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DATA SHEET

ACM60B-S1LE13x06

ACM60
Absolute encoders

SICK Sensor Intelligence



Illustration may differ

ABSOLUTE ENCODERS

ACM60B-S1LE13x06

ORDERING INFORMATION

Type	part no.
ACM60B-S1LE13x06	6045313

Further device versions and accessories at www.sick.com/ACM60



DETAILED TECHNICAL DATA

SAFETY-RELATED PARAMETERS

MTTF _D (mean time to dangerous failure)	600 years (EN ISO 13849-1) ¹⁾
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¹⁾ This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 40°C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

PERFORMANCE

Number of steps per revolution (max. resolution)	13,107
Number of revolutions	64 (6 bit)
Max. resolution (number of steps per revolution x number of revolutions)	6 bit (13,107 x 64)
Resolution per measuring step	0.8 mV ... 5.5 mV ¹⁾
Resolution	0.35° ... 1.76° ¹⁾
Measurement range	0° ... 23,040°, programmable
Minimum measuring range	≥ 640°
Accuracy	± 0.1 % based on the programmed angle ¹⁾

¹⁾ See measuring step diagram/calculation formula for details.

INTERFACES

Communication interface	-
Communication Interface detail	Voltage
Voltage output	0 V ... 10 V
Code sequence parameter adjustable	CW (clockwise) ¹⁾
Load resistance	≥ 10 kΩ

¹⁾ Default clockwise - CCW possible via Keyboard programming.

ELECTRONICS

Connection type	Male connector, M12, 5-pin, radial
Supply voltage	18 ... 33 V DC
Current consumption	< 80 mA
Reverse polarity protection	✓
Electrical wiring	4-wire, see figure

MECHANICS

Mechanical design	Solid shaft, Servo flange
Shaft diameter	6 mm
Shaft length	10 mm
Characteristics of the shaft	With flat
Weight	0.4 kg
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum die cast
Start up torque	0.5 Ncm (+20 °C)
Operating torque	0.3 Ncm (+20 °C)
Permissible shaft loading	60 N (radial) 30 N (axial)
Operating speed	$\leq 10,000 \text{ min}^{-1}$
Moment of inertia of the rotor	30 gcm ²
Bearing lifetime	2.0 x 10 ⁹ revolutions
Angular acceleration	$\leq 500,000 \text{ rad/s}^2$

AMBIENT DATA

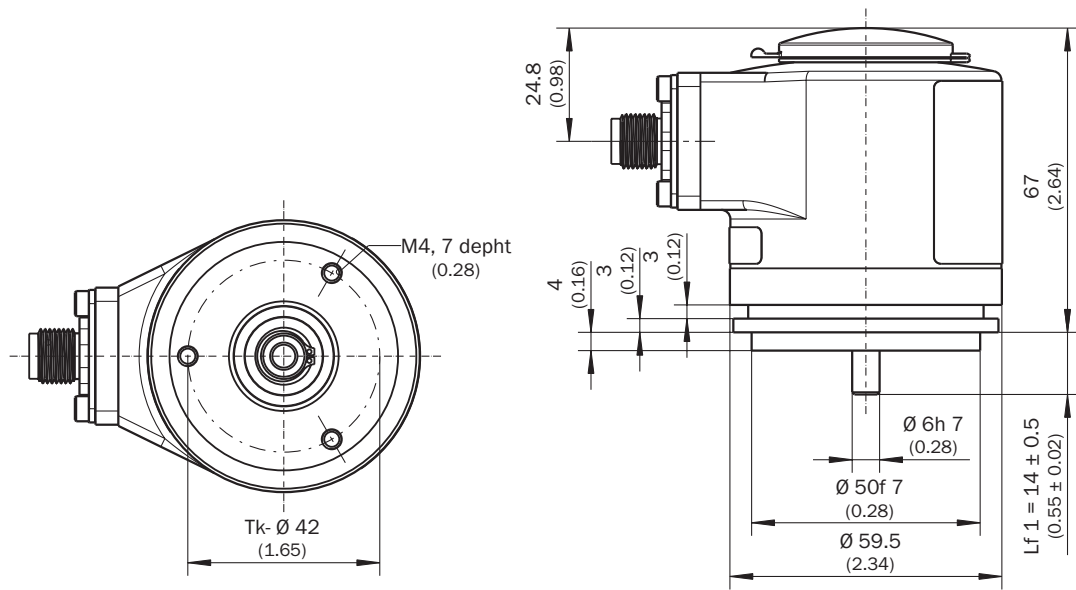
EMC	According to EN 61000-6-2 and EN 61000-6-4
Enclosure rating	IP65, shaft side (IEC 60529) IP67, housing side (IEC 60529) ¹⁾
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	-30 °C ... +80 °C
Storage temperature range	-40 °C ... +100 °C, without package
Resistance to shocks	50 g, 6 ms (EN 60068-2-27)
Resistance to vibration	4 g, 5 Hz ... 100 Hz (EN 60068-2-6)

¹⁾ With mating connector fitted.

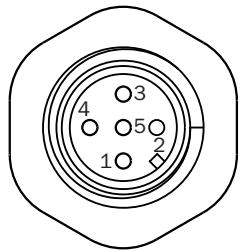
CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓

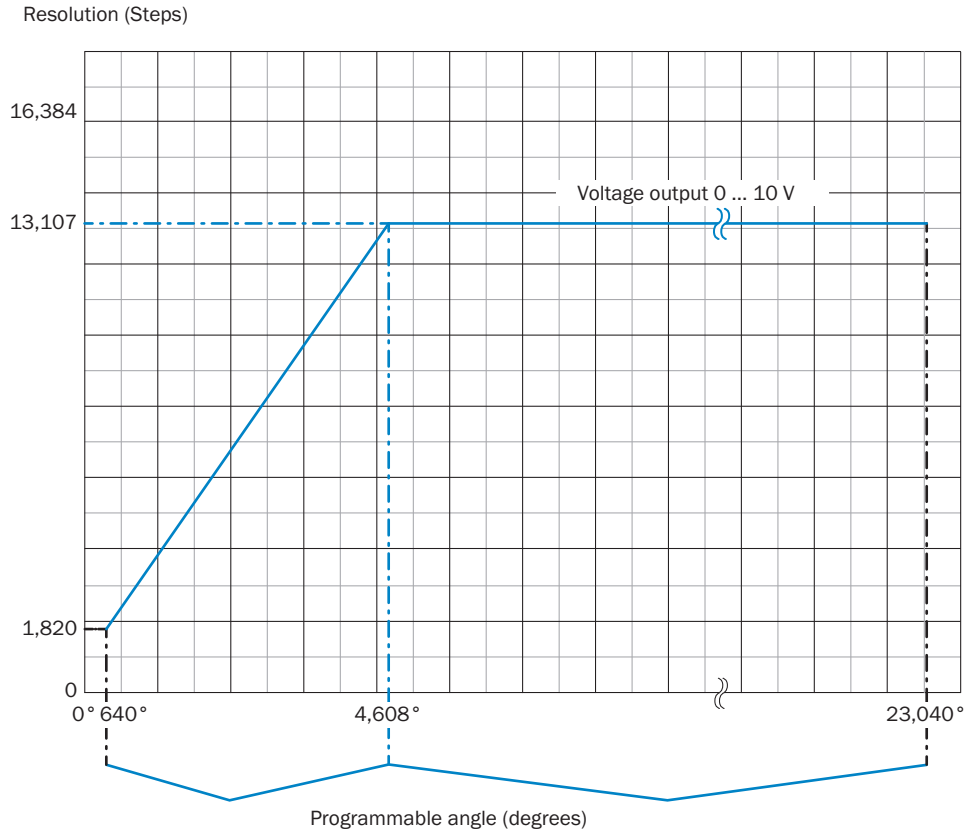
DIMENSIONAL DRAWING



PIN ASSIGNMENT



- ① GND
- ② + 24 V
- ③ Output signal GND
- ④ Output signal 4 ... 20 mA
- ⑤ N.C.

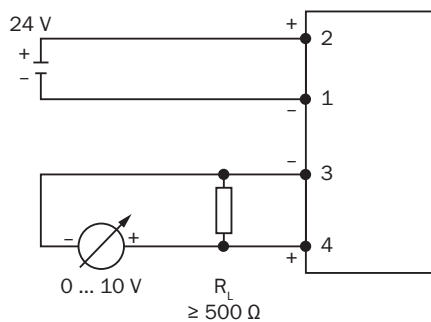
RESOLUTION DIAGRAM VOLTAGE OUTPUT**Resolution ACM60**

Calculation formula for
number of steps in angle range

$$\text{Steps} = \frac{\text{Angle} \times 1024}{360^\circ}$$

Number of steps in angle range

$$\text{Steps (0 ... 10 V)} = 13107$$

ELECTRICAL WIRING VOLTAGE OUTPUT

4-wire technology

for an accurate measurement, the internal resistance of the measuring device must be equal to 10 kOhm.

- ① GND
- ② + 24 V
- ③ Output signal GND
- ④ Output signal 4 ... 20 mA

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6045313



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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