

ONLINE DATA SHEET
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Absolute encoders
AHS/AHM36 CANopen, Rotary

AHS36A-S1CC016384



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AHS/AHM36 CANopen, Rotary

Model Name > AHS36A-S1CC016384
Part No. > 1066002



Illustration may differ

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 rotatablecable 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

CE

Performance

Max. number of steps per revolution:	16,384
Max. number of revolutions:	1
Resolution power:	16,384 x 1
Error limits:	± 0.35 ° (at 20°C)
Repeatability (Ta not constant):	± 0.2 ° (at 20°C)
Measuring step:	± 0.022 ° (360 °/number of steps)
Initialization time:	2 s [1)]

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

Mechanical data

Mechanical interface:	Solid shaft, Servo flange
Shaft diameter:	6 mm

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Mass:	0.12 kg (for an encoder with connector outlet)
Start up torque:	1 Ncm (+20 °C) [1]
Operating torque:	< 1 Ncm (+20 °C) [2]
Permissible Load capacity of shaft:	20 N (axial), 40 N (radial)
Maximum operating speed::	6,000 /min [3] [4]
Moment of inertia of the rotor:	2.5 gcm²
Bearing lifetime:	3.6 x 10^8 revolutions
Max. angular acceleration:	500,000 rad/s²
Shaft material:	Stainless steel
Flange material:	Aluminum
Housing material:	Zinc
Shaft length:	12 mm

1) 2) 4) 3) Self warming of 5,5 K per 1000 revolutions/min when applying note working temperature range

Electrical data

Power consumption:	Without load
Operating voltage range:	10 V ... 30 V
MTTFd: mean time to dangerous failure:	270 a (EN ISO 13849-1) [1]
Connection type:	Connector M12, 5-pin, universal
Reverse polarity protection:	1
Power consumption max. without load:	1.5 W

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.

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 [1]
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, Einheit für Ausgabe des Geschwindigkeitswerts, Elektronische Nocken (2 Kanäle x 8 Nocken), PRESET, Endless operating functionality (only Multiturn version), Number of steps per revolution, Counting direction
PDO data:	Speed, Position, Temperature
Available diagnostics data:	Betriebsstundenzähler Power-On/Motion, Maximale Geschwindigkeit, Minimale und maximale Betriebsspannung, Minimale und maximale Temperatur, Power-On Zähler, Zähler für Richtungsänderungen/Anzahl Bewegung cw/Anzahl Bewegungen ccw

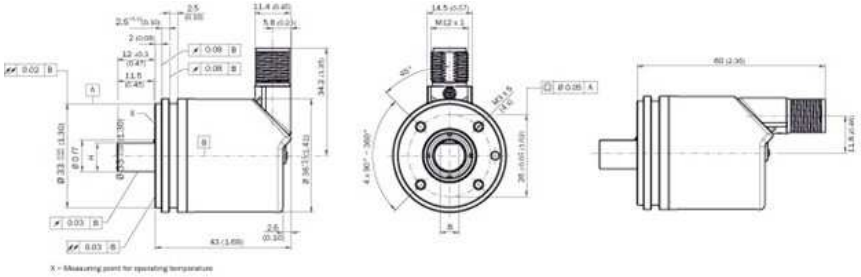
1) See accessories

Ambient data

EMC:	(according to EN 61000-6-2 and EN 61000-6-3)
Enclosure rating::	IP 66/IP 67 (according to IEC 60529), housing side, IP 66/IP 67 (according to IEC 60529), shaft side [1] [2]
Permissible relative humidity:	90 % (Condensation not permitted)
Working temperature range:	-40 °C ... +85 °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)

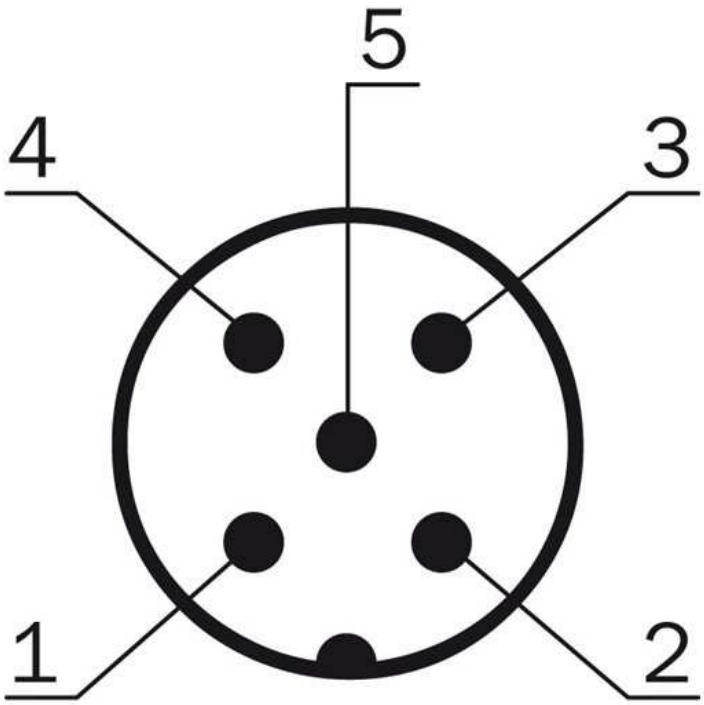
[1] With mating connector fitted [2]

Dimensional drawing



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PIN assignment



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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