



Multitrurn absolute encoder

ES*58-EC

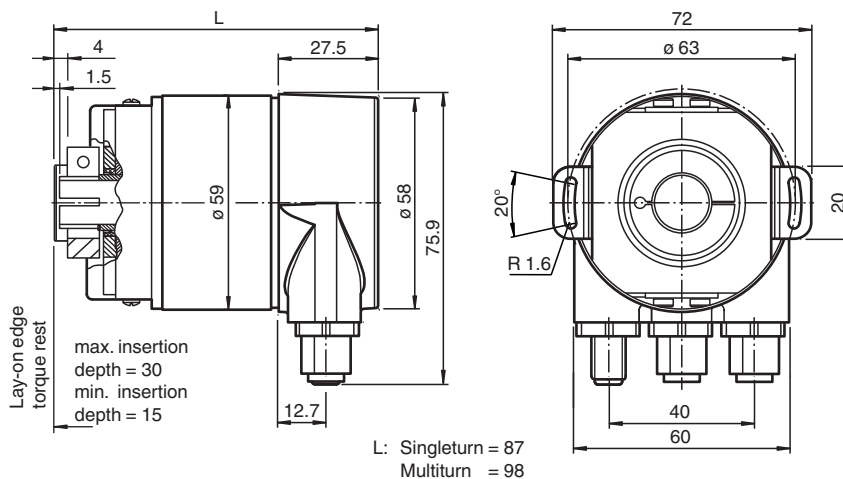
- EtherCAT interface
- Industrial standard housing $\varnothing 58$ mm
- 30 Bit multitrurn
- Two Ethernet connectors with built in hub
- Recessed hollow shaft
- Mechanical compatibility with all major encoders with fieldbus interface
- Status LEDs
- Stainless steel desktop housing available



Function

The ES*58-EC series are high precision rotary encoders with interal optical sampling.

Dimensions



Technical Data

General specifications

Detection type	photoelectric sampling
Device type	Multitrurn absolute encoder

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , safe galvanic isolation per EN 50178
Power consumption	P_0	max. 2.5 W
Linearity		± 0.5 LSB (up to 12 Bit) ± 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	EtherCAT CoE (CANopen over EtherCAT, according to CiA DS-301 and DS-406 device profile CiA)
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

Resolution	
Single turn	up to 16 Bit
Multiturn	up to 14 Bit
Overall resolution	up to 30 Bit
Physical	
Transfer rate	10 MBit/s / 100 MBit/s
Cycle time	≥ 65 µs
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: IP65 (without shaft seal)/ IP66/67 (with shaft seal) housing side: IP66/67 Stainless steel version (INOX): completely IP66/67
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 ... 85 °C (-40 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	98 % , no moisture condensation
Mechanical specifications	
Material	
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	
Angle offset	± 0.9 °
Axial offset	static: ± 0.3 mm, dynamic: ± 0.1 mm
Radial offset	static: ± 0.5 mm, dynamic: ± 0.2 mm

Accessories



	9203	Angled flange
	9300	Mounting bracket for servo flange
	ACC-PACK-ABS-_S_58 ø15	Accessories set for Ø58 absolut rotary encoder with recessed hollow shaft 15 mm
	ACC-PACK-ABS-_S_58 ø14	Accessories set for Ø58 absolut rotary encoder with recessed hollow shaft 14 mm

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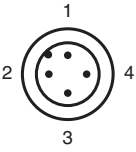
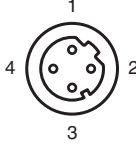
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Accessories

	ACC-PACK-ABS-_S_58 ø12	Accessories set for Ø58 absolut rotary encoder with recessed hollow shaft 12 mm
	ACC-PACK-ABS-_S_58 ø10	Accessories set for Ø58 absolut rotary encoder with recessed hollow shaft 10 mm

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

Port LEDs

LED	Color	Status	Description
Link/Act IN	green	on	LINK active for HUB port 1
		blinking	Activity on HUB port 1
Link/Act OUT	green	on	LINK active for HUB port 2
		blinking	Activity on HUB port 2

EtherCAT LEDs

LED	Color	Status	Description
Error	red	off	no error
		blinking	invalid configuration
		single flash	local error
		double flash	process data watchdog timeout/ EtherCAT watchdog timeout
		flickering	booting error
		on	application failure
Run	green	off	initialization
		blinking	Pre-Operational
		single flash	Safe-Operational
		flickering	initialization or bootstrap
		on	Operational



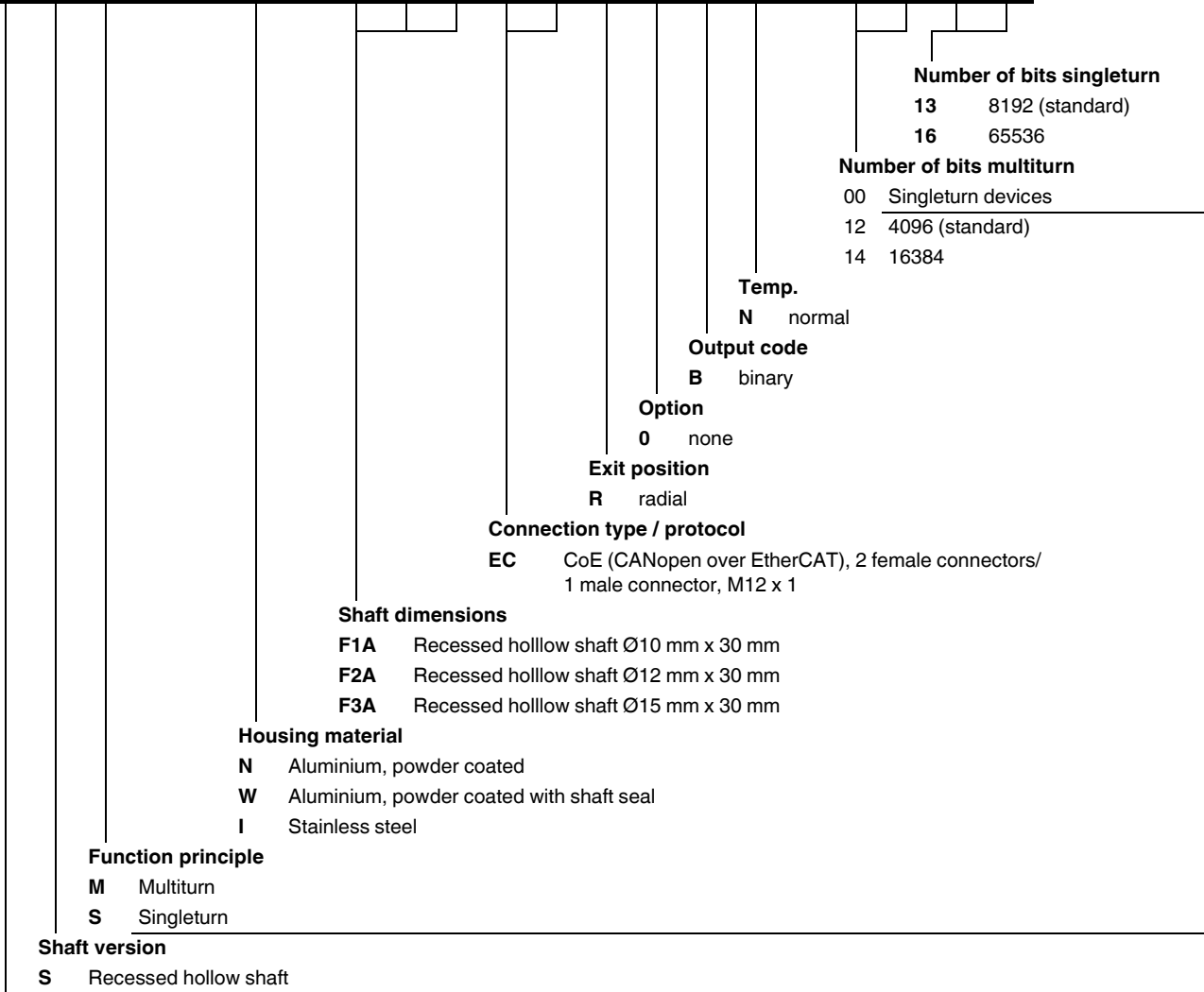
Type Code

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Order code

E S 5 8 - - - E C R 0 B N - - -



Number of bits singleturn

13	8192 (standard)
16	65536

Number of bits multiturn

00	Singleturn devices
12	4096 (standard)
14	16384

Temp.
N normal

Output code
B binary

Option
0 none

Exit position
R radial

Connection type / protocol
EC CoE (CANopen over EtherCAT), 2 female connectors/
1 male connector, M12 x 1

Shaft dimensions
F1A Recessed hollow shaft Ø10 mm x 30 mm
F2A Recessed hollow shaft Ø12 mm x 30 mm
F3A Recessed hollow shaft Ø15 mm x 30 mm

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

Function principle
M Multiturn
S Singleturn

Shaft version
S Recessed hollow shaft

Data format
E Ethernet

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