



Angle sensor 424Z

Axial angle sensor 424Z is the most cost-effective option for angle measurement in the elobau product portfolio. The 424Z has a minimal design and is without a roller or ball bearing. It is optionally available with a redundant output signal, making it an option for safety critical measurement tasks, particularly in mobile applications. The angle measurement range is from 30° and 120°. Angle sensor 424Z is based on the contactless Hall measurement principle, making it extremely reliable and with a long service life.

Owing to the compact dimensions and technical properties, it can be used for a wide range of applications. The sensor is used, for example, in steering axes of mobile machinery for measuring the wheel position.

Product characteristics

- Long lifetime and extremely reliable from contactless measurement with Hall principle
- Angle measuring range between 30° and 120°
- IP67 protection class for harsh environmental conditions
- High temperature resistance from -40 °C to +85 °C
- Resolution 0.1°
- Ratiometric output signal 0.5 V to 4.5V
- Redundant output signal available

General information

The angle measuring range is between 30° and 120°. The measuring principle is contactless, based on a magnetic field rotating around a Hall sensor. The system is short-circuit proof. The mechanical limit stop is at approx. 180°. The rotary axis has a plastic bearing. The rotary axis must therefore not be subjected to any force, i.e. levers are not permitted.

Technical drawing

IMAGE 1/5

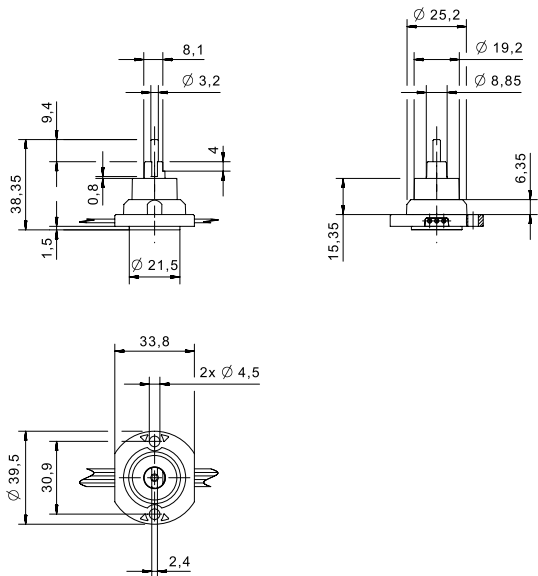
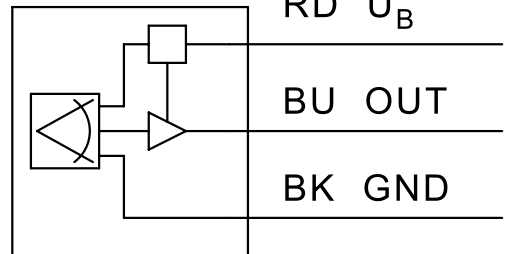


IMAGE 2/5

424ZE..



424ZP..

424ZG..

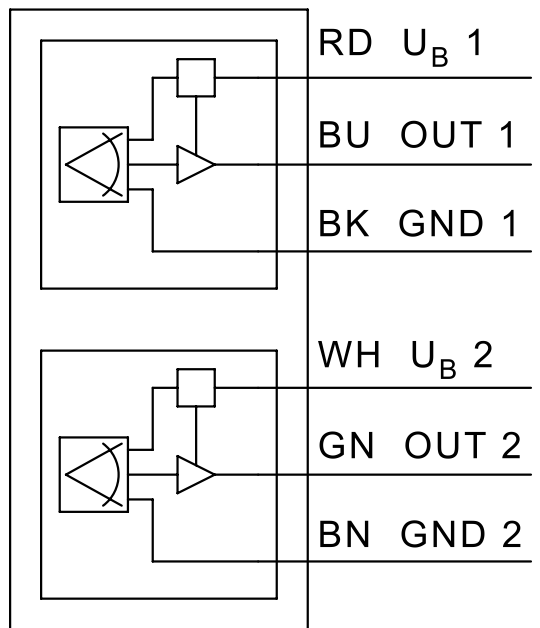


IMAGE 3/5

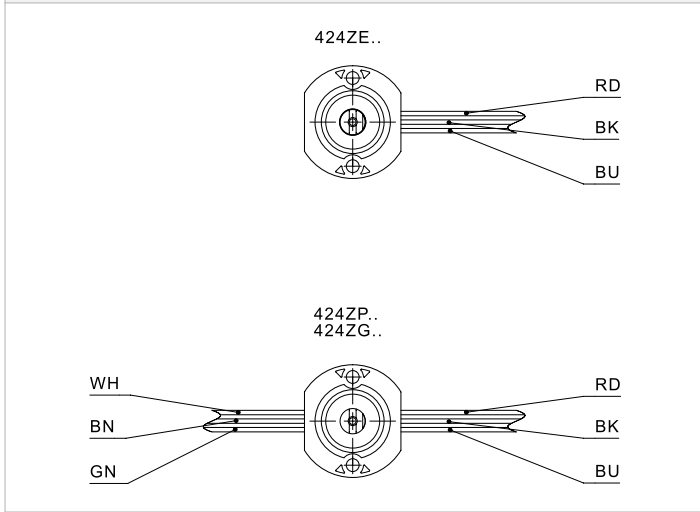


IMAGE 4/5

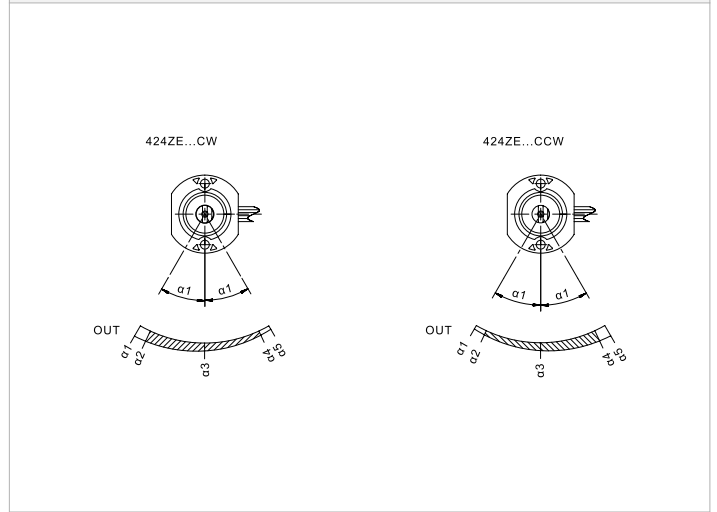
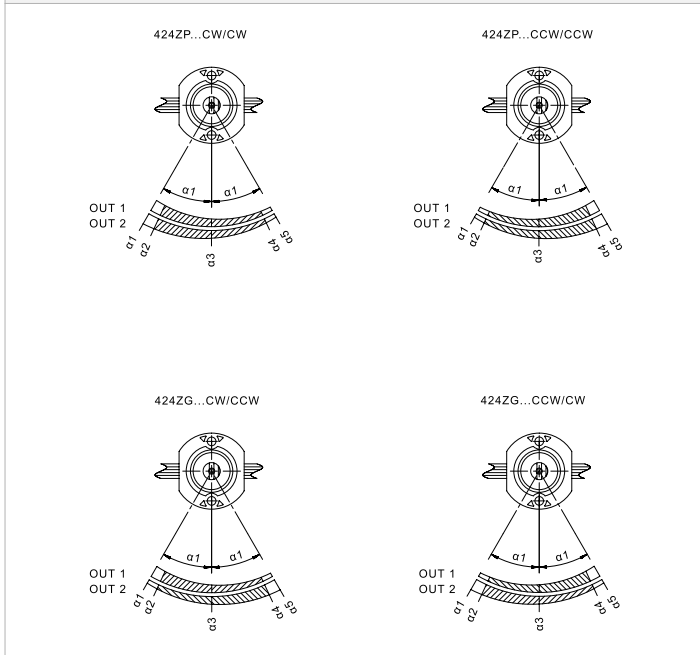


IMAGE 5/5



Electrical data

Attribute	424Z...
Polarity reversal protection	yes
Output signal min.	0.5 V DC
Output signal max.	4.5 V DC
Output signal - centre position/zero position	2.5 V DC
Resolution	0.1 °
EMC immunity (Norm)	ISO 11452-5:2000 ISO7637-2:2004 ISO7637-2:1999
EMC emission (Norm)	DIN EN 55025:2003
Operating voltage min.	4.5 V DC
Operating voltage max.	5.5 V DC
Current consumption	10 mA
Temperature coefficient	typ. +- 245 ppm/K
Linearity error	typ. +-4,14 %
Signal sequence	CCW oder CCW/CW
Signal update rate	2000 Hz
Outputs (quantity, type)	1 oder 2
Technology	Hall
Angle measuring range	30° ... 120 °
Outputs	0,5...4,5V
MTTF	717.9 a
Load resistance min.	10000 Ohm

Mechanical data

Attribute	424Z...
Max. shaft load, axial	0 N
Max. shaft load, radial	0 N
Bearing	Plastic plain bearing
Mechanical stop	yes

Material information

Attribute	424Z...
Housing material	PBT

Environmental conditions

Attribute	424Z...
Protection class	IP67 DIN EN 60529
Operating temperature min.	-40 °C
Max. operating temperature	85 °C
Min. storage temperature	-40 °C
Max. storage temperature	85 °C
Min. cable temperature range, fixed installation	-40 °C
Max. cable temperature range, fixed installation	105 °C

Installation

Attribute	424Z...
Torque for fastening screws	1 N m

Connection

Attribute	424Z...
Cable type	Litze
Cable length	0.5 m