



- Industrial standard housing Ø58 mm
- Ethernet interface with Powerlink
- 30 Bit multiturn
- Integrated webserver
- Recessed hollow shaft

Product 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 ESM58 for Ethernet.

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 Ethernet interface of this absolute encoder supports the TCP/IP 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 mounted directly onto the application shaft, without any coupling. Rotation of the absolute encoder is prevented by a torque rest.

ESM58-PZ



Technical data

Electrical specifications

Operating voltage	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)	parameterisable, cw ascending (clockwise rotation, code course ascending) cw descending (clockwise rotation, code course descending)

Interface

Resolution	
Singleturn	up to 16 Bit
Multiturn	14 Bit
Overall resolution	up to 30 Bit

Physical	Ethernet
Interface type	Powerlink
Transfer rate	10 MBit/s / 100 MBit/s

Connection

Connector	Ethernet: 2 sockets M12 x 1, 4-pin, D-coded Supply: 1 plug M12 x 1, 5-pin, A-coded
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Standard conformity

Protection degree	DIN EN 60529, shaft side: IP64 (without shaft seal)/IP66 (with shaft seal) housing side: IP65
Climatic testing	DIN EN 60068-2-3, no moisture condensation
Emitted interference	DIN EN 61000-6-4
Interference rejection	DIN EN 61000-6-2
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

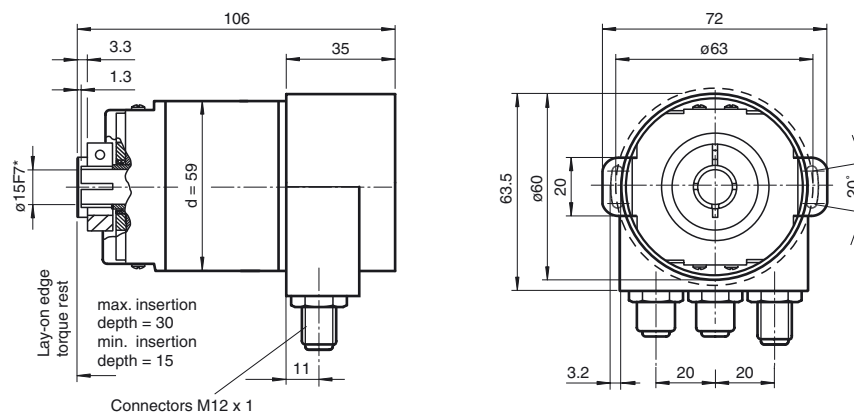
Operating temperature	0 ... 60 °C (273 ... 333 K)
Storage temperature	-40 ... 85 °C (233 ... 358 K)

Mechanical specifications

Material	housing: aluminium, powder coated flange: aluminium shaft: stainless steel
Mass	approx. 700 g
Rotational speed	max. 12000 min ⁻¹
Moment of inertia	30 gcm ²
Starting torque	≤ 3 Ncm (version without shaft seal)
Tightening torque, fixing screws	max. 1.8 Nm
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

Dimensions

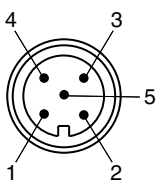
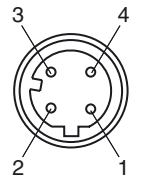


Recessed hollow shaft

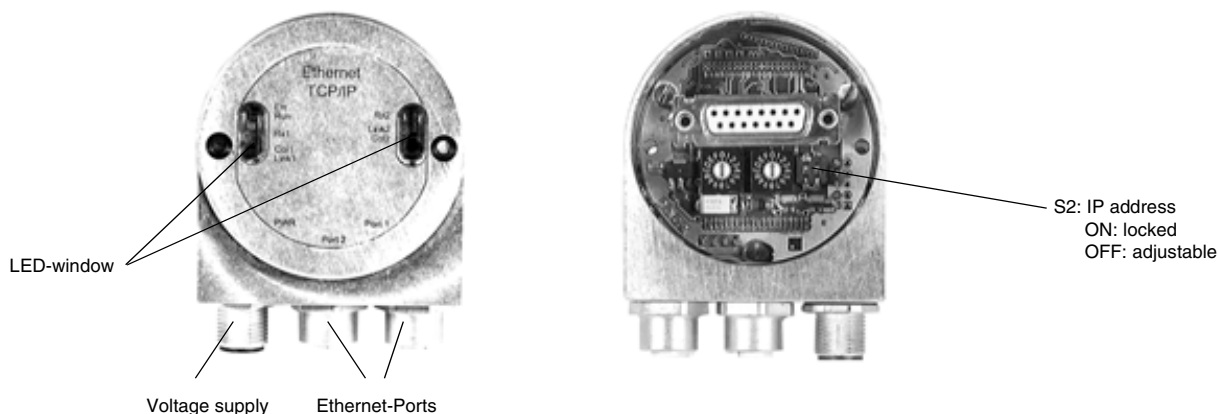
* shaft can be reduced to $\varnothing 10F7$ or $\varnothing 12F7$ by using an adapter

Electrical connection

Pin	Male connector M12 x 1, 5-pin, A-coded	Female connector M12 x 1, 4-pin, D-coded
1	+ 24 V	Rx +
2	+ 24 V	Tx +
3	0 V	Rx -
4	0 V	Tx -
5	PE	

Indicators and operation means



LED-indicators

LED	Colour	Meaning
Rx1	yellow	Data traffic on Port 1
Link1	green	Connection to another Ethernet device on Port 1
Col1	red	Bus collision on Port 1
Rx2	yellow	Data traffic on Port 2
Link2	green	Connection to another Ethernet device on Port 2
Col2	red	Bus collision on Port 2
Err	red	Internal error
Run	green	Ethernet interface ready to work

IP address adjustment

Set switch S2 to position OFF. The IP address can be adjusted now. In switch position ON, the IP address is blocked to avoid unintended change.

The rotary switches and switch S1 are without any function.

Order code



- Number of bits singleturn**
- 13 8192 (standard)
- 16 65536
- Number of bits multiturn**
- 12 4096 (standard)
- 14 16384

Temp.
N normal

Output code
B binary

Option
0 none

Exit position
R radial

Connection type / protocol

- PN** Profinet protocol, 1 female connector/1 male connector, M12 x 1
- PZ** Powerlink protocol, 1 female connector/1 male connector, M12 x 1
- TZ** TCP/IP protocol, 1 female connector/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

Function principle

M Multiturn

Shaft version

S Recessed hollow shaft

Data format

E Ethernet

