



Motion Control Made Simple

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## RHS15 Hollow Shaft Encoder

### Features:



- Robust .060" [1,524mm] chrome-on-glass code disk.
- Single LED light source for high reliability.
- Differential photo transistor sensor array.
- Sealed or shielded bearings.
- Flexible mounting plate accommodates large axial movement
- Integral cable strain relief.

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### General Description:

The RHS15 combines our state-of-the-art modular technology with an integral bearing system that accommodates large axial and radial shaft movement, while also providing high performance in an affordable package.

The RHS15 is small and lightweight, yet TTL compatible with various outputs available and resolutions up to 1250 cycles per revolution.

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### Specifications:

*(Subject to change without notice)[Metric measurements in square brackets]*

#### MECHANICAL:

Outer Diameter:	1.62 inches [41,15mm]
Height:	1.55" max [39,37mm]
Shaft Dia:	3/16 to 1/2 inch [4,76 to 12,7mm]
Weight:	3.75 oz [107g]
Slew Speed:	6000 rpm [628 rad/sec]
Bore Material:	Stainless Steel
Base Material:	Aluminum
Cover Material:	Glass filled Polycarbonate
Starting Torque:	0.5 oz-in [3.5 X 10E-3 N-M] @ 25°C
Bearing Life:	2 billion revolutions (90% life) [1,26 x 10E10 radians]

#### ELECTRICAL:

Output: Square wave two channel quadrature  
with index (gating options available)

Input Power: 5 VDC  $\pm$ 5%

Output Format: TI AM26LS31CD or LM2901

Min Edge Separation: 45° (all channels)

Freq Response: Up to 200 KHz

**ENVIRONMENTAL:**

Operating Temp: -10°C to +100°C

Storage Temp: -30°C to +110°C

Shock: 50 G's for 11 mSec

Vibration: 5 - 2000 Hz @ 10 G's

IP Rating: IP 40

Humidity: 90% relative (non condensing)

**RESOLUTIONS:**

Range: 16 to 1250

Currently available: 16, 24, 32, 50, 60, 75, 90,  
100, 120, 127, 128, 150, 200,  
225, 245, 250, 256, 300, 312,  
360, 471, 480, 500, 512, 540,  
600, 635, 640, 647, 720, 800,  
900, 1000, 1024, 1250

**HUB SIZE: (shown in inches) [metric]**

Specify Hub Bore (+.0005/- .0000) [+0,013mm/-0,000mm]

3/16	.1877	[4,77mm]
1/4	.2502	[6,35mm]
3/8	.3752	[9,53mm]
5MM	.1970	[5,00mm]
6MM	.2364	[6,00mm]
8MM	.3151	[8,00mm]
10MM	.3939	[10,00mm]

**TERMINATION OPTIONS:****Round Cable**

Pin	CA18 Function	Wire Color
1	+VCC	Red
2	GND	Blk
3	CH A	Wht
4	CH A NOT	Yel
5	CH B	Grn
6	CH B NOT	Blu
7	INDEX	Orn
8	INDEX NOT	Brn

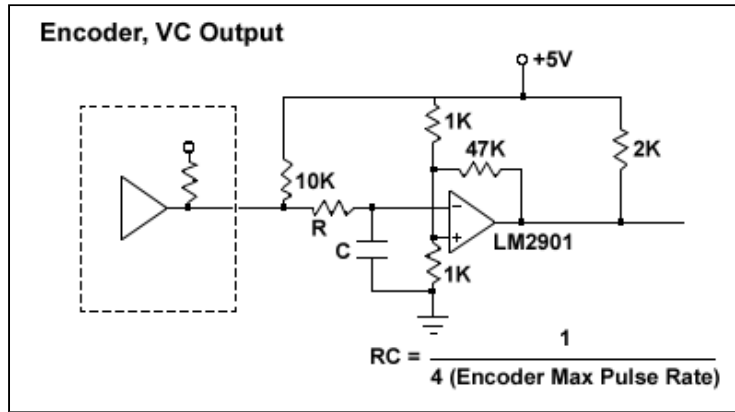
**OUTPUT INTERFACE OPTIONS:**

- VC
- LD

**OUTPUT INTERFACES:**

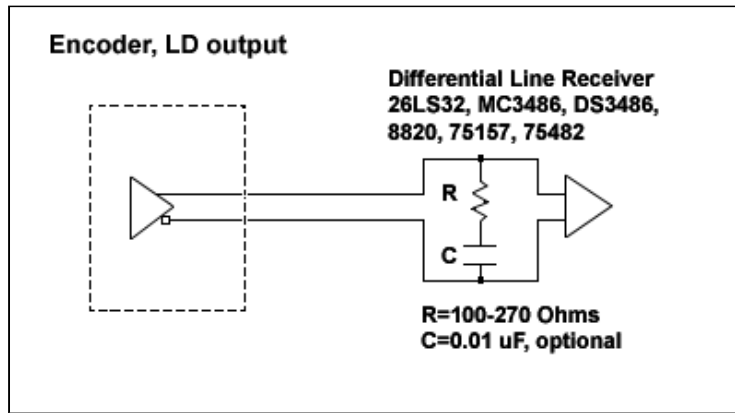
**VC (VOLTAGE COMPARATOR)**

No complementary signals available  
 5 VDC power input TTL compatible (+12V available)  
 Output sinks 6mA  
 Nominal power requirements 75mA



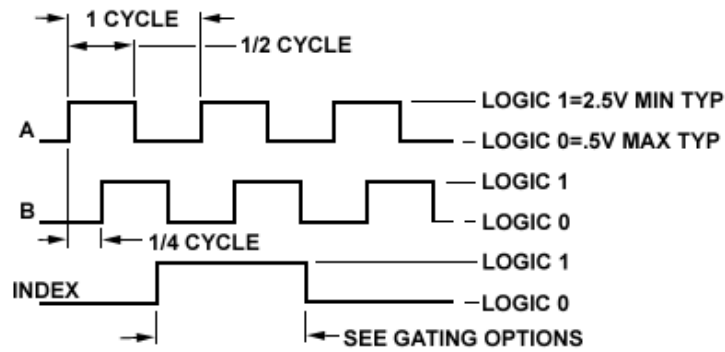
**LD (LINE DRIVER TI AM26LS31CD typical output)**

26LS32 typical line receiver suggested for user interface  
 Output sinks and sources 20mA  
 Nominal power requirements 135mA



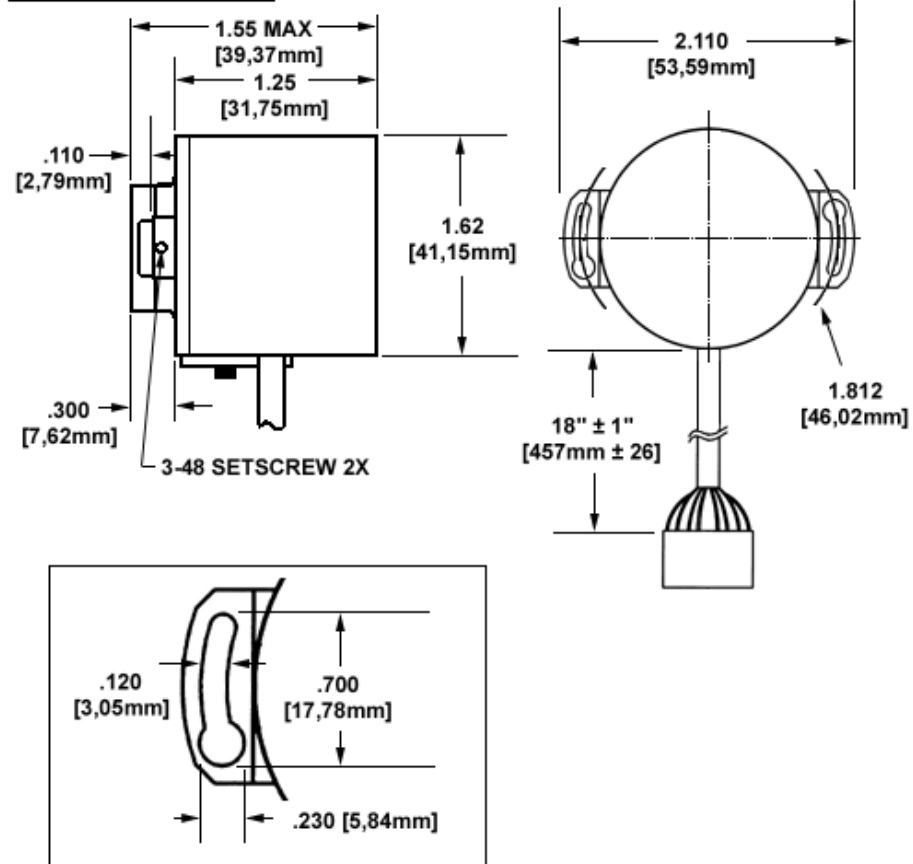
**GATING OPTIONS:**

Specify	Gating Option	Index Width
0	Ungated	360° ± 20%
1	Gated W/A&B	90° ± 45°

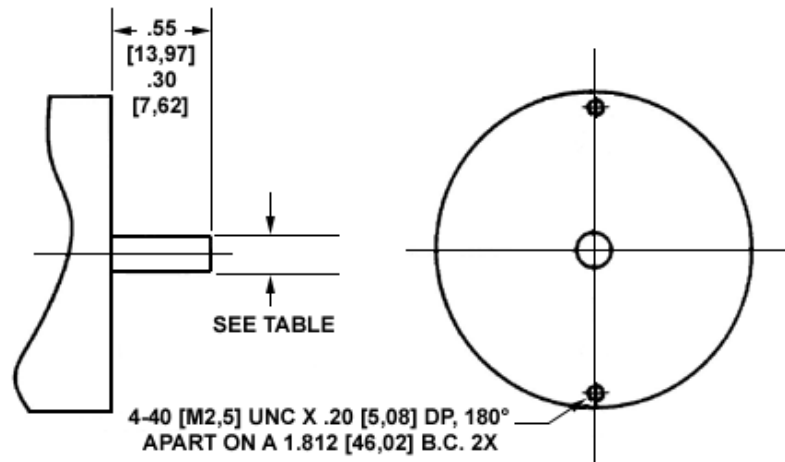
**OUTPUT CONFIGURATION:**

Minimum transition to transition edge separation of A and B is 45° over operating temperature and frequency. Complementary outputs are not shown for simplicity. CCW viewing encoder top.

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**Dimensions:****Mechanical Outline**

### Mounting Requirements




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## Ordering Information:

*Sample Model Number:*

***RHS15D-1000-1/4-5-CA18-LD-0-M2***

To order, specify your model number as follows:

Model Number = RHS15

Channels = D (Dual CH + Index)

Resolution = Pulses per revolution (PPR) ([Refer to Resolution List](#))

Hub size = Size of hub bore ([Refer to Hub Size Table](#))

Input Voltage = 5 Volt (Standard), 12 Volt (available on VC only)

Termination = CA18 (18 inch [457mm] Round Cable standard)  
([Refer to Termination Options](#))

Output Interface = VC, LD ([Refer to Output Interface Table](#))

Index Gating = 0 (Ungated) or 1 (Gated with A&B) ([Refer to Gating Options](#))

Mounting Option = M2 ([Refer to Dimensions Section](#))

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