

# Hercules Encoders

## Programmable

### Incremental Encoders

Select PPR's  
Choice of 5 PPR's

Select Pulse Width  
10µSecs, 30µSecs or Square Wave

Select Channels  
•Single or quadrature channels  
•Count with up/down direction  
•Up count channel and down count channel

#### Function Selection Switches

SW1

SW2

SW3

SW4

SW5 on bottom

## One Encoder Can Provide Over 20 Model Variations...



Simply remove the bottom panel and set the switches for the functions desired.



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Hercules



6000 Series



4000 Series

### Series 4000 and 6000 Programmable Encoders

#### Standard Features

- 4000 Series - Space-Saving Enclosure, 1-1/2"D x 3"H x 3"W, 25 to 4096 PPR.
- 6000 Series - Internal Space for 3 Separate Encoders, 25 to 4096 PPR.
- Built-In Anti-Jitter Circuitry.
- Operating Voltage Flexibility - 8 to 28Vdc, 5Vdc with TTL Outputs and Line Drivers, etc.
- Low Supply Current Requirements - Only 50 Milliamperes per Encoder
- Extra Heavy Duty 1/2"D Shafts - Optional

For the latest specifications visit our website  
[www.herculesencoders.com](http://www.herculesencoders.com)

# Hercules Encoders "Value Added" Programmable Encoder

**P**      **4 or 6**      **X**      **X**      **X**      —      **A**      **X**      **0 6 0 0**

**Shaft Diameter**

**Order Choice**

- 1=1/4" diameter
- 2=5/16" diameter
- 3=3/8" diameter
- 4=1/2" diameter

**Shaft Extension**

**Order Choice**

- 1=Single extension
- 2=Double extension

**Mounting Type**

**Order Choice**

- 1=2.0" B.H.C.
- 2=Flanged base (mounting type can be changed by substituting bottom plate when programming)

**Channel Outputs**







**Order Choice**

- A=NPN w/pullup res.
- B=NPN open collector
- F=5V NPN w/pullup res.
- G=5V NPN open collector
- H=PNP outputs
- K=5V line driver
- L=8-15V line driver

**Channel Types Are:**











- Q=Quadrature outputs\*
- P=Separate UP & DOWN output channels
- U=Pulse train output with UP/DN direction output
- S=Single output channel

**Channel Types Programming**

| Type   | SW3   | SW4   |
|--------|---|---|
| Q<br>S |  <b>CCW</b>  |  <b>CCW</b>  |
| P      |  <b>Cntr</b> |  <b>Cntr</b> |
| U<br>S |  <b>CW</b>   |  <b>CW</b>   |

*Encoders to be shipped with the PPR as ordered & quadrature channel type with 50/50 duty cycle pulse.*

*\*Quadrature available for 1st three SW 1 & 2 columns (below).*

| Order PPR's Model | PPR's Available With This Model | Switch Positions   |  |   |  |   |  |  |   |   |   |
|-------------------|---------------------------------|--|--|---|--|---|--|--|---|---|---|
|                   |                                 | SW1<br> <b>CCW</b> | SW2<br> <b>CCW</b> | SW1<br> <b>Cntr</b> | SW2<br> <b>CCW</b> | SW1<br> <b>CW</b> | SW2<br> <b>CCW</b> | SW1<br> <b>CW</b> | SW2<br> <b>Cntr</b> | SW1<br> <b>CW</b> | SW2<br> <b>CW</b> |
| 120               | 30, 60, 120, 240, 480           | 30PPR  | 60PPR  | 120PPR  | 240PPR   | 480PPR  |  |  |   |   |   |
| 192               | 48, 96, 192, 384, 768           | 48PPR  | 96PPR  | 192PPR  | 384PPR   | 768PPR  |  |  |   |   |   |
| 300               | 75, 150, 300, 600, 1200         | 75PPR  | 150PPR   | 300PPR  | 600PPR   | 1200PPR   |  |  |   |   |   |
| 360               | 90, 180, 360, 720, 1440         | 90PPR  | 180PPR   | 360PPR  | 720PPR   | 1440PPR   |  |  |   |   |   |
| 400               | 100, 200, 400, 800, 1600        | 100PPR   | 200PPR   | 400PPR  | 800PPR   | 1600PPR   |  |  |   |   |   |
| 480               | 120, 240, 480, 960, 1920        | 120PPR   | 240PPR   | 480PPR  | 960PPR   | 1920PPR   |  |  |   |   |   |
| 500               | 125, 250, 500, 1000, 2000       | 125PPR   | 250PPR   | 500PPR  | 1000PPR  | 2000PPR   |  |  |   |   |   |
| 512               | 128, 256, 512, 1024, 2048       | 128PPR   | 256PPR   | 512PPR  | 1024PPR  | 2048PPR   |  |  |   |   |   |
| 540               | 135, 270, 540, 1080, 2160       | 135PPR   | 270PPR   | 540PPR  | 1080PPR  | 2160PPR   |  |  |   |   |   |
| 600               | 150, 300, 600, 1200, 2400       | 150PPR   | 300PPR   | 600PPR  | 1200PPR  | 2400PPR   |  |  |   |   |   |
| 720               | 180, 360, 720, 1440, 2880       | 180PPR   | 360PPR   | 720PPR  | 1440PPR  | 2880PPR   |  |  |   |   |   |
| 960               | 240, 480, 960, 1920, 3840       | 240PPR   | 480PPR   | 960PPR  | 1920PPR  | 3840PPR   |  |  |   |   |   |
| 1000              | 250, 500, 1000, 2000, 4000      | 250PPR   | 500PPR   | 1000PPR   | 2000PPR  | 4000PPR   |  |  |   |   |   |
| 1024              | 256, 512, 1024, 2048, 4096      | 256PPR   | 512PPR   | 1024PPR   | 2048PPR  | 4096PPR   |  |  |   |   |   |

Programming of Switches: \CCW=set to left; | Cntr=set center; /CW=set to right

Note: for SW5 (right hand column PPR x 4) Time Settings: CW=other columns; Cntr=5-10µsec; CCW=25-35µsec