

Incremental rotary encoder

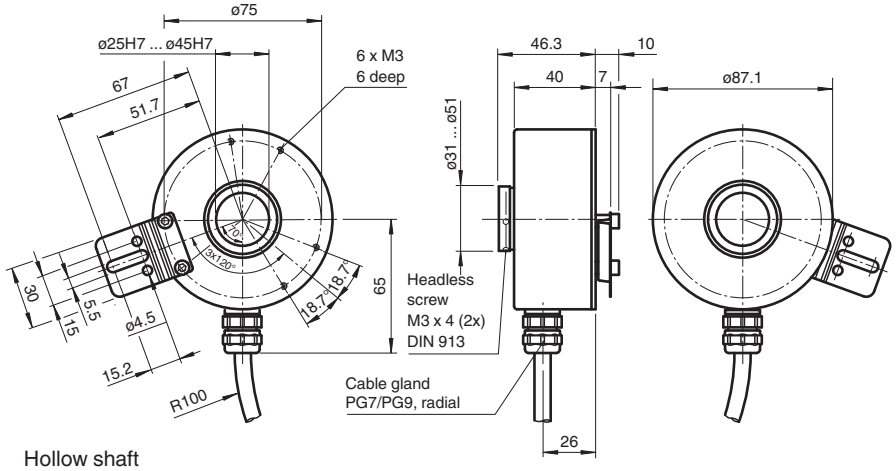
THI90

- Compact design housing Ø90 mm
- 25 mm and 45 mm hollow shaft
- Cost-effective
- Short delivery times
- Shaft mounting with threaded pins

Function

The THI90 hollow shaft encoder is a product that has been specially developed for use in drive and elevator technology. It combines the advantages of modern technology with a cost-effective design.
The hollow shaft encoder can be supplied with shaft diameters of Ø25 mm and Ø45 mm. Its relatively small external diameter means it can be used in places where there is limited mounting space.
Due to the reduced number of variants and the focus on standard market requirements, its most appealing features are its low price and very short delivery times.

Dimensions



Hollow shaft

Technical Data

General specifications		
Detection type		photoelectric sampling
Pulse count		512 , 600 , 1024 , 2048
UL File Number		E223176
Functional safety related parameters		
$MTTF_d$		140 a
Mission Time (T_M)		20 a
L_{10}		50 E+9 at 1750 rpm
Diagnostic Coverage (DC)		0 %
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC or 5 V DC ± 5 % (see "Output circuit" in the ordering information)

Release date: 2025-01-22 Date of issue: 2025-01-22 Filename: t48220_eng.pdf

Technical Data

No-load supply current	I_0	max. 70 mA
Output		
Output type		push-pull, incremental or RS 422, incremental (see "Output circuit" in the ordering information)
Voltage drop	U_d	< 2.5 V (push-pull, incremental)
Load current		max. per channel 40 mA , short-circuit protected, reverse polarity protected (push-pull, incremental) max. per channel 20 mA , short-circuit protected, reverse polarity protected (RS 422, incremental)
Output frequency		max. 200 kHz
Rise time		600 ns
De-energized delay	t_{off}	600 ns
Connection		
Cable		Ø6.5 mm, 4 x 2 x 0.14 mm², 1 m
Standard conformity		
Degree of protection		DIN EN 60529, IP54
Climatic testing		DIN EN 60068-2-78
Emitted interference		EN 61000-6-4:2007/A1:2011
Noise immunity		EN 61000-6-2:2005
Shock resistance		DIN EN 60068-2-27, 100 *g*, 6 ms
Vibration resistance		DIN EN 60068-2-6, 10 *g*, 10 ... 2000 Hz
Approvals and certificates		
UL approval		cULus Listed, General Purpose, Class 2 Power Source
Maximum permissible ambient temperature		max. 60 °C (max. 140 °F)
Ambient conditions		
Operating temperature		-5 ... 70 °C (23 ... 158 °F) , cable, movable installation -20 ... 70 °C (-4 ... 158 °F), cable, fixed installation
Storage temperature		-40 ... 80 °C (-40 ... 176 °F)
Mechanical specifications		
Material		
Housing		Aluminum
Flange		3.1645 aluminum
Shaft		Stainless steel 1.4305 / AISI 303
Mass		approx. 900 g
Rotational speed		max. 3500 min $^{-1}$
Starting torque		≤ 6 Ncm
Shaft load		
Angle offset		1 °
Axial offset		max. 1 mm
Dimensions		
Length		48.5 mm
Diameter		87.1 mm

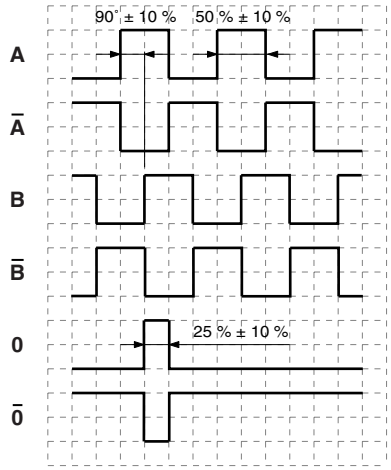
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Connection

Signal	Cable
GND	White
U_b	Brown
A	Green
B	Grey
$\overline{A}$	Yellow
$\overline{B}$	Pink
0	Blue
$\overline{0}$	Red

Operation

Signal outputs



↻ cw - with view onto the shaft clamping ring

Type Code

T	H	I	9	0	N	–			A			R	6		N	–					

Pulse count 512, 600, 1024, 2048

Option
N Normal

Output circuit
1 10 V ... 30 V, push-pull
6 5 V, RS 422

Signal output
6 A + B + 0 and $\overline{A}$ + $\overline{B}$ + $\overline{0}$

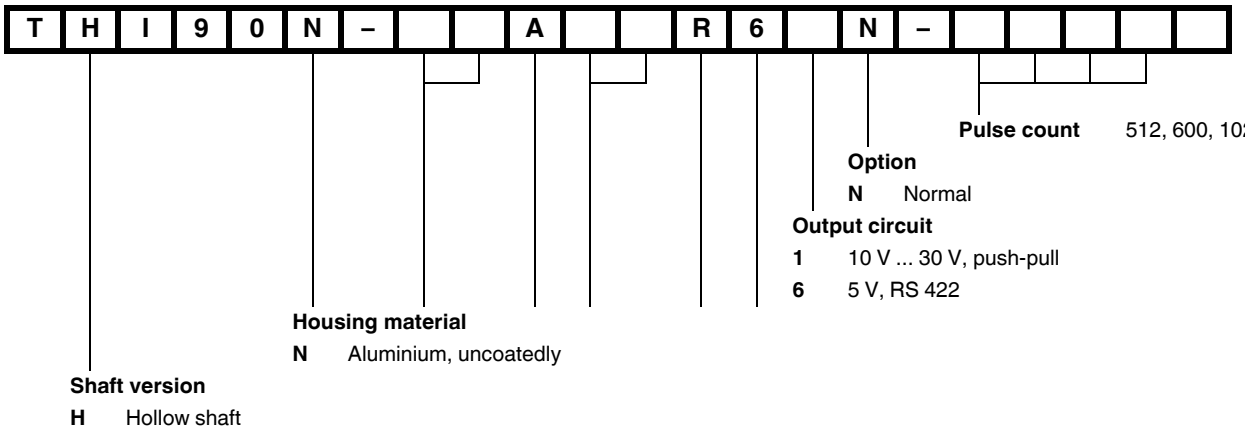
Exit position
R Radial

Connection type
K1 Cable Ø6.5 mm, 4 x 2 x 0.14 mm², 1 m
K5 Cable Ø6.5 mm, 4 x 2 x 0.14 mm², 5 m

Flange version
A Hollow shaft

Shaft dimension
SH Hollow shaft Ø25 mm with set screws
SN Hollow shaft Ø45 mm with set screws

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