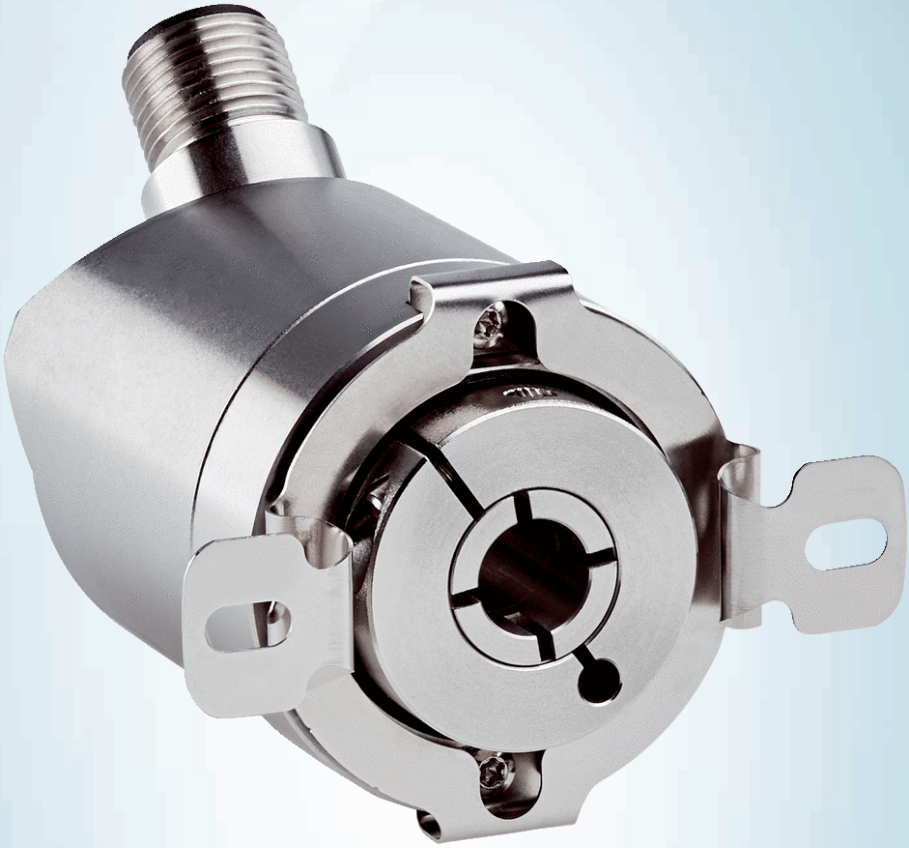
Data sheet



AHM36I-BDJC014X12

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.

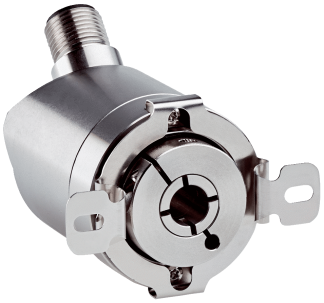


Illustration may differ

Ordering information

Type	part no.
AHM36I-BDJC014X12	1120029

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

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)
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	SAE J1939
Address setting	0 ... 253, (Address Claiming: 0...240) default: 224
Data transmission rate (baud rate)	125 kbit/s, 250 kbit/s, 500 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 Counting direction Sampling rate for speed calculation

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

[2] See accessories.

	Unit for output of the speed value
Status information	CAN 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	Blind hollow shaft
Shaft diameter	10 mm
Characteristics of the shaft	Front clamp
Weight	0.2 kg [1]
Shaft material	Stainless steel 1,4305
Flange material	Stainless steel 1,4305
Housing material	Stainless steel 1,4305
Start up torque	1 Ncm (+20 °C)
Operating torque	< 1 Ncm (+20 °C)
Permissible movement static	± 0.3 mm, ± 0.3 mm (radial, axial)
Permissible movement dynamic	± 0.1 mm (radial) ± 0.1 mm (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	IP67 (IEC 60529) IP69K (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) [1] [2]

[1] With additional mechanical cable mounting.
[2] For side-mounted encoders (horizontal encoder shaft, vertical stator coupling), additional damping measures may be required in some cases as resonances can arise. Furthermore, the cable must be fastened with the shortest possible distance to the encoder.

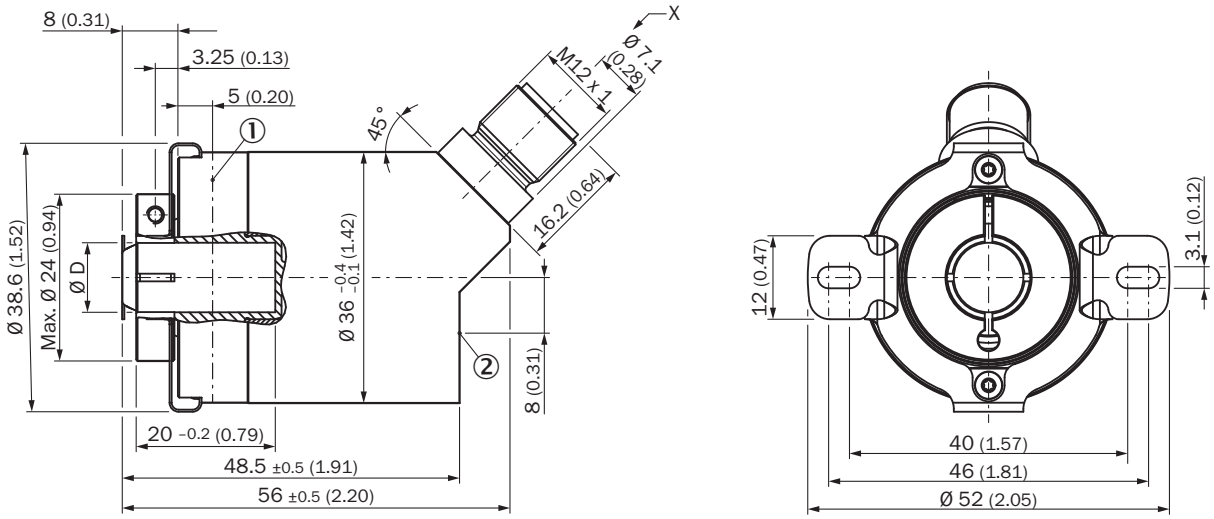
Classifications

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

Certificates

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

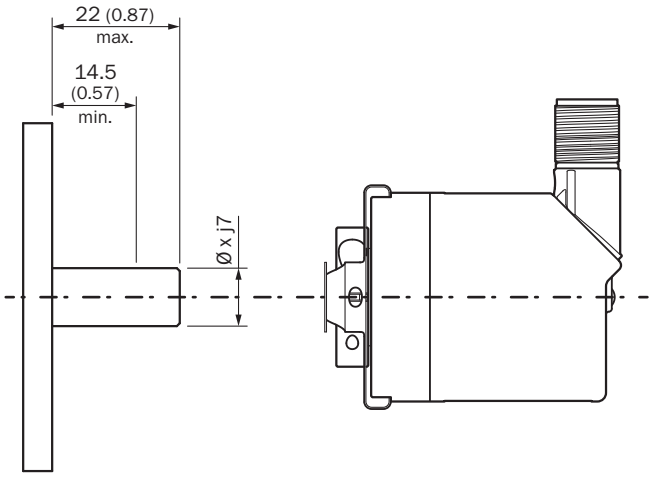
Dimensional drawing Blind hollow shaft, male connector



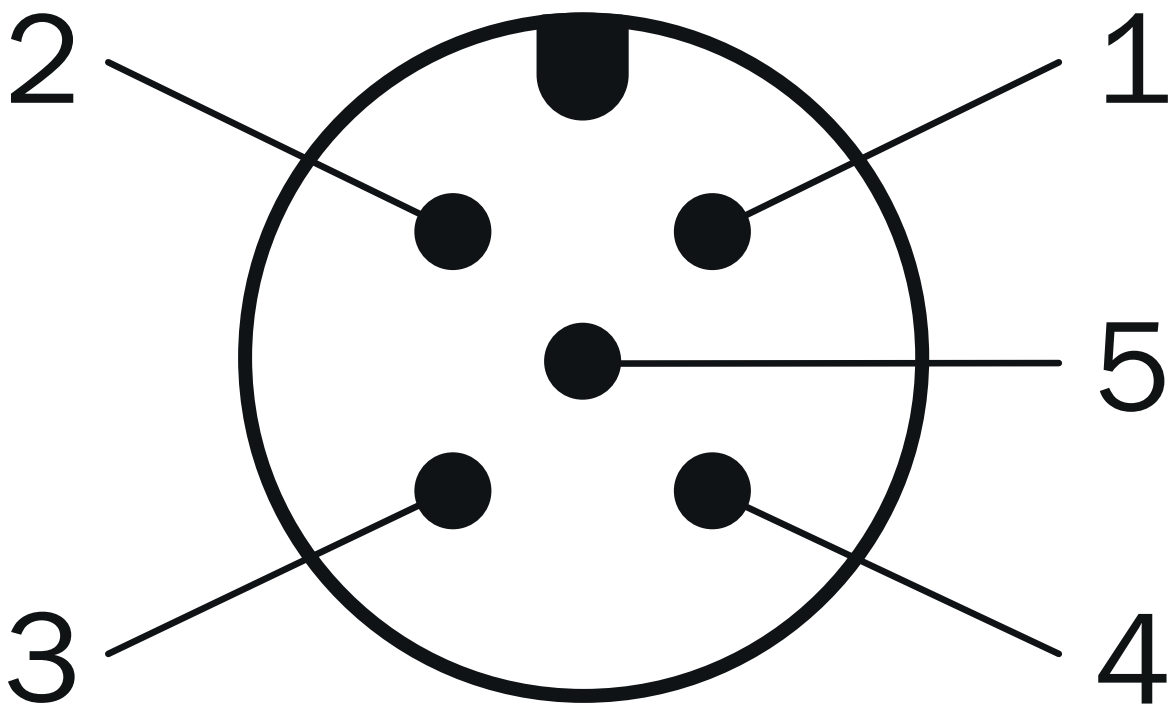
Dimensions in mm (inch)
Non-tolerated dimensions according to DIN-ISO 2768-mk
① Measuring point for operating temperature
② measuring point for vibrations

Type	Shaft diameterØ D F7
AHx36x-BAxxxxxxxx	6 mm
AHx36x-BBxxxxxxxx	8 mm
AHx36x-BCxxxxxxxx	1/4″
AHx36x-BDxxxxxxxx	10 mm
AHx36x-BKxxxxxxxx	3/8″

Attachment specifications



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	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.
connectors and cables			
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Description:** Shielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm² • **Application:** Hygienic and washdown zones	YF12ES5-0075S5586A	2097335
	• **Connection type head A:** Male connector, M12, 5-pin, straight, A-coded • **Description:** Shielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm² • **Application:** Hygienic and washdown zones	YM12ES5-0075S5586A	2097336
	• **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-1205T000025KM0	6030664
	• **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
	• **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
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
Mounting systems			
	• **Product family:** Stator couplings • **Description:** Standard stator coupling, AHS/AHM36	BEF-DS16-AHX	2108615

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