ENC-A8T Miniature Differential Encoder Without Index

FEATURES

- Miniature Size
- 180 to 720 Cycles Per Revolution (CPR)
- Tracks 0 to 100,000 Cycles Per Second
- Fits Shaft Diameters of .118” to .375”
- Maximum Shaft Axial Play of ±.010”
- Operating Temperature of -20° to +100° C
- Powered from a Single +5 VDC Power Supply

DESCRIPTION

With an acceptable minimum shaft length of .295” and maximum shaft length of .400”, without the hole in cover. Shaft sizes ranging from .118” to .375” in diameter, the ENC-A8TD is a differential miniature encoder designed for high volume applications with space limitations. The ENC-A8TD module is designed to detect the rotary position with a code wheel. When attached to the end of a shaft, the encoder provides digital feedback information. This differential miniature encoder consists of an LED source lens and monolithic detector IC enclosed in a small polymer package. These modules implement phased array detector technology providing superior performance and tolerances over traditional aperture mask type encoders. The ENC-A8TD Series provides digital quadrature outputs on all resolutions and are capable of sinking or sourcing 8 mA each. These encoders are powered from a single +5VDC power supply and are RoHS compliant.

CUSTOM ORDER LAYOUT

ENC - A8TD - 0180 - 118 - H - M

CPR	
0180	0400
0200	0500
0250	0512
0256	0720
0360	

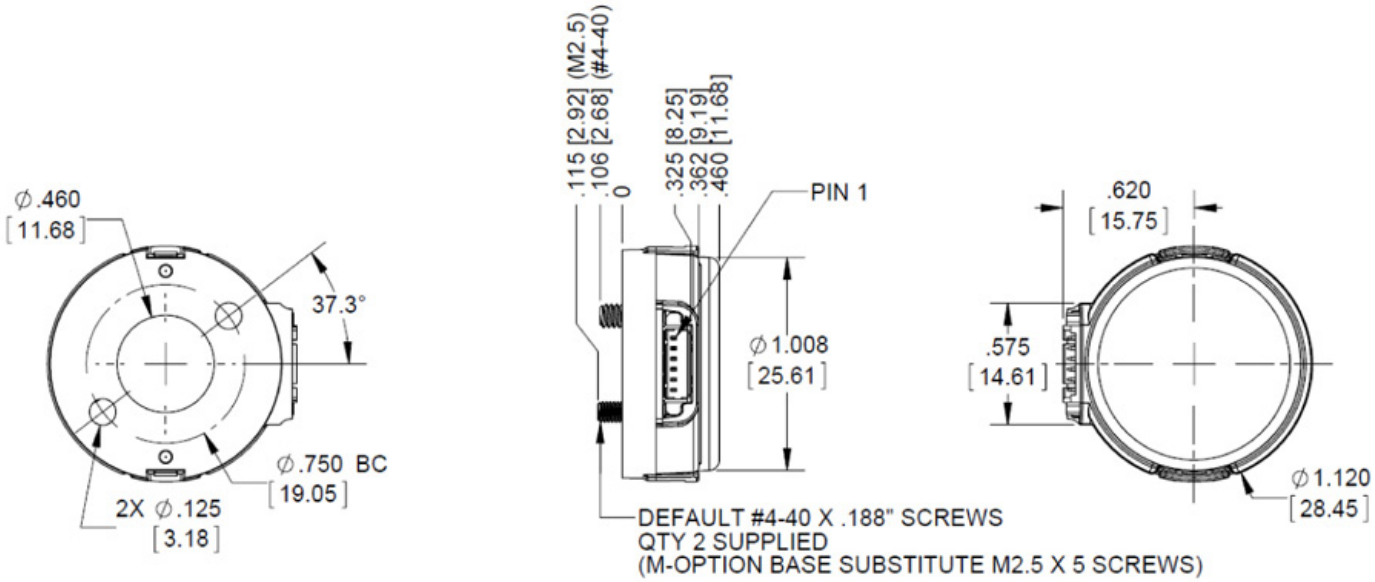
Bore Size	
118 = 3/16”	236 = 6mm
125 = 1/8”	250 = 1/4”
156 = 5/32”	276 = 7mm
157 = 4mm	315 = 8mm
197 = 5mm	375 = 3/8”

Cover Options
H = Hole in Cover
Blank = Default

Base Options
M = Metric Mounting Screws
G = Adds 1.28” Bolt Circle Mount
Blank = Default

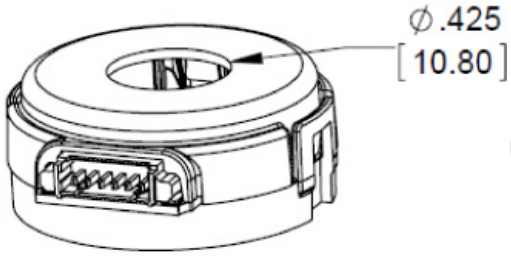
4985 East Landon Drive Anaheim, CA 92807 **Tel. (714) 992-6990** Fax. (714) 992-0471 **www.anaheimautomation.com**

DIMENSIONS

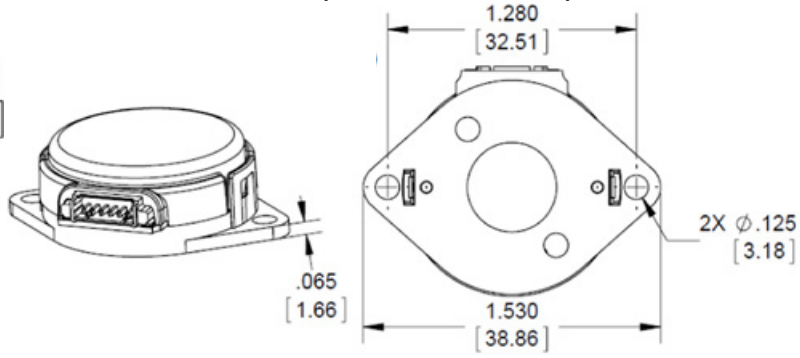


COVER OPTIONS

H-OPTION COVER
(COVER HOLE FOR EXTENDED SHAFTS)



G-OPTION BASE
(1.28" MOUNTING)



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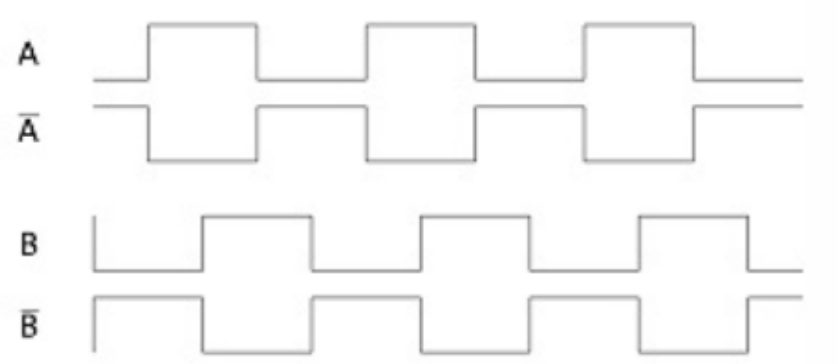
PIN/TIMING DIAGRAMS

DIFFERENTIAL ENCODER TIMING DIAGRAMS



DIFFERENTIAL ENCODER PINOUT

TOP OF ENCODER FACING PLUG

Pin #	Function
1	GND
2	A Channel
3	A- Channel
4	+5VDC
5	B Channel
6	B- Channel

ELECTRICAL SPECIFICATIONS

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

Parameter	Max	Units
Vibration (20Hz to 2kHz)	20	g
Shaft Axial Play	± .010	in.
Shaft Runout (TIR)	.002	in.
Acceleration	250,000	rad/sec^2
Electrostatic Discharge Single-Ended Differential	 ±12 ±7	kV
Shock, 6 Milliseconds, Half-Sine	75	G

Recommended Operating Conditions	Min	Max	Units
Temperature	-20	100	°C
Max Relative Humidity	-	90	%
Load Capacitance	-	100	pF
Count Frequency	-	100	kHz

Mechanical	Value	Units
Minimum Shaft Length*	0.295	in.
Maximum Shaft Length*	0.400	in.
Mounting Screw Torque	2-3	in-lbs

*Including Axial play

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ELECTRICAL SPECIFICATIONS

Parameter	Min	Typ	Max	Units
Supply Voltage	4.5	5.0	5.5	Volts
Supply Current (No Load)	-	27	32	mA
Differential Output Voltage (RL = 100 ohm)	3.0	3.8	-	Volts
Differential Output Rise/Fall Time	-	-	20	ns

Parameter	Typ	Units
Symmetry, S	180	°e
Quadrature Delay, Q	90	°e

Speed Calculation		Units
All CPR Values	(30,000/CPR)*60	RPM

*60,000 RPM is the maximum RPM due to mechanical limitations.

ACCESSORIES

Cables:

The following cables are compatible with Anaheim Automation's A8TD series encoder. Select a cable length from the table below:

Cable Part Number	Length
ENC-CBL-CA-MIC6-SH-NC-1	1 ft.
ENC-CBL-CA-MIC6-SH-NC-5	5 ft.
ENC-CBL-CA-MIC6-SH-NC-10	10 ft.
ENC-CBL-CA-MIC6-SH-NC-20	20 ft.

Mating Connector:

Micro mating connector shell (Molex# 51021-0600) and 6 pins for 26-28 AWG wires (Molex # 50079-8100)

NOTE: For pricing and other information on cables and centering tools, please visit Accessories on our website.

Centering Tools:

Centering tools are optional, but recommended for a more precise installation.

ENC-MCTOOL - 250

Bore Size	
059=1.5mm	188=3/16"
079=2mm	197=5mm
125=1/8"	236=6mm
156=5/32"	250=1/4"
157=4mm	

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