



# Incremental rotary encoder

## RVI25\*-\*\*\*\*\*6

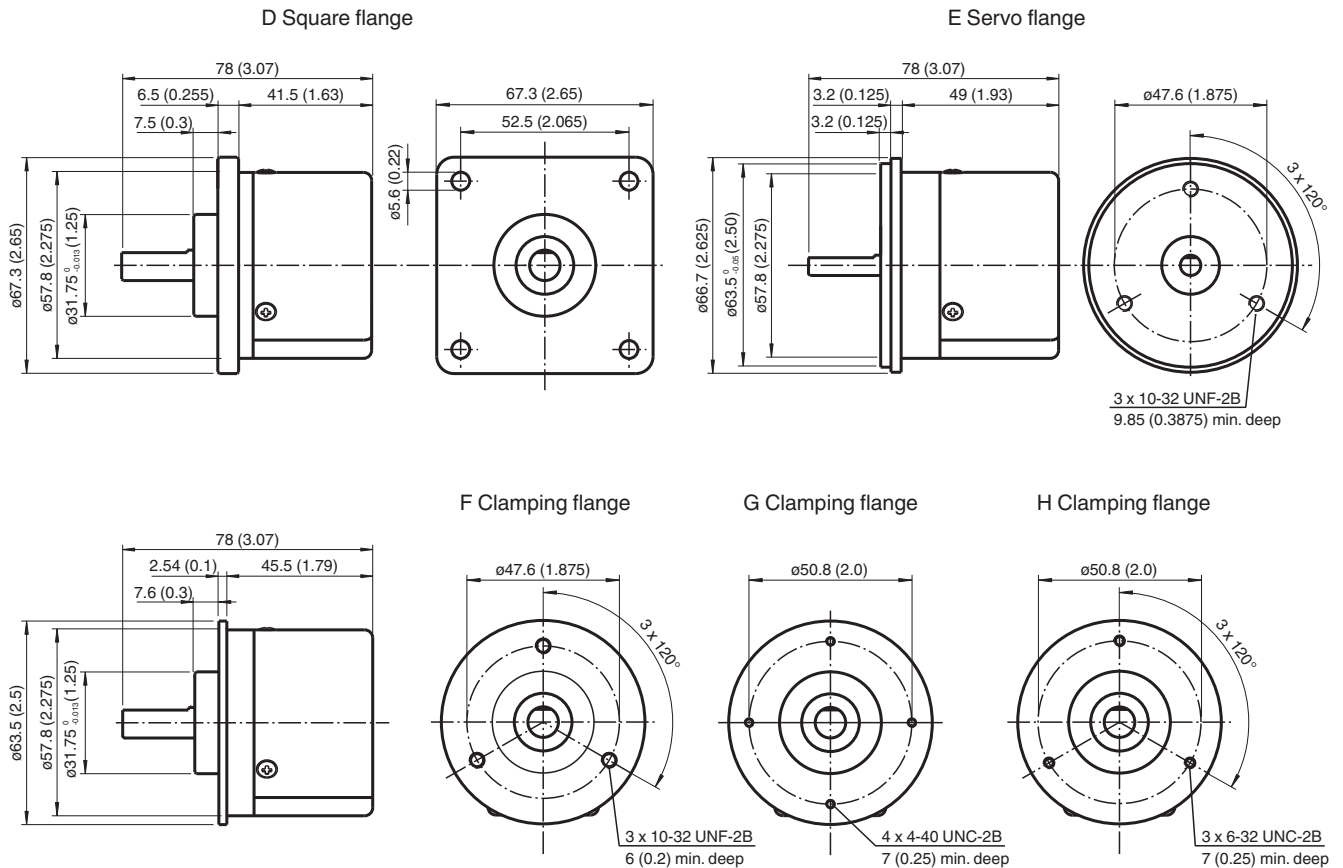
- Industrial standard housing  $\varnothing 2.5''$
- Up to 5000 ppr
- Servo flange or square flange
- 5 V with RS-422 interface



### Dimensions

#### Flange

Dimensions in mm (inch)



Release date: 2022-04-21 Date of issue: 2022-12-12 Filename: t19776\_eng.pdf

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

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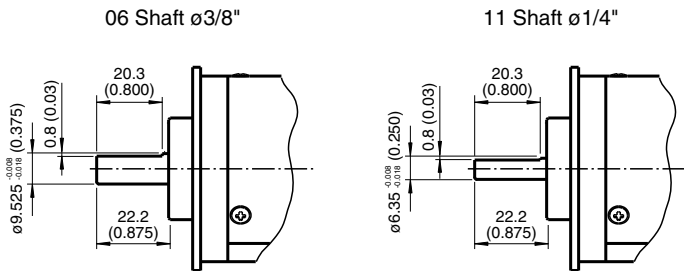
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**Dimensions**

**Shafts**

Dimensions in mm (inch)



**Connections**

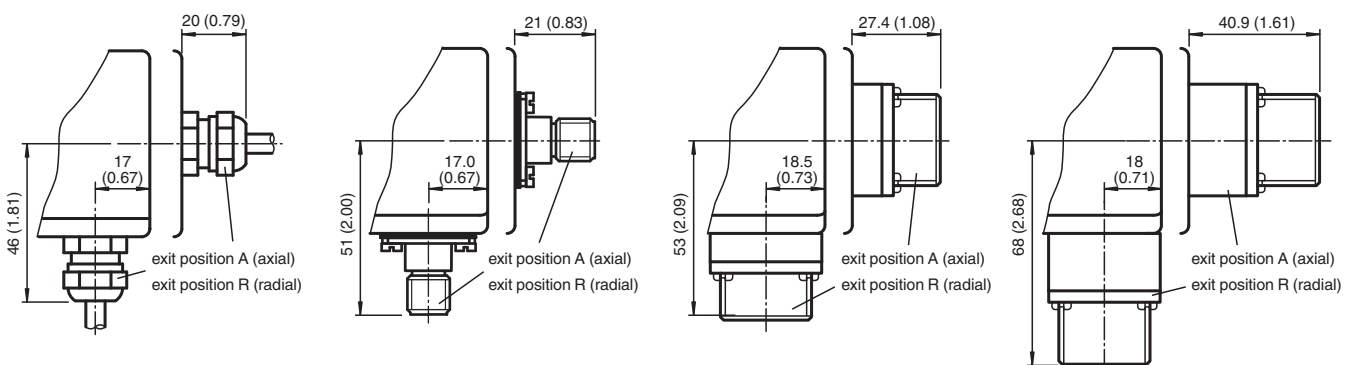
Dimensions in mm (inch)

K2 (2 m cable)  
K5 (5 m cable)  
Cable gland PG7/PG9

BE  
Connector M12 x 1

AR  
Connector 9415

AS  
Connector 9419



**Technical Data**

<b>General specifications</b>		
Detection type	photoelectric sampling	
Pulse count	max. 5000	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	140 a	
Mission Time (T <sub>M</sub> )	20 a	
L <sub>10</sub>	70 E+9 at 6000 rpm	
Diagnostic Coverage (DC)	0 %	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	5 V DC ± 5 %
No-load supply current	I <sub>0</sub>	max. 70 mA
<b>Output</b>		
Output type	RS 422, incremental	
Load current	max. per channel 20 mA , conditionally short-circuit proof (not with U <sub>b</sub> )	
Output frequency	max. 100 kHz	
Rise time	100 ns	
De-energized delay	t <sub>off</sub>	100 ns
<b>Connection</b>		
Connector	type 9415 (1-20 UNEF), 7-pin type 9419 (1 1/8-18 UNEF), 10-pin	
Cable	Ø7.8 mm, 6 x 2 x 0.14 mm <sup>2</sup> , 2 m or 5 m	
<b>Standard conformity</b>		
Degree of protection	DIN EN 60529, IP54 (without shaft seal)/IP65 (with shaft seal)	
Climatic testing	DIN EN 60068-2-3, no moisture condensation	

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## Technical Data

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, 3 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	
Glass disk	-20 ... 80 °C (-4 ... 176 °F)
Plastic disk	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	
Glass disk	-40 ... 100 °C (-40 ... 212 °F)
Plastic disk	-40 ... 70 °C (-40 ... 158 °F)
<b>Mechanical specifications</b>	
Material	
Housing	diecast zinc, not laquered or coated
Flange	3.1645 aluminum
Shaft	Stainless steel 1.4305 / AISI 303
Mass	approx. 397 g
Rotational speed	max. 12000 min <sup>-1</sup>
Moment of inertia	≤ 25 gcm <sup>2</sup>
Starting torque	≤ 1.5 Ncm (with shaft seal) ≤ 1 Ncm (without shaft seal)
Shaft load	
Axial	40 N at max. 6000 min <sup>-1</sup> 10 N at max. 12000 min <sup>-1</sup>
Radial	60 N at max. 6000 min <sup>-1</sup> 20 N at max. 12000 min <sup>-1</sup>

**Function**

The RVI25 series is Pepperl+Fuchs' industrial standard size 2,5" encoder. This encoder is well-suited for many applications with its rugged, industrial housing and variety of options. Standard mounting configurations include 1/4" and 3/8" shafts and servo or face mounts.

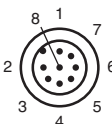
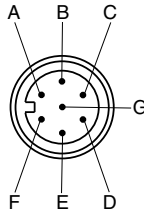
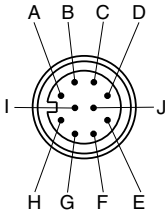
The pulse disk is designed in plastic up to 1500 pulses. Beyond that, glass is used.

Electrical options include push-pull and RS 422 outputs on either Mil-Spec connectors or cables. An optional shaft seal protects the encoder and gives it a protection rating of IP65.

**Connection**

**Electrical connection**

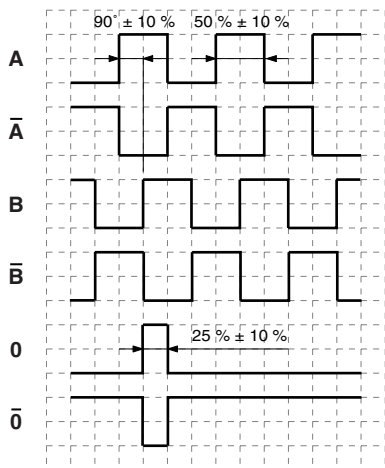
Signal	Cable Ø7.8 mm, 12-core	Connector M12 x 1, 8-pin	Connector 9415, 7-pin	Connector 9419, 10-pin
GND	White	1	F	F
U <sub>b</sub>	Brown	2	D	D
A	Green	3	A	A
B	Grey	5	B	B
$\bar{A}$	Yellow	4	-	H
$\bar{B}$	Pink	6	-	I
0	Blue	7	C	C
$\bar{0}$	Red	8	-	J
U <sub>b</sub> Sens <sup>*)</sup>	Violet	-	-	-
NC	Grey/Pink	-	E	E
Housing	Screen	Housing	G	G
GND Sens <sup>*)</sup>	Black	-	-	-

<sup>\*)</sup> only for devices with 5 V supply and RS 422 interface

**Additional Information**

**Signal outputs**



↺ ccw - with

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**Order code**



**Shaft version**  
**V** Solid shaft

**Housing**  
**N** Normal, protection degree IP54  
**P** With shaft seal, protection degree IP65

**Flange version**  
**D** Square flange 2.65" x 2.65"  
**E** Servo flange Ø2.625"  
**F** Clamping flange Ø2.5"  
**G** Clamping flange Ø2.5"  
**H** Clamping flange Ø2.5"

**Shaft dimension**  
**06** Shaft Ø3/8" x 0.875"  
**11** Shaft Ø1/4" x 0.875"

**Connection type**  
**AR** MIL-C connector, 7-pin  
**AS** MIL-C connector, 10-pin  
**BE** Plug connector M12 x 1, 8-pin  
**K2** Cable Ø7.8 mm, 6 x 2 x 0.14 mm<sup>2</sup>, 2 m  
**K5** Cable Ø7.8 mm, 6 x 2 x 0.14 mm<sup>2</sup>, 5 m

**Exit position**  
**A** Axial  
**R** Radial

**Signal output**  
**3** A + B + 0  
**6** A + B + 0 and  $\bar{A} + \bar{B} + 0$

**Output switching**  
**1** 10 V ... 30 V, push-pull  
**6** 5 V, RS 422  
**X** 10 V ... 30 V, RS 422

**Option**  
**N** Normal

**Pulse count** 100, 360, 500, 512, 1000, 1024, 1250, 2048, 2500, 3600, 4096, 5000

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