

AHM36A-SCCC000S11

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
AHM36A-SCCC000S11	1134021

Other models and accessories → www.sick.com/AHS_AHM36



Detailed technical data

Features

Special device	✓
Specialty	ATM60-C4H13x13 successor: Premounted adapter flange BEF-FA-020-036 (2072299) Max. resolution: 13 bit x 12 bit (8,192 x 4,096)
Standard reference device	AHM36A-SCCC014x12, 1070190

Safety-related parameters

MTTF_D (mean time to dangerous failure)	270 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)	8,192 (13 bit)
Number of revolutions	4,096 (12 bit)
Max. resolution (number of steps per revolution x number of revolutions)	13 bit x 12 bit (8,192 x 4,096)
Error limits G	0.35° (at 20 °C) ¹⁾
Repeatability standard deviation σ_r	0.2° (at 20 °C) 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	CANopen
Data protocol	CANopen CiA DS-301 V4.02, CiA DSP-305 LSS, Encoder Profile: - CiA DS-406, V3.2. - Class C2
Address setting	0 ... 127, default: 5

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

²⁾ See accessories.

Data transmission rate (baud rate)	20 kbit/s ... 1,000 kbit/s, default: 125 kbit/s
Initialization time	2 s ¹⁾
Process data	Position, speed, Temperature
Parameterising data	Number of steps per revolution Number of revolutions PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value Round axis functionality Electronic cams(2 channels x 8 cams)
Available diagnostics data	Minimum and maximum temperature Maximum speed Power-on counter Operating hours counter power-on/motion Counter of direction changes/number of movements cw/number of movements ccw Minimum and maximum operating voltage
Status information	CANopen status via status LED
Bus termination	Via external terminator ²⁾

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

²⁾ See accessories.

Electronics

Connection type	Male connector, M12, 5-pin, universal
Supply voltage	10 ... 30 V
Power consumption	≤ 1.5 W (without load)
Reverse polarity protection	✓

Mechanics

Mechanical design	Solid shaft, face mount flange
Shaft diameter	10 mm ¹⁾
Shaft length	24 mm
Characteristics of the shaft	With flat
Weight	0.12 kg ²⁾
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Zinc
Start up torque	1 Ncm (+20 °C)
Operating torque	< 1 Ncm (+20 °C)
Permissible shaft loading	40 N (radial) 20 N (axial)
Operating speed	≤ 6,000 min ⁻¹ ³⁾
Moment of inertia of the rotor	2.5 gcm ²
Bearing lifetime	3.6 x 10 ⁸ revolutions
Angular acceleration	≤ 500,000 rad/s ²

¹⁾ For use with the adapters 2072298 and 2072295.

²⁾ Based on devices with plug and without adapter flange.

³⁾ Allow for self-heating of 3.5 K per 1,000 rpm when designing the operating temperature range.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP66 (IEC 60529) IP67 (IEC 60529)
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	-40 °C ... +85 °C
Storage temperature range	-40 °C ... +100 °C, without package
Resistance to shocks	100 g, 6 ms (EN 60068-2-27)
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

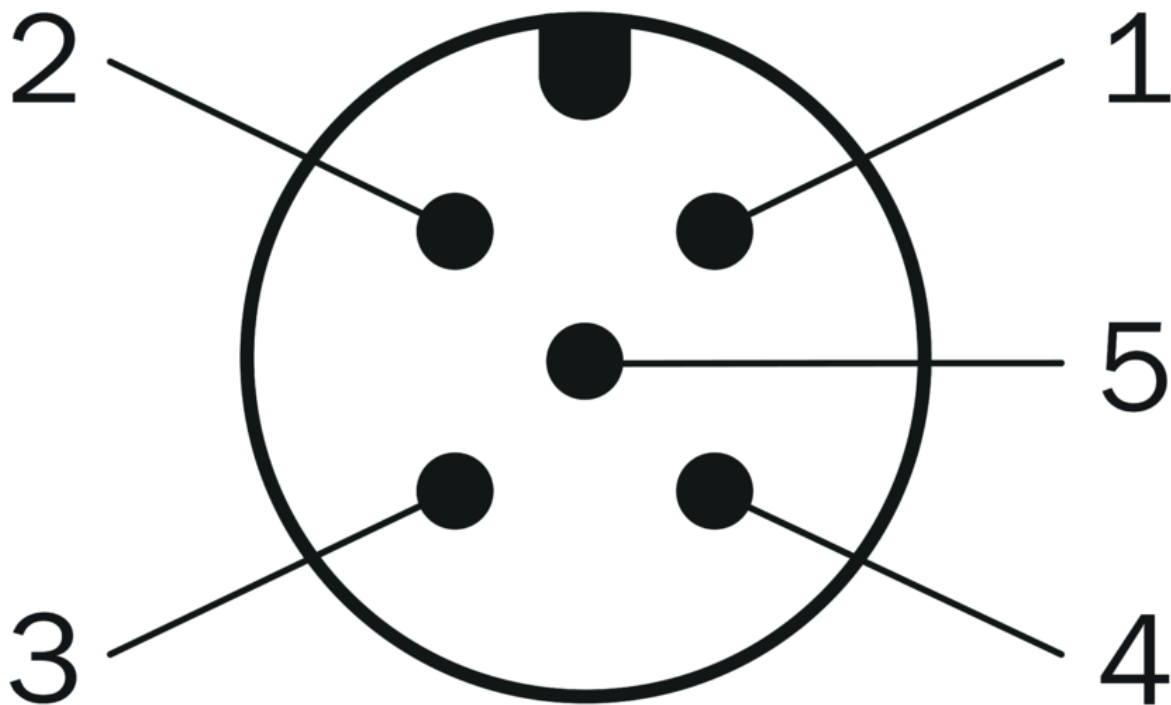
Certificates

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

Classifications

ECLASS 5.0	27270502
ECLASS 5.1.4	27270502
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270502
ECLASS 8.0	27270502
ECLASS 8.1	27270502
ECLASS 9.0	27270502
ECLASS 10.0	27270502
ECLASS 11.0	27270502
ECLASS 12.0	27270502
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

Anschlussbelegung

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PIN	Signal	Wire colors (cable connection)	Function
2	VDC	Red	Supply voltageEncoder10 V DC ... 30 V DC
3	GND/CAN GND	Blue	0 V (GND)
4	CAN high	Black	CAN signal
5	CAN low	Pink	CAN signal
Housing	-	-	Shielding

Recommended accessories

Other models and accessories → www.sick.com/AHS_AHM36

	Brief description	Type	part no.
shaft adaptation			
	Product segment: Shaft adaptation Product: Shaft couplings Description: Double loop coupling, shaft diameter 8 mm / 10 mm, max. shaft offset: radially +/- 0,25 mm, axially +/- 0,4 mm, angle +/- 4 degrees; max. speed 10.000 rpm, -30 to +120 degrees Celsius, torsional spring stiffness of 150 Nm/rad	KUP-0810-D	5326704
	Product segment: Shaft adaptation Product: Shaft couplings Description: Claw coupling, shaft diameter 8 mm / 10 mm, damping element 80 shore blue, maximum shaft offset: radial ± 0.22 mm, axial ± 1 mm angular ± 1.3°, max. speed 19,000 rpm, angle of twist max. 10°, -30 °C to +80 °C, max. torque 800 Ncm, tightening torque of screws: ISO 4029 150 Ncm, material: aluminum flange, damping element: polyurethane	KUP-0810-J	2128267
	Product segment: Shaft adaptation Product: Shaft couplings Description: Bellows coupling, shaft diameter 10 mm/10 mm; maximum shaft offset: radial +/- 0,25 mm, axial +/- 0,4 mm, angular +/- 4°; max. revolutions 10,000 rpm, -30° to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum clamping hubs	KUP-1010-B	5312983
	Product segment: Shaft adaptation Product: Shaft couplings Description: Double loop coupling, shaft diameter 10 mm / 10 mm, Maximum shaft offset: radial +/- 2.5 mm, axial +/- 3 mm, angular +/- 10°; max. speed 3,000 rpm, -30° to +80 °C, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-1010-D	5326703
	Product segment: Shaft adaptation Product: Shaft couplings Description: Spring washer coupling, shaft diameter 10 mm / 10 mm, maximum shaft offset, radial ± 0.3 mm, axial ± 0.4 mm, angle ± 2.5°, torsion spring stiffness 30 Nm/rad; material: aluminum flange, glass-fiber reinforced polyamide membrane and hardened steel coupling pin	KUP-1010-F	5312986
	Product segment: Shaft adaptation Product: Shaft couplings Description: Claw coupling, shaft diameter 10 mm / 10 mm, damping element 80 shore blue, maximum shaft offset: radial ± 0.22 mm, axial ± 1 mm angular ± 1.3°, max. speed 19,000 rpm, angle of twist max. 10°, -30 °C to +80 °C, max. torque 800 Ncm, tightening torque of screws: ISO 4029 150 Ncm, material: aluminum flange, damping element: polyurethane	KUP-1010-J	2127054
	Product segment: Shaft adaptation Product: Shaft couplings Description: 10 mm / 12 mm; maximum shaft offset: radial +/- 0.25 mm, axial +/- 0.4 mm, angular +/- 4°; max. revolutions 10,000 rpm, -30° to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum clamping hubs	KUP-1012-B	5312984
	Product segment: Shaft adaptation Product: Shaft couplings Description: Double loop coupling, shaft diameter 10 mm / 12 mm, Maximum shaft offset: radial +/- 2.5 mm, axial +/- 3 mm, angular +/- 10°; max. speed 3,000 rpm, -30° to +80 °C, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-1012-D	5326702
	Product segment: Shaft adaptation Product: Shaft couplings Description: Claw coupling, shaft diameter 10 mm / 12 mm, damping element 80 shore blue, maximum shaft offset: radial ± 0.22 mm, axial ± 1 mm angular ± 1.3°, max. speed 19,000 rpm, angle of twist max. 10°, -30 °C to +80 °C, max. torque 800 Ncm, tightening torque of screws: ISO 4029 150 Ncm, material: aluminum flange, damping element: polyurethane	KUP-1012-J	2128265

	Brief description	Type	part no.
connectors and cables			
	Connection type head A: Male connector, M12, 5-pin, straight Signal type: CANopen Description: CANopen, unshielded	CAN male connector	6021167
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Signal type: CANopen, DeviceNet™ Description: CANopen, shielded DeviceNet™ Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm²	DOS-1205-GA	6027534
	Connection type head A: Male connector, M12, 5-pin, straight, A-coded Signal type: CANopen, DeviceNet™ Description: CANopen, shielded DeviceNet™ Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm²	STE-1205-GA	6027533
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Fieldbus, CANopen, DeviceNet™ Cable: 2 m, 4-wire, PUR, halogen-free Description: Fieldbus, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants	YF2A15-020C1BXLEAX	2106283
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Fieldbus, CANopen, DeviceNet™ Cable: 5 m, 4-wire, PUR, halogen-free Description: Fieldbus, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants	YF2A15-050C1BXLEAX	2106284
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Fieldbus, CANopen, DeviceNet™ Cable: 10 m, 4-wire, PUR, halogen-free Description: Fieldbus, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants	YF2A15-100C1BXLEAX	2106286
	Connection type head A: Female connector, M12, 5-pin, straight Connection type head B: Female connector, D-Sub, 9-pin, straight Signal type: CANopen Description: CANopen, shielded Note: Programming adapter cable for programming tool PGT-12-Pro	DDL-2D05-G0M5BC9	2083805
	Connection type head A: Female connector, M12, 5-pin, A-coded Connection type head B: Female connector, M12, 5-pin, A-coded Connection type head C: Male connector, M12, 5-pin, A-coded Description: Unshielded	DSC-1205T000025KMC	6030664
	Connection type head A: Flying leads Connection type head B: Flying leads Signal type: CANopen, DeviceNet™ Items supplied: By the meter Cable: 4-wire, twisted pair Description: CANopen, shielded, DeviceNet™ Note: Wire shield Al-Pt film, overall shield C-screen tin-plated	LTG-2804-MW	6028328
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Male connector, M12, 5-pin, straight, A-coded Signal type: Fieldbus, CANopen, DeviceNet™ Cable: 2 m, 4-wire, PUR, halogen-free Description: Fieldbus, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants	YF2A15-020C1B-M2A15	2106279
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Male connector, M12, 5-pin, straight, A-coded Signal type: Fieldbus, CANopen, DeviceNet™ Cable: 5 m, 4-wire, PUR, halogen-free Description: Fieldbus, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants	YF2A15-050C1B-M2A15	2106281
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Male connector, M12, 5-pin, straight, A-coded Signal type: Fieldbus, CANopen, DeviceNet™ Cable: 10 m, 4-wire, PUR, halogen-free Description: Fieldbus, shielded, CANopen, DeviceNet™	YF2A15-100C1B-M2A15	2106282

	Brief description	Type	part no.
	• Application: Drag chain operation, Zones with oils and lubricants • Connection type head A: Female connector, M12, 5-pin, A-coded • Connection type head B: Female connector, M12, 5-pin, A-coded • Connection type head C: Male connector, M12, 5-pin, A-coded • Cable: 0.5 m, TPU • Description: Shielded	Y-CAN cable	6083185
	programming devices		
	• Product segment: Programming devices • Product family: PGT-12 Pro • Description: Hand-held programming device for the programmable SICK AHS/AHM36 CANopen encoders, TMS/TMM61 CANopen inclination sensors, TMS/TMM88 CANopen, TMS/TMM88 Analog, and wire draw encoders with AHS/AHM36 CANopen. Compact dimensions, low weight, and intuitive operation. • Items supplied: 1 x PGT-12-Pro standalone programming tool, 4 x 1.5 V (AA) alkaline mignon batteries	PGT-12-Pro	1076313

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

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For us, that is “Sensor Intelligence.”

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