

# Optical Encoders

Series 62P Low Cost, PC Mount



## FEATURES

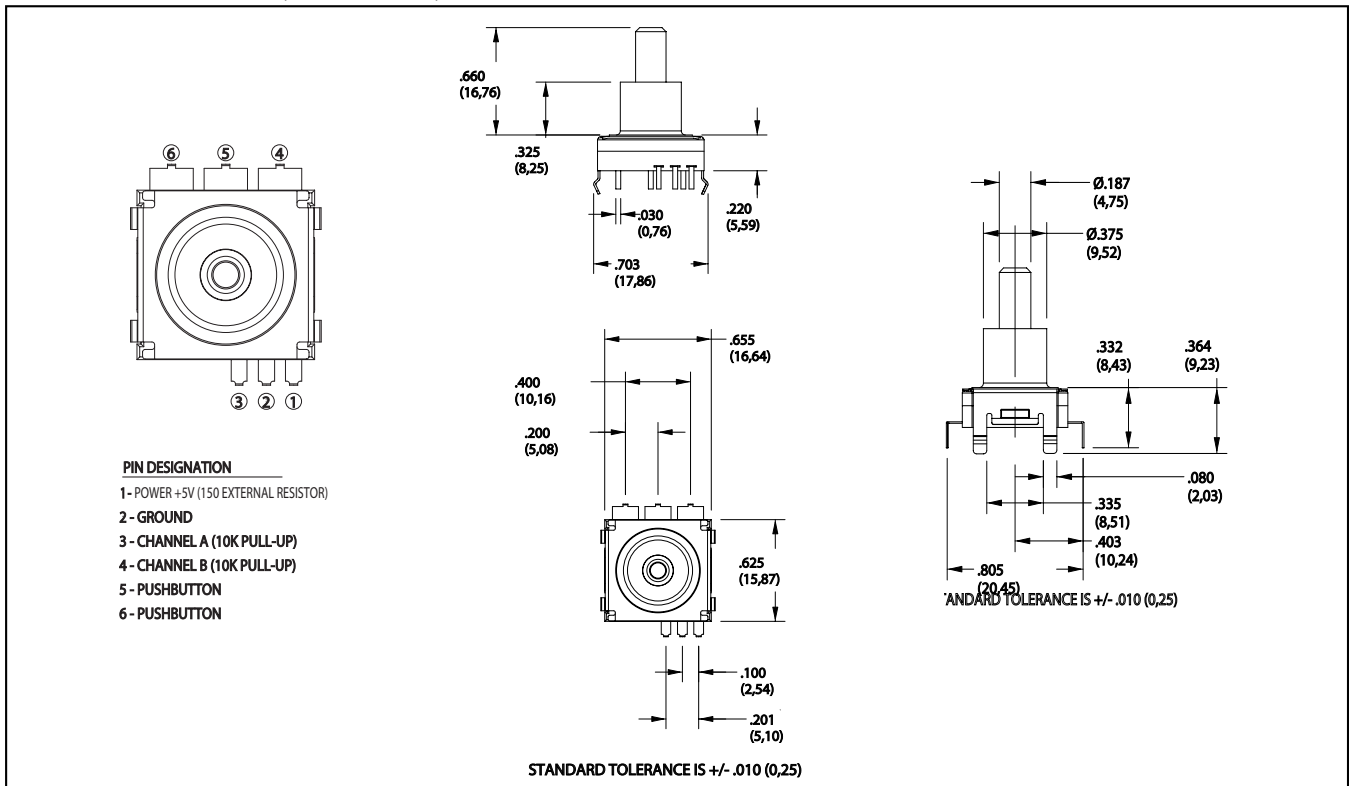
- Low Cost
- Compact Size
- PC Mount
- No De-Bouncing Required
- Reliable, Up to 2 Million Cycles
- Choice of Detent and Pushbutton Force
- Available in 16 Positions
- Quadrature Output

## APPLICATIONS

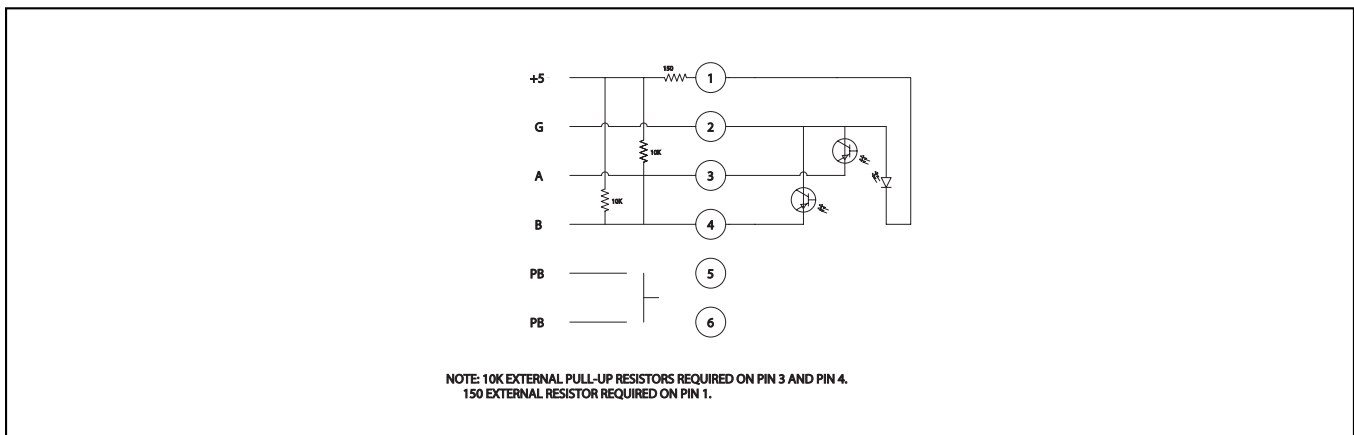
- Automotive Controls
- White Goods
- Audio



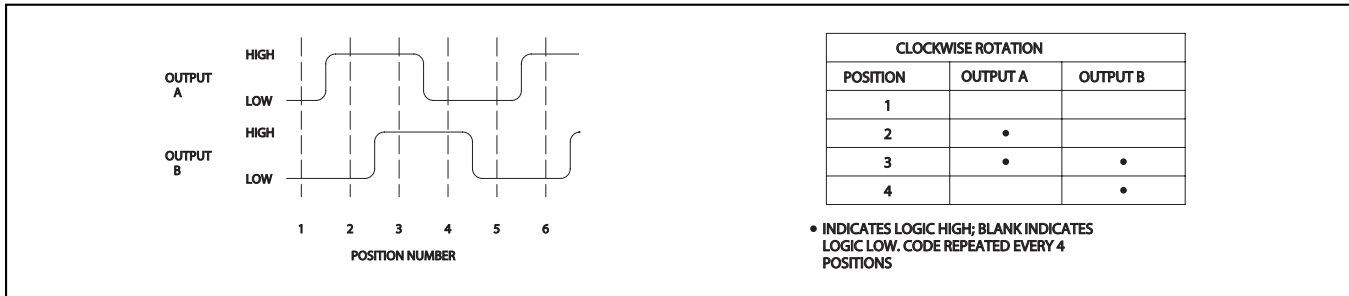
## DIMENSIONS In inches (and millimeters)



## CIRCUITRY AND JOYSTICK OPERATION Standard Quadrature 2-Bit Code



### WAVEFORM AND TRUTH TABLE Standard Quadrature 2-Bit Code



### SPECIFICATIONS

#### Electrical Ratings

**Operating Voltage:** 5 Vdc +/- .25 Vdc  
**Supply Current:** 30mA maximum at 5 Vdc  
**Logic High:** 3.0V minimum  
**Logic Low:** 1.0V maximum  
**Logic Rise and Fall:** less than 30 Ms

#### Pushbutton Switch Ratings

**Rating:** 5.0 Vdc at 10mA 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 and less than 10 mS at break  
**Actuation Life:** 3,000,000 operations  
**Actuation Force:** 6: 600 +/- 200 grams  
 4: 450 +/- 150 grams

#### Mechanical Ratings

**Operating Torque:**  
 H: 1.4 in-oz +/- 0.6 in-oz initial  
 L: 0.6 in-oz +/- 0.3 in-oz initial  
**Rotational Life:**  
 H&L: 500,000 cycles  
 N: 2 million cycles  
 (1 cycle = 360 degree rotation and return)  
**Shaft Push Out Force:** 20 lbs minimum  
**Operating Speed:** 100 RPM maximum  
**Axial Shaft Play:** .010 maximum

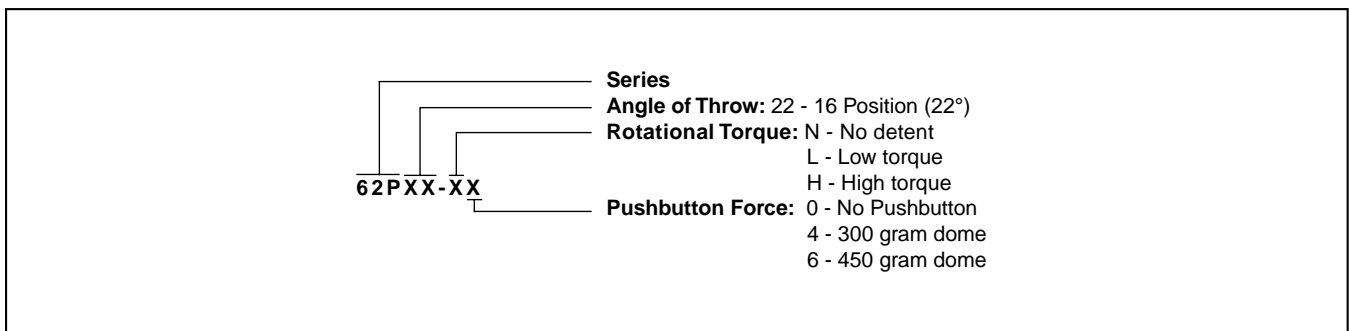
#### Environmental Ratings

**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: Tested at 100g for 6mS, half sine, 12.3 ft/s.  
 Test 2: 100g for 6mS, Sawtooth, 9.7 ft/s

#### Materials and Finishes

**Code/Pushbutton Housing:** Thermoplastic  
**Shaft:** Thermoplastic  
**Code/Detent Rotor:** Reinforced Thermoplastic  
**Bushing:** Thermoplastic  
**Terminal Pins:** Brass, Tin plated  
**Detent Spring:** Stainless Steel  
**Dome:** Stainless Steel  
**Pushbutton Contact:** Nickel plated brass  
**Phototransistor:** Planar Silicon  
**Detent Balls:** .0625 dia. Stainless Steel  
**Infrared Emitter:** Gallium Aluminum Arsenide  
**Label:** White Thermal Transfer Cast Film. Adhesive Coated  
**Bracket:** Stainless Steel, Tin plated

### ORDERING INFORMATION



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