



# AHM36I-SDQC014x12

AHS/AHM36

**ABSOLUTE ENCODERS**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
AHM36I-SDQC014x12	1093772

Other models and accessories → [www.sick.com/AHS\\_AHM36](http://www.sick.com/AHS_AHM36)

### Detailed technical data

#### Performance

<b>Max. resolution (number of steps per revolution x number of revolutions)</b>	14 bit x 12 bit (16,384 x 4,096)
<b>Error limits G</b>	0.35° (at 20 °C) <sup>1)</sup>
<b>Repeatability standard deviation <math>\sigma_r</math></b>	0.2° (at 20 °C) <sup>2)</sup>

<sup>1)</sup> 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.

<sup>2)</sup> In accordance with DIN ISO 55350-13; 68.3% of the measured values are inside the specified area.

#### Interfaces

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

#### Electrical data

<b>Connection type</b>	Male connector, M12, 4-pin, universal
<b>Supply voltage</b>	18 ... 30 V
	Male connector, M12, 4-pin
<b>Power consumption</b>	≤ 1.5 W
<b>Reverse polarity protection</b>	✓
<b>MTTFd: mean time to dangerous failure</b>	145.6 years (EN ISO 13849-1)

## Mechanical data

<b>Mechanical design</b>	Solid shaft, Servo flange
<b>Shaft diameter</b>	6 mm <sup>1)</sup>
<b>Shaft length</b>	12 mm
<b>Weight</b>	0.2 kg, relates to devices with male connector connection
<b>Shaft material</b>	Stainless steel V2A
<b>Flange material</b>	Stainless steel V2A
<b>Material, stator coupling</b>	Stainless steel V2A
<b>Housing material</b>	Stainless steel V2A
<b>Material, cable</b>	PUR
<b>Start up torque</b>	≤ 1 Ncm <sup>2)</sup>
<b>Operating torque</b>	≤ 1 Ncm <sup>2)</sup>
<b>Permissible Load capacity of shaft</b>	40 N / radial 20 N / axial
<b>Moment of inertia of the rotor</b>	2.5 gcm <sup>2</sup>
<b>Bearing lifetime</b>	3.6 x 10 <sup>8</sup> revolutions
<b>Angular acceleration</b>	≤ 500,000 rad/s <sup>2</sup>
<b>Operating speed</b>	≤ 6,000 min <sup>-1</sup>

<sup>1)</sup> For adapting to 1.25 m Ecoline wire draw mechanism; only available for multiturn variants.

<sup>2)</sup> At 20 °C.

## Ambient data

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

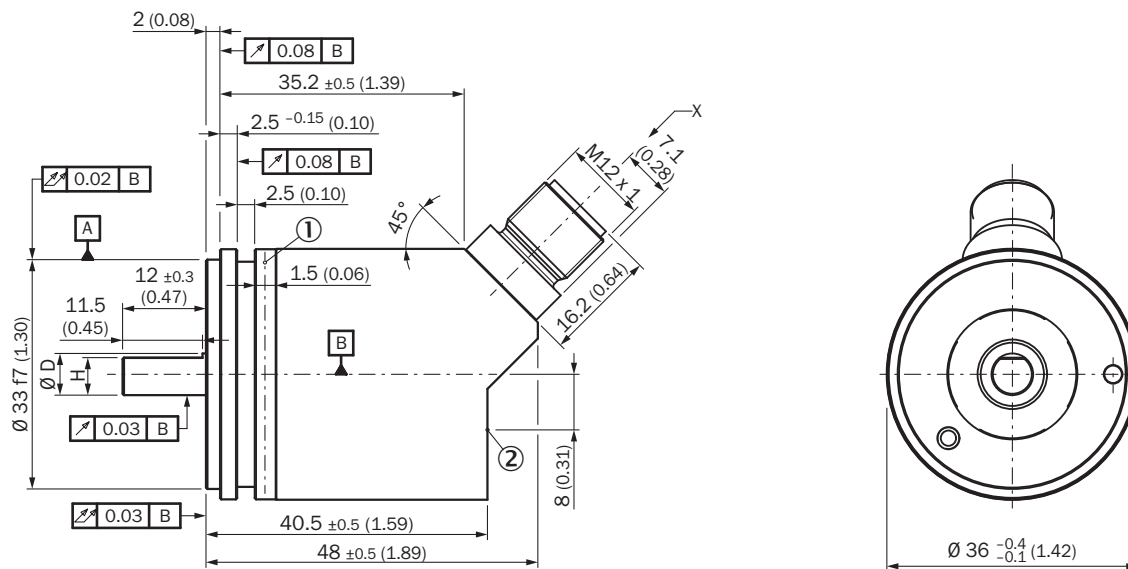
## Classifications

<b>ECl@ss 5.0</b>	27270502
<b>ECl@ss 5.1.4</b>	27270502
<b>ECl@ss 6.0</b>	27270590
<b>ECl@ss 6.2</b>	27270590
<b>ECl@ss 7.0</b>	27270502
<b>ECl@ss 8.0</b>	27270502
<b>ECl@ss 8.1</b>	27270502
<b>ECl@ss 9.0</b>	27270502
<b>ECl@ss 10.0</b>	27270502
<b>ECl@ss 11.0</b>	27270502
<b>ETIM 5.0</b>	EC001486

<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

### Dimensional drawing (Dimensions in mm (inch))

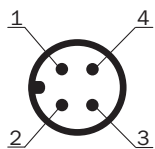
Solid shaft, servo flange, male connector



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](http://www.sick.com/AHS_AHM36)

	Brief description	Type	Part no.
<b>Other mounting accessories</b>			
	Servo clamps, small, for servo flange (clamping claws, mounting eccentric), 3 pcs, without mounting hardware, without mounting hardware	BEF-WK-RESOL	2039082
<b>Plug connectors and cables</b>			
	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 &amp; 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 &amp; 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 &amp; 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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