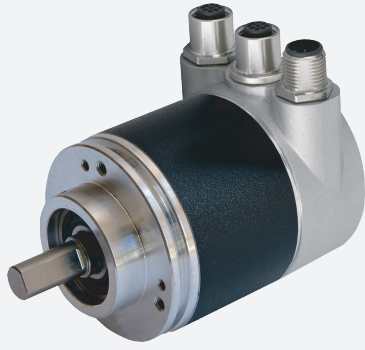


Multiturn absolute encoder

EVM58-PN



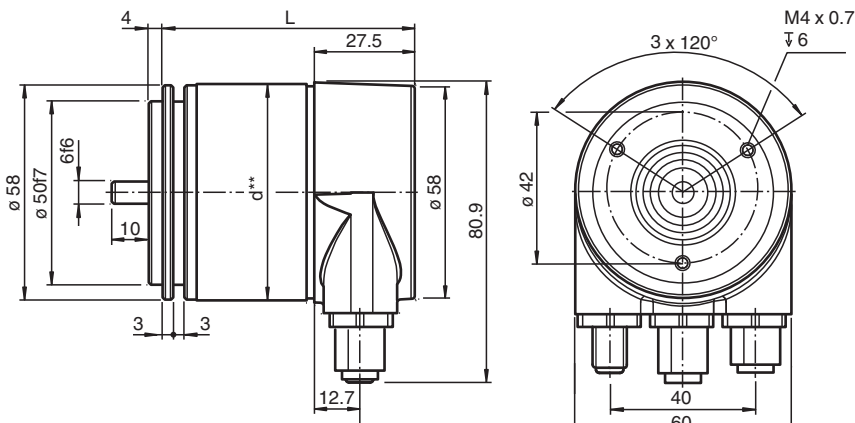
- Industrial standard housing $\varnothing 58$ mm
- PROFINET IRT
- 30 Bit multiturn
- Servo or clamping flange
- Network loop through by means of integrated 2 port switch (IRT capable)
- IP address resettable
- No DIP switches for address setting
- Mechanical compatibility with all major encoders with fieldbus interface
- Status LEDs



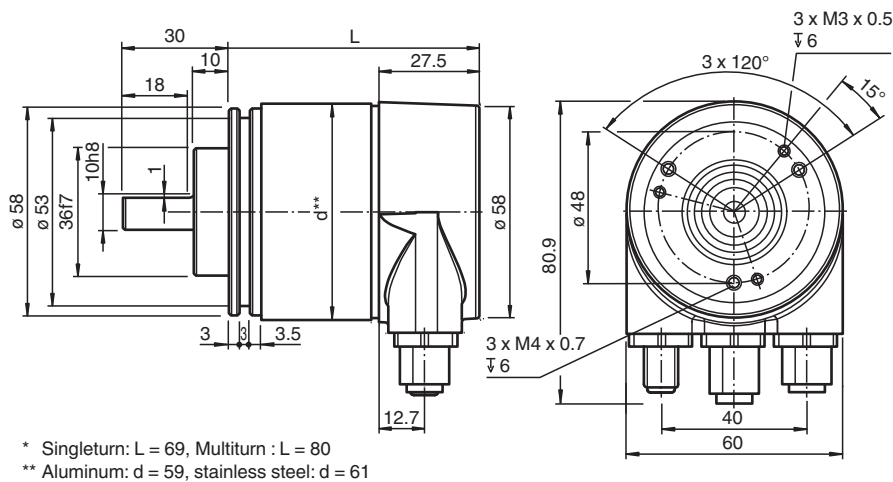
Function

Absolute multiturn rotary encoders deliver an absolute step value for each angle setting. This device has a maximum basic resolution of 65536 steps per revolution (16 bits) and codes up to 16384 revolutions (14 bits). Thus the overall resolution amounts to 30 bits. On account of the high number of measuring steps resulting (more than 1 billion), this type of encoder can be used to divide very long linear distances into small measuring steps. The device is designed for shaft assembly and is available in servo flange or clamping flange design.

Dimensions



- * Singleturn: L = 69, Multiturn : L = 80
- ** Aluminum: d = 59, stainless steel: d = 61



* Singleturn: L = 69, Multiturn : L = 80
 ** Aluminum: d = 59, stainless steel: d = 61

Technical Data

General specifications

Detection type	photoelectric sampling
Device type	Multiturn absolute encoder
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	120 a
Mission Time (T _M)	20 a
L ₁₀	1.9 E+11 at 6000 rpm and 20/40 N axial/radial shaft load
Diagnostic Coverage (DC)	0 %

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Power consumption	P ₀	max. 4 W
Linearity		± 2 LSB (up to 16 Bit)
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
Resolution	
Single turn	up to 16 Bit
Multiturn	14 Bit
Overall resolution	up to 30 Bit
Physical	Ethernet
Transfer rate	100 MBit/s
Cycle time	≤ 1 ms (IRT) ; ≤ 10 ms (RT)

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, Aluminum version: shaft side: IP64 (without shaft seal)/IP66 (with shaft seal) housing side: IP65 Stainless steel version (INOX): completely 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 ... 2000 Hz

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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

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

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

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Technical Data

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)
Mechanical specifications	
Material	housing: powder coated aluminum flange: aluminum shaft: stainless steel
Combination 1	housing: powder coated aluminum flange: aluminum shaft: stainless steel
Combination 2 (Inox)	housing: stainless steel 1.4305 / AISI 303 flange: stainless steel 1.4305 / AISI 303 shaft: stainless steel 1.4305 / AISI 303
Combination 3 (A)	housing: stainless steel 1.4404 / AISI 316L flange: stainless steel 1.4404 / AISI 316L shaft: stainless steel 1.4112 / AISI 440B
Mass	approx. 370 g (Aluminum version) approx. 860 g (Stainless steel version)
Rotational speed	max. 12000 min ⁻¹ for IP64 max. 3000 min ⁻¹ for IP66/IP67
Moment of inertia	30 gcm ²
Starting torque	≤ 3 Ncm (version without shaft seal)
Shaft load	
Axial	40 N
Radial	110 N

Type Code

Structure of the type code

E	V	M	5	8	(1)	-	(2)	(2)	(3)	P	N	R	0	B	N	-	(4)	(4)	(5)	(5)
---	---	---	---	---	-----	---	-----	-----	-----	---	---	---	---	---	---	---	-----	-----	-----	-----

E	Data format
E	Ethernet

V	Shaft version
V	Solid shaft

M	Function principle
M	Multiturn

58	Housing diameter
58	58 mm

1	Housing material
N	Aluminum, powder coated
W	Aluminum, powder coated with shaft seal
I	Stainless steel 1.4305 / AISI 303
A	Stainless steel 1.4404 / AISI 316L (only with shaft dimension/flange 01/1 und 03/2)

(2) (2)	Shaft dimensions
01	Shaft Ø10 mm x 20 mm
03	Shaft Ø6 mm x 10 mm

Note housing material when selecting shaft dimension















(3)	Flange
1	Clamping flange
2	Servo flange

Note housing material when selecting flange

PN	Connection type / protocol
PN	Profinet protocol, 1 female connector/1 male connector, M12 x 1

R	Exit position
R	Radial
0	Option
0	None
B	Output code
B	Binary
N	Temperature
N	Normal
(4) (4)	Number of bits multiturn
12	12 Bits : 4096 pulses (Standard)
14	14 Bits : 16384 pulses
(5) (5)	Number of bits singleturn
13	13 Bits : 8192 pulses (standard)
16	16 Bits : 65536 pulses

Accessories

	9203	Angled flange
	9310-3	Synchro clamping element
	9300	Mounting bracket for servo flange
	KW-10/10	Helical coupling
	KW-6/10	Helical coupling
	KW-6/6	Helical coupling
	KW-6/8	Helical coupling
	9401 10*10	Spring steel coupling
	9401 10*12	Spring steel coupling
	9401 6*10	Spring steel coupling
	9401 6*6	Spring steel coupling
	9402 6*6	Spring steel coupling
	9404 10*10	Spring disk coupling
	9404 6*6	Spring disk coupling

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

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

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

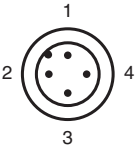
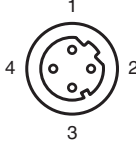
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Accessories

	9409 10*10	Bellows coupling
	9409 6*10	Bellows coupling
	9409 6*6	Bellows coupling
	9409 6*8	Bellows coupling
	9410 10*10	Precision coupling
	9410 6*6	Precision coupling
	9460 6*6	Stainless steel bellows coupling
	9460 10*10	Stainless steel bellows coupling

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 -

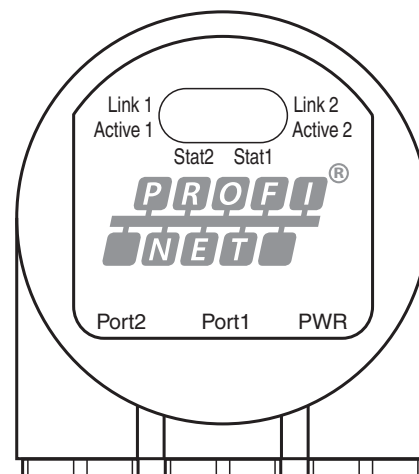
	
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Indication

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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