



Model Number

ENA58IL-R***-ProfiNET

Features

- Recessed hollow shaft
- 30 Bit multiturn
- Free of wear magnetic sampling
- High resolution and accuracy
- Mechanical compatibility with all major encoders with fieldbus interface
- Status LEDs

Description

The ENA58IL series are high precision encoders with internal magnetic sampling.

Technical Data

General specifications

Detection type	magnetic sampling
Device type	Absolute encoders
Linearity error	$\leq \pm 0.1^\circ$
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	130 a at 40 °C
Mission Time (T _M)	20 a
L ₁₀	5 E+8 revolutions at 24/198 N axial/radial shaft load
Diagnostic Coverage (DC)	0 %

Electrical specifications

Operating voltage U _B	10 ... 30 V DC
Power consumption P ₀	approx. 4 W
Time delay before availability t _v	< 250 ms
Output code	binary code
Code course (counting direction)	programmable, cw ascending (clockwise rotation, code course ascending) cw descending (clockwise rotation, code course descending)

Interface

Interface type	PROFINET IO
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Resolution	
Single turn	up to 16 Bit
Multiturn	up to 14 Bit
Overall resolution	up to 30 Bit
Transfer rate	100 MBit/s
Cycle time	≥ 1 ms

Connection

Connector	Ethernet: 2 sockets M12 x 1, 4-pin, D-coded Supply: 1 plug M12 x 1, 4-pin, A-coded
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Standard conformity

Degree of protection	DIN EN 60529, IP65, IP66, IP67
Climatic testing	DIN EN 60068-2-3, no moisture condensation
Emitted interference	EN 61000-6-4:2007
Noise immunity	EN 61000-6-2:2005
Shock resistance	DIN EN 60068-2-27, 100 g, 6 ms
Vibration resistance	DIN EN 60068-2-6, 10 g, 10 ... 1000 Hz

Ambient conditions

Operating temperature	-40 ... 70 °C (-40 ... 158 °F) for model without connection cover -40 ... 85 °C (-40 ... 185 °F) for model with connection cover
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

Relative humidity	98 % , no moisture condensation
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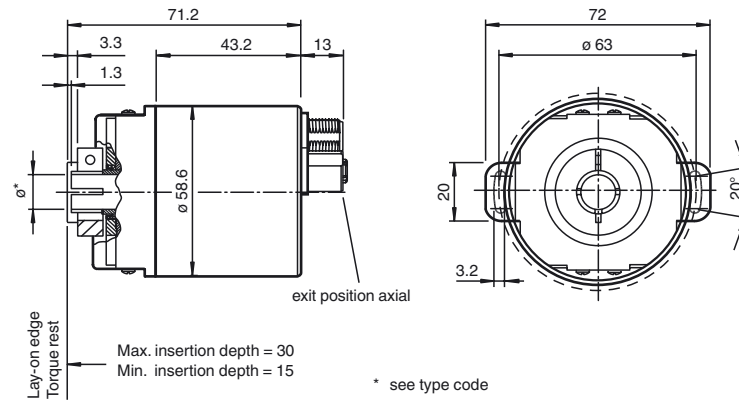
Mechanical specifications

Material	
Housing	Zinc plated steel, painted
Flange	Aluminum
Shaft	Stainless steel
Mass	approx. 300 g
Rotational speed	max. 12000 min ⁻¹ for IP65 max. 3000 min ⁻¹ for IP66/IP67
Moment of inertia	50 gcm ²
Starting torque	< 5 Ncm
Shaft load	
Axial	24 N
Radial	198 N
Angle offset	$\pm 0.9^\circ$
Axial offset	± 0.3 mm static
Radial offset	± 0.5 mm static

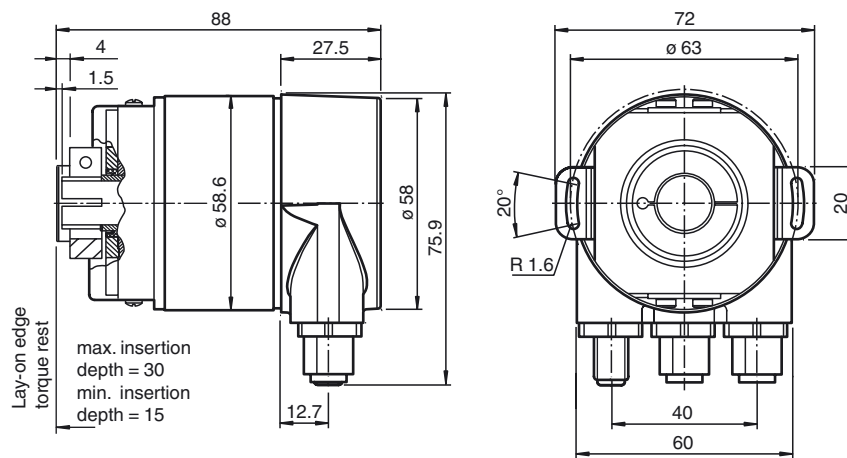
Approvals and certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source , if UL marking is marked on the product.
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Dimensions

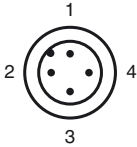
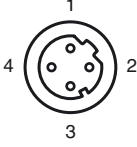


Recessed hollow shaft



Recessed hollow shaft

Electrical connection

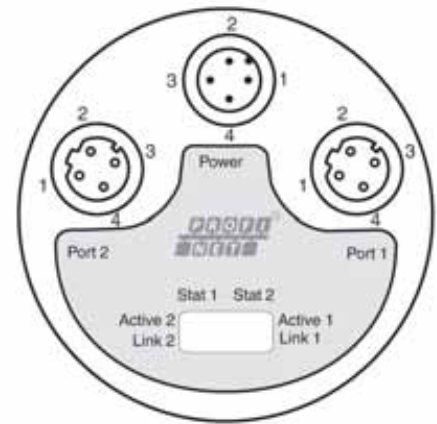
Pin	Male connector M12 x 1, 4-pin, A-coded	Female connector M12 x 1, 4-pin, D-coded
1	Supply voltage +U _B	Tx +
2	-	Rx +
3	0 V	Tx -
4	-	Rx -
		

Indicators

Diagnostic LEDs

LED	Color	Description for LED = ON
Active1	Yellow	Incoming and outgoing data traffic for port 1
Link1*	Green	Connection to other Ethernet devices on port 1
Active2	Yellow	Incoming and outgoing data traffic for port 2
Link2*	Green	Connection to other Ethernet devices on port 2
Stat1	Green	Status 1, details see table below
Stat2	Red	Status 2, details see table below

* flashes with 2 Hz if engineering identification call is activated and link connection is available



Stat1 (green)	Stat2 (red) bus failure	Meaning	Cause
off	off	No power	
on	on	No connection to another device Criteria: no data exchange	• bus disconnected • Master not available / switched off
on	flashes ¹⁾	Parameterization fault, no data exchange Criteria: data exchange correct. However, the slave did not switch to the data exchange mode.	• Slave not configured yet or wrong configuration • Wrong station address assigned (but not outside the permitted range) • Actual configuration of the slave differs from the nominal configuration
on	off	Data exchange. Slave and operation ok.	

1) flashing frequency 0.5 Hz for at least 3 seconds

Model number

E	N	A	5	8	I	L	-	R			D	A	-				B	1	7	-			
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Connection type

ABP axial connection alignment,
2 Sockets / plug M12 x 1

RH2 radial connection alignment, Bus
cover with 2 Sockets / plug M12 x 1

Interface, electric

B17 ProfiNET

Singleturn resolution

13 13 bit

16 16 bit

Multiturn resolution

00 Singleturn rotary encoder

12 Multiturn rotary encoder, 12 bit

14 Multiturn rotary encoder, 14 bit

Degree of protection

5 IP65

7 IP66, IP 67

Flange

DA Dual spring plate

Shaft diameter

06 6 mm (d = 6F7)

10 10 mm (d = 10F7)

12 12 mm (d = 12F7)

14 14 mm (d = 14F7)

15 15 mm (d = 15F7)

Shaft type

R Recessed hollow shaft

Version

IL Industrial Line

Size

58 Housing diameter: 58 mm

Device type

ENA Absolute rotary encoder