

SERIES 62SG

Compact / Cost Effective

FEATURES

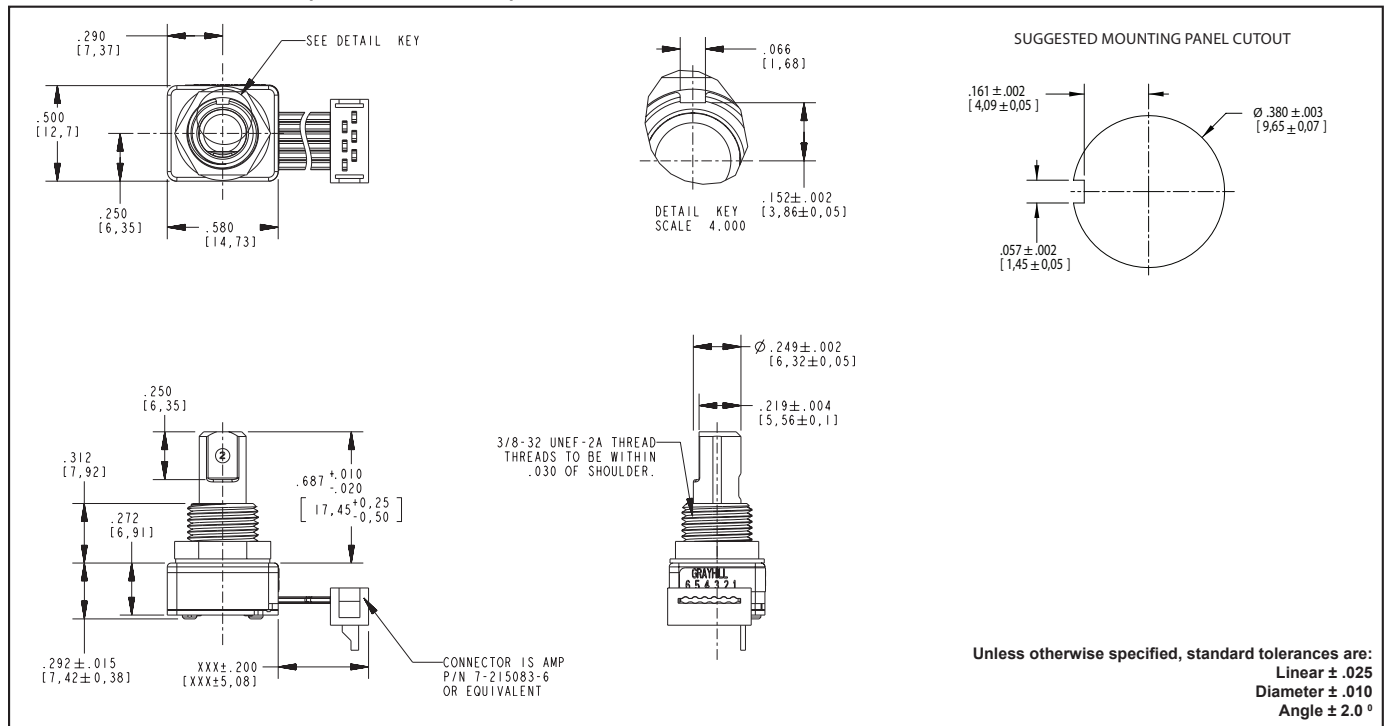
- Just 0.3-inch behind panel depth
- Over 1 million rotational cycles
- 2-bit gray code output
- Quadrature coding
- Available in 16, 24 and 32 detent positions
- Optional integrated pushbutton
- Light pipe technology
- Cost competitive with mechanical encoders at higher volumes

APPLICATIONS

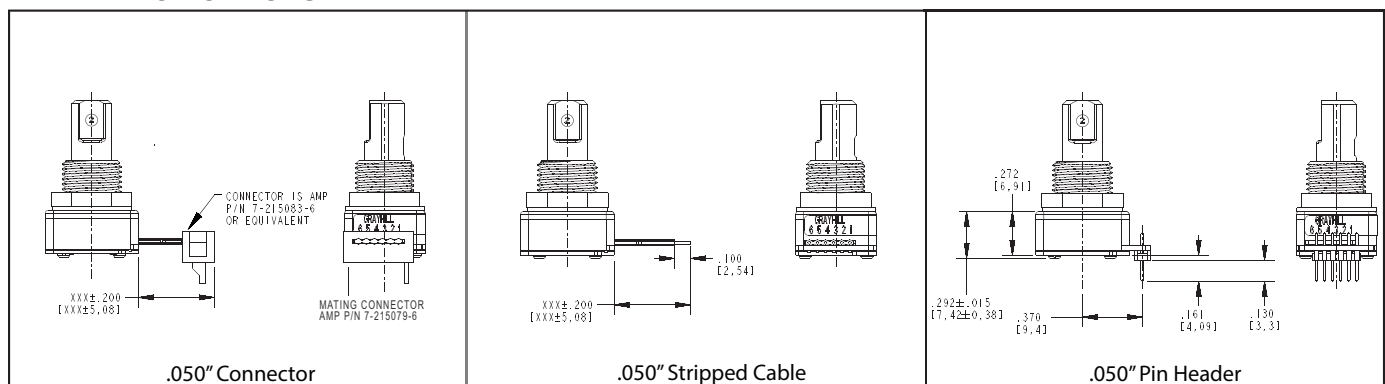
- Automotive
 - audio systems
 - navigation systems
- Medical
 - patient monitoring systems
- Test & Measurement
 - analyzers
 - oscilloscopes
- Audio & Video
 - consumer electronics
 - professional editing equipment



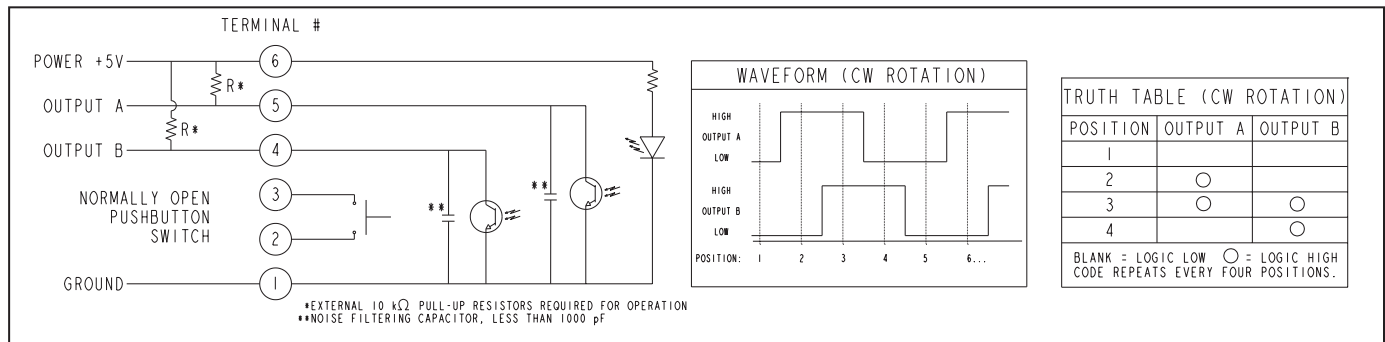
DIMENSIONS in inches (and millimeters)



TERMINATION OPTIONS



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: 5.00 $\pm$ 0.25 Vdc

Supply Current: 30 mA maximum

Logic Output Characteristics:

Logic High: V_{OH} = 3.0 Vdc MIN at V_{CC} = 4.75 Vdc with 10 k Ω PULL-UP RESISTOR

Logic Low: V_{OL} = 1.0 Vdc MAX at V_{CC} = 5.25 Vdc with 10 k Ω PULL-UP RESISTOR

Output: Open Collector Phototransistor

Optical Rise Time: 30ms maximum

Optical Fall Time: 30ms maximum

TORQUE TABLE (IN-OZ)	L	M	H
16-POSITION ($\pm$ 1.0 IN-OZ)	1.80	2.10	2.55
24-POSITION ($\pm$ 0.5 IN-OZ)	1.25	1.65	2.45
32-POSITION ($\pm$ 0.5 IN-OZ)	1.00	1.20	1.50

40% 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**Pushbutton Electrical and Mechanical Specifications**

Rating: 30 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 = 550 $\pm$ 200 grams9 = 1050 $\pm$ 200 grams**Shaft Travel:** .020 $\pm$.008 inch**Materials and Finishes****Bushing:** Zamak 2**Shaft:** Zamak 2**Detent Ball:** 302 Stainless Steel**Detent Spring:** Music Wire**Retaining Ring:** 301 Stainless Steel**Code Housing:** Nylon 6/6 25% glass

reinforced. Zytel FR-50

Light Pipe: Lexan, GE**Code Rotor:** Delrin 100

Pushbutton Actuator: Glass Reinforced nylon 6/6. Zytel 70G33L. UL 94

Pushbutton Dome: 301 Stainless Steel

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

Infrared Emitting Diode: Gallium Aluminum Arsenide

Phototransistor Diode: NPN Silicon**Resistor:** Metal oxide on ceramic substrate

Spacer: Pet plastic

Backplate: 302 Stainless Steel**Label:** TT406 thermal transfer cast film

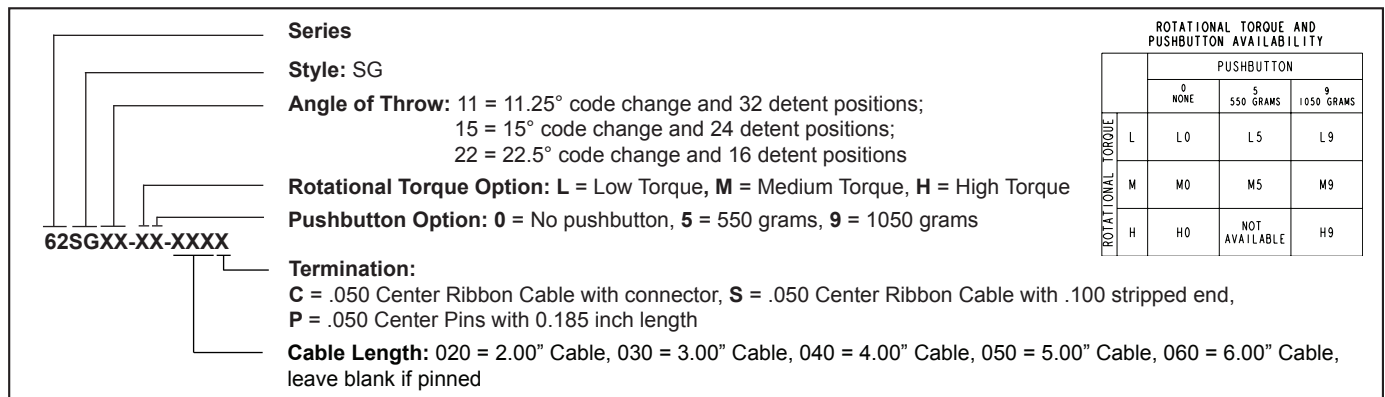
Solder: 96.5% tin / 3% silver / 0.5% copper. No clean

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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