



Model Number

RVS58S-YYKYA6ZT-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 V_{SS} 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
 L₁₀ 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 I₀ 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 61508:2010 (SIL3)
 IEC 62061:2012
 ISO 13849-1:2015
 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)

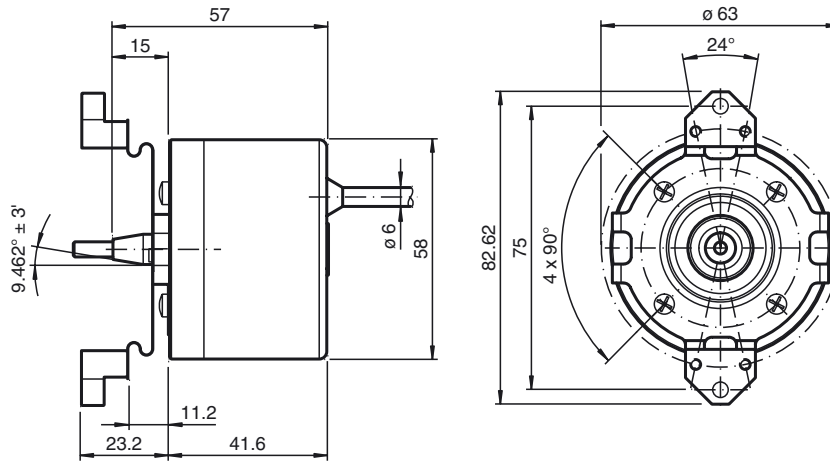
Mechanical specifications

Material
 Housing aluminum, blank
 Flange 3.1655 aluminum
 Shaft Stainless steel 1.4305 / AISI 303
 Mass approx. 350 g
 Rotational speed max. 8000 min⁻¹
 Moment of inertia ≤ 25 gcm²
 Starting torque ≤ 1.5 Ncm
 Shaft load
 Axial 40 N at max. 6000 rpm
 10 N at 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

Dimensions

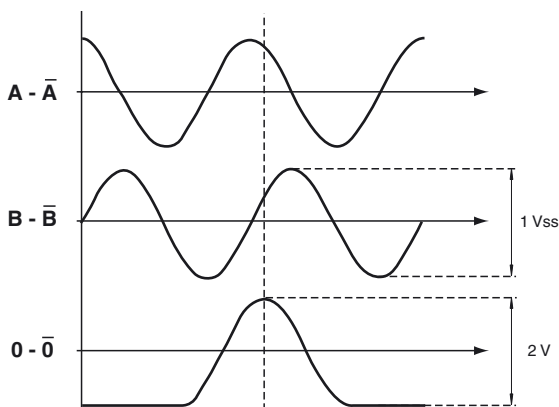


Electrical connection

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

Signal outputs

↻ cw - flange view



measured in difference mode

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Order code

