



Incremental rotary encoder ENI58IL-R

- Immunity to vibration, with mechanical latching
- Gold-plated and machined contacts
- Shield attached to connector housing
- Housing Ø 58 mm
- Recessed hollow shaft
- Up to 5000 ppr
- Universal output driver
- BlueBeam technology for ultimate precision

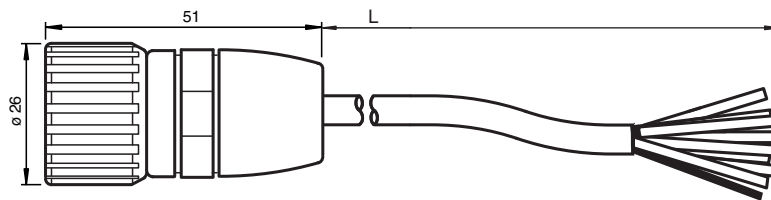
Female cordset, M23, 12-pin, PVC cable, 11-core



Function

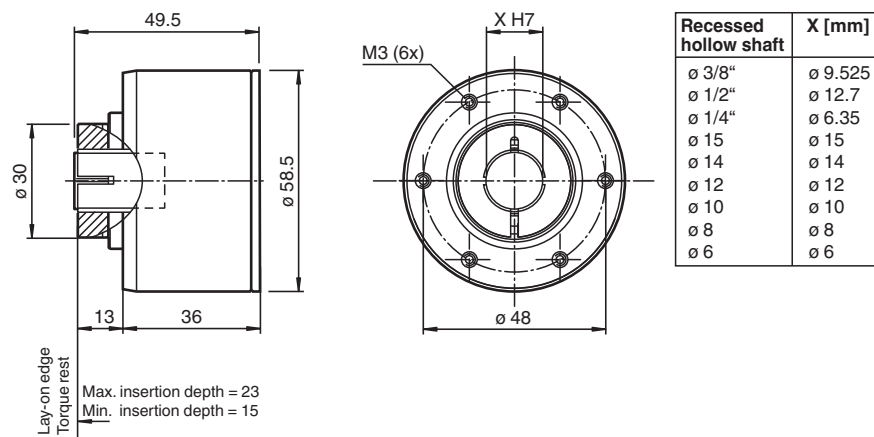
The ENI58IL impresses with its modular design, which is available over all mechanical and electrical interfaces. The ENI58IL is the best solution for all common applications, coupled with its high robustness, high reliability and versatility. With the high-precision BlueBeam technology and innovative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

Dimensions

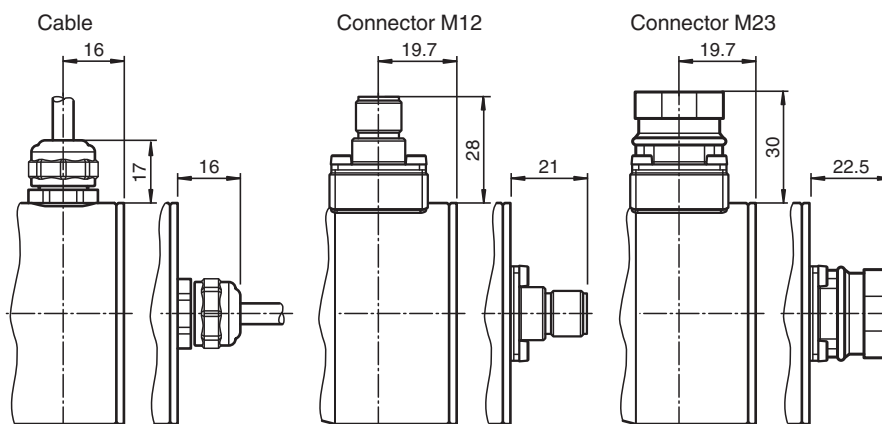


Dimensions

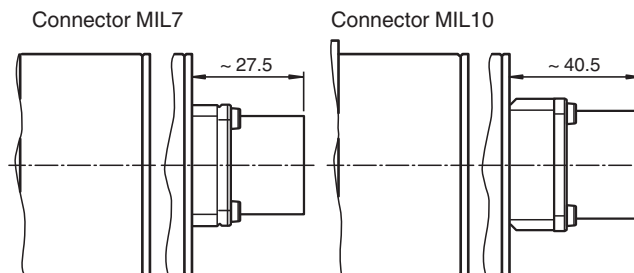
Recessed hollow shaft with cable and connector M12, M23 (radial, axial) and MIL connector (axial)



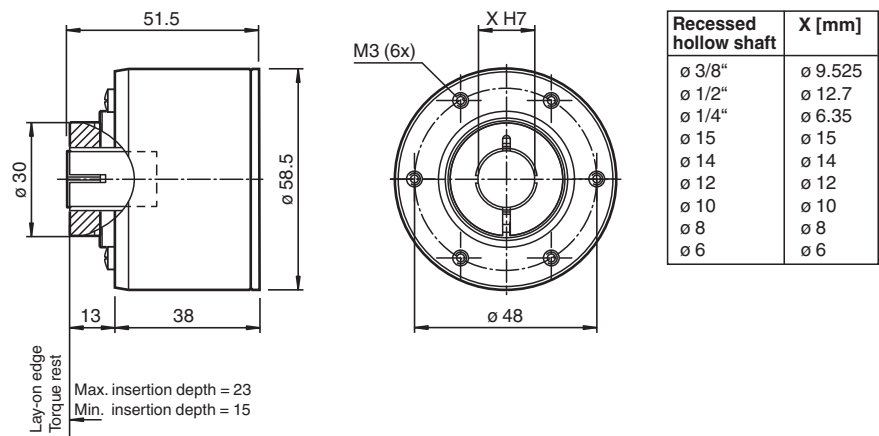
Connections



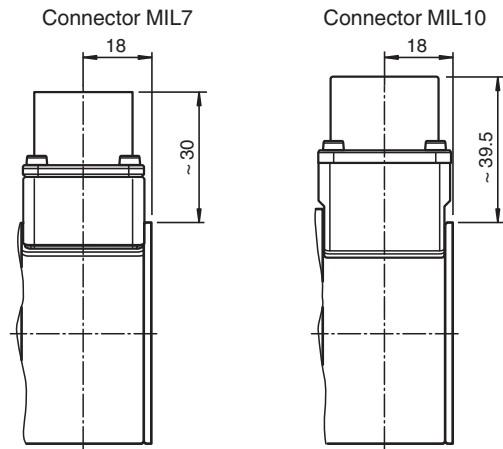
Connections



Recessed hollow shaft with MIL connector (radial)



Connections

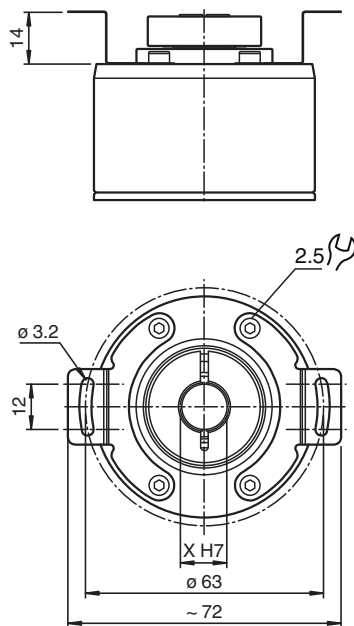


Spring plates

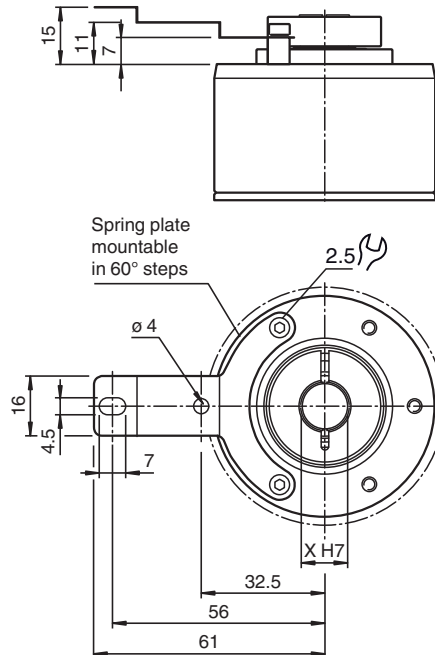
DA / BA / JA

DA

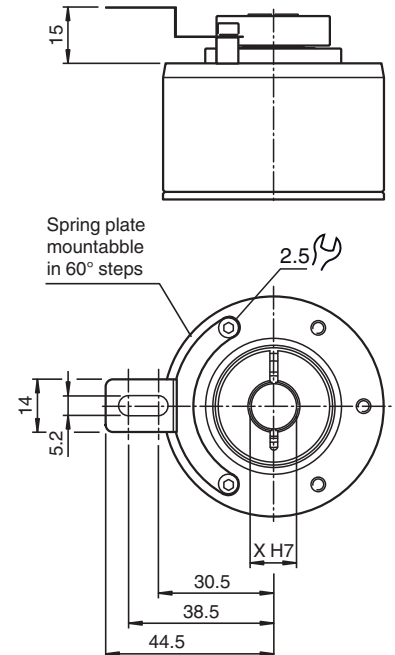
for more accurate measuring tasks

**BA**

for standard application

**JA**

for confined installation space

**Technical Data****General specifications**

Detection type	photoelectric sampling
Linearity error	$\pm 0.025^\circ$
Number of pins	12
Connection 1	socket
Construction type 1	straight
Threading 1	M23
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	15 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

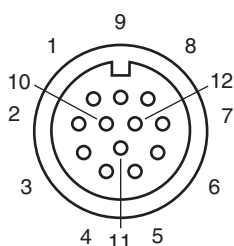
Output

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

Technical Data

Pulse counts ≥ 3600	90 ° $\pm$ 15 ° 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	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	
Ambient temperature	cable, fixed: -40 ... 80 °C (-40 ... 176 °F) cable, flexing: -5 ... 70 °C (23 ... 158 °F)
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)
Pollution degree	3
Mechanical specifications	
Degree of protection	IP67
Material	
Housing	3.2315 aluminum (AlMgSi1, saltwater-proof)
Flange	3.2315 aluminum (AlMgSi1, saltwater-proof)
Shaft	Recessed hollow shaft Stainless steel
Cable	PVC
Mass	< 300 g without cable
Rotational speed	max. 8000 min ⁻¹ for IP65 , max. 6000 min ⁻¹ for IP67
Moment of inertia	≤ 60 gcm ²
Starting torque	≤ 1.5 Ncm for IP65 , ≤ 2.5 Ncm for IP67
Shaft load	
Angle offset	max. 1 °
Axial offset	max. 1 mm

Connection Assignment



Wire colors

1	PK	(pink)
2	VT	(violet)
3	BU	(blue)
4	RD	(red)
5	GN	(green)
6	YE	(yellow)
7	PK/GY	(pink/gray)
8	GY	(gray)
9		
10	WH	(white)
11	BK	(black)
12	BN	(brown)
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Accessories

	9416	Female connector
	9416L	Female connector
	V19-G-10M-PVC-TP	Female cordset, M12, 8-pin, shielded, PVC cable
	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-BK2M-PUR-U	Female cordset, M12, 8-pin, PUR-cable
	V19-G-BK5M-PUR-U	Female cordset, M12, 8-pin, PUR-cable
	V19-G-BK10M-PUR-U	Female cordset, M12, 8-pin, PUR-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

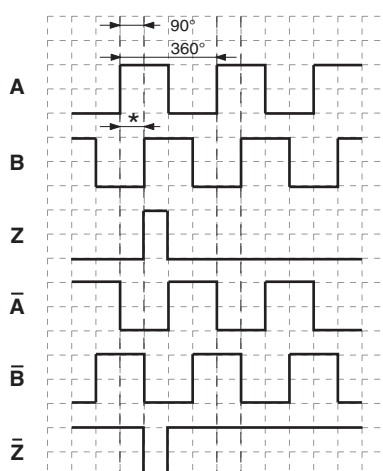
Release date: 2020-04-29 Date of issue: 2020-04-29 Filename: t182004_eng.pdf

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
	Note: Unused cores must be insulated individually before commissioning in order to avoid interference..					

Operation

Signal outputs



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

Type Code

Note: Preferred options are in bold letters.