

Encoders

magnetic Encoder, digital outputs, 3 channels, 16 - 4096 lines per revolution

For combination with Brushless DC-Motors

Series IEF3-4096

	IEF3	-16	-32	-64	-128	-256	-512	-1024	-2048	-4096	
Lines per revolution	N	16	32	64	128	256	512	1 024	2 048	4 096	
Frequency range, up to ¹⁾	f	5	10	20	40	80	160	320	640	875	kHz
Signal output, square wave		2+1 lr	ndex								Channels
Supply voltage	UDD	4,5	5,5								V
Current consumption, typical ²⁾	IDD	typ. 2	5, max. 4	40							mA
Output current, max. ³⁾	Ιουτ	2,5									mA
Index Pulse width ⁴⁾	Po	90 ± 4	5					90 ± 6	5 90 ± 7	5	°e
Phase shift, channel A to B	Φ	90 ± 4	5					90 ± 6	5 90 ± 7	5	°e
Signal rise/fall time, max. (CLOAD = 50 pF)	tr/tf	0,05 /	0,05								μs
Inertia of sensor magnet	J	1,57									gcm ²
Operating temperature range		-40	+100								°C
Accuracy, typ.		0,5									°m
Repeatability, typ.		0,08									°m
Hysteresis		0,02									°m
Edge spacing, min.		225									ns
Mass, typ.		15,4									g

¹⁾ Velocity (min⁻¹) = $f(Hz) \times 60/N$

²⁾ $U_{DD} = 5$ V: with unloaded outputs

³⁾ U_{DD} = 5 V: low logic level < 0,4 V, high logic level > 4,5 V: CMOS- and TTL compatible

⁴⁾ At 5 000 min⁻¹

For combination with Motor Dimensional drawing A <l1 [mm]<="" td=""> 2214 BXT H 21,3 Dimensional drawing B <l1 [mm]<="" td=""> 3216 BXT H 23,3 Dimensional drawing C <l1 [mm]<="" td=""> 4221 BXT H 28,3</l1></l1></l1>		
2214 BXT H21,3Dimensional drawing B <l1 [mm]<="" th="">3216 BXT H23,3Dimensional drawing C<l1 [mm]<="" td=""></l1></l1>	For combination with Moto	or
Dimensional drawing B <l1 [mm]<="" th="">3216 BXT H23,3Dimensional drawing C<l1 [mm]<="" td=""></l1></l1>	Dimensional drawing A	
3216 BXT H 23,3 Dimensional drawing C <l1 [mm]<="" td=""><td>2214 BXT H</td><td>21,3</td></l1>	2214 BXT H	21,3
3216 BXT H 23,3 Dimensional drawing C <l1 [mm]<="" td=""><td></td><td></td></l1>		
3216 BXT H 23,3 Dimensional drawing C <l1 [mm]<="" td=""><td>Dimensional drawing B</td><td><l1 [mm]<="" td=""></l1></td></l1>	Dimensional drawing B	<l1 [mm]<="" td=""></l1>
Dimensional drawing C <l1 [mm]<="" td=""><td>3216 BXT H</td><td>23,3</td></l1>	3216 BXT H	23,3
Dimensional drawing C <l1 [mm]<br="">4221 BXT H 28,3</l1>		
4221 BXT H 28,3	Dimensional drawing C	<l1 [mm]<="" td=""></l1>
	4221 BXT H	28.3
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Characteristics

These incremental encoders with 3 output channels, in combination with the FAULHABER Brushless DC-Motors, are used for the indication and control of both shaft velocity and direction of rotation as well as for positioning.

The encoder is integrated in the Brushless DC-Motors BXT H-Series and extends the overall length by only 6,2 mm.

A segmented magnetic disc provides a magnetic field which is detected and further processed by an angle sensor.

At the encoder outputs, two 90° phase-shifted square wave signals are available with up to 4096 impulses and an index impulse per motor revolution.

The encoder is available with different standard resolutions.

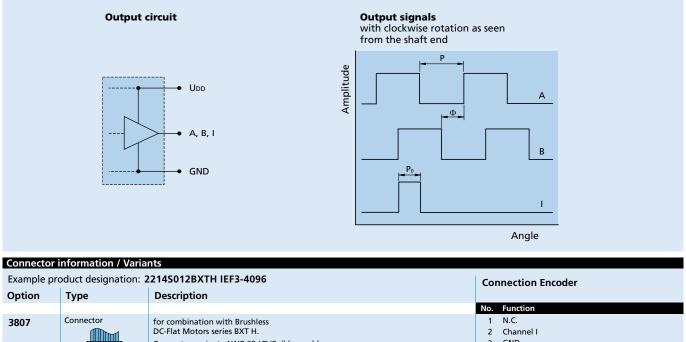
The supply voltage for the encoder and the output signals are interfaced through a ribbon cable, optional with connector.

Details for the Brushless DC-Motors and suitable reduction gearheads are on separate catalogue pages.

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

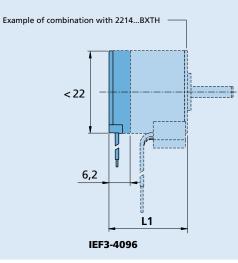


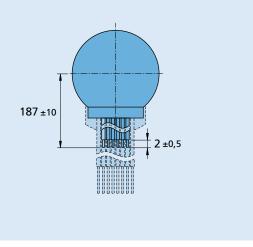
Circuit diagram / Output signals



	6 1	Connector variants AWG 28 / PVC ribbon cable with connector MOLEX Picoblade 51021-0600, recommended mating connector 53047-0610.		3 GND 4 U∞ 5 Channel B 6 Channel A
3592	Connector	for combination with Brushless DC-Flat Motors series BXT H. Connector variants AWG 28 / PVC ribbon cable with connector MOLEX Picoblade 51021-0600, recommended mating connector 53047-0610.	1205 1357 Inclusive motor connector 3830	1 6
				Standard cable PVC-ribbon cable, 6-AWG 28, 1,27 mm
				Caution: Incorrect lead connection will damage the motor electronics!

Dimensional drawing A





For notes on technical data and lifetime performance refer to "Technical Information". Edition 2021 Dec. 03 

