

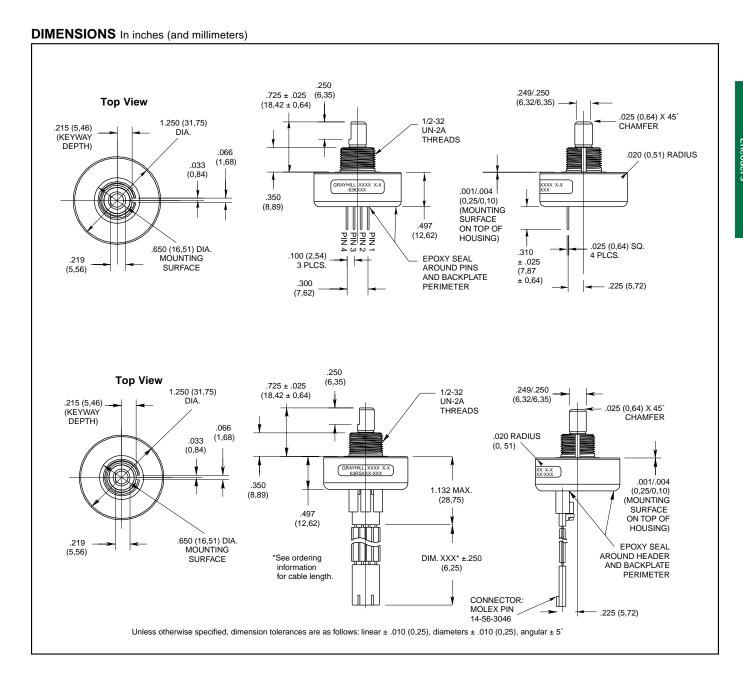
### **SERIES 63K**

# High Resolution, Ball Bearing, 4-Pin

### **FEATURES**

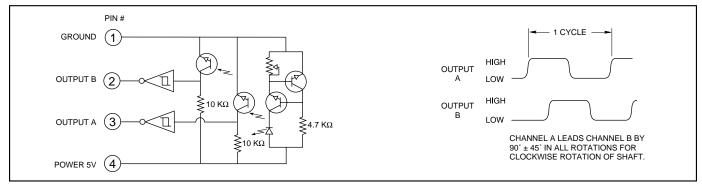
- 25, 32, 50, 64, 100, 128 and 256
  Cycles per Revolution Available
- Sealed Version Available
- Rugged Construction
- Cable or Pin Version
- 300 Million Life Cycles
- 5,000 RPM Shaft Rotation







### CIRCUITRY AND WAVEFORM: Standard Quadrature 2-Bit Code



### **SPECIFICATIONS**

### **Electrical Ratings**

Operating Voltage: 5.0 ±.25 Vdc Supply Current: 30 mA maximum at 5 Vdc Logic Output Characteristics:

Output Type: Open collector with integrated Schmitt Trigger and 10 K $\Omega$  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

Operating Torque: 0.5 in-oz maximum (no

detents) for unsealed versions

Externally Applied Shaft Force: Axial: 15 lbs maximum; Radial: 15 lbs maximum

**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: 6262-T9 aluminum alloy

Housing: Hiloy 610B

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

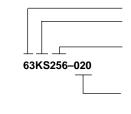
Connector: Glass-filled PCT, UL94V-0

## Bearing Subassembly

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

Bellville Spring: spring steel (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

### Termination:

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

Cable Termination: 020 = 2.0 inches minimum to 250 = 25 inches maximum. Provided in increments of 1/2 inch. (Example 035 = 3.5", 060 = 6".) Cable is terminated with standard Molex part no. 14-56-3046. Use any standard .100 center 4-pin header to interface with cable. Recommended to be mounted with Molex header part no. 70543-0003 or 70553-0003.

Control knobs available, see page E-39

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