Hercules Encoders Series 4000HR

Heavy Duty Incremental Rotary Shaft Encoder

- Enclosure: Slimline 3"x 3" x 1 1/2" Space-Saver
- NEMA 12/13 or NEMA 4 type Sealing Flush or Flanged Base Styles
- Inherently Anti-Jitter Circuitry, Shatterproof Code Disks
- Internally and Externally shielded ABEC 5 Stainless Steel Bearings, Mounted Internally
- Low Supply Current Requirement 50 milliamps typical per encoder, maximum of 80 mA
- Operating Voltage Flexibility 8 to 28 Vdc or 5 Vdc Output, 5V or 8-15V with Line Driver
- Operating Temperature Rating designed for extremes, from -40° to $+85^{\circ}$ C (-40° to $+185^{\circ}$ F)

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Specifications

Mechanical

Shaft Speed 1500 RPM maximum Shaft Direction Bidirectional Standard Shaft Sizes (Dia.) .2497", .3747", .4997" Shaft Extension(s) 0.80" with .50 x .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 +0.1° of Shaft Rotation Typical Accuracy Black Anodized Aluminum Housing

Electrical

Weight

Connector

Pulse Rate	A	10 kHz , up to 125 kHz
Outputs	NPN w/ pullup; NPN	open collector; PNP sourcing
	Line Driver (5	Vdc/TTL level, 8 to 15 Vdc)
a.	All line drivers	have complementary outputs

Output Ratings

Open Collector Transistor Line Drivers 8-15 Vdc 5 Vdc TTL

Supply Voltage

Supply Current Current Sinking Output Duty Cycle

Pulsed Outputs Rise/Fall Times

40 Vdc maximum 15 Vdc maximum 5.5 Vdc maximum 8 to 28 Vdc

Standard: 17 oz, Sealed: 26 oz

6 Pin MS3102 or 18" Cable Out

5 Vdc with 5V TTL level output 50 mA typical, 80 mA maximum 250 mA maximum

 $50/50 \text{ w}/\pm20\%$ typical tolerance Tighter to $\pm 5\%$ by spec 5-10 µsec or 25-35 µsec

1 µsec typical, other options available

See Wiring Diagrams for Pin Outs

Environmental

Operating 7	Гетр.	-40° to $+85^{\circ}$ C $(-40^{\circ}$ to $+185^{\circ}$ 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

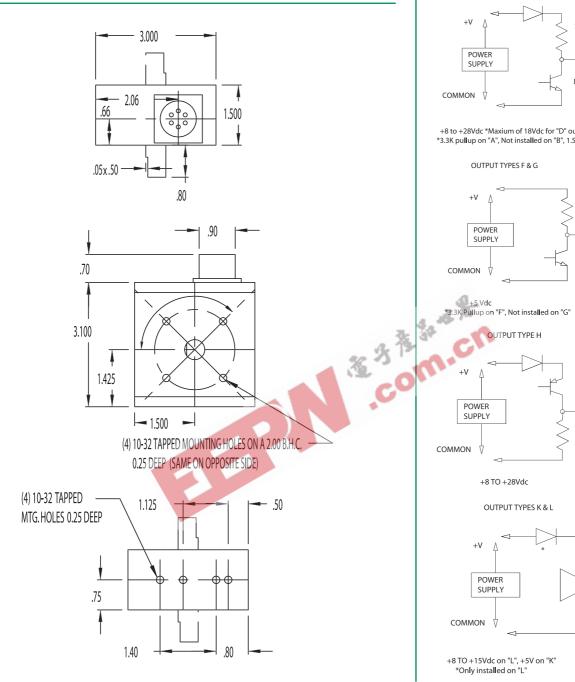
Electrical Connections

Function	<u>Pin</u>	Color
+V	В	Red
Common	A	Black
Channel A	D	Blue
Channel B	E	Brown
Channel A	C	White
Channel B	F	Green

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

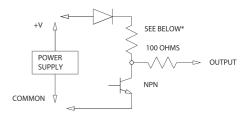
Dimensional Drawings

Series 4000HR Standard call for sealed dimensions



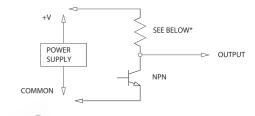
Wire Drawings

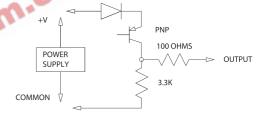
OUTPUT TYPES A. B & D



+8 to +28Vdc *Maxium of 18Vdc for "D" output *3.3K pullup on "A", Not installed on "B", 1.5K on "D"

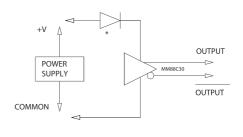
OUTPUT TYPES F & G





+8 TO +28Vdc

OUTPUT TYPES K & L



+8 TO +15Vdc on "L", +5V on "K"

Ordering Information

