

AHM36I-BBQM014x12

AHS/AHM36

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
AHM36I-BBQM014x12	1093776

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

Detailed technical data

Performance

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 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	IO-Link
Communication Interface detail	V1.1 / COM3 (230,4 kBaud)
Smart Sensor	Efficient communication, Enhanced Sensing
Process data	Position, speed
Parameterising data	Number of steps per revolution Number of revolutions PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value
Status information	Via status LED
Initialization time	2 s
Cycle time	≤ 3.2 ms

Electrical data

Connection type	Cable, 4-wire, universal, 5 m
Supply voltage	18 ... 30 V
	Cable, 4-wire
Power consumption	≤ 1.5 W
Reverse polarity protection	✓
MTTFd: mean time to dangerous failure	145.6 years (EN ISO 13849-1)

Mechanical data

Mechanical design	Blind hollow shaft
Shaft diameter	8 mm
Weight	0.2 kg, relates to devices with male connector connection
Shaft material	Stainless steel V2A
Flange material	Stainless steel V2A
Material, stator coupling	Stainless steel V2A
Housing material	Stainless steel V2A
Material, cable	PUR
Start up torque	$\leq 1 \text{ Ncm}^{1)}$
Operating torque	$\leq 1 \text{ Ncm}^{1)}$
Permissible movement static	$\pm 0.3 \text{ mm}$ (radial) $\pm 0.3 \text{ mm}$ (axial)
Permissible movement dynamic	$\pm 0.1 \text{ mm}$ (radial) $\pm 0.1 \text{ mm}$ (axial)
Moment of inertia of the rotor	23 gcm ²
Bearing lifetime	2.0 x 10 ⁹ revolutions
Angular acceleration	$\leq 500,000 \text{ rad/s}^2$
Operating speed	$\leq 6,000 \text{ min}^{-1}$

¹⁾ At 20 °C.

Ambient data

EMC	According to EN 61000-6-2, EN 61000-6-3 and EN 61131-9
Enclosure rating	IP67 (IEC 60529) IP69K (IEC 60529)
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	-40 °C ... +85 °C
Storage temperature range	-40 °C ... +100 °C
Resistance to shocks	100 g, 6 ms (according to EN 60068-2-27) ¹⁾
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6) ¹⁾

¹⁾ With additional mechanical cable mounting.

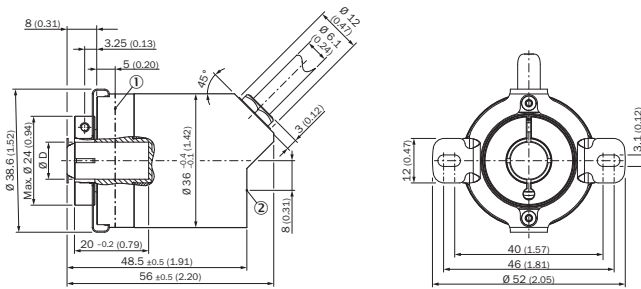
Classifications

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))

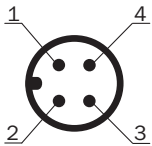
Blind hollow shaft, cable outlet



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

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

PIN assignment






PIN	Wire color	Signal	Function		
			Basic	Advanced	Advanced Smart Task
1	Brown	L+	Encoder supply voltage 18-30 V (+Us)		
2	White	I/Q	Not connect- ed - no function	Multifunctional pin (configurable as switching input or switching output)	
3	Blue	L-	Encoder supply voltage 0 V (GND)		
4	Black	C/Q	IO-Link communication		
			-		Switching out- put (SIO mode)

Recommended accessories

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

	Brief description	Type	Part no.
Flanges			
	Standard stator coupling, AHS/AHM36	BEF-DS16-AHX	2108615
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PVC, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G02MNI	6052613
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G02MRN	6058291
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PVC, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G05MNI	6052615
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G05MRN	6058476
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PVC, unshielded, 10 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G10MNI	6052617
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PP, unshielded, 10 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G10MRN	6058478
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PVC, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-W02MNI	6052614
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-W02MRN	6058474

	Brief description	Type	Part no.
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PVC, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-W05MNI	6052616
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-W05MRN	6058477
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PVC, unshielded, 10 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-W10MNI	6052618
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PP, unshielded, 10 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-W10MRN	6058479
	Head A: female connector, M12, 4-pin, angled Head B: male connector, M12, 4-pin, straight Cable: PVC, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-B02MNI	6052633
	Head A: female connector, M12, 4-pin, angled Head B: male connector, M12, 4-pin, straight Cable: PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-B02MRN	6058502
	Head A: female connector, M12, 4-pin, angled Head B: male connector, M12, 4-pin, straight Cable: PVC, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-B05MNI	6052634
	Head A: female connector, M12, 4-pin, angled Head B: male connector, M12, 4-pin, straight Cable: PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-B05MRN	6058503
	Head A: female connector, M12, 4-pin, straight Head B: male connector, M12, 4-pin, straight Cable: PVC, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-G02MNI	6052630

	Brief description	Type	Part no.
	<p>Head A: female connector, M12, 4-pin, straight Head B: male connector, M12, 4-pin, straight Cable: PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)</p>	DSL-1204-G02MRN	6058499
	<p>Head A: female connector, M12, 4-pin, straight Head B: male connector, M12, 4-pin, straight Cable: PVC, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)</p>	DSL-1204-G05MNI	6052631
	<p>Head A: female connector, M12, 4-pin, straight Head B: male connector, M12, 4-pin, straight Cable: PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)</p>	DSL-1204-G05MRN	6058500

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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