



## RS15 Self Contained Encoder

### Features:



- Large selection of output formats.
- Single LED light source for high reliability.
- Differential photo transistor sensor array.
- Sealed or shielded bearings.
- C-Flange mounting adapter.
- Integral cable strain relief.

### Dimensions / Ordering Information

## General Description:

The RS15 meets the cost needs for high volume OEM applications, while maintaining the flexibility to satisfy low volume semi-custom requirements.

A wide variety of mounting styles, output interface formats and index gating options allow the unit to meet the requirements of almost any application while remaining within the scope of the standard product.

The RS15 is a self contained encoder which provides a large number of standard line counts and output options with a 1/4" shaft size.

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## Specifications:

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

### MECHANICAL:

Outer Diameter:	1.62 inches [41,15mm]
Height:	1.25" [31,75mm]
Shaft Dia:	.2495 to .2497 inches[6,337mm to 6,342mm]
Weight:	4.80 oz with C-Flange[137g]
Slew Speed:	6000 RPM standard [628 rad/sec]
Shaft Loading:	Radial, Axial 5 lbs [22,24 N]
Shaft Runout:	.0005 inches [0,013mm]
Shaft Material:	Stainless Steel
Base Material:	Aluminum
Cover Material:	Glass filled Polycarbonate
Starting Torque:	0.5 oz in @ 25°C [3,5 x 10E-3 N-M]
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 ±5%  
Output Format: TI AM26LS31CD or LM2901  
Min Edge Separation: 45° (all channels)  
Freq Response: Up to 200 KHz

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ENVIRONMENTAL:

Operating Temp: -10°C to +85°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)

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RESOLUTIONS:

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

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TERMINATION OPTIONS:

Round Cable

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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

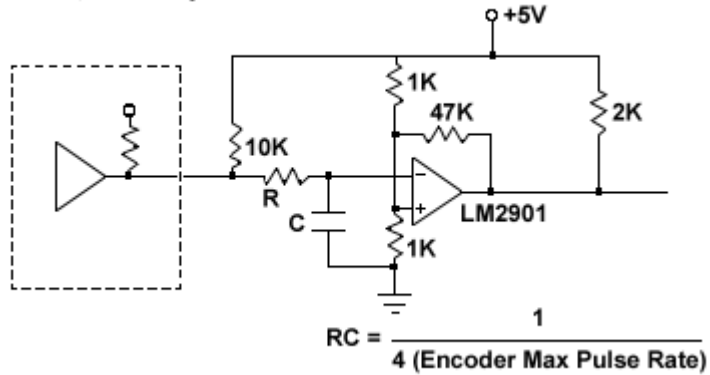
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OUTPUT INTERFACES:

VC (VOLTAGE COMPARATOR)

LM2901 (VC with pullup resistor)  
No complementary signals available  
5 VDC power input TTL compatible (+12V available)  
Output sinks 6mA  
Nominal power requirements 75mA

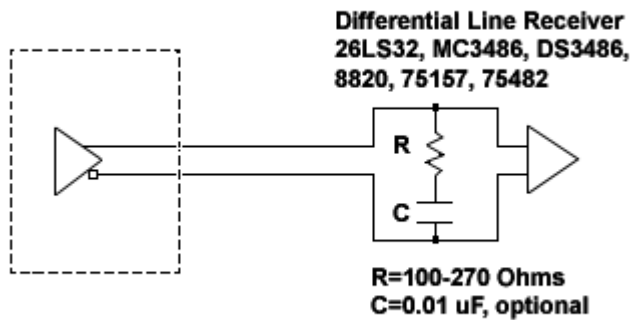
Encoder, VC Output



LD (LINE DRIVER)

TI AM26LS31CD typical output  
26LS32 typical line receiver suggested for user interface  
Output sinks and sources 20mA  
Nominal power requirements 135mA

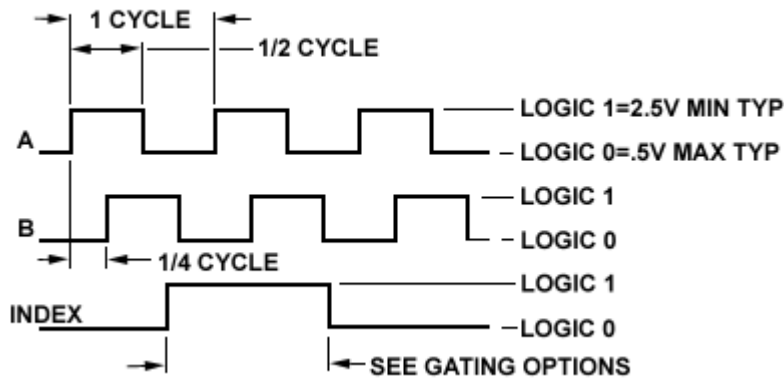
Encoder, LD output



OPTIONAL SHAFT COUPLER OPTIONS:

- 1/4 - 1/4
- 1/4 - 5/16
- 1/4 - 3/8
- 1/4 - 1/2
- 1/4 - 1/8

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.

GATING OPTIONS:

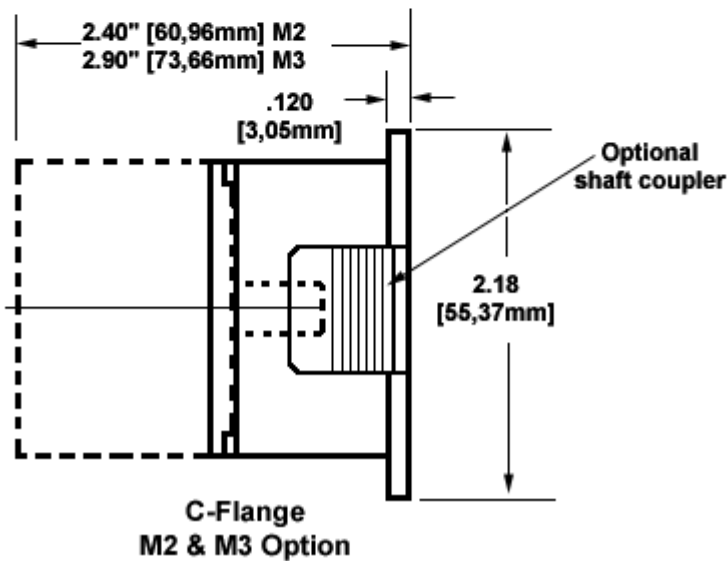
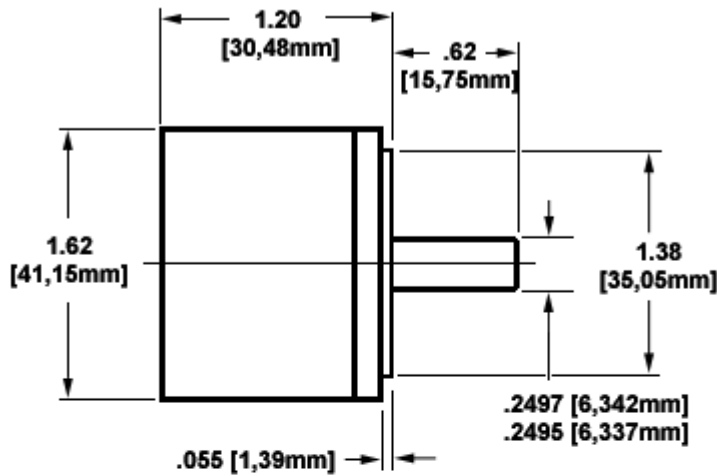
Specify	Gating Option	Index Width
0	Ungated	360° ± 20%
1	Gated W/A&B	90° ± 45°

MOUNTING OPTIONS:

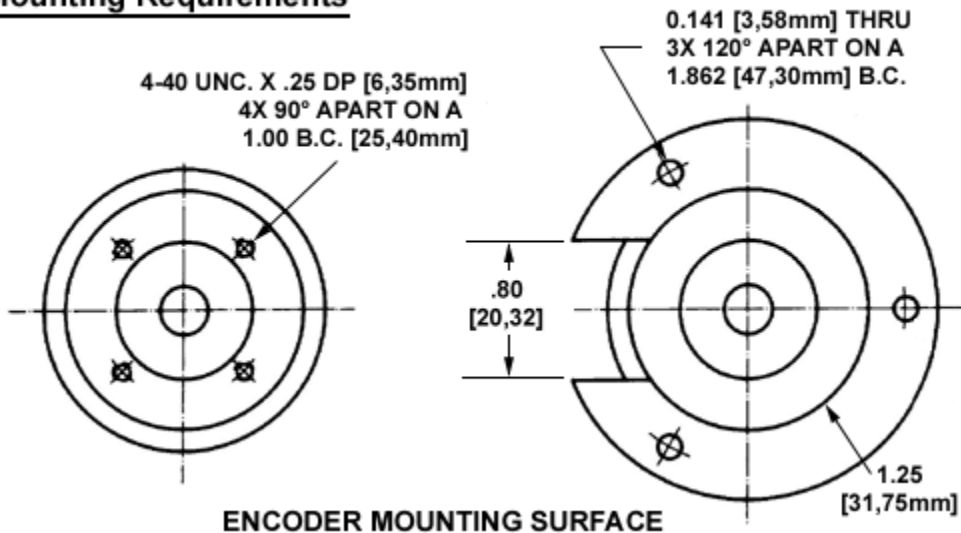
Specify	Configuration	Customer Shaft Length
M1	4-40 UNC 4X 90° on 1.00 B.C. [25,40mm]	.62 shaft ext. [15,75mm]
M2	(C-Flange) 2.40" [60,96mm] .141 3X 120° on 1.862 B.C [3,58mm] [47,29mm]	.3 to .5 shaft ext. [7,62mm] to [12,70mm]
M3	(C-Flange) 2.90" [73,66mm] .141 3X 120° on 1.862 B.C [3,58mm] [47,29mm]	.75 to 1.00 shaft ext. [19,05mm] to [25,40mm]

# Dimensions:

## Mechanical Outline



## Mounting Requirements



## Ordering Information:

*Sample Model Number:*

***RS15D-1000-1/4-5-CA18-LD-0-M2***

To order, specify your model number as follows:

Model Number = RS15

Channels = D (Dual CH + Index)

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

Shaft size = 1/4 inch [6,35mm]

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

Termination = CA18 (18 in. [457mm] Round Cable std) ([Refer to Termination](#))

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

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

Mounting Options = M1, M2 or M3 ([Refer to Mounting Options](#))

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