

## SERIES 62AG

Price Competitive Solution

### FEATURES

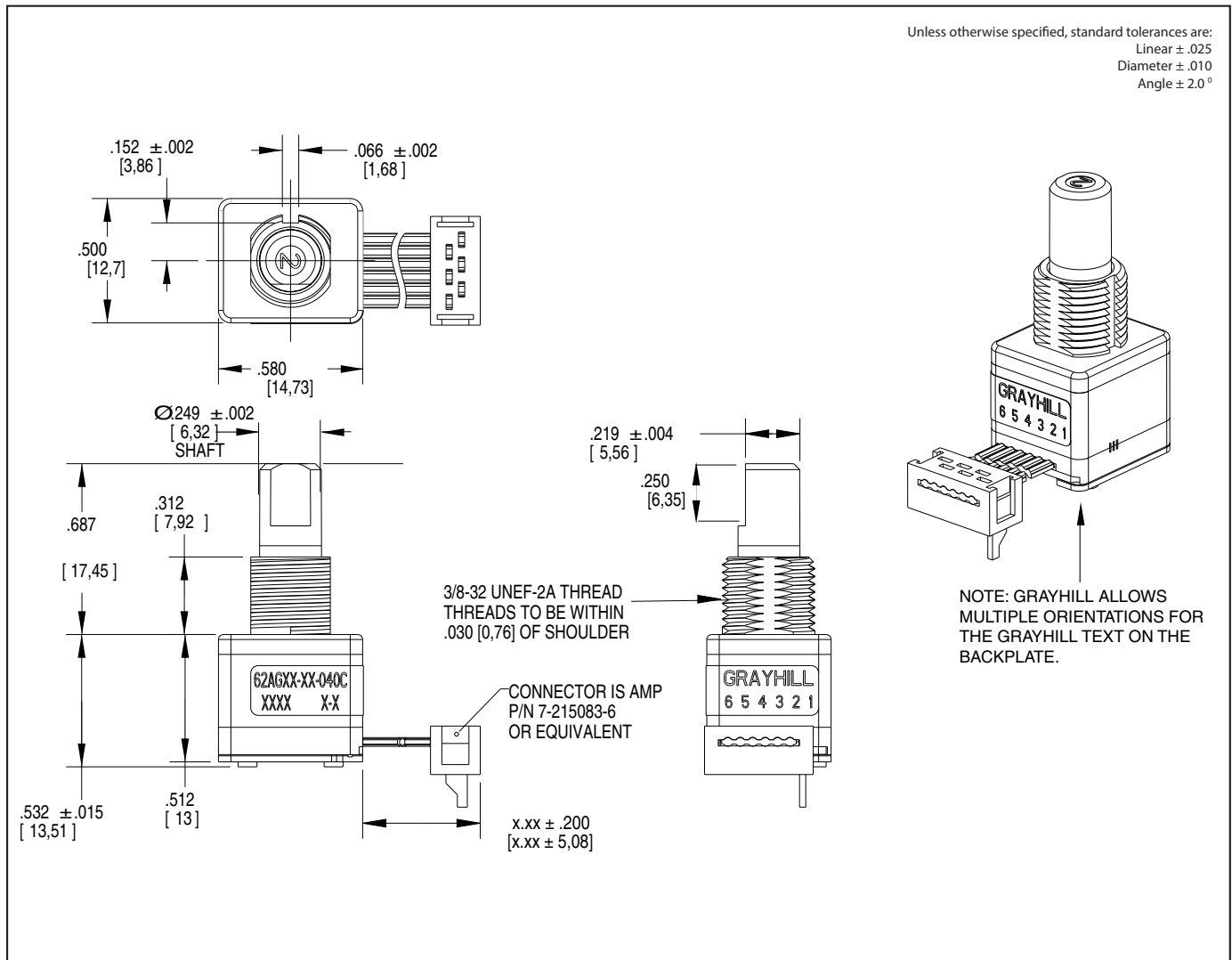
- Over 1 million rotational cycles
- 2-bit gray code output
- Quadrature coding
- Available in 16, 20, 24 and 32 detent positions
- Choices of cable length and terminations
- Available for 5Vdc and 3.3Vdc
- Optional integrated pushbutton
- Patented light pipe technology
- Cost competitive with mechanical encoders at higher volumes

### APPLICATIONS

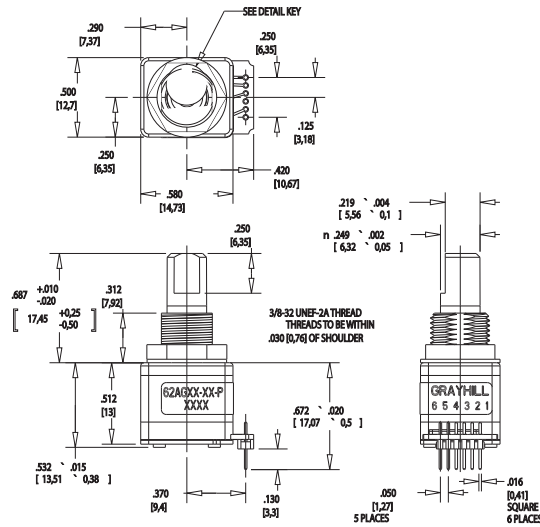
- Automotive
  - audio systems
  - navigation systems
- Medical
  - patient monitoring systems
- Test & Measurement
  - analyzers
  - oscilloscopes
- Audio & Video
  - consumer electronics
  - professional editing equipment



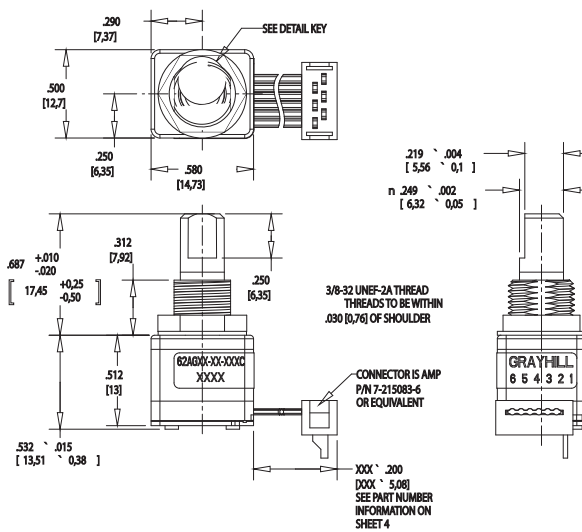
### DIMENSIONS in inches (and millimeters)



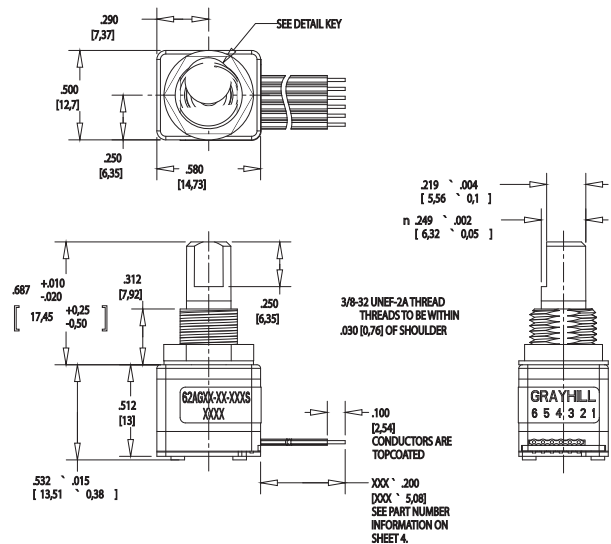
## Termination Options



P - .050 Center Pins with 0.185 inch length

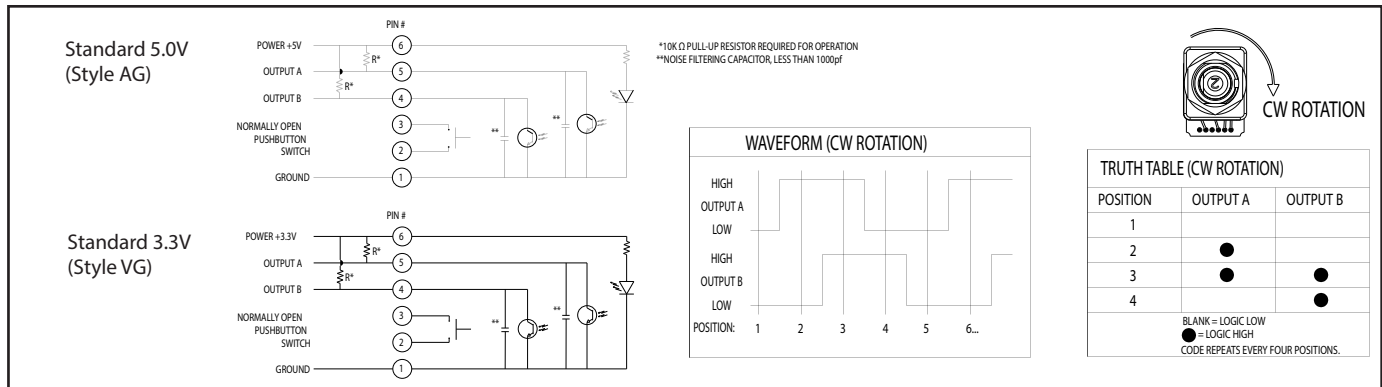


C - .050 Center Ribbon Cable with connector



S - .050 Center Ribbon Cable with .100 stripped end

## WAVEFORM AND TRUTH TABLE



## SPECIFICATIONS

## Environmental Specifications

Operating Temperature: -40°C to 85°C  
 Storage Temperature: -40°C to 85°C  
 Humidity: 96 hours @ 90-95% humidity @ 40°C  
 Mechanical Vibration: Harmonic motion with amplitude of 15g within a varied frequency of 10 to 2000 Hz for 12 hours  
 Mechanical Shock:  
 Test 1: 100g for 6 ms half-sine wave with a velocity change of 12.3 ft/s.  
 Test 2: 100g for 6 ms sawtooth wave with a velocity change of 9.7 ft/s.

## Rotary Electrical and Mechanical Specifications

Operating Voltage:  
 AG Style 5.00±0.25 Vdc  
 VG Style 3.30±0.125 Vdc  
 Supply Current:  
 AG Style 30 mA maximum  
 VG Style 30 mA maximum  
 Logic Output Characteristics:  
 AG Style - Logic high no less than 3.0 Vdc.  
 Logic low shall be no greater than 1.0 Vdc.  
 VG Style - Logic high no less than 2.0 Vdc.  
 Logic low shall be no greater than 1.0 Vdc.  
 Output: Open Collector Phototransistor  
 Optical Rise Time: 30ms maximum.  
 Optical Fall Time: 30ms maximum.

## Average Rotational Torque:

Low = 2.0±1.4 in-oz initially.  
 High = 3.5±1.4 in-oz initially.  
 50% of initial value after 1 million cycles.  
 Mechanical Life: 1,000,000 cycles of operation. 1 cycle is a rotation through all positions and a full return.  
 Mounting Torque: 15in-lbs. maximum  
 Shaft Pushout Force: 45 lbs. minimum  
 Terminal Strength: 15 lbs. Cable pull out force minimum  
 Solderability: 95% free of pin holes & voids  
 Maximum rotational speed: 100 rpm.

## Pushbutton Electrical and Mechanical Specifications

Rating: 10 mA @ 5 Vdc  
 Contact Resistance: <10 Ω (Compatible with CMOS or TTL)  
 Life: 1 million actuations minimum  
 Contact Bounce: <4 ms make, <10ms break  
 Actuation Force: 5 = 510±150 grams, 9 = 950±200 grams  
 Shaft Travel: .017 ± .008 INCH

## Materials and Finishes

Bushing: Zamak 2  
 Shaft: Zamak 2

Detent Rotor: Reinforced Nylon Zytel 70G33L UL 94

Detent Spring: 303 Stainless Steel  
 Housing, Upper: Nylon 6/6 25% glass reinforced. Zytel FR-50

Light Pipe: Lexan, GE

Code Rotor: Delrin 100

Housing, Lower: Nylon 6/6 25% glass reinforced. Zytel FR-50

Pushbutton Actuator: Reinforced nylon. Zytel 70G33L UL 94

Pushbutton Dome: Stainless Steel

Printed Circuit Board: NEMA Grade FR4, Double clad with copper, Plated with gold over nickel

Infrared Emitting Diode: Gallium Arsenide

Phototransistor Diode: NPN Silicon

Resistor: Metal oxide on ceramic substrate  
 Spacer: Pet plastic

Backplate: Stainless Steel

Label: TT406 thermal transfer cast film.

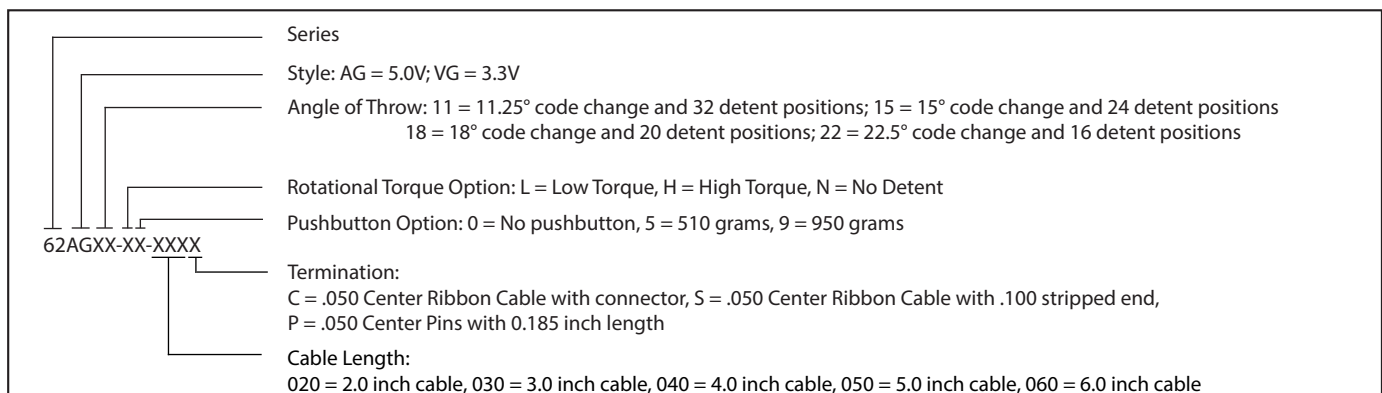
Solder: 96.5% tin / 3% silver / 0.5% copper. No clean.

Hex Nut: Brass, Plated with nickel

Lockwasher: Zinc Plated Spring Steel with Clear Trivalent Chromate Finish

Cable: Copper Stranded with topcoat in PVC insulation

Connector (.050 center): PA4.6 with tin/nickel plated phosphor bronze.



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# Mouser Electronics

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[62AG18-L0-030C](#) [62AG11-L0-050C](#) [62AG11-L5-030C](#) [62AG22-L9-030C](#) [62AG22-L5-030C](#) [62AG22-H9-030C](#)  
[62AG22-H0-030C](#) [62VG22-L9-030C](#) [62AG11-H0-030C](#) [62VG22-H0-030C](#) [62AG22-H5-030C](#) [62VG22-H9-030C](#)  
[62AG15-L0-030C](#) [62AG11-H9-050C](#) [62VG22-L0-030C](#)