



AHM36A-BACC014x12

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|-------------------|----------|
| AHM36A-BACC014x12 | 1065990 |

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 | 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 |

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

²⁾ See accessories.

| | |
|-----------------------------------|--|
| 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 | Blind hollow shaft |
| Shaft diameter | 6 mm |
| Characteristics of the shaft | Front clamp |
| 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 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 | 15 gcm ² |
| Bearing lifetime | 2.0 x 10 ⁹ 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) |

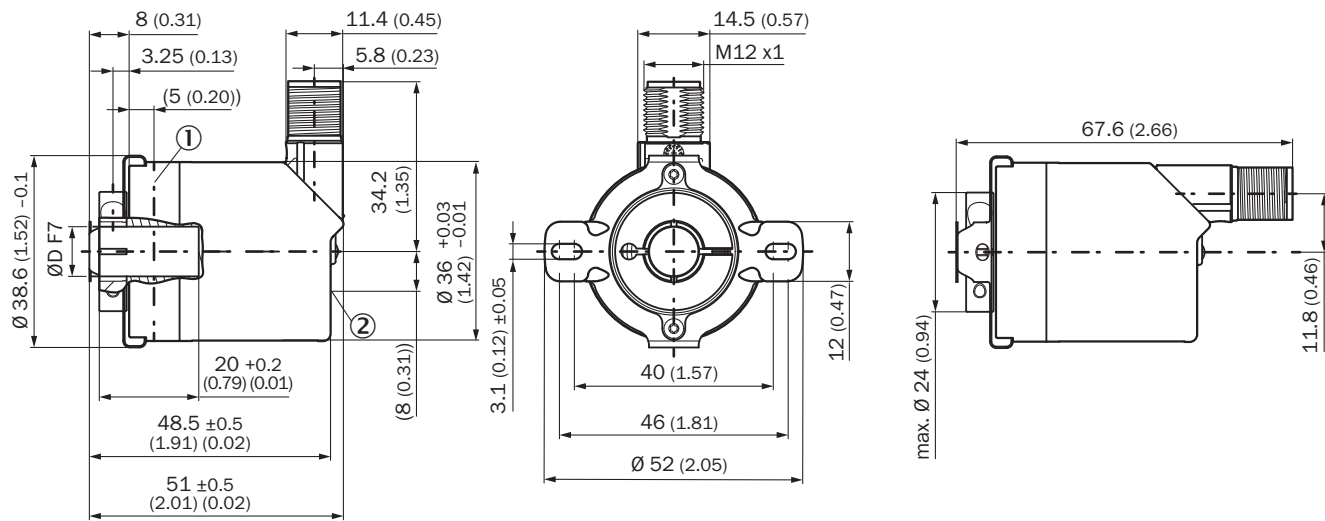
Certificates

| | |
|--|---|
| 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 |

Dimensional drawing Blind hollow shaft, male connector



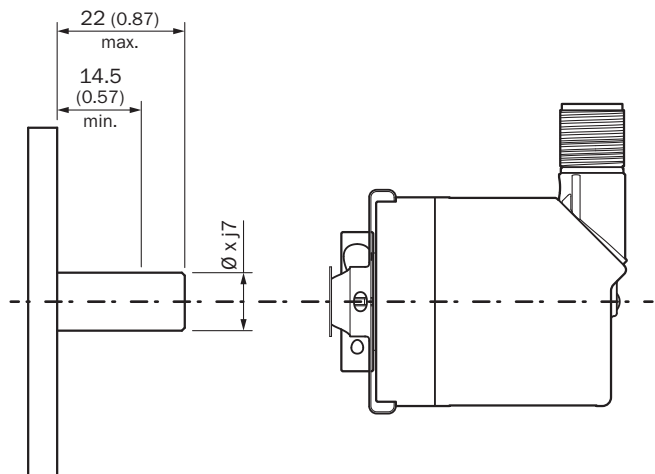
Dimensions in mm (inch)

① Measuring point for operating temperature

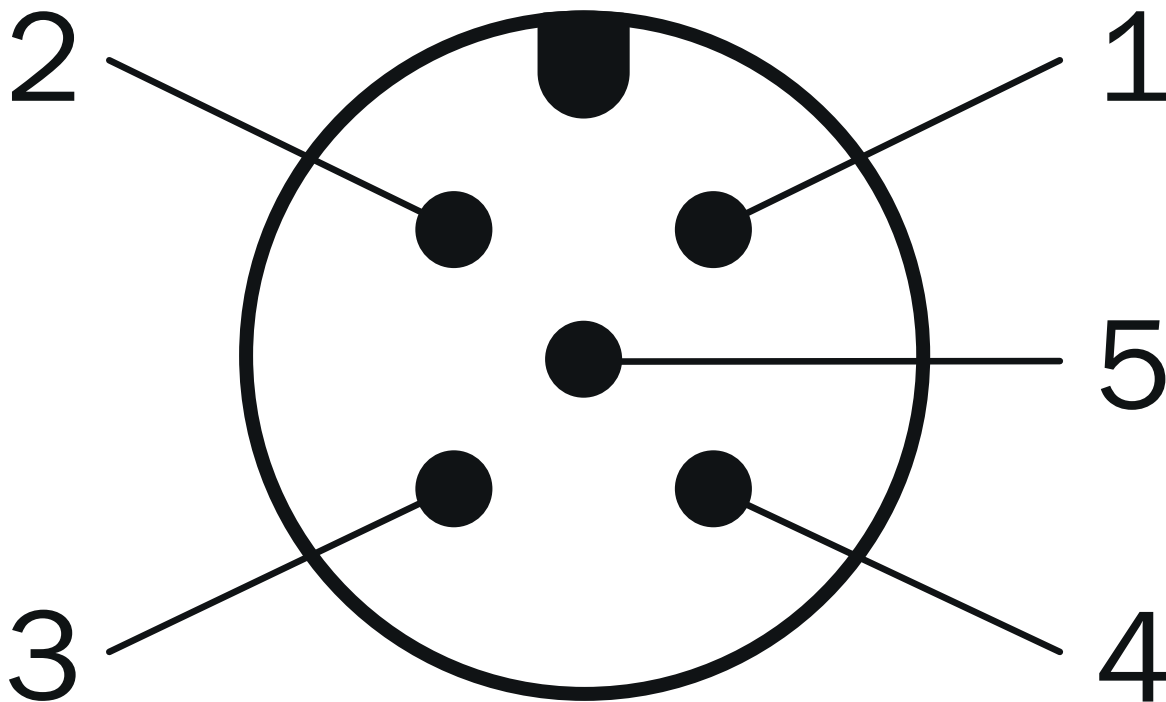
② measuring point for vibrations

| Type | Shaft diameter Ø D F7 |
|------------------|-----------------------|
| AHx36x-BAxxxxxxx | 6 mm |
| AHx36x-BBxxxxxxx | 8 mm |
| AHx36x-BCxxxxxxx | 1/4" |
| AHx36x-BDxxxxxxx | 10 mm |
| AHx36x-BKxxxxxxx | 3/8" |

Attachment specifications




Anschlussbelegung






| PIN | Signal | Wire colors (cable connection) | Function |
|---------|-------------|--------------------------------|--|
| 1 | CAN Shield | White | Shielding |
| 2 | VDC | Red | Supply voltageEncoder 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 | - | - | Shielding |

Recommended accessories

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

| Brief description | Type | part no. |
|---|------------|----------|
| programming devices  <ul style="list-style-type: none"> Product segment: Programming devices Product: 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 | Type | part no. |
|---|---|---------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> Description: CANopen, shielded, DeviceNet™ 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 Note: Wire shield Al-Pt film, overall shield C-screen tin-plated | LTG-2804-MW | 6028328 |
|  | <ul style="list-style-type: none"> Description: CANopen, shielded, DeviceNet™ Connection type head A: Female connector, M12, 5-pin, straight, A-coded Signal type: CANopen, DeviceNet™ Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² | DOS-1205-GA | 6027534 |
|  | <ul style="list-style-type: none"> Description: CANopen, shielded, DeviceNet™ Connection type head A: Male connector, M12, 5-pin, straight, A-coded Signal type: CANopen, DeviceNet™ Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² | STE-1205-GA | 6027533 |
|  | <ul style="list-style-type: none"> Description: CANopen, unshielded Connection type head A: Male connector, M12, 5-pin, straight Signal type: CANopen | CAN male connector | 6021167 |
|  | <ul style="list-style-type: none"> Description: Unshielded 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 | DSC-1205T000025KMC | 6030664 |
|  | <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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-020C1BXLAX | 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-050C1BXLAX | 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-100C1BXLAX | 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-020C1B-M2A15 | 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-050C1B-M2A15 | 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, shielded, CANopen, DeviceNet™ Application: Drag chain operation, Zones with oils and lubricants | YF2A15-100C1B-M2A15 | 2106282 |
|  | <ul style="list-style-type: none"> Description: Shielded 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 | Y-CAN cable | 6083185 |

| | Brief description | Type | part no. |
|---|--|------------------|----------|
|  | <ul style="list-style-type: none"> Cable: 0.5 m, TPU Description: CANopen, 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 Note: Programming adapter cable for programming tool PGT-12-Pro | DDL-2D05-G0M5BC9 | 2083805 |
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> Product family: Stator couplings Description: Stator coupling on hole circle 63 mm | BEF-DS08 | 2072206 |
|  | <ul style="list-style-type: none"> Product family: Stator couplings Description: Standard stator coupling, AHS/AHM36 | BEF-DS16-AHX | 2108615 |

SICK AT A GLANCE

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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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