elobau GmbH & Co. KG
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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

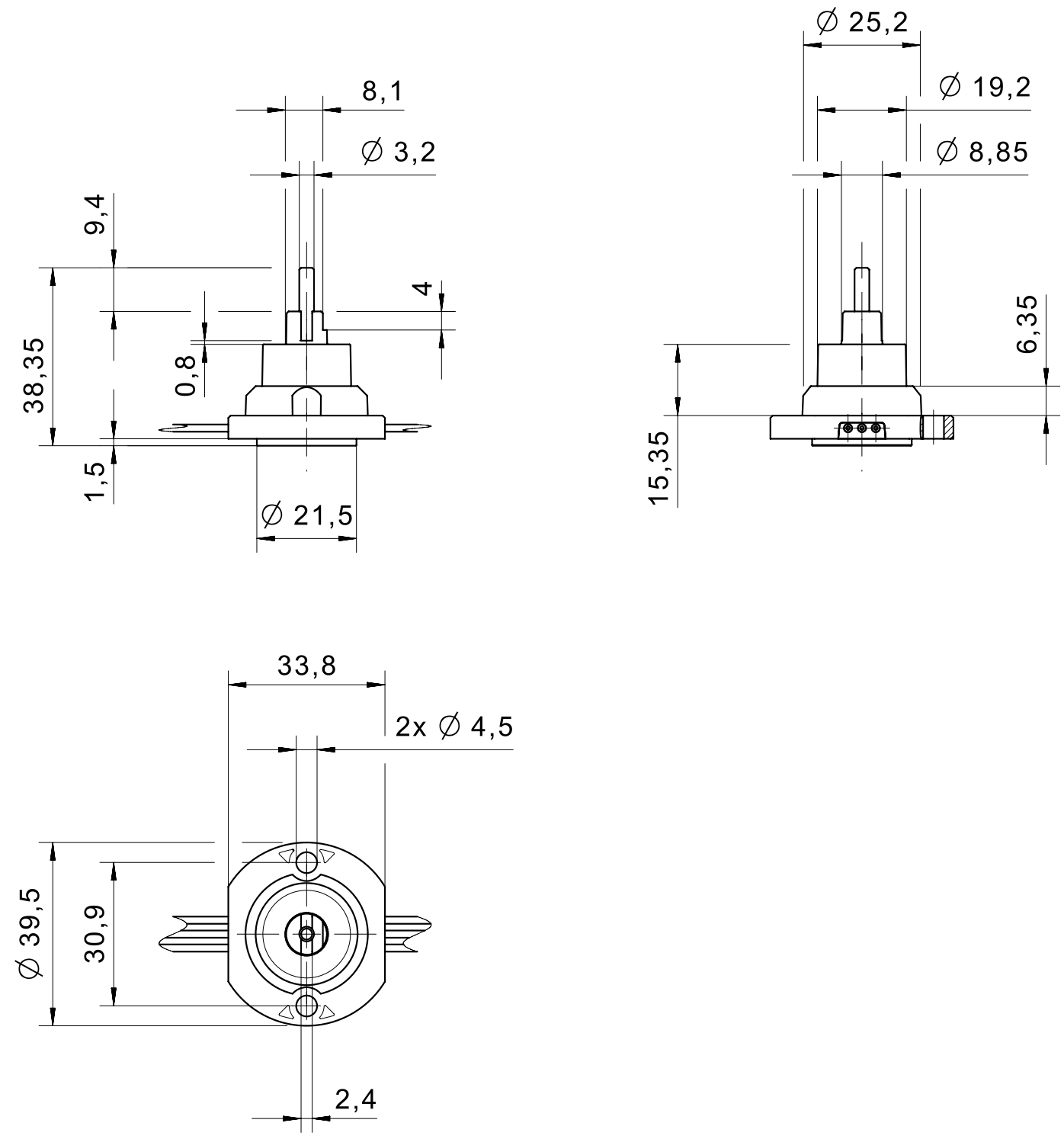
General information
The angle measuring range is between 30° and 120°. The measuring principle is contactless, based on a magnetic field rotating around a Hall sensor. The system is short-circuit proof. The mechanical limit stop is at approx. 180°. The rotary axis has a plastic bearing. The rotary axis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

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Technical drawing

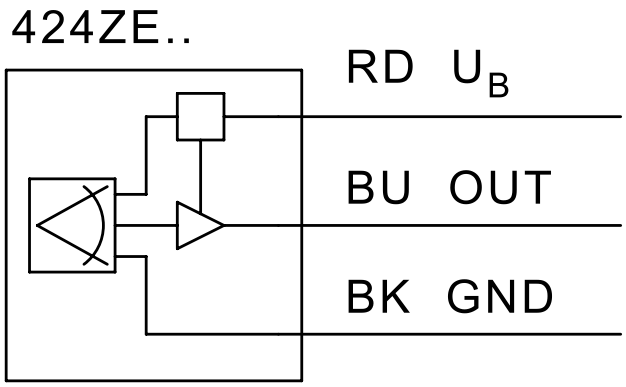
IMAGE 1/5

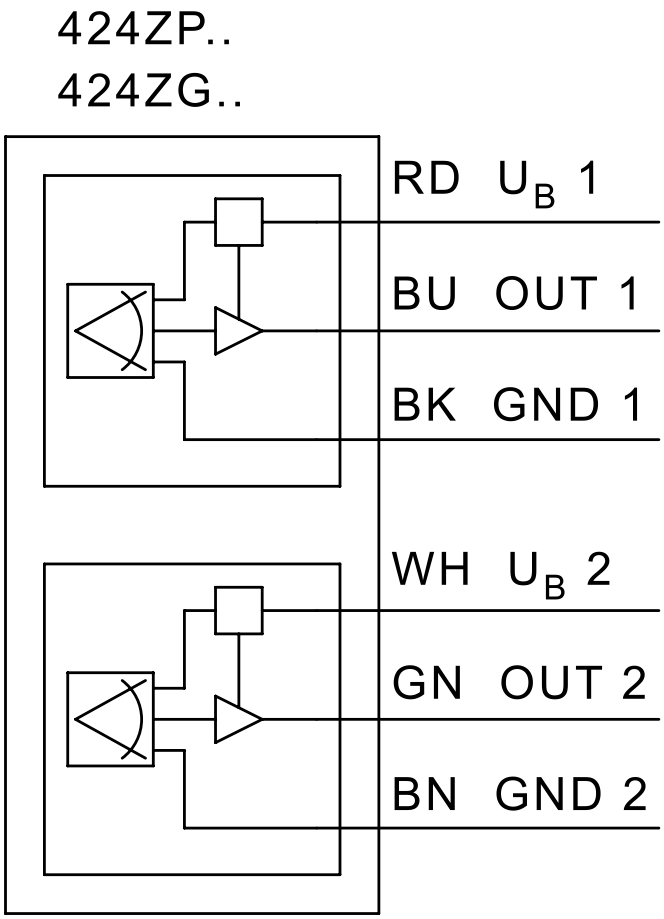


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IMAGE 2/5

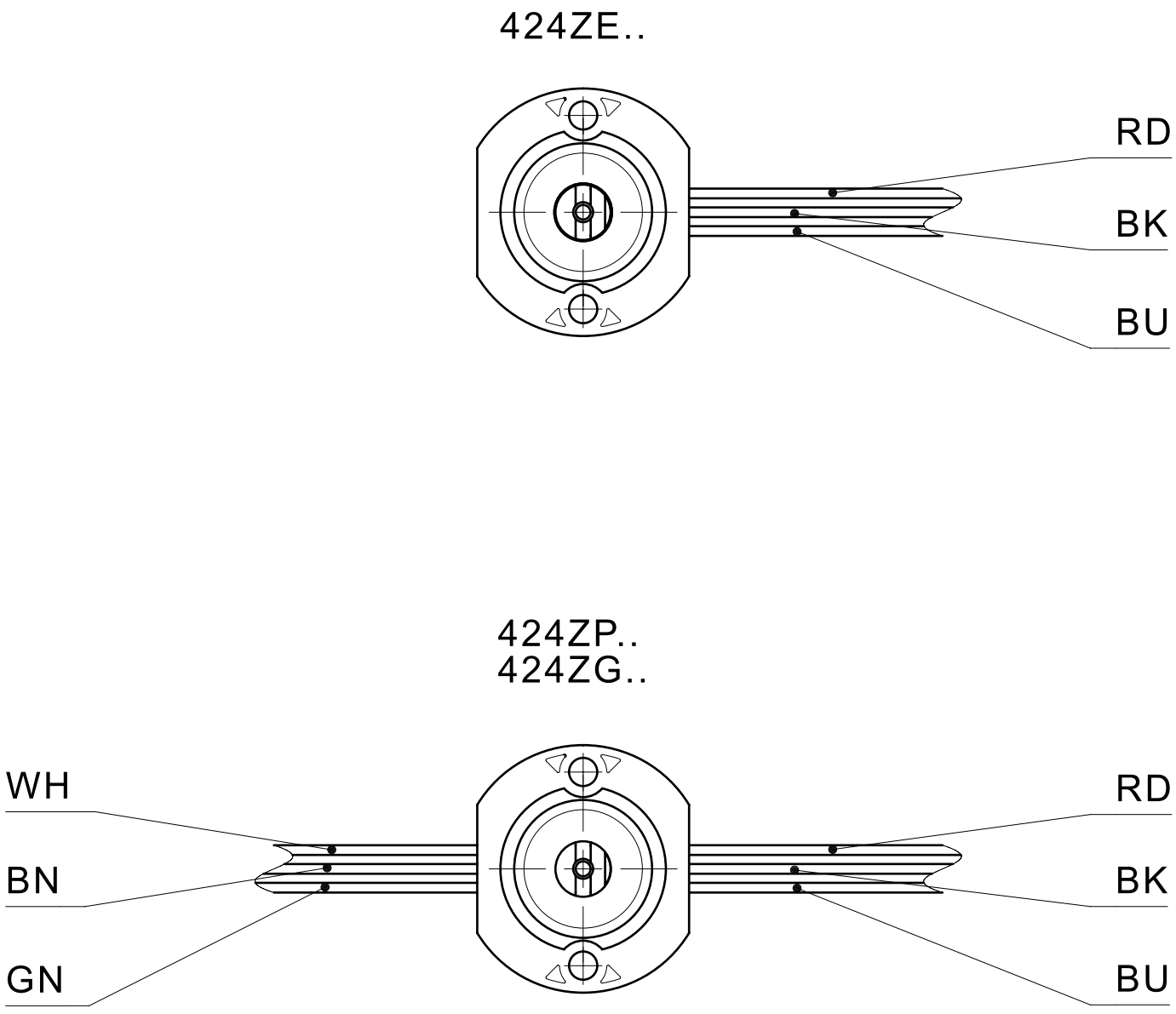




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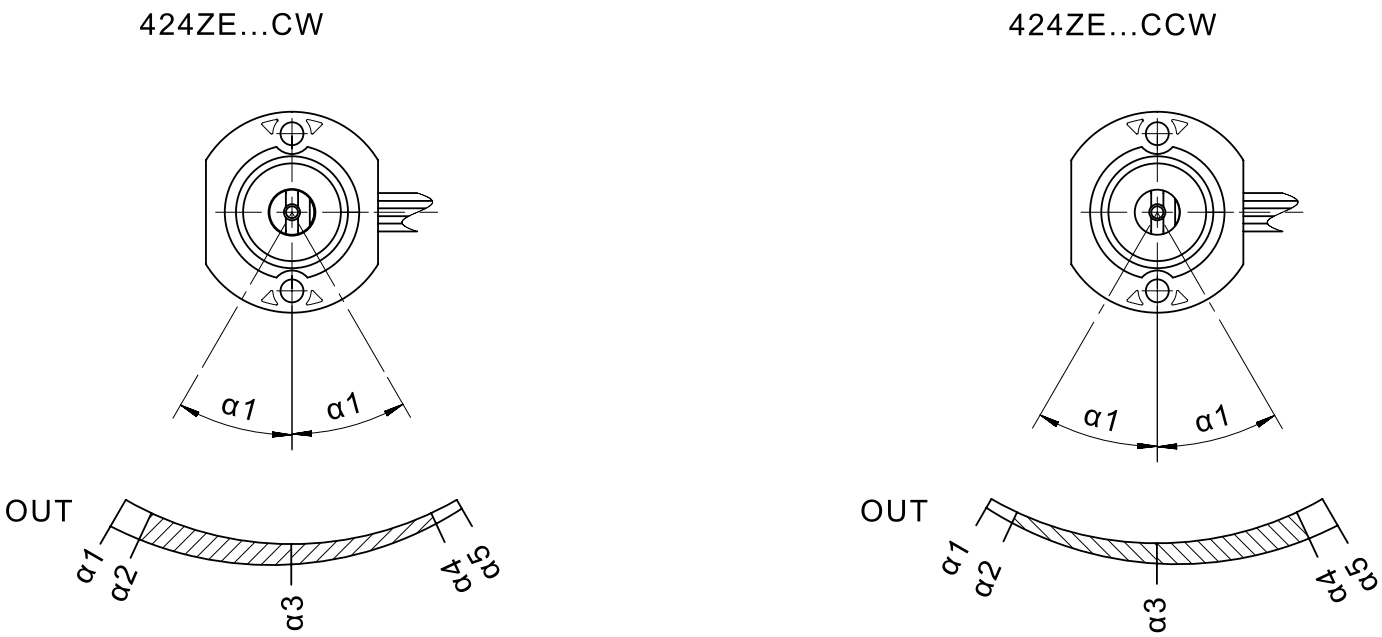
IMAGE 3/5



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IMAGE 4/5

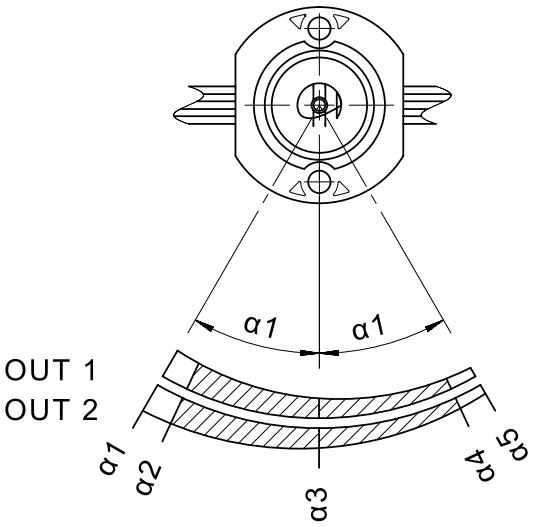


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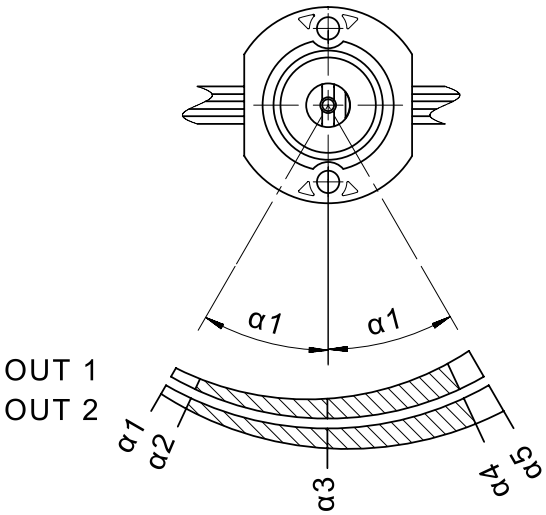
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IMAGE 5/5

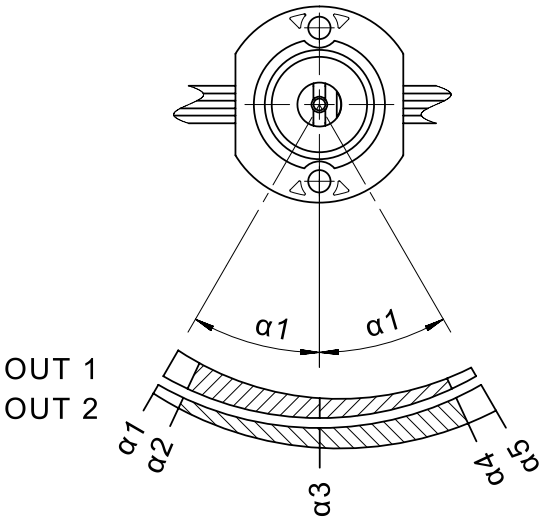
424ZP...CW/CW



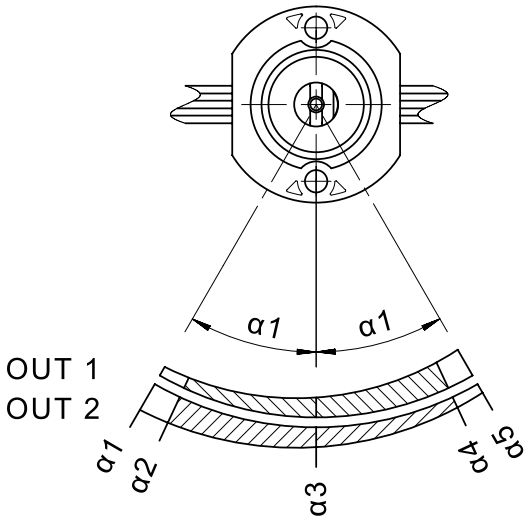
424ZP...CCW/CCW



424ZG...CW/CCW



424ZG...CCW/CW



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Product options

IMAGE 1/1

ORDERING KEY

424Z			Axial angle sensor 120°, magnetic + redundant
			Output signal / signal sequence
	E		Output 1 / CCW
	G		Opposite (output 1 + output 2) / CCW/CW
			Angle measuring range
		030	30°
		045	45°
		060	60°
		090	90°
		120	120°

Optional
Output signal
Parallel

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Article characteristics

Attribute	00008833
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 °
Operating voltage min.	4.5 V DC
Operating voltage max.	5.5 V DC
Current consumption	10 mA
Temperature coefficient	typ. +- 250 ppm/K
Signal sequence	CCW or CCW/CW
Signal update rate	2000 Hz
Outputs (quantity, type)	1 or 2
Technology	Hall
Angle measuring range	30° ... 120 °
Outputs	0,5...4,5V
MTTF	717.9 a
Load resistance min.	10000 Ohm
Typical linearity error	= +/-15° : +-0,2° = +/-25° : +-0,4° = +/-35° : +-1,0° = +/-45° : +-2,0° = +/-60° : +-5,0°
EMC Agricultural and forestry machines (Norm)	EN ISO 14982 conducted disturbance not applicable for 5V supply
EMC Earth-moving and building construction machinery (Norm)	DIN EN ISO 13766-1 conducted disturbance not applicable for 5V supply
EMC Industrial trucks (Norm)	DIN EN 12895
Max. shaft load, axial	0 N
Max. shaft load, radial	0 N
Bearing	Plastic plain bearing
Mechanical stop	yes
Protection class	IP67 DIN EN 60529
Operating temperature min.	-40 °C
Max. operating temperature	85 °C

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Attribute	00008833
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
Torque for fastening screws	1 N m
Cable type	Strand
Cable length	0.5 m