

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
- Magnetic rotor included in delivery



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	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	EN 61000-6-2
Emitted interference	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 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	± 0.5 mm
Material	Housing: plastic Shaft: stainless steel 1.4104
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.	250 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

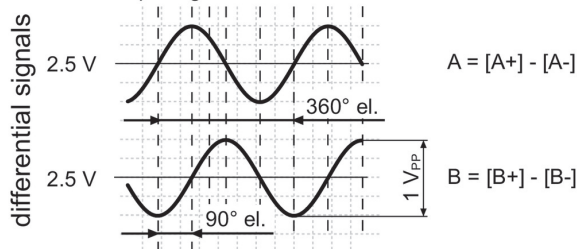
Output signal level

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

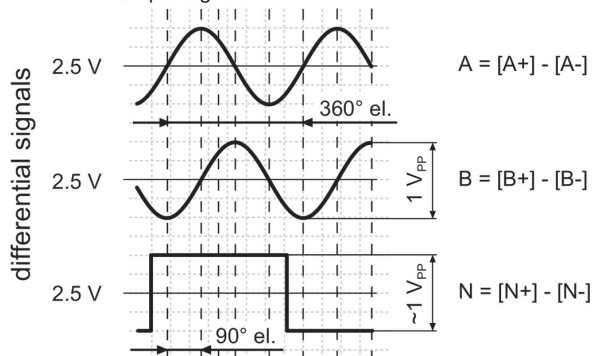
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals



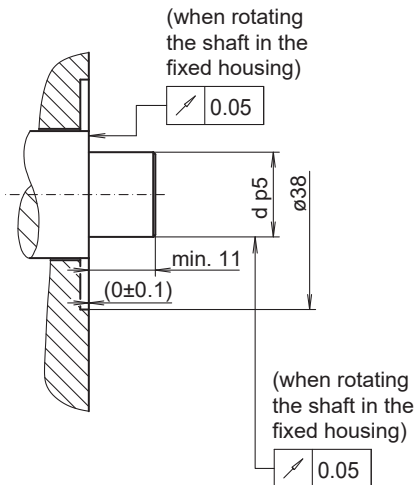
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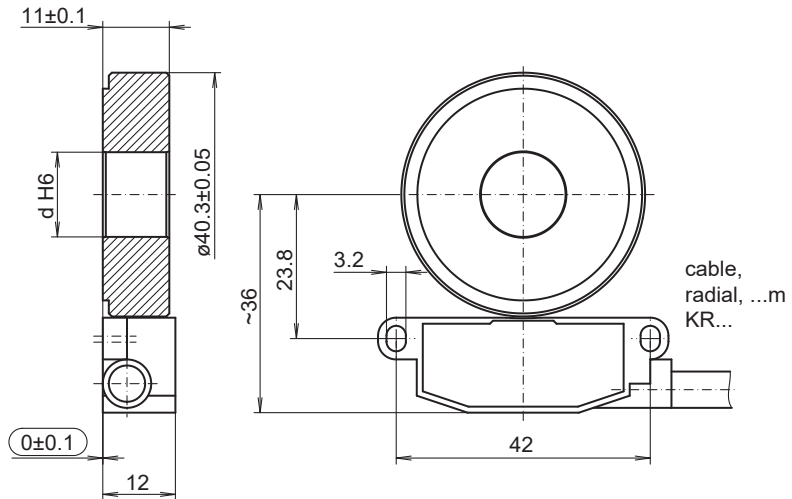
Dimensions

mounting side (proposition)



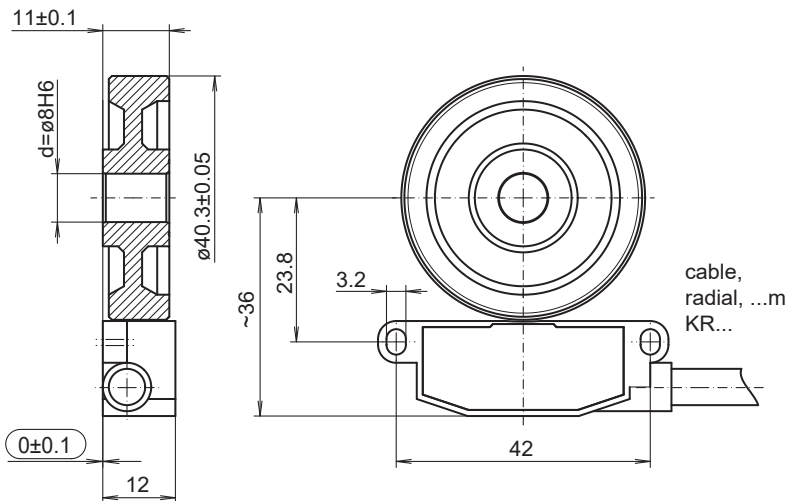
dimension drawing (optimal mounting)

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:

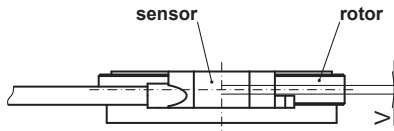
The system, consisting of sensor and rotor, form a matched pair. They may not be exchanged individually. The sensor should be mounted on an electrically conductive surface on potting side.

Dimensions

Mounting tolerances, operating tolerances

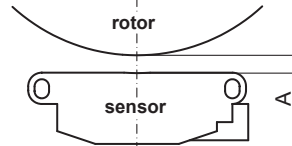
Permitted change of position sensor to rotor during mounting and operation:

Axial offset:



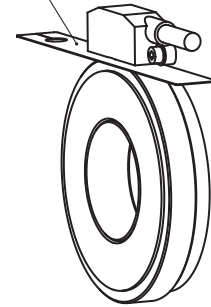
$V = \pm 0.5$ mm, optimal 0.1 mm

Working distance:



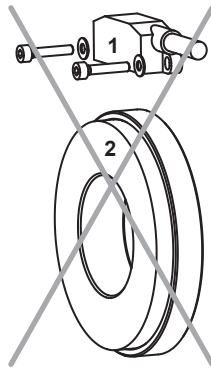
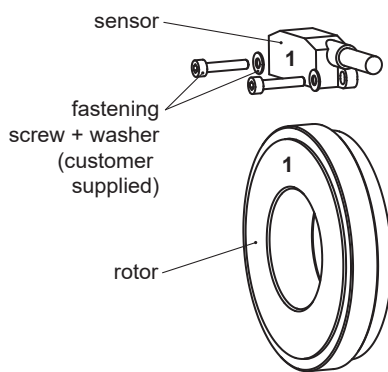
$A = 0.2 \dots 0.5$ mm,
optimal 0.3 mm

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	#####	IP	67
Product	ITD49H00								
Sinewave cycles		64							
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									
$\varnothing 8$ mm, for adhesive or heat-shrink mounting							08		
$\varnothing 9$ mm, for adhesive or heat-shrink mounting							09		
$\varnothing 10$ mm, for adhesive or heat-shrink mounting							10		
$\varnothing 12$ mm, for adhesive or heat-shrink mounting							12		
$\varnothing 14$ mm, for adhesive or heat-shrink mounting							14		
$\varnothing 15$ mm, for adhesive or heat-shrink mounting							15		
$\varnothing 19$ mm, for adhesive or heat-shrink mounting							19		
$\varnothing 25$ mm, for adhesive or heat-shrink mounting							25		
$\varnothing 28$ mm, for adhesive or heat-shrink mounting							28		
IP								IP	
Protection class									
IP67 (relating to sealed electronics)									67

Other diameters on request.