

# SERIES E14

**Dynapar™ brand**

## Miniature Encoder

### Key Features

- Rugged Metal Housing
- Optional Differential Line Driver Outputs
- Up to 2540PPR with Optional Index



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental

**Resolution:** 100 to 2540 PPR (pulses/revolution)

**Format:** Two channel quadrature (AB) with optional Index (Z) outputs

**Phase Sense:** A leads B for CW shaft rotation as viewed from the shaft end of the encoder

**Accuracy:**  $\pm 3 \times (360^\circ \div \text{PPR})$  or  $\pm 2.5$  arc-min worst case pulse to any other pulse, whichever is less

**Quadrature Phasing:**  $90^\circ \pm 36^\circ$  electrical

**Symmetry:**  $180^\circ \pm 18^\circ$  electrical

**Index:**  $90^\circ \pm 25^\circ$  (gated with A and B high)

**Waveforms:** Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

### ELECTRICAL

**Input Power:** 5 VDC  $\pm 5\%$  at 80 mA max.; 12 or 15 VDC  $\pm 10\%$  at 80 mA max.; not including output loads

**Outputs:** 7272 (or equivalent) line driver, 40 mA sink and source

**Frequency Response:** 100 kHz min.

### MECHANICAL

**Bearing Life:** (16 x 10<sup>6</sup>  $\div$  RPM) hours at max. load

**Shaft Loading:** 5 lb. radial, 3 lb. axial max.

**Shaft Speed:** 5,000 RPM max.

**Starting Torque:**

Shielded Bearing: 0.1 oz-in max. at 25 °C

Sealed Bearing: 0.43 oz-in max. at 25 °C

**Running Torque:**

Shielded Bearing: 0.08 oz-in max. at 25 °C

Sealed Bearing: 0.42 oz-in max. at 25 °C

**Moment of Inertia:**  $3.8 \times 10^{-5}$  oz -in -sec<sup>2</sup>

**Weight:** 3.0 oz. max.

### ENVIRONMENTAL

**Operating Temperature:** 0 to +70 °C

**Storage Temperature:** -25 to +70 °C

**Humidity:** to 98% without condensation

**Enclosure Rating:** NEMA12/IP54 (dirt tight, splashproof)

### Electrical Connections

Wire Color Code	Function		
	Standard Outputs 5, 12, or 15 VDC	w/ Line Driver Outputs	
		Unidirectional	Bidirectional
Red	Power Source	Power Source	Power Source
Black	Common	Common	Common
White	Signal A	Signal A	Signal A
Green	Signal B (if used)	Signal $\bar{A}$	Signal B
Orange	Signal Z (if used)	No Connection	Signal $\bar{B}$
Blue	No Connection	No Connection	Signal $\bar{A}$
Shield	Floating	Floating	Floating
White/Black	—	—	Signal Z (if used)
Red/Black	—	—	Signal $\bar{Z}$ (if used)

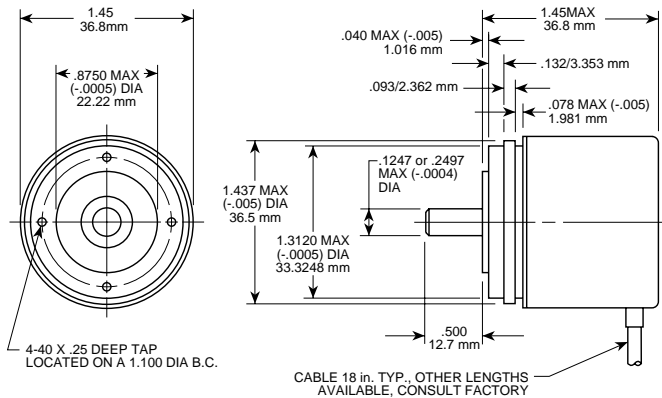
**Ordering Information**

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

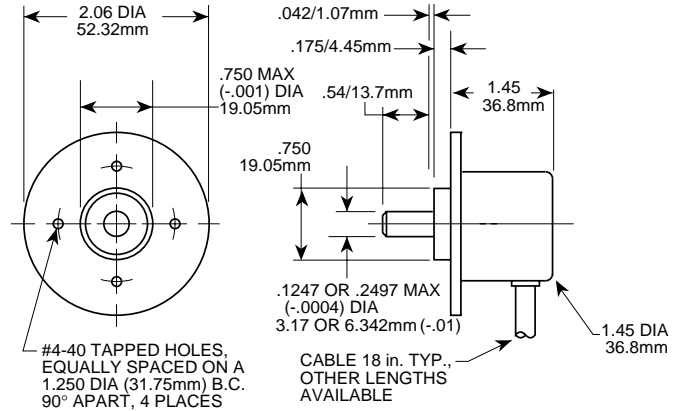
Code 1: Model	Code 2: Pulses/Rev	Code 3: Mounting	Code 4: Mechanical	Code 5: Output	Code 6: Electrical	Code 7: Termination
<b>E14</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>E14</b> Size 14, Light Duty Enclosed	<b>0100</b> <b>0720</b> <b>0200</b> <b>0750</b> <b>0240</b> <b>0900</b> <b>0250</b> <b>1000</b> <b>0256</b> <b>1024</b> <b>0300</b> <b>1250</b> <b>0360</b> <b>1500</b> <b>0400</b> <b>2000</b> <b>0500</b> <b>2048</b> <b>0600</b> <b>2500</b> <b>2540</b>	<b>0</b> Size E14 <b>1</b> Size E20 Servo <b>2</b> Size E20 Flange Available when code 4 is 2 <b>3</b> Size EC80 Flange	<b>0</b> 1/4" Shaft, Sealed Bearing <b>1</b> 1/8" Shaft, Sealed Bearing <b>2</b> 1/4" Shaft, Shielded Bearing <b>3</b> 1/8" Shaft, Shielded Bearing	<b>0</b> Single Ended, Unidirectional <b>2</b> Single Ended, Bidirectional, no Index <b>3</b> Single Ended, Bidirectional, with Index <b>4</b> Differential, Unidirectional <b>6</b> Differential, Bidirectional, no Index <b>7</b> Differential, Bidirectional, with Index	<b>0</b> 5 VDC <b>1</b> 12 VDC <b>2</b> 15 VDC	<b>0</b> 18" Cable <b>1</b> 3' Cable <b>2</b> 6' Cable <b>3</b> 10' Cable <b>4</b> 15' Cable

**Dimensions (inches/mm)**

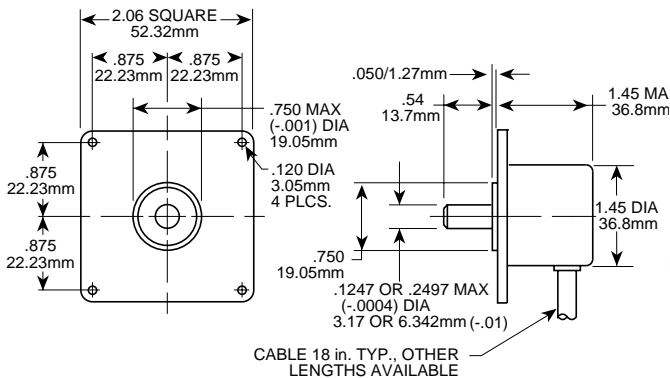
**Code 3: 0**



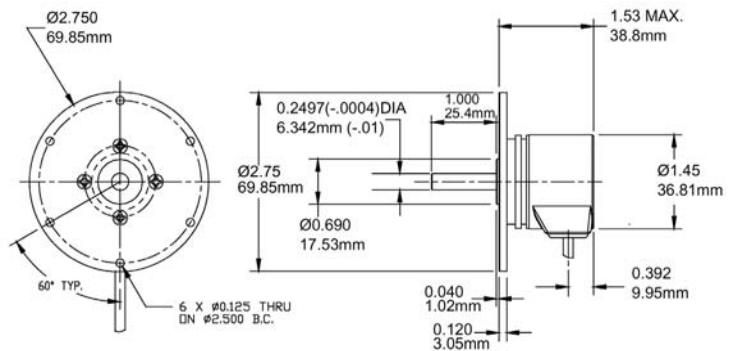
**Code 3: 1**



**Code 3: 2**



**Code 3: 3**



**Worldwide Brands: NorthStar™ • Acuro™ • Dynapar™ • Hengstler™ • Harowe™**  
Headquarters: 1675 Delany Road • Gurnee, IL 60031-1282 • USA • Phone: 1.847.662.2666 • Fax: 1.847.662.6633

**Satellite Locations:**

- **North America:** North Carolina, South Carolina, Connecticut, Massachusetts, New York, Canada, British Virgin Islands
- **West Indies:** St. Kitts • **Europe:** United Kingdom, Italy, France, Germany, Spain, Slovakia
- **South America:** Brazil • **Asia:** China, Japan, Korea, Singapore

**Customer Service:**

Tel.: +1.800.873.8731  
Fax: +1.847.662.4150  
custserv@dynapar.com

**Technical Support**

Tel.: +1.800.234.8731  
Fax: +1.847.782.5277  
dynapar.techsupport@dynapar.com  
northstar.techsupport@dynapar.com