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.

Dimensions / Ordering Information

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.

Specifications:

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

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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]
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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

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]

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TERMINATION OPTIONS:

Round Cable
_____

        CA18            Wire
Pin     Function        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 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
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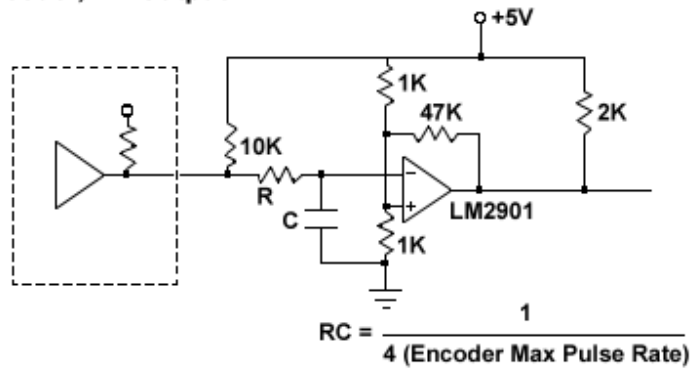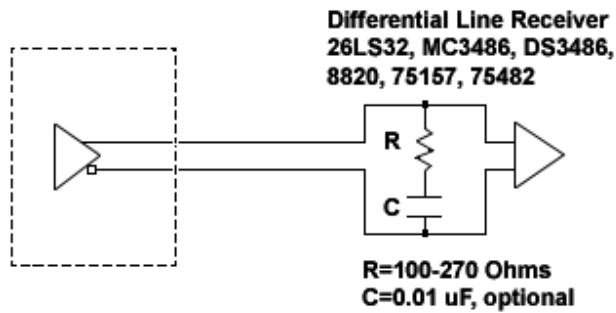
Encoder, VC Output

$$RC = \frac{1}{4 \text{ (Encoder Max Pulse Rate)}}$$

LD (LINE DRIVER TI AM26LS31CD typical output)

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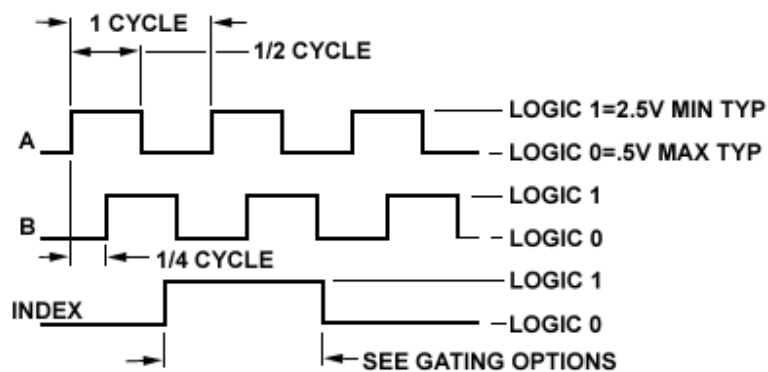   Nominal power requirements 135mA

Encoder, LD output

**Differential Line Receiver
26LS32, MC3486, DS3486,
8820, 75157, 75482**

R
C

**R=100-270 Ohms
C=0.01 uF, optional**

GATING OPTIONS:

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

OUTPUT CONFIGURATION:

1 CYCLE
1/2 CYCLE

A — LOGIC 1=2.5V MIN TYP
— LOGIC 0=.5V MAX TYP

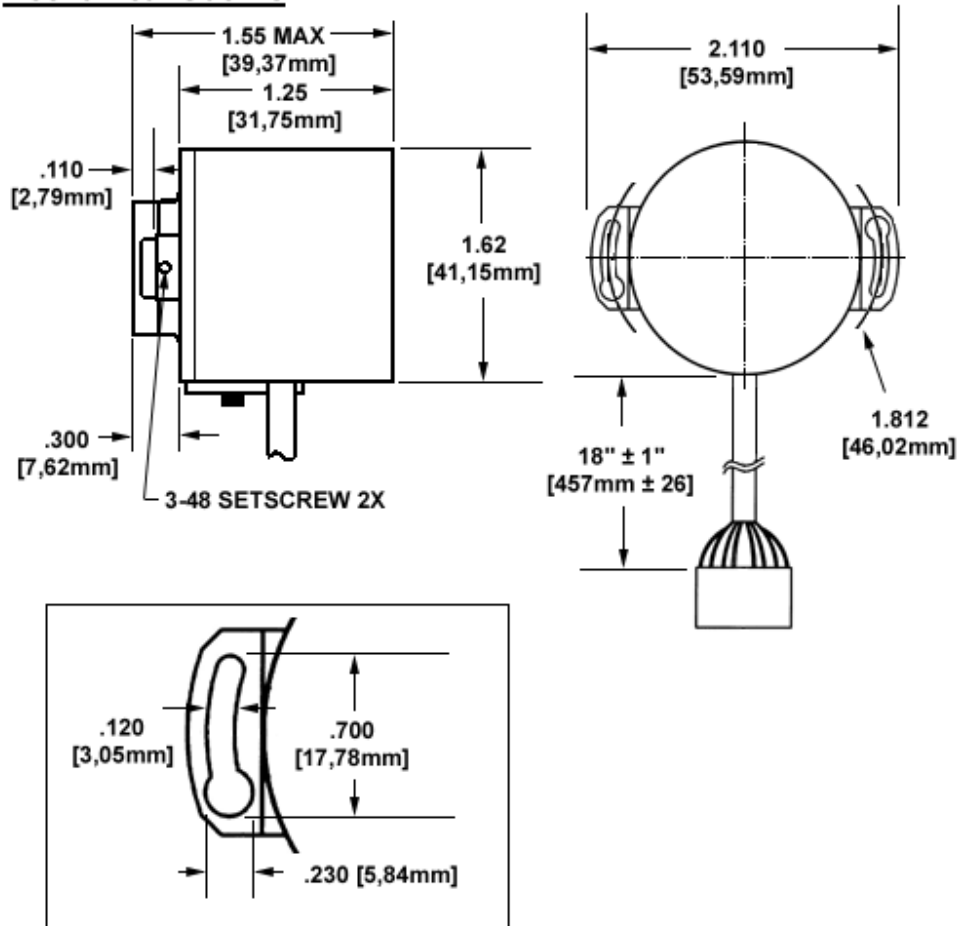B — LOGIC 1
— LOGIC 0
1/4 CYCLE
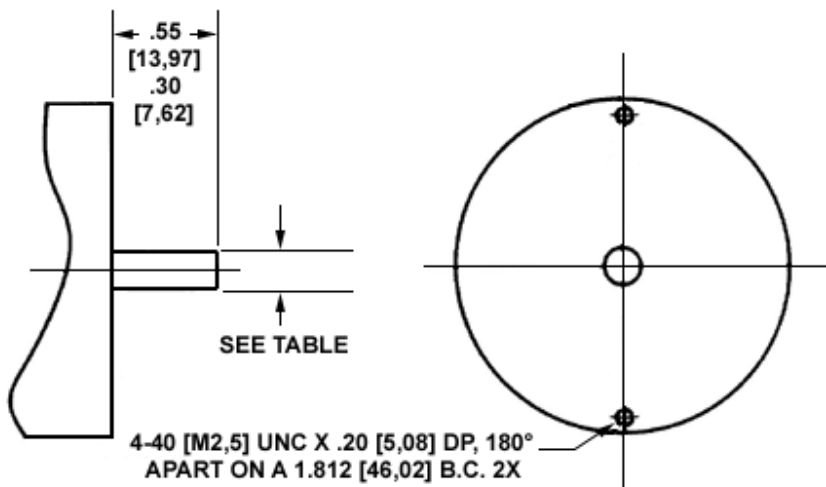
INDEX — LOGIC 1
— LOGIC 0
— SEE GATING OPTIONS

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.

Dimensions:

Mechanical Outline

1.55 MAX
[39,37mm]

1.25
[31,75mm]

.110
[2,79mm]

1.62
[41,15mm]

.300
[7,62mm]

3-48 SETSCREW 2X

2.110
[53,59mm]

18" ± 1"
[457mm ± 26]

1.812
[46,02mm]

.120
[3,05mm]

.700
[17,78mm]

.230 [5,84mm]

Mounting Requirements

.55
[13,97]

.30
[7,62]

SEE TABLE

4-40 [M2,5] UNC X .20 [5,08] DP, 180°
APART ON A 1.812 [46,02] B.C. 2X

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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