

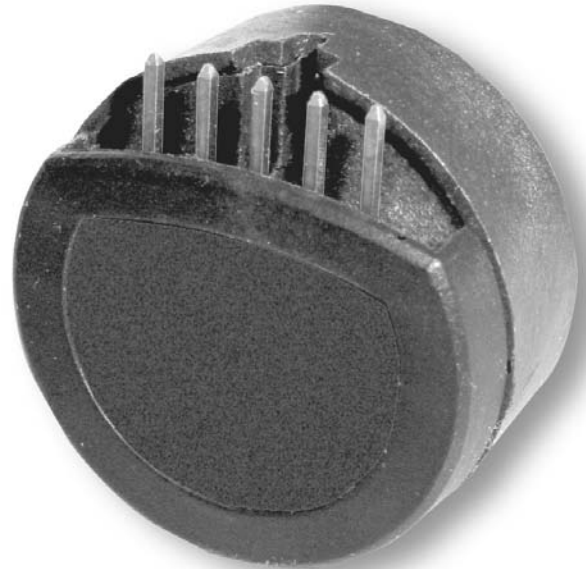
# SERIES M9

# Dynapar™ brand

## Miniature Encoder

### Key Features

- Super-Compact Modular Encoder for Small Servo and Stepper Motor Feedback
- Integrated ASIC for Enhanced Reliability and Accuracy
- Up to 512 PPR Resolution



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental, Optical

**Resolution:** Incremental pulses per revolution; 100 to 512

**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 header (accessory 12" wires w/connector, part no. CA0050012) or flying leads

**Recommended Mating Connector:** AMP part number 103675-4

### MECHANICAL

**Weight:** 0.15 oz (4.14 g)

**Moment of Inertia:** 0.15 x 10<sup>-5</sup> oz-in-sec<sup>2</sup> (0.11 gm-cm<sup>2</sup>)

**Hub Bore:** 1.5, 2.0, 2.5, 3.0, 4.0 mm; 0.125, 0.156 inch

**Hub Dia. Tolerance:** +0.0004"/-0.0000" (+0.010 mm/-0.000 mm)

**Mating Shaft Length:** See table

**Mating Shaft Runout:** 0.001 TIR

**Mating Shaft Endplay:** >256 ppr: ±0.003" (±0.076mm); 250, 256 ppr: +0.005/-0.003" (+0.127/-0.076mm); <250 ppr: +0.007/-0.003" (+0.178/-0.076mm)

### ENVIRONMENTAL

**Operating Temperature:** -20° to 100°C

**Storage Temperature:** -50° to 125°C

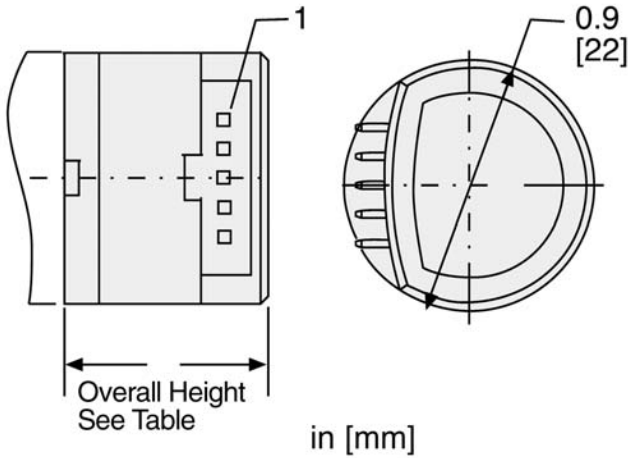
**Relative Humidity:** 90% non-condensing

## OUTPUT WAVEFORMS & CONNECTIONS

PIN	FUNCTION	CABLE WIRE
1	GND	BLACK
2	CH Z	BLUE
3	CH A	WHITE
4	Vcc	RED
5	CH B	BROWN

(Direction CCW viewing encoder cover)

**DIMENSIONS/INSTALLATION**



**IMPORTANT:** To properly install Series M9, a specialized mounting kit must be purchased. Only one kit is required to install any number of encoders with the same hub bore size.

Kit Part Number:  
 MK M9     Code 4 (from Models Table, above) designating Hub Bore requirement.

Example: Kit for installing encoders with 3.0 mm hub Bore= **MK M9 3.0**

Base (Code 3)	Overall Height inch (MM)	Motor Shaft Length inch (MM)	
		Max.	Min
A	0.583 (14.80)	0.437 (11.10)	0.377 (9.57)
C, D, E	0.717 (18.20)	0.571 (14.50)	0.511 (12.97)

Bases C and D provide clearance for motor-bosses with maximum dimensions of 0.5 in. Dia. x 0.15 in. high. Base E provides clearance for motor-bosses with maximum dimensions of 1.0 in. x 0.15 in. high

**ORDERING INFORMATION**

To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: PPR	Code 3: Mounting Description	Code 4: Hub Bore Description	Code 5: Termination Description
<b>M9</b>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> /0 <input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>

Ordering Information								
<b>M9</b>	0.9" Diameter Incremental Modular Encoder	<b>0100/0</b>	<b>0</b>	No mounting base	<b>1.5</b>	1.5 mm	<b>1</b>	5 pin header flying leads
		<b>0144/0</b>	<b>A</b>	4x M1.6 on 0.728" BC,	<b>2.0</b>	2.0 mm		
		<b>0200/0</b>	<b>C</b>	2x #2-56 on 0.75" BC	<b>2.5</b>	2.5 mm		
		<b>0256/0</b>	<b>D</b>	3x #0-80 on 0.823" BC	<b>3.0</b>	3.0 mm	<b>2</b>	
		<b>0300/0</b>	<b>E</b>	2x #2-56 On 1.812" BC	<b>4.0</b>	4.0 mm		
		<b>0360/0</b>			<b>125</b>	0.125 in		
		<b>0500/0</b>			<b>156</b>	0.156 in		
<b>0512/0</b>								



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