

**SERIES 63T**  
**High Resolution, Hollow Shaft**

**FEATURES**

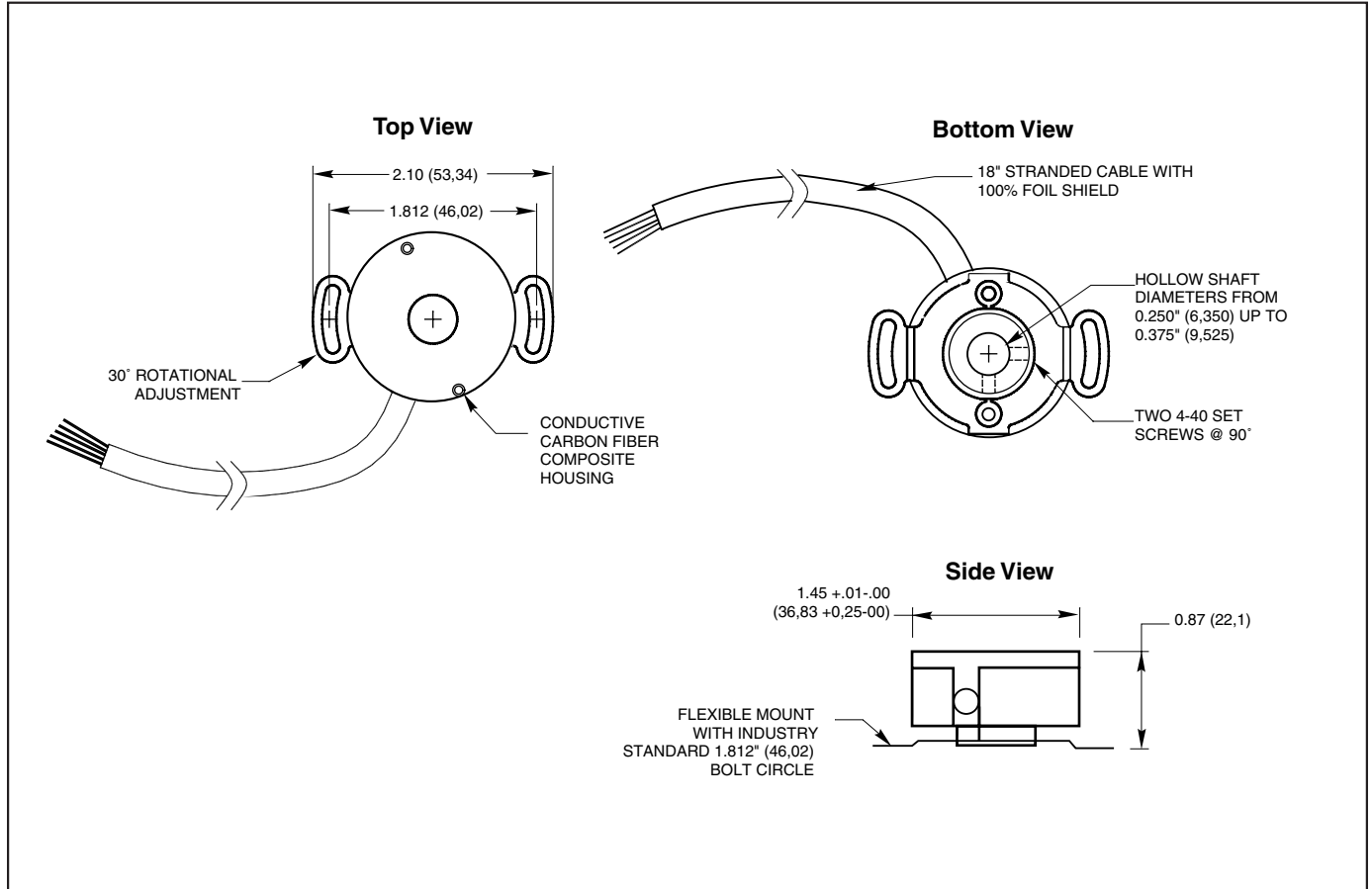
- Low Profile
- Simplified Encoder Attachment
- Resolutions up to 1024 Lines per Revolutions
- Three-Phase Commutation in 4,6 or 8 Pole Versions
- Conductive Carbon Fiber Housing
- Standard 1.812" (46mm) Bolt Circle Mounting
- Hollow Shaft Sizes Up to .375" or 10mm in Diameter
- High Noise Immunity
- Cost Competitive with Modular Encoders
- Industry Standard Line Drivers

**APPLICATIONS**

- Steer by Wire
- Fractional Horse Power Motors
- Machine Tool Controls
- Material Handling
- Flow Meters

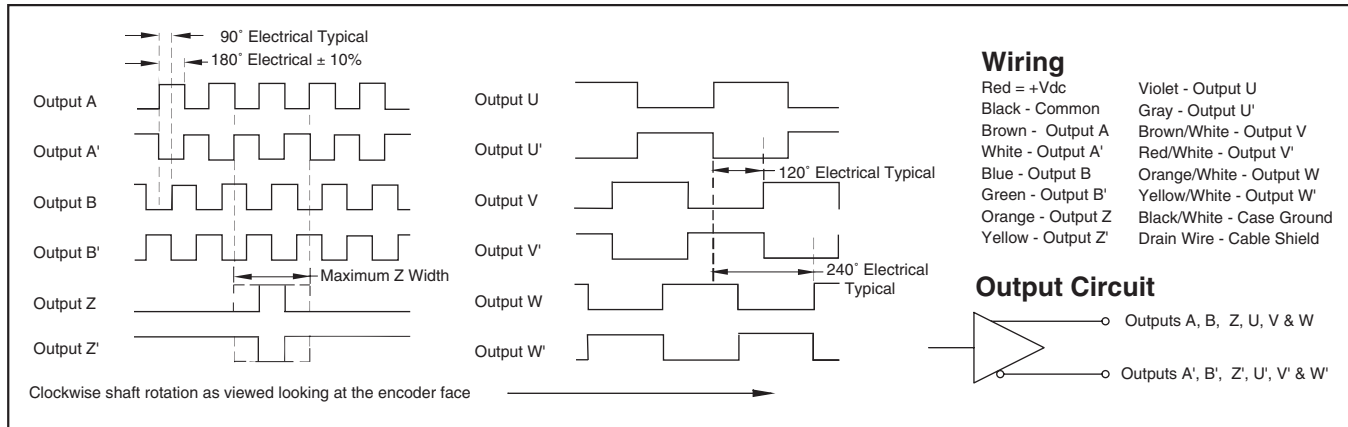


**DIMENSIONS** In inches (and millimeters)



Optical and Mechanical Encoders

**WAVEFORM, CIRCUITRY, AND WIRING DIAGRAM** Standard Quadrature 2-Bit Code



**SPECIFICATIONS**

**Electrical Ratings**

**Input Voltage:** 5 ± 5% Vdc or 5-26 Vdc  
**Ripple Current:** 2% peak-to-peak @ 5 Vdc  
**Output Circuits:** AM26LS31 RS422A line driver, OL7272 line driver, TTL  
**Logic Output Characteristics:**  
 Output Type: Quadrature with channel A leading channel B for CW rotation with index centered over A  
**Frequency Response:** 200 kHz  
**Symmetry:** 180° ± 10% typical  
**Minimum Edge Separation:** 54 electrical degrees  
**Commutation Format:** Three phase: 4, 6 or 8 poles  
**Commutation Accuracy:** ± 1° mechanical  
**Input Current Requirements:** 125 mA typical, 5 Vdc plus interface loads

**Mechanical Ratings**

**Maximum Shaft Speed:** 8,000 RPM  
**Hollow Shaft Diameter:** 0.250", 0.312", 0.375", 6mm, 8mm, 10mm  
**Radial Shaft Movement:** 0.007" (0,178mm) T.I.R.  
**Axial Shaft Movement:** ± 0.030" (7,62mm)  
**Housing:** Carbon fiber composite (case ground via cable)  
**Housing Volume Resistivity:** 10<sup>2</sup> ohm-cm  
**Termination:**  
 Standard: 15-conductor stranded cable, 28 AWG, 18" (457mm) in length  
 Non-commutation and TTL output: 9-conductor stranded cable, 28 AWG, 18" in length  
**Mounting:** 1.812" (46mm) bolt circle  
**Acceleration:** 1x10<sup>5</sup> radians per second<sup>2</sup>  
**Moment of Inertia:** 1.5 x 10<sup>-4</sup> oz-in-s<sup>2</sup>  
**Accuracy:** ± 8 arc minutes

**Environmental Ratings**

**Operating Temperature Range:** -20°C to 100°C typical; -20°C to 120°C optional (contact Grayhill for more information)  
**Storage Temperature Range:** -40°C to 125°C  
**Relative Humidity:** 98% non-condensing  
**Vibration:** 20G's @ 50-500 CPS  
**Mechanical Shock:** 50g @ 11mS duration

**OPTIONS**

Contact Grayhill for custom terminations, resolutions, mounting configurations, and shaft couplings and configurations.

**ORDERING INFORMATION**

|                        |   |
|------------------------|---|
|                        | <b>Series</b>   |
|                        | <b>Resolution:</b> (quadrature cycles per revolution) A = 500, B = 512, C = 1000, D = 1024, E = 256   |
|                        | <b>Voltage:</b> L = 5.0 ± 5% Vdc, H = 5-26 Vdc  |
|                        | <b>Output Option:</b> 1 = AM26LS31 RS422A Line Driver, 2 = OL7272, 5-26 Vdc Line Driver, 3 = TTL, 4 = RS422A, for A, B, Z; Open Collector for U, R, W |
|                        | <b>Mounting:</b> 1 = Std. 1.812" flex<br>2 = Size 15 Resolver Mount   |
| <b>63TAL-1-1-4-2-1</b> | <b>Index Gating:</b> 0 = Ungated index; 1 = Gated to A, 180°; 2 = Gated to A and B, 90°   |
|                        | <b>Motor Poles:</b> 4 = 4 pole, 6 = 6 pole, 8 = 8 pole, 0 = no commutation  |
|                        | <b>Hollow Shaft Size:</b> 1 = 0.250", 2 = 0.312", 3 = 0.375", 4 = 6mm, 5 = 8mm, 6 = 10mm  |

**Available from your local Grayhill Component Distributor.** For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

Optical and Mechanical Encoders