Specifications are subject to change. Please refer to the current datasheet on www.grayhill.com for the most current published specifications for this product.



Optical Encoders

SERIES 62R

1/2" Package, Redundant Circuitry

FEATURES

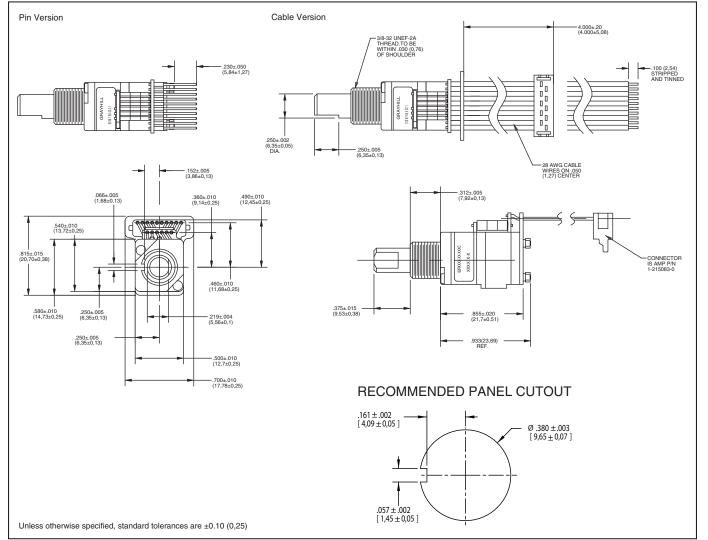
- Redundant Circuitry
- 1 Million Rotational Cycles
- Compatible with CMOS, TTL and HCMOS Logic
- Optional Integral Pushbutton
- Available in 12, 16, and 24
 Detent Positions
- Choices of Cable Length and Terminations
- Ideal for Critical Applications

APPLICATIONS

- Cockpit Controls
- Medical Equipment

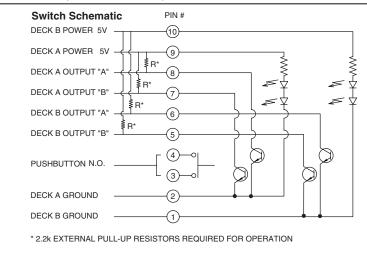


DIMENSIONS in inches (and millimeters)



Grayhill

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



SPECIFICATIONS

Pushbutton Switch Ratings Pushbutton Rating: 10 mA, 5 Vdc, resistive Contact Resistance: less than 10 ohms (TTL or CMOS compatible) Pushbutton Life: 3 million actuations min. Contact Bounce: less than 4 mS at make and less than 10 mS at break Actuation Force: 1000 ±300 grams Pushbutton Travel: .010/.025"

Switch Ratings

Coding: 2-bit quadrature coded output Operating Voltage: 5.0 ±.25 Vdc Voltage Breakdown: 250 Vac between mutually insulated parts Supply Current: 30 mA maximum@5.0 Vdc (per deck) Logic Output Characterisitics: Logic High: 3.5 Vdc minimum Logic Low: 1.5 Vdc maximum Mechanical Life: 1,000,000 cycles minimum

(One cycle is a rotation through all positions and a full return) Minimum Sink Current: 2.0 mA

Power Consumption: 150mW max. (per deck) Output: open collector phototransistor

Optical Rise and Fall Times: less than 30 mS maximum

Operating Torque: 3.5 ± 1.4 in-oz initially Shaft Push Out Force: 45 lbs minimum Mounting Torque: 15 in-lbs max. Terminal Strength: 15 lbs cable pull-out force

min.

Operating Speed: 100 RPM max.

Environmental Ratings

Operating Temperature Range: -40°C to 85°C

Storage Temperature Range: -55°C to 100°C

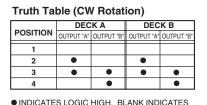
Vibration Resistance: Harmonic motion with amplitude of 15G's, within a varied 10 to 2000 Hz frequency for 12 hours

Mechanical Shock: Test 1: 100g, 6 mS, half sine, 12.3 ft/s; Test 2: 100g, 6 mS, sawtooth, 9.7 ft/s

Humidity: 90-95% at 40°C for 96 hours

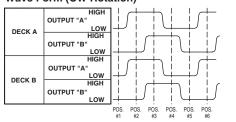
Materials and Finishes

Shaft: Aluminum Bushing: Zinc casting Shaft Retaining Ring: Stainless steel Detent Spring: Stainless steel Printed Circuit Boards: NEMA grade FR-4 gold over nickel or palladium Terminals: Brass, tin-plated



 INDICATES LOGIC HIGH. BLANK INDICATES LOGIC LOW. CODE REPEATS EVERY 4 POSITIONS

Wave Form (CW Rotation)



Mounting Hardware: One brass, nickel-plated nut and zinc-plated spring steel with clear

trivalent chromate finish lockwasher supplied with each switch. (Nut is 0.094 inches thick by 0.433 inches across flats)

Rotor: Thermoplastic

Code Housing: Thermoplastic Pushbutton Dome: Stainless steel Dome Retaining Disk: Thermoplastic Pushbutton Housing: Thermoplastic Phototransistor: Planar Silicon NPN Infrared Emitter: Gallium aluminum arsenide

Pushbutton Contact: Brass, nickel-plated **Flex Cable:** 28 AWG stranded, halogen-free polyolefin insulation on .050" centers (cabled version)

Header Pins: Phospher bronze, tin-plated Spacer: Zinc casting

Backplate/Strain Relief: Stainless steel Studs: Stainless steel

OPTIONS

Contact Grayhill for custom terminations, shaft and bushing configurations, and resolutions. Control knobs are also available.

ORDERING INFORMATION

	Series Angle of Throw: $15 = 15^{\circ}$ or 24 pos, $22 = 22.5^{\circ}$ or 16 positions, $30 = 30^{\circ}$ or 12 Positions Pushbutton Option: $01 = w/o$ pushbutton, $02 = with pushbutton$
62R22-01-040S	
	Termination: $.050"$ centers; S = Stripped cable, C = Connector, P = Pin Cable Length: 040 = 4.0 inches. Cable is terminated with Amp Connector P/N 215083-8. See Amp Mateability Guide for mating connector details. *Eliminate cable length if ordering pins. (Ex: 62R22-02-P)
Custom materials, styles, colors, and markings are available. Control knobs available.	
Available from your logal Component Gravhill Distributor. For prices and discounts, contact a logal Sales Office, an authorized logal	

Distributor, or Grayhill.