



AHS36I-S4CC016384

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
AHS36I-S4CC016384	1103436

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

Detailed technical data

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,	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	CANopen
Data protocol	CANopen CiA DS-301 V4.02, CiA DSP-305 LSS, Encoder Profile: - CiA DS-406, V3.2. - Class C2
Address setting	0 ... 127, default: 5
Data transmission rate (baud rate)	20 kbit/s ... 1,000 kbit/s, default: 125 kbit/s
Process data	Position, speed, temperature
Parameterising data	Number of steps per revolution PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value Electronic cams(2 channels x 8 cams)
Available diagnostics data	Minimum and maximum temperature, maximum speed, power-on counter, operating hours counter power-on/motion, counter of direction changes/number of movements cw/number of movements ccw, minimum and maximum operating voltage
Status information	CANopen status via status LED
Bus termination	Via external terminator ¹⁾
Initialization time	2 s ²⁾

¹⁾ See accessories.

²⁾ Valid positional data can be read once this time has elapsed.

Electrical data

Connection type	Male connector, M12, 5-pin, universal
Supply voltage	10 ... 30 V
Power consumption	≤ 1.5 W (without load)
Reverse polarity protection	✓
MTTFd: mean time to dangerous failure	270 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.

Mechanical data

Mechanical design	Solid shaft, face mount flange
Shaft diameter	10 mm
Shaft length	12 mm
Weight	0.2 kg ¹⁾
Shaft material	Stainless steel 1,4305
Flange material	Stainless steel 1,4305
Housing material	Stainless steel 1,4305
Material, cable	PUR
Start up torque	1 Ncm
Operating torque	< 1 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	IP67 (according to IEC 60529) IP69K (according to IEC 60529)
Permissible relative humidity	90 % (Condensation not permitted)
Operating 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)

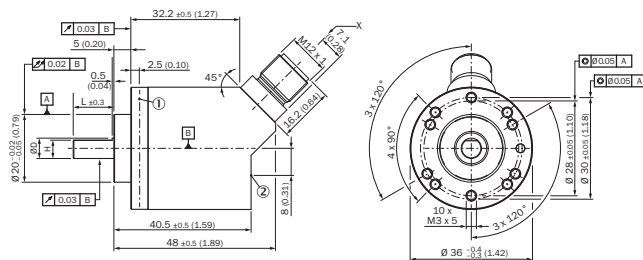
Classifications

ECl@ss 5.0	27270502
ECl@ss 5.1.4	27270502
ECl@ss 6.0	27270590
ECl@ss 6.2	27270590

ECl@ss 7.0	27270502
ECl@ss 8.0	27270502
ECl@ss 8.1	27270502
ECl@ss 9.0	27270502
ECl@ss 10.0	27270502
ECl@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, male connector

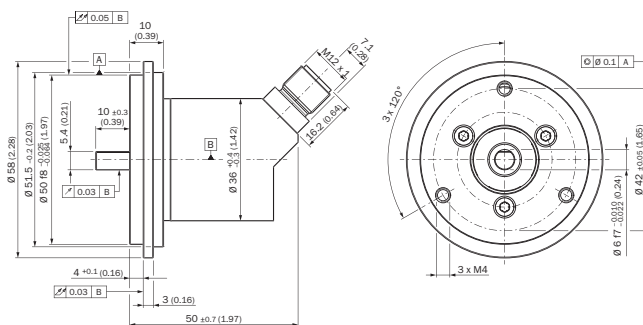


Non-tolerated dimensions according to DIN-ISO 2768-mk

- ① Measuring point for operating temperature
- ② Measuring point for vibrations

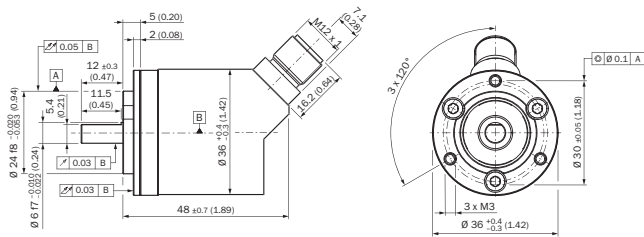
Attachment specifications

Solid shaft, face mount flange with flange adapter, centering collar D20 on D50 (BEF-FA-020-050-I, 2103985)



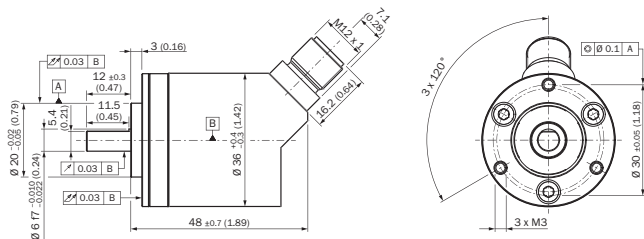
Order example for 6 mm shaft diameter: AHx36I-S3xx0xxxx + BEF-FA-020-050-I (adapter is not pre-assembled)

Solid shaft, face mount flange with flange adapter, centering collar D20 on D24 (BEF-FA-020-024-I, 2103982)



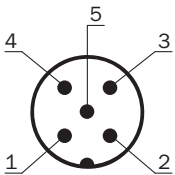
Order example for 6 mm shaft diameter: AHx36I-S3xx0xxxx + BEF-FA-020-024-I (adapter is not pre-assembled)

Solid shaft, face mount flange with flange adapter, centering collar D20 on D36, 2 mm high (BEF-FA-020-036-2-I, 2103984)



Order example for 6 mm shaft diameter: AHx36I-S3xx0xxxx + BEF-FA-020-036-2-I (adapter is not pre-assembled)

PIN assignment



PIN	Signal	Wire colors (cable connection)	Function
1	CAN Shield	White	Screen
2	VDC	Red	Supply voltage Encoder 10 V DC ... 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

Recommended accessories

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

	Brief description	Type	Part no.
Shaft adaptation			
	Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular $\pm 4^\circ$; max. speed 10,000 rpm, -30°C to $+120^\circ\text{C}$, max. torque 80 Ncm; material: stainless steel bellows, aluminum hub	KUP-0610-B	5312982
	Double loop coupling, shaft diameter 6 mm / 10 mm, max. shaft offset: radially ± 2.5 mm, axially ± 3 mm, angle ± 10 degrees; max. speed 3.000 rpm, -30 to $+80$ degrees Celsius, torsional spring stiffness of 25 Nm/rad	KUP-0610-D	5326697
	Spring washer coupling, shaft diameter 6 mm / 10 mm, Maximum shaft offset: radial ± 0.3 mm, axial ± 0.4 mm, angular $\pm 2.5^\circ$; max. speed 12,000 rpm, -10° to $+80^\circ\text{C}$, max. torque 60 Ncm; material: aluminum flange, glass fiber-reinforced polyamide membrane and hardened steel coupling pin	KUP-0610-F	5312985
	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
	Bellows coupling, shaft diameter 10 mm/10 mm; maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular $\pm 4^\circ$; max. revolutions 10,000 rpm, -30° to $+120^\circ\text{C}$, max. torque 80 Ncm; material: stainless steel bellows, aluminum clamping hubs	KUP-1010-B	5312983
	Double loop coupling, shaft diameter 10 mm / 10 mm, Maximum shaft offset: radial ± 2.5 mm, axial ± 3 mm, angular $\pm 10^\circ$; max. speed 3,000 rpm, -30° to $+80^\circ\text{C}$, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-1010-D	5326703
	Spring washer coupling, shaft diameter 10 mm / 10 mm, maximum shaft offset, radial ± 0.3 mm, axial ± 0.4 mm, angle $\pm 2.5^\circ$, torsion spring stiffness 30 Nm/rad; material: aluminum flange, glass-fiber reinforced polyamide membrane and hardened steel coupling pin	KUP-1010-F	5312986
	10 mm / 12 mm; maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular $\pm 4^\circ$; max. revolutions 10,000 rpm, -30° to $+120^\circ\text{C}$, max. torque 80 Ncm; material: stainless steel bellows, aluminum clamping hubs	KUP-1012-B	5312984
	Double loop coupling, shaft diameter 10 mm / 12 mm, Maximum shaft offset: radial ± 2.5 mm, axial ± 3 mm, angular $\pm 10^\circ$; max. speed 3,000 rpm, -30° to $+80^\circ\text{C}$, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-1012-D	5326702
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight, A-coded Cable: Fieldbus, PUR, halogen-free, shielded, 2 m	YF2A55-020C1BXLEAX	2107874
	Head A: female connector, M12, 5-pin, angled, A-coded Cable: Fieldbus, PUR, halogen-free, shielded, 2 m	YG2A55-020C1BXLEAX	2107899
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Fieldbus, PUR, halogen-free, shielded, 2 m	YF2A55-020C1BM2A65	2107898
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Fieldbus, PUR, halogen-free, shielded, 2 m	YG2A55-020C1BM2A55	2107901
	Head A: female connector, M12, 5-pin, straight, A-coded Cable: shielded	YF12ES5-0075S5586A	2097335
	Head A: male connector, M12, 5-pin, straight, A-coded Cable: shielded	YM12ES5-0075S5586A	2097336

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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