

SERIES 62AG

Price Competitive Solution

FEATURES

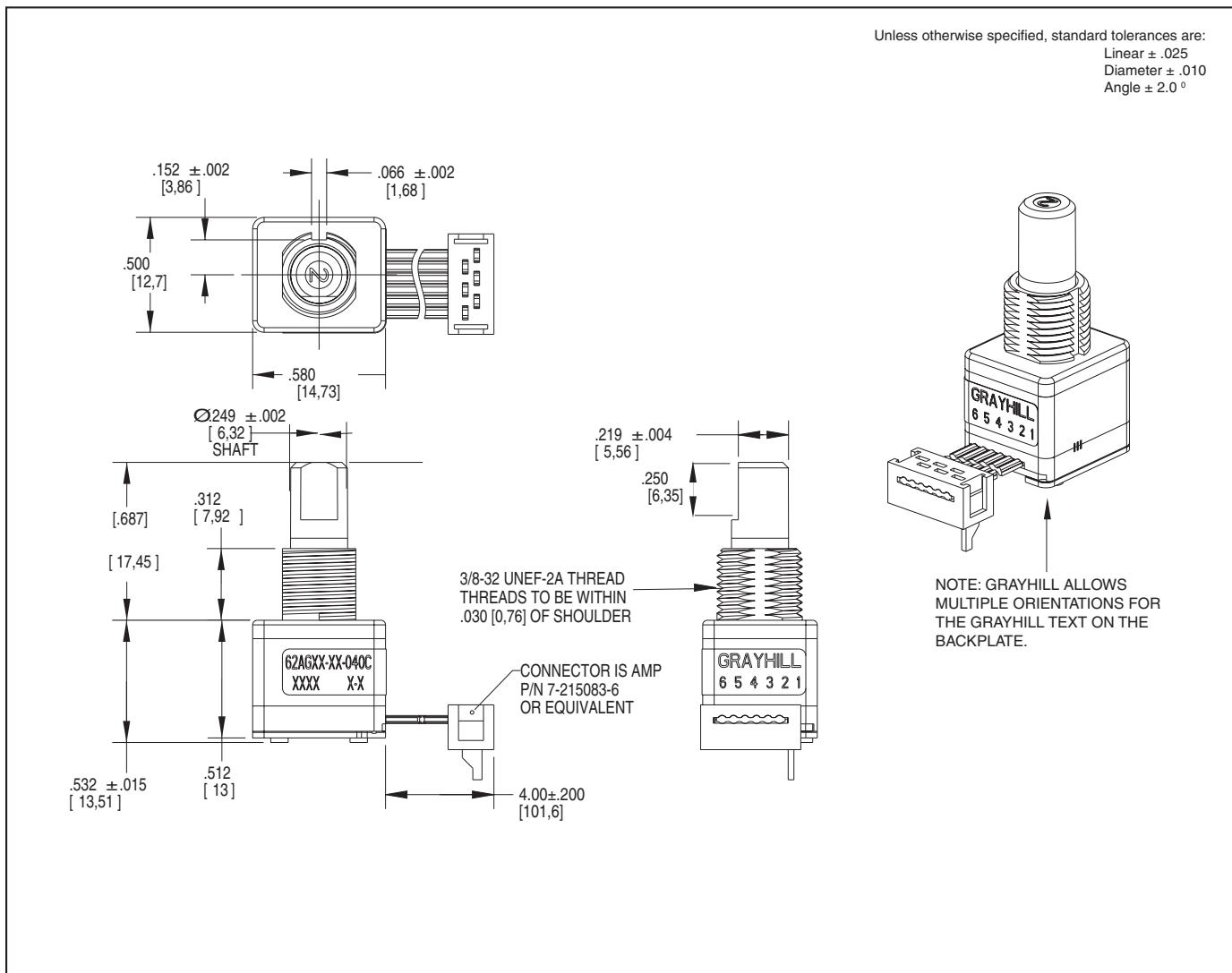
- Over 1 million rotational cycles
- 2-bit gray code output
- Quadrature coding
- Available in 16 detent positions
- 4 inch cable/connector assembly
- RoHS compliant
- Optional integrated pushbutton
- Patented light pipe technology
- Cost competitive with mechanical encoders at higher volumes

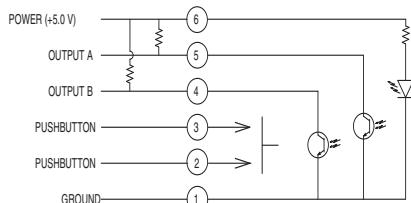
APPLICATIONS

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

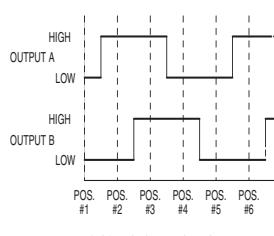


DIMENSIONS in inches (and millimeters)



WAVEFORM AND TRUTH TABLE

'EXTERNAL 10k Ω PULL-UP RESISTORS REQUIRED FOR OPERATION'



POSITION	OUTPUT A	OUTPUT B
#1		
#2	●	
#3	●	●
#4		●
#5		
#6		

● INDICATES LOGIC HIGH; BLANK INDICATES LOGIC LOW.
CODE REPEATS EVERY FOUR POSITIONS.

SPECIFICATIONS**Environmental Specifications****Operating Temperature Range:** -40°C to 85°C**Storage Temperature:** -40°C to 85°C**Humidity:** 96 Hours at 90-95% humidity at 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.

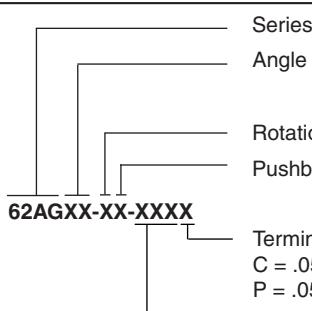
Test 2: 100g for 6 ms sawtooth wave with a velocity change of 9.7 ft/s.

Rotary Electrical and Mechanical Specifications**Operating Voltage:** 5.00±0.25 Vdc**Supply Current:** 30 mA maximum at 5 Vdc.**Logic Output Characteristics:**

Logic high shall be no less than 3.0 Vdc Logic low shall be no greater than 1.0 Vdc

Minimum sink current: 0.5 mA for 5 Vdc. (Preliminary)**Power Consumption:** 150 mW maximum for 5 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 and 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:** 510 ± 150 grams**Shaft Travel:** $.017 \pm .008$ 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:** Stainless steel**Cable:** Copper Stranded with topcoat in PVC insulation**Connector** (.050 center): PA4.6 with tin/nickel plated phosphor bronze.

Angle of Throw: $22 = 22.5^\circ$ for code change and 16 detent positions
 $18 = 18^\circ$ for code change and 20 detent positions

Rotational Torque Option: L = Low Torque, H = High Torque

Pushbutton Option: 0 = No pushbutton, 5 = 510 grams, 9 = 950 grams

Termination:

C = .050 Center Ribbon Cable with connector, S = .050 Center Ribbon Cable with .100 stripped end,
 P = .050 Center Pins with 0.185 inch length

Cable Length:

020 = 2.0 inch cable, 030 = 3.0 inch cable, 040 = 4.0 inch cable, 050 = 5.0 inch cable, 060 = 6.0 inch cable

Available from your local Grayhill Distributor. For prices and discounts, contact a local sales office, an authorized distributor, or Grayhill.