



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

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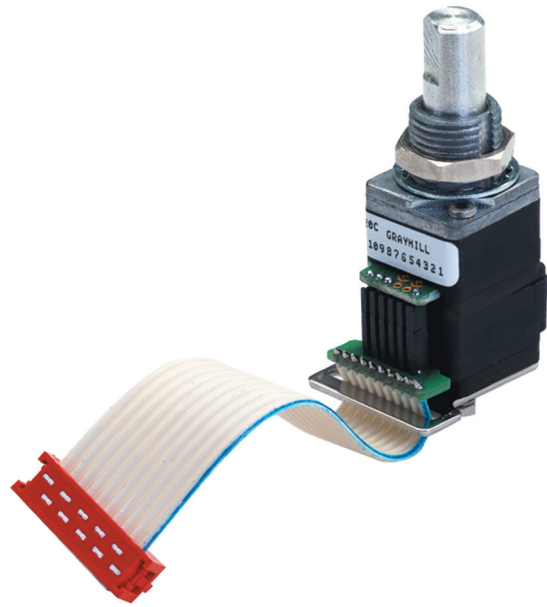
SERIES 62R
1/2" Package, Redundant Circuitry

FEATURES

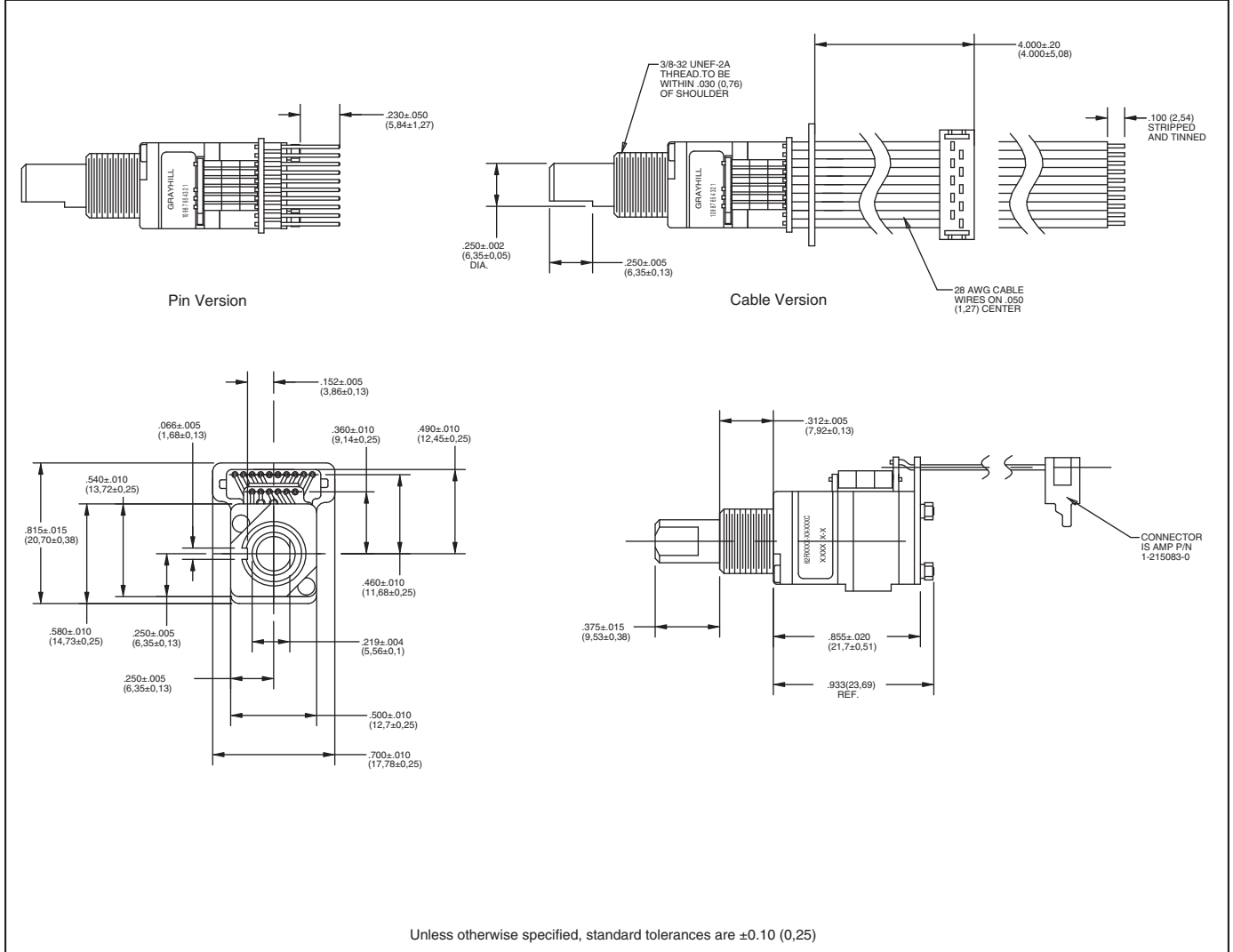
- Redundant Circuitry
- 1 Million Rotational Cycles
- Compatible with CMOS, TTL and HCMOS Logic
- Optional Integral Pushbutton
- Available in 12, 16, and 24 Detent Positions
- Choices of Cable Length and Terminations
- Ideal for Critical Applications

APPLICATIONS

- Cockpit Controls
- Medical Equipment



DIMENSIONS in inches (and millimeters)



Optical and Mechanical Encoders

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 Characteristics:
 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.

Optical and Mechanical Encoders

ORDERING INFORMATION

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.