

ITD69H00 - Sine signal

Through hollow shaft $\varnothing 40$ to $\varnothing 68$ 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. $\pm 0.2^\circ$
- 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 $\pm 10\%$
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	$\pm 0.2^\circ$
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3

Technical data - mechanical design

Shaft type	$\varnothing 40 \dots 68$ 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	$-40 \dots +100$ °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	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

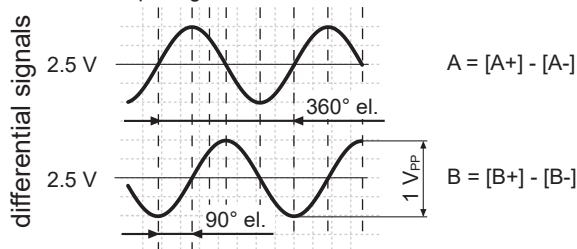
Output signal level

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

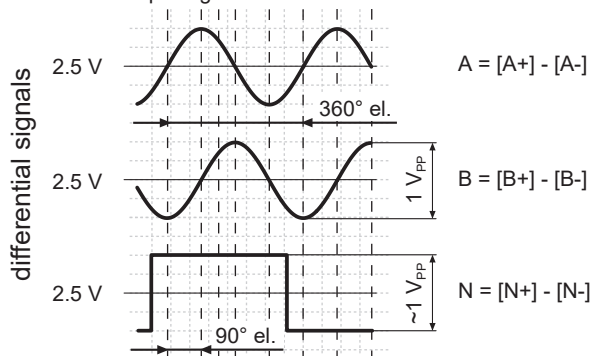
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals

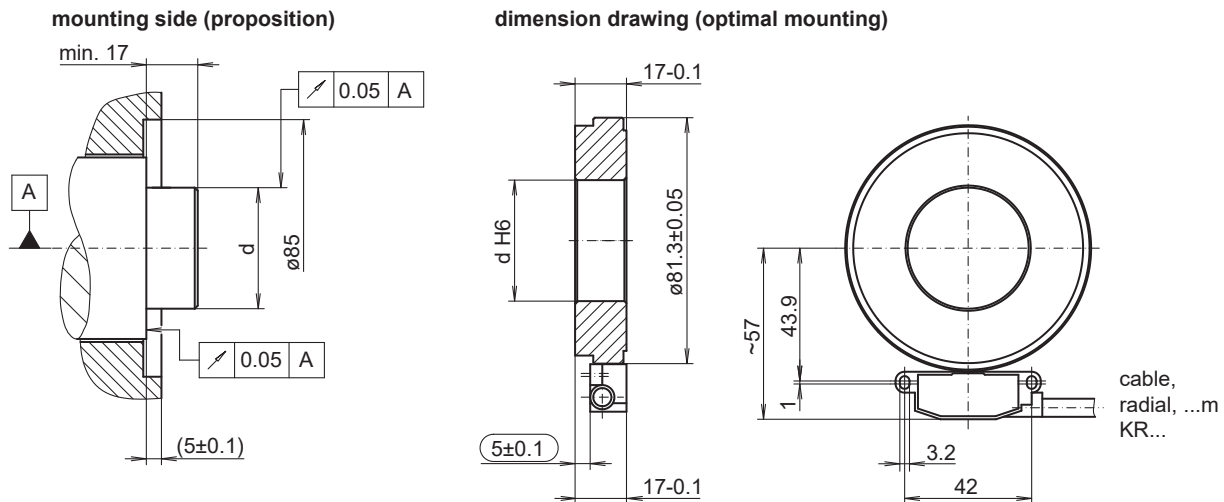


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Dimensions



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

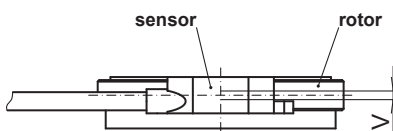
Installation note:

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

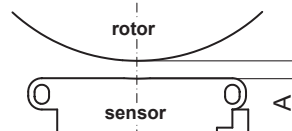
Permitted change of position sensor to rotor during mounting and operation:

Axial offset:



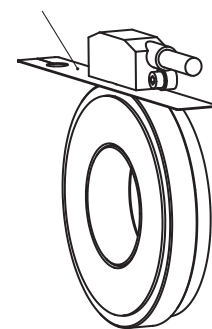
$V = \pm 0.5$ mm, optimal 0.1 mm

Working distance:



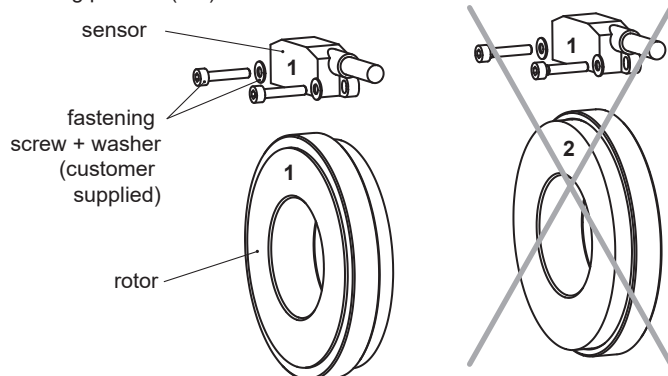
$A = 0.2 \dots 0.5$ mm,
optimal 0.3 mm

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	128	M	####	KR1	E	#####	IP	67
Product	ITD69H00								
Sinewave cycles		128							
Voltage supply									
UB= 5 VDC $\pm 10\%$ / sine 1 Vpp			M						
Output signal sine									
A+, A-, B+, B-				BI					
A+, A-, B+, B-, N+, N-				NI					
Connection									
Cable radial, 1.00 m					KR1				
Operating temperature									
-40...+100 °C (fixed cable)						E			
Magnetic wheel H00									
$\varnothing 40$ mm, for adhesive or heat-shrink mounting									40
$\varnothing 45$ mm, for adhesive or heat-shrink mounting									45
$\varnothing 50$ mm, for adhesive or heat-shrink mounting									50
$\varnothing 55$ mm, for adhesive or heat-shrink mounting									55
$\varnothing 60$ mm, for adhesive or heat-shrink mounting									60
$\varnothing 65$ mm, for adhesive or heat-shrink mounting									65
IP								IP	
Protection class									
IP67 (relating to sealed electronics)									67

Other diameters on request.