

Encoders

magnetic absolute Encoder, SSI Interface,
4096 lines per revolution

For combination with
Brushless DC-Motors

Series AES – 4096

		AES – 4096	
Lines per revolution	N	4096	
Resolution		12 Bit	
Signal output		Synchronous Serial Interface (SSI)	
Supply voltage	U _{DD}	4,5 ... 5,5	V DC
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	µs
Operating temperature range		- 40 ... + 100 °C	

¹⁾ U_{DD} = 5V: with unloaded outputs

²⁾ U_{DD} = 5V: low logic level ≤ 0,4V, high logic level ≥ 4,6V

For combination with motor

Dimensional drawing A	<L1 [mm]		
2232...BX4	50,2		
2232...BX4S	50,2		
2250...BX4	68,2		
2250...BX4S	68,2		
Dimensional drawing B	<L1 [mm]		
3242...BX4	60,0		
3268...BX4	86,0		

Features

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.

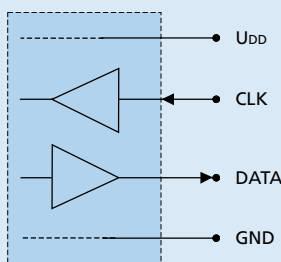
In the AES version (absolute encoder), absolute position information is provided with a resolution of up to 4096 steps per revolution at the signal outputs and communicated via a serial (SSI) interface. Absolute means, that each shaft position is assigned to a unique angular value within one revolution. This value is already available directly after power-on.

The advantages are a reduced torque ripple, a higher efficiency, and reduced electrical noise generation. When using sinusoidal commutation.

Motor and encoder are connected via a common flexboard.

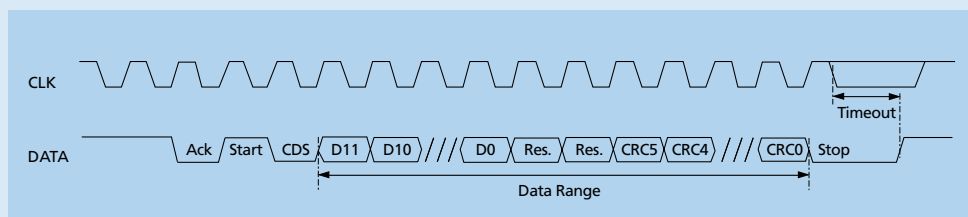
Circuit diagram / Output signals

Output circuit



Interface signals (SSI)

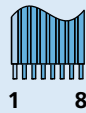
Angle position values are ascending for clockwise rotation.
Clockwise rotation as seen from the shaft end.



Connector information / Variants

No.	Function
1	Phase C
2	Phase B
3	Phase A
4	GND
5	U ₀₀
6	CLK
7	Reserved
8	DATA

Connection Encoder and Motor



Option

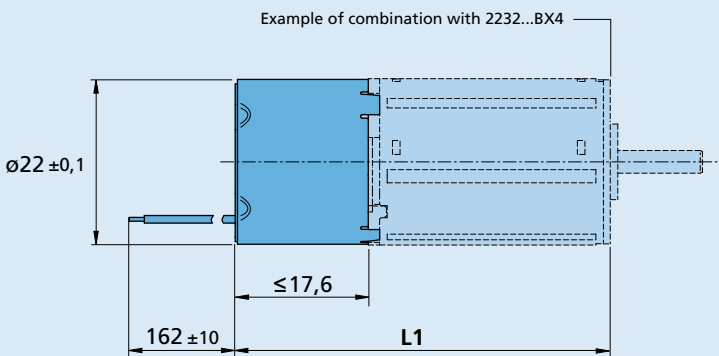
- Connector variants (Option no.: 3807) with connector Micro-Fit

Caution:
Incorrect lead connection will damage the motor electronics!

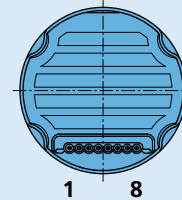
Full product description

- Example:
2232S012BX4 AES-4096
3242G024BX4 AES-4096

Dimensional drawing A

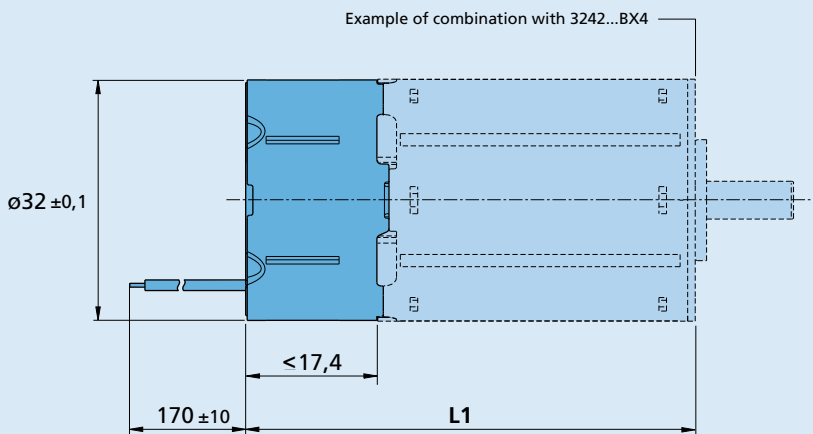


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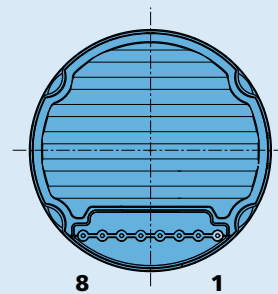


Cable
PVC-ribbon cable
8-AWG 26, 1,27 mm

Dimensional drawing B



AES - 4096



Cable
PVC-ribbon cable
8-AWG 24, 2,54 mm