

AHM36B-BBQM012x12

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|-------------------|----------|
| AHM36B-BBQM012x12 | 1092053 |

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

Detailed technical data

Safety-related parameters

| | |
|--|--|
| MTTF_D (mean time to dangerous failure) | 240 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) | 4,096 (12 bit) |
| Number of revolutions | 4,096 (12 bit) |
| Max. resolution (number of steps per revolution x number of revolutions) | 12 bit x 12 bit (4,096 x 4,096) |
| Error limits G | 0.35° (at 20 °C) ¹⁾ |
| Repeatability standard deviation σ_r | 0.25° (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 | IO-Link |
| Communication Interface detail | IO-Link V1.1 |
| Initialization time | 2 s ¹⁾ |
| Cycle time | ≤ 3.2 ms |
| Smart Sensor | Efficient communication, Enhanced Sensing |
| Process data | Position, speed |
| Parameterising data | Number of steps per revolution Number of revolutions PRESET Counting direction |

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

| | |
|---------------------------|---|
| | Sampling rate for speed calculation Unit for output of the speed value |
| Status information | Via status LED |

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

Electronics

| | |
|------------------------------------|-------------------------------|
| Connection type | Cable, 4-wire, universal, 5 m |
| Supply voltage | 18 ... 30 V |
| Power consumption | ≤ 1.5 W |
| Reverse polarity protection | ✓ |

Mechanics

| | |
|---------------------------------------|---------------------------------------|
| Mechanical design | Blind hollow shaft |
| Shaft diameter | 8 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 | < 0.5 Ncm (+20 °C) |
| Operating torque | < 0.5 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 |
| 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.

Ambient data

| | |
|--------------------------------------|--|
| EMC | According to EN 61000-6-2, EN 61000-6-3 and EN 61131-9 |
| Enclosure rating | IP65 (IEC 60529) |
| Permissible relative humidity | 90 % (Condensation not permitted) |
| Operating temperature range | -20 °C ... +70 °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

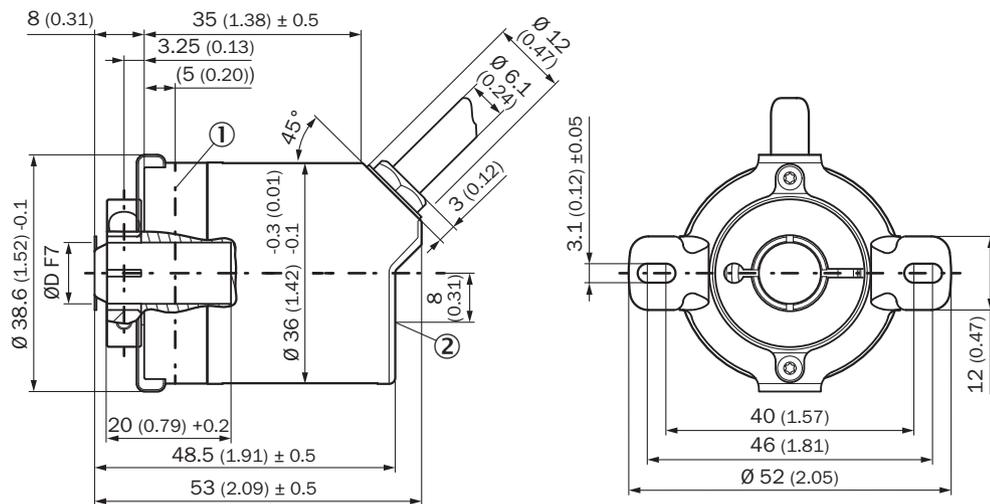
| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |

| | |
|--|---|
| cTUVus certificate | ✓ |
| 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, cable



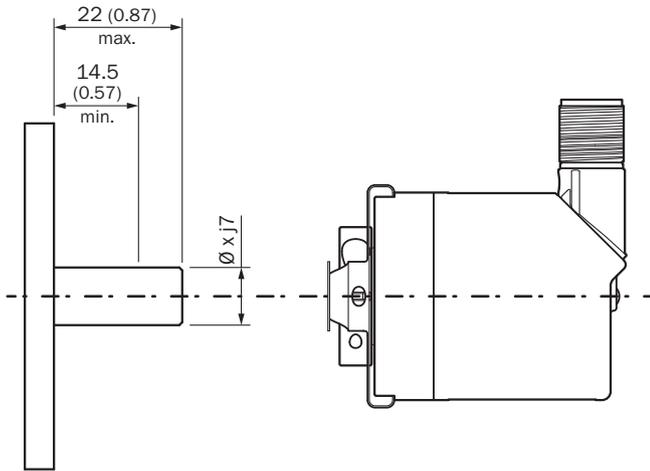
Dimensions in mm (inch)

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

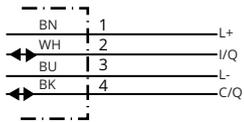
| Type | Shaft diameter Ø D F7 |
|------------------|-----------------------|
| AHx36x-BAxxxxxxx | 6 mm |
| AHx36x-BBxxxxxxx | 8 mm |

| Type | Shaft diameter \varnothing D F7 |
|------------------|-----------------------------------|
| AHx36x-BCxxxxxxx | 1/4" |
| AHx36x-BDxxxxxxx | 10 mm |
| AHx36x-BKxxxxxxx | 3/8" |

Attachment specifications



Anschlussbelegung



| PIN | Wire color | Signal | Function | | |
|-----|------------|--------|--------------------------------------|--|---------------------|
| | | | Basic | Advanced | Advanced Smart Task |
| - | - | - | Encoder supply voltage 18-30 V (+Us) | | |
| 1 | Brown | L+ | | | |
| 2 | White | I/Q | Not connect- ed - no function | Multifunctional pin (configurable as switching input or switching output) | |
| 3 | Blue | L- | Encoder supply voltage 0 V (GND) | | |
| 4 | Black | C/Q | IO-Link communication | | |
| | | - | - | Switching out- put (SIO mode) | |

Recommended accessories

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

| | Brief description | Type | part no. |
|---|--|--------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² | DOS-1204-G | 6007302 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Male connector, M12, 4-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 2 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-020UB3M2A14 | 2096000 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Male connector, M12, 4-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-050UB3M2A14 | 2096001 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Male connector, M12, 4-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 10 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-100UB3M2A14 | 2096002 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-020UB3XLEAX | 2095607 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-050UB3XLEAX | 2095608 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-100UB3XLEAX | 2095609 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 0.6 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-C60UB3XLEAX | 2145654 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 1 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-010UB3XLEAX | 2145655 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 3 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-030UB3XLEAX | 2145656 |

| | Brief description | Type | part no. |
|---|--|--------------|----------|
| Mounting systems | | | |
|  | <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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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.”

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