

## SERIES 63K

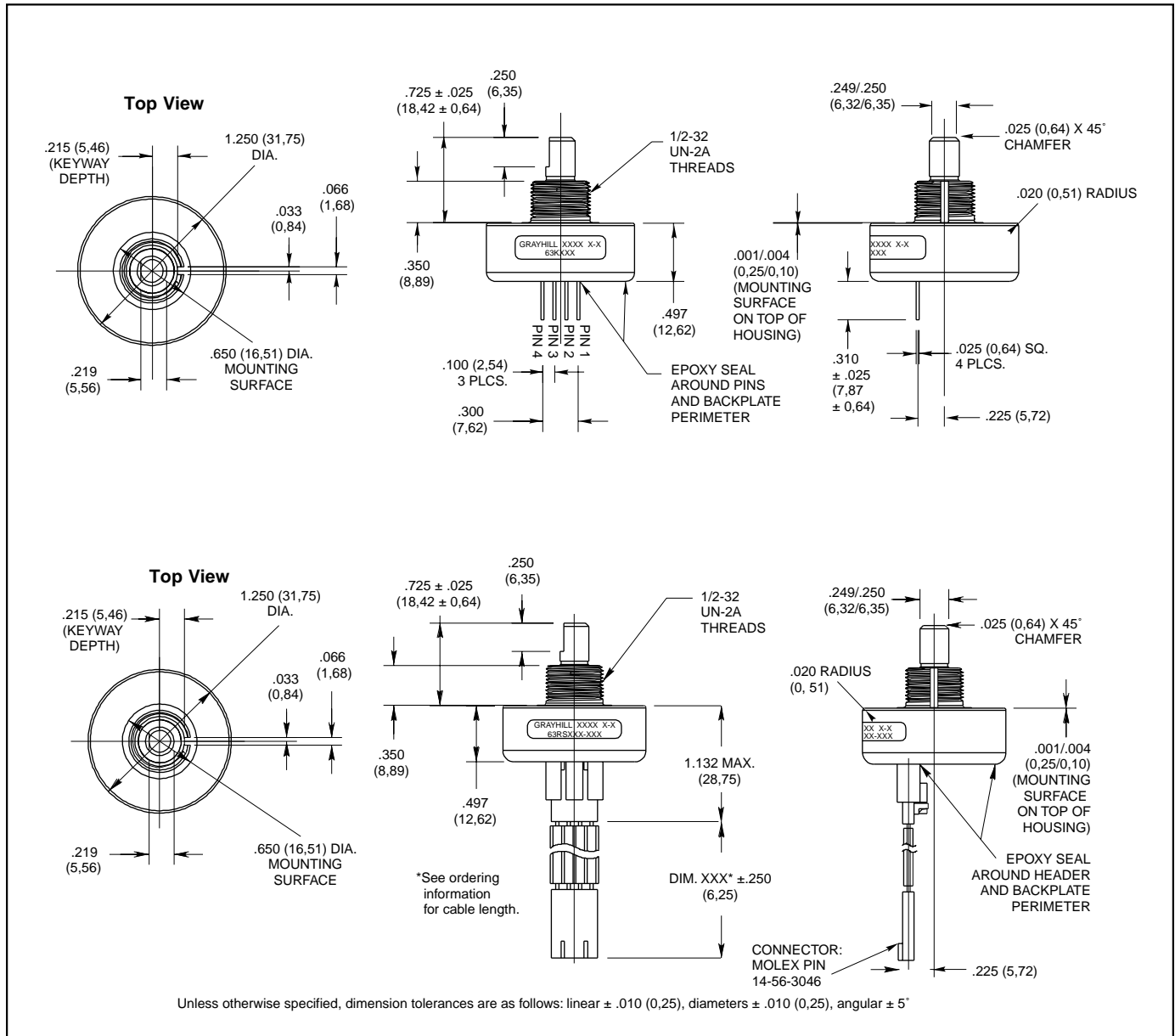
High Resolution, Ball Bearing,  
4-Pin

### 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



### DIMENSIONS In inches (and millimeters)



Optical and Mechanical Encoders

## 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 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  
**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

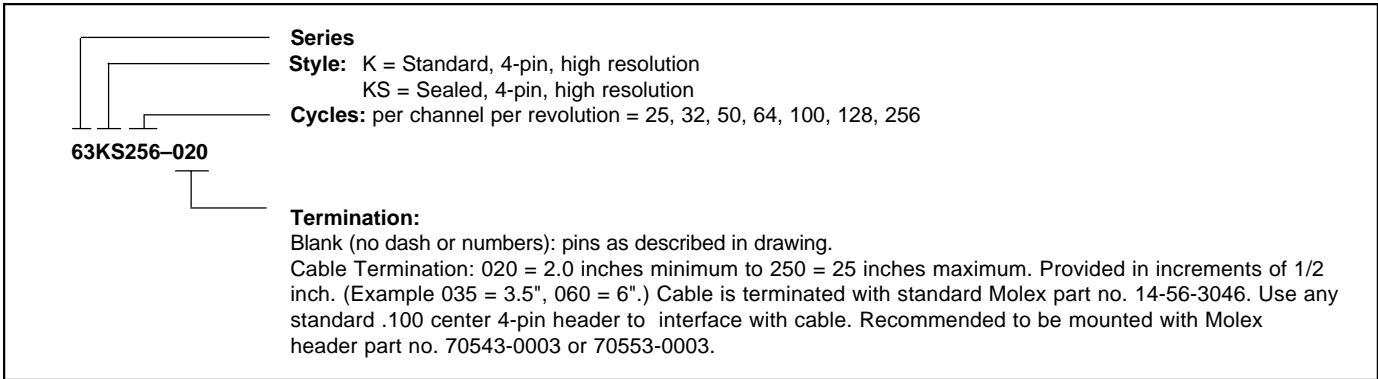
**Operating Temperature Range:** -40°C to 85°C  
**Storage Temperature Range:** -55°C to 100°C  
**Relative Humidity:** 90-95% at 40°C for 96 hours  
**Vibration Resistance:** Harmonic motion with amplitude of 15g, within a varied 10 to 2000 Hz frequency for 12 hours per MIL-STD-202, Method 204  
**Shock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



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.

**SERIES 63R**  
**High Resolution, Ball Bearing,**  
**5-pin (Polarized Connection)**

**FEATURES**

- 25, 32, 50, 64, 100, 128 and 256 Cycles per Revolution Available
- Sealed Version Available
- Rugged Construction
- Cable or Pin Versions
- 300 Million Life Cycles
- 5000 RPM Shaft Rotation
- Index Pulse Available

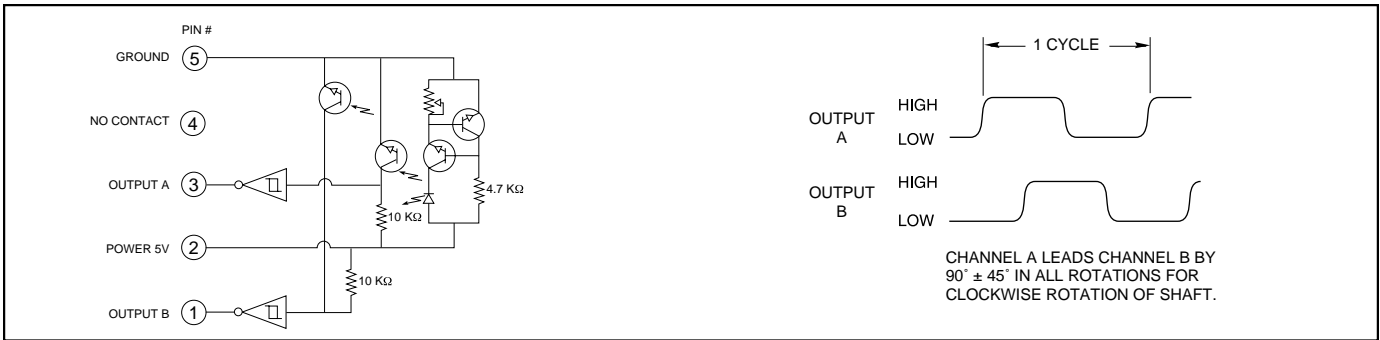


**DIMENSIONS** In Inches (and millimeters)



Optical and Mechanical Encoders

## 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  
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**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

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**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

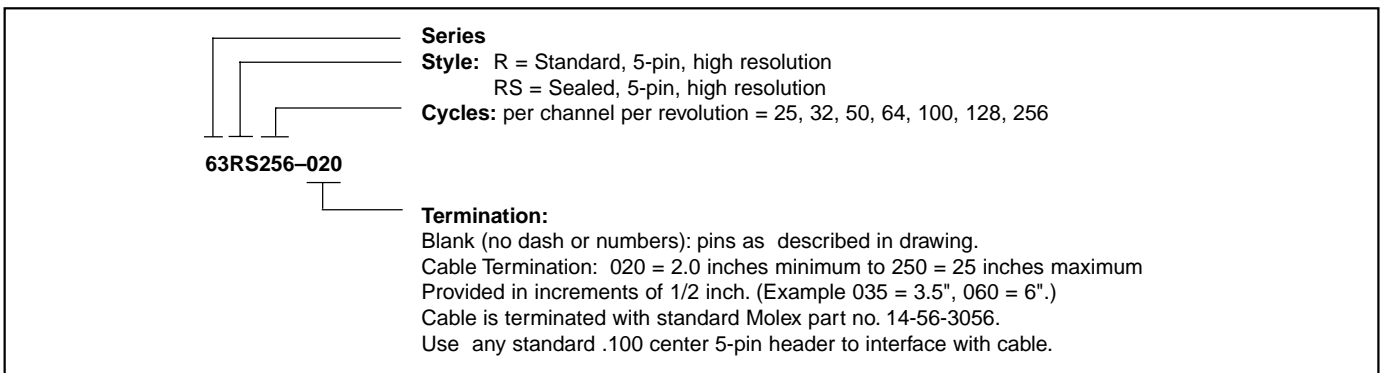
**Bushing:** 6262-T9 aluminum alloy  
**Housing:** Hiloy 610B  
**Shaft:** Stainless steel insert molded into nylon rotor support  
**Code Rotor and Aperture:** Chemically etched stainless steel/electroformed nickel  
**Printed Circuit Board:** NEMA Grade FR-4. Five microinches minimum gold over 100 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)  
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#### Bearing Subassembly

**Bearing:** NSK ABEC 5 (stainless steel)  
**Preload Collar:** 303 stainless steel  
**Spacer:** 303 stainless steel  
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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.