

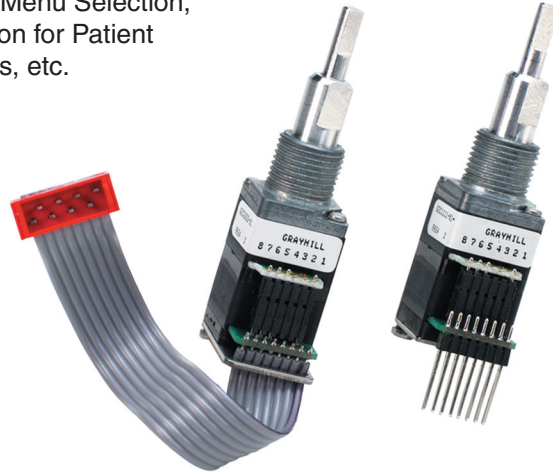
## SERIES 62C Concentric Shaft

### FEATURES

- Economical Size
- Combined Functionality
- Optically Coupled for more than a Million Cycles of Operations
- Optional Integral Pushbutton
- Compatible with CMOS, TTL, and HCMOS Logic
- Available with 12, 16, 24, and 32 Detent Positions for Deck
- Choices of Cable Length and Terminations
- Available in 3.3 Volt Input (contact Grayhill for details)

### APPLICATIONS

- Used to Set Radio Frequency, Drill Depth, RPM, Menu Selection, Parameter Selection for Patient Monitoring Devices, etc.

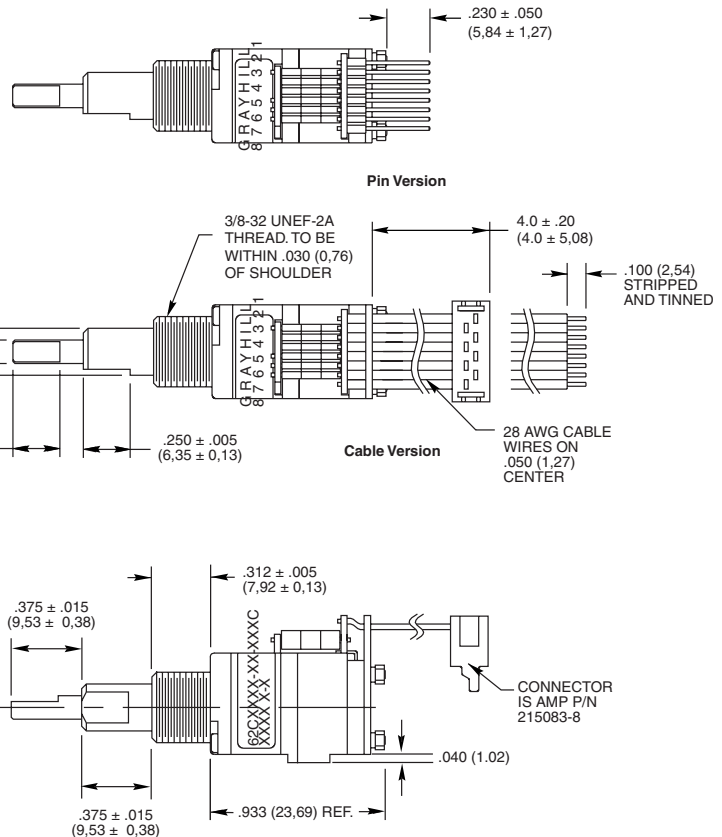
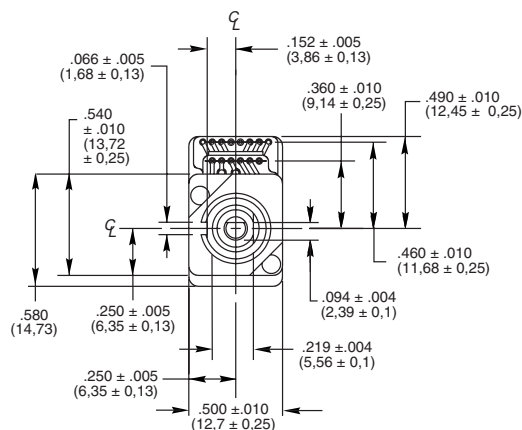


### DIMENSIONS in inches (and millimeters)

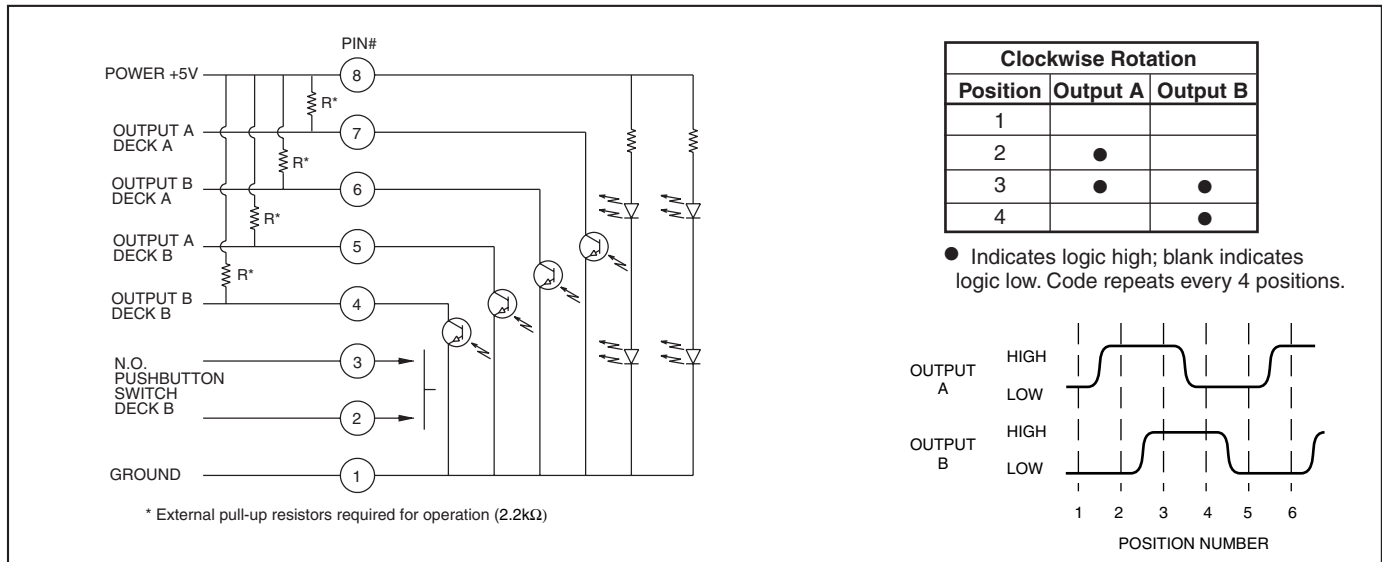
Unless otherwise specified, standard tolerance are:

Linear  $\pm .025$   
Diameter  $\pm .010$   
Angle  $\pm 2.0^\circ$

Deck A: 0.250 (6,35) shaft  
Deck B: 0.125 (3,18) shaft



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



## SPECIFICATIONS

## Pushbutton Switch Ratings

**Rating:** 5 Vdc, 10 mA, resistive  
**Contact Resistance:** less than 10 ohms (TTL or CMOS compatible)  
**Voltage Breakdown:** 250 Vac between mutually insulated parts  
**Contact Bounce:** less than 4 mS at make, less than 10 mS at break  
**Actuation Life:** 3,000,000 operations  
**Actuation Force:** 1000 ± 300 grams  
**Pushbutton Travel:** .010 / .025 inch

## Encoder Ratings

**Coding:** 2-bit quadrature coded output  
**Operating Voltage:** 5 ± .25 Vdc  
**Supply Current:** 50 mA maximum at 5 Vdc  
**Logic High:** 3.8V minimum  
**Logic Low:** 0.8V maximum  
**Logic Rise and Fall Times:** less than 30 mS  
**Operating Torque:** 2.0 in-oz ± 1.4 in-oz initially

**Rotational Life:** more than 1,000,000 cycles of operation (1 cycle = 360° rotation)  
**Shaft Push Out Force:** 45 lbs minimum  
**Mounting Torque:** 15 in-lbs maximum  
**Operating Speed:** 100 RPM maximum  
**Axial Shaft Play:** 0.010 max. for each shaft

## Environmental Ratings

**Operating Temp. Range:** -40°C to 85°C  
**Storage Temp. Range:** -55°C to 100°C  
**Relative Humidity:** 90–95% at 40°C, 96 hrs.  
**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: Tested at 100g for 6 mS, half sine, 12.3 ft/s Test 2: 100g for 6 mS, sawtooth, 9.7 ft/s

## Materials and Finishes

**Bushing:** Zinc casting  
**Shaft:** Aluminum  
**Shaft Retaining Ring:** Stainless steel  
**Detent Spring:** Stainless steel  
**Printed Circuit Board:** NEMA grade FR-4  
**Terminals:** Brass, tin-plated  
**Mounting Hardware:** One brass, nickel-plated nut and zinc-plated spring steel with clear trivalent chromate finish lockwasher supplied with each switch. (Nut is 0.094 inches thick by 0.433 inches across flats)  
**Rotor:** Thermoplastic  
**Code Housing:** Reinforced thermoplastic  
**Pushbutton Dome:** Stainless steel  
**Pushbutton Housing:** Thermoplastic  
**Pushbutton Contact:** Brass, nickel-plated  
**Dome Retaining Disk:** Thermoplastic  
**Strain Relief:** Stainless steel  
**Cable:** 28 AWG, stranded/top coated wire, PVC coated on .050 centers (cable version)  
**Header Pins:** Phosphor bronze, tin-plated  
**Insulator:** Glass-filled polyester  
**Spacer:** Zinc casting

## ORDERING INFORMATION

