Optical and Mechanical



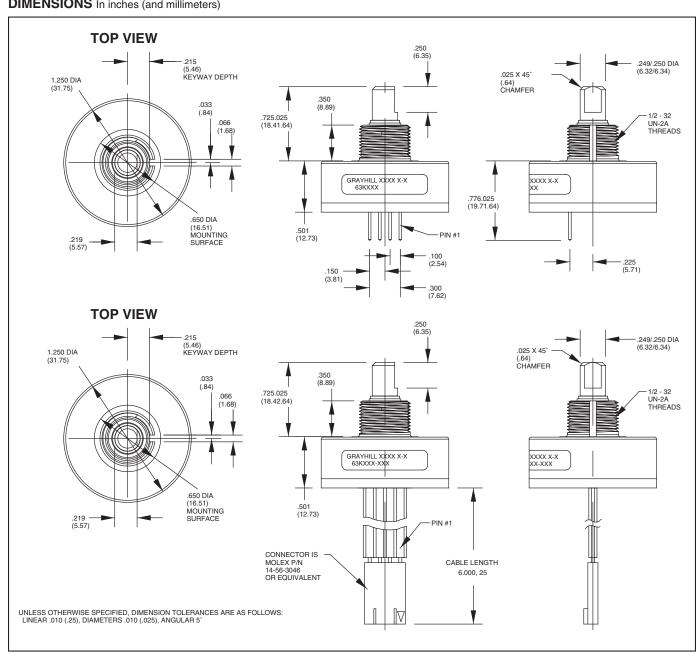
SERIES 63K High Resolution, Ball Bearing, 4-Pin

FEATURES

- 25, 32, 50, 64, 100, 128 and 256 Cycles per Revolution Available
- Sealed Version Available
- Rugged Construction
- Cable or Pin Version
- 300 Million Rotational Cycles
- 5,000 RPM Shaft Rotation

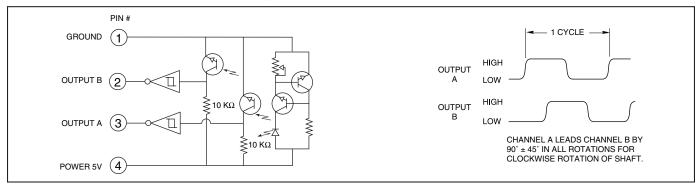


DIMENSIONS In inches (and millimeters)





CIRCUITRY AND WAVEFORM: Standard Quadrature 2-Bit Code



SPECIFICATIONS

Electrical Ratings

Operating Voltage: 5 ±.25 Vdc

Supply Current: 30 mA maximum at 5 Vdc

Logic Output Characteristics:

Output Type: Open collector with integrated Schmitt Trigger and 10 KW pull-up resistor Maximum Sink Current: 16 mA at .40 volts Power Consumption: 150 mW maximum Optical Rise Time: 500 nS typical Optical Fall Time: 14 nS typical

Mechanical Ratings

Mechanical Life: 300 million revolutions Time Life: Guaranteed for 10 years of continuous operation (calculated from emitter degradation data)

Mounting Torque: 20 in-lbs maximum Terminal Strength: 5 lbs terminal pull-out

force minimum

Solderability: 95% free of pin holes and voids **Externally Applied Shaft Force:** Axial:15 lbs maximum; Radial:15 lbs

maximum

Operating Torque: 0.5 in-oz maximum (no detents) for unsealed versions

Environmental Ratings

Operating Temperature Range: -40°C to 85°C Storage Temperature Range: -55°C to 100°C Relative Humidity: 90-95% at 40°C for 96 hours Vibration Resistance: Harmonic motion with amplitude of 15g, within a varied 10 to 2000 Hz frequency for 12 hours per MIL-STD-202, Method 204

Shock Resistance: Test 1: 100g for 6 mS, halfsine wave with velocity change of 12.3 ft/s. Test 2: 100g for 6 mS, sawtooth wave with velocity change of 9.7 ft/s.

Materials and Finishes

Bushing: Zinc diecast **Housing:** Zytel FR-50

Shaft: Stainless steel insert molded into nylon

rotor support

Code Rotor and Aperture: Chemically etched stainless steel/electroformed nickel Printed Circuit Board: NEMA Grade FR-4. Five microinches minimum gold over 100 microinches minimum nickel over copper Optical Barrier: Polyphenylene sulfide, 94 V-0

Backplate: Polyester

Header: Phosphor bronze, 200 microinches tin over 50 microinches nickel (pin version only) **Infrared Emitter:** Gallium aluminum arsenide

Photo IC: Planar silicon Retaining Ring: Stainless steel

Cable: 26 AWG, stranded/tinned wire, PVC coated on .100 (2,54) centers (cable version only) Connector: Glass-filled PCT, UL94V-0

Bearing Subassembly

Bearing: NSK ABEC 5 (stainless steel) **Preload Collar:** 303 stainless steel

ORDERING INFORMATION

