

Encoders without bearings - incremental

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

64...2048 pulses per revolution

ITD49H00 - Rectangular signal



ITD49H00 - attachment variant adhesive mounting

Technical data - electrical ratings

Voltage supply	5 VDC $\pm 5\%$ 8...26 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption w/o load	≤ 50 mA
Pulses per revolution	64...2048
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 current	≤ 30 mA
Output frequency	≤ 300 kHz (TTL) ≤ 160 kHz (HTL)
System accuracy	$\pm 0.3^\circ$
Output stages	TTL linedriver (short-circuit proof) HTL push-pull (short-circuit proof)
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3

Features

- Bearingless magnetic encoder
- Max. 2048 pulses per revolution
- Output circuits: HTL or TTL
- Fast, easy and space saving installation
- Maintenance-free
- High accuracy - error max. $\pm 0.3^\circ$
- Rotation speed max. 30000 rpm
- High resistance to dirt and vibrations

Optional

- Cable with connector
- Redundant sensing

Technical data - mechanical design

Dimensions W x H x L	12 x 16 x 48 mm
Shaft type	$\varnothing 8$...28 mm (through hollow shaft)
Protection DIN EN 60529	IP 67 (relating to sealed elec- tronics)
Operating speed	≤ 30000 rpm
Working distance	0.2...0.5 mm (radial), optimal 0,3 mm
Axial offset	± 0.5 mm
Materials	Housing: plastic Shaft: stainless steel 1.4104
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.	250 g
Connection	Cable 1 m
Admitted cable length	15 m

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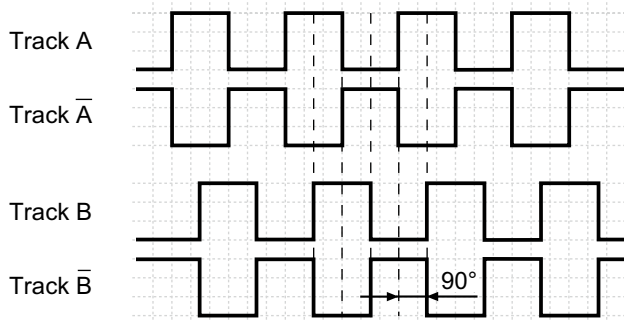
64...2048 pulses per revolution

ITD49H00 - Rectangular signal

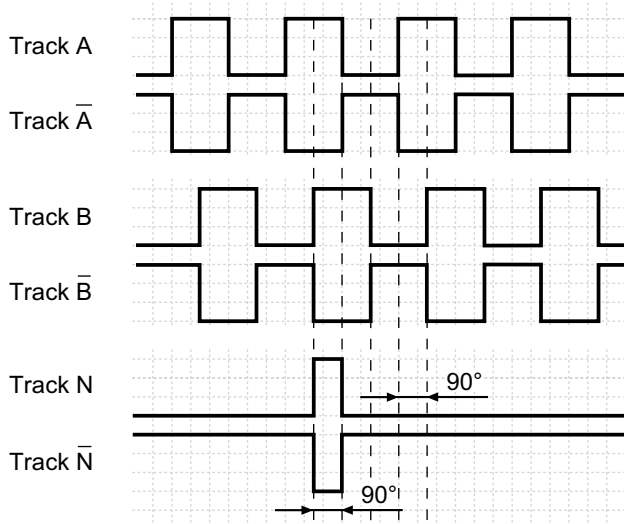
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals



Trigger level

Outputs	Linedriver
Output level High	$\geq 2,5$ V
Output level Low	$\leq 0,5$ V
Load	≤ 30 mA

Outputs	Push-pull short-circuit proof
Output level High	$\geq U_B - 3$ V
Output level Low	$\leq 1,5$ V
Load	≤ 30 mA

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

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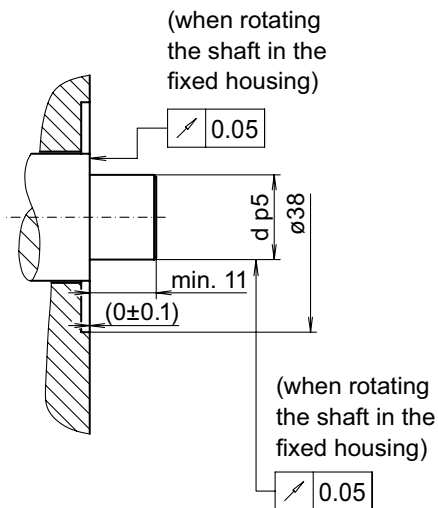
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ITD49H00 - Rectangular signal

Dimensions

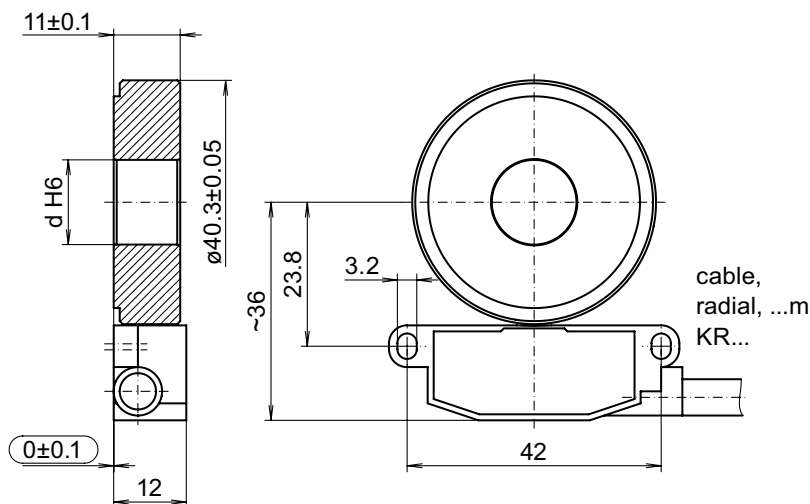
mounting side (proposition)



dimension drawing (optimal mounting)

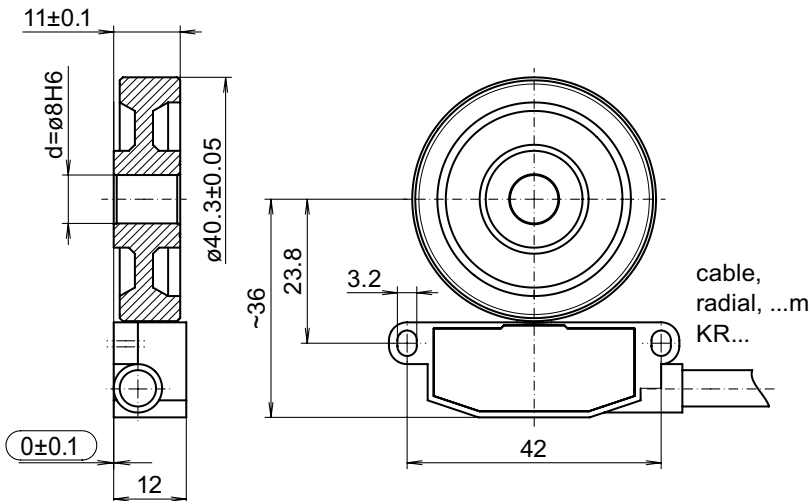
$d = \varnothing 9$ mm, $\varnothing 9.525$ mm, $\varnothing 10$ mm, $\varnothing 12$ mm, $\varnothing 12.7$ mm, $\varnothing 14$ mm, $\varnothing 15$ mm, $\varnothing 15.875$ mm, $\varnothing 19$ mm, $\varnothing 25$ mm, $\varnothing 25.4$ mm, $\varnothing 28$ mm.

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:

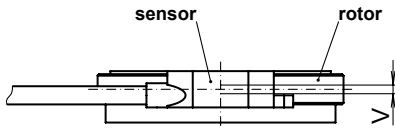
The system, consisting of sensor and rotor, form a matched pair. They may not be exchanged individually. The sensor should be mounted on an electrically conductive surface on potting side.

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Mounting tolerances, operating tolerances

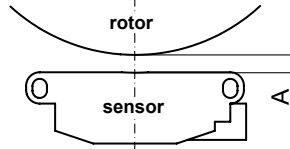
Permitted change of position sensor to rotor during mounting and operation:

Axial offset:



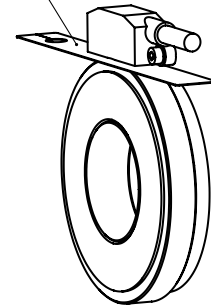
$V = \pm 0.5 \text{ mm}$, optimal 0.1 mm

Working distance:



$A = 0.2 \dots 0.5 \text{ mm}$,
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!

