

Encoders without bearings - incremental

Through hollow shaft $\varnothing 40$ to $\varnothing 65$ mm

128...4096 pulses per revolution

ITD69H00



ITD69H00 - Design for heat-shrink or 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	±0.2°
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3

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Voltage supply	5 VDC ±5 % 8...26 VDC
Pulses per revolution	128...4096
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)

ITD69H00 sine

Voltage supply	5 VDC ±10 %
Sinewave cycles per turn	128
Output stages	SinCos 1 Vpp
Output frequency	≤180 kHz (-3 dB)

Features

- Bearingless magnetic encoder
- Max. 4096 pulses per revolution
- Output circuits: HTL, TTL or sine 1 Vpp
- Fast, easy and space saving installation
- Maintenance-free
- High accuracy - error max. ±0.2 °
- Rotation speed max. 15000 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	∅40...65 mm (through hollow shaft)
Motor shaft tolerance	0.5 mm axial 0.05 mm radial
Protection DIN EN 60529	IP 67 (relating to sealed electronics)
Operating temperature	-40...+100 °C (fixed cable)
Operating speed	≤15000 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
Connection	Cable 1 m
Weight approx.	390 g
Admitted cable length	15 m

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Part number

Rectangular signal encoder

ITD69H00 KR1 E IP67

Protection
IP67 IP 67

Through hollow shaft
40 $\varnothing 40$ mm
45 $\varnothing 45$ mm
50 $\varnothing 50$ mm
55 $\varnothing 55$ mm
60 $\varnothing 60$ mm
65 $\varnothing 65$ 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

128*	512	2048
256*	1024	4096

* Featured pulse numbers available as BI output signals.

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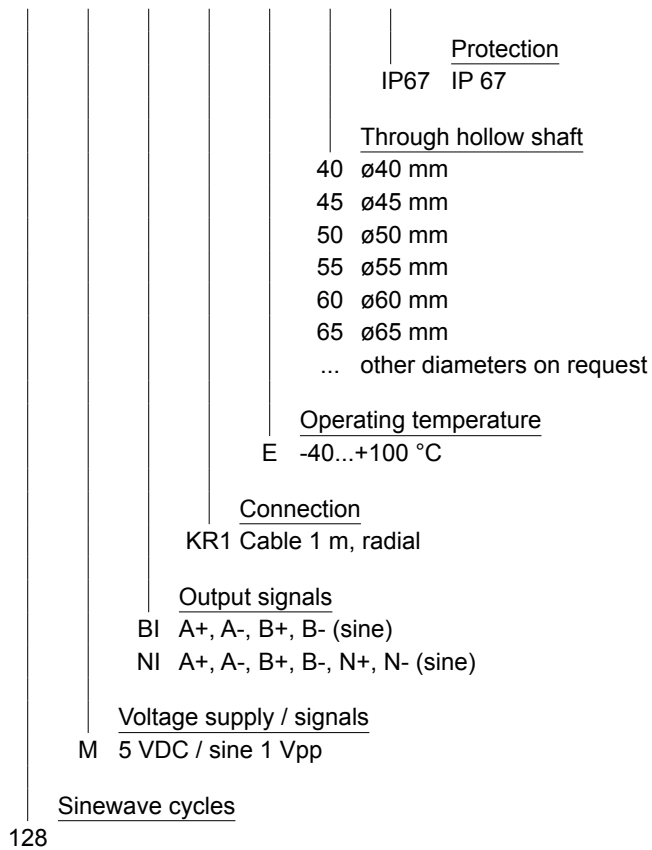
128...4096 pulses per revolution

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Part number

Sine signal encoder

ITD69H00 128 M KR1 E IP67



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Terminal assignment

Square wave signal-encoder

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

Sine signal-encoder

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

Trigger level

Square wave signal-encoder

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	$\geq UB - 3$ V
Output level Low	$\leq 1,5$ V
Load	≤ 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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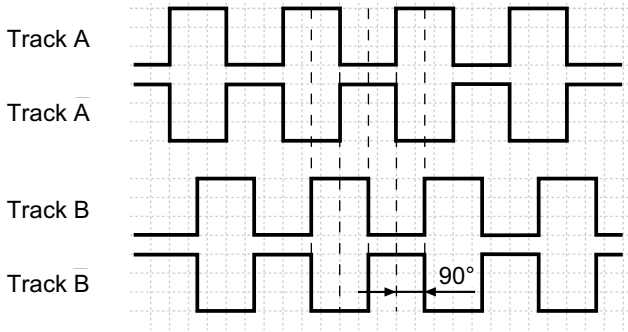
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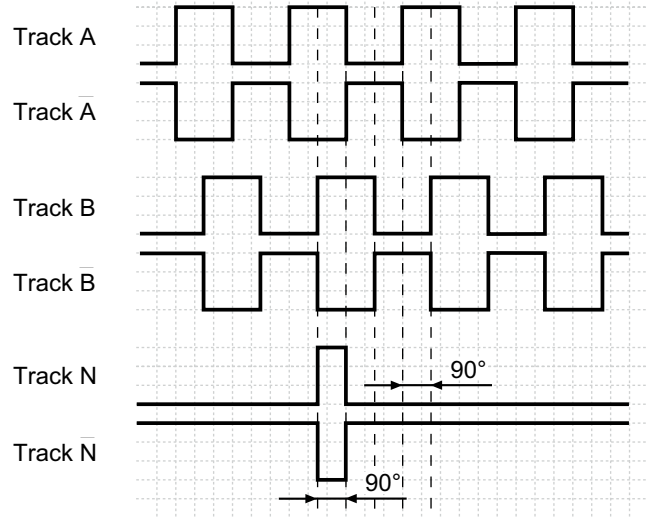
Output signals

Clockwise rotation when looking at the mounting side.

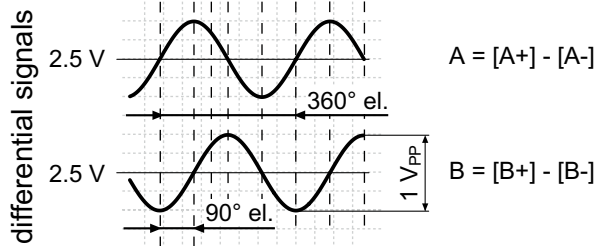
BI-Output signals (Square wave signal-encoder)



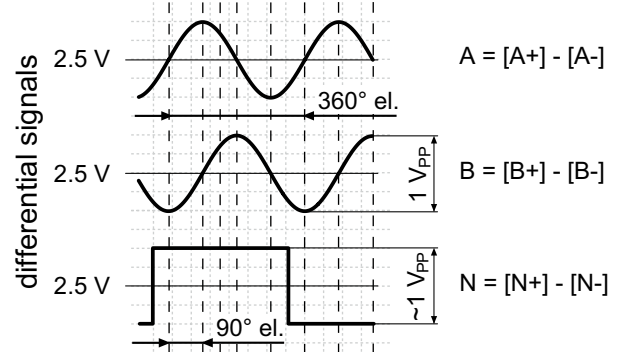
NI-Output signals (Square wave signal-encoder)



BI-Output signals (Sine signal-encoder)



NI-Output signals (Sine signal-encoder)



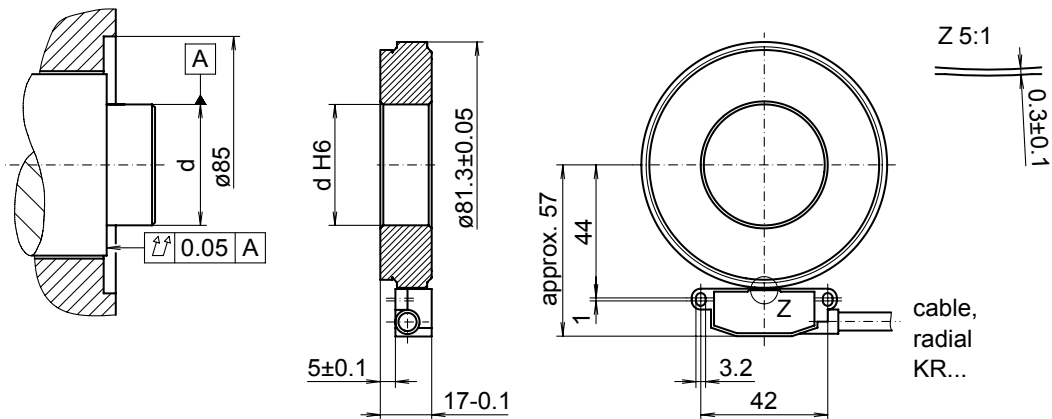
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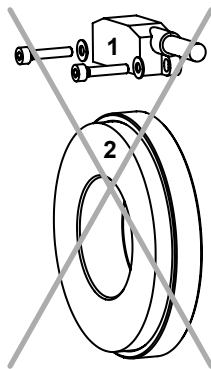
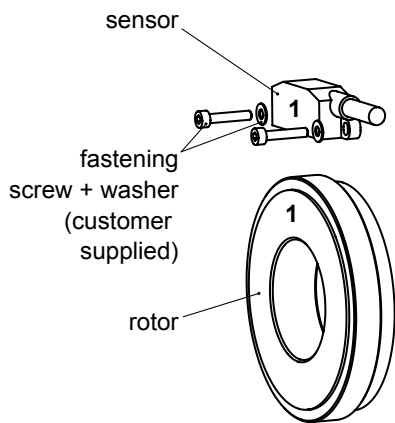
Dimensions



Mounting type	Mounting side	Proposition
Shrink fitting	d p5 (customer shaft)	Maximum heating of the pole wheel $T_{(max)}=100$ °C
Adhesive mounting	d g6 (customer shaft)	Please observe the manufacturer's instructions for the adhesive mounting with respect to adhesives and adhesive air gap. Recommendation: Adhesive Loctite 3504

Attention:

Mounting position (1-1) sensor to rotor should not be altered!



Use the distance band as a mounting tool for optimal gap between sensor and rotor.

