

IE3-1024 L

magnetic Encoder, digital outputs, 3 channels,
1 - 1024 lines per revolution, Line Driver

IE3-1024 L

		IE3-32 L	IE3-64 L	IE3-128 L	IE3-256 L	IE3-512 L	IE3-1024 L	
Lines per revolution	N	32	64	128	256	512	1 024	
Frequency range, up to ¹⁾	f	15	30	60	120	240	430	kHz
Signal output, square wave		2+1 Index and complementary outputs						Channels
Supply voltage	U_{DD}	4.5 ... 5.5						V
Current consumption, typical ²⁾	I_{DD}	typ. 20, max. 30						mA
Index Pulse width	P_0	90 ± 45						°e
Phase shift, channel A to B	Φ	90 ± 45						°e
Inertia of sensor magnet	J	0.08						gcm ²
Operating temperature range		-40 ... +100						°C
Accuracy, typ.		0.5						°m
Repeatability, typ.		0.1						°m
Hysteresis		0.17						°m
Edge spacing, min.		421						ns
Mass, typ.		13.5						g

¹⁾ Velocity (min⁻¹) = f(Hz) x 60/N

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

³⁾ At 5 000 min⁻¹

Note: The output signals are TIA-422 compatible.

Examples of Line Driver Receivers: ST26C32AB (STM), AM26C32 (TI).

For combination with Motor

Dimensional drawing A	<L1 [mm]
2214 ... BXT H	26.8
3216 ... BXT H	28.7
4221 ... BXT H	34

Characteristics

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

A permanent magnet on the shaft creates a moving magnetic field which is captured using an angular sensor and further processed. At the encoder outputs, two 90° phase-shifted square wave signals are available with up to 1 024 impulses and an index impulse per motor revolution.

The Line Driver version has differential signal outputs (TIA-422). Differential signals reduce ambient interference and are suitable for applications with high ambient interference.

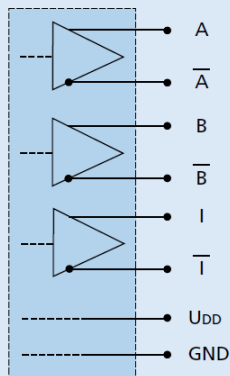
The Line Driver amplifies the encoder signal which means that long cables can be used without signal degradation. Differential signal outputs must be decoded by the appropriate receiver module. In addition, a suitable line termination resistance (100 ohm) is possibly useful.

The encoder is available in a variety of different resolutions. The encoder is connected with a ribbon cable.

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

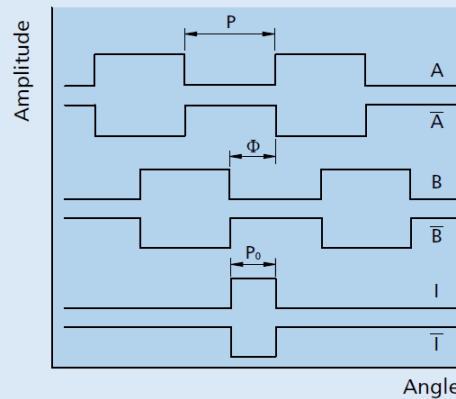
Circuit diagram / Output signals

Output circuit



Output signals

with clockwise rotation as seen from the shaft end



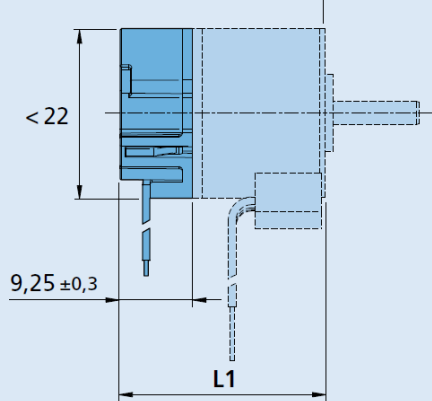
Connector information / Variants

Example product designation: **2444S024B-K1838 IE3-1024L**

Option	Type	Description	Connection Encoder																						
3806	Connector	for combination with DC-Motors series CR, CXR and with Brushless DC-Motor series B(S), BP4 and BXT H. Connector variants AWG 28 / PVC ribbon cable with connector EN 60603-13 / DIN-41651.	<table border="1"> <thead> <tr> <th>No.</th> <th>Function</th> </tr> </thead> <tbody> <tr><td>1</td><td>N.C.</td></tr> <tr><td>2</td><td>U_{DD}</td></tr> <tr><td>3</td><td>GND</td></tr> <tr><td>4</td><td>N.C.</td></tr> <tr><td>5</td><td>Channel \bar{A}</td></tr> <tr><td>6</td><td>Channel A</td></tr> <tr><td>7</td><td>Channel \bar{B}</td></tr> <tr><td>8</td><td>Channel B</td></tr> <tr><td>9</td><td>Channel \bar{I}</td></tr> <tr><td>10</td><td>Channel I</td></tr> </tbody> </table>	No.	Function	1	N.C.	2	U _{DD}	3	GND	4	N.C.	5	Channel \bar{A}	6	Channel A	7	Channel \bar{B}	8	Channel B	9	Channel \bar{I}	10	Channel I
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3589	Connector	for combination with Brushless DC-Motors series BX4. Connector variants AWG 28 / PVC ribbon cable with connector EN 60603-13 / DIN-41651. Inclusive motor connector 3830																							
	Resolutions	Resolutions from 1 - 1024 lines per revolution are available by request.																							

Dimensional drawing A

Example of combination with 2214...BXTH



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