



**Absolute encoders**  
**AHS/AHM36 CANopen, Rotary**

AHM36B-BDCC012X12

**Model Name** > [AHM36B-BDCC012X12](#)  
**Part No.** > [1069386](#)

#### At a glance

- Compact 36 mm absolute encoder with max. 26 bits (singleturn: 14 bits, multiturn: 12 bits)
- Face mount flange, servo flange, blind hollow shaft
- Rotatable M12 connector or rotatable cable outlet
- CANopen interface with programmable configuration
- Diagnostic functions: temperature, operating time, etc. (depending on the type)
- Protection class up to IP 67 (depending on the type)
- Operating temperature: -40 °C to +85 °C (depending on the type)

#### Your benefits

- Simple, time-saving mechanical installation due to a rotatable connector or rotatable cable outlet, various mounting hole patterns, and many different shafts
- Simple network installation with various configuration options
- Intelligent diagnostic functions evaluate maintenance intervals for the entire system, thereby increasing system reliability
- Customizable Easy setup for various applications allowing binary, non-binary, and non-integer resolutions with the round axis functionality (advanced version)
- Reliable operation in harsh environments thanks to the rugged, reliable, fully magnetic sensor system
- Space-efficient and cost-effective design that is suitable for applications where space is tight
- High performance at a cost-efficient price



#### Performance

Max. number of steps per revolution:	4,096, number of steps from 1 to 4,096 programmable
Max. number of revolutions:	4,096, number of revolutions from 1 to 4,096 programmable
Resolution power:	4,096 x 4,096
Resolution:	12 bit x 12 bit
Error limits:	± 0.35 ° (at 20°C)
Repeatability (Ta not constant):	± 0.25 ° (at 20°C)
Measuring step:	± 0.09 ° (360 °/number of steps)
Initialization time:	2 s <sup>1)</sup>

<sup>1)</sup> Valid positional data can be read once this time has elapsed

#### Mechanical data

Mechanical interface:	Blind hollow shaft
Shaft diameter:	10 mm
Mass:	0.12 kg (for an encoder with connector outlet)
Start up torque:	0.5 Ncm (+20 °C) <sup>1)</sup>
Operating torque:	< 0.5 Ncm (+20 °C) <sup>2)</sup>
Maximum operating speed:	6,000 /min <sup>3)</sup>
Moment of inertia of the rotor:	15 gcm <sup>2</sup>
Bearing lifetime:	2.0 x 10 <sup>9</sup> revolutions
Max. angular acceleration:	500,000 rad/s <sup>2</sup>
Permissible movement axial static/dynamic:	± 0.3 mm, ± 0.1 mm
Permissible movement radial static/dynamic:	± 0.3 mm, ± 0.1 mm
Shaft material:	Stainless steel
Housing material:	Zinc

1) 2) 3) Self warming of 3.5 K per 1000 revolutions/min when applying note working temperature range

### Electrical data

Power consumption:	Without load
Operating voltage range:	10 V DC ... 30 V DC
MTTFd: mean time to dangerous failure:	270 a (EN ISO 13849-1) <sup>1)</sup>
Electrical connection:	Connector M12, 5-pin, universal
Reverse polarity protection:	1
Power consumption max. without load:	1.5 W

<sup>1)</sup> 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.

### Interfaces

Electrical interface:	CANopen
Bus:	CANopen®
Address setting:	0 ... 127
Data transmission rate (baud rate):	20 kbit/s ... 1,000 kbit/s, default: 125 kbit/s
Status information:	CANopen Status über Status-LED
Bus termination:	Via external termination resistance <sup>1)</sup>
Encoder profile:	CANopen CiA DS-301 V4.02, CiA DSP-305 LSS, Encoder Profile: - CiA DS-406, V3.2. - Class C2
Parameterising data:	Abtastrate für Geschwindigkeitsberechnung, Number of revolutions (only Multiturn version), Einheit für Ausgabe des Geschwindigkeitswerts, PRESET, Number of steps per revolution, Counting direction
PDO data:	Speed, Position, Temperature

<sup>1)</sup> See accessories

### Ambient data

EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating:	IP 65 (according to IEC 60529), housing side, IP 65 (according to IEC 60529), shaft side
Permissible relative humidity:	90 % (Condensation not permitted)

Working temperature range: -20 °C ... +70 °C  
 Storage temperature range: -40 °C ... +100 °C, without package  
 Resistance to shocks: 100 g, 6 ms (according to EN 60068-2-27)  
 Resistance to vibration: 20 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)

1) With mating connector fitted

### PIN and wire allocation

PIN	Signal	Wire color	Function
1	CAN shield	White	Screen
2	VDC	Red	Encoder supply voltage: 10 ... 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

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