

ONLINE DATA SHEET
www.mysick.com

Absolute encoders
AHS/AHM36 CANopen, Rotary

AHM36A-S3CC014x12



SICK
Sensor Intelligence.

SICK
Sensor Intelligence.

Absolute encoders
AHS/AHM36 CANopen, Rotary

Model Name > AHM36A-S3CC014x12
Part No. > 1065999



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:	4,096, number of revolutions from 1 to 4,096 programmable
Resolution power:	16,384 x 4,096
Resolution:	14 bit x 12 bit
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

© SICK AG. Subject to change without notice.

Mechanical interface:	Solid shaft, Face mount flange
Shaft diameter:	6 mm
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

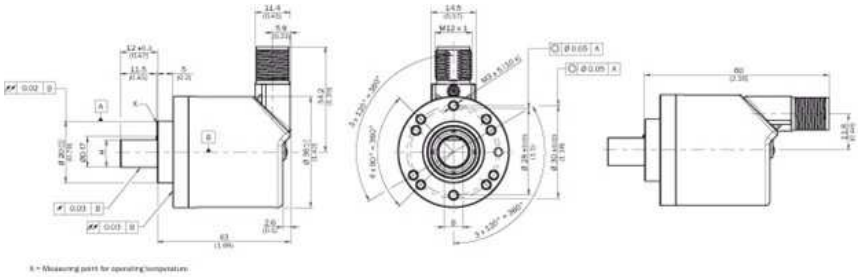
© SICK AG. Subject to change without notice.

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)

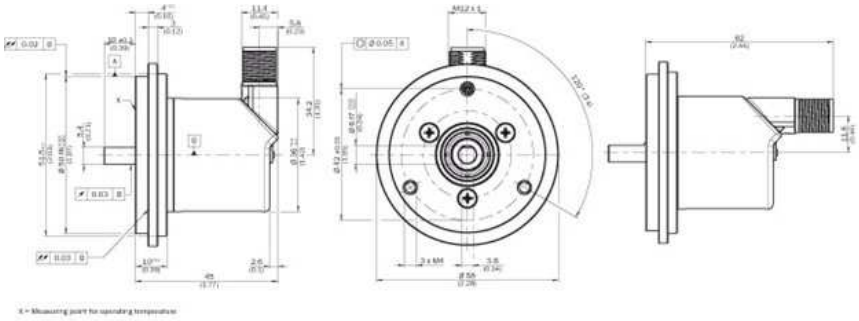
[1] With mating connector fitted [2]

Dimensional drawing

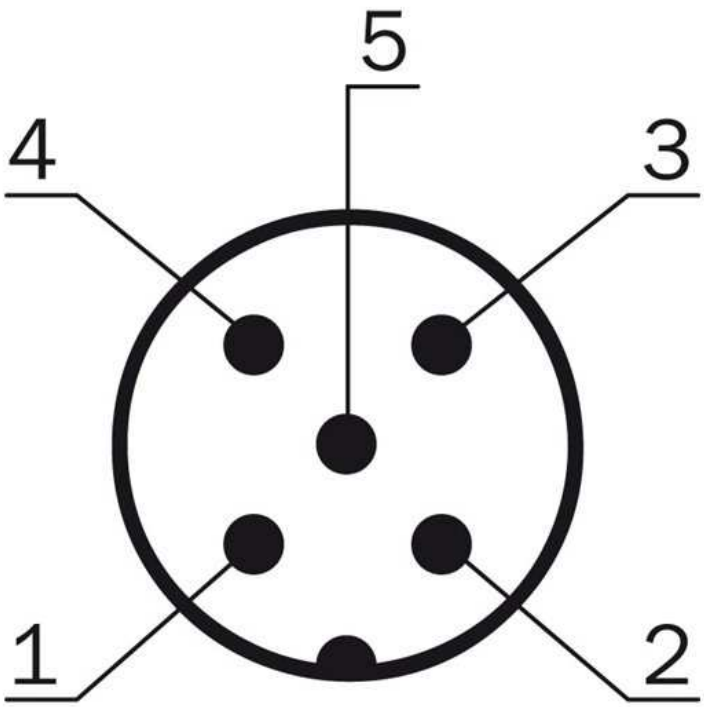


© SICK AG. Subject to change without notice.

Proposed fitting



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

© SICK AG. Subject to change without notice.

A4 4c int43

Australia
Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg
Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil
Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada
Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika
Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China
Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark
Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland
Phone +49 211 5301-301
E-Mail info@sick.de

España
Phone +34 93 480 31 00
E-Mail info@sick.es

France
Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain
Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India
Phone +91–22–4033 8333
E-Mail info@sick-india.com

Israel
Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia
Phone +39 02 27 43 41
E-Mail info@sick.it

Japan
Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország
Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland
Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge
Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich
Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska
Phone +48 22 837 40 50
E-Mail info@sick.pl

România
Phone +40 356 171 120
E-Mail office@sick.ro

Russia
Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz
Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore
Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija
Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa
Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea
Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi
Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige
Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan
Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye
Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates
Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México
Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at **www.sick.com**

SICK
Sensor Intelligence.