

Differential Encoders Without Index Channel



FEATURES

- **Small Size, Pre-Mounted to Dual Shaft Motor**
- **50 to 1024 Cycles per Revolution (CPR)**
- **Tracks 0 to 100,000 Cycles per Second**
- **2-Channel Quadrature Differential Squarewave Outputs**
- **Accepts + / - 0.010" Axial Shaft Play**
- **Powered by a Single +5VDC Power Supply**
- **Operating Temperature of -40° to + 100° C**



DESCRIPTION

Our Differential Encoders without 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 differential 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 differential outputs on all resolutions. 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 DN on the end of any Anaheim Automation dual shaft motor. For example, to place a 500 CPR encoder on a 23Y106D-LW8, the part number would be 23Y106D-LW8-500DN.

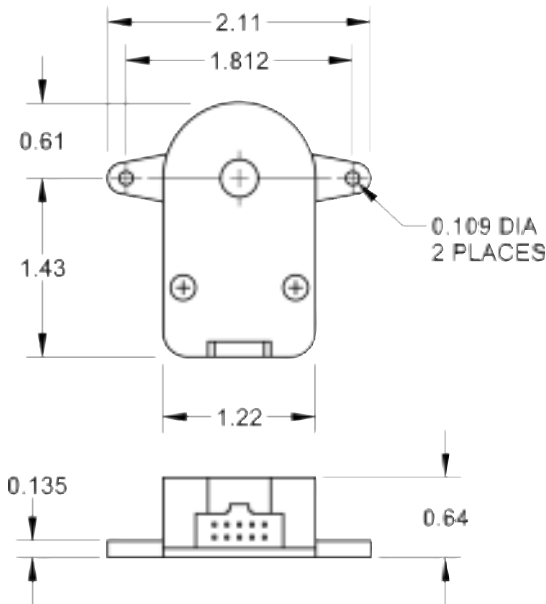
23Y106D-LW8-500DN

Table 1																	
Parameter	50DN	96DN	100DN	110DN	120DN	192DN	200DN	250DN	256DN	360DN	400DN	500DN	512DN	540DN	1000DN	1016DN	1024DN
Fits NEMA Size	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42	11-42
Cycles Per Revolution	50	96	100	110	120	192	200	250	256	360	400	500	512	540	1000	1016	1024

L010386

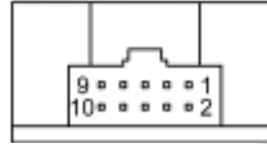
DIMENSIONS

Note: All dimensions are in inches.



DIFFERENTIAL ENCODER PINOUT

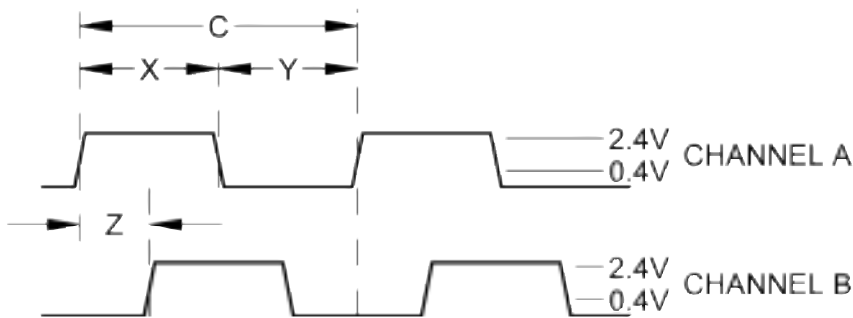
TOP OF ENCODER FACING PLUG



- 1 - GROUND
- 2 - GROUND
- 3 - INDEX-
- 4 - INDEX+
- 5 - A- CHANNEL
- 6 - A+ CHANNEL
- 7 - +5VDC POWER
- 8 - +5VDC POWER
- 9 - B- CHANNEL
- 10 - B+ CHANNEL

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

Cable Ordering Info	Length
ENC-CBL-AA4707	1 ft.
ENC-CBL-CA4217-6	6 ft.
ENC-CBL-CA4217-10	10 ft.

Parameter	Min	Typ	Max	Units	Recommended Operating Conditions	Min	Max	Units
Supply Current	4.5	5.0	5.5	Volts	Temperature	-40	100	°C
Current Consumption All Resolutions	-	18	43	mA	Supply Volatage	4.5	5.5	Volts
Output High Sourcing to +5	2.4	3.4	-	Volts	Load Capacitance	-	100	pF
Sinking to Ground	-	0.2	0.4	Volts	Count Frequency	-	100	kHz

ELECTRICAL SPECIFICATIONS