

Encoders

magnetic absolute Encoder, SSI Interface with BISS-C Protocol, 4096 steps per revolution

For combination with Brushless DC-Motors

Series AESM-4096

AESM-4096			
Steps per revolution		4 096	
Resolution		12 Bit	
Signal output		SSI Interface with BISS-C Protocol	
Supply voltage	U_{DD}	4,5 ... 5,5	V
Current consumption, typical ¹⁾	I_{DD}	typ. 16, max. 23	mA
Output current, max. (DATA) ²⁾		4	mA
Clock Frequency, max. (CLK)		2	MHz
Input low level (CLK)		0 ... 0,8	V
Input high level (CLK)		2 ... U_{DD}	V
Setup time after power on, max.	t_{setup}	4	ms
Timeout	$t_{timeout}$	16	μ s
Inertia of sensor magnet	J	0,007	gcm ²
Operating temperature range		-30 ... +100	°C

¹⁾ $U_{DD} = 5$ V: with unloaded outputs

²⁾ $U_{DD} = 5$ V: low logic level < 0,4 V, high logic level > 4,6 V: CMOS- and TTL compatible

For combination with Motor

Dimensional drawing A	<L1 [mm]		
0824 ... B	24,1		
Dimensional drawing B	<L1 [mm]		
1028 ... B	28,1		

Characteristics

The absolute encoder in combination with the FAULHABER motors is ideal for commutation, speed and position control. It can also be used to create a sinusoidal commutation signal.

In the AESM version, absolute position information is provided with a resolution of up to 4096 steps per revolution at the signal outputs and communicated via a SSI Interface with BISS-C Protocol.

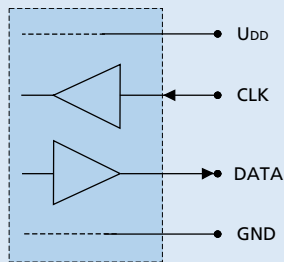
Absolute means, that each shaft position is assigned to an unique angular value within one revolution. This value is already available directly after power-on. The advantages are a reduced torque ripple, a higher efficiency, and reduced electrical noise generation.

Motor and encoder are connected via a common flexboard.

To view our large range of accessory parts, please refer to the "Accessories" chapter.

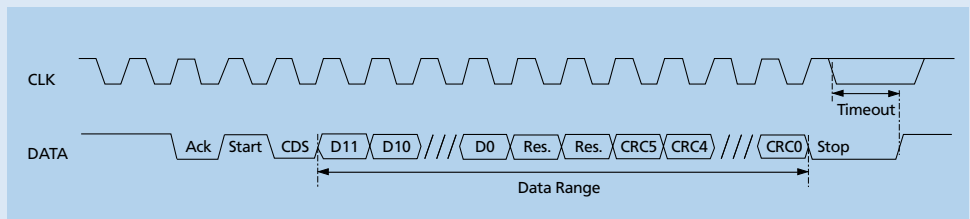
Circuit diagram / Output signals

Output circuit



Interface Protocol BISS-C

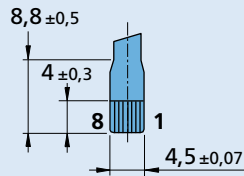
Angle position values are ascending for clockwise rotation.
Clockwise rotation as seen from the shaft end.



Connector information / Variants

No.	Function
1	Phase C
2	Phase B
3	Phase A
4	GND
5	U _{DD}
6	CLK
7	N.C.
8	DATA

Connection Encoder and Motor



Flexboard
8 circuits, 0,5 mm pitch

Full product description

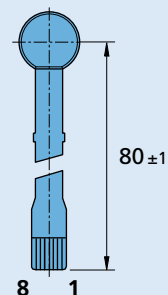
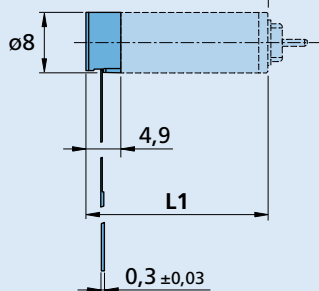
- Examples:
0824K006B AESM-4096
1028S012B AESM-4096

Caution:
Incorrect lead connection will damage the motor electronics!

Recommended connector
Top contact style
8 circuits, 0,5 mm pitch, e.g.:
Molex: 52745-0896/0897

Dimensional drawing A

Example of combination with 0824...B

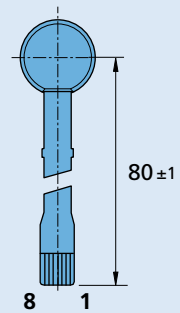
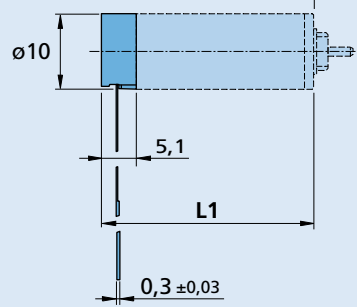


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Dimensional drawing B



Example of combination with 1028...B



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