

# Incremental rotary encoder THI40N-YYAK2R6YN-00050

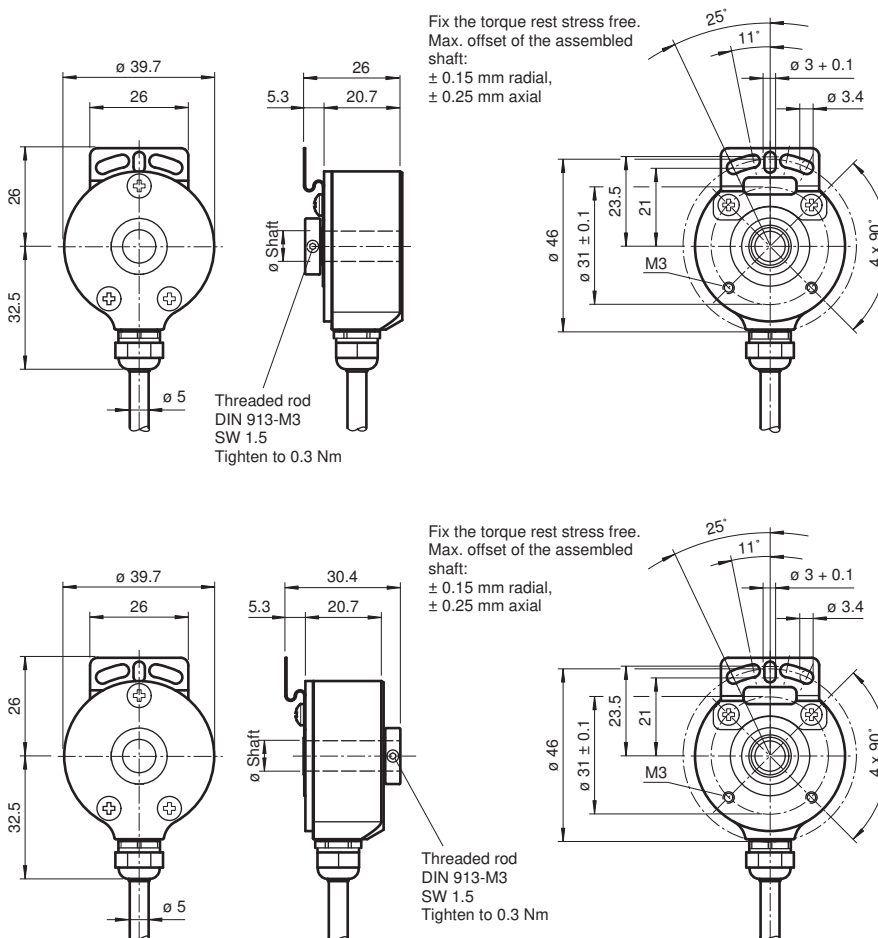
- Compact design
- Up to 1024 ppr
- 4.75 V ... 30 V with short-circuit proof push-pull output
- RS 422 functionality at 5 V operation



## Function

The THI40 continues the new economical target line of Pepperl+Fuchs. With a small outside diameter of 40 mm, the unit is ideal for use in industrial areas where very little space is available. The technology of the rotary encoder is adapted to the new requirements of the rotary encoder market. Innovative fast technology with Opto-ASIC forms the central basis of the device. The rotary encoder is available with a pulse count of up to 1024 pulses per revolution.

## Dimensions



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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

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## Technical Data

General specifications		
Detection type		photoelectric sampling
Pulse count		max. 1024
Functional safety related parameters		
MTTF <sub>d</sub>		810 a at 40 °C
Electrical specifications		
Operating voltage	U <sub>B</sub>	4.75 ... 30 V DC 5 V DC for RS-422
No-load supply current	I <sub>0</sub>	max. 55 mA
Output		
Output type		push-pull, incremental or RS-422, incremental
Voltage drop	U <sub>d</sub>	≤ 2.5 V (< 2.5 V)
Load current		max. per channel 30 mA , short-circuit protected (max. per channel 20 mA, conditionally short-circuit proof)
Output frequency		max. 100 kHz (max. 100 kHz)
Rise time		980 ns (225 ns)
De-energized delay	t <sub>off</sub>	980 ns (225 ns)
Connection		
Cable		Ø5 mm, 8 x 0.08 mm <sup>2</sup> , 2 m
Standard conformity		
Degree of protection		DIN EN 60529, IP54
Climatic testing		DIN EN 60068-2-3, no moisture condensation
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		-10 ... 70 °C (14 ... 158 °F)
Storage temperature		-25 ... 85 °C (-13 ... 185 °F)
Mechanical specifications		
Material		
Housing		Aluminum
Flange		Aluminum
Shaft		Stainless steel
Mass		approx. 160 g
Rotational speed		max. 6000 min <sup>-1</sup>
Moment of inertia		≤ 5 gcm <sup>2</sup>
Starting torque		≤ 1 Ncm

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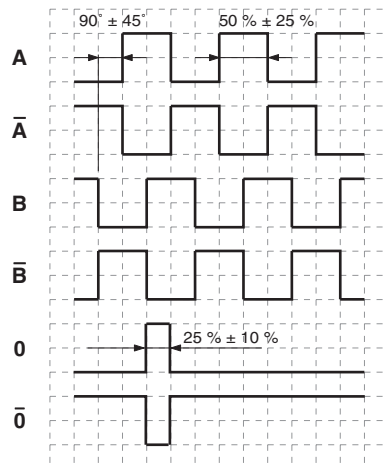
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## Connection

Signal	Cable, 8-core
GND	White
+U <sub>B</sub>	Brown
A	Green
B	Grey
$\bar{A}$	Yellow
$\bar{B}$	Pink
0	Blue
$\bar{0}$	Red
Screen	-

## Operation

Signal outputs



↻ cw - with view onto the shaft

Type Code

T	H	I	4	0	N	-			A	K	2	R	6	T	N	-								
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- Pulse count** 25, 50, 60, 100, 150, 180, 200, 250, 360, 400, 500, 600, 1000, 1024
- Temperature range** N normal
- Output switching** T 4,75 V ... 30 V, push-pull
- Signal output** 6 A + B + 0 and  $\bar{A}$  +  $\bar{B}$  +  $\bar{0}$
- Exit position** R radial
- Connection type** K2 cable Ø5 mm, 8 x 0.08 mm<sup>2</sup>, 2 m
- Flange type** A Hollow shaft
- Shaft dimensions**
  - 0S Hollow shaft Ø6 mm, clamping ring at flange side
  - 0U Hollow shaft Ø6.35 mm, clamping ring at flange side
  - 0C Hollow shaft Ø8 mm, clamping ring at flange side
  - 0X Hollow shaft Ø3/16", clamping ring at flange side
  - 2A Hollow shaft Ø5/16", clamping ring at flange side
  - 1S Hollow shaft Ø6 mm, clamping ring at cover side
  - 1U Hollow shaft Ø6.35 mm, clamping ring at cover side
  - 1C Hollow shaft Ø8 mm, clamping ring at cover side
  - 1X Hollow shaft Ø3/16", clamping ring at cover side
  - 3A Hollow shaft Ø5/16", clamping ring at cover side
- Housing material** N Aluminium
- Shaft version** H Hollow shaft

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