

Absolute rotary encoder

ENA58IL-R***-B17



- 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

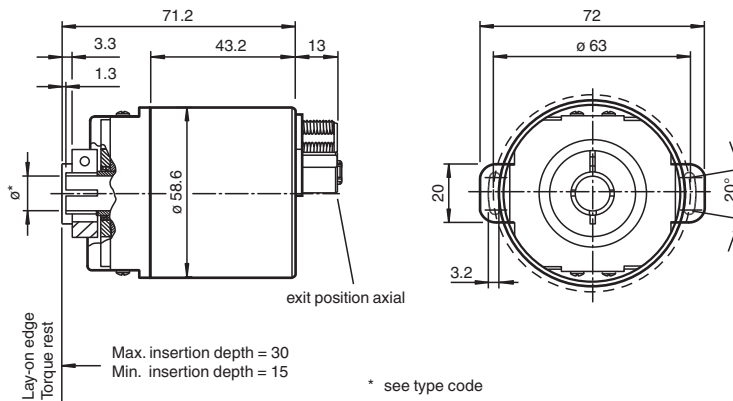
Absolute rotary encoder with magnetic sampling and PROFINET interface



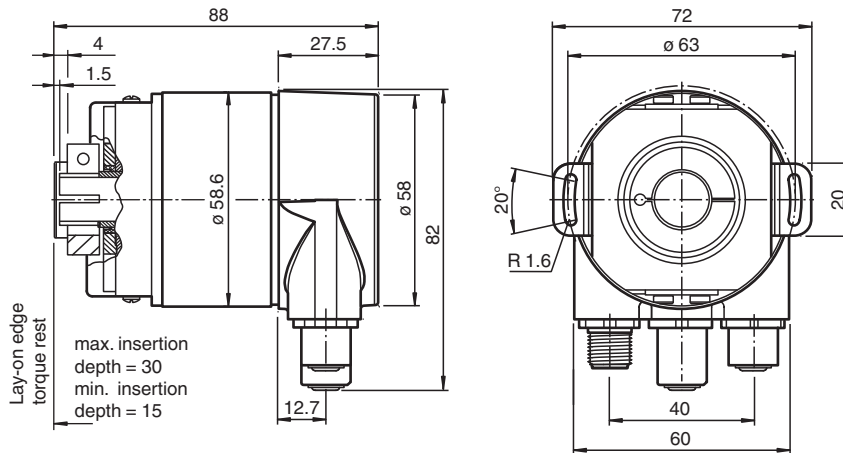
Function

The absolute rotary encoders with PROFINET IO interface and magnetic sampling can be used in all PROFINET applications. Thanks to the Encoder Profile 4.2 and the IRT mode, they are ideally suited for I4.0 applications.

Dimensions



Recessed hollow shaft



Recessed hollow shaft

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

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Technical Data

General specifications		
Detection type		magnetic sampling
Device type		Absolute rotary encoder
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.
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Power consumption	P_0	approx. 4 W
Time delay before availability	t_v	< 15 s
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
Device profile		Encoder Profile V4.2
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		$\geq 250 \mu\text{s}$
Connection		
Connector		Ethernet: 2 sockets M12 x 1, 4-pin, D-coded Supply: 1 plug M12 x 1, 4-pin, A-coded
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
Approvals and certificates		
UL approval		cULus Listed, General Purpose, Class 2 Power Source, if UL marking is marked on the product.
Ambient conditions		
Operating temperature		-40 ... 85 °C (-40 ... 185 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		98 % , no moisture condensation
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		$\pm 0.3 \text{ mm static}$

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Radial offset ± 0.5 mm static

Type Code

Structure of the type code

E N A 5 8 I L - R (1) (1) D A (2) - (3) (3) (4) (4) B 1 7 - (5) (5) (5)

ENA	Device type
ENA	Absolute rotary encoder
58	Size
58	Housing diameter 58 mm
IL	Version
IL	Industrial Line
R	Shaft type
R	Recessed hollow shaft
(1) (1)	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)
DA	Flange
DA	Dual spring plate
(2)	Degree of protection
5	IP65
7	IP67
(3) (3)	Multiturn resolution
00	Singleturn rotary encoder
12	Multiturn rotary encoder, 12 bit
14	Multiturn rotary encoder, 14 bit
(4) (4)	Singleturn resolution
13	13 Bit
16	16 Bit
B17	Interface, electric
B17	PROFINET
(5) (5) (5)	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

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Connection

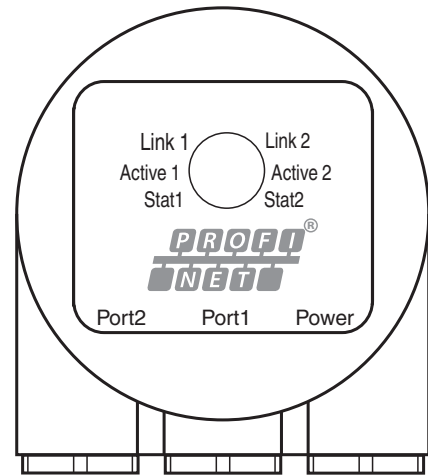
Pin	Male connector M12 x 1, 4-pin, A-coded	Female connector M12 x 1, 4-pin, D-coded
1	Supply voltage +U _B	Tx +
2	-	Rx +
3	0 V	Tx -
4	-	Rx -

Indication

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	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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

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