



## Incremental rotary encoder with sin/cos interface

RHS90N-\*\*\*\*\*Z

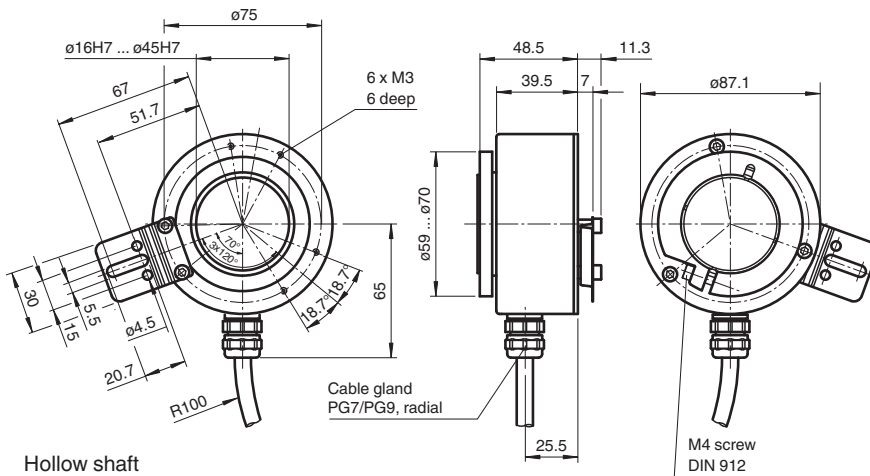
- Incremental encoder with sin/cos interface
- 1024 or 2048 signal periods
- Hollow shaft up to max. 45 mm (many reducers on request)
- Temperature compensated, interpolateable voltage signals
- Application: motor feedback/ drive engineering



### Function

The RHS90 provides the user with sine/cosine signals with a resolution of up to 2048 signal periods per revolution. Typical applications for these rotary encoders are found in drive technology (motor feedback in assembly applications). Thanks to the 1 V<sub>ss</sub> sine/cosine interface the RHS90 is compatible with the current drive converters available on the market, as are required for the fine positioning of drives and servo-drive systems in industrial applications. A clear increase in precision and improved drive running characteristics at an attractive price are the strengths of this series of rotary encoders.

### Dimensions



### Technical Data

#### General specifications

Detection type	photoelectric sampling
Pulse count	max. 2048

#### Electrical specifications

Operating voltage	U <sub>B</sub>	5 V DC ± 5 %
No-load supply current	I <sub>0</sub>	max. 70 mA

#### Output

Output type	sine / cosine
Amplitude	1 V <sub>ss</sub> ± 10 %
Load current	max. per channel 10 mA , short-circuit protected, reverse polarity protected
Output frequency	max. 200 kHz (3 dB limit)

#### Connection

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

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## Technical Data

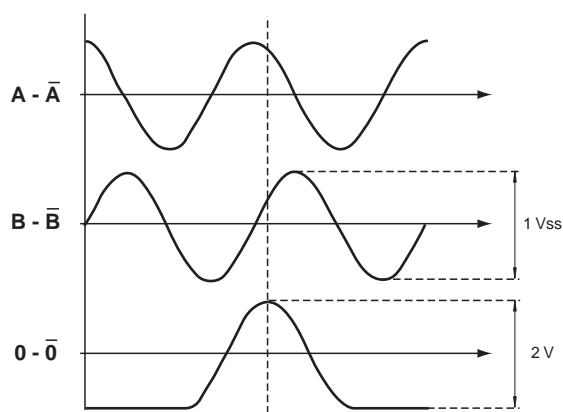
Cable	Ø6.5 mm, 4 x 2 x 0.14 mm <sup>2</sup> , 1 m
<b>Standard conformity</b>	
Degree of protection	DIN EN 60529, IP65
Climatic testing	DIN EN 60068-2-78
Emitted interference	EN 61000-6-4:2007/A1:2011
Noise immunity	DIN EN 61000-6-2
Shock resistance	DIN EN 60068-2-27, 100 g, 6 ms
Vibration resistance	DIN EN 60068-2-6, 10 g, 10 ... 2000 Hz
<b>Approvals and certificates</b>	
UL approval	cULus Listed, General Purpose, Class 2 Power Source
<b>Ambient conditions</b>	
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)
<b>Mechanical specifications</b>	
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

## Connection

Signal	Cable Ø6.5 mm, 6-core
GND	White
$U_b$	Brown
A / cos	Green
B / sin	Grey
$\bar{A}$ / $\overline{\text{cos}}$	Yellow
$\bar{B}$ / $\overline{\text{sin}}$	Pink
0	Blue
$\bar{0}$	Red
Screen	-

## Operation

### Signal outputs



↻ cw - view towards clamping ring

measured in difference mode

## Type Code

### Order code

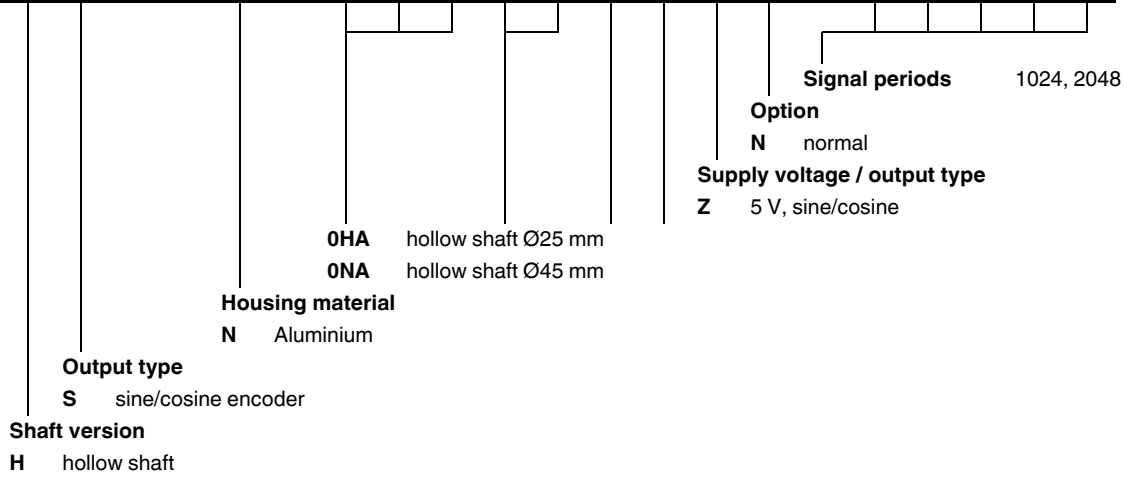
R	H	S	9	0	N	-					K	1	R	6	Z	N	-								
																	Signal periods		1024, 2048						
																	Option		N normal						
																	Supply voltage / output type		Z 5 V, sine/cosine						
																	Signal output		6 A + B + 0 and $\bar{A}$ + $\bar{B}$ + $\bar{0}$						
																	Exit position		R radial						
																	Connection type		K1 cable Ø6.5 mm, 4 x 2 x 0.14 mm <sup>2</sup> , 1 m						
																	Shaft dimensions/flange version		2CA hollow shaft Ø19 mm 0FA hollow shaft Ø20 mm						

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**Order code**

R	H	S	9	0	N	-				K	1	R	6	Z	N	-						
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