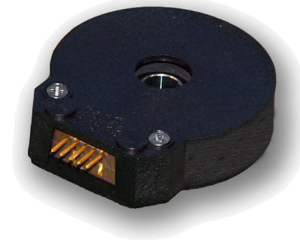


Single-Ended High Resolution Encoders With Index Channel



FEATURES

- **Small Size, Pre-Mounted to Dual Shaft Motor**
- **1800 to 2500 Cycles per Revolution (CPR)**
- **Tracks 0 to 100,000 Cycles per Second**
- **2-Channel Quadrature TTL Squarewave Outputs**
- **Third Index Channel**
- **Accepts +/- 0.010" Axial Shaft Play**
- **Operating Temperature of -40° to + 100° C**
- **RoHS Compliant and REACH Certified**



DESCRIPTION

Our Single-Ended Encoders with an Index channel are transmissive optical encoder modules. These modules are designed to detect rotary position with a codewheel when added to the end of an Anaheim Automation dual shaft motor. These Single-Ended Encoders consist of a lensed LED source and a monolithic detector IC enclosed in a small polymer package. These modules use phased array detector technology to provide superior performance and greater tolerances over traditional aperture mask type encoders. They provide digital quadrature outputs, and come standard with a third index channel output on all resolutions and are capable of sinking or sourcing 8mA each. These encoders are powered from a single +5VDC power supply. Also, they are RoHS compliant and REACH certified.

BUILD A PART NUMBER

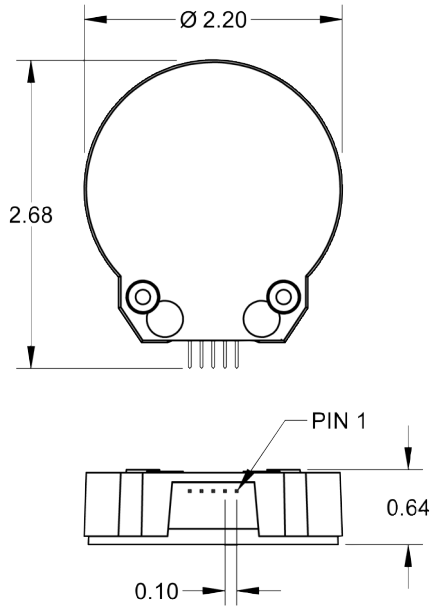
Example: To order an encoder, add a " - ", the CPR number and a SI on the end of any Anaheim Automation dual shaft motor. For example, to place a 2000 CPR encoder on a 23Y106D-LW8, the part number would be 23Y106D-LW8-2000SI.

23Y106D-LW8-2000SI

Table 1				
Parameter	1800SI	2000SI	2048SI	2500SI
Fits NEMA Size	11-42	11-42	11-42	11-42
Counts Per Revolution	1800	2000	2048	2500

L010388

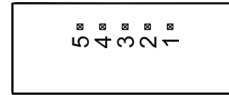
DIMENSIONS



Note: All dimensions are in inches.

SINGLE-END ENCODER PINOUT

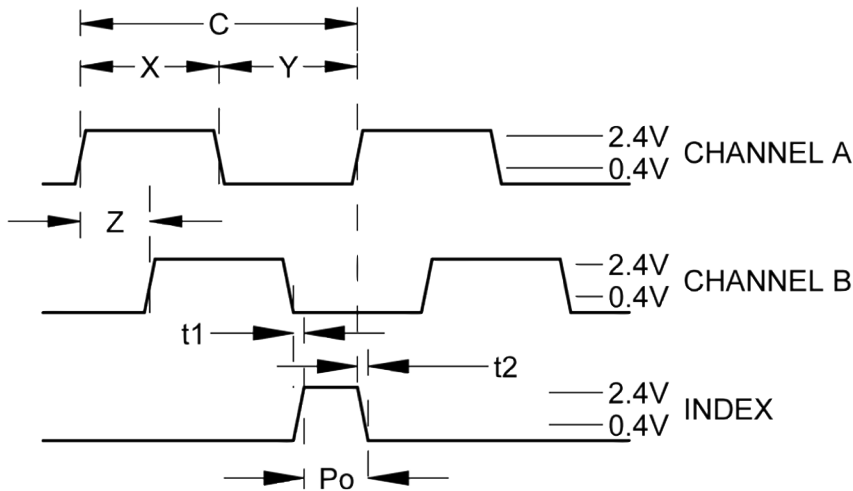
TOP OF ENCODER FACING PLUG



CHANNEL B
+5VDC INPUT
CHANNEL A
INDEX
GROUND

Parameter	Max	Units
Vibration (5 to 2kHz)	20	g
Shaft Axial Play	+ / - 0.01	in.
Shaft Eccentricity Plus Radial Play	0.004	in.
Acceleration	250,000	rad/sec ²

SINGLE-END ENCODER TIMING DIAGRAMS



Rotation:

CW - B leads A
CCW - A Leads B

Model #	Description
CPR(N):	The Number of Cycles Per Revolution
One Shaft Rotation:	360 mechanical degrees, N cycles
One Electrical Degree (°e):	1/360th of one cycle
One Cycle (C):	360 electrical degrees (°e). Each cycle can be decoded into 1 or 4 codes, referred to as X1 or X4 resolution multiplication
Symmetry:	A measure of the relationship between (X) and (Y) in electrical degrees, nominally 180 °e
Quadrature (Z):	The phase lag or lead between channels A and B in electrical degrees, nominally 90°e
Index (CH I):	The index output goes high once per revolution, coincident with the low states of channels A and B, nominally 1/4 of one cycle (90°e)

Parameter	Min	Typ	Max	Units	Description	Symbol	Min	Typ	Max	Units
Supply Current					Index Pulse Width					
1800 and 2500 CPR Only	50	55	57	mA	2000 and 2048 CPR Only	Po	40	90	140	°e
2000 and 2048 CPR Only	30	57	85	mA	1800 and 2500 CPR Only	Po	60	90	120	°e
Output Low					Ch. I Rise After Ch. B or Ch. A Fall					
1800 and 2500 CPR Only	-	-	0.5	Volts	1800 and 2500 CPR Only	t1	10	100	250	ns
2000 and 2048 CPR Only	-	-	0.4	Volts	2000 and 2048 CPR Only	t1	10	450	1500	ns
Output High*					Ch. I Fall After Ch. A or Ch. B Rise					
1800 and 2500 CPR Only	2.0	-	-	Volts	1800 and 2500 CPR Only	t2	70	150	300	ns
2000 and 2048 CPR Only	2.4	-	-	Volts	2000 and 2048 CPR Only	t2	10	250	1500	ns
Output Current Per Channel										
1800 and 2500 CPR Only	-8.0	-	8.0	mA						
2000 and 2048 CPR Only	-1.0	-	5.0	mA						

Recommended Operating Conditions	Min	Max	Units
Temperature	-40	100	°C
Supply Volatage	4.5	5.5	Volts
Load Capacitance	-	100	pF
Count Frequency	-	100	kHz

Cable Ordering Info	Length
CBL-AA4032	1 ft
CBL-AA4032-04	4 ft
CBL-AA4032-10	10 ft

* Unloaded high level ouput voltage is 4.80V typically, 4.2V minimum.