

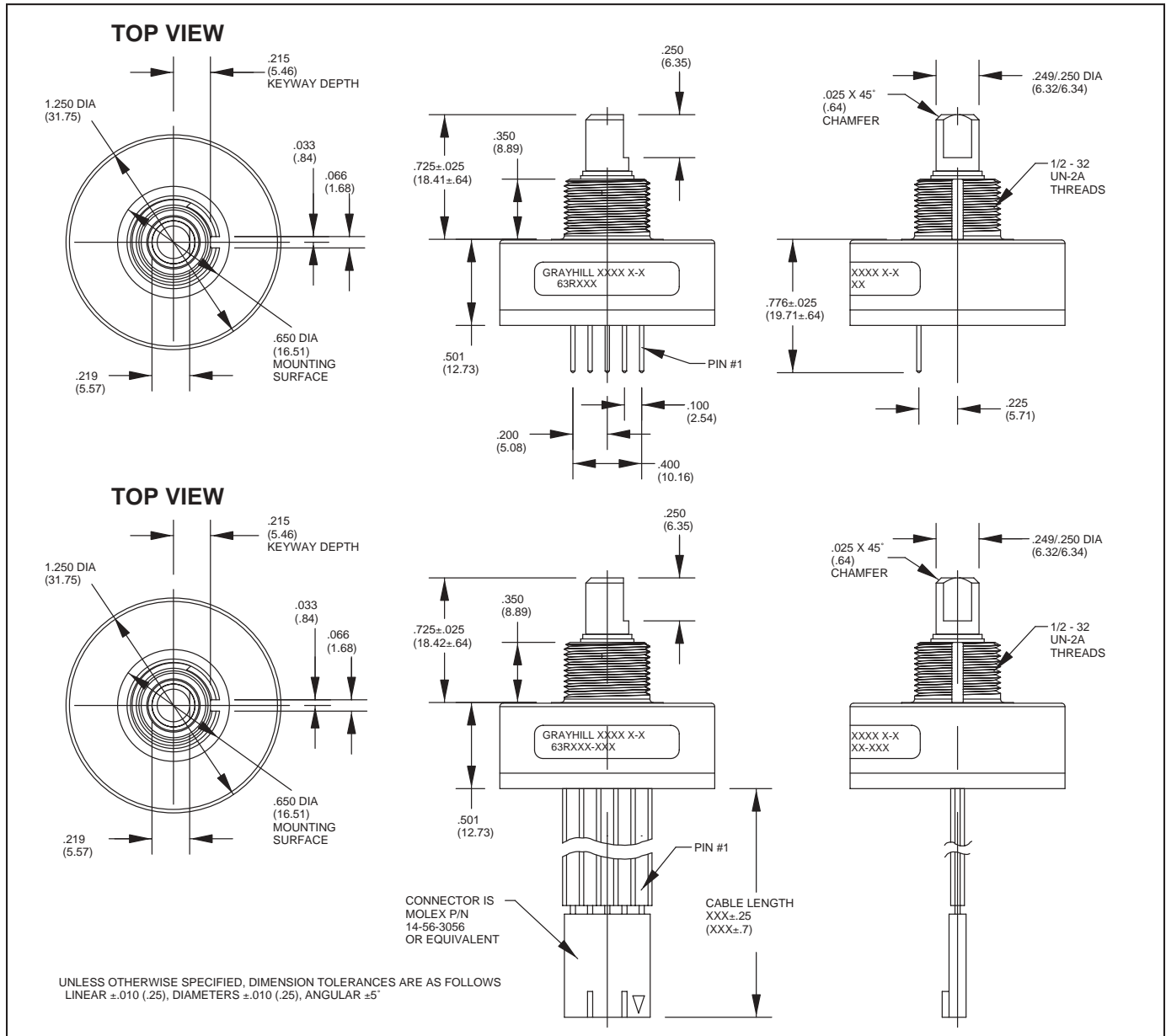
SERIES 63R
High Resolution, Ball Bearing,
5-pin (Polarized Connection)

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

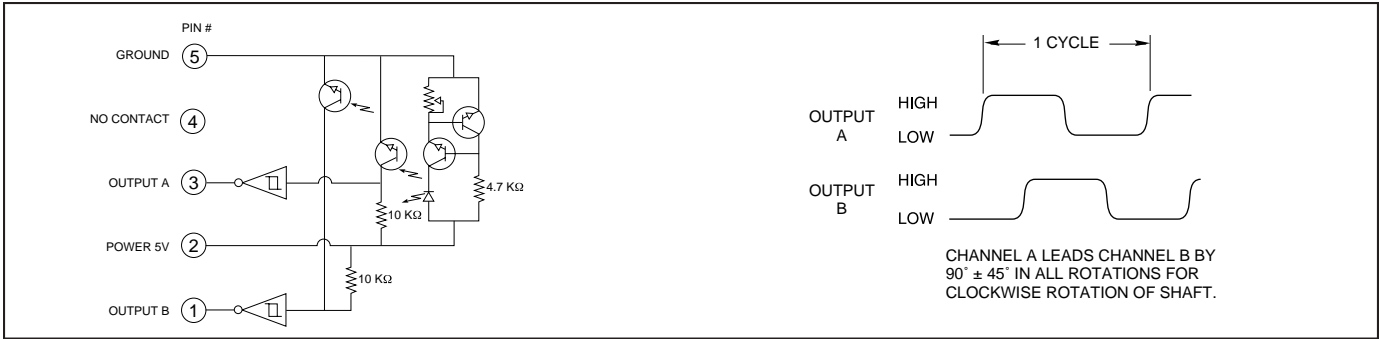


DIMENSIONS In Inches (and millimeters)



Optical and Mechanical Encoders

CIRCUITRY AND WAVEFORM: Standard Quadrature 2-Bit Code



SPECIFICATIONS

Electrical Ratings

Operating Voltage: $5 \pm .25$ 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, 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 or zinc diecast

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)

Connector: Glass-filled PCT, UL94V-0

Bearing Subassembly

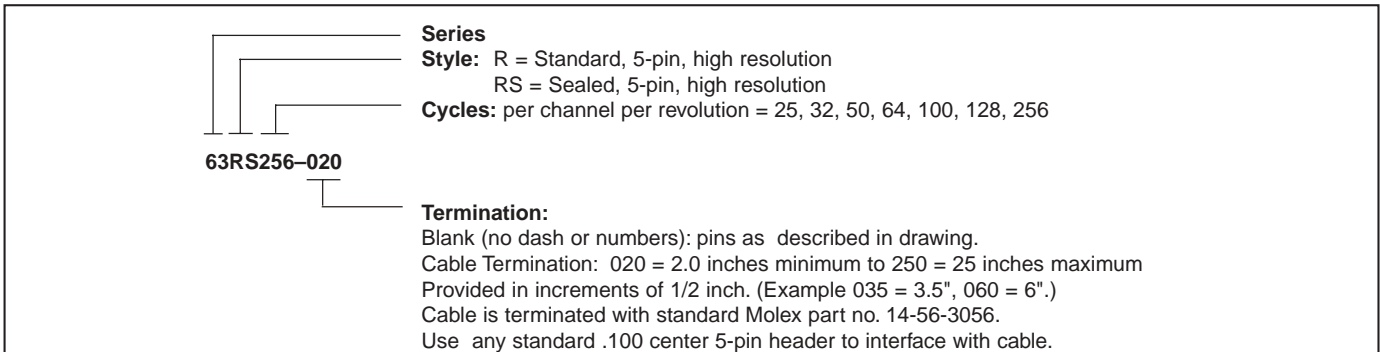
Bearing: NSK ABEC 5 (stainless steel)

Preload Collar: 303 stainless steel

Spacer: 303 stainless steel

Bellville Spring: Spring steel (stainless steel)

ORDERING INFORMATION



Control knobs available, see page I-57.

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