SERIES 62R

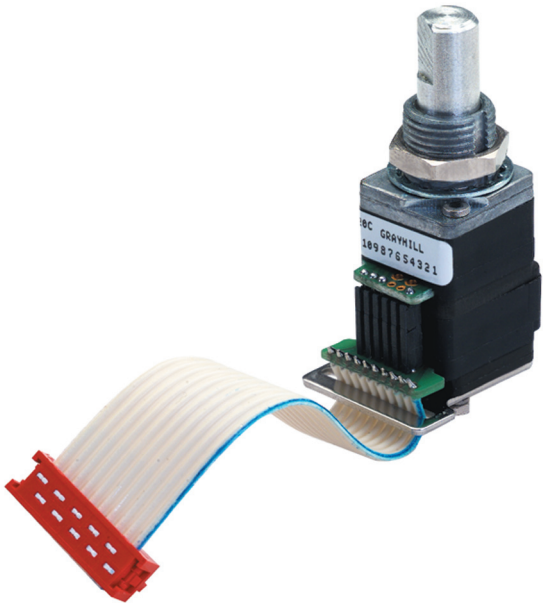
1/2" Package, Redundant Circuitry

FEATURES

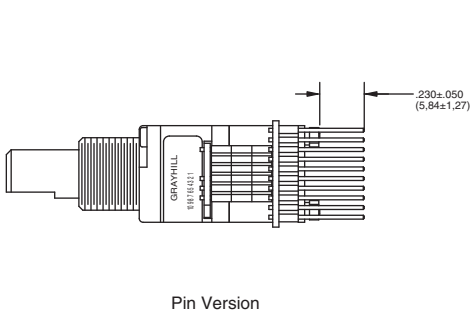
- Redundant Circuitry
- 1 Million Rotational Cycles
- Compatible with CMOS, TTL and HCMOS Logic
- Optional Integral Pushbutton
- Available in 12, 16, and 24 Detent Positions
- Choices of Cable Length and Terminations
- Ideal for Critical Applications

APPLICATIONS

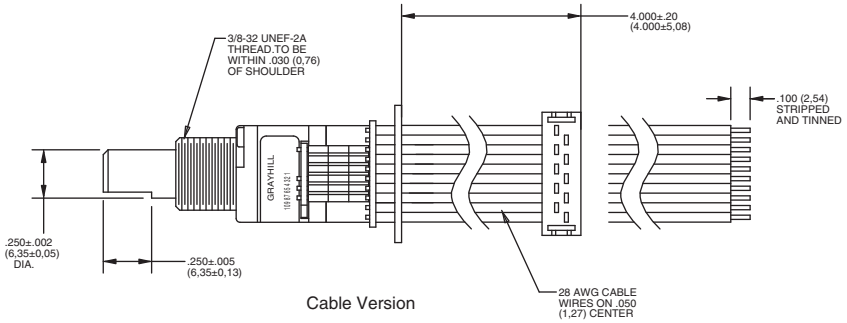
- Cockpit Controls
- Medical Equipment



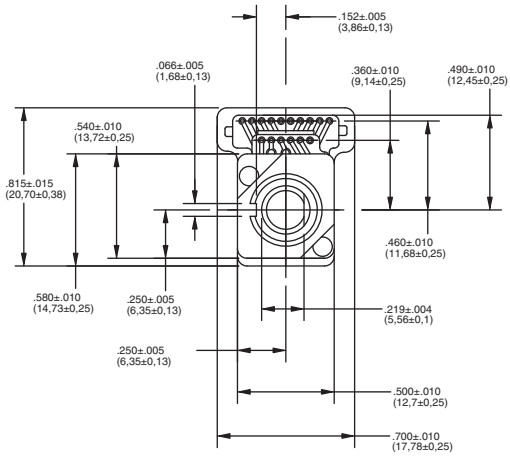
DIMENSIONS in inches (and millimeters)

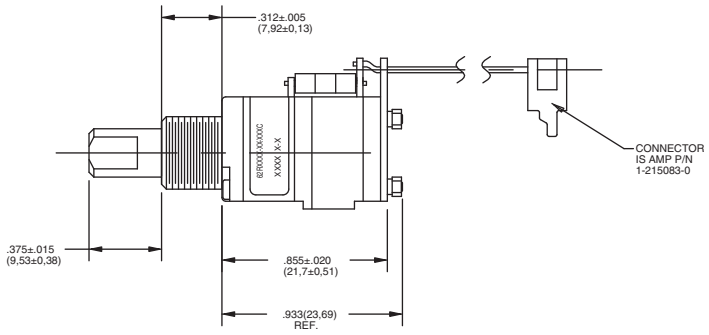


Pin Version



Cable Version

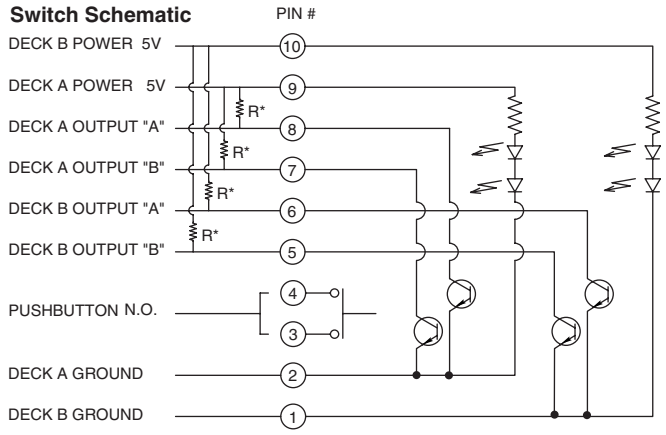




Unless otherwise specified, standard tolerances are ±0.10 (0,25)

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

Switch Schematic



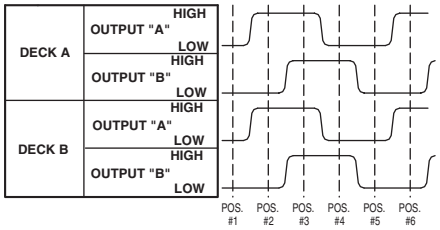
* 2.2k EXTERNAL PULL-UP RESISTORS REQUIRED FOR OPERATION

Truth Table (CW Rotation)

POSITION	DECK A		DECK B	
	OUTPUT "A"	OUTPUT "B"	OUTPUT "A"	OUTPUT "B"
1				
2	●		●	
3	●	●	●	●
4		●		●

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

Wave Form (CW Rotation)



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

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: Phosphor 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

62R22-01-040S

Series
Angle of Throw: 15 = 15° or 24 pos, 22 = 22.5° or 16 positions, 30 = 30° or 12 Positions
Pushbutton Option: 01 = w/o pushbutton, 02 = with pushbutton

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 local Component Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.