



SERIES 63R

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

FEATURES

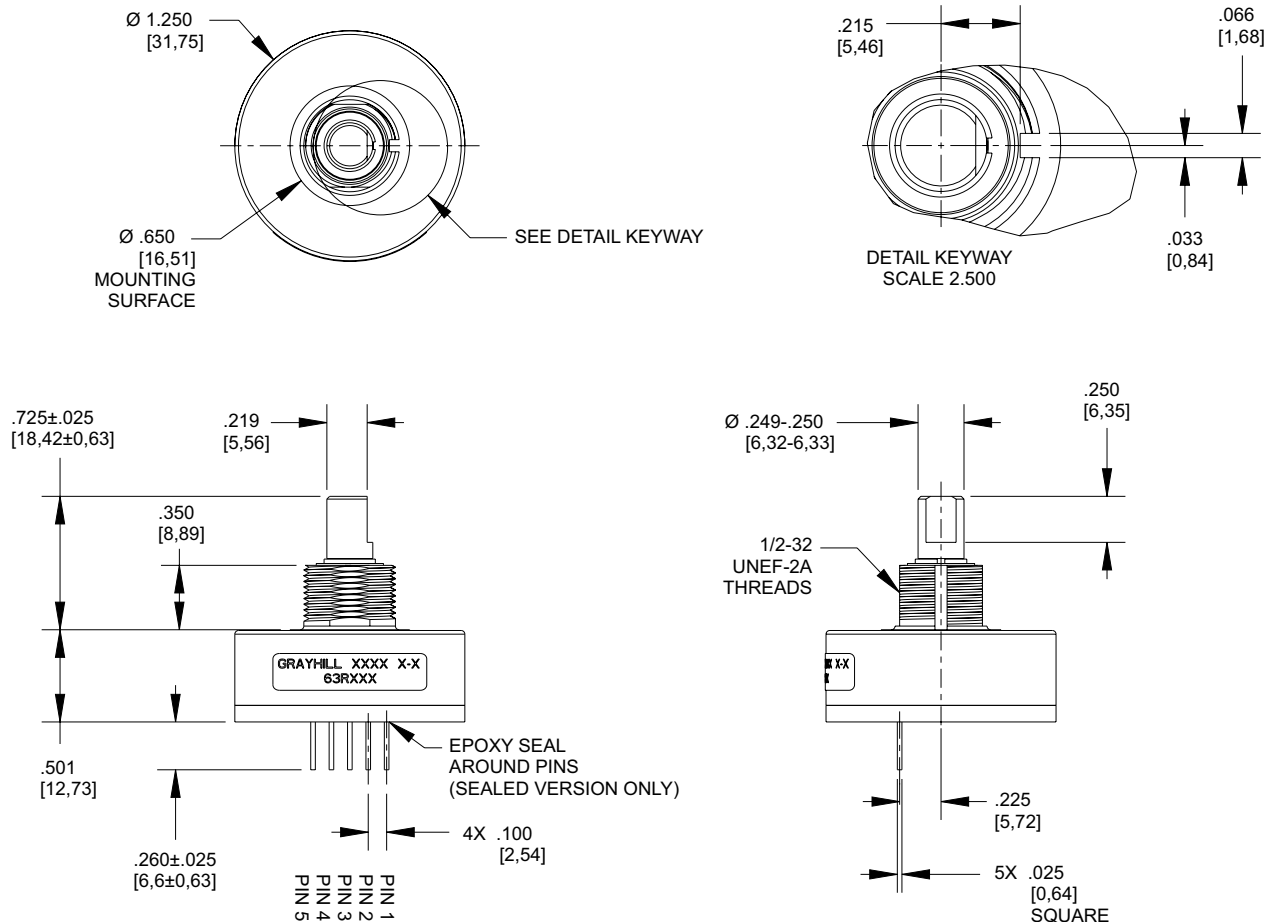
- Debris resistant Hall-effect sensor technology
- 25, 32, 50, 64, 100, 128, and 256 cycles per revolution available
- Sealed version available
- Rugged construction
- Cable or pin versions
- 300 million rotational cycles
- 3,000 RPM shaft rotation



DIMENSIONS in inches [and millimeters]

Unless otherwise specified, standard tolerances are:
Linear $\pm .010$
Diameter $\pm .025$
Angle $\pm 2.0^\circ$

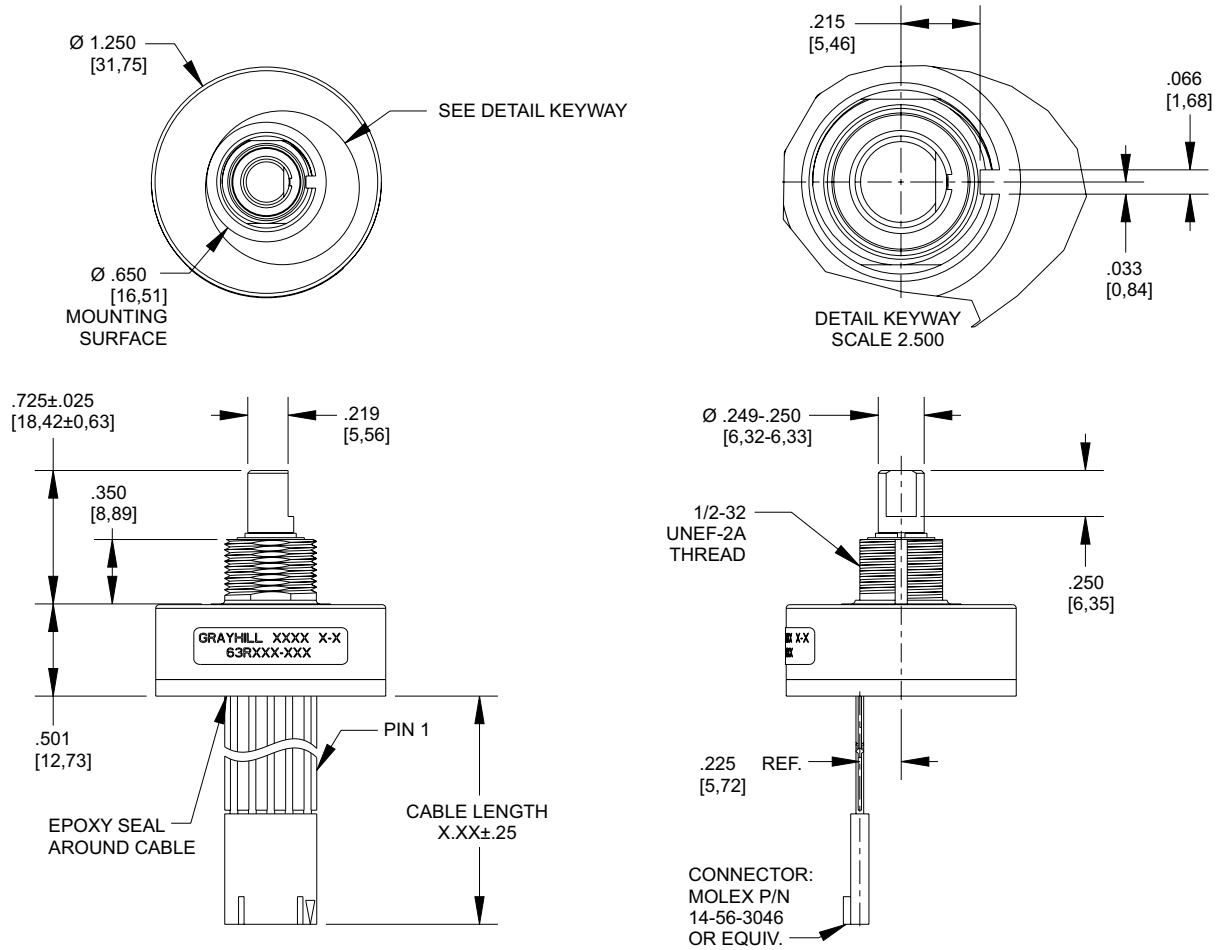
Pin Version



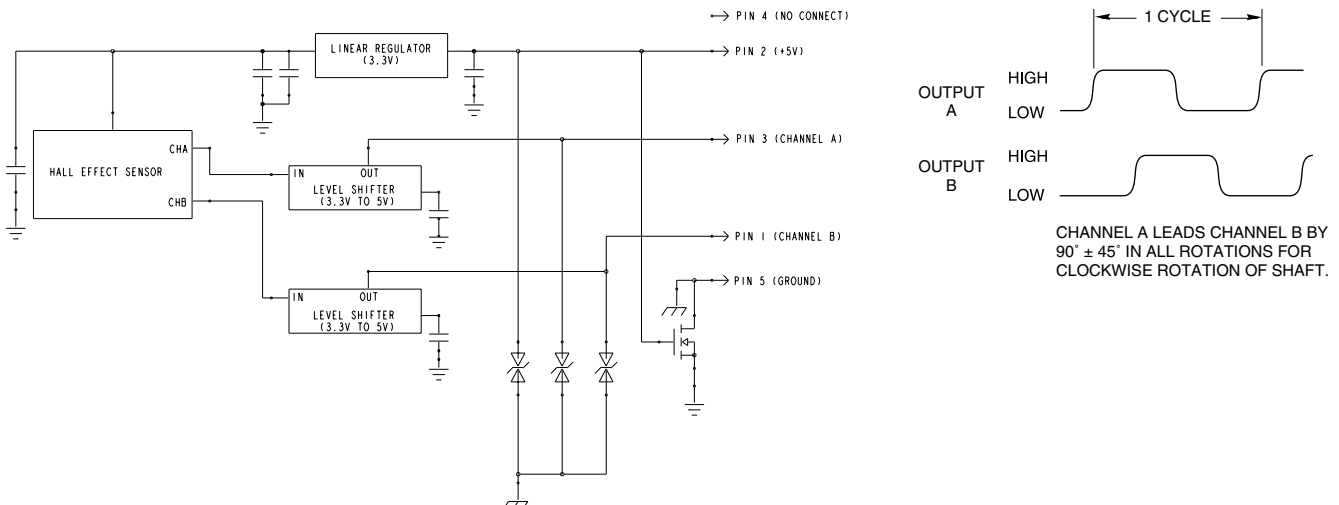
DIMENSIONS in inches [and millimeters]

Cable Version

Unless otherwise specified, standard tolerances are:
Linear $\pm .010$
Diameter $\pm .025$
Angle $\pm 2.0^\circ$



CIRCUITRY, TRUTH TABLE, AND WAVEFORM: Standard Quadrature 2-Bit Code



SPECIFICATIONS

Electrical Ratings

Operating Voltage	5.0±.25 Vdc
Supply Current	20 mA maximum at 5 Vdc
Logic Output Characteristics	Logic High: $V_{OH} = 4.5 V_{dc}$ min at $V_{cc} = 4.75 V_{dc}$ at 1 mA load Logic Low: $V_{OL} = 0.5 V_{dc}$ max at $V_{cc} = 5.25 V_{dc}$ at 1 mA load
Output Type	Push-pull output
Output Rise/Fall Time	100 nS max
Output Sink Current	8 mA minimum at output voltage of 0.35 V
Output Source Current	-8 mA minimum at output voltage of 3.95 V

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 15 g, within a varied 10 to 2000 Hz frequency for 12 hours per MIL-STD-202, Method 204
Shock Resistance	Test 1: 100 g for 6 mS, half-sine wave with velocity change of 12.3 ft/s Test 2: 100 g for 6 mS, sawtooth wave with velocity change of 9.7 ft/s

Bearing Subassembly

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

Mechanical Ratings

Mechanical Life	300 million revolutions
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

Materials and Finishes

Bushing	Zinc diecast
Housing	Zytel FR-50
Shaft	Stainless steel
Printed Circuit Board	NEMA grade FR-4
Backplate	Polyester
Header	Phosphor bronze, 200 microinches tin over 50 microinches nickel (pin version only)
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
Magnet	N-35SH sintered NdFeB

ORDERING INFORMATION

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

