

# Hercules Encoders

## Series 500

### Hall Effect Incremental Rotary Shaft Encoders

- Enclosure: Low profile 3" L x 1.25" W x 2"
- NEMA 12/13 Dust-, Oil-tight
- Inherent Anti-Jitter Circuitry prevents false outputs due to machine vibration
- Low Supply Current Requirement — 15 milliamps typical per encoder, at 24Vdc
- Ideally suited for low PPR needs in dirty environments, wide temperature ranges

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## Specifications

### Mechanical

Shaft Speed	4000 RPM maximum
Shaft Direction	Bidirectional
Standard Shaft Sizes (Dia.)	.2497", .3125"
Shaft Extension(s)	1.17" with .50x.05" flat
Mounting	Refer to dimensional drawings
Bearings	ABEC 7 Shielded
Radial Loading	15 lbs. Operating
Axial Loading	7 lbs. Operating
Accuracy	$\pm 1.0^\circ$ of Shaft Rotation Typical
Housing	Black Anodized Aluminum
Weight	7 oz.
Connector (Side)	Wire Out (Strip/Tin or Mate-n-Lok)

### Electrical

Pulse Rate	10 kHz
Outputs	NPN w/ pullup; NPN open collector; PNP sourcing
Output Rating	
Open Collector Transistor	40 Vdc maximum
Supply Voltage	8 to 28 Vdc
	5 Vdc with 5V TTL output
Supply Current	15 mA maximum
Current Sinking	250 mA maximum
Output Duty Cycle	50/50 w/ $\pm 20\%$ typical tolerance
Rise/Fall Times	1 $\mu$ sec typical

### Environmental

Operating Temp.	$-20^\circ$ to $+70^\circ$ C ( $-4^\circ$ to $+158^\circ$ F)
Shock	20 g's for 11 Milliseconds
Vibration	5 to 1000 Hertz at 10 g's
Enclosures	NEMA 12/13 equiv. — Dust-, Oil-Tight

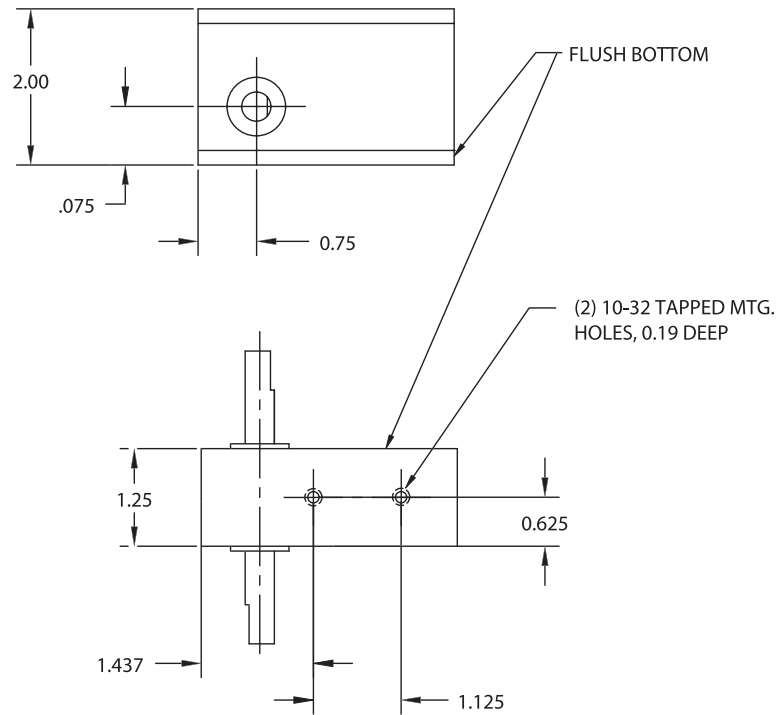
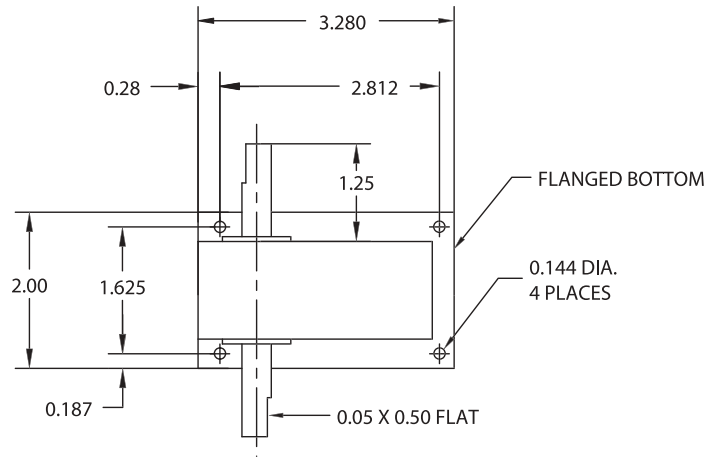
### Electrical Connections

#### Function

Supply Voltage (-)	A
Supply Voltage (+)	B
Channel "A"	D
Channel "B"	E
Cable Shield	S

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# Dimensional Drawings



## Ordering Information

**Series** — 5 2 3

**Shaft Diameter**  
 1=1/4" (0.2497")  
 2=5/16" (0.3122")

**Mounting Type**  
 1=10-32 BH on Base & Wire Leads  
 2=Flanged Base & Wire Leads  
 3=10-32 BH on Base & Male Connector  
 4=Flanged Base & Male Connector

**Channel Outputs** — A S 06

A=NPN w/Pullup Res.  
 B=NPN Open Collector  
 D=1.5K Pullup, No Ser. R  
 F=5Vdc w/Pullup Res.  
 G=5Vdc Open Collector  
 H=PNP Sourcing Output

**Channel Types**  
 S=Single Channel  
 Q=Quadrature Outputs

PPR (Pulses per Revolution)

**Channel Types "S" and "Q"**

01	02	03	04
05	06	07	08
09	10	12	15
18	20	25	30

**Added Channel Types "S" (Square Wave)**

14	16	24
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