



Model Number

RVS70E

Features

- 1024 or 2048 signal periods
- Flameproof enclosure
- Worldwide certification: ATEX, IECEx, KOSHA, NEPSI
- Degree of protection IP66 / IP67
- High shaft load capacity
- Temperature range -40 ... 158 °F (-40°C to 70°C)
- Suitable for offshore applications

Description

RVS70E Series incremental rotary encoders are enclosed in a pressure-resistant housing. The robust bearing design allows high shaft loads to be absorbed, enabling this series of rotary encoder to deliver reliability and precision over its full service life. The compact design ensures efficient use of installation space. The high degree of protection along with the seawater-resistant housing make the RVS70E ideal for use in tough environmental conditions. The temperature range of -40 °C to +70 °C allows the encoder to be used in a wide variety of climatic conditions. The wide range of variants available mean the RVS70E Series is suitable for use in a host of applications.

Technical data

General specifications

Detection type	photoelectric sampling
Device type	Incremental rotary encoder
Pulse count	1024 and 2048

Functional safety related parameters

MTTF _d	140 a
Mission Time (T _M)	20 a
L _{10h}	1.6 E+9 at 3000 rpm
Diagnostic Coverage (DC)	0 %

Electrical specifications

Operating voltage U _B	5 V ± 5 %
No-load supply current I ₀	max. 70 mA

Output

Output type	sine / cosine
Amplitude	1 V _{SS} ± 10 %
Load current	max. per channel 20 mA , short-circuit protected , Reverse polarity protection
Output frequency	max. 200 kHz (3 dB limit)

Connection

Cable	Ø 10.2 mm, Radox 9 x 0.5 mm ²
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Standard conformity

Degree of protection	DIN EN 60529, IP66 DIN EN 60529, IP67
Climatic testing	DIN EN 60068-2-78 , 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, 3 ms
Vibration resistance	DIN EN 60068-2-6, 10 g, 10 ... 2000 Hz

Ambient conditions

Operating temperature	
Gas Ex-area	-40 ... 70 °C (-40 ... 158 °F)
Dust Ex-area	-40 ... 70 °C (-40 ... 158 °F)
Storage temperature	
Gas Ex-area	-40 ... 70 °C (-40 ... 158 °F)
Dust Ex-area	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

Material	
Combination 1	housing: anodized aluminum flange: anodized aluminum shaft: Stainless steel 1.4401 / AISI 316
Combination 2 (Inox)	housing: Stainless steel 1.4404 / AISI 316L flange: Stainless steel 1.4404 / AISI 316L shaft: Stainless steel 1.4401 / AISI 316

Mass	approx. 1300 g (combination 1) approx. 2300 g (combination 2)
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Rotational speed	max. 6000 min ⁻¹
Moment of inertia	400 gcm ²
Starting torque	< 5 Ncm
Shaft load	

Axial	110 N
Radial	150 N

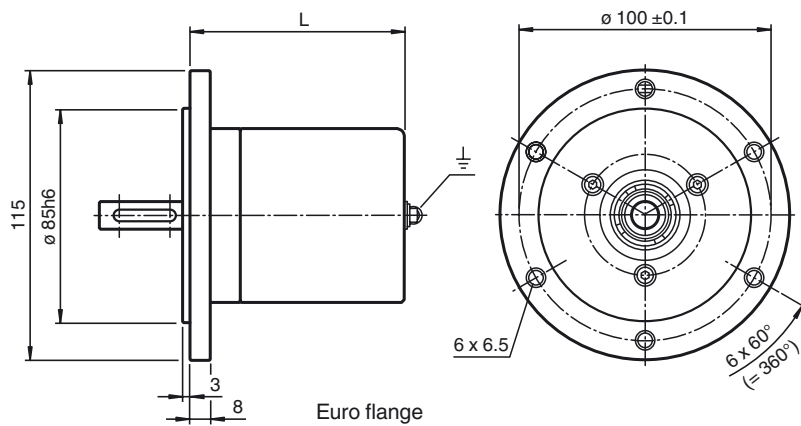
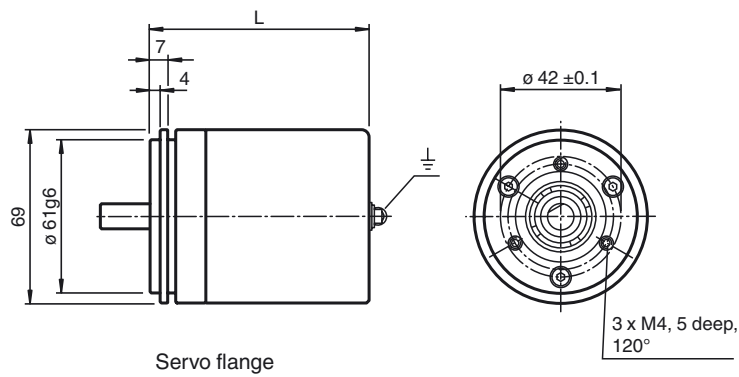
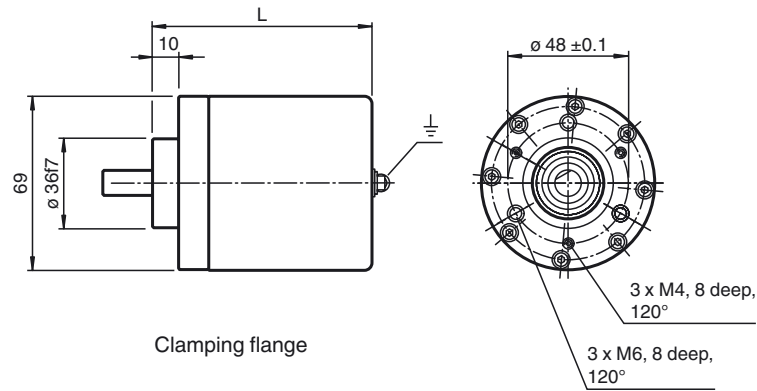
Data for application in connection with Ex-areas

EC-Type Examination Certificate	ZELM 14 ATEX 0519 X IECEx ZLM 14.0003X
Group, category, type of protection	⊕ II 2G Ex db IIC T6 - T4 Gb ⊕ II 2D Ex tb IIIC T80°C Db

Directive conformity

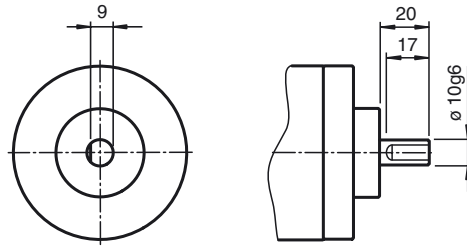
Directive 94/9/EC	IEC 60079-0:2011 EN 60079-0:2012+A11:2013 IEC 60079-1:2014 EN 60079-1:2014 IEC 60079-31:2013 EN 60079-31:2014
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Dimensions

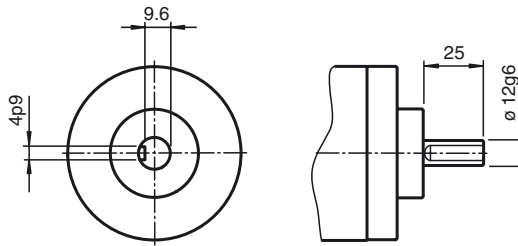


Flange	L [mm]	
	Axial output	Radial output
Clamping flange	80	87
Servo flange	80.2	87.2
Euro flange	78	85

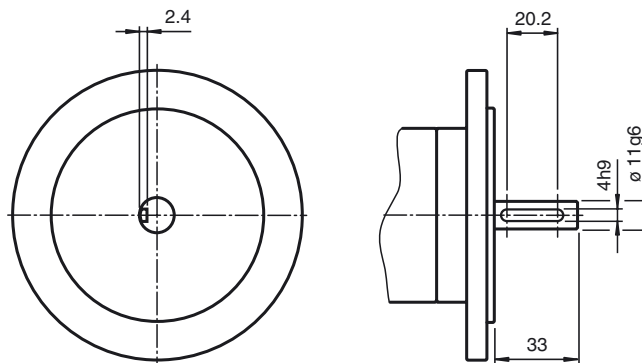
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Shaft: 10 mm

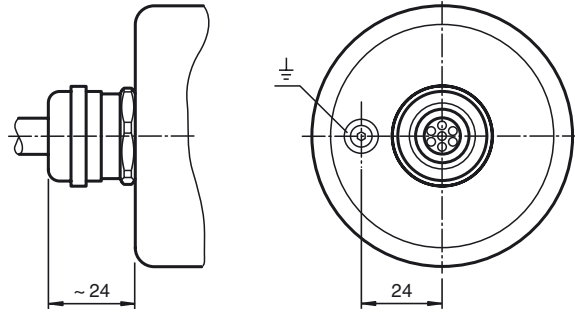


Shaft: 12 mm

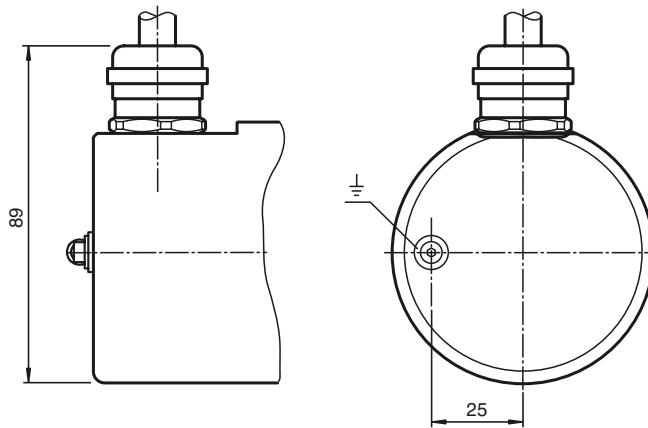


Shaft: 11 mm

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Axial output



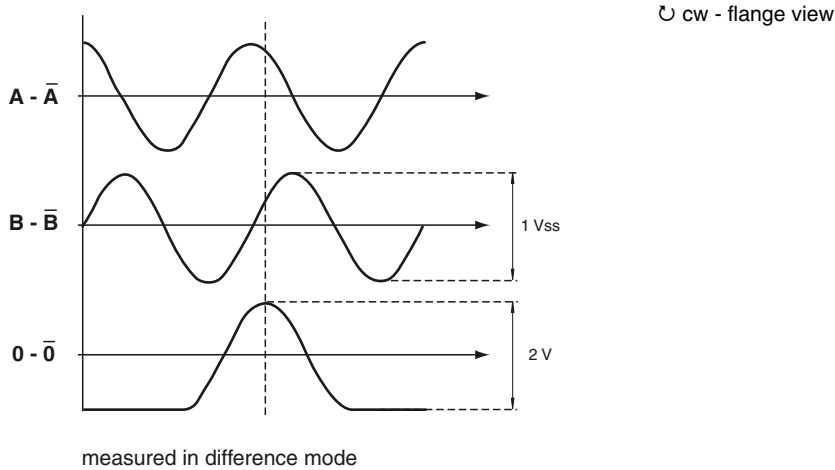
Radial output

Electrical connection

Signal	Cable Ø11.2 mm, 9-core
GND	1
+U _b	2
A	3
B	4
\bar{A}	5
\bar{B}	6
Z	7
\bar{Z}	8
PE	Green/Yellow

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Signal outputs



Order code

R	V	S	7	0	E	-					6		-						
Shaft version		Shaft dimension/flange version		Special properties		Connection type		Exit position		Signal output		Output switching		Housing material		Pulse count			
V Solid shaft		011 Shaft Ø10 mm x 20 mm with clamping flange 012 Shaft Ø10 mm x 20 mm with servo flange 021 Shaft Ø12 mm x 25 mm with clamping flange 022 Shaft Ø12 mm x 25 mm with servo flange 033 Shaft Ø11 mm x 30 mm with euro flange		E Explosion proof		K2 Cable, 2 m K5 Cable, 5 m KA Cable, 10 m		A Axial R Radial		6 A + B + 0 and $\bar{A} + \bar{B} + \bar{0}$		Z 5 V, sine/cosine		N Aluminum I Inox		1024, 2048			

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