

Hercules Encoders

Series 4000

Heavy Duty Incremental Rotary Shaft Encoder

- Enclosure: SLIMLINE — 3" x 3" x 1½" Space-Saver NEMA 12/13 or NEMA 4 type Sealing — Flush or Flanged Base Styles
- Inherently Anti-Jitter Circuitry, Shatterproof Metal Code Discs
- Internally and Externally Shielded ABEC 5 Stainless Steel Bearings, Mounted Internally
- Low Supply Current Requirement — 30milliamps typical per encoder, maximum of 50 mA
- Operating Voltage Flexibility — 8 to 28 Vdc or 5 Vdc TTL Output, 5V or 8-15V with Line Driver
- Operating Temperature Rating designed for extremes, from -40° to +85° C (-40° to +185° F)

Specifications

Mechanical

| | |
|-----------------------------|--|
| Shaft Speed | 6000 RPM maximum |
| Shaft Direction | Bidirectional |
| Standard Shaft Sizes (Dia.) | .2497", .3747", .4997" |
| Shaft Extension(s) | 0.80" with .50x.05" flat |
| Shaft Seals | Neoprene or PTFE Options |
| Mounting | Refer to dimensional drawings |
| Bearings | ABEC 5 Shielded |
| Radial Loading | (3/8") 30 lbs. Operating (1/2") 70 lbs. Operating |
| Axial Loading | (3/8") 15 lbs. Operating (1/2") 35 lbs. Operating |
| Accuracy | ±0.1° of Shaft Rotation Typical |
| Housing | Black Anodized Aluminum |
| Weight | Standard: 17 oz., Sealed: 26 oz. |
| Connector | 6 Pin MS3102 or 18" Cable Out |

Electrical

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|---------------------------|---|
| Pulse Rate | 10 kHz, up to 200 kHz |
| Outputs | NPN w/ pullup; NPN open collector; PNP sourcing Line Drivers (5 Vdc/ TTL level, 8 to 15 Vdc) All line drivers have complementary outputs. |
| Output Ratings | |
| Open Collector Transistor | 40 Vdc maximum |
| Line Drivers | 8-15 Vdc 15 Vdc maximum 5 Vdc TTL 5.5 Vdc maximum |
| Supply Voltage | 8 to 28 Vdc 5 Vdc with 5V TTL level output |
| Supply Current | 30 mA typical, 50 mA maximum |
| Current Sinking | 250 mA maximum |
| Output Duty Cycle | 50/50 w/ ±20% typical tolerance Tighter to ±5% by spec |
| Pulsed Outputs | 5-10 µsec or 25-35 µsec |
| Rise/Fall Times | 1 µsec typical, other options available |
| | See Wiring Diagrams for Pin Outs |

Environmental

| | |
|---------------------|--------------------------------------|
| Operating Temp. | -40° to +85° C (-40° to +185° F) |
| Shock | 50 g's for 11 Milliseconds |
| Vibration | 5 to 2000 Hertz at 20 g's |
| Humidity | 100% Relative Humidity |
| Enclosures (Sealed) | NEMA 4 type — Water-tight |
| (Std) | NEMA 12/13 equiv. — Dust-, Oil-Tight |

Electrical Connections

| Function | Pin | Color |
|-------------------|-----|-------|
| +V | B | Red |
| Common | A | Black |
| Channel A | D | Blue |
| Channel B | E | Brown |
| Channel \bar{A} | C | White |
| Channel \bar{B} | F | Green |

For the latest specifications visit our website
www.herculesencoders.com



