

Hercules Encoders

Series N35

Heavy Duty Incremental Rotary Shaft Encoder

- Enclosure: N35-3.5" Dia. NEMA 4 type Sealing Servo, Flush or Flanged Mounting
- Vibration-resistant Anti-Jitter Circuitry, Shatterproof Metal Code Discs
- Shielded ABEC 5 Stainless Steel Spindle Bearings, Standard and Self-Mounting options
- 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 -40° to +85° C (-40° to +185° F)



Specifications

Mechanical

Shaft Speed	6000 RPM maximum
Shaft Direction	Bidirectional
Standard Shaft Sizes	.3747", .4997"
Shaft Extension(s)	Std 0.875", .50 x .05" flat
Shaft Seals	Neoprene or PTFE Options
Mounting	Refer to dimensional drawings
Bearings	ABEC 5 Spindle
Radial Loading	90 lbs. Operating
Axial Loading	45 lbs. Operating
Accuracy	±0.1° of Shaft Rotation Typical
Housing	Black Anodized Aluminum
Weight (N35)	36 oz.
Connector	6, 7, 10 Pin MS3102E or 18" Cable Out

Electrical

Pulse Rate	15 kHz typical, up to 200 kHz available
Outputs	NPN w/ 3.3K pullup or open collector PNP sourcing Line Driver (with 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 TTL output
Supply Current, per channel	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 4X equiv. — Water-tight

Electrical Connections

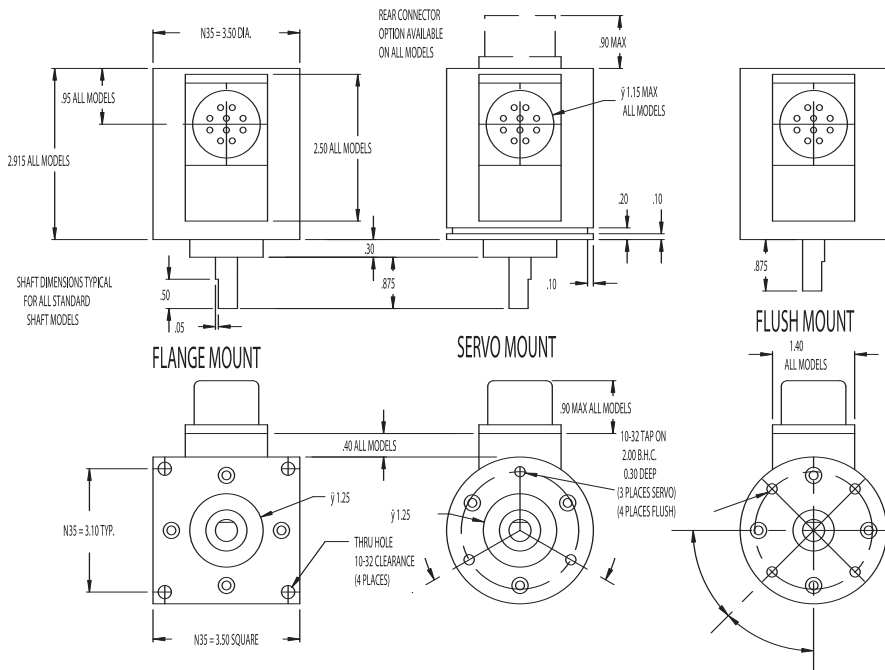
Function	6 Pin	7 Pin	10 Pin	Cable Out	Color
+V	B	D	D	D	Red
Common	A	F	F	F	Black
Channel A	D	A	A	A	Blue
Channel B	E	B	B	B	Brown
Channel A	C	E	H	E	White
Channel B	F	G	I	G	Green
Index	C or E*	C	C	C	White
Index	F	G	J	G	Green

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

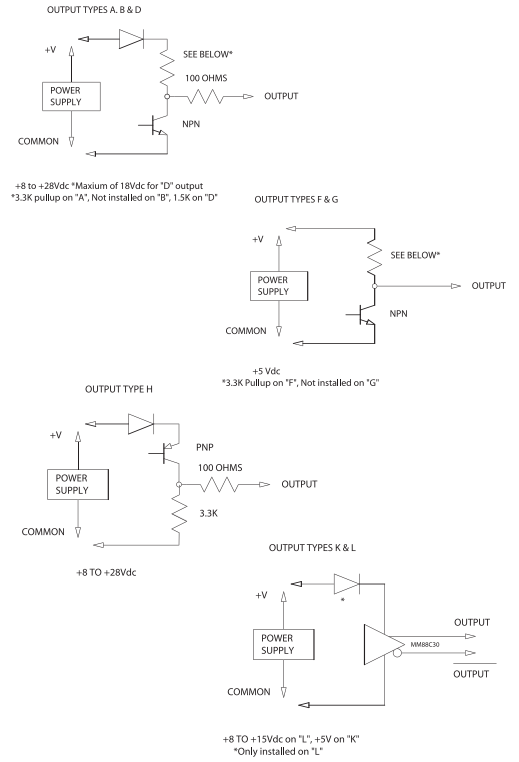
For the latest specifications visit our website
www.herculesencoders.com

Dimensional Drawings

Series N35 Standard



Wire Drawings



Ordering Information

	N35T	335	K Q 1000	KI	Index Channel (same types as Channel Outputs)
Size N35S=Sealed (Elastomer) N35T=Sealed (PTFE)					
Mounting Style 1=Flush mount 2=Servo mount 3=Flange mount					
Shaft Style 3=3/8" Standard Shaft 4=1/2" Standard Shaft					
	Connector Style 1=6 Pin rear mounted 2= 6 Pin side mounted 3= 7 Pin rear mounted 4= 7 Pin side mounted 5=10 Pin rear mounted 6=10 Pin side mounted 7=Cable rear mounted 8=Cable side mounted	Channel Outputs (All outputs available with complementary outputs) A=NPN w/Pullup Res. B=NPN Open Collector F=5Vdc w/Pullup Res. G=5Vdc Open Collector H=PNP Sourcing Output K=5Vdc Line Driver L=8 to 15 Vdc Line Driver	Channel Types Q=Quadrature Outputs P=1st Output CW Pulses 2nd Output CCW Pulses U=1st Output Pulse Train 2nd Output Logic High For CW Rotation, Low For CCW Rotation I=Index Pulse		
				Channel Types "P" "U" & "Q"	
				0025 0030 0050 0060 0064	
				0075 0090 0093 0096 0100	
				0120 0125 0128 0135 0150	
				0180 0186 0192 0200 0240	
				0250 0256 0270 0300 0360	
				0372 0400 0480 0500 0512	
				0540 0600 0720 0840 0960	
				1000 1024	
				If "P" or "U" add (Square Wave)	
				0800 1080 1200 1440	
				1680 1920 2000 2048	
				If "P" or "U" add (Pulsed)	
				0768 1488 1600 2160 2400	
				2880 3360 3840 4000 4096	
				<i>Consult factory for PPR not listed</i>	