

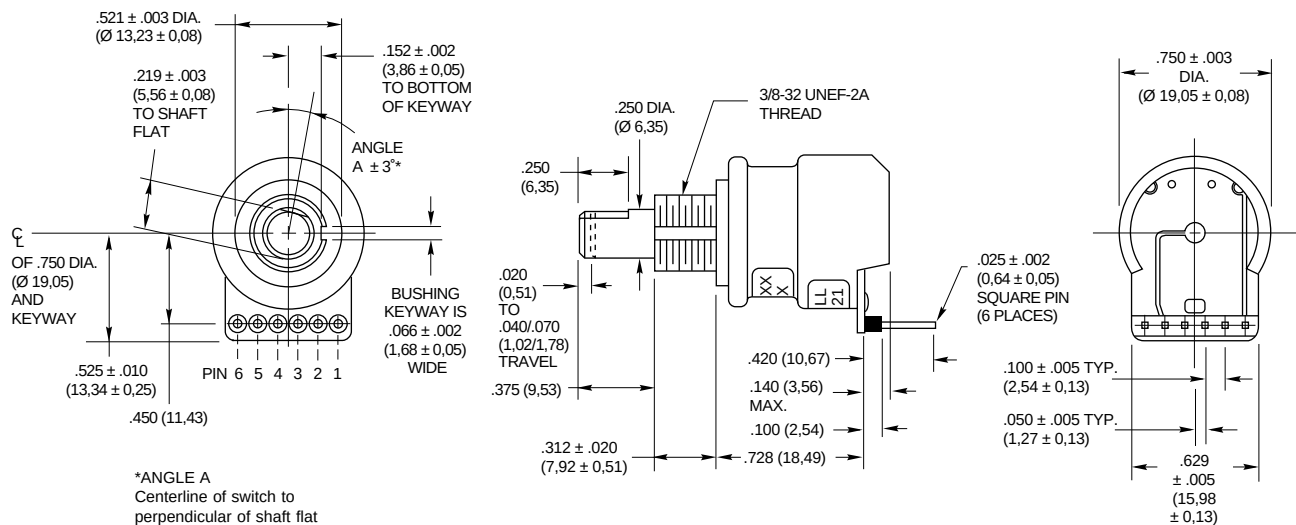
SERIES 61C 16 or 32 Position With integral Pushbutton

FEATURES

- Competitively Priced to Similar Electromechanical Switches
- Optically Coupled For More Than A Million Trouble-Free Rotations
- Has Data Entry Pushbutton Switch Activated By Switch Shaft
- Compatible With CMOS, TTL, and HCMOS Logic
- Operationally Used to Move Display Icon and Input Data
- Used to Set Radio Frequency, Drill Depth, RPM Etc.



DIMENSIONS In inches (and millimeters)



*ANGLE A
Centerline of switch to
perpendicular of shaft flat

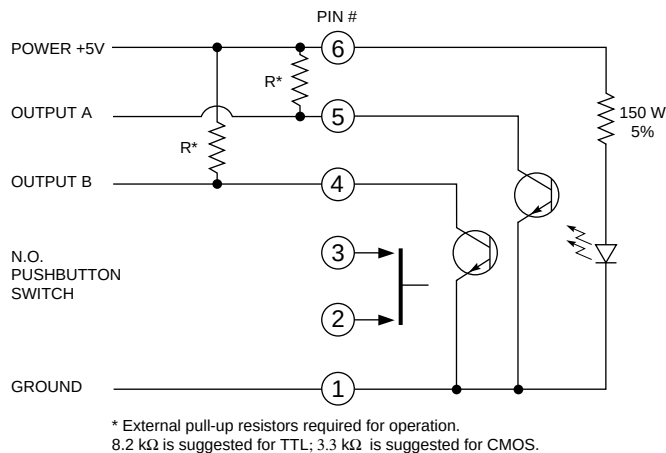
32 Pos. 28.125°
16 Pos. 56.25°

Grayhill part number and date
code marked on label. Customer
part number marked on request.

Unless otherwise indicated, tolerances are $\pm .010$ (0.25).

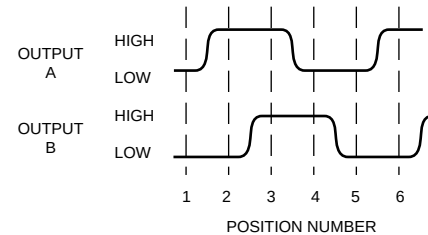
OPTICAL ENCODERS

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



Clockwise Rotation		
Position	Output A	Output B
1		
2	●	
3	●	●
4		●

● Indicates logic high; blank indicates logic low. Code repeats every 4 positions.



SPECIFICATIONS

Pushbutton Switch Ratings

Rating: at 5 Vdc, 10 mA, Resistive

Contact Resistance: <10 (TTL or CMOS Compatible)

Voltage Breakdown: 250 VAC between mutually insulated parts.

Contact Bounce: Less than 4 milliseconds at make and less than 10 milliseconds at break.

Actuation Life: 3,000,000 operations.

Actuation Force: Maximum actuation force of 450 grams and a minimum actuation force of 300 grams.

Rotary Encoder Ratings

Coding: 2 bit quadrature coded output.

Operating Voltage: 5V $\pm$.25 VDC

Supply Current: 30 mA Maximum @ 5 VDC

Logic High: 3.8V for CMOS and 2.7V for TTL minimum.

Logic Low: 0.8V Maximum

Logic Rise and Fall Times: Rise Time < 30 ms @ 16.6 rpm. Fall Time < 30 ms @ 16.6 rpm.

Operating Torque: 1.5 in-oz $\pm$ 50% initial (1.0 in-oz 50% after life for 32 position only)

Rotational Life: >1,000,000 cycles of operation (1 cycle is rotation through all positions and return)

Shaft Push Out Force: 20 lbs min.

Mounting Torque: 10 in-lb max.

Environmental

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

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

Vibration Resistance: Tested at 10-2000 Hz at 15g or 0.060" double amplitude.

Mechanical Shock: Tested at 100 g's, 6 ms, half sine, 12.3 ft/s and 100 g's, 6 ms, sawtooth, 9.7 ft/s.

Humidity: 90-95% Relative humidity @ 40 C for 96 hrs.

Materials and Finishes

Bushing: Reinforced thermoplastic

Shaft: Reinforced thermoplastic

Detent Balls: Steel, nickel plated

Detent and Pushbutton Springs: Tinned music wire

PC Boards: NEMA grade FR-4

Pushbutton Contact: Stainless steel, gold plated

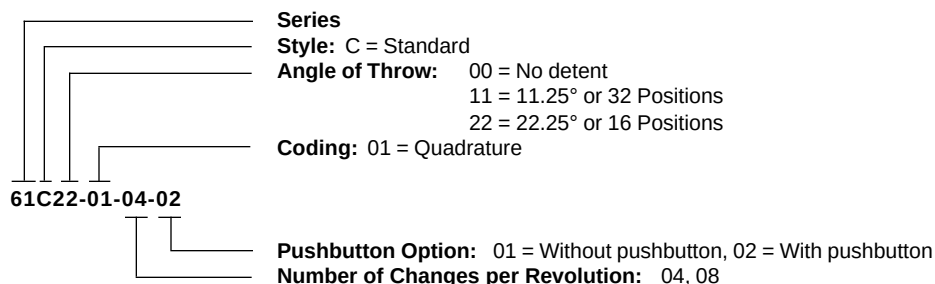
Board Terminals: Phosphor bronze, tin plated

Mounting Hardware: One brass, cadmium plated nut and lockwasher supplied with each switch. Nut is 0.094 inches thick by 0.562 inches across flats.

Rotor: Reinforced thermoplastic

Aperture: Brass, black oxide finish

ORDERING INFORMATION



ACCESSORIES

See page E-14.

These switches have Quadrature 2-Bit Code output and a shaft actuated pushbutton switch.

Available from your local Grayhill Distributor.

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