Baumer
Passion for Sensors

Encoders without bearings - absolute

EB360.SC-C.S012.V4GJN.13000N

Magnetic singleturn encoder, magnetic rotor for screw mounting

Article number: 11266753

Overview

- Non contact absolute encoder / SSI
- Resolution 13 bit
- Precise magnetic sensing
- High resistance to shock and vibrations
- Flylead connector M12, 8-pin
- Magnetic rotor included in delivery (calibrated set)

Technical data

Technical data - electrical ratings

Voltage supply	4.5...30 VDC
Consumption typ.	60 mA (5 VDC, w/o load) 20 mA (24 VDC, w/o load)
Initializing time	≤ 170 ms after power on
Inputs	SSI clock: Linereceiver RS422 Zero setting input Counting direction
Interface	SSI
Function	Singleturn
Steps per revolution	8192 / 13 bit
Output stages	SSI data: Linedriver RS422
Absolute accuracy	±0.3 ° (+20 ±15 °C) ±0.5 ° (-40...+85 °C)
Sensing method	Magnetic
Code	Gray
Code sequence	CW: ascending values with clockwise sense of rotation (looking at flange)
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-4
Approval	UL approval / E217823 CE

Technical data - mechanical design

Size (flange)	ø36 mm
Magnet rotor	ø12 mm, screw mount
Protection EN 60529	IP 67 (sensor housing)
Operating speed	≤6000 rpm
Working distance	0.1 … 4 mm (axial) ≤ 2 mm (radial)
Material	Housing: PA10T / GF30 Cable sheath: PUR Magnet rotor: stainless steel
Operating temperature	-40...+85 °C (see general information)
Relative humidity	95 %
Resistance	EN 60068-2-6 Vibration 30 g, 10-2000 Hz EN 60068-2-27 Shock 500 g, 1 ms
Weight approx.	100 g
Connection	Flylead connector M12, 8-pin, length 300 mm

Optional

- Corrosion protection CX (C5-M)
- Ring register operation (on request)
- Gear function (on request)
- IP 69K (on request)
- Diagnostic function DATAVALID (on request)

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General information

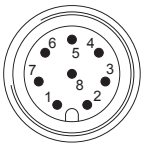
Self-heating correlated to installation and ambient conditions as well as to electronics and supply voltage must be considered for precise thermal dimensioning. Operating the encoder close to the maximum limits requires measuring the real prevailing temperature at the encoder flange.

Terminal assignment

Flylead connector M12, 8-pin, male, A-encoding

Pin	Signals
1	0 V
2	+Vs
3	Clock+
4	Clock-
5	Data+
6	Data-
7	SET
8	DIR

Cable data: 4 x 2 x 0.14 mm², shielded, twisted in pairs



Terminal significance

SET	Zero setting. Input for zero setting at any position. The zero setting operation is triggered by a high pulse and has to be in line with the selected direction of rotation (DIR). Impulse duration >100 ms. Connect to 0 V after zero setting for maximum interference immunity.
DIR	Counting direction input. The input is standard on high. For maximum interference immunity connect to +Vs respectively 0 V depending on counting direction. CW HIGH - CCW LOW (Version with DATAVALID does not include the counting directon input).

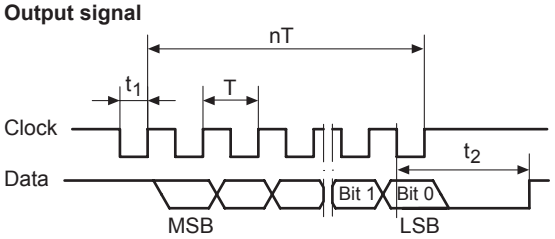
Trigger level

Control inputs	Input circuit
Maximal	0...+Vs
Input level Low	<1 V
Input level High	>2.1 V

Applies to standard cable lengths up to 2 m, for longer cables the voltage drop must be taken into account.

Data transfer

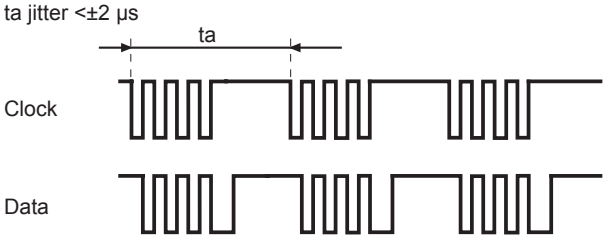
Output signal



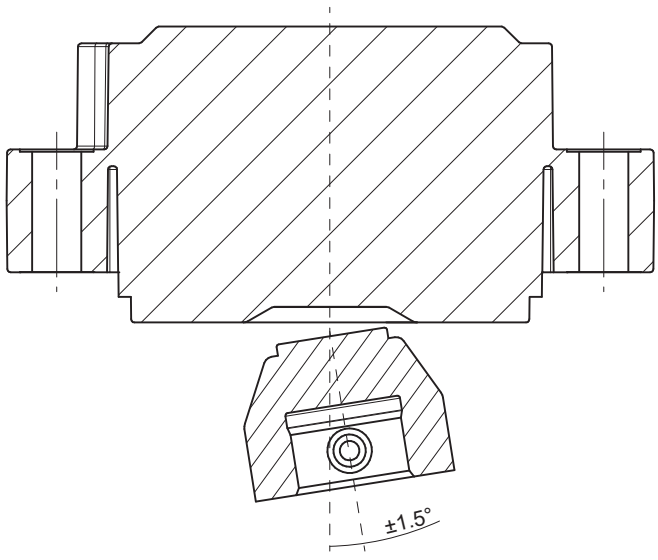
T = 0.5...10 µs	t_1 = 0.25...5 µs
t_2 = 20 ±2 µs	f max. = 2 MHz

Data acquisition time ta

Following timing of the SSI Masters is the requirement for a data refresh rate of typ. 2 µs. If this is not fulfilled the data refresh rate is <50 µs.
ta <5000 µs
ta jitter <±2 µs



Angular misalignment



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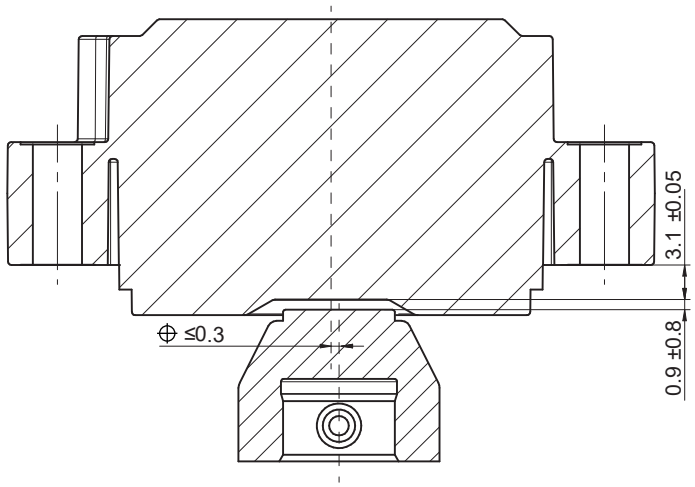
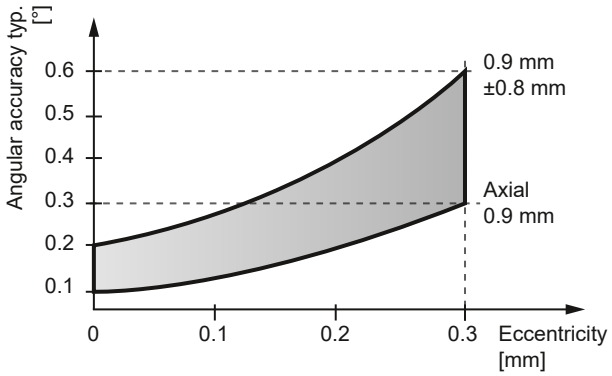
Working distance



The ideal working distance of the magnet related to the encoder is at an eccentricity of 0 mm and an axial distance of 0.9 mm. Deviation affects the accuracy as shown in following diagram.



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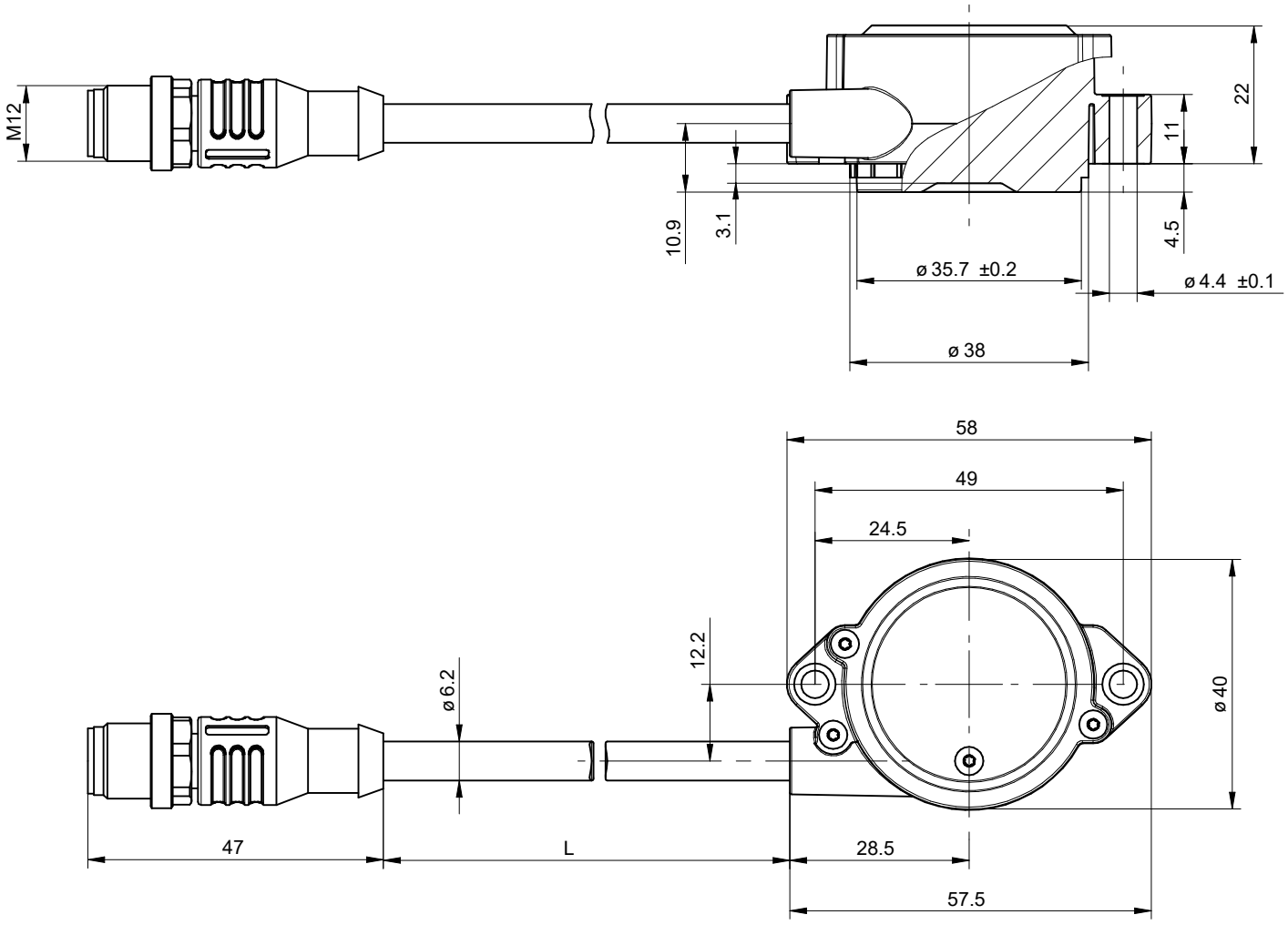
Dimensions



Sensor with flylead connector M12

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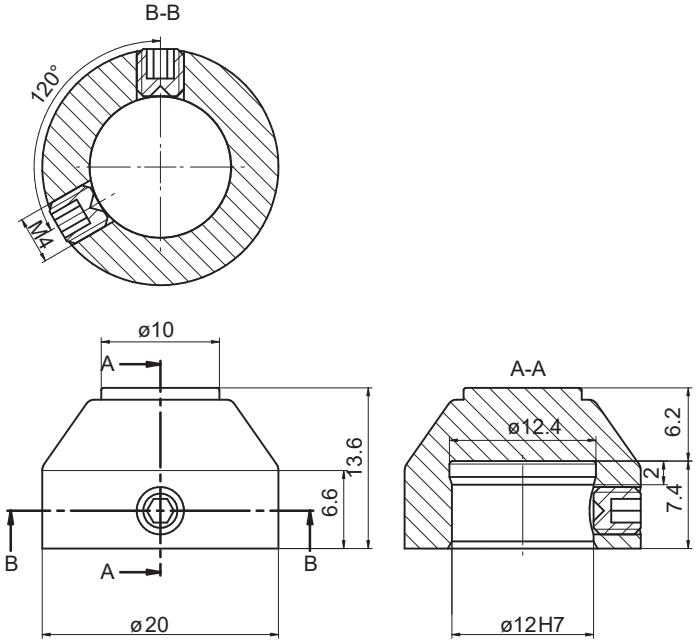
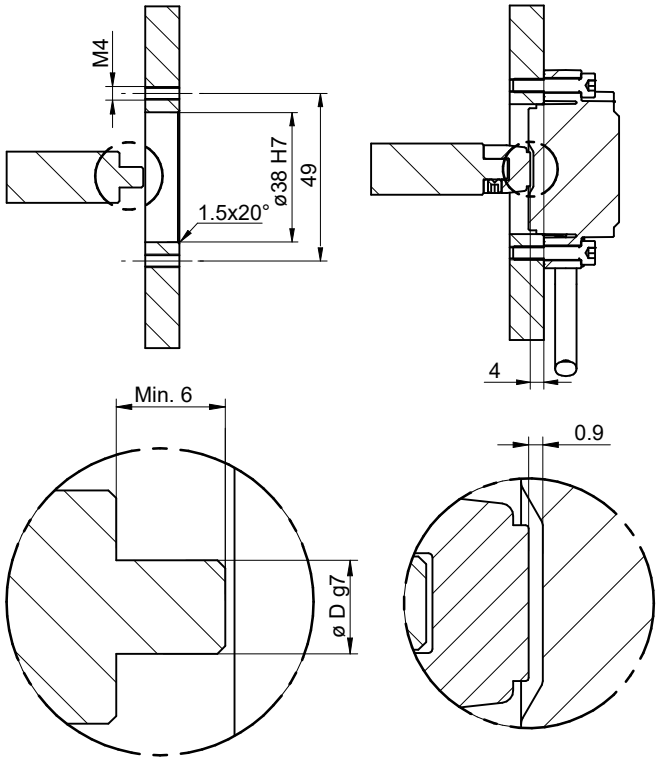
Dimensions



Magnetic rotor screw mounting, ø12 mm

Mounting recommendation



Screw mount