

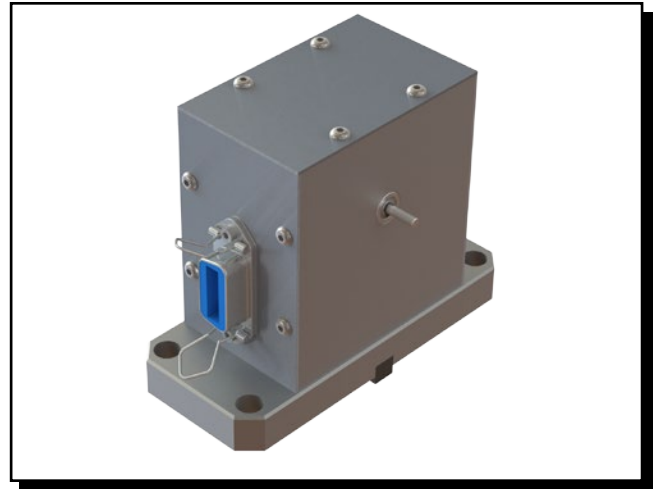
EMA Series Stand Alone Encoder

FEATURES

- Quadrature output (Channel A, Channel B, Index)
- Several resolutions available
- Low inertia: 5.19×10^{-8} kg·m²
- Interfaces directly with Magtrol controllers
- Mountable to a Magtrol PT 25 Base Plate

DESCRIPTION

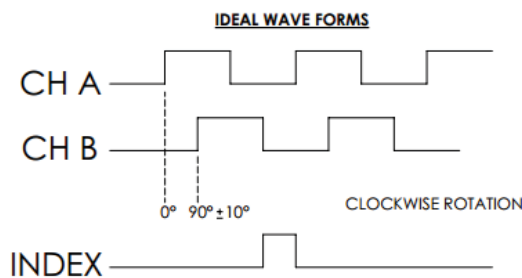
Magtrol's EMA Series Stand Alone Encoder provides a square wave output on two channels for up/down counting or free-run motor speed measurement applications. Each channel outputs the specified pulses per revolution of the encoder shaft, and is 90° phase-shifted in order to determine direction when used with the appropriate counter/timer DAQ board. The device incorporates an infrared optical switch and disk assembled into a rugged aluminum housing. The encoder is supplied with an 8 mm rectangular key for easy alignment to a 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 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.



DIMENSIONS

	in	mm
width	4.528	115
depth	1.969	50
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.

RATINGS

Maximum Mechanical Speed (rpm)	Maximum Drag Torque @ 1,000 rpm (mN·m)	Inertia (kg·m ²)	Electrical Connections*	
			Output Function	Pin# 14 Pin Connector
35,000	.353	5.19 x 10 ⁻⁸	Channel B	2
			+5 Volts	7
			Common	8
			Channel A	10
			Index	11

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

VARIATIONS

Model	Stock Code	Description	Readable Speed* (rpm)
EMA-0050	007204	ENCODER MODULE ASSY, 50 CPR	35,000**
EMA-0096	007205	ENCODER MODULE ASSY, 96 CPR	
EMA-0100	007206	ENCODER MODULE ASSY, 100 CPR	
EMA-0192	007207	ENCODER MODULE ASSY, 192 CPR	
EMA-0200	007208	ENCODER MODULE ASSY, 200 CPR	
EMA-0250	007209	ENCODER MODULE ASSY, 250 CPR	
EMA-0256	007210	ENCODER MODULE ASSY, 256 CPR	
EMA-0360	007211	ENCODER MODULE ASSY, 360 CPR	
EMA-0400	007212	ENCODER MODULE ASSY, 400 CPR	
EMA-0500	007213	ENCODER MODULE ASSY, 500 CPR	
EMA-0512	007214	ENCODER MODULE ASSY, 512 CPR	
EMA-0720	007215	ENCODER MODULE ASSY, 720 CPR	25,000
EMA-0900	007216	ENCODER MODULE ASSY, 900 CPR	20,000
EMA-1000	007217	ENCODER MODULE ASSY, 1000 CPR	18,000
EMA-1024	007218	ENCODER MODULE ASSY, 1024 CPR	18,000
EMA-1250	007219	ENCODER MODULE ASSY, 1250 CPR	14,000

*Confirm instrumentation can read developed frequencies.

**Limited by maximum mechanical speed.

Due to the continual development of our products, we reserve the right to modify specifications without forewarning.



www.magtrol.com

MAGTROL INC

70 Gardenville Parkway
Buffalo, New York 14224 USA
Phone: +1 716 668 5555
Fax: +1 716 668 8705
E-mail: magtrol@magtrol.com

MAGTROL SA

Route de Montena 77
1728 Rossens/Fribourg, Switzerland
Phone: +41 (0)26 407 3000
Fax: +41 (0)26 407 3001
E-mail: magtrol@magtrol.ch

Subsidiaries in:

Germany • France
China • India
Worldwide Network
of Sales Agents

