

R35i B4-B6 Modular



The **R35i B4-B6 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 provides 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
- Standard industry outputs available
- CMOS ASIC technology
- Up to 500 KHz frequency response (PP output only)

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 8000 & above
Hub Material	Stainless Steel
Shaft Max End Play	±0.254mm [± 0.010]
Shaft Run Out	0.025mm [.001"] TIR
Mounting Hardware	
C, H, SC, SH:	2 x M2.5 (#2-56 UNC screws w/captive washer optional)
C4, H4, SC4, SH4:	#4-40 UNC screws

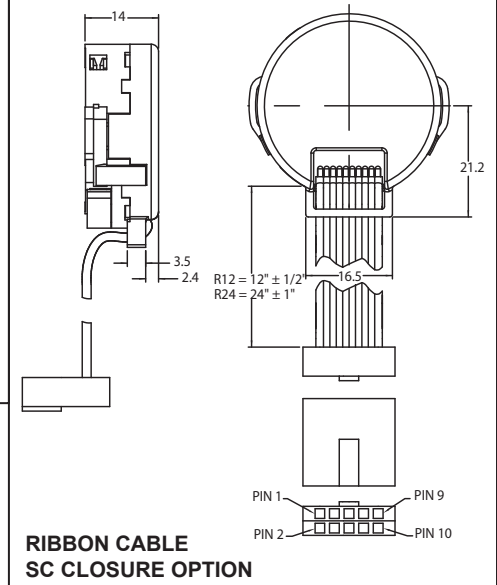
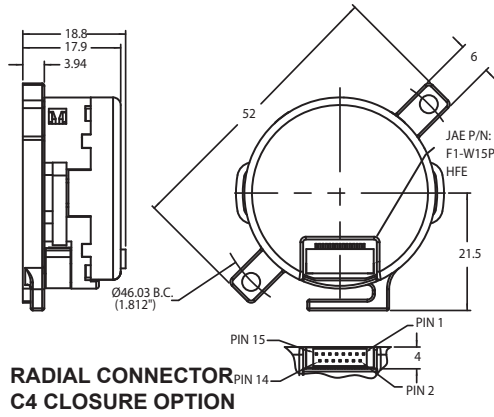
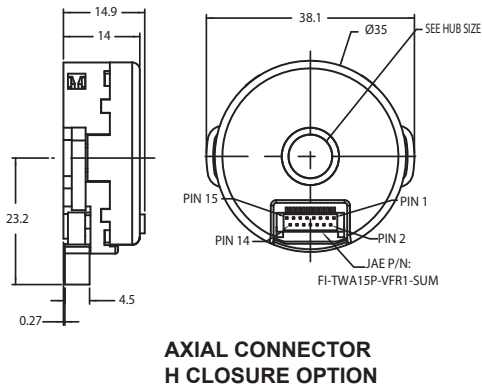
Electrical:

Signals	Incremental
Input Voltage	5 VDC ± 10%
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	PP = Push/Pull 4mA Min. Source or Sink HP = 7404 buffer output, Sinks 16mA, Sources -0.4mA, with negative index B4 = 7404 buffer output, Sinks 16mA, Sources -0.4mA B6 = 7406 with 470 Ohm internal pullup, Sinks 30mA OC = 7406 Open Collector sinks 40mA
Output Logic Levels	Logic 0 = 0.5 V Max, Logic 1 = 2.5V Min.
Operating Frequency	100 KHz, PP output type to 500 KHz

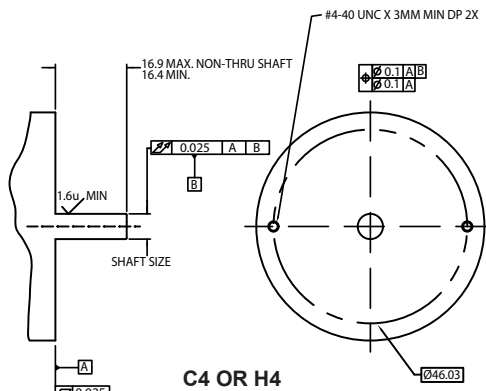
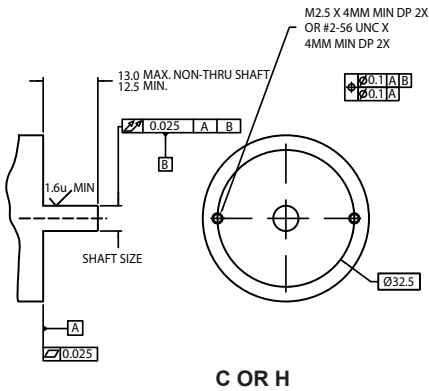
Resolution:

Line Count	100, 200, 250, 256, 400, 500, 512, 625, 800, 1000, 1024, 1250, 2000, 2048, 2500, 4000, 4096, 5000, 8000, 8192, 10000
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

Mechanical Dimensions



Mounting Requirements



Connector or Cable Option

CONNECTOR OPTION

A	Axial Connector
R	Radial Connector

CABLE OPTION

R12	12 in. Ribbon Cable
R24	24 in. Ribbon Cable

Pin Functions

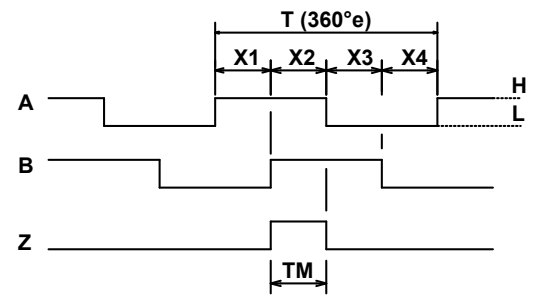
PIN NO	FUNCTION		
	CONNECTOR	CABLE	HP CABLE
1	A	A	A
2	A-	+5V	+5V
3	B	GND	GND
4	B-	N/C	N/C
5	Z	N/C	N/C
6	Z-	N/C	GND
7	N/C	N/C	+5V
8	N/C	B	B
9	N/C	N/C	+5V
10	N/C	Z	Z
11	N/C		
12	N/C		
13	+5V		
14	GND		
15	N/C		
CURRENT (mA)	170	50	170

Hub Size

SPECIFY	HUB SIZE +0.01 -0	SHAFT SIZE +0 -0.013
1/8	3.17	3.167
1/8+	3.178	3.175
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

Phase Quadrature

CCW VIEWING ENCODER TOP
-1 GATING OPTION SHOWN



$$X1+X2=0.5T\pm 0.2T$$

$$X2+X3=0.5T\pm 0.2T$$

$$0.375T \geq Xn \geq 0.125T \quad (n=1, 2, 3, 4)$$

$$TM=0.25T\pm 0.125T \quad (=X2)$$

Output Format

SPECIFY	OUTPUT
PP	Push/Pull
HP**	7404 w/Neg Index
B4*	7404
B6*	7406 w/pullup
OC*	Open Collector

* Connector option only
** Ribbon cable only

Closure Option

SPECIFY	with STRAIN RELIEF	CLOSURE OPTION
C	SC	Closed Cover
H	SH	Cover w/Hole
C4	SC4	46.02 Mtg. Closed Cover
H4	SH4	46.02 Mtg. Cover w/Hole

Note: Covers for units with axial connector do not have strain relief

Ordering Information

R35iB - / 0 - - - 5 - - -

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