AHS36A-S7PM016384

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
AHS36A-S7PM016384	1087443

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

Illustration may differ

Detailed technical data

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)	16,384 (14 bit)
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 PRESET Counting direction Code type Offset of position bits Position error bit SSI mode
Code type	Gray, binary

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

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

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	Cable, 8-wire, universal, 5 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	3/8″
Shaft length	12 mm
Characteristics of the shaft	With flat
Weight	0.12 kg [1]
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}
Moment of inertia of the rotor	2.5 gcm²
Bearing lifetime	3.6 x 10^8 revolutions
Angular acceleration	≤ 500,000 rad/s²

[1] 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 Solid shaft, face mount flange, cable

Dimensions in mm (inch)
① Measuring point for operating temperature
② measuring point for vibrations

Type	Shaft diameterØ D f7	B	H
AHx36x-S1xxxxxxxx AHx36x-S3xxxxxxxx	6 mm	3,6 mm	5,4 mm
AHx36x-S9xxxxxxxx AHx36x-S5xxxxxxxx	8 mm	3,9 mm	7,5 mm
AHx36x-S2xxxxxxxx AHx36x-S4xxxxxxxx AHx36x-SCxxxxxxxx	10 mm	6 mm	9 mm
AHx36x-SAxxxxxxxx AHx36x-S8xxxxxxxx	1/4″	3,85 mm	5,7 mm
AHx36x-SBxxxxxxxx AHx36x-S7xxxxxxxx	3/8″	4,35 mm	9 mm

Attachment specifications Solid shaft, face mount flange with flange adapter, centering collar D20 on D24 (BEF-FA-020-024, 2072294)
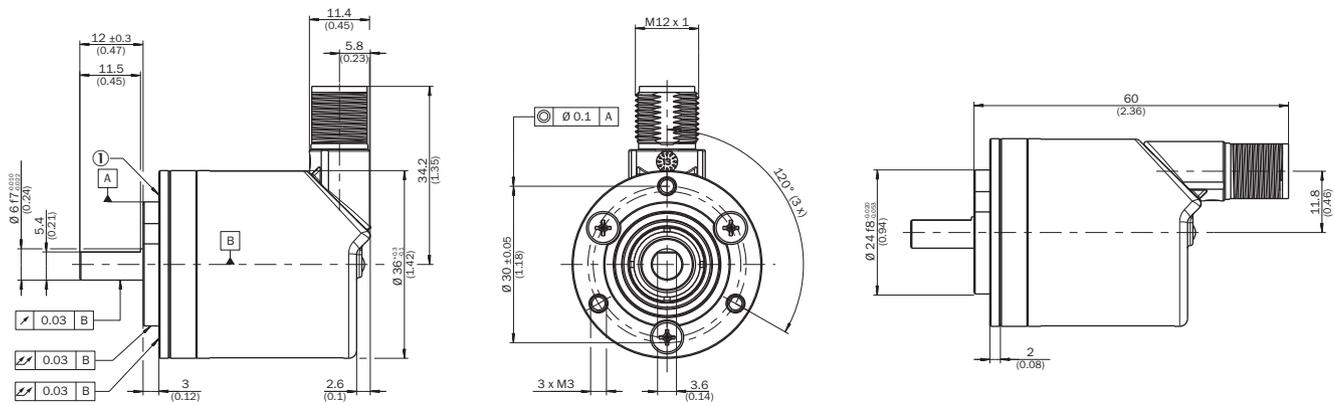
order example for 6 mm shaft diameter: AHx36x-S3xx0xxxxx + BEF-FA-020-024 (adapter is not pre-assembled)
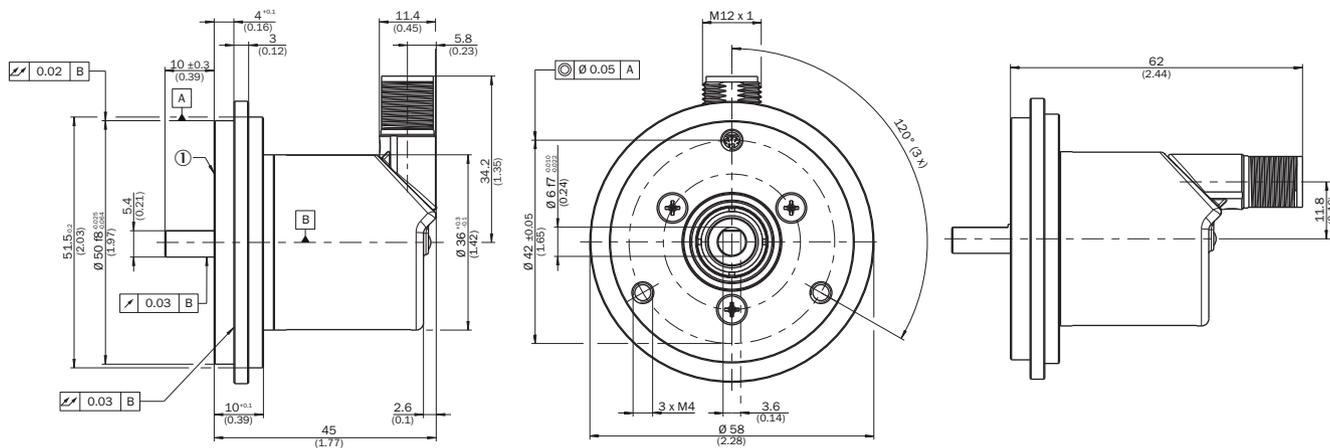① Measuring point for operating temperature

Attachment specifications Solid shaft, face mount flange with flange adapter, centering collar D20 on D36, 2 mm high (BEF-FA-020-036-002, 2072296)
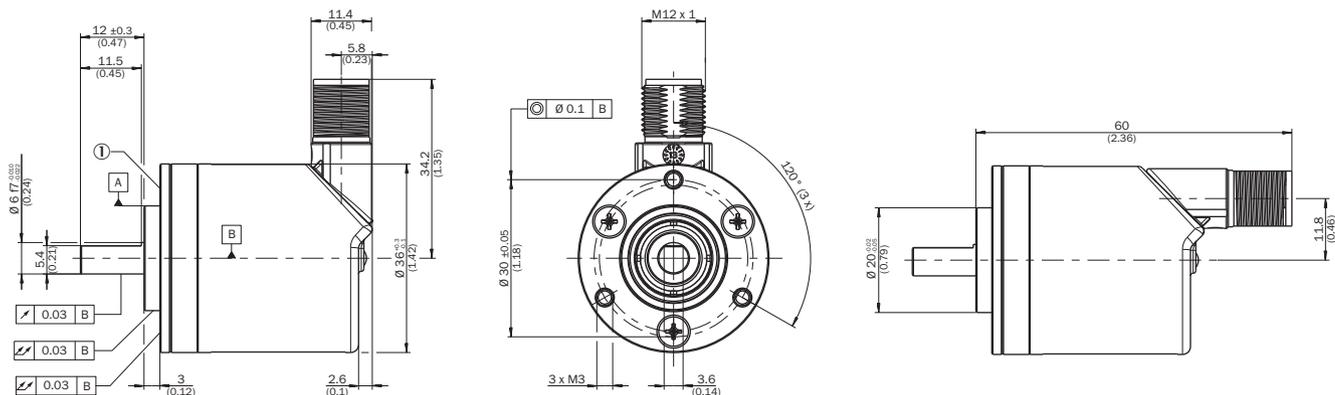
order example for 6 mm shaft diameter: AHx36x-S3xx0xxxxx + BEF-FA-020-036-002 (adapter is not pre-assembled)

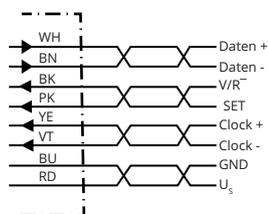① Measuring point for operating temperature

Attachment specifications Solid shaft, face mount flange with flange adapter, centering collar D20 on D50 (BEF-FA-020-050, 2072297)

order example for 6 mm shaft diameter: AHx36x-S3xx0xxxxx + BEF-FA-020-050 (adapter is not pre-assembled)
① Measuring point for operating temperature

Anschlussbelegung

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	Screen connected to housing on encoder side. Connected to ground on control side.

Recommended accessories

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

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Male connector, M12, 8-pin, straight, A-coded • **Signal type:** Incremental • **Cable:** CAT5, CAT5e • **Description:** Incremental, shielded • **Connection systems:** IDC quick connection • **Permitted cross-section:** 0.14 mm² ... 0.34 mm²	STE-1208-GA01	6044892
	• **Connection type head A:** Female connector, terminal box, 8-pin, straight • **Connection type head B:** Male connector, D-Sub, 9-pin, straight • **Signal type:** SSI + incremental • **Cable:** 0.5 m, 4-wire, PVC • **Description:** SSI + incremental, shielded • **Note:** Programming adapter cable for programming tool PGT-10-Pro and PGT-08-S	DSL-0D08-G0M5AC3	2061739
programming devices			
	• **Product segment:** Programming devices • **Product family:** 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
	• **Product segment:** Programming devices • **Product family:** 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

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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.

For us, that is "Sensor Intelligence."

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