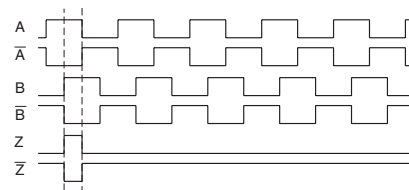




- Robust mechanical construction, high vibration and shock resistance
- 1 to 16,384 pulses/ revolution
- Operating temperature - 40 °C to + 85 °C
- Protection grade IP 65



Design and function

Sensing the angle position with magnetic sensor and signal processing including the generation of the pulse outputs.

Robust housing made of steel with a coating for corrosion protection and flange made of sea water proof aluminium (AlMgSi1).

Shaft in stainless steel. Bearings with shaft sealing ring.

- Number of pulses/ revolution: Each pulse number from 1 to 16,384 pulses / revolutions
- Signal outputs: Channel A, B and Zero Z and inverted signals
- Form of signals: Square (Duty cycle 1:1)

Technical Data

Electrical data

■ Sensor system:	Magnetic
■ Supply voltage range:	+ 4.75 VDC to + 30 VDC (protection against reverse polarity)
■ Power consumption:	≤ 40 mA (24 VDC)
■ Output Voltage High level push pull (HTL):	> 4 V @ supply voltage V_s 4.75 – 9 V > $V_s - 3$ V @ supply voltage V_s 9 – 30 V
■ Output Voltage Low level push pull (HTL):	< 0.5 V
■ Output Voltage High Level RS422 (TTL):	> 4 V
■ Output Voltage Low Level RS422 (TTL):	< 0.5 V
■ Maximum load of output signal:	120 Ω (50 mA for each channel)
■ Reverse polarity protection:	yes
■ Short circuit protection:	yes
■ Reference signal:	Zero pulse, width 90° (180°, 270°, 360° optional)
■ Output frequency:	max. 1 MHz
■ Phase accuracy:	90° ± 14°
■ Accuracy:	±0.0878° (≤ 12 Bits)
■ Signal output:	A+ and B+ (90° shifted) and Z+. Additionally inverted signals A-, B- and Z-
■ Output circuit:	Linedriver / RS 422 Push-pull short-circuit proof
■ EMC-Standards:	EN 61000-6-2 (ESD) EN 61000-6-4 (Emission)
■ Approval:	CE
■ MTTF:	280 years @ 40°C

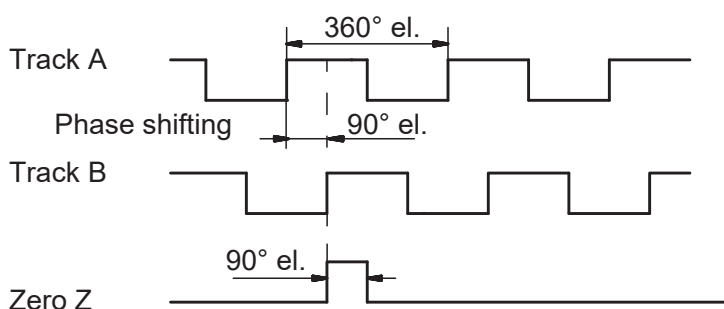
Mechanical data

■ Operating speed:	≤ 12,000 rpm
■ Resolution:	1 to 16,384 (steps/turn)
■ Starting torque:	≤ 0.03 Nm
■ Dimensions (flange):	∅ 58 mm
■ Perm. shaft load:	≤ 40 N axial ≤ 110 N radial
■ Bearings lifetime:	2x10 ⁹ rev. at 100 % of full rated shaft load (minimum)
■ Material:	Flange (aluminium), housing (steel with coating for corrosion protection), shaft (stainless steel)
■ Mass:	ca. 215 g

Environmental data

■ Operating temperature:	- 40 °C to + 85 °C
■ Humidity:	98 % without condensation
■ Resistance	
□ To shock:	1,000 m/s ² , 6 ms, DIN EN 60068-2-27
□ To vibration:	100 m/s ² , 10 Hz ... 1,000 Hz DIN EN 60068-2-6
■ Protection grade	IP65

Signal output when CW turning (view on shaft)



Order code format

Order code format

FOI	58	S6	1	1	A	1024	R	6	T	01
-----	----	----	---	---	---	------	---	---	---	----

Electrical and mechanical variants

Signal form:

- T TTL (see electrical data page 2)
- H HTL (see electrical data page 2)

Output signal:

- 2 A+, B+
- 3 A+, B+, Z+
- 4 A+, B+, A-, B-
- 6 A+, B+, Z+, A-, B-, Z-

Shaft rotation:

- R CW
- L CCW

Pulses:

- 1024 Pulses / 360° (1 ... 16,384)

Housing material:

- A Aluminium (AlMgSi1)

Electrical connection:

- 1 M23 Connector 12 pin (matching cable with M23 connector and open wire end see page 7)

Protection grades:

- 1 IP 65

Flange type:

- S6 Synchro flange, shaft 6 mm (see page 4)
- K10 Clamping flange, shaft 10 mm (see page 5)
- B12 Blind hollow shaft, clamped ring 12 mm (see page 6; 10, 8 mm blind hollow shaft see reducing bushes page 6)

Design form:

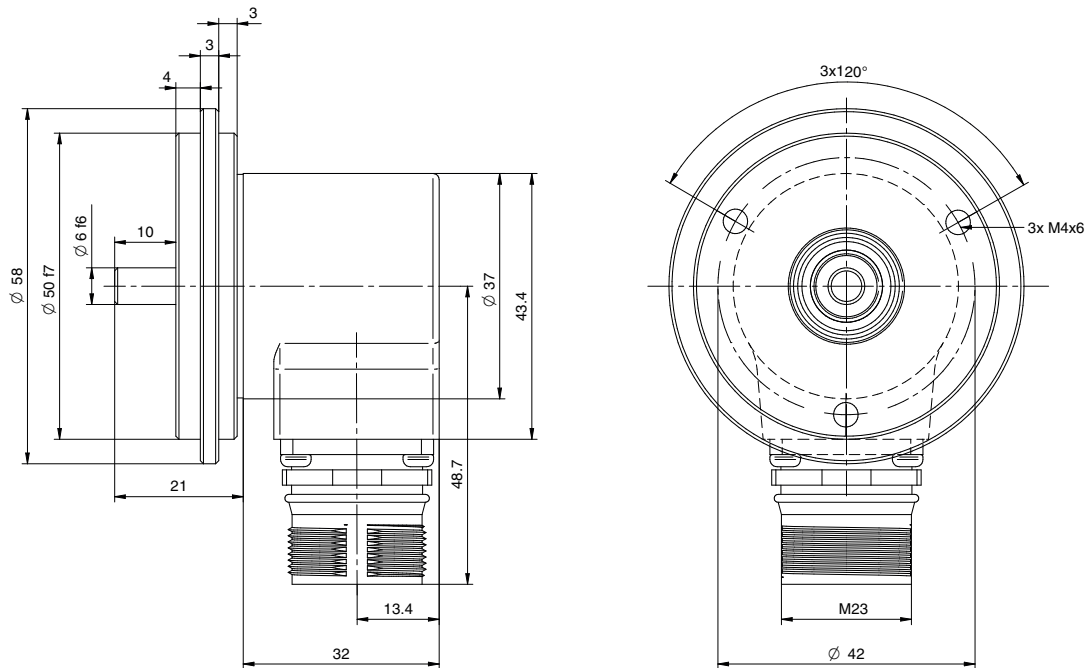
- 58 Case diameter ø 58 mm

FOI Incremental encoder

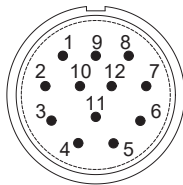
Installation drawings

Dimensions in mm

Model FOI58S6 (M23-Connector, radial)



Electrical connection (view to contacts)



M 23 Connector, 12 pin

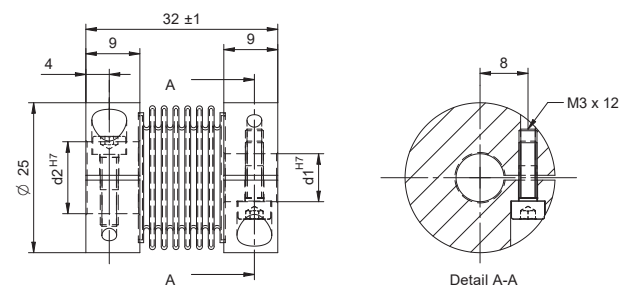
Contact no.	M23-Connector
1	B- Channel
3	Z+ Channel, Zero signal
4	Z- Channel, Zero signal
5	A+ Channel
6	A- Channel
8	B+ Channel
10	GND
12	+Vs
Shielding	Connector housing

Accessories

Bellow coupling

- BKA 32/6-6-A01:** d2 = ø 6 mm, d1 = ø 6 mm
BKA 32/6-8-A01: d2 = ø 6 mm, d1 = ø 8 mm
BKA 32/6-10-A01: d2 = ø 6 mm, d1 = ø 10 mm

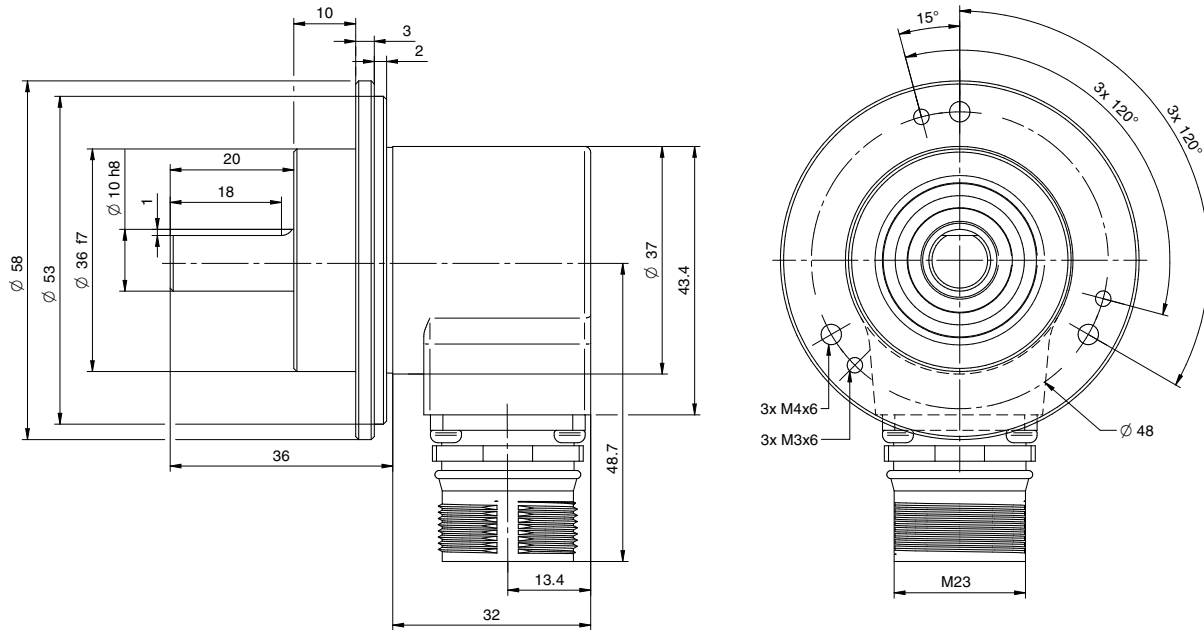
Dimensions in mm



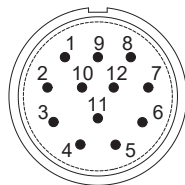
Installation drawings

Dimensions in mm

Model FOI58K10 (M23-Connector, radial)



Electrical connection (view to contacts)



M 23 Connector, 12 pin

Contact no.	M23-Connector
1	B- Channel
3	Z+ Channel, Zero signal
4	Z- Channel, Zero signal
5	A+ Channel
6	A- Channel
8	B+ Channel
10	GND
12	+Vs
Shielding	Connector housing

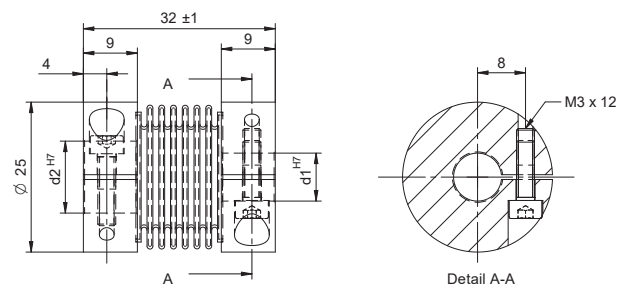
Accessories

Bellow coupling

BA 32/10-10-A01: d2 = $\varnothing$ 10 mm, d1 = $\varnothing$ 10 mm

BA 32/10-12-A01: d2 = $\varnothing$ 10 mm, d1 = $\varnothing$ 12 mm

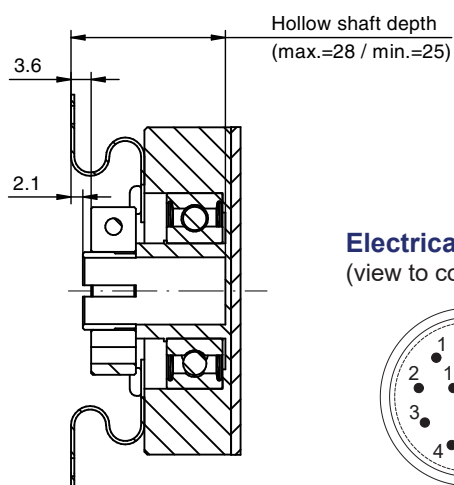
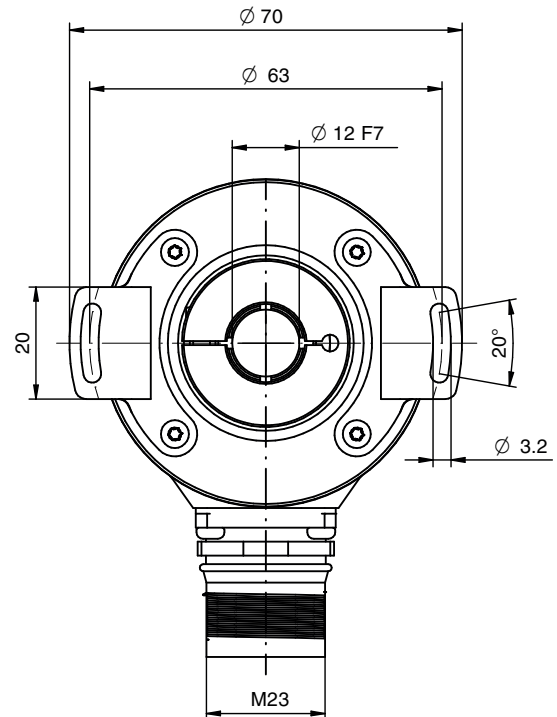
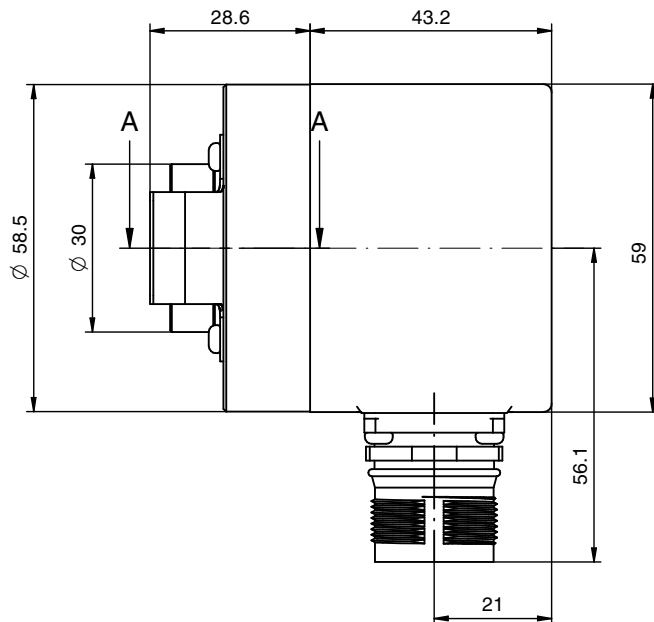
Dimensions in mm



Installation drawings

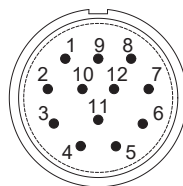
Dimensions in mm

Model FOI58B12 (M23-Connector, radial)



Details A-A

Electrical connection (view to contacts)



M 23 Connector, 12 pin

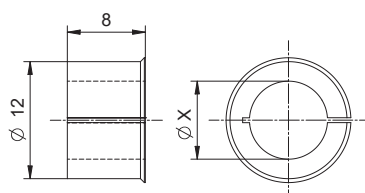
Contact no.	M23-Connector
1	B- Channel
3	Z+ Channel, Zero signal
4	Z- Channel, Zero signal
5	A+ Channel
6	A- Channel
8	B+ Channel
10	GND
12	+Vs
Shielding	Connector housing

Accessories

Reducing bush (Material: aluminium)

ZRH-A-12-10: x = 10 mm

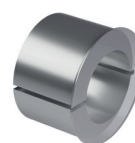
ZRH-A-12-8: x = 8 mm



ZRH-A-12-10



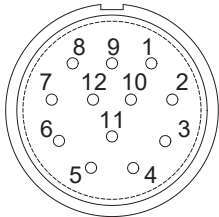
ZRH-A-12-8



Accessories

Cable

- Type of cable: PVC-Cable 6x2x0,14 mm² with open wire end
- Cable configuration: 6x2x0,14 mm² AWG 26
- Cable outside diameter: 6 - 10 mm
- Protection grade: IP 67

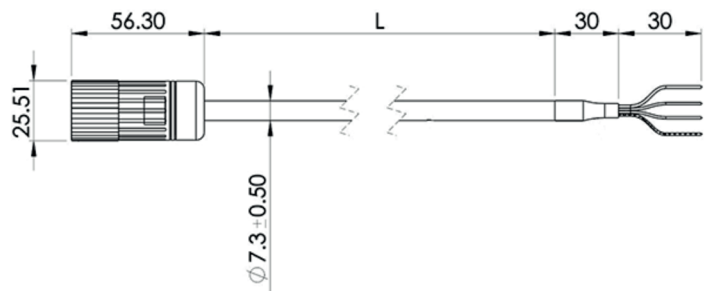


M 23 Connector, 12 socket

M23-Connector	Color
1	yellow
2	green
3	grey
4	pink
5	blue
6	red
7	black
8	grey/pink
9	blue/red
10	violet
11	brown
12	white

Order code format

Kabel	-	X	-	222
Cable length:				
		2		2000 mm (L)
		5		5000 mm (L)
		10		10.000 mm (L)



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FAE S.R.L. • Via Tertulliano, 41 • 20137 Milano
Tel. +39 02 55187133 • Fax +39 02 55187399