Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!


## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

# SERIES 62NG

## Encoder with a Separate Non-rotating Pushbutton Shaft

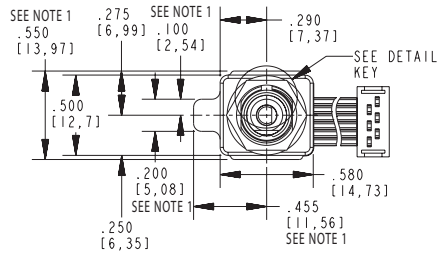
### FEATURES

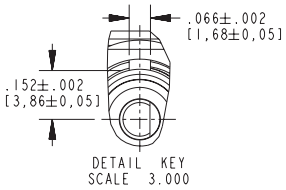
- Non-turn pushbutton to ensure pushbutton text and orientation
- Low cost version of our popular 62N series
- Patented light pipe technology
- Optically coupled for more than a million cycles
- Available for 5 Vdc & 3.3 Vdc
- Available in 16, 20, 24, and 32 detent positions
- Choices of cable length and terminations

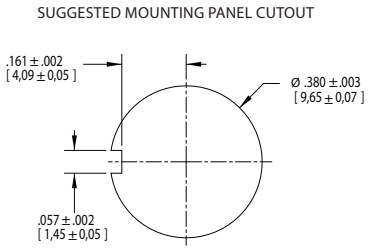
### APPLICATIONS

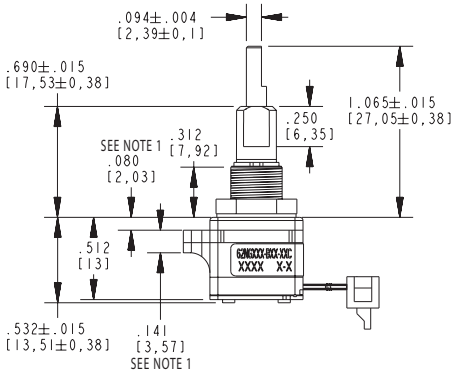
- Global positioning
- Driver information systems
- Ultrasound, patient monitor and other medical equipment
- Commercial and military cockpit controls

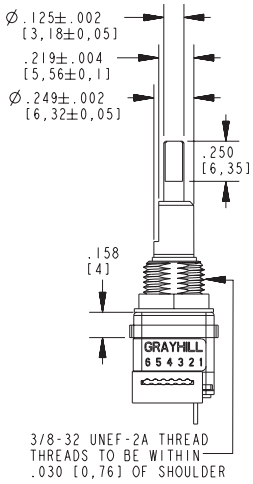
### DIMENSIONS in inches (and millimeters)



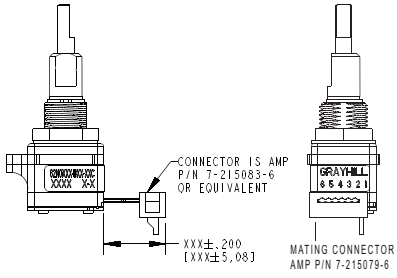



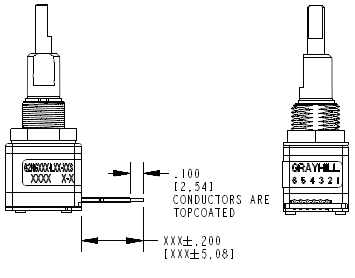

Unless otherwise specified, standard tolerances are ±0.010"

NOTE 1 - Features are only present on ball & spring detent style encoders

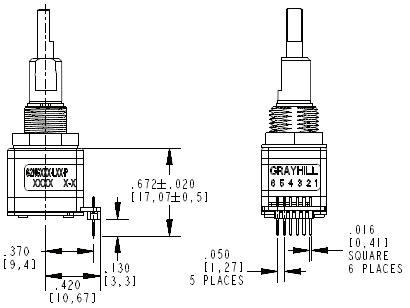
### TERMINATION OPTIONS




.050" Connector




.050" Stripped Cable




.050" Pin Header

## SPECIFICATIONS

### Pushbutton Switch Ratings

**Electrical Rating:** at 24 Vdc max, 10 mA, resistive
**Contact Resistance:** less than 10 ohms
**Pushbutton Life Expectancy:** 1 million actuations minimum
**Contact Bounce:** less than 4 mS at make and less than 10 mS at break
**Actuation Force:** 5 = 455 ±140 g
**Pushbutton Travel:** .019±.008 in

### Encoder Ratings

**Coding:** 2-bit quadrature coded output
**Operating Voltage:** NG5: 5.0 ±.25 Vdc, NG3: 3.3 ±.125 Vdc
**Supply Current:** NG5: 30 mA maximum @5.0 Vdc, NG3: 30 mA maximum @3.3 Vdc
**Logic Output Characterisitics:**
**Logic High:** NG5: 3.0 Vdc minimum, NG3: 2.0 Vdc minimum
**Logic Low:** NG5: 1.0 Vdc maximum, NG3: 1.0 Vdc maximum
**Mechanical Life:** 1,000,000 cycles (one cycle is a rotation through all positions and a full return)
**Max Rotational Speed**: 100 RPM

**Shaft Pushout / Pullout Force:** 45 lbs/45 lbs minimum
**Mounting Torque:** 15 in-lbs maximum
**Terminal Strength:** 15 lbs minimum cable or header pullout force, MIL-STD-202, Method 211A, Test Condition A
**Solderbility:** 95% free of pin holes and voids, MIL-STD-202, Method 208

### Environmental Ratings

**Operating Temperature Range:** -40°C to 85°C, IEC 68-2-1, Test Aa and IEC 68-2-2, Test Aa
**Storage Temperature Range:** -40°C to 85°C, IEC 68-2-1, Method Aa and IEC 68-2-2, Method Ba
**Mechanical Shock:** Test 1: 100G, 6 mS, half sine, 12.3 ft/s; Test 2: 100G, 6 mS, sawtooth, 9.7 ft/s, MIL-STD-202, Method 213, Test Condition C and I
**Relative Humidity:** 90–95% at 40°C for 96 hours, MIL-STD-202, Method 103B
**Mechanical Vibration:** Harmonic motion with amplitude 15G within a varied 10 - 2000Hz frequency for 12 hours, MIL-STD-202, Method 204, Test Condition B

### Materials and Finishes

**Shafts:** Zinc
**Bushing:** Zinc
**Header Pins:** Tin- plated phosphor bronze
**Hex Nut**: Nickel plated brass
**Lockwasher**: Spring steel, zinc plate with clear trivalent chromate finish
**Cable**: Copper stranded with topcoat in PVC insulation (cable version only)

### EMC Ratings

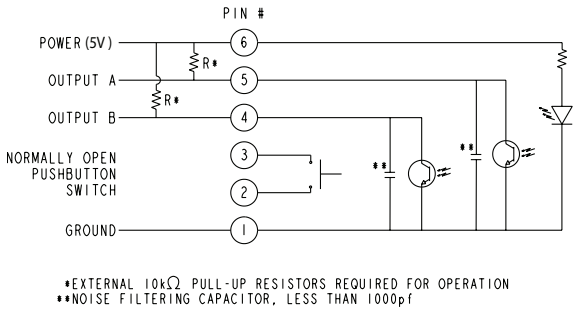
**Radiated Immunity:** Meets IEC 61000-4-3, level 3
**Conducted Immunity:** Meets IEC 61000-4-6, level 3
**Radiated Emissions:** Meets ANSI C63.4
**Conducted Emissions:** Meets EN 55022
**Electrostatic Discharge:** Meets IEC 61000-4-2
**Power Frequency Magnetic Field:** Meets IEC 61000-4-8

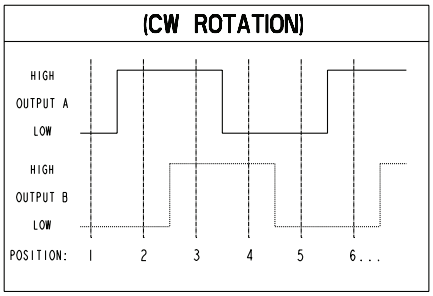


**INITIAL AVERAGE ROTATIONAL TORQUE (IN-OZ)**
**50% OF INITIAL TORQUE THROUGHOUT LIFE**

| | LOW LEAF SPRING (LL) | HIGH LEAF SPRING (LH) | LOW BALL & SPRING (BL) | HIGH BALL & SPRING (BH) |
|---|---|---|---|---|
| 16 POSITION | 2.00±1.40 | 3.50±1.40 | 0.90±0.45 | 1.60±0.90 |
| 20 POSITION | 2.00±1.40 | 3.50±1.40 | 0.80±0.40 | 1.60±0.90 |
| 24 POSITION | 2.00±1.40 | 3.50±1.40 | 0.70±0.40 | 1.60±0.90 |
| 32 POSITION | 2.00±1.40 | 3.50±1.40 | 0.60±0.40 | 1.15±0.65 |

## CIRCUITRY, TRUTH TABLE, AND WAVEFORM

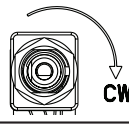


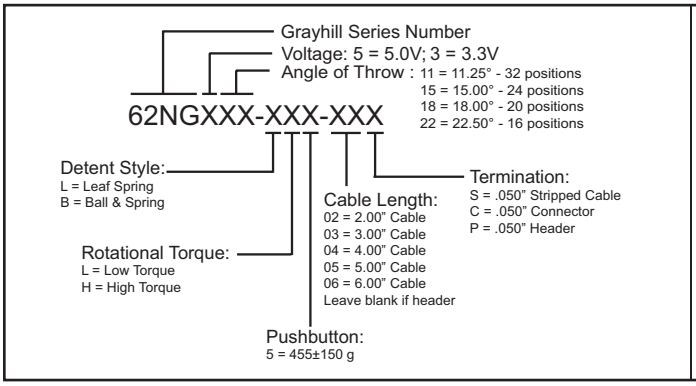

(CW ROTATION)

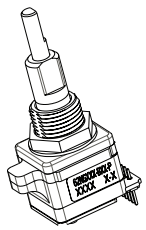
| POSITION | OUTPUT A | OUTPUT B |
|---|---|---|
| 1 | | |
| 2 | ● | |
| 3 | ● | ● |
| 4 | | ● |

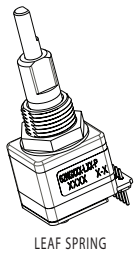
BLANK = LOGIC LOW ● = LOGIC HIGH
CODE REPEATS EVERY FOUR POSITIONS.




## ORDERING INFORMATION





BALL & SPRING DETENT STYLE


LEAF SPRING DETENT STYLE