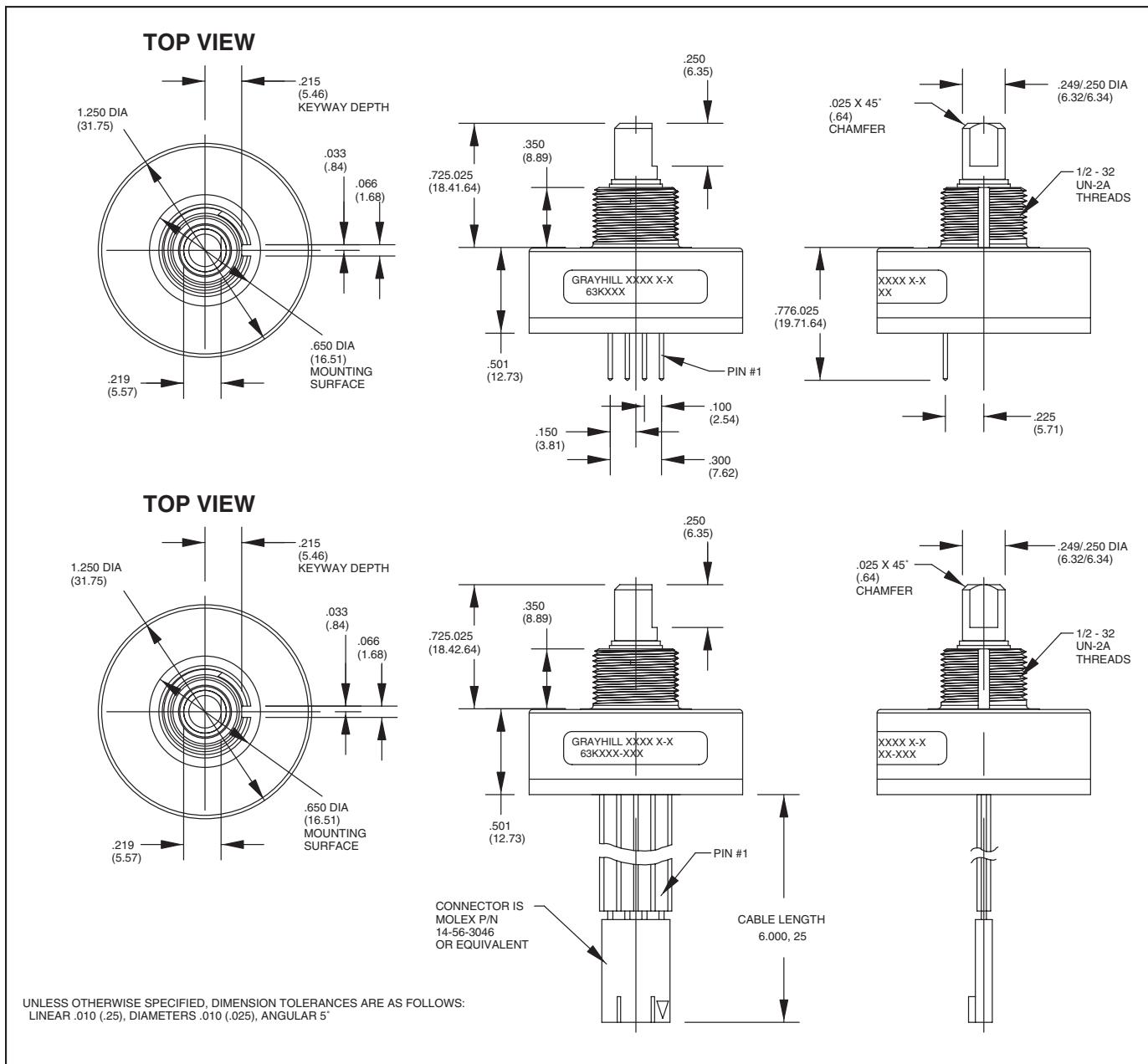
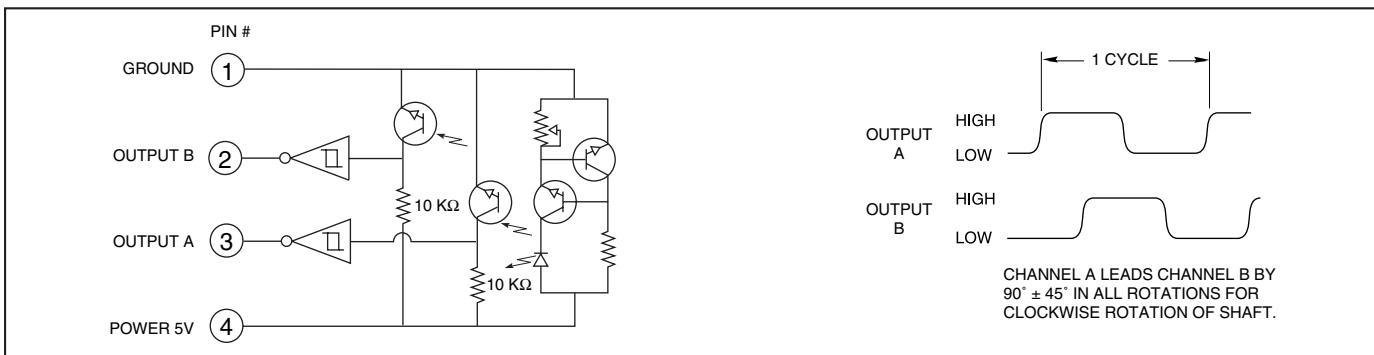


**SERIES 63K****High Resolution, Ball Bearing,  
4-Pin****FEATURES**

- 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 kΩ 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, half-sine 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

### Series

**Style:** K = Standard, 4-pin, high resolution

KS = Sealed, 4-pin, high resolution

**Cycles:** per channel per revolution = 25, 32, 50, 64, 100, 128, 256

63KS256-060

### Termination:

Blank (no dash or numbers): pins as described in drawing.

**Cable Termination:** 060 = 6.0in. Cable is terminated with Molex Connector P/N 14-56-3046.

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