



Model Number

RHI90N

Features

- Compact design housing Ø90 mm
- Variable hollow shaft from Ø16 mm ... Ø45 mm
- Up to 50,000 ppr
- Easy shaft clamping
- Very high resolution and accuracy
- Optional: Shaft insulation through heavy-duty plastic insulating sleeve

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.

For specific applications the hollow shaft encoder is available with an electrical insulated hollow shaft.

Technical Data

General specifications

Detection type	photoelectric sampling
Pulse count	max. 50000
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)
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

Connector	type 9416 (M23), 12-pin, type 9416L (M23), 12-pin
Cable	Ø6.5 mm, 4 x 2 x 0.14 mm ² , 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)

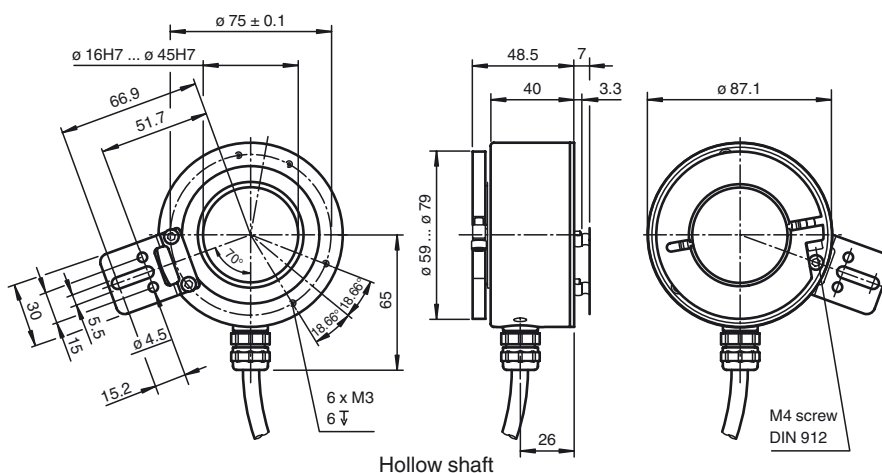
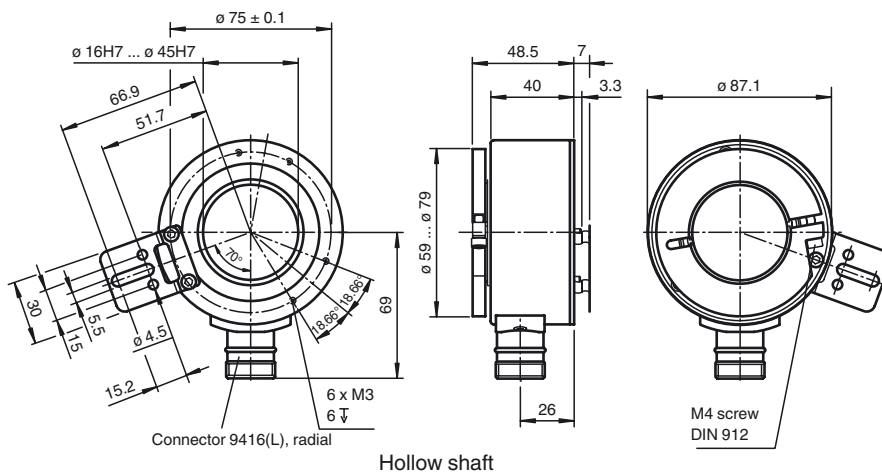
Mechanical specifications

Material	
Housing	aluminum, blank
Flange	3.1645 aluminum
Shaft	Stainless steel 1.4305 / AISI 303 With insulating sleeve provided as an option, made from PPS GF40 material with internal diameters of 16 mm, 25 mm, 30 mm, 38 mm, isolation voltage of 3 kV (see type code)
Mass	approx. 900 g
Rotational speed	max. 3500 min ⁻¹
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
Maximum permissible ambient temperature	≤ 60 °C (≤ 140 °F)

Dimensions



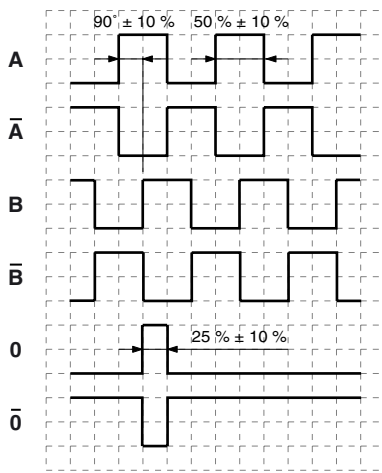
Electrical connection

Signal	Cable Ø6.5 mm, 8-core	Connector 9416, 12-pin	Connector 9416L, 12-pin
GND	White	10	10
U _b	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

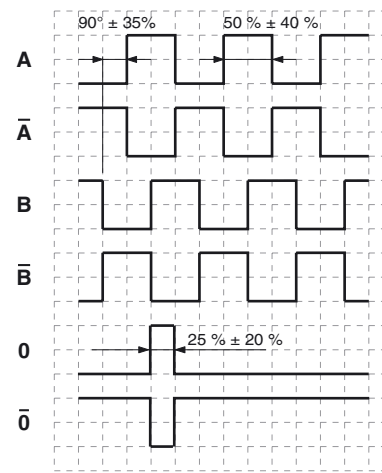
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Signal outputs

↻ cw - with view onto the shaft clamping ring



< 5000 pulses



≥ 5000 pulses

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

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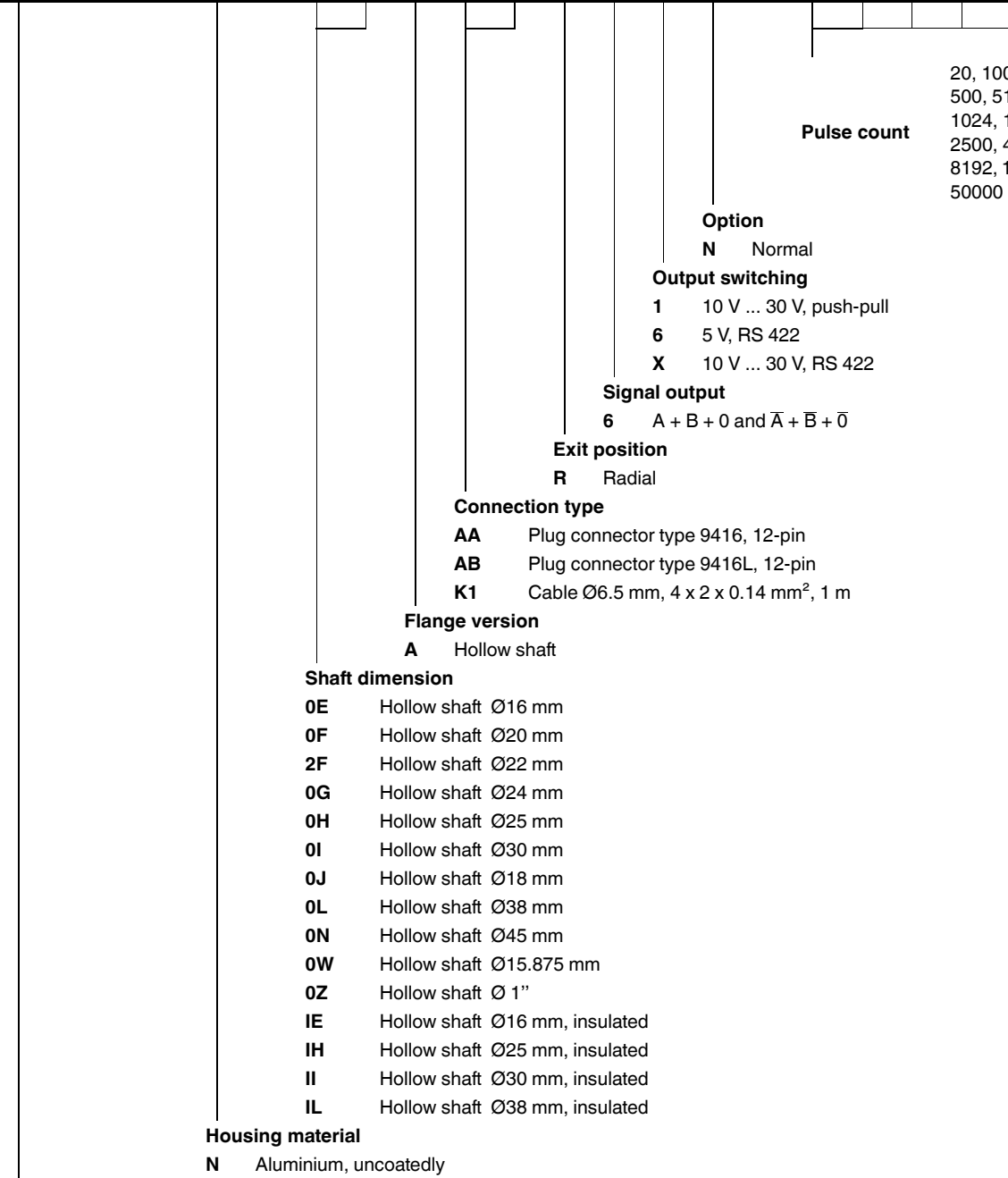
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Order code

R H I 9 0 N - A R 6 N -



20, 100, 125, 360,
500, 512, 600, 1000,
1024, 1250, 2048,
2500, 4096, 5000,
8192, 10000, 25000,
50000

Pulse count

Option

N Normal

Output switching

1 10 V ... 30 V, push-pull

6 5 V, RS 422

X 10 V ... 30 V, RS 422

Signal output

6 A + B + 0 and $\bar{A} + \bar{B} + \bar{0}$

Exit position

R Radial

Connection type

AA Plug connector type 9416, 12-pin

AB Plug connector type 9416L, 12-pin

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

Flange version

A Hollow shaft

Shaft dimension

0E Hollow shaft Ø16 mm

0F Hollow shaft Ø20 mm

2F Hollow shaft Ø22 mm

0G Hollow shaft Ø24 mm

0H Hollow shaft Ø25 mm

0I Hollow shaft Ø30 mm

0J Hollow shaft Ø18 mm

0L Hollow shaft Ø38 mm

0N Hollow shaft Ø45 mm

0W Hollow shaft Ø15.875 mm

0Z Hollow shaft Ø 1"

IE Hollow shaft Ø16 mm, insulated

IH Hollow shaft Ø25 mm, insulated

II Hollow shaft Ø30 mm, insulated

IL Hollow shaft Ø38 mm, insulated

Housing material

N Aluminium, uncoatedly

Shaft version

H Hollow shaft

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