Baumer
Passion for Sensors

Encoders without bearings - incremental

ITD69H00 - Rectangular signal

Through hollow shaft ø40 to ø68 mm

128...4096 pulses per revolution

Overview

- Bearingless magnetic encoder
- Max. 4096 pulses per revolution
- Output circuits: HTL or TTL
- Fast, easy and space saving installation
- Maintenance-free
- High accuracy - error max. ±0.2°
- Rotation speed max. 10000 rpm
- High resistance to dirt and vibrations
- Magnetic rotor included in delivery

Technical data

Technical data - electrical ratings	
Voltage supply	5 VDC ±5 % 8...26 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption w/o load	≤50 mA
Pulses per revolution	128 … 4096
Interpolation	1-fold (single) 2-fold 4-fold 8-fold 16-fold 32-fold
Output signals	A 90° B + inverted A 90° B, N + inverted
Output stages	TTL linedriver (short-circuit proof) HTL push-pull (short-circuit proof)
Output current	≤30 mA
Output frequency	≤300 kHz (TTL) ≤160 kHz (HTL)

Technical data - electrical ratings	
System accuracy	±0.2°
Interference immunity	EN 61000-6-2
Emitted interference	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 EN 60529	IP 67 (relating to sealed electronics)
Operating speed	≤10000 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	EN 60068-2-6 Vibration 10 g, 55-2000 Hz EN 60068-2-27 Shock 100 g, 11 ms
Weight approx.	390 g
Connection	Cable 1 m

Optional

- Cable with connector
- Redundant sensing

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Terminal assignment

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

Core colour	Assignment
green	Track A
yellow	Track A inv.
grey	Track B
pink	Track B inv.
red	UB
blue	GND
transparent	Shield/Housing

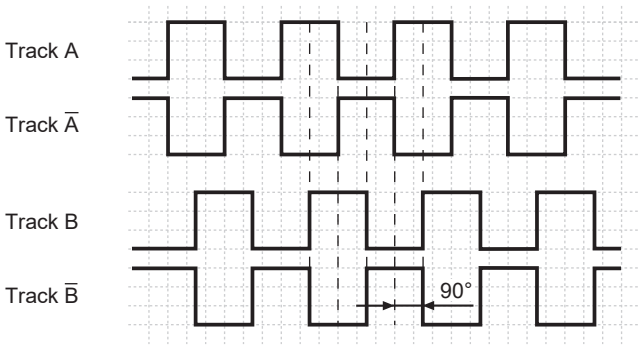
With NI-signals, cable [4x2x0,08 mm2]

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

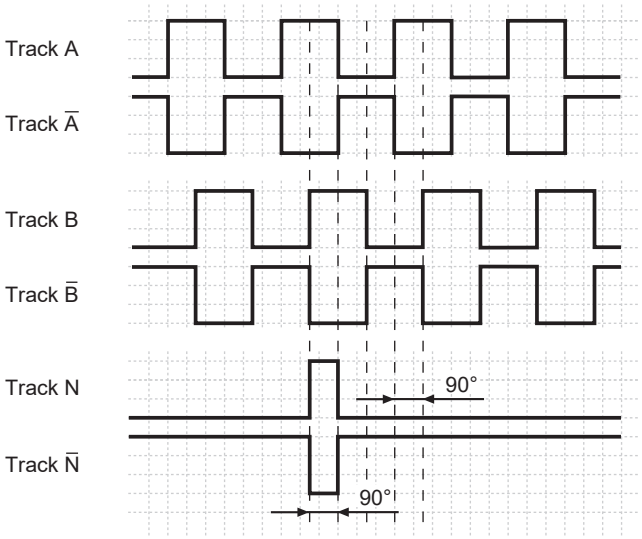
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals



Trigger level

Outputs	**Linedriver**
Output level High	≥2,5 V
Output level Low	≤0,5 V
Load	≤30 mA

Outputs	**Push-pull** short-circuit proof
Output level High	≥UB -3 V
Output level Low	≤1,5 V
Load	≤30 mA

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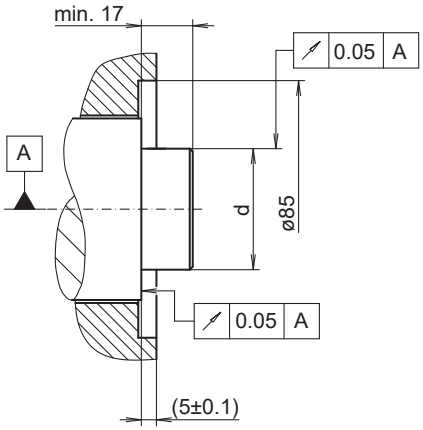
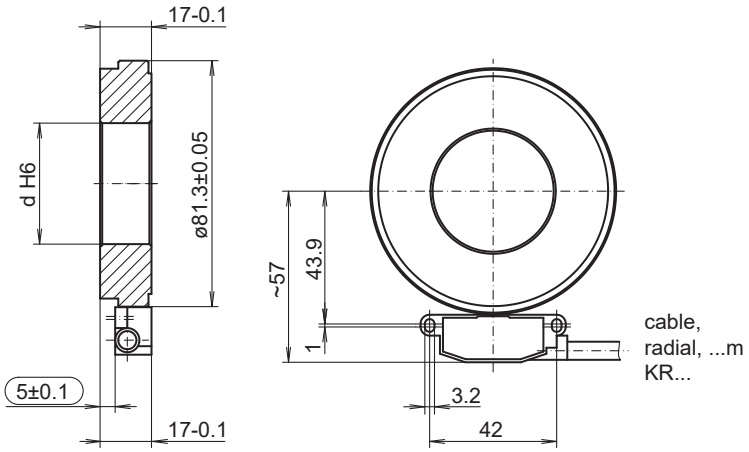
Dimensions

mounting side (proposition)



dimension drawing (optimal mounting)



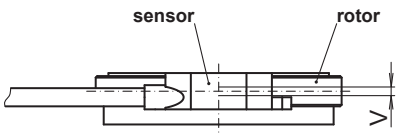
Mounting type	Shaft tolerance	Requirement
Shrink fitting	d p5	Maximum heating of the pole wheel $T_{(max)}$=100 °C
Adhesive mounting	d g6	Please observe the manufacturer's instructions for the adhesive mounting with respect to adhesives and adhesive air gap. Recommendation: Adhesive Loctite 3504

Installation note:
The system, consisting of sensor and rotor, form a matched pair. They may not be exchanged individually. The sensor should be mounted on an electrically conductive surface on potting side.

Mounting tolerances, operating tolerances

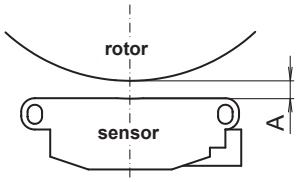
Permitted change of position sensor to rotor during mounting and operation:

Axial offset:



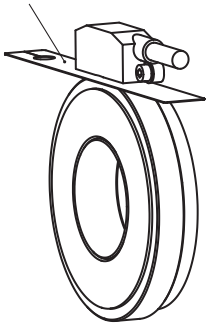
V = ±0.5 mm, optimal 0.1 mm

Working distance:



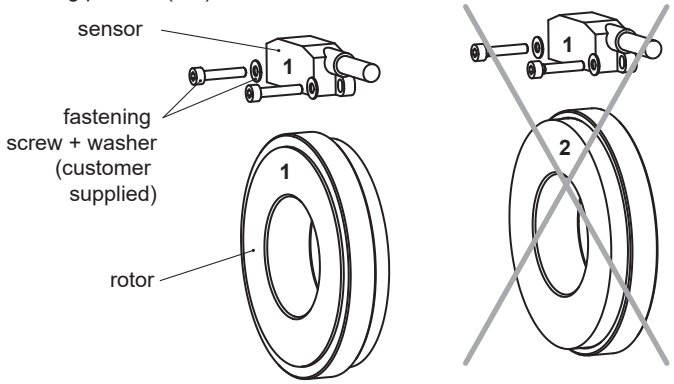
A = 0.2...0.5 mm,
optimal 0.3 mm

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

	ITD69H00	####	#	####	KR1	E	######	IP	67
Product									
	ITD69H00								
Pulse number									
128(1)		128							
256(1)		256							
512		512							
1024		1024							
2048		2048							
4096		4096							
Voltage supply									
UB= 5 VDC ±5% / TTL level, linedriver			T						
UB= 8...26 VDC / HTL level, push-pull			H						
Output signal									
A, A inv, B, B inv				BI					
A, A inv, B, B inv, N, N inv				NI					
Connection									
Cable radial, 1.00 m					KR1				
Operating temperature									
-40...+100 °C (fixed cable)						E			
Magnetic wheel H00									
Ø40 mm, for adhesive or heat-shrink mounting							40		
Ø45 mm, for adhesive or heat-shrink mounting							45		
Ø50 mm, for adhesive or heat-shrink mounting							50		
Ø55 mm, for adhesive or heat-shrink mounting							55		
Ø60 mm, for adhesive or heat-shrink mounting							60		
Ø65 mm, for adhesive or heat-shrink mounting							65		
IP								IP	
Protection class									
IP67 (relating to sealed electronics)									67

(1) Featured pulse numbers available as BI output signals.
Other diameters on request.