Baumer
Passion for Sensors

Encoders without bearings - incremental

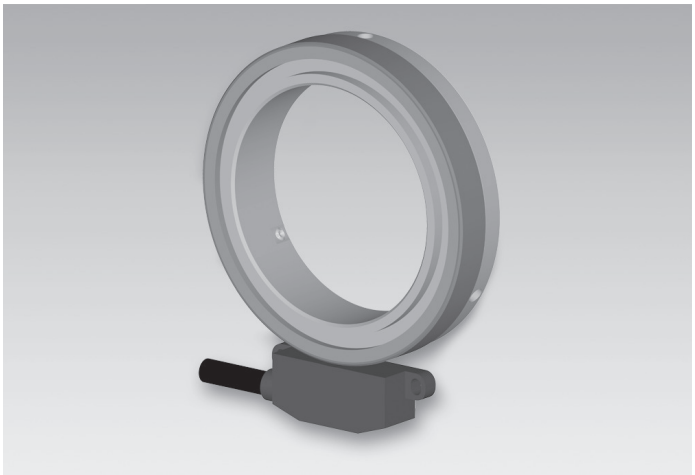
ITD69H02 - Sine signal

Through hollow shaft ø40 to ø68 mm

128 sinewave cycles per revolution

Overview

- Bearingless magnetic encoder
- 128 sinewave cycles per revolution
- Output circuit: Sine 1 Vpp
- Fast, easy and space saving installation
- Maintenance-free
- High accuracy - error max. ±0.2 °
- Rotation speed max. 6000 rpm
- High resistance to dirt and vibrations



Technical data

Technical data - electrical ratings

Voltage supply	5 VDC ±10 %
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption w/o load	≤50 mA
Sinewave cycles per revolution	128
Output signals	A+, A-, B+, B- A+, A-, B+, B-, N+, N-
Output stages	SinCos 1 Vpp
Output frequency	≤180 kHz (-3 dB)
System accuracy	±0.2°
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3

Technical data - mechanical design

Shaft type	ø40...68 mm (through hollow shaft)
Dimensions W x H x L	12 x 16 x 48 mm
Protection DIN EN 60529	IP 67 (relating to sealed electronics)
Operating speed	≤6000 rpm
Working distance	0,2 … 0,5 mm (radial), optimal 0,3 mm
Axial offset	±0,5 mm
Material	Housing: plastic Shaft: stainless steel
Operating temperature	-40...+100 °C (fixed cable)
Resistance	DIN EN 60068-2-6 Vibration 10 g, 55-2000 Hz DIN EN 60068-2-27 Shock 100 g, 11 ms
Weight approx.	390 g
Connection	Cable 1 m
Admitted cable length	15 m

Optional

- Cable with connector
- Redundant sensing

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2020-02-20

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Terminal assignment

With BI-signals, cable [4x2x0,08 mm²]

Core colour	Assignment
green	A +
yellow	A -
grey	B +
pink	B -
red	UB
blue	GND
transparent	Shield/Housing

With NI-signals, cable [4x2x0,08 mm2]

Core colour	Assignment
green	A +
yellow	A -
grey	B +
pink	B -
brown	N +
white	N -
red	UB
blue	GND
transparent	Shield/Housing

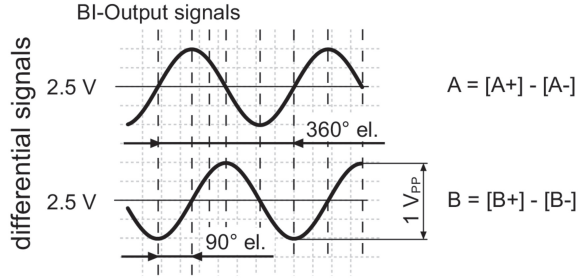
Output signal level

Outputs	Sine
Output amplitude A + B	1 V_{PP} at Z_0 = 120 Ω
Output amplitude N	approx. 2,5 V at Z_0 = 120 Ω

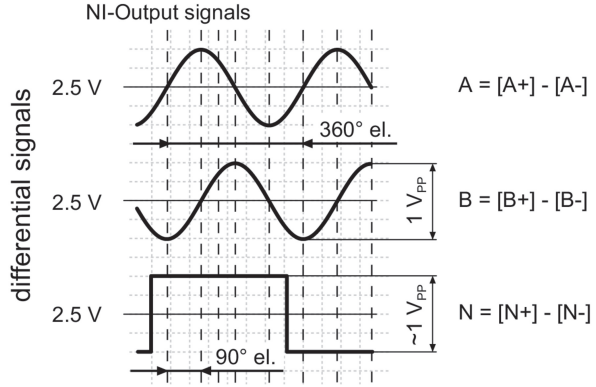
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals



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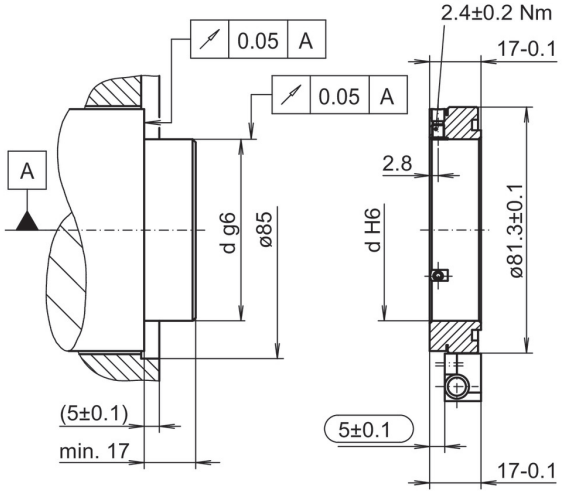
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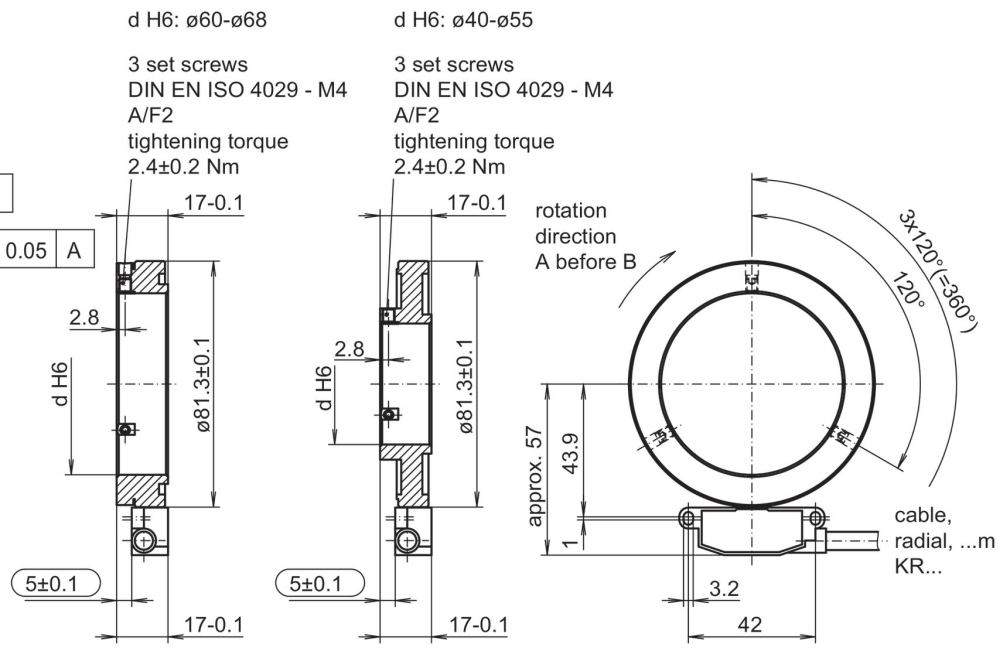
128 sinewave cycles per revolution

Dimensions

mounting side (proposition)



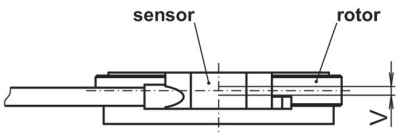
dimension drawing (optimal mounting)



Mounting tolerances, operating tolerances

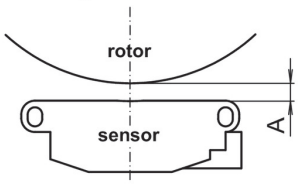
Permitted change of position sensor to rotor during mounting and operation:

Axial offset:



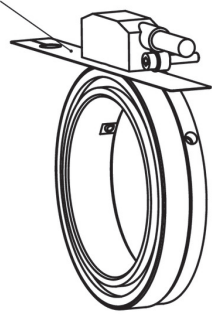
V = ±0.5 mm, optimal 0.1 mm

Working distance:



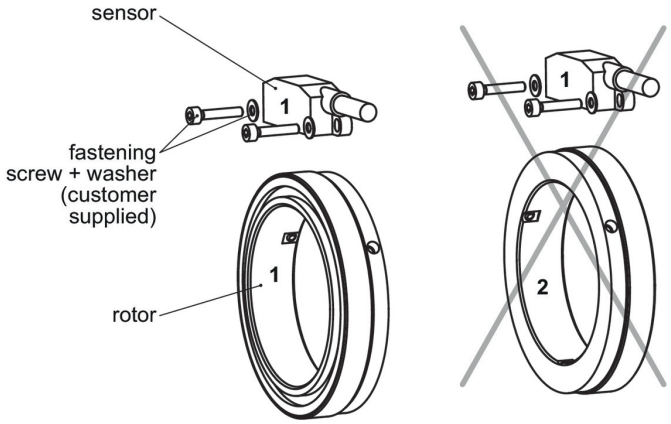
A = 0.2...0.5 mm,
optimal 0.3 mm

Use the distance band as a mounting tool for optimal gap (0.3 mm) between sensor and rotor.



Mounting position

Mounting position (1-1) sensor to rotor should not be altered!



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Ordering reference

	ITD69H02	128	M	####	KR1	E	##	IP67
Product								
	ITD69H02							
Sinewave cycles								
128		128						
Voltage supply / signals								
5 VDC / sine 1 Vpp			M					
Output signals								
A+, A-, B+, B- (sine)				BI				
A+, A-, B+, B-, N+, N- (sine)				NI				
Connection								
Cable 1 m, radial					KR1			
Operating temperature								
-40...+100 °C						E		
Through hollow shaft								
ø40 mm							40	
ø42 mm							42	
ø45 mm							45	
ø50 mm							50	
ø55 mm							55	
ø60 mm							60	
ø65 mm							65	
ø68 mm							68	
Protection								
IP 67								IP67

Other diameters on request.

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