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DATA SHEET

ARS60-H4K03600

ARS60
Absolute encoders

SICK

Sensor Intelligence



Illustration may differ

ABSOLUTE ENCODERS

ARS60-H4K03600

ORDERING INFORMATION

Type	part no.
ARS60-H4K03600	1032884

Further device versions and accessories at www.sick.com/ARS60



DETAILED TECHNICAL DATA

SAFETY-RELATED PARAMETERS

MTTF _D (mean time to dangerous failure)	300 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)	3,600
Measuring step	360° / number of steps
Measuring step deviation	0.016° non-binary number of steps
Error limits G	0.046° (non-binary number of steps) ¹⁾
Repeatability standard deviation σ_r	0.005° ²⁾

¹⁾ In accordance with DIN ISO 1319-1, position of the upper and lower error limit depends on the installation situation, specified value refers to a symmetrical position, i.e. deviation in upper and lower direction is the same.

²⁾ In accordance with DIN ISO 55350-13; 68.3% of the measured values are inside the specified area.

INTERFACES

Communication interface	Parallel data world
Initialization time	80 ms ¹⁾
Code type	Binary
Code sequence parameter adjustable	CW (clockwise) increasing when viewing the clockwise rotating shaft
Measured value backlash	0.005°
Response threshold	0.003°

¹⁾ Valid positional data can be read once this time has elapsed.

ELECTRONICS

Connection type	Cable, 22-wire, radial, 1.5 m
Supply voltage	10 ... 32 V
Operating current	Typ. 90 mA
Switching level of control inputs	Logic H = $0.7 \times U_s$, Logic L = $0 \text{ V} \dots 0.3 \times U_s$
Actuation of set button	$\geq 100 \text{ ms}$ ¹⁾

¹⁾ Only with shaft stationary (note initialisation time).

MECHANICS

Mechanical design	Solid shaft, face mount flange
Shaft diameter	10 mm
Shaft length	19 mm
Characteristics of the shaft	With flat
Weight	Approx. 0.3 kg ¹⁾
Housing material	Aluminum die cast
Start up torque	Typ. 0.4 Ncm
Operating torque	Typ. 0.3 Ncm
Permissible shaft loading	20 N (radial) 10 N (axial)
Operating speed	$\leq 6,000 \text{ min}^{-1}$ with shaft seal $\leq 10,000 \text{ min}^{-1}$ without shaft seal ²⁾
Moment of inertia of the rotor	54 gcm ²
Bearing lifetime	3.6×10^9 revolutions
Angular acceleration	$\leq 500,000 \text{ rad/s}^2$

¹⁾ Based on devices with male connector.

²⁾ If the shaft seal has been removed by the customer.

AMBIENT DATA

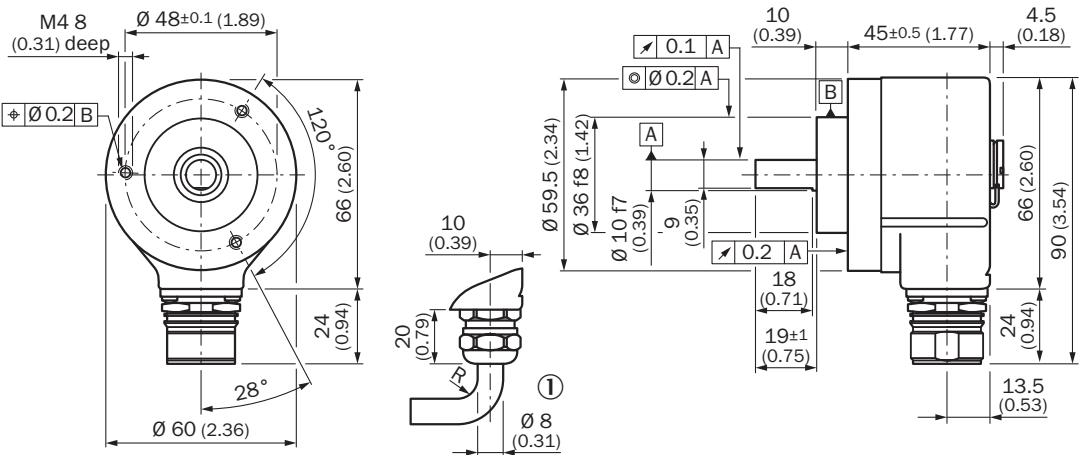
EMC	According to EN 61000-6-2 and EN 61000-6-3 ¹⁾
Enclosure rating	IP66, cable (IEC 60529)
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	-20 °C ... +85 °C
Storage temperature range	-40 °C ... +100 °C, without package
Resistance to shocks	50 g, 11 ms (EN 60068-2-27)
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

¹⁾ EMC according to the standards quoted is achieved if shielded cables are used.

CERTIFICATES

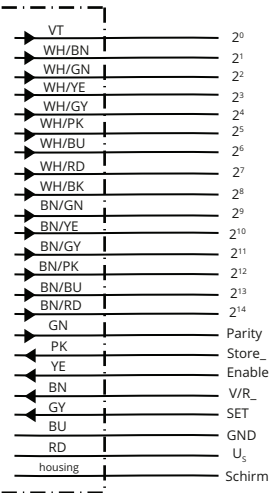
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

DIMENSIONAL DRAWING



Dimensions in mm (inch)
General tolerances according to DIN ISO 2768-mk
① R = min. bending radius 40 mm

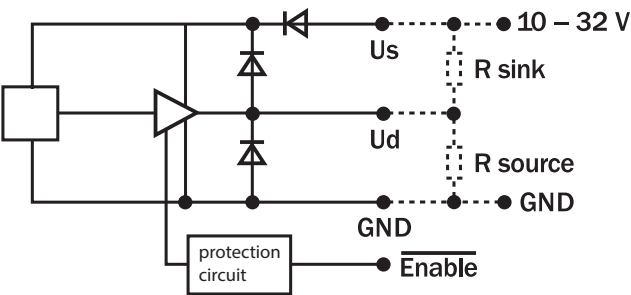
ANSCHLUSSBELEGUNG



PIN	Wire colors (cable connection)	SignalBinary	SignalGray	SignalBCD	
1	Violet	2 ⁰	G ⁰	2 ⁰ v. 10 ⁰	-
2	White/brown	2 ¹	G ¹	2 ¹ v. 10 ⁰	-
3	White/green	2 ²	G ²	2 ² v. 10 ⁰	-
4	White/yellow	2 ³	G ³	2 ³ v. 10 ⁰	-
5	White/grey	2 ⁴	G ⁴	2 ⁰ v. 10 ¹	-
6	White/pink	2 ⁵	G ⁵	2 ¹ v. 10 ¹	-
7	White/blue	2 ⁶	G ⁶	2 ² v. 10 ¹	-
8	White/red	2 ⁷	G ⁷	2 ³ v. 10 ¹	-
9	White/black	2 ⁸	G ⁸	2 ⁰ v. 10 ²	-
10	Brown/green	2 ⁹	G ⁹	2 ¹ v. 10 ²	-
11	Brown/yellow	2 ¹⁰	G ¹⁰	2 ² v. 10 ²	-
12	Brown/gray	2 ¹¹	G ¹¹	2 ³ v. 10 ²	-
13	Brown/pink	2 ¹²	G ¹²	2 ⁰ v. 10 ³	-

PIN	Wire colors (cable connection)	SignalBinary	SignalGray	SignalBCD	
14	Brown/blue	2^{13}	G^{13}	$2^1 \text{ v. } 10^3$	-
15	Brown/red	2^{14}	G^{14}	$2^2 \text{ v. } 10^3$	-
16	Green	Parity		Parity	
17	Pink		Store		-
18	Yellow		Enable		-
19	Brown		CW/CCW (V/R)		-
*	Gray		SET		-
20	Blue		GND		-
21	Red		U_s		-

DIAGRAMS



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/1032884



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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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