AHM36A-BACC000S38

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.

AHM36A-BACC000S38 | AHS/AHM36
ABSOLUTE ENCODERS

Ordering information

Type	Part no.
AHM36A-BACC000S38	1107735

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

Detailed technical data

Features

Special device	✓
Specialty	Preprogrammings as descriped in table
Standard reference device	AHM36A-BACC14x12, 1065990

Performance

Number of steps per revolution (max. resolution)	8,192 (13 bit)
Number of revolutions	4,096 (12 bit)
Max. resolution (number of steps per revolution x number of revolutions)	13 bit x 12 bit (8,192 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: node ID 62, baud rate 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 Unit for output of the speed value

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

[2] See accessories.

Available diagnostics data	Round axis functionality Electronic cams(2 channels x 8 cams) 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.

[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	Blind hollow shaft
Shaft diameter	6 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 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 gcm²
Bearing lifetime	2.0 x 10^9 revolutions
Angular acceleration	≤ 500,000 rad/s²

[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

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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

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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))

Blind hollow shaft, male connector
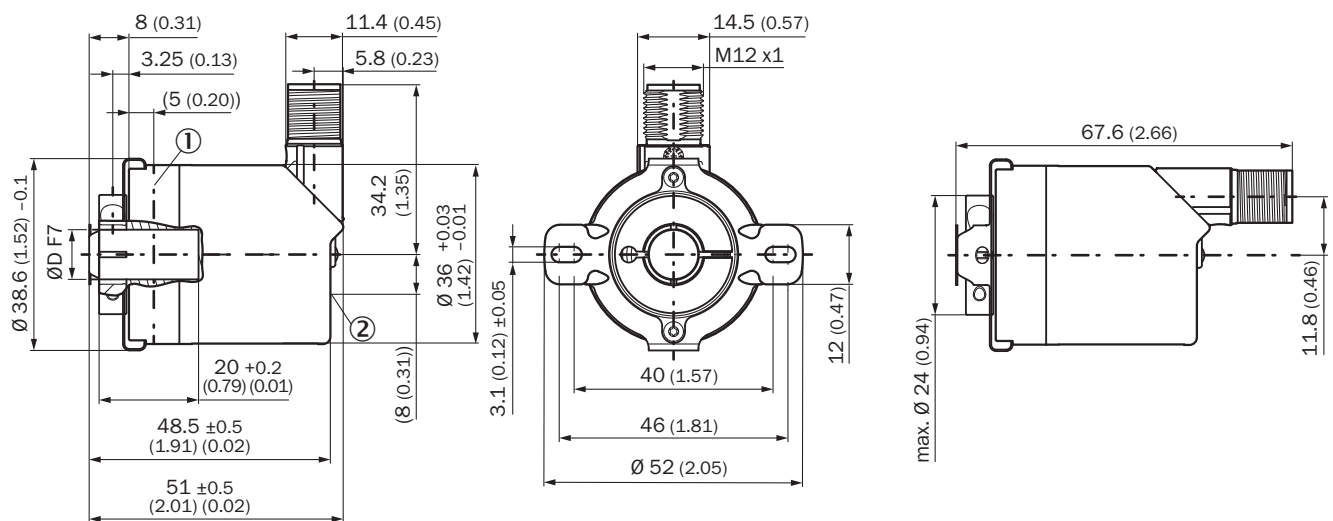
① Measuring point for operating temperature
② Measuring point for vibrations

PIN assignment
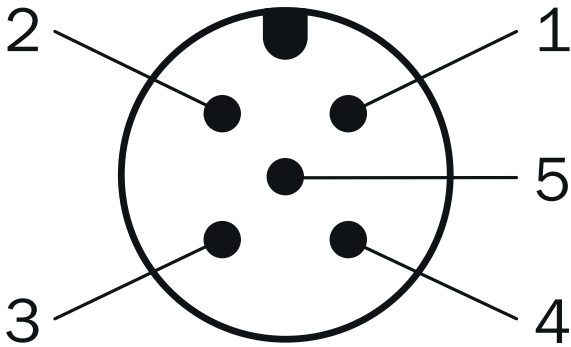
PIN	Signal	Wire colors (cable connection)	Function
1	CAN Shield	White	Screen
2	VDC	Red	Supply voltage Encoder 10 V DC … 30 V DC
3	GND/CAN GND	Blue	0 V (GND)
4	CAN high	Black	CAN signal
5	CAN low	Pink	CAN signal
Housing	-	-	Screen

Adjustments

Pre-programming

Object	Subindex	Default-value	Preprogrammed value	Description
1800	5	0	10	Event Timer Transmit PDO 1 on 10ms
1801	5	0	10	Event Timer Transmit PDO 2 on 10ms
1802	5	0	10	Event Timer Transmit PDO 3 on 10ms
1803	5	0	10	Event Timer Transmit PDO 4 on 10ms
2009	2	5	62 (Dez), 3E (Hex)	Node-ID set to 62
2009	3	4	3	Baudrate set to 250 kbit/s
6000	Bit 2	0	1	Scaling activated
6001	-	16384 (Dec), 4000 (Hex)	8192 (Dec), 2000 (Hex)	Singleturn resolution on 13 bits (8192 steps per turn)
6002	-	67108864 (Dec), 4000000 (Hex)	33554432 (Dez), 2000000 (Hex)	Total measuring range on 25 bits (13 bits x 12 bits)

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."

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