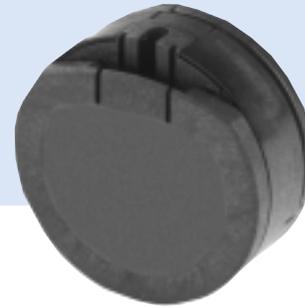


# Series M14 Miniature Encoder

- Ideal economical feedback device for servo and stepper motors
- Short axial length and compact 1.5 inch diameter
- Easy “snap-on” installation
- High resolution to 1024 lines/rev and 200 kHz bandwidth
- Drop-in replacement for HP 5540
- CE Qualified



MOTOR MOUNT

## APPLICATION/INDUSTRY

The M14 series of incremental optical encoders provides high performance feedback for precision motion control in a small, low cost package. Its high performance, advanced features, and competitive pricing make it the encoder of choice for a broad range of applications.

## DESCRIPTION

The M14 optical encoder utilizes a patent-pending ASIC that integrates all encoder electronics, including the optoelectronic sensors, which enhances reliability and accuracy.

Quadrature A and B channels with up to 1024 lines per revolution and reference pulse are output as single-ended TTL/CMOS compatible signals.

## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Optical  
 Resolution: Incremental pulses per revolution; 200 to 1024  
 Phasing: 90° ±18° electrical  
 Symmetry: 180° ±18° electrical  
 Index Pulse Width: 90° ±36° electrical

### ELECTRICAL

Supply Voltage: 5 VDC ±10%  
 Supply Current: 10 mA, typ.  
 Output Signals: 2.5 V min. high ( $V_{OH}$ ); 0.5 V max. low ( $V_{OL}$ ), 6 mA sink/source (25°C), 4 mA (100°C)  
 Frequency Response: 200 kHz  
 Termination: 5 pin connector (accessory connector w/12" wires, part no. CA0060012)  
 Recommended Mating Connector: Amp Part Number 103969-4

### MECHANICAL

Weight: 0.22 oz (6.2 g)  
 Moment of Inertia:  $0.16 \times 10^{-5}$  oz-in-sec<sup>2</sup> (0.13 gm-cm<sup>2</sup>)  
 Hub Bore: 3.0, to 8.0 mm; 0.125, to 0.375 inch  
 Hub Dia. Tolerance: +0.0004"/-0.0000" (+0.010 mm/-0.000 mm)  
 Mating Shaft Length: 0.525" (13.3 mm) max.; 0.436" (11.07 mm) min.  
 Mating Shaft Runout: 0.001 TIR  
 Mating Shaft Endplay: >512 ppr: ±0.003" (±0.076mm); 500, 512 ppr: +0.005/-0.003" (+0.127/-0.076mm); <500 ppr: +0.007/-0.003" (+0.178/-0.076mm)

### ENVIRONMENTAL

Operating Temperature: 40° to 100°C  
 Storage Temperature: -50° to 125°C  
 Relative Humidity: 90% non-condensing

