



AHM36A-S5CC000S01

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
AHM36A-S5CC000S01	1115406

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

Detailed technical data

Features

Special device	✓
Specialty	Data transmission rate (baud rate) 250 kbit/s Preprogrammed Node-ID:32, 1.TPDO cyclically sent every 50 ms, 1.TPDO transmission type: Application specific triggering
Standard reference device	AHM36A-S5CC014x12, 1069034

Performance

Number of steps per revolution (max. resolution)	16,384 (14 bit)
Number of revolutions	4,096 (12 bit)
Max. resolution (number of steps per revolution x number of revolutions)	14 bit x 12 bit (16,384 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: 32
Data transmission rate (baud rate)	20 kbit/s ... 1,000 kbit/s, default: 250 kbit/s
Initialization time	2 s ¹⁾
Process data	Position, speed, Temperature
Parameterising data	Number of steps per revolution Number of revolutions PRESET

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

²⁾ See accessories.

	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	CAN open 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.

Electrical data

Connection type	Male connector, M12, 5-pin, universal
Supply voltage	10 ... 30 V
Power consumption	≤ 1.5 W (without load)
Reverse polarity protection	✓
MTTFd: mean time to dangerous failure	270 years (EN ISO 13849-1) ¹⁾

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.

Mechanical data

Mechanical design	Solid shaft, face mount flange
Shaft diameter	8 mm
Shaft length	12 mm
Weight	0.12 kg ¹⁾
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Zinc
Material, cable	PUR
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 ²⁾
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⁾ Based on devices with male connector.

²⁾ 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)

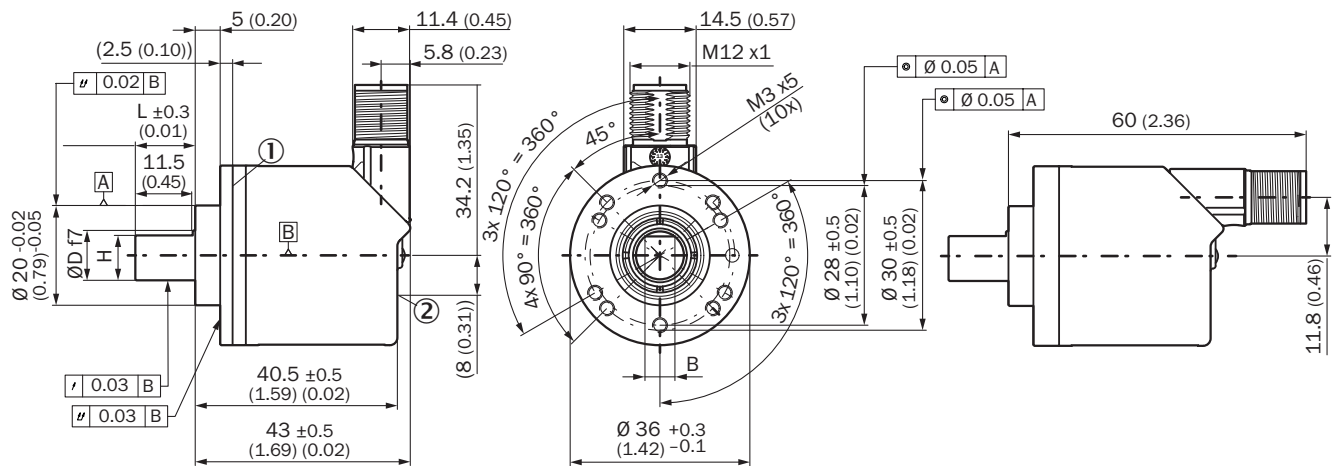
	IP67 (IEC 60529)
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	-40 °C ... +85 °C
Storage temperature range	-40 °C ... +100 °C, without package
Resistance to shocks	100 g, 6 ms (EN 60068-2-27)
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

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

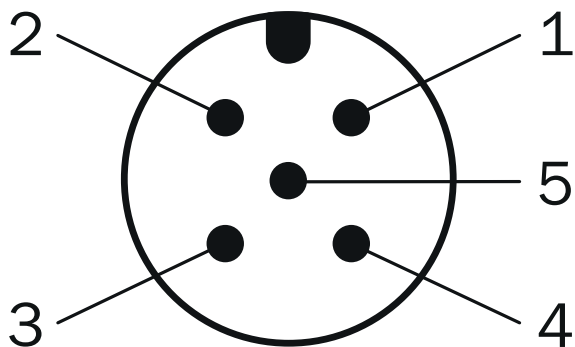
Dimensional drawing (Dimensions in mm (inch))

Solid shaft, face mount flange, male connector



- ① Measuring point for operating temperature
- ② Measuring point for vibrations

PIN assignment





PIN	Signal	Wire colors (cable connection)	Function
1	CAN Shield	White	Screen
2	VDC	Red	Supply voltage Encoder 10 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	-	-	Screen

Recommended accessories

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

	Brief description	Type	Part no.
Programming and configuration tools			
	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.	PGT-12-Pro	1076313
Distributors			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, A-coded Connection type head B: Male connector, M12, 5-pin, A-coded Connection type head C: Female connector, M12, 5-pin, A-coded Description: T-piece for simultaneous connection to sender and receiver, splits the cable from the control cabinet to the sender and receiver Note: 5-pin 	DSC-1205T000025KM0	6030664
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Female connector, M12, 5-pin, straight, A-coded Signal type: CAN, Power Cable: 0.5 m, 5-wire Description: CAN, Power, Y-CAN cable 	Y-CAN cable	6027647

	Brief description	Type	Part no.
Plug connectors and cables			
	<ul style="list-style-type: none"> • 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, CANopen, DeviceNet™, shielded • Application: Drag chain operation, Zones with oils and lubricants 	YF2A15-020C1BXLEAX	2106283
	<ul style="list-style-type: none"> • 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, CANopen, DeviceNet™, shielded • Application: Drag chain operation, Zones with oils and lubricants 	YF2A15-050C1BXLEAX	2106284
	<ul style="list-style-type: none"> • 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, CANopen, DeviceNet™, shielded • Application: Drag chain operation, Zones with oils and lubricants 	YF2A15-100C1BXLEAX	2106286
	<ul style="list-style-type: none"> • 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, CANopen, DeviceNet™, shielded • Application: Drag chain operation, Zones with oils and lubricants 	YF2A15-020C1BM2A15	2106279
	<ul style="list-style-type: none"> • 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, CANopen, DeviceNet™, shielded • Application: Drag chain operation, Zones with oils and lubricants 	YF2A15-050C1BM2A15	2106281
	<ul style="list-style-type: none"> • 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, CANopen, DeviceNet™, shielded • Application: Drag chain operation, Zones with oils and lubricants 	YF2A15-100C1BM2A15	2106282
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight • Signal type: CANopen, DeviceNet™ • Description: CANopen, DeviceNet™, shielded, Head A: female connector, M12, 5-pin, straight, shielded, for cable diameter 4.5 mm ... 7 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	DOS-1205-GA	6027534
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 5-pin, straight, A-coded • Signal type: CANopen, DeviceNet™ • Description: CANopen, DeviceNet™, shielded, Head A: male connector, M12, 5-pin, straight, A coded, shielded, for cable diameter 4 mm ... 8 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	STE-1205-GA	6027533
Shaft adaptation			
	<p>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</p>	KUP-0810-D	5326704
	<p>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</p>	KUP-0810-J	2128267

	Brief description	Type	Part no.
Others			
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 5-pin, straight • Signal type: CANopen • Description: CANopen, unshielded, CAN male connector, with terminating resistor 	CAN male connector	6021167
	<ul style="list-style-type: none"> • Connection type head A: Flying leads • Connection type head B: Flying leads • Signal type: CANopen, DeviceNet™ • Cable: 4-wire, twisted pair • Description: CANopen, DeviceNet™, shielded • Note: Wire shield Al-Pt film, overall shield C-screen tin-plated • Items supplied: By the meter 	LTG-2804-MW	6028328

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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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