

Hercules Encoders

Series 2000

Medium Duty Incremental Rotary Shaft Encoder

- Enclosure: Standard Series - Industry Standard 2.25" Cube NEMA 12/13 or NEMA 4 type Sealing
- Flush or Flanged Base Styles
- Anti-Jitter Circuitry, Shatterproof Metal Code Discs - up to 600 PPR Quadrature
- Internally and Externally Shielded ABEC 5 Stainless Steel Bearings, Mounted Internally
- Low Supply Current Requirement - 30 milliamps 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 -20° to +70° C (-4° to +158° F)

Specifications

Mechanical

| | |
|-----------------------------|----------------------------------|
| Shaft Speed | 6000 RPM maximum |
| Shaft Direction | Bidirectional |
| Standard Shaft Sizes (Dia.) | .2497", .3747" |
| 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 | 30 lbs. Operating |
| Axial Loading | 15 lbs. Operating |
| Accuracy | ±0.1° of Shaft Rotation Typical |
| Housing | Black Anodized Aluminum |
| Weight | Standard: 14 oz., Sealed: 19 oz. |
| Connector | 6 Pin MS3102 or 18" Cable Out |

Electrical

| | |
|---------------------------|---|
| Pulse Rate | 10 kHz, up to 200 kHz |
| Outputs | NPN w/ pullup; NPN open collector; PNP sourcing Line Drivers (5Vdc/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. | -20° to +70° C (-4° to +158° 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 | 6 Pin | Cable Out | Color |
|-------------------|---------|-----------|-------|
| +V | B | D | Red |
| Common | A | F | Black |
| Channel A | D | A | Blue |
| Channel B | E | B | Brown |
| Channel \bar{A} | C | E | White |
| Channel \bar{B} | F | G | Green |
| Index | C or E* | C | White |
| Index | F | G | Green |

* C is standard; for outputs "KI" or "LI" (line driver with index), index pin is E

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