

AHS36A-S2CC016384

AHS/AHM36

ABSOLUTE ENCODERS





Ordering information

Туре	part no.
AHS36A-S2CC016384	1093668

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

Illustration may differ



Detailed technical data

Safety-related parameters

MTTF _D (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

Performance

Number of steps per revolution (max. resolution)	16,384 (14 bit)
Error limits G	0.35° (at 20 °C) ¹⁾
Repeatability standard deviation $\boldsymbol{\sigma}_{r}$	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.

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
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

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

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

²⁾ See accessories.

Parameterising data	Number of steps per revolution PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value Electronic cams(2 channels x 8 cams)
Available diagnostics data	Minimum and maximum temperature Maximumspeed Power-on counter Operatinghours counter power-on/motion Counter of direction changes/number of movements cw/number of movements ccw Minimum andmaximum 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.

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, Servo flange
Shaft diameter	10 mm
Shaft length	12 mm
Characteristics of the shaft	With flat
Weight	0.12 kg ¹⁾
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 2)}
Moment of inertia of the rotor	2.5 gcm ²
Bearing lifetime	3.6 x 10^8 revolutions
Angular acceleration	≤ 500,000 rad/s²

¹⁾ Based on devices with male connector.

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)	

²⁾ See accessories.

 $^{^{2)}\,\}mathrm{Allow}$ for self-heating of 3.5 K per 1,000 rpm when designing the operating temperature range.

AHS36A-S2CC016384 | AHS/AHM36

ABSOLUTE ENCODERS

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)

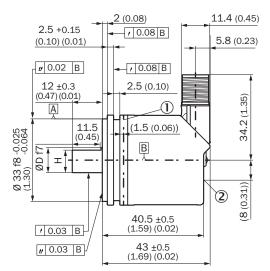
Certificates

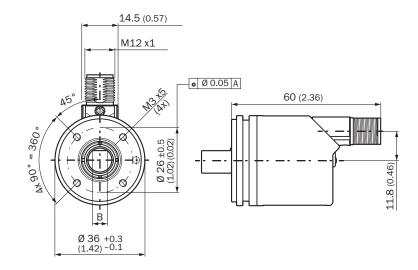
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cTUVus certificate	✓
CANopen certificate	✓
ECE test certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

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

solid shaft, servo flange, male connector



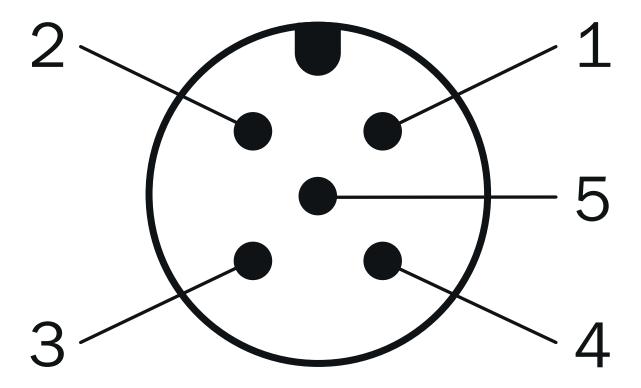


Dimensions in mm (inch)

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

Туре	Shaft diameterØ D f7	В	Н
AHx36x-S1xxxxxxxx AHx36x-S3xxxxxxxx	6 mm	3,6 mm	5,4 mm
AHx36x-S9xxxxxxx AHx36x-S5xxxxxxxx	8 mm	3,9 mm	7,5 mm
AHx36x-S2xxxxxxxx AHx36x-S4xxxxxxxx AHx36x-SCxxxxxxxxx	10 mm	6 mm	9 mm
AHx36x-SAxxxxxxxx AHx36x-S8xxxxxxxx	1/4"	3,85 mm	5,7 mm
AHx36x-SBxxxxxxxx AHx36x-S7xxxxxxxx	3/8"	4,35 mm	9 mm

Anschlussbelegung



PIN	Signal	Wire colors (cable connection)	Function
1	CAN Shield	White	Shielding
2	VDC	Red	Supply voltageEn- coder10 V DC 30 V DC
3	GND/CAN GND	Blue	O 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	Туре	part no.
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

	Brief description	Туре	part no.	
connectors ar	connectors and cables			
///	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 Signal type: CANopen, DeviceNet™ Description: CANopen, shieldedDeviceNet™ Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	DOS-1205-GA	6027534	
Co	Connection type head A: Male connector, M12, 5-pin, straight, A-coded Signal type: CANopen, DeviceNet™ Description: CANopen, shieldedDeviceNet™ Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm²	STE-1205-GA	6027533	
	 Connection type head A: Male connector, M12, 5-pin, straight Signal type: CANopen Description: CANopen, unshielded 	CAN male connector	6021167	
Se.	 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	
No.	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	
No.	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	
No.	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	
88	 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	
88	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	
66	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™ Application: Drag chain operation, Zones with oils and lubricants	YF2A15-100C1B- M2A15	2106282	
1.66	 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 	Y-CAN cable	6083185	

AHS36A-S2CC016384 | AHS/AHM36

ABSOLUTE ENCODERS

	Brief description	Туре	part no.
	Description: Shielded		
	 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
Mounting systems			
3 3 3	Description: Servo clamps, small, for servo flange (clamps, eccentric fastener), 3 pcs, without mounting material Items supplied: Without mounting hardware	BEF-WK-RESOL	2039082

	Brief description	Туре	part no.
shaft adaptat	ion		
	 Product segment: Shaft adaptation Product: Shaft couplings Description: Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular +/- 4°; max. speed 10,000 rpm, -30 °C to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum hub 	KUP-0610-B	5312982
10	 Product segment: Shaft adaptation Product: Shaft couplings Description: Double loop coupling, shaft diameter 6 mm / 10 mm, max. shaft offset: radially +/-2,5 mm, axially +/-3 mm, angle +/- 10 degrees;max. speed 3.000 rpm, -30 to +80 degrees Celsius, torsional spring stiffness of 25 Nm/rad 	KUP-0610-D	5326697
	 Product segment: Shaft adaptation Product: Shaft couplings Description: Spring washer coupling, shaft diameter 6 mm / 10 mm, Maximum shaft offset: radial +/- 0.3 mm, axial +/- 0.4 mm, angular +/- 2.5°; max. speed 12,000 rpm, -10° to +80°C, max. torque 60 Ncm; material: aluminum flange, glass fiber-reinforced polyamide membrane and hardened steel coupling pin 	KUP-0610-F	5312985
	 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
10	 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
(i	 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: 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
10	 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: 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
10	 Product segment: Shaft adaptation Product: Shaft couplings Description: Claw coupling, shaft diameter 6 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-0610-J	2127056
	 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
10	 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, 	KUP-1010-J	2127054

AHS36A-S2CC016384 | AHS/AHM36

ABSOLUTE ENCODERS

Brief description	Туре	part no.
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		
 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

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.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

WORLDWIDE PRESENCE:

Contacts and other locations -www.sick.com

