



## Model Number

THI58N

## Features

- **Sturdy and compact design**
- **Up to 1500 ppr**
- **Hollow shaft**
- **4.75 V ... 30 V with short-circuit proof push-pull output**
- **RS 422 functionality at 5 V operation**

## Description

The Pepperl+Fuchs target line is extended by the THI58, an economical hollow shaft encoder. With its outside diameter of 58 mm, the device is fully mechanical compatible to the usual industry standard.

The technology of the rotary encoder is optimally adapted to the 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 1500 pulses per revolution.

The rotary encoder provides the ideal combination of non-sensitivity to temperature and high resolution.

## Technical data

### General specifications

Detection type	photoelectric sampling
Pulse count	max. 1500

### Functional safety related parameters

MTTF <sub>d</sub>	810 a
Mission Time (T <sub>M</sub> )	20 a
L <sub>10</sub>	50 E+9 at 3000 rpm
Diagnostic Coverage (DC)	0 %

### 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	Ø6 mm, 8 x 0.14 mm <sup>2</sup> , 0.5 m, UL-Style 2571
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### 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

### Ambient conditions

Operating temperature	-10 ... 70 °C (14 ... 158 °F)
Storage temperature	-40 ... 80 °C (-40 ... 176 °F)

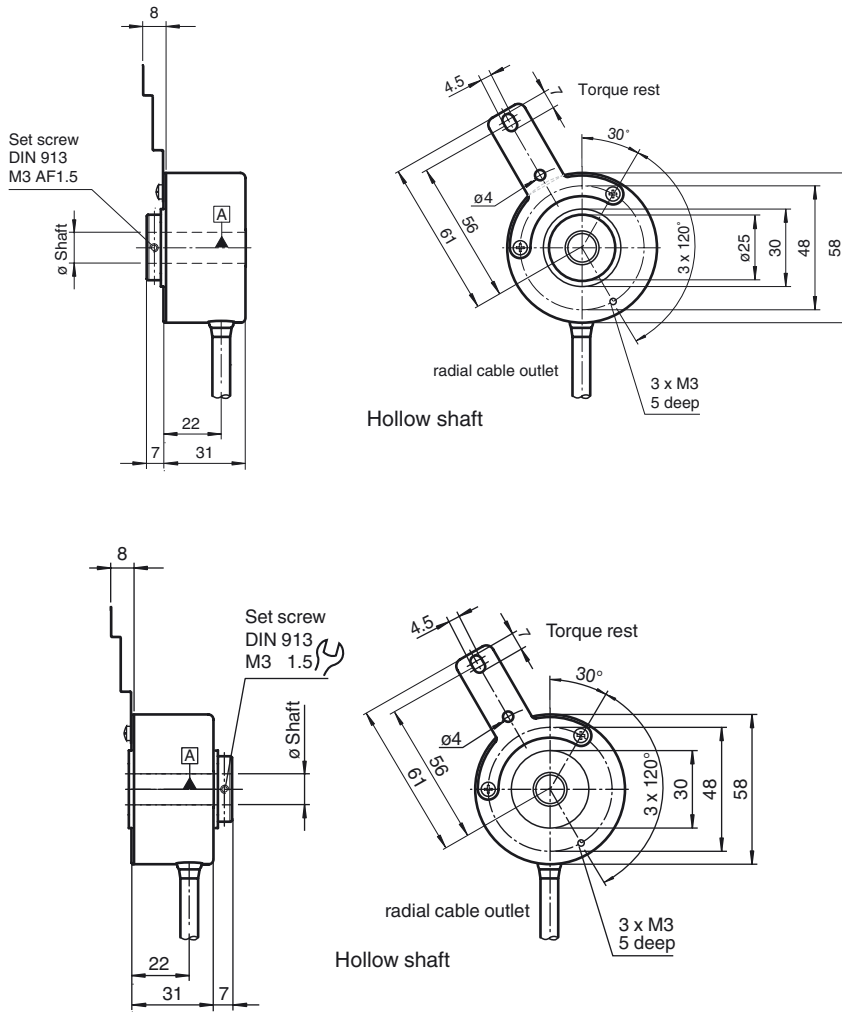
### Mechanical specifications

Material	
Housing	aluminum, blank
Flange	3.1645 aluminum
Shaft	Stainless steel 1.4305 / AISI 303
Mass	approx. 290 g
Rotational speed	max. 6000 min <sup>-1</sup>
Moment of inertia	≤ 40 gcm <sup>2</sup>
Starting torque	≤ 2.5 Ncm
Shaft load	
Angle offset	1 °
Axial offset	max. 1 mm

### Approvals and certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source
Maximum permissible ambient temperature	≤ 60 °C (≤ 140 °F)

Dimensions

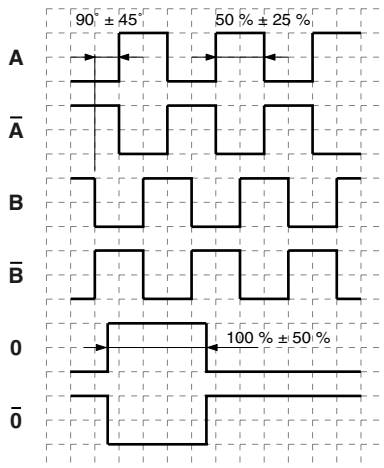


Electrical connection

Signal	Cable Ø6 mm, 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	-

Release date: 2018-04-10 10:48 Date of issue: 2018-04-10 t27876\_eng.xml

Signal outputs



↻ cw - with view onto the shaft

Order code

T	H	I	5	8	N	-			A	K		R	6	T	N	-				
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**Pulse count** 100, 125, 250, 360, 500, 512, 600, 1000, 1024, 1500

**Option**  
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**  
K0 Cable Ø6 mm, 8 x 0.14 mm<sup>2</sup>, 0.5 m, UL style 2571  
K2 Cable Ø6 mm, 8 x 0.14 mm<sup>2</sup>, 2 m, UL style 2571

**Flange version**  
A Hollow shaft

**Shaft dimension**  
0A Hollow shaft Ø10 mm (clamping ring at flange side)  
0B Hollow shaft Ø12 mm (clamping ring at flange side)  
0T Hollow shaft Ø15 mm (clamping ring at flange side)  
1A Hollow shaft Ø10 mm (clamping ring at cover side)  
1B Hollow shaft Ø12 mm (clamping ring at cover side)  
1T Hollow shaft Ø15 mm (clamping ring at cover side)

**Housing material/protection degree**  
N Aluminium, IP54

**Shaft version**  
H hollow shaft

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