

# SERIES E23

**Dynapar™ brand**

## Miniature Encoder

### Key Features

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



## SPECIFICATIONS

### STANDARD OPERATING CHARACTERISTICS

**Code:** Incremental, Optical  
**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: 5 to 26 VDC, at 200 mA max.;  
 Line Driver: 5 to 26 VDC at 80 mA max.  
**Outputs:**  
 7272 Push-Pull: 40mA, sink or source  
 7272 Differential Line Driver: 40 mA, sink or source  
 7273 Open Collector: 40mA, sink max  
 4469 Differential Line Driver: 100 mA, sink or source  
**Frequency Response:** 100 kHz min.  
**Noise Immunity:** Tested to EN61326-1  
**Electrical Immunity:** Reverse polarity and short circuit protected  
**Termination:** Cable, Screw Terminals  
**Cable:** PVC jacket, 105 °C rated, overall foil shield; 3 twisted pairs 26 AWG (output signals), plus 2 twisted pairs 24 AWG (input power)

### MECHANICAL

**Shaft Size:** 1/4"  
**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>  
**Housing and Cover:** Aluminum  
**Shaft Material:** Stainless Steel  
**Disc Material:** Glass  
**Weight:** 13 oz. max.

### ENVIRONMENTAL

**Operating Temperature:** 0 to +70 °C  
**Storage Temperature:** -40 to +80 °C  
**Shock:** 50 G's for 11 msec duration  
**Vibration:** 5 to 2000 Hz at 2 G's  
**Humidity:** Up to 98% (non-condensing)  
**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

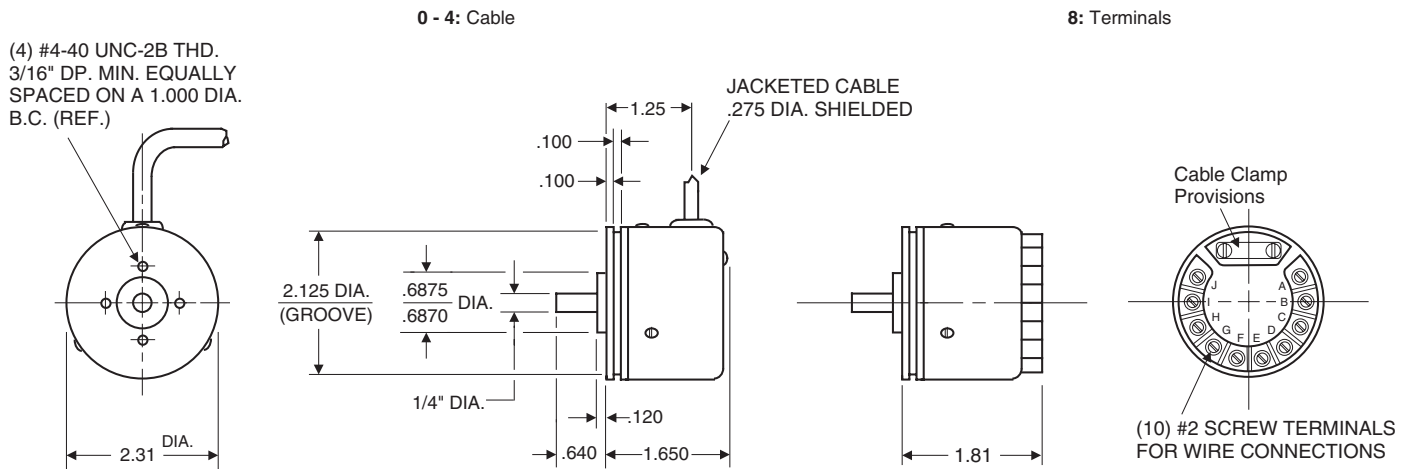
**Ordering Information**

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"/>
<b>E23</b> Size 23 Enclosed	0001 0005 0010 0012 0050 0060 0100 0120 0150 0180 0200 0240 0250	0256 0300 0344 0360 0400 0500 0512 0600 0625 0635 0720 0800 0900	1024 1200 1250 1270 1500 1600 1800 1968 2000 2048 2400 2500 2540	0 1/4" Shaft, Shielded Bearings 1 1/4" Shaft, Sealed Bearings	4 Single Ended, with Index, Format C 5 Differential, with Index, Format C 6 Single Ended, with Index, Format D 7 Differential, with Index, Format D 8 Single Ended, no Index, Format C 9 Differential, no Index, Format C	0 5-26V in; 5-26V Open Collector w/2.2kΩ Pull up out 1 5-26V in; 5-26V Open Collector out 2 5-26V in; 5V TTL Totem Pole out 3 5-26V in; 5V Line Driver out (7272) 4 5-26V in; 5-26V Line Driver out (7272) 5 5-26V in, 5V Differential Line Driver out (4469) 6 5-15V in, 5-15V Differential Line Driver out (4469)	0 18" Cable 1 3' Cable 2 6' Cable 3 10' Cable 4 15' Cable 8 Screw Terminals
	For Resolutions above 2540, see Series EC23						

**Dimensions (inches)**

**Code 6: Termination**



**Code 4: Output**



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