

Optical Encoders

Series 63T High Resolution, Hollow Shaft



FEATURES

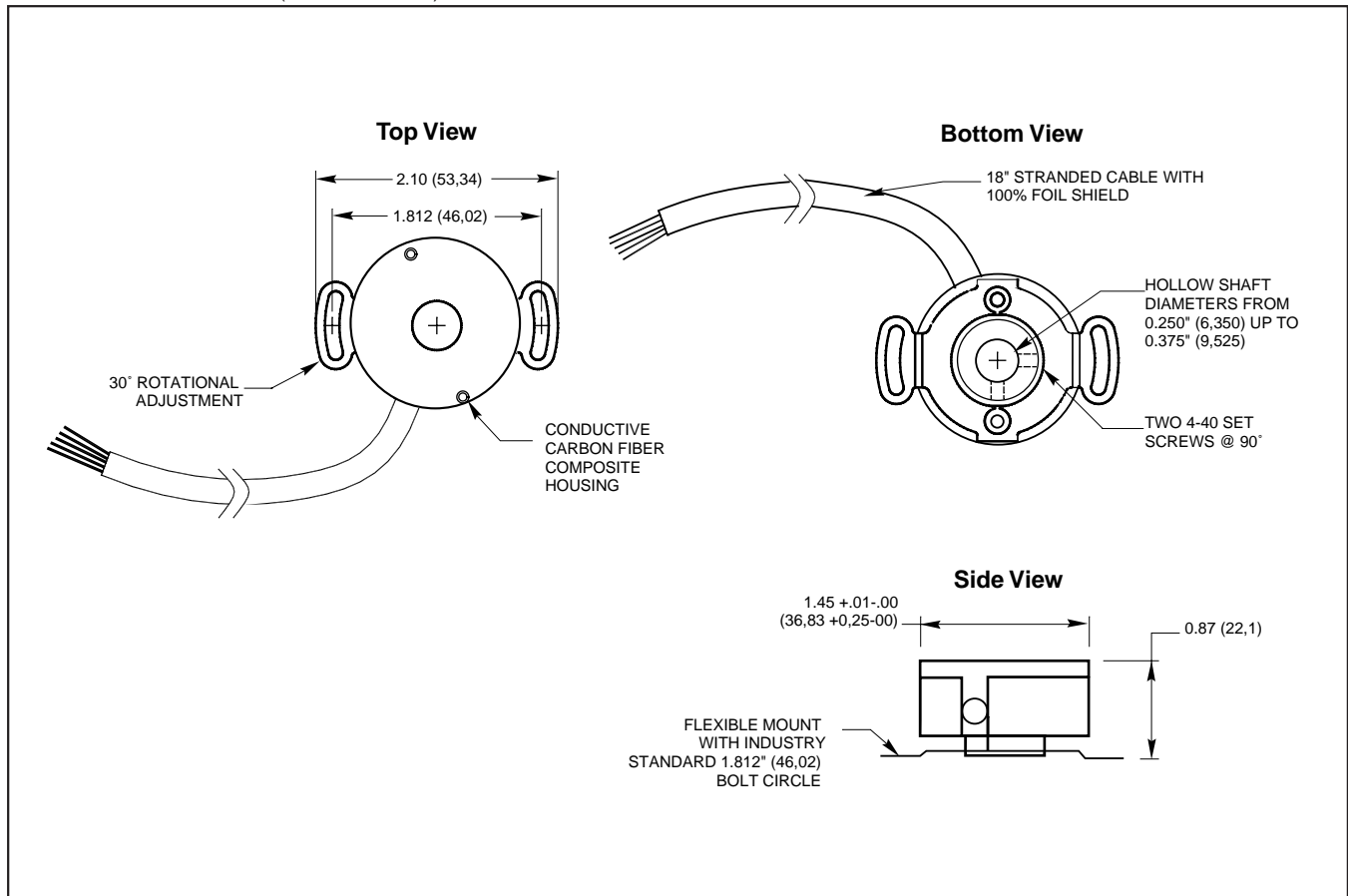
- Low Profile
- Simplified Encoder Attachment
- Resolutions up to 1024 Lines per Revolutions
- Three-Phase Commutation in 4, 6 or 8 Pole Versions
- Conductive Carbon Fiber Housing
- Standard 1.812" (46mm) Bolt Circle Mounting
- Hollow Shaft Sizes Up to .375" or 10mm in Diameter
- High Noise Immunity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

APPLICATIONS

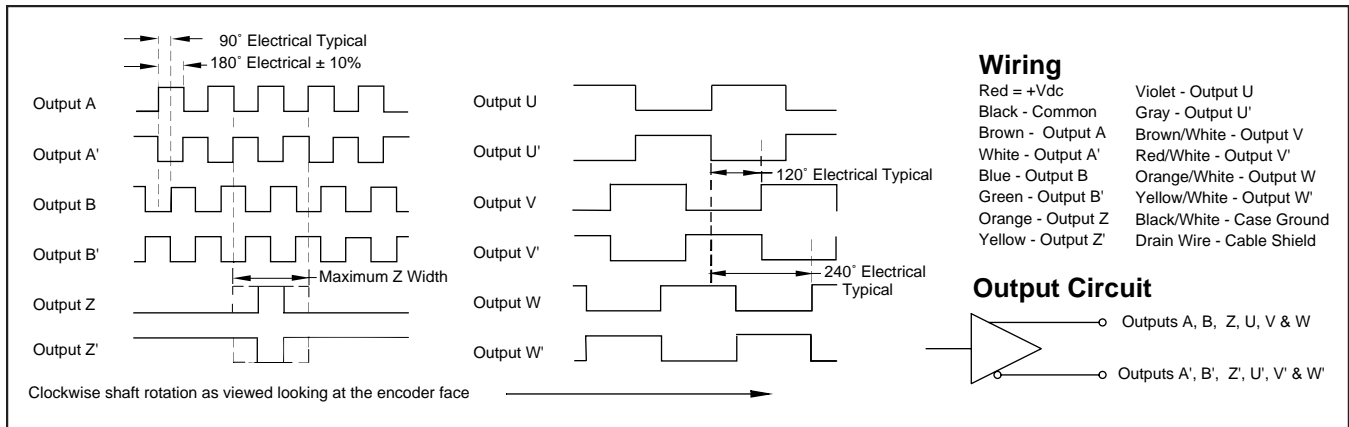
- Steer by Wire
- Fractional Horse Power Motors
- Machine Tool Controls
- Material Handling
- Flow Meters



DIMENSIONS In inches (and millimeters)



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



SPECIFICATIONS

Electrical Ratings

Input Voltage: $5 \pm 5\%$ 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: $180^\circ \pm 10\%$ typical
Minimum Edge Separation: 54 electrical degrees
Commutation Format: Three phase: 4, 6 or 8 poles
Commutation Accuracy: $\pm 1^\circ$ 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: 10^2 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: 1×10^5 radians per second²
Moment of Inertia: 1.5×10^{-4} oz-in-s²
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

Series
Resolution: (quadrature cycles per revolution) A = 500, B = 512, C = 1000, D = 1024, E = 256
Voltage: L = $5.0 \pm 5\%$ Vdc, H = 5-26 Vdc
Output Option: 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
Mounting: 1 = Std. 1.812" flex
 2 = Size 15 Resolver Mount

Index Gating: 0 = ungated index; 1 = Gated to A, 180°; 2 = Gated to A and B, 90°
Motor Poles: 4 = 4 pole, 6 = 6 pole, 8 = 8 pole, 0 = no commutation
Hollow Shaft Size: 1 = 0.250", 2 = 0.312", 3 = 0.375", 4 = 6mm, 5 = 8mm, 6 = 10mm

Note: Output options 1, 3, and 4 are only available with the 5VDC operating voltage (L)

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