Baumer
Passion for Sensors

Encoders without bearings - incremental

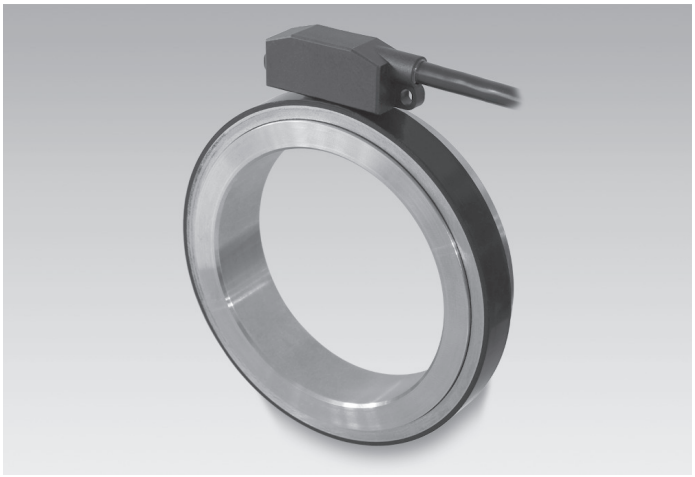
ITD89H00 - Rectangular signal

Through hollow shaft ø70 to ø140 mm

256...8192 pulses per revolution

Overview

- Bearingless magnetic encoder
- Max. 8192 pulses per revolution
- Output circuits: HTL or TTL
- Fast, easy and space saving installation
- Maintenance-free
- High accuracy - error max. ±0.1°
- Rotation speed max. 5000 rpm
- High resistance to dirt and vibrations



Technical data

Technical data - electrical ratings	
Voltage supply	5 VDC ±5 % 8...26 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption w/o load	≤50 mA
Pulses per revolution	256 … 8192
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 stages	TTL linedriver (short-circuit proof) HTL push-pull (short-circuit proof)
Output current	≤30 mA
Output frequency	≤300 kHz (TTL) ≤160 kHz (HTL)
System accuracy	±0.1°

Technical data - electrical ratings	
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Technical data - mechanical design	
Shaft type	ø70...140 mm (through hollow shaft)
Dimensions W x H x L	12 x 16 x 48 mm
Motor shaft tolerance	±0,5 mm axial ±0,05 mm radial
Protection DIN EN 60529	IP 67 (relating to sealed electronics)
Operating speed	≤5000 rpm
Material	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 ø70 mm) 619 g (at ø140 mm)
Connection	Cable 1 m
Admitted cable length	15 m

Optional

- Cable with connector
- Redundant sensing

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2020-02-20

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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

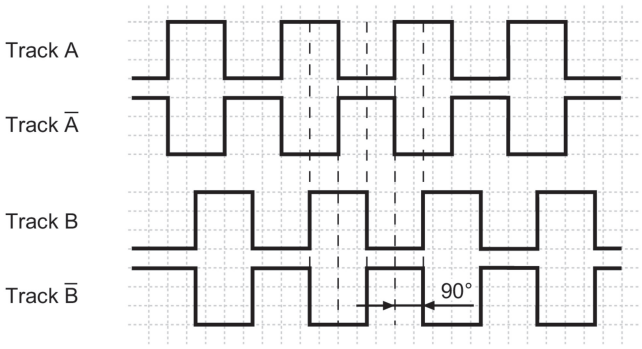
With NI-signals, cable [4x2x0,08 mm2]

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

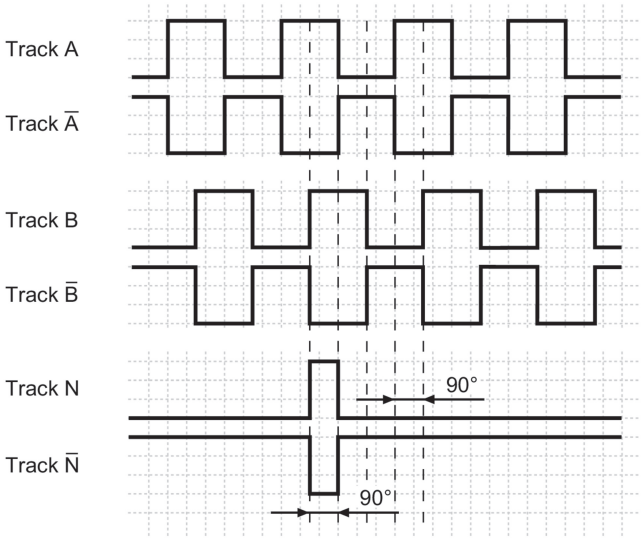
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals



Trigger level

Outputs	**Linedriver**
Output level High	≥2,5 V
Output level Low	≤0,5 V
Load	≤30 mA

Outputs	**Push-pull** short-circuit proof
Output level High	≥UB -3 V
Output level Low	≤1,5 V
Load	≤30 mA

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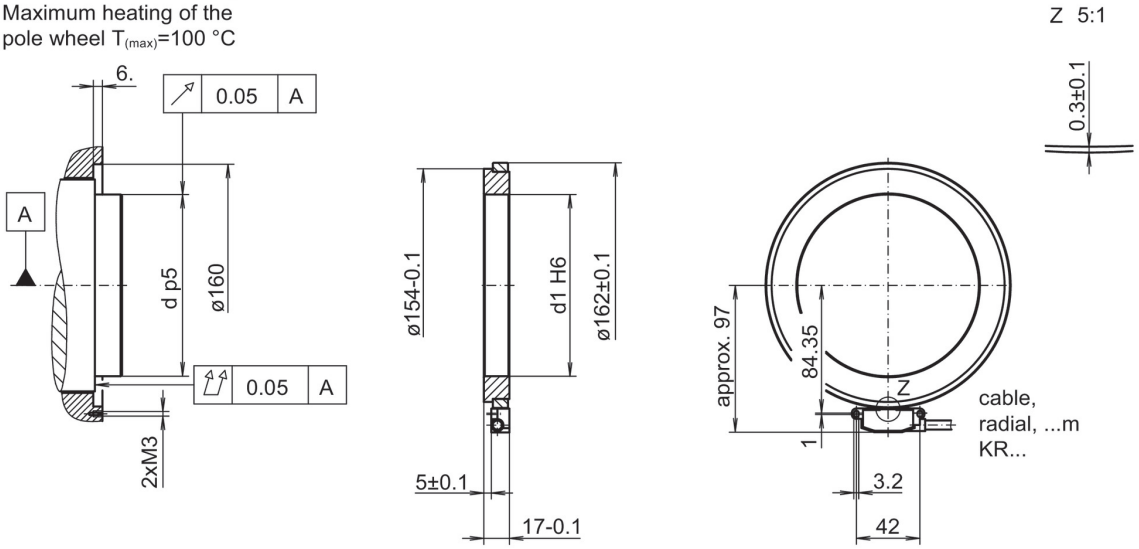
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Dimensions

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: Loctite 3504, air gap 15 µm ±5 µm

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Ordering reference

	ITD89H00	#####	#	####	KR1	E	##	IP67
Product								
	ITD89H00							
Pulse number								
256(1)		256						
512(1)		512						
1024		1024						
2048		2048						
4096		4096						
8192		8192						
Voltage supply / signals								
5 VDC / TTL level, linedriver			T					
8...26 VDC / HTL level, push-pull			H					
Output signals								
A, A inv, B, B inv				BI				
A, A inv, B, B inv, N, N inv				NI				
Connection								
Cable 1 m, radial					KR1			
Operating temperature								
-40...+100 °C						E		
Through hollow shaft								
ø70 mm							70	
ø75 mm							75	
ø80 mm							80	
ø85 mm							85	
ø120 mm							120	
Protection								
IP 67								IP67

(1) Featured pulse numbers available as BI output signals.

Other diameters on request.

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