

SERIES 62SG

Compact / Cost Effective

FEATURES

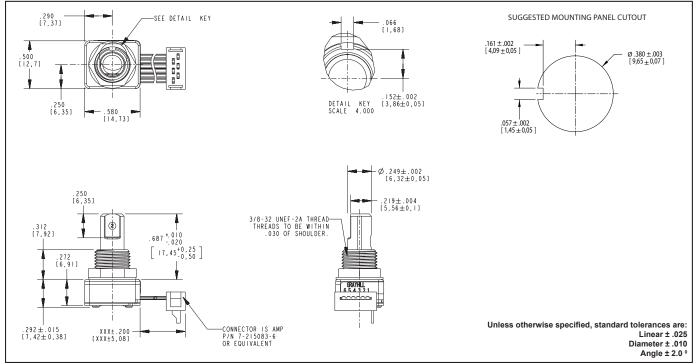
- Just 0.3-inch behind panel depth
- Over 1 million rotational cycles
- 2-bit gray code output
- Quadrature coding
- Available in 16, 24 and 32 detent positions
- Optional integrated pushbutton
- Light pipe technology
- Cost competitive with mechanical encoders at higher volumes

APPLICATIONS

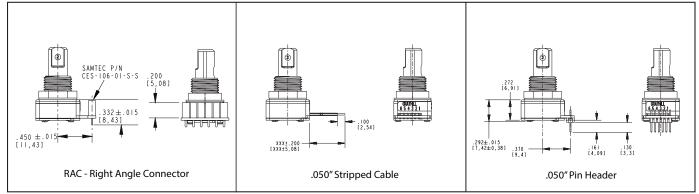
- Automotive
 - audio systems
 - navigation systems
- Medical
- patient monitoring systems
- Test & Measurement
 - analyzers
 - oscilloscopes
- Audio & Video
 - consumer electronics
 - professional editing equipment



DIMENSIONS in inches (and millimeters)

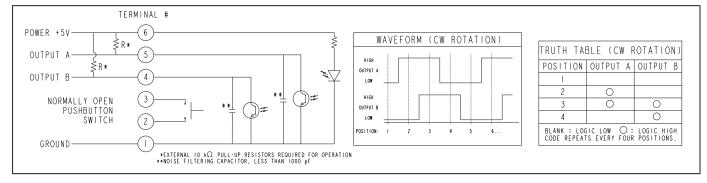


OTHER TERMINATION OPTIONS





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 ± 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	М	Н
I6-POSITION (±1.0 IN-OZ)	1.80	2.10	2.55
24-POSITION (±0.5 IN-OZ)	1.25	1.65	2.45
32-POSITION (±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 ± 200 grams 9 = 1050 ± 200 grams Shaft Travel: .020 ± .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

Connector (.050 center): PA4.6 with tin/

nickel plated phosphor bronze.

	Series		ROTATIONAL TORQUE AND PUSHBUTTON AVAILABILITY					
	Style: SG Angle of Throw: 11 = 11.25° code change and 32 detent positions;		PUSHBUTTON					
			NONE	5 550 GRAMS	9 1050 GRAMS			
62SGXX-XX-XXXX	$15 = 15^{\circ}$ code change and 24 detent positions; 22 = 22.5° code change and 16 detent positions	TOROUE	. LO	L5	L9			
	Rotational Torque Option: L = Low Torque, M = Medium Torque, H = High Torque	onal ∞	и мо	М5	М9			
	Pushbutton Option: 0 = No pushbutton, 5 = 550 grams, 9 = 1050 grams	ROTATI	н но	NOT AVAILABLE	нэ			
	 Termination: C = .050 Center Ribbon Cable with connector, S = .050 Center Ribbon Cable with .100 stripped end, P = .050 Center Pin, RAC = Right Angle Connector; .050" centers 							
	Cable Length: 020 = 2.00" Cable, 040 = 4.00" Cable, 060 = 6.00" Cable, leave blank if pinned							

*Eliminate cable length if ordering "P" or "RAC" termination option

*62SG15-L5-RAC available as standard P/N, for additional options, please contact Grayhill