



AHM36B-S5AK012x12

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
AHM36B-S5AK012x12	1079094

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

Detailed technical data

Performance

Max. resolution (number of steps per revolution x number of revolutions)	12 bit x 12 bit (4,096 x 4,096)
Error limits G	0.35° (at 20 °C) ¹⁾
Repeatability standard deviation σ_r	0.25° (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
Process data	Position
Initialization time	100 ms ¹⁾
Position forming time	125 µs
SSI	
Code type	Gray
Code sequence parameter adjustable	CW/CCW (V/R) configurable via 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 - U _s V)

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

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

Electrical data

Connection type	Cable, 8-wire, universal, 1.5 m
Supply voltage	4.5 ... 32 V DC

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.

Power consumption	≤ 1.5 W (without load)
Reverse polarity protection	✓
MTTFd: mean time to dangerous failure	230 years (EN ISO 13849-1) ¹⁾

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Mechanical data

Mechanical design	Solid shaft, face mount flange
Shaft diameter	8 mm
Shaft length	12 mm
Weight	0.12 kg ¹⁾
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Zinc
Material, cable	PUR
Start up torque	0.5 Ncm
Operating torque	< 0.5 Ncm
Permissible Load capacity of shaft	40 N / radial 20 N / axial
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
Operating speed	≤ 6,000 min ⁻¹ ²⁾

¹⁾ Based on devices with male connector.

²⁾ Allow for self-heating of 3.5 K per 1,000 rpm when designing the operating temperature range.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP65 (according to IEC 60529)
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	-20 °C ... +70 °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)

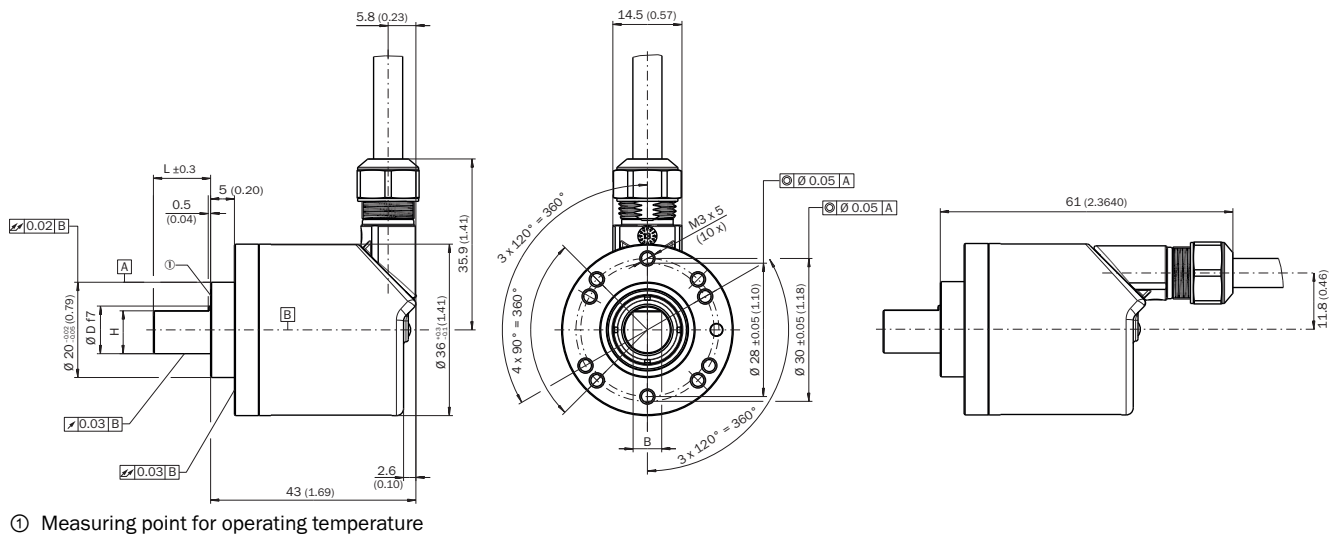
Classifications

ECI@ss 5.0	27270502
ECI@ss 5.1.4	27270502
ECI@ss 6.0	27270590
ECI@ss 6.2	27270590
ECI@ss 7.0	27270502
ECI@ss 8.0	27270502
ECI@ss 8.1	27270502

ECI@ss 9.0	27270502
ECI@ss 10.0	27270502
ECI@ss 11.0	27270502
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing (Dimensions in mm (inch))

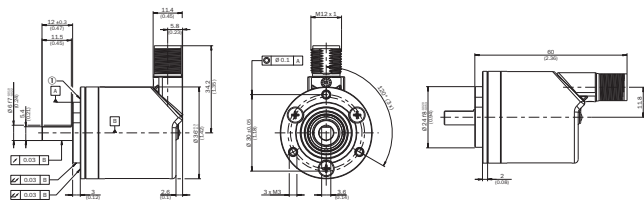
Solid shaft, face mount flange, cable



① Measuring point for operating temperature

Attachment specifications

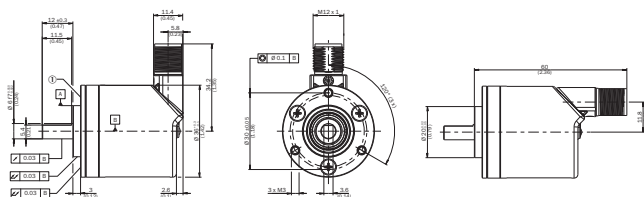
Solid shaft, face mount flange with flange adapter, centering collar D20 on D24 (BEF-FA-020-024, 2072294)



Order example for 6 mm shaft diameter: AHx36x-S3xx0xxxx + BEF-FA-020-024 (adapter is not pre-assembled)

① Measuring point for operating temperature

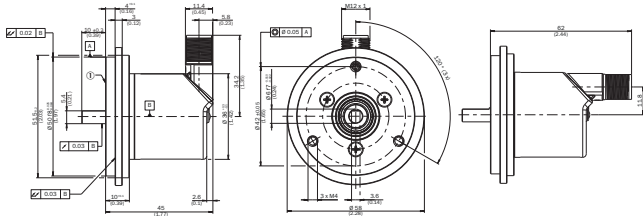
Solid shaft, face mount flange with flange adapter, centering collar D20 on D36, 2 mm high (BEF-FA-020-036-002, 2072296)



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

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

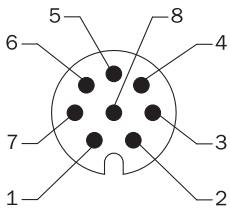


Order example for 6 mm shaft diameter: AHx36x-S3xx0xxxxx + BEF-FA-020-050 (adapter is not pre-assembled)

① Measuring point for operating temperature

PIN assignment

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 adjustment Interface signals
5	Yellow	Clock +	Interface signals
6	Purple	Clock -	Interface signals
7	Blue	GND	Ground connection
8	Red	U _S	Operating voltage
		Screen	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.
Shaft adaptation			
	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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: male connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, shielded	STE-1208-GA01	6044892

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