

R50i Modular



The **R50i Series** is a highly reliable, low cost modular encoder built using OPTO-ASIC technology. Modular encoders do not incorporate bearings in their design, which improves the overall reliability of the servo-motor. The housing materials are extremely robust, providing a mechanically stable platform over an extremely wide temperature range. The low profile of the R50i also allows for shorter motor lengths, and its 50mm OD allows it to be used in traditional resolver mounting pilots with shafts up to 5/8". The installation requires no special tools and has been optimized to streamline your production. The R50i is the ideal solution for your brush or brushless servo motor application.

Features:

- Patented slide lock for easy installation
- Line count up to 4096
- 2 data channels in quadrature
- Once around index pulse
- 3 commutation channels (optional)
- ASIC technology
- Up to 300 kHz frequency response
- 46.02 [1.812"] and 60.35 [2.375"] B.C. mounting
- Size 21 pilot mounting (optional)

Environmental:

Operating Temp	-30° to 115°C
Excursion Limits:	
Storage Temp	-40° to 125°C
Shock	100 G's for 6 mS duration
Vibration	25 to 2000 Hz @ 20 G's
Humidity	85%/85°C non-condensing
IP Rating	IP40 with closed cover

Mechanical:

Moment of Inertia	27.7 g-cm ² (Max.) for 10mm Hub/Glass Disk
Weight	73 g [2.57 oz] (Max.) with 10mm Hub/Glass Disk
Base & Cover	PET 530
Disc Material	Metal 0.04mm THK TYP for < 2048 resolutions Glass 1mm THK TYP for > 2500 resolutions
Hub Material	Stainless Steel
Shaft Max End Play	±0.254mm [±0.010"]
Shaft Run Out	0.025mm [.001"] TIR
Mounting Hardware	Metric hub sizes are supplied with 2x M2.5 x 6mm screws English hub sizes are supplied with 2x #4-40 x 1/4" screws

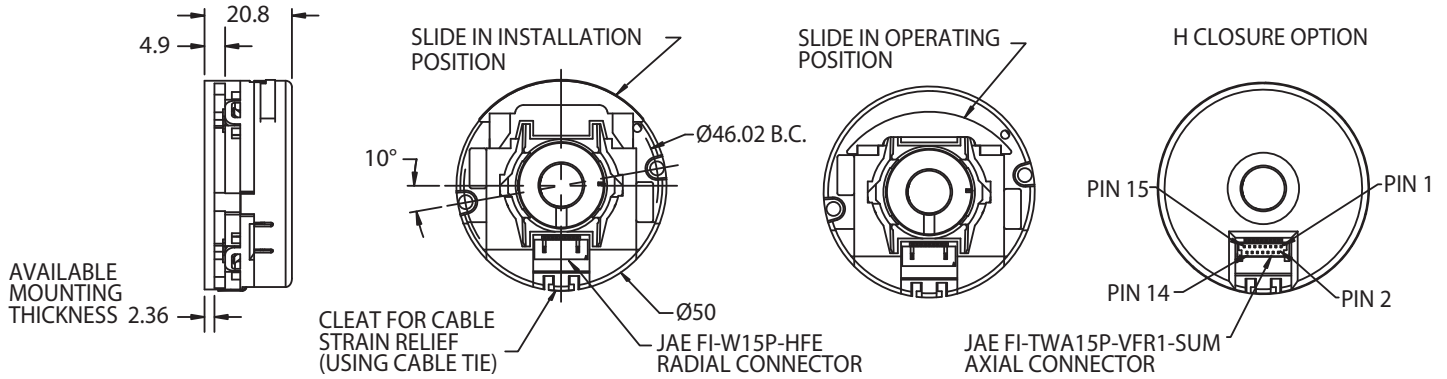
Electrical:

Signals	Incremental plus optional Commutation
Input Voltage	5.0 VDC ± 10% Single or Dual Supply
Current	180mA (Max.) @ 5 VDC (LD/LD)
Output Format	A/B in phase quadrature. INDEX width & location gated with respect to data
Output Type	LD = AM26C31 20 mA Source or Sink Max. VO = Open Collector 4 mA Sink Min. VC = Open Collector w/ 2K Ohm pull-ups 4mA Sink Min.
Output Logic Levels	Logic 0 = 0.5 V Max, Logic 1 = 2.5 V Min.
Operating Frequency	300 kHz

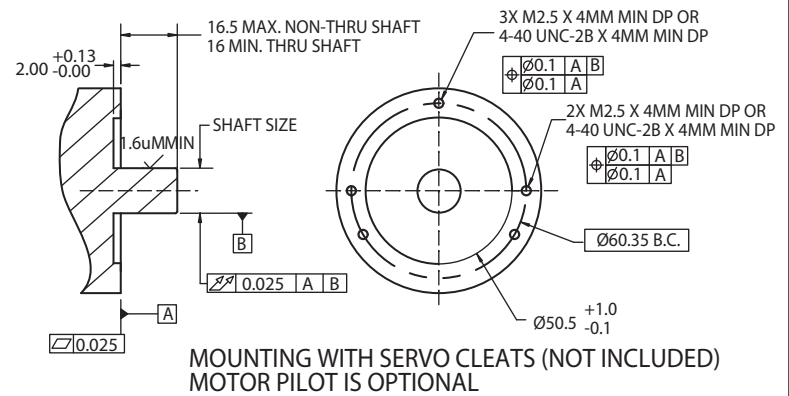
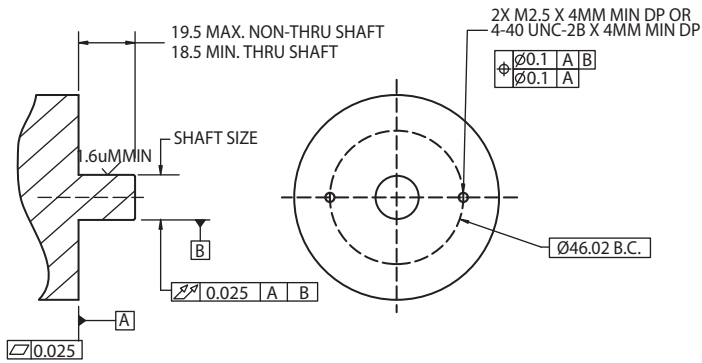
Resolution:

Line Count	250, 256, 500, 512, 1000, 1024, 2000, 2048, 2500, 4000, 4096
Commutation	0, 2, 3, 4
Index Gating	1 = Index Gated with A & B, Index width 90° ±45° (LD only) 6 = Index Gated with A- & B-, Index width 90° ±45°

Mechanical Dimensions

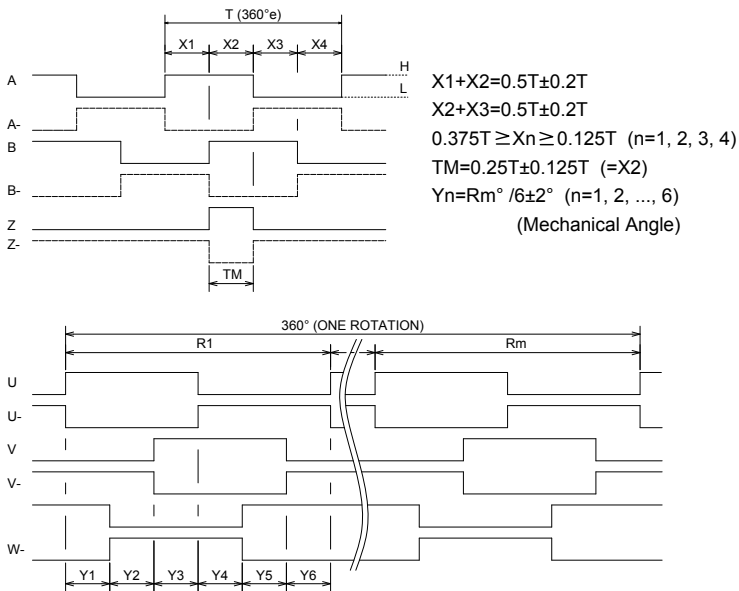


Mounting Requirements



Phase Quadrature

CCW VIEWING ENCODER TOP
LD/LD WITH -1 GATING OPTION SHOWN



Voltage Options

5/0 = Single Supply
5/5 = Dual Supply

Connector Options

R = Radial
A = Axial

Pin Functions

PIN NO	FUNCTION
1	A
2	A-
3	B
4	B-
5	Z
6	Z-
7	U
8	U- (GND2)
9	V
10	V- (Vcc2)
11	W
12	W-
13	+Vcc
14	GND
15	N/C

Closure Options

C = Closed Cover
H = Cover w/Hole

Hub Size

SPECIFY	HUB SIZE	SHAFT SIZE
	+01 -00	+0 -0.013
1/2	12.695	12.692
1/2+	12.703	12.700
5/8	15.87	15.867
10MM	10	9.997
12MM	12	11.997
14MM	14	13.997

Output Options

	DATA / COMM	
LD/LD	VC/VC	VO/VO
LD/VC	VC/VO	VO/0
LD/VO	VC/0	
LD/0		

Ordering Information

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RESOLUTION See Front Page COMMUTATION See Front Page HUB SIZE OUTPUT OPTION VOLTAGE GATING See Front Page CONNECTOR CLOSURE