RENCO

R35i Modular



The R35i Modular uses OPTO-ASIC technology to provide our highest level of performance in a modular encoder. This innovative technology minimizes components to increase product reliability in the smallest possible package. The R35i also provides optional brushless commutation outputs and the highest resolution data channels available in the industry. The enhanced slide lock mechanism automatically centers and gaps the encoder thus making installation simpler than ever before.

Features:

- Small size 35mm [1.38 inch]
- Patented slide lock for easy installation
- Line count up to 10,000
- 2 data channels in quadrature
- Once around index pulse
- 3 commutation channels (optional)
- CMOS ASIC technology
- Up to 500 KHz frequency response

Environmental:

Operating Temp	-30° to 115°C
Excursion Limits:	
Storage Temp	-40° to 125°C
Shock	100 G's for 6mS 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	2.0g-cm^2 [2.9 x 10^{-5} oz in sec^2] for 8mm hub with metal disk 2.625g-cm^2 [3.7 x 10^{-5} oz in sec^2] for 8mm hub with glass disk
Weight	10 encoders with tray = 10 oz.
Base Material	PET 530
Cover Material	PET 530
Disc Material	Metal 0.05mm THK TYP for 100-5000 resolutions Glass .7mm THK TYP for resolutions of 8000 & above
Hub Material	Stainless Steel
Shaft Max End Play	±0.254mm [± 0.010]
Shaft Run Out	0.025mm [.001"] TIR
Mounting Hardware	
C or H:	2 x M2.5 or #2-56 UNC screws with captive washer
C4 or H4:	2 x M2.5 or #4-40 UNC screws
CR or HR:	No hardware provided

Electrical:

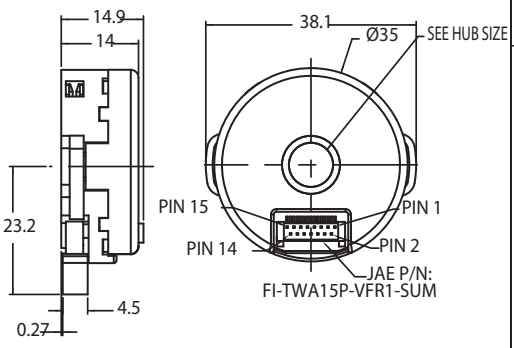
Signals	Incremental plus optional commutation
Input Voltage	5.0 VDC ± 10% Single or Dual Supply
Current	See Pin Functions Table on Page 2
Output Format	A/B in phase quadrature. INDEX width & location gated with respect to data
Output Type	LD = AM26C31 20 mA Source or Sink Max. PP = 4mA Max. Source or Sink VO = Open Collector 4 mA Sink Max.(Comm only) VC = Open Collector w/ 2K Ohm pullup (Comm only)
Output Logic Levels	Logic 0 = 0.5 V Max, Logic 1 = 2.5 V Min.
Operating Frequency	To 500 KHz (*360 and 720 counts to 300 KHz)

Resolution:

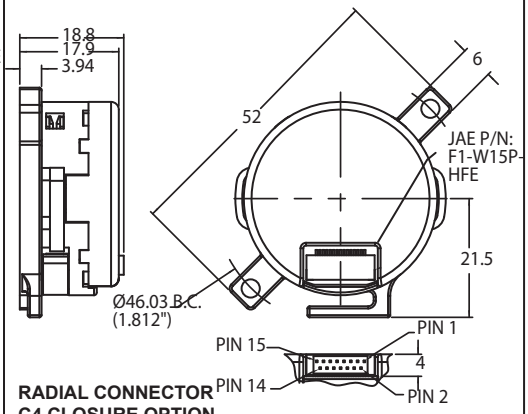
Line Count	100, 200, 250, 256, 360*, 400, 500, 512, 625, 720*, 800, 1000, 1024, 1250, 2000, 2048, 2500, 4000, 4096, 5000, 8000, 8192, 10000
Commutation	0, 2, 3, 4
Index Gating	1 = Index Gated with A & B, Index width 90°e ± 45°e 6 = Index Gated with A- & B-, Index width 90°e ± 45°e 7 = Centered on A & B, Index width 270°e ± 45°e 8 = Centered on A- & B-, Index width 270°e ± 45°e

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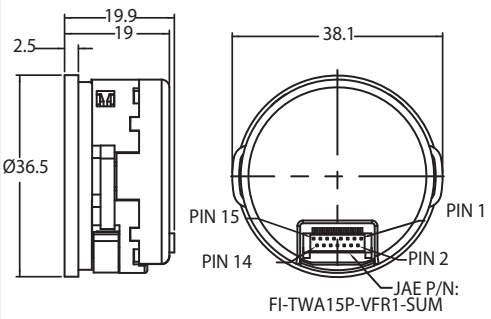
Mechanical Dimensions



AXIAL CONNECTOR
H CLOSURE OPTION

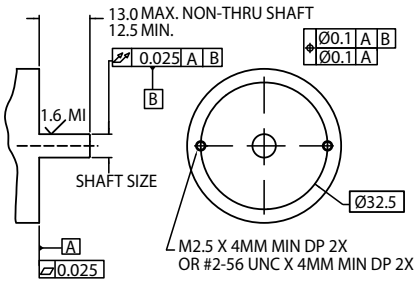


RADIAL CONNECTOR
C4 CLOSURE OPTION

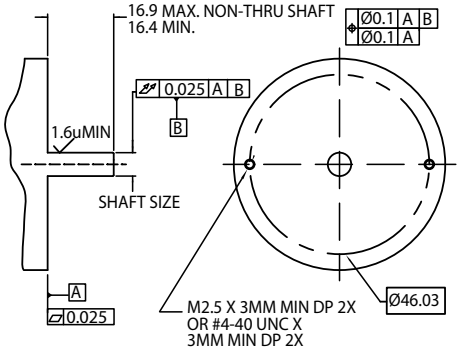


AXIAL CONNECTOR
CR CLOSURE OPTION

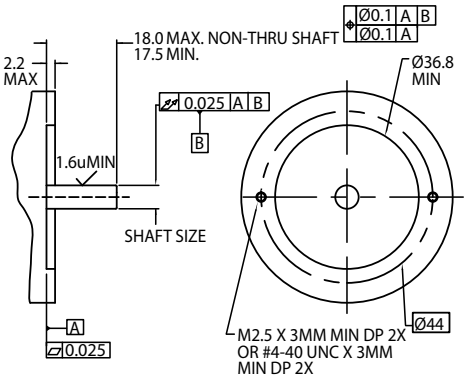
Mounting Requirements



C OR H



C4 OR H4



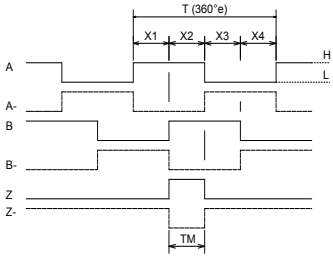
CR OR HR

Pin Functions

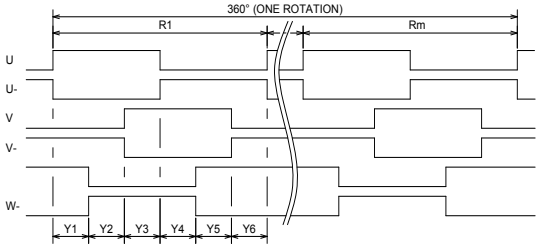
PIN NO.	5/0 LD/0	5/0 LD/LD	5/0 LD/PP	5/0 PP/0	5/0 PP/PP	5/0 0/LD	5/0 0/PP	5/5 LD/VO OR LD/VC	5/5 PP/VO OR PP/VC
1	A	A	A	A	A			A	A
2	A-	A-	A-					A-	
3	B	B	B	B	B			B	B
4	B-	B-	B-					B-	
5	Z	Z	Z	Z	Z			Z	Z
6	Z-	Z-	Z-					Z-	
7		U	U		U	U	U	U	U
8		U-				U-		GND2	GND2
9		V	V		V	V	V	V	V
10		V-				V-		+5V2	+5V2
11		W	W		W	W	W	W	W
12		W-				W-			
13	+5V	+5V	+5V	+5V	+5V	+5V	+5V	+5V	+5V
14	GND	GND	GND	GND	GND	GND	GND	GND1	GND1
15									
CURRENT (mA)	100	160	108	48	56	100	48	108	56

Phase Quadrature

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



X1+X2=0.5T±0.2T
X2+X3=0.5T±0.2T
0.375T ≥ Xn ≥ 0.125T (n=1, 2, 3, 4)
TM=0.25T±0.125T (=X2)
Yn=Rm° /6±2° (n=1, 2, ..., 6)
(Mechanical Angle)



Hub Size

SPECIFY	HUB SIZE +0.01 -0	SHAFT SIZE +0 -0.013
1/8	3.17	3.167
3/16	4.757	4.754
3/16+	4.765	4.762
1/4	6.345	6.342
1/4+	6.353	6.350
5/16	7.932	7.929
5/16+	7.94	7.937
3/8	9.52	9.517
3/8+	9.528	9.525
4mm	4	3.997
5mm	5	4.997
6mm	6	5.997
8mm	8	7.997

Output Format

VOLTAGE	DATA/COMM	
5/0	LD/0	LD/LD
	LD/PP	
	PP/0	PP/PP
	0/LD	0/PP
5/5	LD/VO	LD/VC
	PP/VO	PP/VC

Closure Option

SPECIFY	CLOSURE OPTION
C	Closed Cover
H	Cover w/Hole
C4	46.02 Mtg. Closed Cover
H4	46.02 Mtg. Cover w/Hole
CR	Resolver Mtg. Closed Cover
HR	Resolver Mtg. Cover w/Hole

Connector

A = Axial
R = Radial

Ordering Information

R35i - _____ / _____ - _____ - _____ / _____ - 5/_____ - _____ - _____ - _____

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

For Technical and Sales Information, Call 805.968.1525 • For Custom Configurations, Consult Factory • All Dimensions in Metric Units • Specifications May Change without Notice