

# SERIES E23

**Dynapar™ brand**

## Miniature Encoder

### Key Features

- Up to 2540PPR with Optional Index
- Optional Screw Terminal Connections
- Standard Size 23 (2.3" diameter)



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental

**Resolution:** 1 to 2540 PPR (pulses/revolution)

**Accuracy:** (Worst case any edge to any other edge)  $\pm 2.5$  arc-min.

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

**Phase Sense:** A leads B for CW or CCW shaft rotation as viewed from the shaft end of the encoder, see Ordering Information

**Quadrature Phasing:**  $90^\circ \pm 18^\circ$  electrical

**Symmetry:**  $180^\circ \pm 9^\circ$  electrical

**Index:**  $180^\circ \pm 9^\circ$  electrical, gated with B

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

### ELECTRICAL

#### Input Power:

Open Collector or Totem Pole outputs: 4.5 VDC min. to 26 VDC max. at 200 mA max.;

Line Driver: 4.5 VDC min. to 26 VDC max. at 80 mA max.

#### Outputs:

Open Collector 7273:

$V_{OH}$ : 30 V max.;  $V_{OL}$ : 0.4 V max. at 20 mA sink

Totem Pole, Line Driver 7272:

40 mA min. sink or source

4469 Differential Line Driver: 100 mA, sink or source

**Frequency Response:** 100 kHz min.

### MECHANICAL

**Shaft Loading:** 5 lbs. max. radial and axial

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

**Starting Torque:** 0.2 oz-in max. at 25 °C

**Moment of Inertia:**  $3.7 \times 10^{-4}$  oz-in-sec<sup>2</sup>

**Weight:** 13 oz. max.

### ENVIRONMENTAL

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

**Storage Temperature:** -40 to +80 °C

**Humidity:** to 98% without condensation

**Shock:** 50 G's for 11 msec duration

**Vibration:** 5 to 2000 Hz at 2 G's

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

### ELECTRICAL CONNECTIONS

Note: Wire color codes are referenced here for models that are specified with pre-wired cable.

Single Ended		
Term.	Function (If Used)	Wire Color Code
A	Signal A	BRN
B	Signal B	ORN
C	Signal Z	YEL
D	Power Source	RED
E	No Connection	—
F	Common	BLK
G	Case	GRN

Differential		
Term.	Function (If Used)	Wire Color Code
A	Signal A	BRN
B	Signal B	ORN
C	Signal Z	YEL
D	Power Source	RED
E	No Connection	—
F	Common	BLK
G	Case	GRN
H	Signal $\bar{A}$	BRN/WH
I	Signal $\bar{B}$	ORN/WH
J	Signal $\bar{Z}$	YEL/WH

### Ordering Information

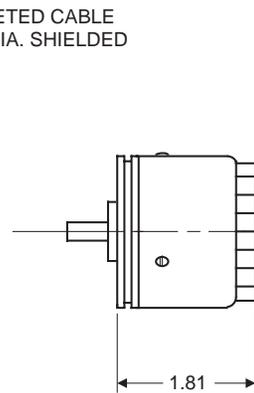
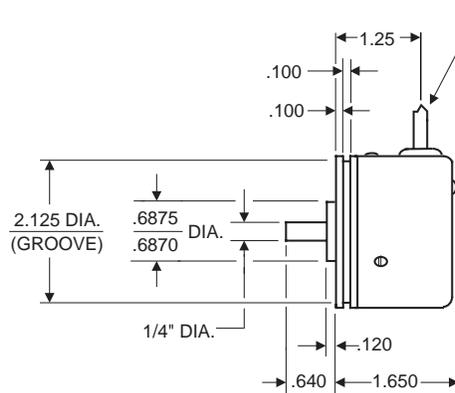
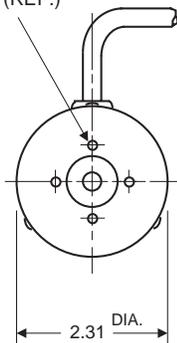
To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: Pulses/Rev	Code 3: Mechanical	Code 4: Output	Code 5: Electrical	Code 6: Termination
<b>E23</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>E23</b> Size 23 Enclosed	<b>0001 0300 1024</b> <b>0005 0344 1200</b> <b>0010 0360 1250</b> <b>0012 0400 1270</b> <b>0050 0500 1500</b> <b>0060 0512 1600</b> <b>0100 0600 1800</b> <b>0120 0625 1968</b> <b>0150 0635 2000</b> <b>0180 0720 2048</b> <b>0200 0800 2400</b> <b>0240 0900 2500</b> <b>0250 1000 2540</b> <b>0256</b> For Resolutions above 2540, see Series EC23	<b>0</b> 1/4" Shaft, Shielded Bearings <b>1</b> 1/4" Shaft, Sealed Bearings	<b>4</b> Single Ended, with Index, Format C <b>5</b> Differential, with Index, Format C <b>6</b> Single Ended, with Index, Format D <b>7</b> Differential, with Index, Format D <b>8</b> Single Ended, no Index, Format C <b>9</b> Differential, no Index, Format C	<b>0</b> 5-26V in; 5-26V Open Collector w/2.2kΩ Pullup out <b>1</b> 5-26V in; 5-26V Open Collector out <b>2</b> 5-26V in; 5V TTL Totem Pole out <b>3</b> 5-26V in; 5V Line Driver out (7272) <b>4</b> 5-26V in; 5-26V Line Driver out (7272) <b>5</b> 5-26V in, 5V Differential Line Driver out (4469) <b>6</b> 5-15V in, 5-15V Differential Line Driver out (4469)	<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 <b>8</b> Screw Terminals

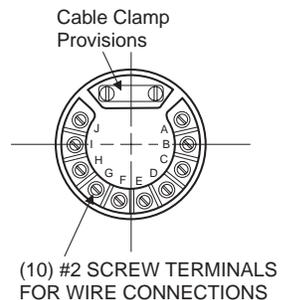
### Dimensions (inches/mm)

### Code 6: Termination

(4) #4-40 UNC-2B THD.  
3/16" DP. MIN. EQUALLY SPACED ON A 1.000 DIA. B.C. (REF.)



8: Terminals



### Code 4: Output

