

Optical Encoders

SERIES 62M Magnetic Detent

FEATURES

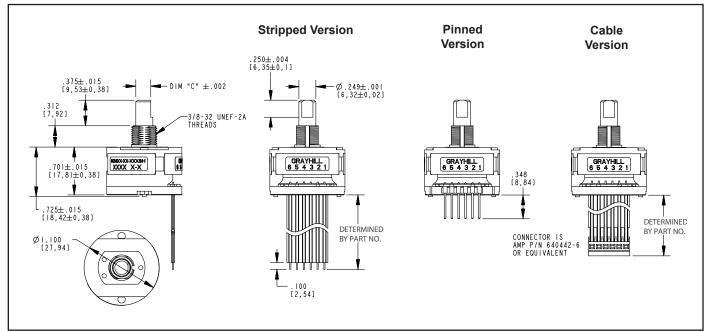
- Ultra Smooth Magnetic Detent
- 3 Million Rotational Cycles, Ten Times the Life of a Mechanical Detent System
- Optional Integrated Pushbutton
- Available in 24 Positions
- Choice of Cable Lengths

Applications

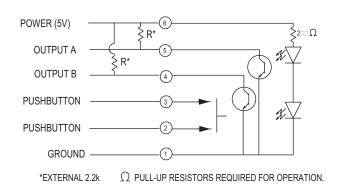
- Medical
- Audio
- Instrumentation



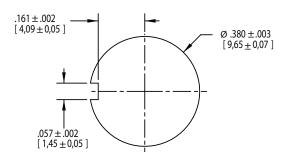
DIMENSIONS in inches (and millimeters)



SWITCH SCHEMATIC



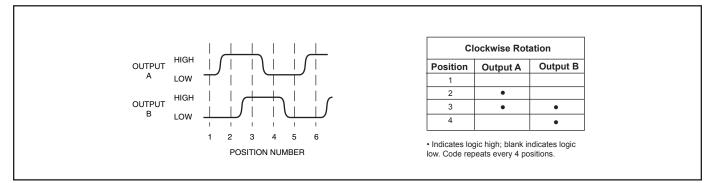
RECOMMENDED PANEL CUTOUT



Optical Encoders



WAVEFORM AND TRUTH TABLE



SPECIFICATIONS

Environmental Specifications Operating Temperature Range: -40° C to 85°

C Storage Temperature Range: -55°C to 100°C

Humidity: 96 hours at 90-95% humidity at 40°C

Mechanical Vibration: Harmonic motion with amplitude of 15 g, within a varied frequency of 10 to 2000 Hz

Mechanical Shock:

Test 1: 100 g for 6 ms half-sine wave with a velocity change of 12.3 ft/sec Test 2: 100 g for 6 ms sawtooth wave with a velocity change of 9.7 ft/sec

Rotary Electrical and Mechanical Specifications

Operating Voltage: 5.00±.25 Vdc **Supply Current:** 30 mA maximum at 5 Vdc **Output:** Open collector phototransistor, external pull-up resistors are required. **Output Code:** Two-bit quadrature, channel A leads channel B by 90° electrically during clockwise rotation of the shaft

Logic Output Characteristics: Logic high signal shall be no less

Logic low signal shall be no greater than 1.0 Vdc

Minimum Sink Current: 2.0 mA Power Consumption: 150 mW maximum Mechanical Life: 3 million rotational cycles of operation. One cycle is a rotation through all positions and a full return Rotational Torque: $H=1.70 \pm 1.00$ in-oz, M=1.25 \pm 0.75 in-oz, L=0.75 \pm 0.5 in-oz Mounting Torque: 15 in-lb maximum Shaft Pull-Out Force: 45 lbs minimum Shaft Push-Out Force: 45 lbs minimum Terminal Strength: 15 lbs minimum terminal pull-out force for cable or header termination Solderability: 95% free of pin holes and voids

Pushbutton Electrical and Mechanical Specifications

Rating: 10 mA at 5 Vdc Contact Resistance: <10 ohms Life: 3 million actuations minimum Contact Bounce: <4 ms make,<10 ms break Actuation Force: 2=200±75 grams, 3=300±90 grams, 4=510±150 grams Shaft Travel: .025 ± .010 inches

Materials and Finishes

Bushing: Zinc Diecast, Cadmium Plated per QQP-416, Class II, Type II Insert Molded into 25% Glass Reinforced Nylon Zytel FR-50 Shaft: NdFeB XE-3594 over Aluminum Stator: Powdered Metal per F-0000-20

Through Bolts: 305 Stainless Steel Through Bolts Nuts: Stainless Steel Spacer Washer: Brass Snap Dome: Stainless Steel Printed Circuit Boards: Nema Grade FR4, Double Clad with Copper, Plated with Gold over Nickel Infrared Light Emitting Diode Chips: Gallium Aluminum Arsenide Silicon Phototransistor Chips: Gold and Aluminum Alloys Resistor: Metal Oxide on Ceramic Substrate Solder Pins: Brass, Plated with Tin Code Rotor: Acetal (Delrin 100) Code Housing: Polyamide Polymer (Nylon 6/10 Alloy) Backplate Strain Relief: Polyamide Polymer (Nylon 6/10 Alloy - Hiloy-610) Cable: Copper Standard with Topcoat in PVC Insulation (Cabled Versions Only) Connector: PA4.6 with Tin Plated Copper Alloy (Cable/Connector Versions) Label: TT406 Thermal Transfer Cast Film Solder: Sn/Ag/Cu, Lead Free, No Clean Mounting Hex Nut: Cadmium over 1/2 Hard Brass Lockwasher: 8-18 Stainless Steel, Passivate Finish Pin Header: Hi-Temp Glass Filled Thermoplastic UL94V-0, Phosphor Bronze (Pinned Versions Only)

