



A3M60A-BHPB014x17

A3M60

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
A3M60A-BHPB014x17	1053333

Other models and accessories → www.sick.com/A3M60

Detailed technical data

Performance

Number of steps per revolution (max. resolution)	16,384 (14 bit)
Number of revolutions	131,072 (17 bit)
Max. resolution (number of steps per revolution x number of revolutions)	14 bit x 17 bit (16,384 x 131,072)
Error limits G	0.35° (at room temperature) ¹⁾
Repeatability standard deviation σ_r	0.15° (at room temperature) 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	PROFIBUS DP
Communication Interface detail	DPV0 DPV1 DPV2
Data transmission rate (baud rate)	≤ 12 MBaud
Initialization time	Approx. 1 s
Parameterising data	Number of steps per revolution Number of revolutions PRESET Counting direction Unit for output of the speed value Round axis functionality
Available diagnostics data	Maximum speed Power-on counter Operating hour counter Minimum and maximum operating voltage
Bus termination	DIP switch

Electrical data

Connection type	Male connector, 2x, M12, 5-pin, axial Female connector, 1x, M12, 5-pin, axial
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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.

Supply voltage	10 ... 32 V
Power consumption	≤ 1.5 W
Reverse polarity protection	✓
MTTFd: mean time to dangerous failure	60 years (EN ISO 13849-1) ¹⁾

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Mechanical data

Mechanical design	Blind hollow shaft
Shaft diameter	15 mm
Weight	0.28 kg
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum
Start up torque	2 Ncm (+20 °C)
Operating torque	1.6 Ncm (+20 °C)
Permissible movement static	± 0.3 mm (radial) ± 0.5 mm (axial)
Permissible movement dynamic	± 0.1 mm (radial) ± 0.2 mm (axial)
Operating speed	≤ 6,000 min ⁻¹ ¹⁾
Bearing lifetime	3.0 x 10 ⁹ revolutions
Angular acceleration	≤ 500,000 rad/s ²

¹⁾ Self warming 35 K at maximum operating speed.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP67, shaft side (IEC 60529) IP67, housing side (IEC 60529) ¹⁾
Permissible relative humidity	95 % (Condensation not permitted)
Operating temperature range	-30 °C ... +80 °C
Storage temperature range	-40 °C ... +100 °C
Resistance to shocks	100 g, 6 ms (EN 60068-2-27)
Resistance to vibration	30 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

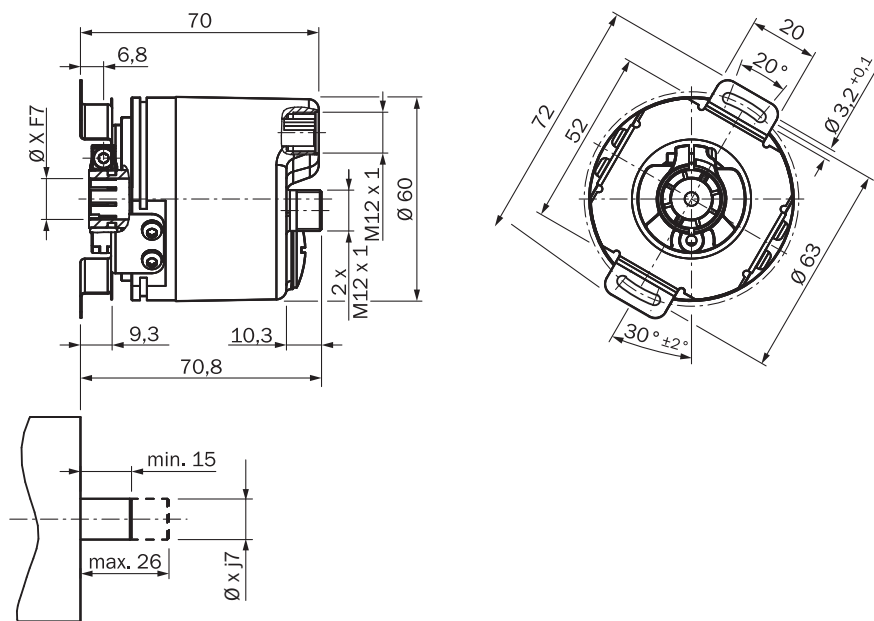
¹⁾ With mating connector fitted.

Classifications

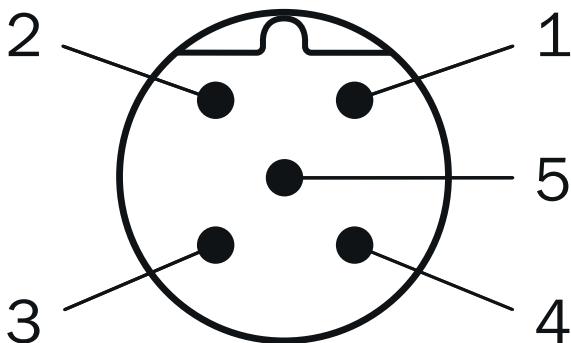
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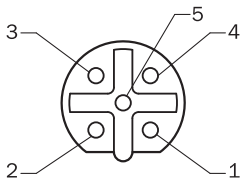
Dimensional drawing (Dimensions in mm (inch))



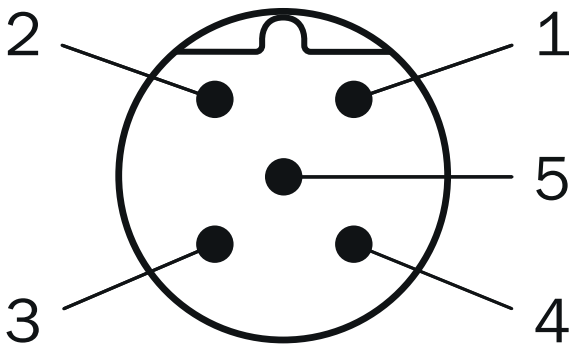
PIN assignment



PIN	PROFIBUS IN	PROFIBUS OUT	Supply voltage
1	Not assigned	+5 V 2P5 ¹⁾	Operating voltage
2	PROFIBUS Data A	PROFIBUS Data A	Not assigned
3	Not assigned	0 V (2M) ¹⁾	Ground (0 V)
4	PROFIBUS Data B	PROFIBUS Data B	Not assigned
5	Screen	Screen	Not assigned
1) External connection to the bus			



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5	Screen	Screen	Not assigned
1) External connection to the bus			

Recommended accessories

Other models and accessories → www.sick.com/A3M60

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: Flying leads Head B: Flying leads Cable: PROFIBUS DP, PUR, shielded	LTG-2102-MW	6021355
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m Voltage supply	DOL-1202-W05MC	6042067
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 10 m Voltage supply	DOL-1202-W10MC	6042068
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 5 m	YF2A25-050UB6XLEAX	2095733
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 10 m	YF2A25-100UB6XLEAX	2095734
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 20 m	YF2A25-200UB6XLEAX	2095738
	Head A: female connector, M12, 2-pin, straight, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 5 m	YF2B22-050PB1XLEAX	2121936
	Head A: female connector, M12, 2-pin, straight, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 10 m	YF2B22-100PB1XLEAX	2106269
	Head A: female connector, M12, 2-pin, straight, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 15 m	YF2B22-150PB1XLEAX	2106272
	Head A: female connector, M12, 2-pin, straight, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 20 m	YF2B22-200PB1XLEAX	2106273

	Brief description	Type	Part no.
	Head A: female connector, M12, 2-pin, angled, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 5 m	YG2B22-050PB1XLEAX	2106274
	Head A: female connector, M12, 2-pin, angled, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 10 m	YG2B22-100PB1XLEAX	2106275
	Head A: male connector, M12, 2-pin, straight, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 5 m	YM2B22-050PB1XLEAX	2106270
	Head A: male connector, M12, 2-pin, straight, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 10 m	YM2B22-100PB1XLEAX	2106271
	Head A: male connector, M12, 2-pin, straight, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 15 m	YM2B22-150PB1XLEAX	2106276
	Head A: male connector, M12, 2-pin, angled, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 5 m	YN2B22-050PB1XLEAX	2106277
	Head A: male connector, M12, 2-pin, angled, B-coded Head B: Flying leads Cable: Fieldbus, PROFIBUS DP, PUR, halogen-free, shielded, 10 m	YN2B22-100PB1XLEAX	2106278
	Head A: female connector, M12, 5-pin, straight, B-coded Head B: male connector, M12, 5-pin, straight, B-coded Cable: PROFIBUS DP, twisted pair, PUR, halogen-free, shielded, 10 m Wire shield Al-Pt film, overall shield C-screen tin-plated	DSL-1205-G10MQ	6032640
	Head A: female connector, M12, 5-pin, straight Cable: unshielded	DOS-1205-G	6009719
	Head A: female connector, M12, 5-pin, straight, B-coded Cable: PROFIBUS DP, shielded	DOS-1205-GQ	6021353
	Head A: female connector, M12, 5-pin, angled Cable: unshielded	DOS-1205-W	6009720
	Head A: female connector, M12, 5-pin, angled, B-coded (B-inverse) Cable: PROFIBUS DP, PROFIBUS DP, shielded	DOS-1205-WQ	6041429
	Head A: male connector, M12, 5-pin, straight, B-coded Cable: PROFIBUS DP, shielded	STE-1205-GQ	6021354
	Head A: male connector, M12, 5-pin, angled, B-coded Cable: PROFIBUS DP, shielded	STE-1205-WQ	6041428
	Cable: unshielded, set of connectors	DOS-3XM12-W	2058177
	Head A: male connector, M12, 4-pin, straight, B-coded Cable: PROFIBUS DP, terminal resistor	STE-END-Q	6021156

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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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