

AHM36A-SCPC000S11

AHS/AHM36

ABSOLUTE ENCODERS



Illustration may differ

Ordering information

Туре	part no.
AHM36A-SCPC000S11	1083981

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



Detailed technical data

Features

Special device	✓
Specialty	Flange adapter 2072298 premounted
Standard reference device	AHM36A-SCPC014x12, 1074753

Safety-related parameters

MTTF _D (mean time to dangerous failure)	230 years (EN ISO 13849-1) ¹⁾
mirit p (mount time to dungerous famare)	230 years (EN 150 13849-1)

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)	16,384 (14 bit)
Number of revolutions	4,096 (12 bit)
Max. resolution (number of steps per revolution x number of revolutions)	14 bit x 12 bit (16,384 x 4,096)
Error limits G	± 0.35° (at 20 °C) 1)
Repeatability standard deviation $\boldsymbol{\sigma}_{r}$	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.

Interfaces

Communication interface	SSI
Initialization time	100 ms ¹⁾
Position forming time	125 μs
Process data	Position
Parameterising data	Number of steps per revolution Number of revolutions PRESET Counting direction Code type

 $^{^{1)}}$ Valid positional data can be read once this time has elapsed.

 $^{^{2)}\,\}mbox{In accordance}$ with DIN ISO 55350-13; 68.3% of the measured values are inside the specified area.

²⁾ Minimum, LOW level (Clock +): 250 ns.

	Offset of position bits Position error bit Round axis functionality SSI mode
Code type	Gray, binary
Code sequence parameter adjustable	CW/CCW (V/R) configurable via programming tool or cable
Clock frequency	2 MHz ²⁾
Set (electronic adjustment)	H-active (L = $0 - 3 \text{ V}$, H = $4,0 - U_s \text{ V}$)
CW/CCW (counting sequence when turning)	L-active (L = 0 - 1 V, H = 2,0 - Us V)

 $^{^{1)}\,\}mathrm{Valid}$ positional data can be read once this time has elapsed.

Electronics

Connection type	Male connector, M12, 8-pin, universal
Supply voltage	4.5 32 V DC
Power consumption	≤ 1.5 W (without load)
Reverse polarity protection	✓

Mechanics

Mechanical design	Solid shaft, face mount flange
Shaft diameter	10 mm ¹⁾
Shaft length	24 mm
Characteristics of the shaft	With flat
Weight	$0.12 \text{kg}^{ 2)}$
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 shaft loading	40 N (radial) 20 N (axial)
Operating speed	≤ 6,000 min ^{-1 3)}
Moment of inertia of the rotor	2.5 gcm ²
Bearing lifetime	3.6 x 10^8 revolutions
Angular acceleration	≤ 500,000 rad/s²

 $^{^{1)}}$ For use with the adapters 2072298 and 2072295.

Ambient data

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)

²⁾ Minimum, LOW level (Clock +): 250 ns.

 $^{^{2)}}$ Based on devices with male connector.

 $^{^{3)}}$ Allow for self-heating of 3.5 K per 1,000 rpm when designing the operating temperature range.

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Operating temperature range	-40 °C +100 °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)

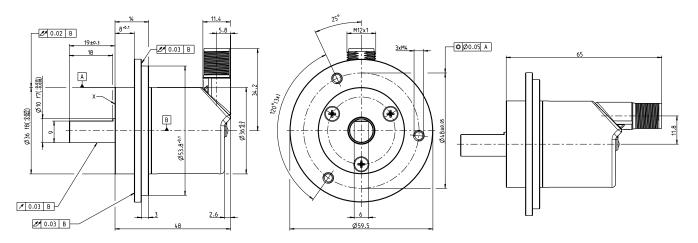
Classifications

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

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)	✓

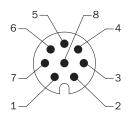
Dimensional drawing



X = Messpunkt für Arbeitstemperatur Measuring point for operating temperature

Dimensions in mm (inch)

Anschlussbelegung M12 male connector, 8-pin and cable, 8-wire, SSI/Gray



view of M12 male device connector on encoder

PIN	Wire colors (cable connection)	Signal	Explanation
1	Brown	Data -	Interface signals
2	White	Data +	Interface signals
3	Black	V/R	Sequence in direction of rotation
4	Pink	SET	Electronic adjustmen- tInterface signals
5	Yellow	Clock +	Interface signals
6	Purple	Clock -	Interface signals
7	Blue	GND	Ground connection
8	Red	U _S	Operating voltage
-	-	Shielding	Shielding connected to hous- ing on encoder side. Connect- ed to ground on control side.

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