

# Encoders without bearings - incremental

Through hollow shaft  $\varnothing 9$  to  $\varnothing 28$  mm

64...2048 pulses per revolution

## ITD49H00



ITD49H00 - attachment variant adhesive mounting

### Technical data - electrical ratings

Consumption w/o load	≤50 mA
Interpolation	1-fold (single), 2-fold, 4-fold, 8-fold, 16-fold, 32-fold
Output signals	A 90° B, 0 A 90° B, N + inverted
Short-circuit proof	Yes
Reverse polarity protection	Yes
System accuracy	±0.3°
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3

### ITD49H00

Voltage supply	5 VDC ±5 % 8...26 VDC
Pulses per revolution	64...2048
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)

### ITD49H00 sine

Voltage supply	5 VDC ±10 %
Sinewave cycles per turn	64
Output stages	SinCos 1 Vpp
Output frequency	≤180 kHz (-3 dB)

### Features

- Bearingless magnetic encoder
- Max. 2048 pulses per revolution
- Output circuits HTL, TTL or sine 1 Vpp
- Fast, easy and space saving installation
- Maintenance-free
- High accuracy - error max. ±0.3°
- Rotation speed max. 30000 rpm
- High resistant to dirt, vibrations

### Optional

- Cable with connector
- Redundant sensing

### Technical data - mechanical design

Dimensions W x H x L	12 x 16 x 48 mm
Motor shaft tolerance	0.5 mm axial 0.05 mm radial
Shaft type	∅9...28 mm (through hollow shaft)
Protection DIN EN 60529	IP 67 (relating to sealed elec- tronics)
Operating temperature	-40...+100 °C (fixed cable)
Operating speed	≤30000 rpm
Resistance	DIN EN 60068-2-6 Vibration 10 g, 55-2000 Hz DIN EN 60068-2-27 Shock 100 g, 11 ms
Materials	Housing: plastic Shaft: stainless steel 1.4104
Connection	Cable 1 m
Weight approx.	250 g
Admitted cable length	15 m

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## Part number

### Rectangular signal encoder

ITD49H00    KR1 E  IP67

Protection  
IP67 IP 67

Through hollow shaft  
9  $\varnothing 9$  mm  
10  $\varnothing 10$  mm  
12  $\varnothing 12$  mm  
14  $\varnothing 14$  mm  
15  $\varnothing 15$  mm  
19  $\varnothing 19$  mm  
25  $\varnothing 25$  mm  
25.4  $\varnothing 25.4$  mm  
28  $\varnothing 28$  mm  
... other diameters on request

Operating temperature  
E -40...+100 °C

Connection  
KR1 Cable 1 m, radial

Output signals  
BI A, A inv, B, B inv  
NI A, A inv, B, B inv, 0, 0 inv

Voltage supply / signals  
T 5 VDC / TTL level, linedriver  
H 8...26 VDC / HTL level, push-pull

Pulse number - see table

## Pulse number

64*	256	1024
128*	512	2048

\* Featured pulse numbers available as BI output signals.



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## Terminal assignment

### Square wave signal-encoder

#### With BI-signals, cable [4x2x0,08 mm<sup>2</sup>]

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 mm<sup>2</sup>]

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

### Sine signal-encoder

#### With BI-signals, cable [4x2x0,08 mm<sup>2</sup>]

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

#### With NI-signals, cable [4x2x0,08 mm<sup>2</sup>]

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

## Trigger level

### Square wave signal-encoder

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

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

## Output signal level

### Sine signal-encoder

Outputs	Sine
Output amplitude A + B	$1 V_{PP}$ at $Z_0 = 120 \Omega$
Output amplitude N	approx. $2,5$ V at $Z_0 = 120 \Omega$

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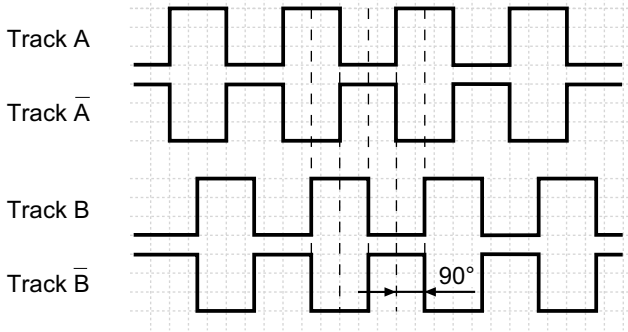
64...2048 pulses per revolution

## ITD49H00

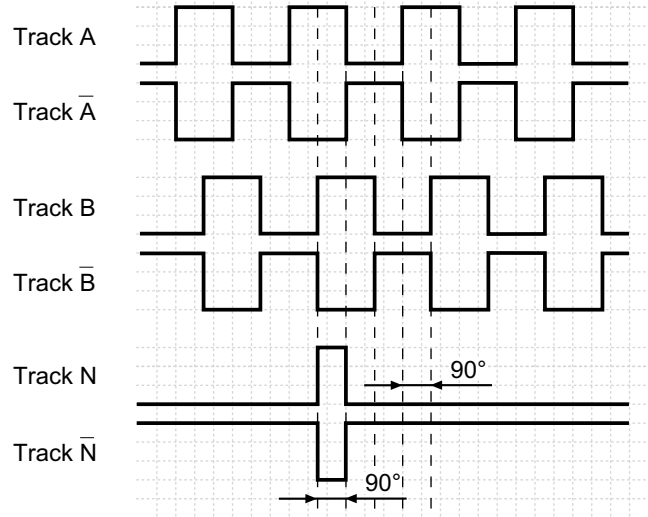
### Output signals

Clockwise rotation when looking at the mounting side.

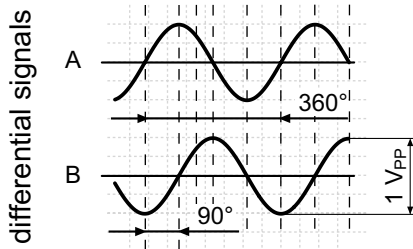
BI-Output signals (Square wave signal-encoder)



NI-Output signals (Square wave signal-encoder)



BI-Output signals (Sine signal-encoder)



NI-Output signals (Sine signal-encoder)

