Model Number

RVS58S-YYYKYA6ZT-01024

Features

- **Safe rotary encoder, thanks to integrated functional safety**
- **Usable up to SIL 3 acc. to IEC 61508**
- **TÜV certified**
- **Suitable as motor feedback system for safe drives in accordance with IEC 61800-5-2**
- **Incremental encoder with sin/cos interface**
- **1024 or 2048 signal periods**
- **Thermally stabilized with the highest precision for high resolution interpolation**

Description

The RVS58S – a combination of precision and integrated safety technology for demanding requirements.

The RVS58S rotary encoder is suitable for use in safety-aligned systems up to

- SIL3 in accordance with IEC 61508
- Performance Level e in accordance with IEC 13849
- Category 4 in accordance with DIN EN 954-1

given the corresponding prerequisites with regard to the diagnostic capability of the higher-level control/evaluation system.

Typical applications for this rotary encoder are found in safety-evaluated drive technology (Motor feedback). Thanks to the 1 Vss sine/cosine interface the RVS58S 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 the smooth running of the drive at an attractive price, including certificated safety in accordance with the applicable standards, enable this rotary encoder to be used in a wide variety of applications.

Technical data

General specifications	
Pulse count	1024 and 2048
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e
$MTTF_d$	1000 a
Mission Time (T_M)	20 a
PFH_d	2.41 E-9
L_{10h}	7.5 E+9 at 6000 rpm
Diagnostic Coverage (DC)	98 %
Electrical specifications	
Operating voltage U_B	5 V DC ± 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 10 mA , short-circuit protected, reverse polarity protected
Output frequency	max. 200 kHz (3 dB limit)
Connection	
Cable	Single stranded wires with crimp contact, 10 x AWG26, 230 mm
Standard conformity	
Degree of protection	DIN EN 60529, IP40
Climatic testing	DIN EN 60068-2-78 , no moisture condensation
Emitted interference	EN 61000-6-4:2007/A1:2011
Noise immunity	DIN EN 61000-6-2 , advanced testing level to IEC 61326-3-1
Shock resistance	DIN EN 60068-2-27, 100 *g*, 3 ms
Vibration resistance	DIN†EN†60068-2-6, 20†g, 55†...†2000†Hz
Functional safety	IEC 61508:2000 IEC 62061:2005 ISO 13849-1:2006 IEC 61800-5-2:2007 EN 50178:1997 IEC 61326-3-1:2007 Suitable up to SIL 3, PL e depending from configuration, see manual and report
Ambient conditions	
Operating temperature	-20 ... 115 °C (-4 ... 239 °F) , fixed cable
Storage temperature	-40 ... 100 °C (-40 ... 212 °F)
Mechanical specifications	
Material	
Housing	aluminum, blank
Flange	3.1645 aluminum
Shaft	Stainless steel 1.4305 / AISI 303
Mass	approx. 350 g
Rotational speed	max. 8000 min^{-1}
Moment of inertia	≤ 25 gcm^2
Starting torque	≤ 1.5 Ncm
Shaft load	
Axial	at 40 N max. 6000 rpm at 10 N max. 8000 rpm
Radial	at 60 N max. 6000 rpm at 20 N max. 8000 rpm
Approvals and certificates	
UL approval	cULus Recognized, General Purpose, Class 2 Power Source
TÜV approval	Cert. No. Z10 08 10 68273 001

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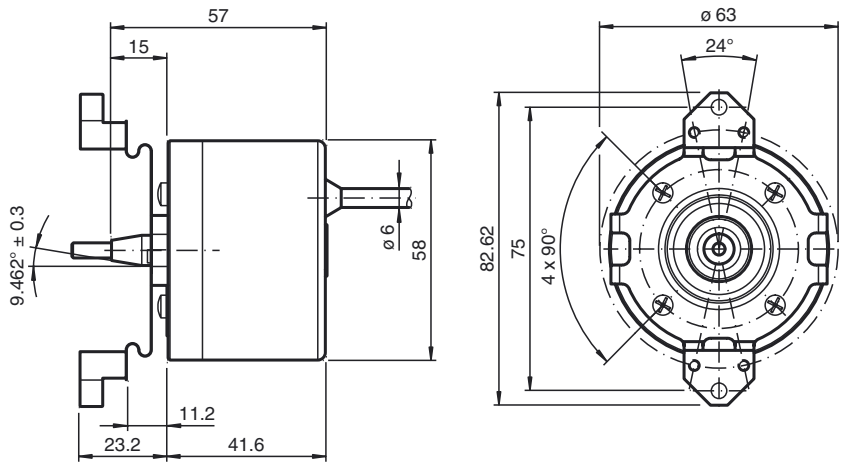
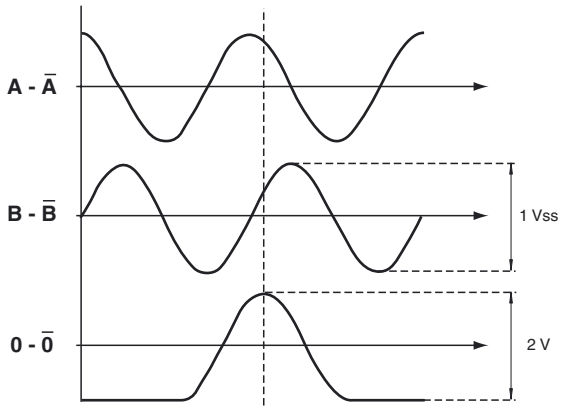
Dimensions



Electrical connection

Signal	Individual leads Ø0.45 mm
GND	White
GND_{sense}	Black
U_b	Brown
$U_{b\ sense}$	Violet
A / cos	Green
B / sin	Grey
$\overline{A}$ / $\overline{cos}$	Yellow
$\overline{B}$ / $\overline{sin}$	Orange
0	Blue
$\overline{0}$	Red
Screen	-

Signal outputs



measured in difference mode

↻ cw - flange view

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Order code

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Pulse count 1024, 2048

Option

T extended Temperature range

Power supply / Output switching

Z 5 V, sine/cosine

Signal output

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

Outgoing circuit

A axial

Connection type

KY individual leads with crimped contacts

Shaft dimension/Flange version

YYY Cone shaft Ø8 mm x 15 mm

Special identification

S Functional safety / Safety assessed

Version

S Sine/Cosine encoder

Shaft version

V Solid shaft

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