses
2048		2048 pulses
2500		2500 pulses
3600		3600 pulses
4000		4000 pulses
4096		4096 pulses
5000		5000 pulses
(5) (5) (5)		Electrical interface
UD1		Universal output driver, U_B 5 V ... 30 V
UD2		RS422, U_B 5 V ... 30 V
R		Connection alignment
R		Radial
(6) (6)		Connection type
B2		Fixed cable with M12 plug, 8-pin, 1 m
B4		Fixed cable with M12 plug, 5-pin, 1 m
C1		Cable, 1 m
C2		Cable, 2 m
C3		Cable, 3 m
C5		Cable, 5 m

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Type Code

(6) (6)	Connection type
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)

Accessories

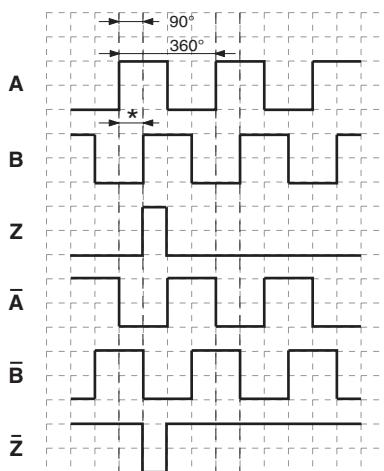
	9416	Female cordset
	9416L	Female cordset
	V19-G-2M-PVC-TP	Female cordset, M12, 8-pin, shielded, PVC cable
	V19-G-5M-PVC-TP	Female cordset, M12, 8-pin, shielded, PVC cable
	V19-G-10M-PVC-TP	Female cordset, M12, 8-pin, shielded, PVC cable
	ACC-TOR-ENI58IL-BA	Spring plate single long for ENI58IL for standard applications
	ACC-TOR-ENI58IL-DA	Dual spring plate for ENI58IL for more accurate measuring tasks
	ACC-TOR-ENI58IL-JA	Spring plate single short for ENI58IL for confined installation space
	9416-M-12P-RX158	Female cordset, M23, 12-pin, PVC cable, 11-core
	ACC-TOR-ENI58IL-LA	Spring plate single extra long for ENI58IL for larger distance to mounting point

Connection

Signal	Cable	Connector M23, 12-pin, clockwise/counter clockwise	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
\bar{A}	Yellow	6	-	H	4	-
\bar{B}	Pink	1	-	I	6	-
Z	Blue	3	C	C	7	5
\bar{Z}	Red	4	-	J	8	-
NC	Violet	2	E	E	-	-
NC	Grey/Pink	7	-	-	-	-
NC	-	9	-	-	-	-
NC	Black	11	-	-	-	-
Shielding	Shield	Housing	G	G	Housing	Housing
	<p>Note: Unused cores must be insulated individually before commissioning in order to avoid interference..</p>					

Operation

Signal outputs



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

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