

ITD89H00 - Rectangular signal

Through hollow shaft $\varnothing 70$ to $\varnothing 140$ 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. $\pm 0.1^\circ$
- Rotation speed max. 5000 rpm
- High resistance to dirt and vibrations
- Magnetic rotor included in delivery



Picture similar

Technical data

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 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 $\pm 0.1^\circ$

Technical data - electrical ratings

Interference immunity EN 61000-6-2

Emitted interference EN 61000-6-3

Technical data - mechanical design

Shaft type $\varnothing 70 \dots 140$ mm (through hollow shaft)

Dimensions (sensor head) 12 x 16 x 49 mm

Motor shaft tolerance 0.5 mm axial
0.05 mm radial

Protection EN 60529 IP 67 (relating to sealed electronics)

Operating speed ≤ 5000 rpm

Material Housing: plastic
Shaft: stainless steel

Operating temperature $-40 \dots +100$ °C (fixed cable)

Resistance EN 60068-2-6
Vibration 10 g, 55-2000 Hz
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

Optional

- Cable with connector
- Redundant sensing

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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

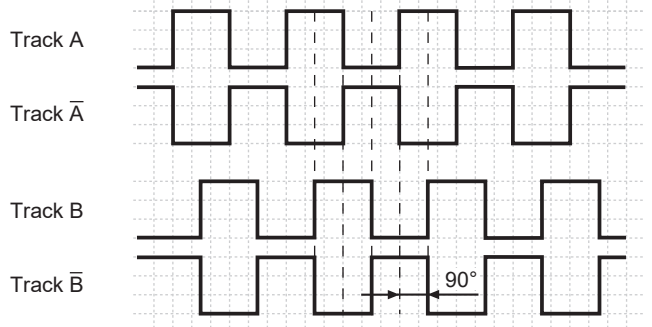
With NI-signals, cable [4x2x0,08 mm²]

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

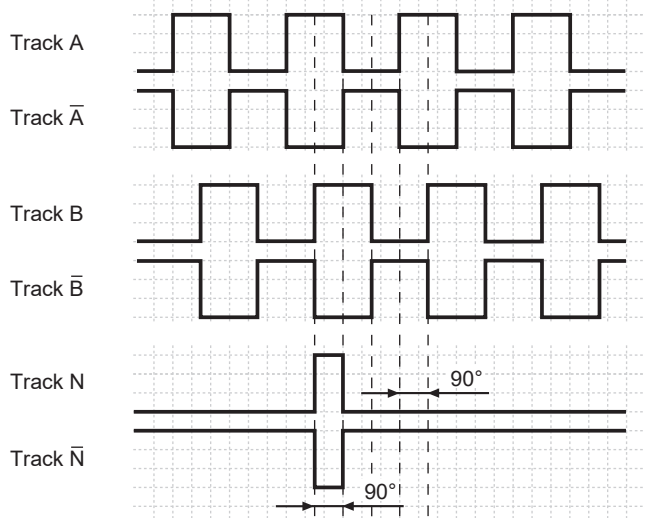
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals



Trigger level

Outputs	Linedriver
Output level High	$\geq 2,5$ 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

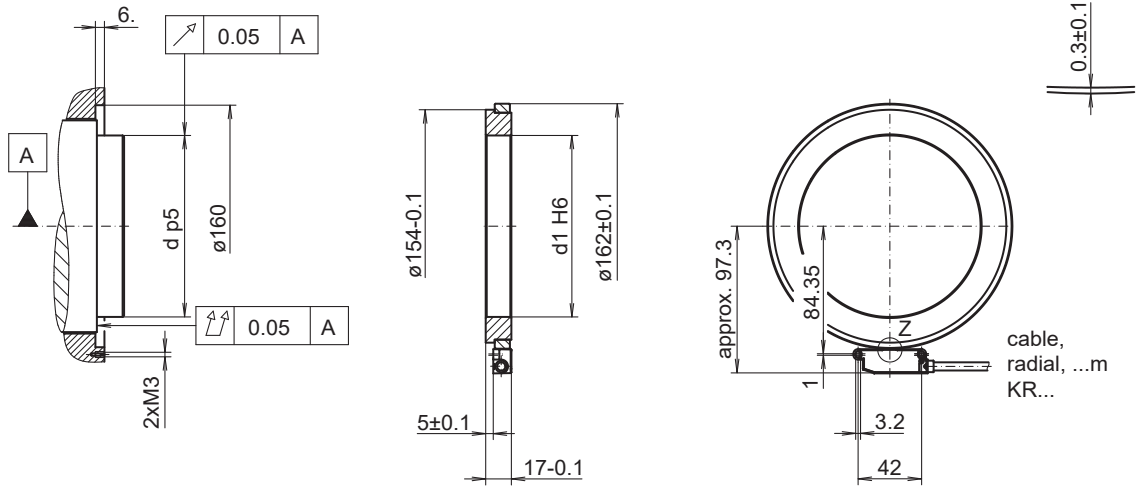
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Dimensions

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 $15 \mu\text{m} \pm 5 \mu\text{m}$

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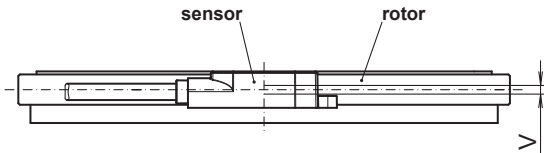
256...8192 pulses per revolution

Dimensions

Mounting tolerances, operating tolerances

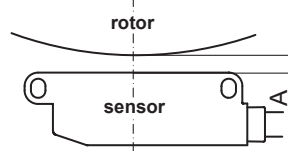
Permitted change of position sensor to rotor during mounting and operation:

Axial offset:



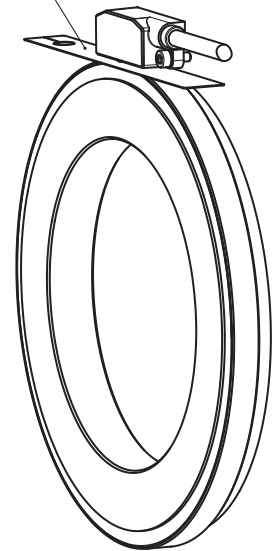
$V = \pm 0.5$ mm, optimal 0.1 mm

Working distance:



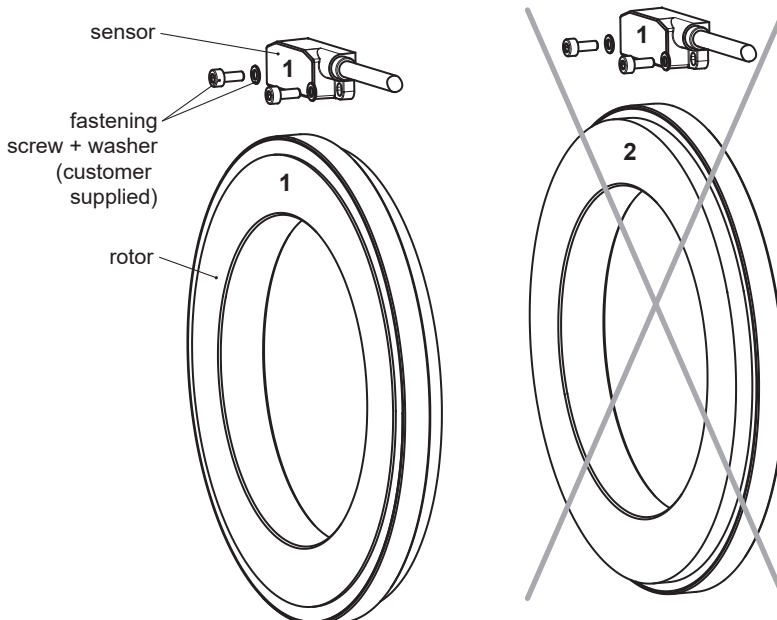
$A = 0.2 \dots 0.5$ mm,
optimal 0.3 mm

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!



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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								
$\varnothing 70$ mm								70
$\varnothing 75$ mm								75
$\varnothing 80$ mm								80
$\varnothing 85$ mm								85
$\varnothing 120$ mm								120
Protection								
IP 67								IP67

(1) Featured pulse numbers available as BI output signals.
 Other diameters on request