Model Number

EVS58-PN

Features

- **Industrial standard housing Ø58 mm**
- **PROFINET IRT**
- **16 Bit singleturn**
- **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**

Description

In addition to the CANopen-, DeviceNet-, PROFIBUS- and AS-Interface encoders, we have broadened our product line of bus-capable absolute encoders with the EVS58 for Ethernet.

Absolute 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).

The Eternet interface of this absolute encoder supports the Profinet protocol. The integrated webserver provides Java applets, which allow the whole parameterisation of the encoder via any web browser. In addition to various functions like resolution adjustment, e-mail-services, change of the IP address and many others, the following operation modes can be selected:

- Polled Mode
- Cyclic Mode
- Change of State Mode

The device is designed for shaft assembly and is available in servo flange or clamping flange design.

Technical data

General specifications	
Detection type	photoelectric sampling
Device type	Singleturn absolute encoder
Functional safety related parameters	
$MTTF_d$	130 a
Mission Time (T_M)	20 a
L_{10h}	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	± 0.5 LSB (12 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
Overall resolution	up to 16 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
Standard conformity	
Degree of protection	DIN EN 60529, 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
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 1.4301 / AISI 304 shaft: stainless steel 1.4305 / AISI 303
Mass	approx. 370 g (combination 1) approx. 840 g (combination 2)
Rotational speed	max. 12000 min^{-1}
Moment of inertia	30 gcm^2
Starting torque	≤ 3 Ncm (version without shaft seal)
Shaft load	
Axial	40 N
Radial	110 N

Approvals and certificates	
UL approval	cULus Listed, General Purpose, Class 2 Power Source

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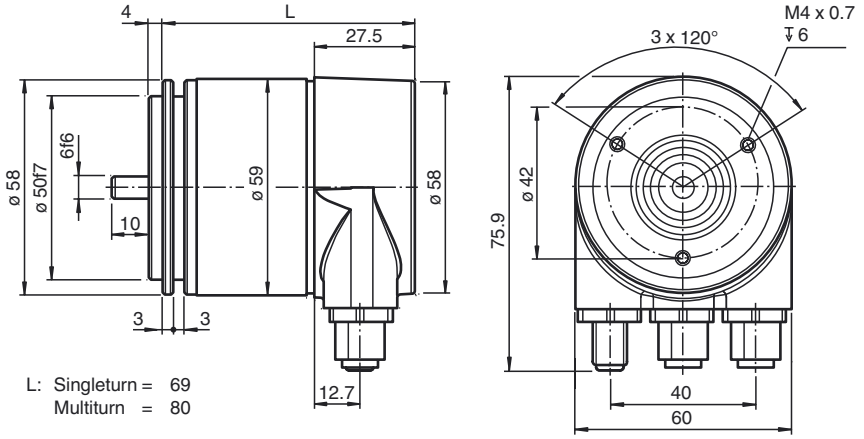
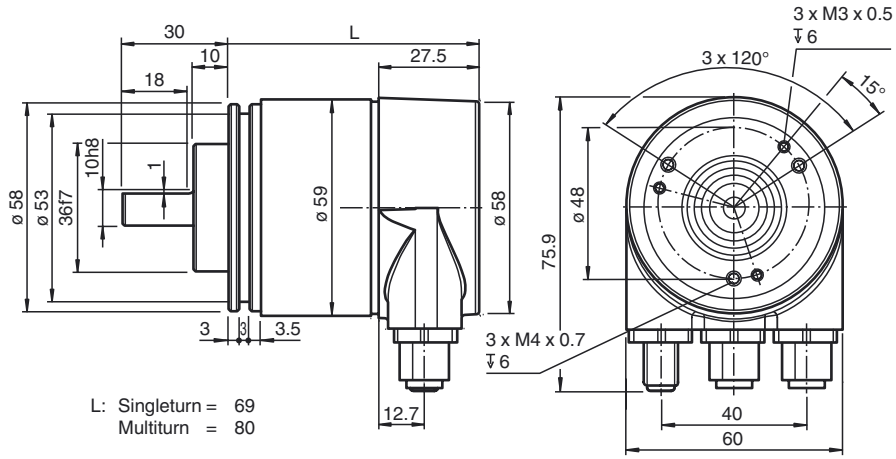
Dimensions





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Pepperl+Fuchs Group www.pepperl-fuchs.com
USA: +1 330 486 0001 fa-info@us.pepperl-fuchs.com
Germany: +49 621 776 4411 fa-info@de.pepperl-fuchs.com
Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com
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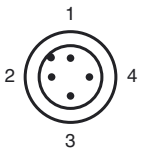
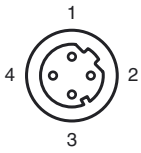
Electrical connection

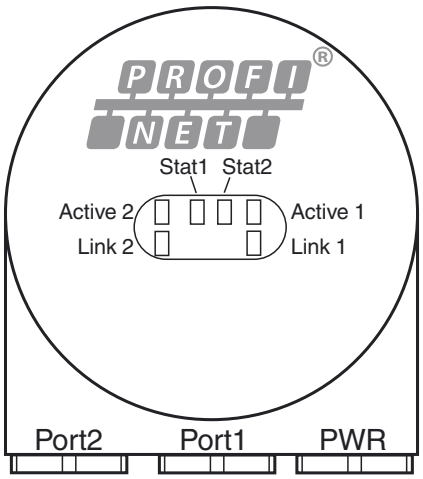
Pin	Male connector M12 x 1, 4-pin, A-coded	Female connector M12 x 1, 4-pin, D-coded
1	Supply voltage +U_B	Tx +
2	-	Rx +
3	0 V	Tx -
4	-	Rx -
		

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

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Accessories

Accessories	Name/defining feature	Order code	Description
Couplings	D1: Ø6 mm, D2: Ø6 mm	9401	shaft Ø6 mm
	D1: Ø6 mm, D2: Ø6 mm	9402	
	D1: Ø6 mm, D2: Ø6 mm	9404	
	D1: Ø6 mm, D2: Ø6 mm	9409	
	D1: Ø6 mm, D2: Ø6 mm	KW	
	D1: Ø10 mm, D2: Ø10 mm	9401	shaft Ø10 mm
	D1: Ø10 mm, D2: Ø10 mm	9404	
	D1: Ø10 mm, D2: Ø10 mm	9409	
	D1: Ø10 mm, D2: Ø10 mm	KW	
Measurement wheels with circumference of 500 mm	Plastic	9101, 10	
	Pimpled rubber	9102, 10	
	Knurled aluminium	9103, 10	
	Knurled plastic	9112, 10	
Measurement wheels with circumference of 200 mm	Plastic	9108, 10	
	Pimpled rubber	9109, 10	
	Knurled aluminium	9110, 10	
	Knurled plastic	9113, 10	
Mounting aids	Mounting bracket	9203	Clamping flange
	Mounting bracket	9213	
Mounting aids	Mounting bracket and set	9300 and 9311-3	Servo flange
	Eccentric clamping elements	9310-3	

For additional information on the accessories, please see the "Accessories" section.

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USA: +1 330 486 0001 fa-info@us.pepperl-fuchs.com
Germany: +49 621 776 4411 fa-info@de.pepperl-fuchs.com
Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com
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Order code

E	V	S	5	8		–				P	N	R	0	B	N	–	0	0		

Data format
E Ethernet

Shaft version
V Solid shaft

Function principle
S Singleturn

Housing material
N Aluminium, powder coated
W Aluminium, powder coated with shaft seal
I Stainless steel

Shaft dimensions
01 Shaft Ø10 mm x 20 mm
03 Shaft Ø6 mm x 10 mm

Flange version
1 Clamping flange
2 Servo flange

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

Exit position
R radial

Option
0 none

Output code
B binary

Temp.
N normal

Number of bits singleturn
13 8192 (standard)
16 65536

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