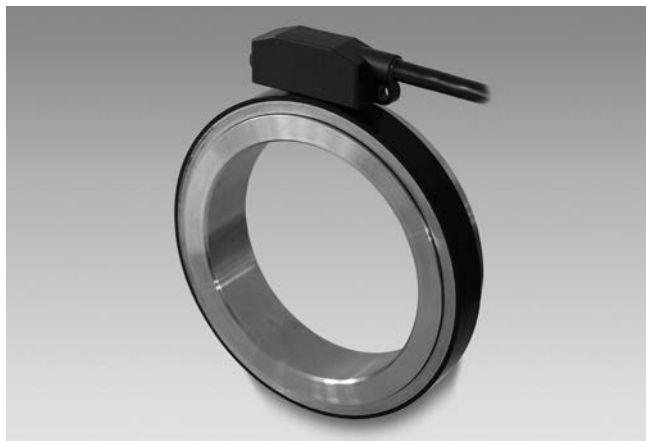


Encoders without bearings - incremental

Through hollow shaft $\varnothing 70$ to $\varnothing 140$ mm

256...8192 pulses per revolution

ITD89H00



ITD89H00 - for heat-shrink or adhesive mounting

Technical data - electrical ratings

Reverse polarity protection	Yes
Short-circuit proof	Yes
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, N A 90° B, N + inverted
System accuracy	$\pm 0.1^\circ$
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3

ITD89H00

Voltage supply	5 VDC $\pm 5\%$ 8...26 VDC
Pulses per revolution	256...8192
Output current	≤ 30 mA
Output frequency	≤ 300 kHz (TTL) ≤ 160 kHz (HTL)
Output stages	TTL linedriver (short-circuit proof) HTL push-pull (short-circuit proof)

ITD89H00 sine

Voltage supply	5 VDC $\pm 10\%$
Sinewave cycles per turn	256
Output frequency	≤ 180 kHz (-3 dB)
Output stages	SinCos 1 Vpp

Features

- Bearingless magnetic encoder
- Max. 8192 pulses per revolution
- Output circuits: HTL, TTL or sine 1 Vpp
- Fast, easy and space saving installation
- Maintenance-free
- High accuracy - error max. $\pm 0.1^\circ$
- Rotation speed max. 7500 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	$\varnothing 70$...140 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 speed	≤ 7500 rpm
Materials	Housing: plastic Shaft: stainless steel
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.	2200 g (at $\varnothing 70$ mm), 619 g (at $\varnothing 140$ mm)
Connection	Cable 1 m
Admitted cable length	15 m

Encoders without bearings - incremental

Through hollow shaft ø70 to ø140 mm

256...8192 pulses per revolution

ITD89H00

Part number

Rectangular signal encoder

ITD89H00

			KR1	E		IP67
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Protection
IP67 IP 67

Through hollow shaft

- 70 ø70 mm
- 75 ø75 mm
- 80 ø80 mm
- 85 ø85 mm
- 120 ø120 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

256*	1024	4096
512*	2048	8192

* Featured pulse numbers available as BI output signals.

Encoders without bearings - incremental

Through hollow shaft ø70 to ø140 mm

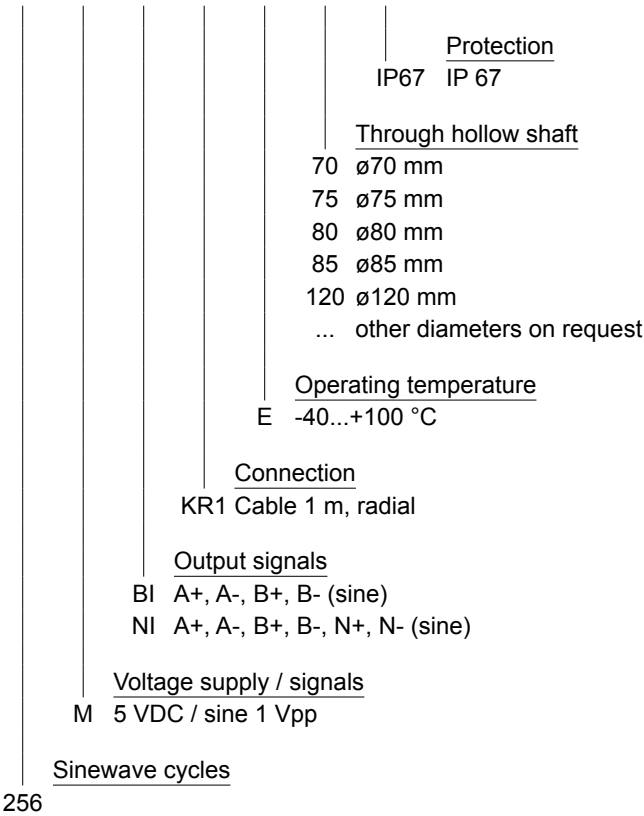
256...8192 pulses per revolution

ITD89H00

Part number

Sine signal encoder

ITD89H00	256	M		KR1	E		IP67
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Encoders without bearings - incremental

Through hollow shaft $\varnothing 70$ to $\varnothing 140$ mm

256...8192 pulses per revolution

ITD89H00

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 Ω
Output amplitude N	approx. 2,5 V at Z ₀ = 120 Ω

Encoders without bearings - incremental

Through hollow shaft $\varnothing 70$ to $\varnothing 140$ mm

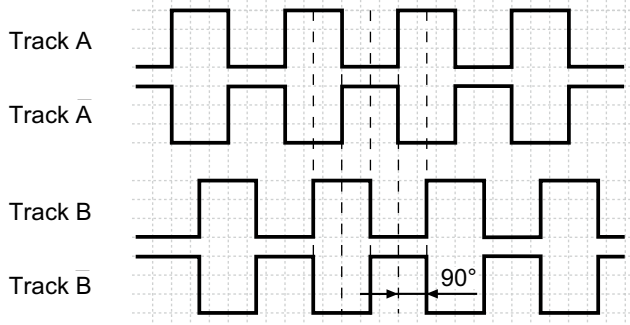
256...8192 pulses per revolution

ITD89H00

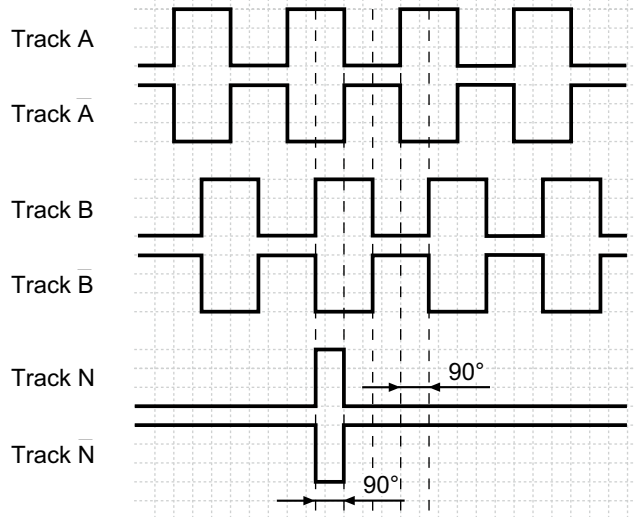
Output signals

Clockwise rotation when looking at the mounting side.

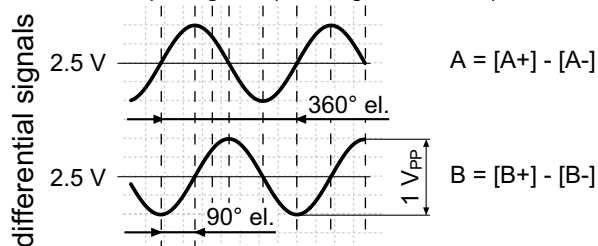
BI-Output signals (Square wave signal-encoder)



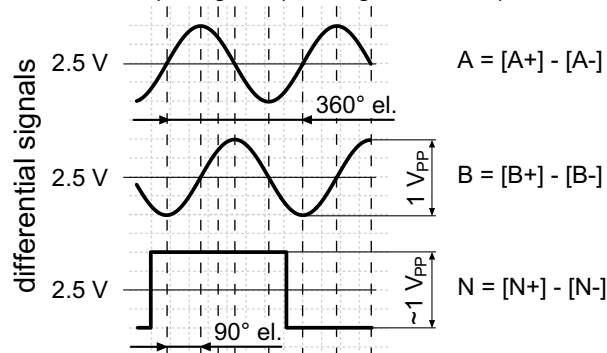
NI-Output signals (Square wave signal-encoder)



BI-Output signals (Sine signal-encoder)



NI-Output signals (Sine signal-encoder)



Encoders without bearings - incremental

Through hollow shaft $\varnothing 70$ to $\varnothing 140$ mm

256...8192 pulses per revolution

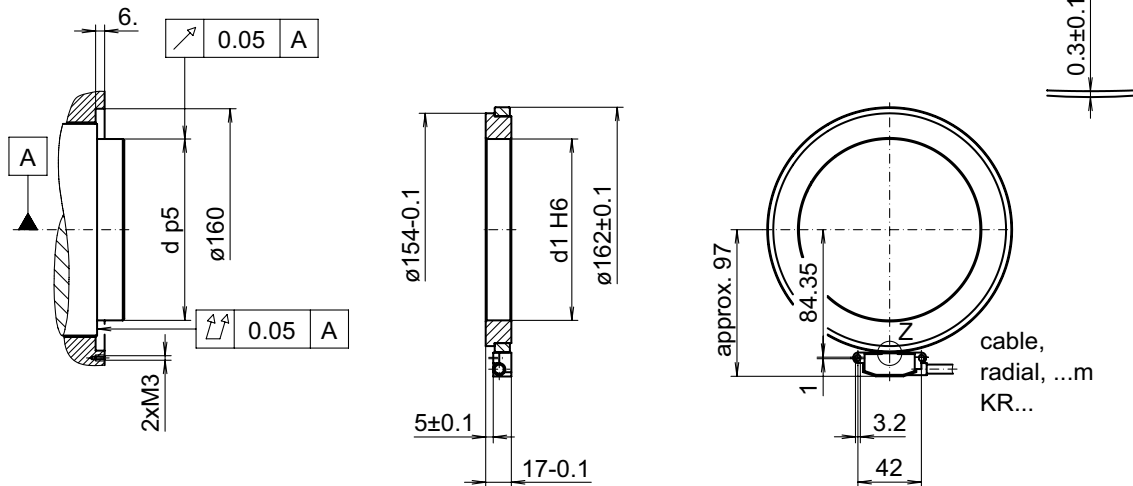
ITD89H00

Dimensions

Mounting side:

Proposal for shrink fitting*.

Maximum heating of the
pole wheel $T_{(max)} = 100$ °C



* Please observe the manufacturer's instructions for the adhesive mounting with respect to adhesives and adhesive air gap.

Recommendation: Locite 3504, air gap $15 \mu\text{m} \pm 5 \mu\text{m}$

040-2