



### Model Number

RHI90N-\*\*\*\*\*1

### Features

- Compact design housing Ø90 mm
- Variable hollow shaft from Ø16 mm ... Ø45 mm
- Up to 50,000 ppr
- Easy shaft clamping
- 10 V ... 30 V with short-circuit proof push-pull output
- Very high resolution and accuracy

### Description

The hollow shaft encoder RHI90 is a product, which has been developed specially for mechanical drive and lift engineering. It combines the advantages of modern technics and cost effective design.

The hollow shaft encoder is available with shaft diameters between Ø16 mm and Ø45 mm. Thanks to its comparatively small outside diameter it can also be used if only little mounting space is available. The shaft fastening is designed in a way that the shaft of the customer is not being damaged.

## Technical data

### General specifications

Detection type	photoelectric sampling
Pulse count	max. 50000

### Functional safety related parameters

MTTF <sub>d</sub>	140 a
Mission Time (T <sub>M</sub> )	20 a
L <sub>10h</sub>	50 E+9 at 1750 rpm
Diagnostic Coverage (DC)	0 %

### Electrical specifications

Operating voltage U <sub>B</sub>	10 ... 30 V DC
No-load supply current I <sub>0</sub>	max. 70 mA

### Output

Output type	push-pull, incremental
Voltage drop U <sub>d</sub>	< 2.5 V
Load current	max. per channel 40 mA , short-circuit protected, reverse polarity protected
Output frequency	max. 200 kHz
Rise time	600 ns
De-energized delay t <sub>off</sub>	600 ns

### Connection

Connector	type 9416 (M23), 12-pin, type 9416L (M23), 12-pin
Cable	Ø6.5 mm, 4 x 2 x 0.14 mm <sup>2</sup> , 1 m

### Standard conformity

Degree of protection	DIN EN 60529, IP65
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

### Ambient conditions

Operating temperature	-5 ... 70 °C (23 ... 158 °F) , movable cable -20 ... 70 °C (-4 ... 158 °F), fixed cable
Storage temperature	-40 ... 80 °C (-40 ... 176 °F)

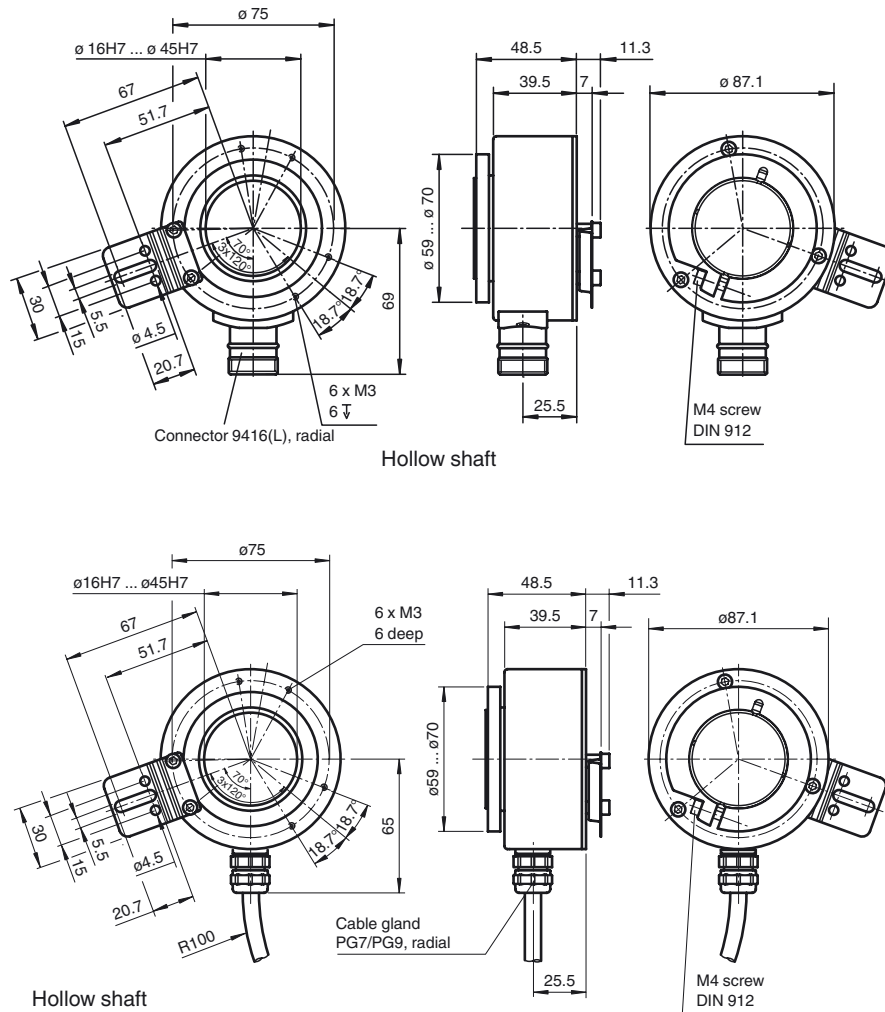
### Mechanical specifications

Material	
Housing	aluminum, blank
Flange	3.1645 aluminum
Shaft	Stainless steel 1.4305 / AISI 303
Mass	approx. 900 g
Rotational speed	max. 3500 min <sup>-1</sup>
Starting torque	≤ 6 Ncm
Shaft load	
Angle offset	1 °
Axial offset	max. 1 mm

### Approvals and certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source
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Dimensions



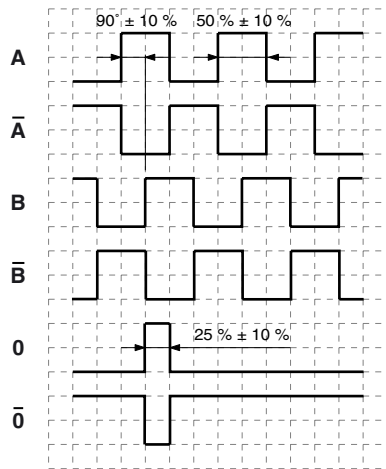
Electrical connection

Signal	Cable Ø6.5 mm, 8-core	Connector 9416, 12-pin	Connector 9416L, 12-pin
GND	White	10	10
U <sub>b</sub>	Brown	12	12
A	Green	5	5
B	Grey	8	8
$\bar{A}$	Yellow	6	6
$\bar{B}$	Pink	1	1
0	Blue	3	3
$\bar{0}$	Red	4	4
Shield	-	Housing	Housing
NC	-	2, 7, 9, 11	2, 7, 9, 11

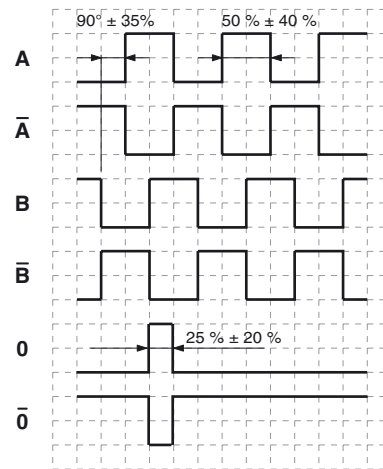
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**Signal outputs**

↻ cw - with view onto the shaft clamping ring



$< 5000$  pulses



$\geq 5000$  pulses

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