SERIES 62S Compact 1/2" Package

FEATURES

- Compact Size
- Requires Minimal Behind Panel Space
- 1 Million Rotational Cycles for Low and Medium Torque, 1/2 Million for High
- 3 Million Rotations for Non-Detent Styles
- Optional Integral Pushbutton
- Choices of Cable Length and Terminations

APPLICATIONS

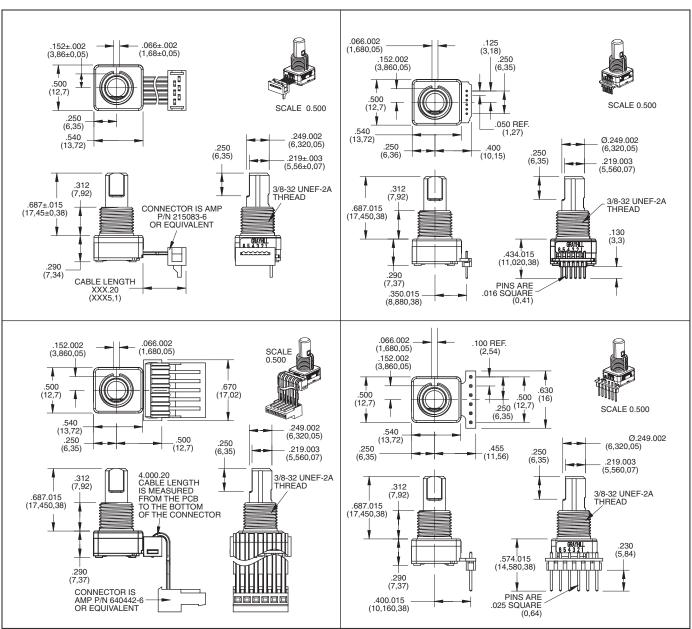
- Global Positioning/Driver Information Systems
- Medical Equipment





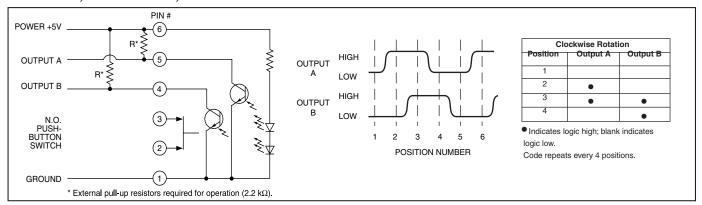
DIMENSIONS in inches (and millimeters)

Unless otherwise specified, standard tolerance is $\pm .010$ (0,25)





CIRCUITRY, TRUTH TABLE, AND WAVEFORM Standard Quadrature 2-Bit Code



SPECIFICATIONS

Environmental Specifications

Operating Temp. Range: -40°C to 85°C Storage Temp. Range: -55°C to 100°C Humidity: 96 Hours at 90–95% humidity at

40°C

Mechanical Vibration: Harmonic motion with amplitude of 15G's, within a varied frequency of 10 to 2000 Hz

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: 25mA max at 5.25Vdc Output: Open collector phototransistor, external pull up resistors are required Output Code: 2-Bit quadrature, channel A leads channel B by 90° electrically during clockwise rotation of the shaft

Logic Output Characteristics:

Logic High shall be no less than 3.8 Vdc Logic Low shall be no greater than 0.8Vdc Minimum Sink Current: 2.0 mA

Power Consumption: 132mW maximum (includes power in 2 pull-up resistors)

Mechanical Life:

Non-Detent 3 Million Cycles
Low & Medium 1 Million Cycles
High 1/2 Million Cycles
1 cycle is a rotation through all positions and

a full return

AVERAGE ROTATIONAL TORQUE SPECIFICATION				IFICATIONS
ı		LOW	MEDIUM	HIGH
-		±0.50 IN-OZ	±1.40 IN-OZ	±1.60 IN-OZ
1	8 POSITION	1.10	1.85	2.75
ı	12 POSITION	1.00	1.70	2.95
ı	16 POSITION	1.40	2.35	3.40
1	20 POSITION	1.35	2.05	2.80
ı	24 POSITION	1.25	1.95	2.95
ı	32 POSITION	0.95	1.40	2.15

Torque shall be within 50% of initial value

throughout life

Mounting Torque: 15 in-lbs maximum Shaft Push-Out Force: 45 lbs minimum Shaft Pull-Out Force: 45 lbs minimum Terminal Strength: 15 lbs minimum terminal pull-out force for cable or header termination Solderability: 95% free of pin holes and voids

Pushbutton Electrical & Mechanical Specifications

Rating: 10 mA at 5 Vdc

Contact Resistance: <10Ω

Life: 3 million actuations minimum

Contact Bounce: <4 ms Make, <10 ms

Break

Actuation Force: 9-950±150 grams, 5-510±150 grams, 4-400±100 grams, 3-300±90 grams,

2-200±75 grams

Shaft Travel: .025±.010 inch

Materials and Finishes

Bushing: Zamak 2

Shaft: Aluminum or Zamak 2 Retaining Ring: Stainless steel Pushbutton Actuator: Zytel 70G33L

Detent Spring: Music wire **Detent Ball:** Stainless steel

Code Housing: Polyamide polymer, nylon 6/10

alloy UL94HB

Code Rotor: Delrin 100

Printed Circuit Boards: NEMA grade FR-4, double clad with copper, plated with gold over nickel

Infrared Emiting Diode Chips: Gallium

aluminum arsenide

Silicon Phototransistor Chips: Gold and

Aluminum Alloys

Resistor: Metal oxide on ceramic substrate Solder Pins: Brass, plated with tin Pushbutton Dome: Stainless steel

Backplate: Stainless steel

Cable: Copper stranded with topcoat in PVC

insulation (Cable version only)

Connector (.050 Center): PA4.6 with tin over

nickel plated phosphor bronze

Connector (.100 Center): Nylon UL94V-2, tin

plated copper alloy

Label: TT406 Thermal transfer cast film Solder: Sn/Ag/Cu, Lead-Free, No Clean Lubricating Grease: NYE nyogel 774L

Hex Nut: Nickel, plated with brass Lockwasher: Stainless steel

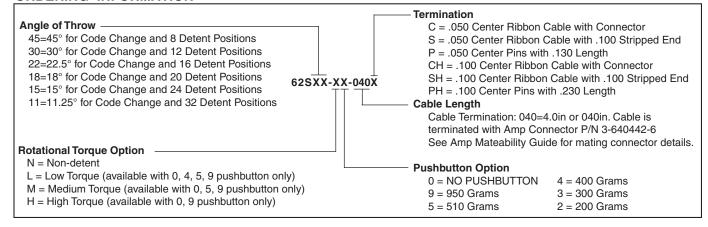
Header: Hi-Temp glass filled thermoplastic UL94V-0, phoshor bronze (pin versions only) **Strain Relief:** Glass filled thermoplastic (.100

center cable versions only)

OPTIONS

Contact Grayhill for custom terminations, shaft and bushing configurations, rotational torque pushbutton force, and code output. Control knobs are also available.

ORDERING INFORMATION



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Grayhill:

62S11-M9-040SH 62S15-M0-P