

EN-0060

Low Inertia Encoder

FEATURES

- Quadrature output (Channel A, Channel B)
- 60 pulses per revolution
- Low inertia: 4.3×10^{-7} kg·m²
- Interfaces directly with DSP6001
- Mountable to T-slot table/base plate

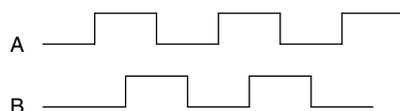
DESCRIPTION

Magtrol's EN-0060 Low Inertia Encoder provides a square wave output on two channels for up/down counting or free-run motor speed measurement applications. Each channel outputs 60 pulses per revolution of the encoder shaft, and is 90° phase-shifted in order to determine direction when used with the appropriate counter/timer DAQ board. The device incorporates an infrared optical switch and slotted metallic disk assembled into a rugged aluminum housing. The EN-0060 is supplied with T-nuts for easy mounting to a T-slot table or Magtrol PT 25 Base Plate.

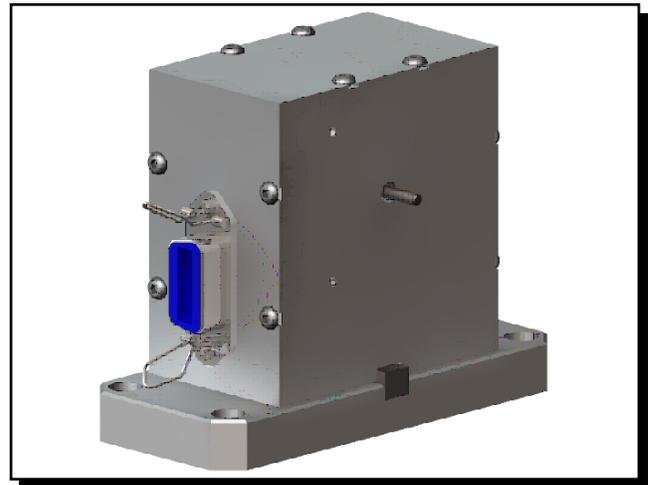
OPERATING PRINCIPLES

Quadrature Encoding

A quadrature encoded signal consists of two square-waves, A and B, which are offset from each other by 90°. The A and B signals are generated from two sensors placed at slightly different angles around the shaft. The direction of rotation can then be inferred from the order in which the two sensors detect each radial line. If A leads B by 90° (as shown in the figure to the right), the shaft is rotating clockwise. If A lags B by 90°, the shaft is rotating counterclockwise. The rate of either square-wave depends on the rotational speed of the shaft.



Typical quadrature encoded signal
(clockwise rotation)



RATINGS

MEASUREMENT CHARACTERISTICS	
Maximum Speed	35,000 rpm
Pulse Count	60 pulses/revolution
Maximum Drag Torque @ 1000 rpm	0.056 mN·m
Inertia	4.266×10^{-7} kg·m ²
ELECTRICAL CONNECTION (14-PIN CONNECTOR)*	
Output Function	Pin #
COM	8
+5V	7
A	10
B	2

* 14-pin cable (P/N 88M007) must be ordered separately.

DIMENSIONS

	in	mm
width	4.528	115
depth	1.752	44.5
height	3.543	90

NOTE: Width and depth are base dimensions.

Detailed dimension drawings can be found on Magtrol's web site. Solid 3D models are also available by contacting Magtrol.



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