

EncoderTech®s advanced Rotary Optical Encoder Module provides Quadrature A B and Index outputs plus three optional brushless motor commutation channels. All outputs are available through the use of a single phased array Opto IC. When the optional Com Tracks are selected, commutation of brushless motors with varying pole configurations can be attained by simply selecting the appropriate code disc. Analog versions of this Module, offered in the same package, allow the user to further increase resolution through the use of interpolation techniques. The Optical Encoder's compact size and simple mounting allow for quick, easy and trouble-free installation onto a wide variety of motors and other OEM assemblies.

ROTARY OPTICAL ENCODER MODULE

For Measurement of **Rotary Motion, Digital or Analog**
PLUS Commutation of Brushless Motors



Technical Specifications

Electrical

Code	Incremental
Resolution	See ordering information for standard resolutions
Supply voltage	5Vdc ± 10% at 60mA maximum
Output format	Dual channel quadrature
Output format options	Index and commutation ComTracks available on Digital version only
Output type – Digital	Square wave, TTL and CMOS compatible, 10mA sink
Output type – Analog	Current Source
Frequency response	125 kHz (data and index)

Mechanical

Dimensions	See module outline dimensions
Weight	<0.25 ounces
Termination	.025 sqr. discrete pins
Materials	Module: Molded PPS 40% glass (R-4) Pins: gold plated Disc: mylar or etched metal Hub: aluminum

Disc Interface

Runout	0.005 inches TIR
Endplay	± 0.010 inches
Optical radius (data)	0.602 or 0.832 inches

Motor Interface

Mounting holes	See recommended mounting
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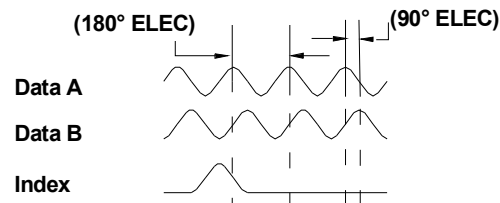
Connector Interface

Molex Connector	P/N 50-57-9005
Molex Socket	P/N 16-02-0069
AMP Connector	P/N 87499-9
AMP Socket	P/N 87667-3

Environmental Conditions

Operating temp range	-40 to 100°C (non-condensing)
Storage temp range	-40 to 100°C
Enclosure	Unsealed housing

Output Wave Forms



Output signal shown after analog signal processing

The above specifications are subject to change without notice.
Dimensions shown in inches.

Ordering Information

Encoder Module (Rotary)

Digital M	602	-	1000	-	3T	-	See Note
	1.		2.		3.		
Analog AM	602	-	2000	-	6T		
	1.		2.		3.		

1. Optical Radius

0.602 inches	602
0.832 inches	832

2. Standard Resolutions

Digital 602 Module

Resolutions from 35 to 3600.
See "Current Resolutions" list.

Digital 832 Module

Resolutions from 360 to 5000
See "Current Resolutions" list.

Analog 602 Module

Available Resolutions: 1000 & 1024

Analog 832 Module

Available Resolutions: 2000 & 2048

3. Lead Positions

Digital

Side Exit	Top Exit
A 1S	A 1T
AB 2S	AB 2T
ABZ 3S	ABZ 3T
	ABZ + COMS 6T

Analog

Top Exit	
ABZ 6T	

Code Disc and Hub

DH	602	-	1000	-	0	-	25
	1.		2.		3.		4.

Code Disc Only (no Hub)

D	602	-	1000	-	0
	1.		2.		3.

1. Disc Outside Diameter

1.30 inches	602
1.75	832

2. Standard Resolutions

See "Current Resolutions" list.

3. Commutation Tracks (Option)

(Available on 6T digital module only)
Not required 0
Specify 2, 3, 4, 6 or 8 motor pole pairs

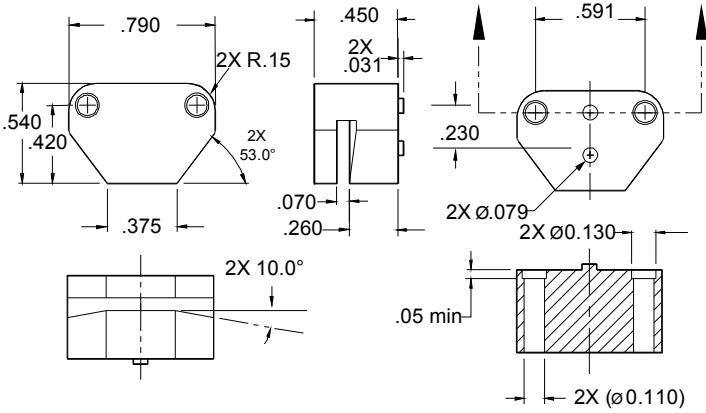
4. Hub Bore Size*

1/4 inch	25	6mm	6M
3/8 inch	38	8mm	8M
		10mm	10M

*Consult factory for other sizes

NOTE: When ordering Modules with Index, add a "G" to the end of the part number for Gated index or "U" for Ungated index

Module Outline Dimensions

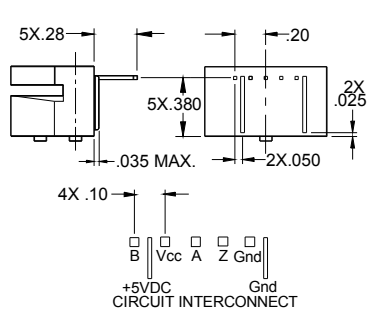


Pin Layouts

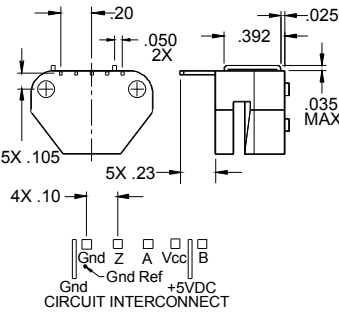
The Optical Encoder Modules come standard in either top mount or side mount with A,B, and Index Channels. Commutation Channels are optionally available for Digital modules in top-mounted configurations only.

ABZ CONFIGURATION 5X .025 square pins

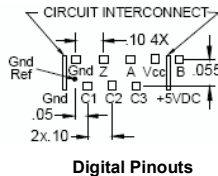
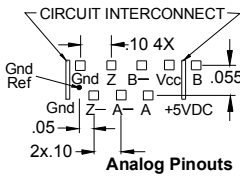
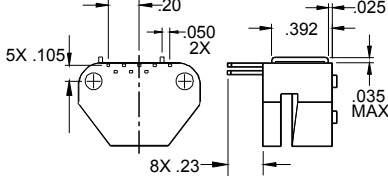
SIDE MOUNT (-1S, -2S, -3S)



TOP MOUNT (-1T, -2T, -3T)

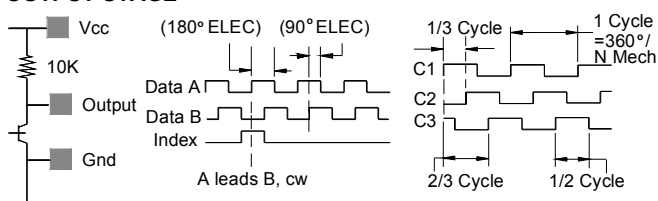


ANALOG CONFIGURATIONS (-6T) 8X .025 square pins



Output Format

OUTPUT STAGE DATA AND INDEX COMMUTATION TRACKS



Reading from top as shown in picture.

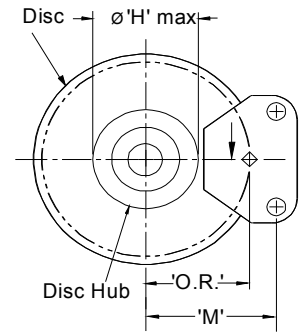
Module Interface

Module 602

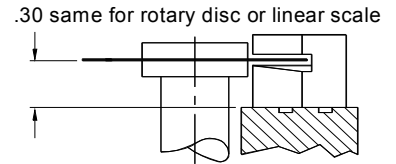
'O.R.' – Optical Radius 0.602 in.
'M' – Mounting dimension .. 0.756 in.
 ϕ 'H' – Hub Maximum O.D. .. 0.061 in.

Module 832

'O.R.' – Optical Radius 0.832 in.
'M' – Mounting dimension... 0.986 in.
 ϕ 'H' – Hub maximum O.D... 1.07 in.



DISC MOUNTING



Disc and Hub Dimensions

Module 602 Disc and Hub

ϕ 'D' – Disc O.D. 1.30 in.
 ϕ 'H' – Hub O.D. 0.61 in.

Module 832 Disc and Hub

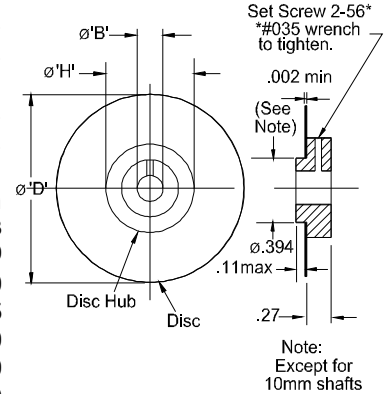
ϕ 'D' – Disc O.D. 1.75 in.
 ϕ 'H' – Hub O.D. 1.00 in.

Shaft Size Hub Bore Sizes

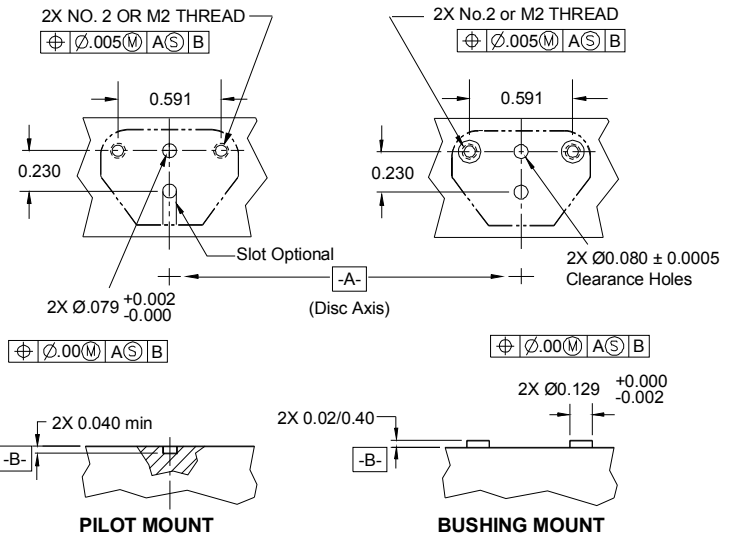
	ϕ 'B' in.	ϕ 'B' mm
	+ .0005	+ .013
	+ .0000	- .000
1/4 in.	.2500	6.350
3/8 in.	.3750	9.525
6 mm	.2362	6.000
8 mm	.3150	8.000
10 mm	.3937	10.000

Disc only

.3942 I.D. x .002 min. thick



Recommended Mounting Configurations



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