

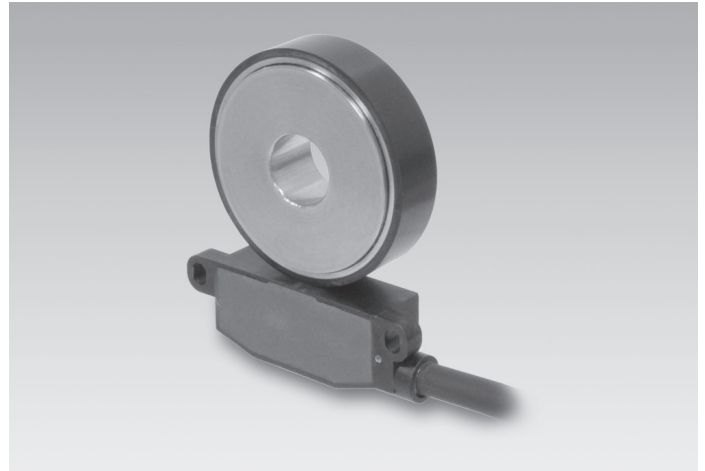
ITD49H00 - Sine signal

Through hollow shaft $\varnothing 8$ to $\varnothing 28$ mm

64 sinewave cycles per revolution

Overview

- Bearingless magnetic encoder
- 64 sinewave cycles per revolution
- Output circuit: Sine 1 Vpp
- Fast, easy and space saving installation
- Maintenance-free
- High accuracy - error max. $\pm 0.3^\circ$
- Rotation speed max. 18000 rpm
- High resistance to dirt and vibrations



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	64
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	$\pm 0.3^\circ$
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3

Technical data - mechanical design

Shaft type	$\varnothing 8 \dots 28$ 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	≤ 18000 rpm
Working distance	0,2 ... 0,5 mm (radial), optimal 0,3 mm
Axial offset	$\pm 0,5$ mm
Material	Housing: plastic Shaft: stainless steel 1.4104
Operating temperature	$-40 \dots +100$ °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.	250 g
Connection	Cable 1 m
Admitted cable length	15 m

Optional

- Cable with connector
- Redundant sensing

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Terminal assignment

With BI-signals, cable [4x2x0,08 mm²]

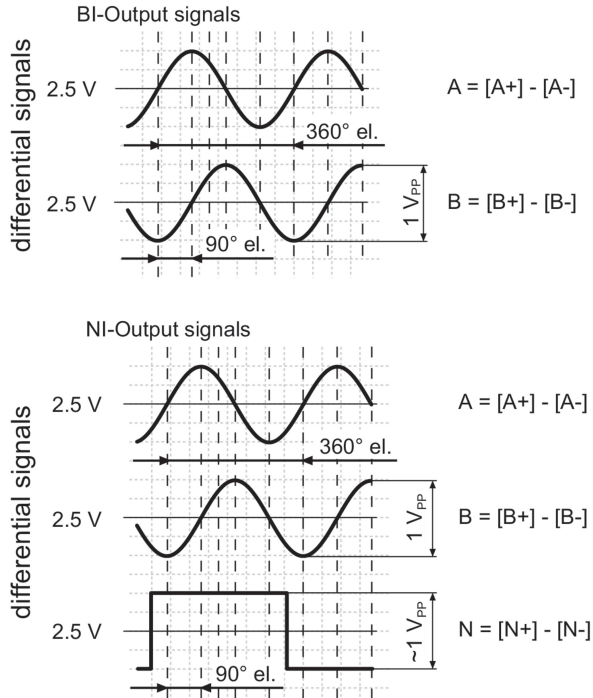
Core colour	Assignment
green	A +
yellow	A -
grey	B +
pink	B -
red	UB
blue	GND
transparent	Shield/Housing

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 signals

Clockwise rotation when looking at the mounting side.



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

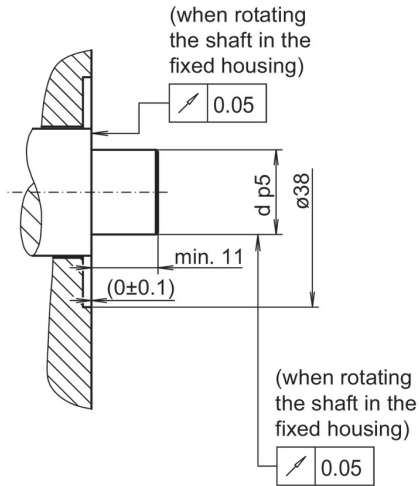
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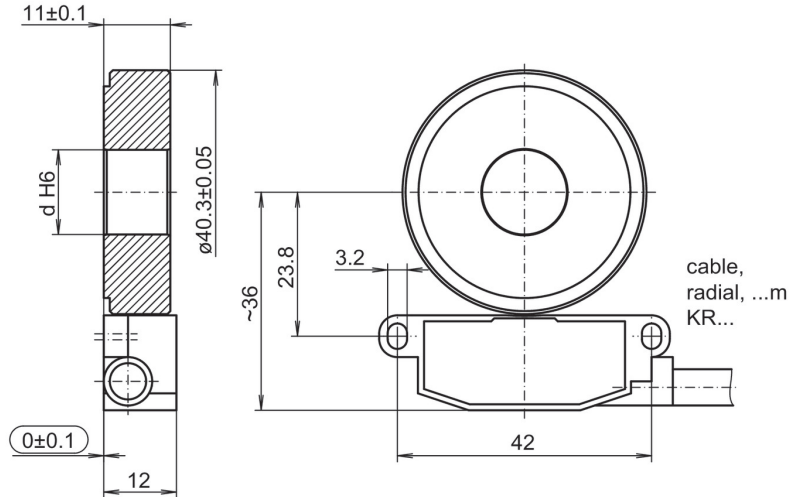
Dimensions

mounting side (proposition)



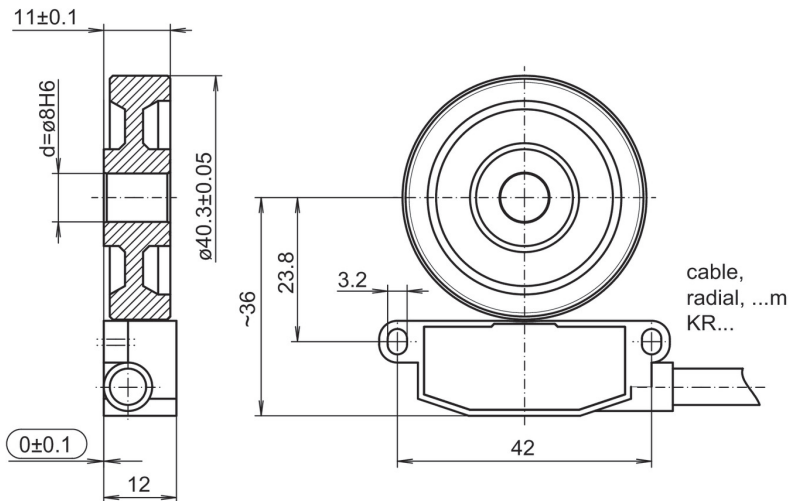
dimension drawing (optimal mounting)

$d = \varnothing 9$ mm, $\varnothing 9.525$ mm, $\varnothing 10$ mm, $\varnothing 12$ mm, $\varnothing 12.7$ mm, $\varnothing 14$ mm,
 $\varnothing 15$ mm, $\varnothing 15.875$ mm, $\varnothing 19$ mm, $\varnothing 25$ mm, $\varnothing 25.4$ mm, $\varnothing 28$ mm.
Please specify the desired bore diameter in your order.



$d = \varnothing 8$ mm

Please specify the desired bore diameter in your order.



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.

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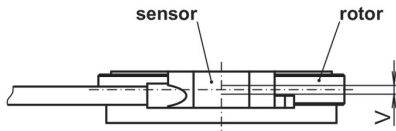
64 sinewave cycles per revolution

Dimensions

Mounting tolerances, operating tolerances

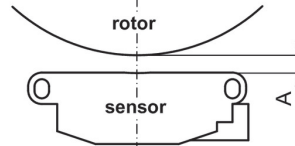
Permitted change of position sensor to rotor during mounting and operation:

Axial offset:



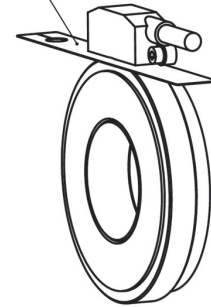
$V = \pm 0.5$ mm, optimal 0.1 mm

Working distance:



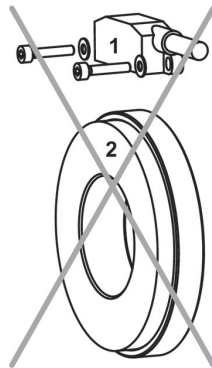
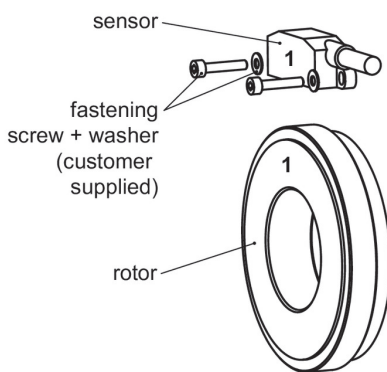
$A = 0.2 \dots 0.5$ mm,
optimal 0.3 mm

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

	ITD49H00	-	64	M	####	KR1	E	#####	67
Product	ITD49H00								
Sinewave cycles	64		64						
Voltage supply	UB= 5 VDC \pm 10% / sine 1 Vpp			M					
Output signal sine	A+, A-, B+, B- (sine)				BI				
	A+, A-, B+, B-, N+, N- (sine)				NI				
Connection	Cable radial, 1.00 m					KR1			
Operating temperature	-40...+100 °C (fixiertes Kabel)							E	
Magnetic wheel H00									
	Ø8 mm, Design for adhesive mounting								08
	Ø9 mm, Design for adhesive mounting								09
	Ø10 mm, Design for adhesive mounting								10
	Ø12 mm, Design for adhesive mounting								12
	Ø14 mm, Design for adhesive mounting								14
	Ø15 mm, Design for adhesive mounting								15
	Ø19 mm, Design for adhesive mounting								19
	Ø25 mm, Design for adhesive mounting								25
	Ø28 mm, Design for adhesive mounting								28
Protection class	IP67 (relating to sealed electronics)								67

Other diameters on request.