

Encoders

magnetic single-turn 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	
Single-turn resolution	12 Bit	
Signal output	SSI Interface with BISS-C Protocol	
Supply voltage	U_{DD}	V
Current consumption, typical ¹⁾	I_{DD}	mA
Output current, max. (DATA) ²⁾	4,5 ... 5,5	mA
Clock Frequency, max. (CLK)	typ. 16, max. 23	MHz
Input low level (CLK)	4	
Input high level (CLK)	2	
Setup time after power on, max.	0 ... 0,8	V
Setup time after power on, max.	t_{setup}	V
Timeout	2 ... U_{DD}	ms
Inertia of sensor magnet	4	μ s
Operating temperature range	J	$g\text{cm}^2$
	0,007	$^{\circ}\text{C}$
	-30 ... +100	

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	$<\text{L1}$ [mm]
0824 ... B	24,1
Dimensional drawing B	$<\text{L1}$ [mm]
1028 ... B	28,1

Characteristics

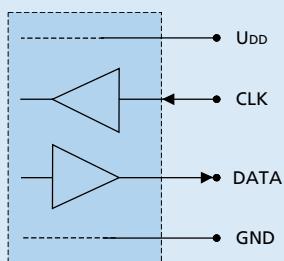
The absolute encoder in combination with the FAULHABER motors is ideal for commutation, speed and position control. It can also be used to create a sinusoidal commutation signal.

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.

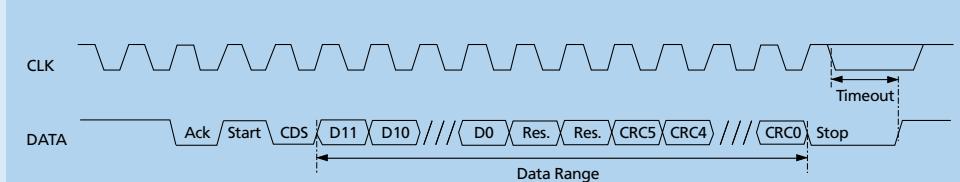
Absolute means, that each shaft position is assigned to an unique angular value within one revolution. This value is already available directly after power-on. The advantages are a reduced torque ripple, a higher efficiency, and reduced electrical noise generation.

Motor and encoder are connected via a common flexboard.

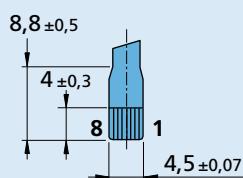
To view our large range of accessory parts, please refer to the "Accessories" chapter.

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

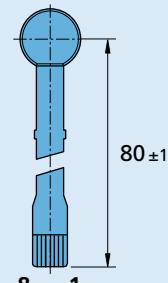
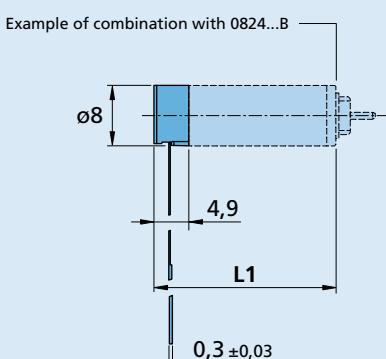
No.	Function
1	Phase C
2	Phase B
3	Phase A
4	GND
5	U _{DD}
6	CLK
7	N.C.
8	DATA

Connection Encoder and Motor

Flexboard
8 circuits, 0,5 mm pitch

Full product description

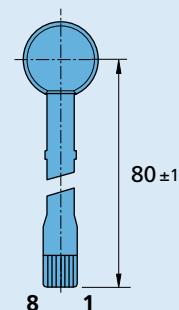
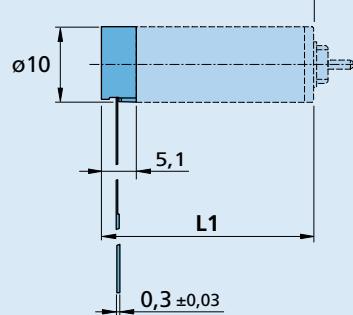
Examples:
0824K006B AESM-4096
1028S012B AESM-4096
Molex: 52745-0897

Caution:
Incorrect lead connection will damage the motor electronics!

Dimensional drawing A

AESM-4096

Dimensional drawing B

Example of combination with 1028...B

**AESM-4096**