Data sheet

AHM36A-SCPZ000S13

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
AHM36A-SCPZ000S13	1129723

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

Detailed technical data

Features

Special device	✓
Specialty	ATM60-A4A0-K19 successor: Flange adapter 2072298 premounted Cable, 8-wire, with male connector, M23, universal, 0.1 m Preconfiguration: - Max. resolution: 13 bit x 11 bit (8,192 x 2,048) - Bit setting: 24 - sync_on: 1 - shift_ri_on: 0 - Centered: 0 - V/R wire: active - Gray code - Position: 0 - SSI mode synchronous AHM36 adapted to 60 mm face mount flange
Standard reference device	AHM36A-SCPJ014x12, 1097559

Safety-related parameters

$MTTF_D$ (mean time to dangerous failure)	230 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.

Performance

Number of steps per revolution (max. resolution)	8,192 (13 bit)
Number of revolutions	2,048 (11 bit)
Max. resolution (number of steps per revolution x number of revolutions)	13 bit x 11 bit (8,192 x 2,048)
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	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 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 V, H = 4,0 - U_s V)
CW/CCW (counting sequence when turning)	L-active (L = 0 - 1 V, H = 2,0 - Us V)

[1] Valid positional data can be read once this time has elapsed.
[2] Minimum, LOW level (Clock +): 250 ns.

Electronics

Connection type	Special version
Connection type Detail	Cable, 8-wire, with male connector, M23, universal, 0.1 m
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
Flange type / stator coupling	AHM36 adapted to 60 mm face mount flange with pre-assembled adapter flange BEF-FA-020-036, 2072298
Weight	0.12 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)

[1] For use with the adapters 2072298 and 2072295.
[2] Based on devices with male connector.

	20 N (axial)
Operating speed	≤ 6,000 min^{-1}
Moment of inertia of the rotor	2.5 gcm^2
Bearing lifetime	3.6 x 10^8 revolutions
Angular acceleration	≤ 500,000 rad/s^2

[1] For use with the adapters 2072298 and 2072295.
[2] Based on devices with male connector.

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)
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)

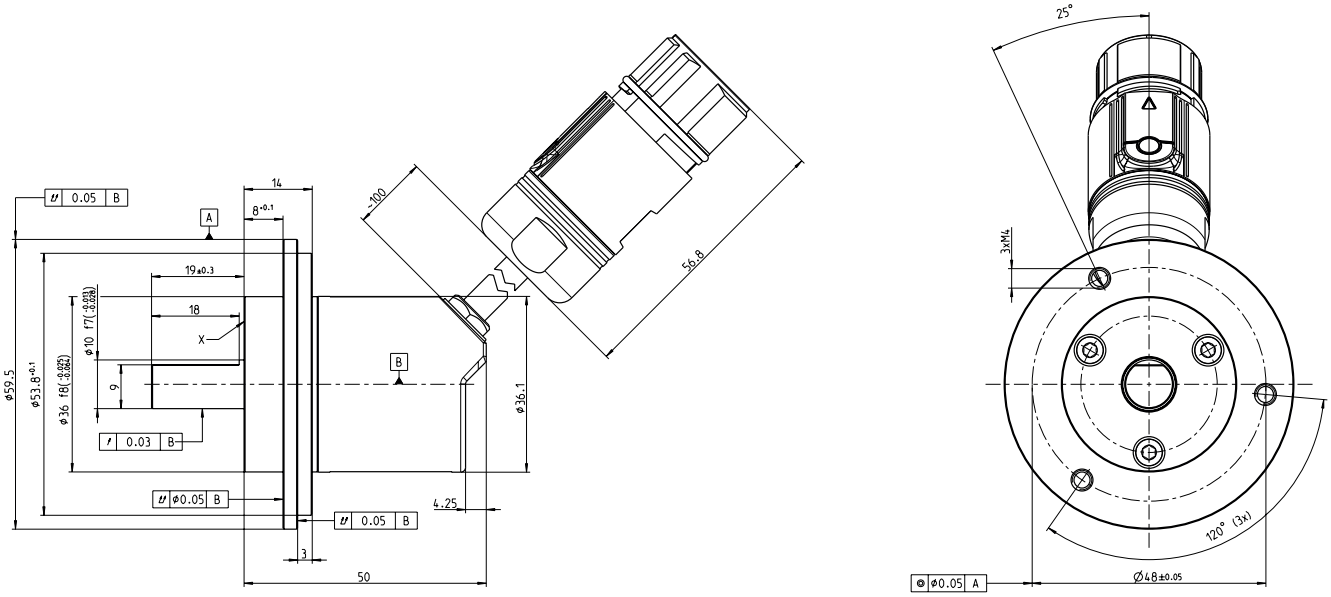
Certificates

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)	✓

Classifications

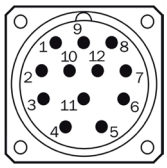
ECLASS 5.0	27270502
ECLASS 5.1.4	27270502
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270502
ECLASS 8.0	27270502
ECLASS 8.1	27270502
ECLASS 9.0	27270502
ECLASS 10.0	27270502
ECLASS 11.0	27270502
ECLASS 12.0	27270502
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing



Dimensions in mm (inch)

Anschlussbelegung



PIN	Signal	Explanation
1	GND	Ground connection
2	Data+	Interface signal
3	Clock+	Interface signal
4	n/c	Not connected
5	n/c	Not connected
6	n/c	Not connected
7	n/c	Not connected
8	Us	Operating voltage
9	SET	Electronic adjustment
10	Data-	Interface signal
11	Clock-	Interface signal
12	V/R	Sequence in direction of rotation
-	Screen	Housing potential

Recommended accessories

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

	Brief description	Type	part no.
shaft adaptation			
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** Double loop coupling, shaft diameter 8 mm / 10 mm, max. shaft offset: radially +/- 0,25 mm, axially +/-0,4 mm, angle +/- 4 degrees;max. speed 10.000 rpm, –30 to +120 degrees Celsius, torsional spring stiffness of 150 Nm/rad	KUP-0810-D	5326704
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** Claw coupling, shaft diameter 8 mm / 10 mm, damping element 80 shore blue, maximum shaft offset: radial ± 0.22 mm, axial ± 1 mm angular ± 1.3°, max. speed 19,000 rpm, angle of twist max. 10°, –30 °C to +80 °C, max. torque 800 Ncm, tightening torque of screws: ISO 4029 150 Ncm, material: aluminum flange, damping element: polyurethane	KUP-0810-J	2128267
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** Bellows coupling, shaft diameter 10 mm/10 mm; maximum shaft offset: radial +/- 0.25 mm, axial +/- 0.4 mm, angular +/- 4°; max. revolutions 10,000 rpm, –30° to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum clamping hubs	KUP-1010-B	5312983
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** Double loop coupling, shaft diameter 10 mm / 10 mm, Maximum shaft offset: radial +/- 2.5 mm, axial +/- 3 mm, angular +/- 10°; max. speed 3,000 rpm, –30° to +80 °C, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-1010-D	5326703
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** Spring washer coupling, shaft diameter 10 mm / 10 mm, maximum shaft offset, radial ± 0.3 mm, axial ± 0.4 mm, angle ± 2.5°, torsion spring stiffness 30 Nm/rad; material: aluminum flange, glass-fiber reinforced polyamide membrane and hardened steel coupling pin	KUP-1010-F	5312986
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** Claw coupling, shaft diameter 10 mm / 10 mm, damping element 80 shore blue, maximum shaft offset: radial ± 0.22 mm, axial ± 1 mm angular ± 1.3°, max. speed 19,000 rpm, angle of twist max. 10°, –30 °C to +80 °C, max. torque 800 Ncm, tightening torque of screws: ISO 4029 150 Ncm, material: aluminum flange, damping element: polyurethane	KUP-1010-J	2127054
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** 10 mm / 12 mm; maximum shaft offset: radial +/- 0.25 mm, axial +/- 0.4 mm, angular +/- 4°; max. revolutions 10,000 rpm, –30° to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum clamping hubs	KUP-1012-B	5312984
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** Double loop coupling, shaft diameter 10 mm / 12 mm, Maximum shaft offset: radial +/- 2.5 mm, axial +/- 3 mm, angular +/- 10°; max. speed 3,000 rpm, –30° to +80 °C, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-1012-D	5326702
	• **Product segment:** Shaft adaptation • **Product:** Shaft couplings • **Description:** Claw coupling, shaft diameter 10 mm / 12 mm, damping element 80 shore blue, maximum shaft offset: radial ± 0.22 mm, axial ± 1 mm angular ± 1.3°, max. speed 19,000 rpm, angle of twist max. 10°, –30 °C to +80 °C, max. torque 800 Ncm, tightening torque of screws: ISO 4029 150 Ncm, material: aluminum flange, damping element: polyurethane	KUP-1012-J	2128265

	Brief description	Type	part no.
programming devices			
	• **Product segment:** Programming devices • **Product:** PGT-08-S • **Description:** USB programming unit, for programmable SICK encoders AFS60, AFM60, DFS60, VFS60, DFV60 and wire draw encoders with programmable encoders. Not compatible with the portable SOPAS ET versions.	PGT-08-S	1036616
	• **Product segment:** Programming devices • **Product:** PGT-10 Pro • **Description:** Programming unit display for programmable SICK DFS60, DFV60, AFS/AFM60, AHS/AHM36 encoders, and wire draw encoder with DFS60, AFS/AFM60 and AHS/AHM36. Compact dimensions, low weight, and intuitive operation. • **Items supplied:** 1 x PGT-10-Pro stand-alone programming tool,4 x alkaline type batteries, 1.5 V Mignon (AA)	PGT-10-Pro	1072254
connectors and cables			
	• **Description:** SSI, shielded • **Connection type head A:** Female connector, M23, 12-pin, straight • **Connection type head B:** Male connector, D-Sub, 9-pin, straight • **Signal type:** SSI • **Cable:** 0.5 m, 8-wire, PUR, halogen-free • **Note:** Suitable for use with SSI interfaces, not suitable for use with SSI + Incremental interface or SSI + Sin/Cos., programming adapter cable for programming tool PGT-10-Pro and PGT-08-S	DSL-3D08-G0M5AC2	2048440

SICK AT A GLANCE

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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.

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