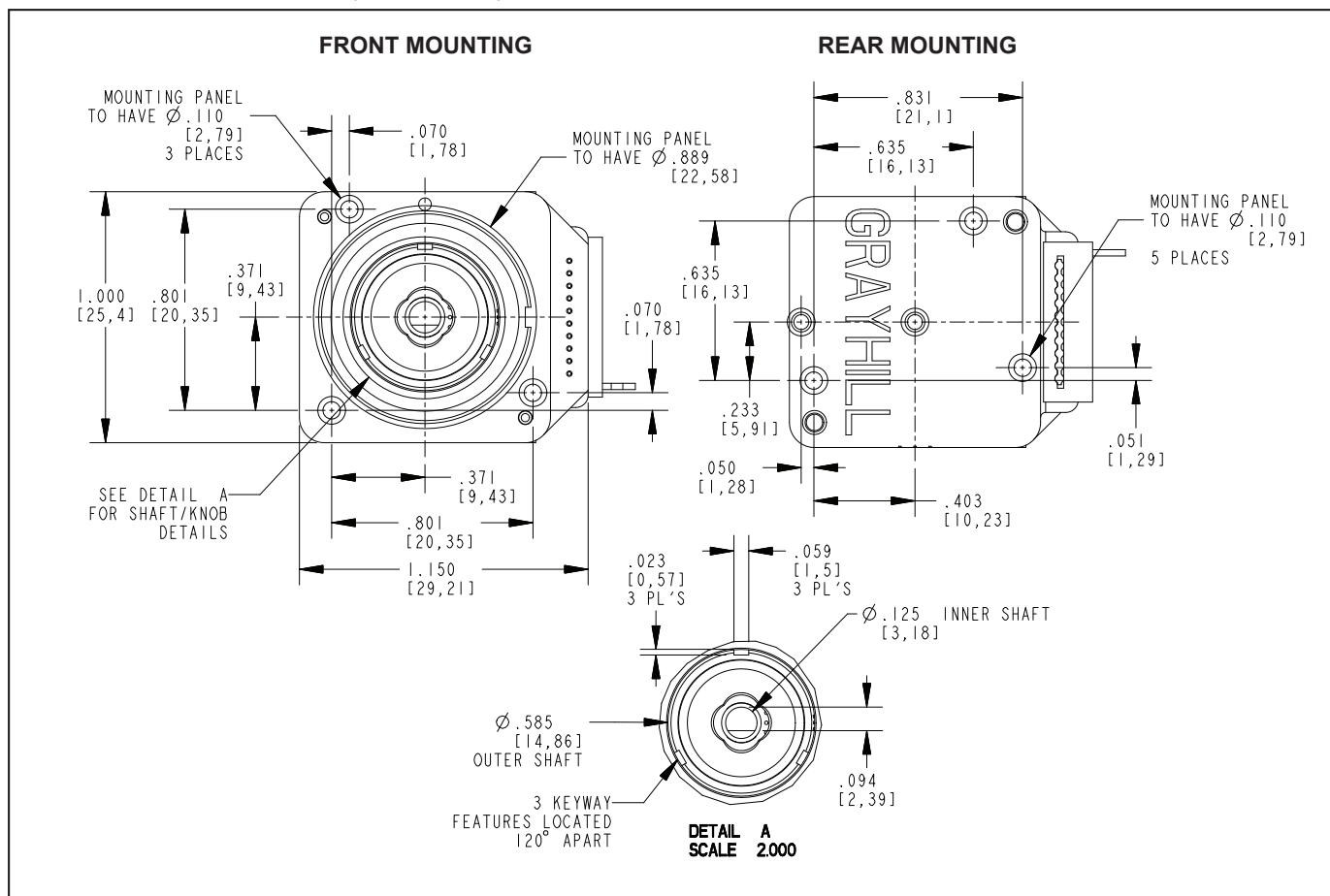


MOUNTING DETAILS in inches (and millimeters)

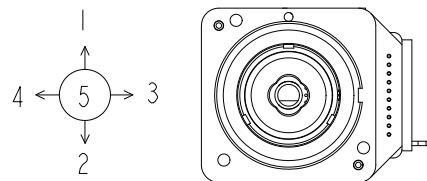


JOYSTICK OPERATION + ENCODER WAVEFORM AND TRUTH TABLE Standard Quadrature 2-Bit Code

JOYSTICK

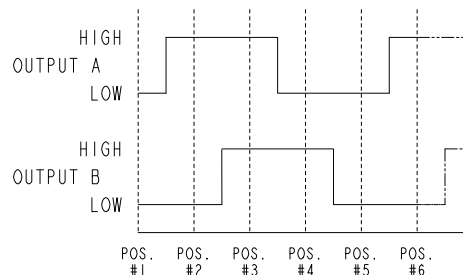
POSITION	BIT 1	BIT 2	BIT 3	BIT 4
1	○	○	○	○
2	○	○	○	○
3	○	○	○	○
4	○	○	○	○
5	○	○	○	○

○ INDICATES LOGIC HIGH
○ INDICATES LOGIC LOW



ENCODER

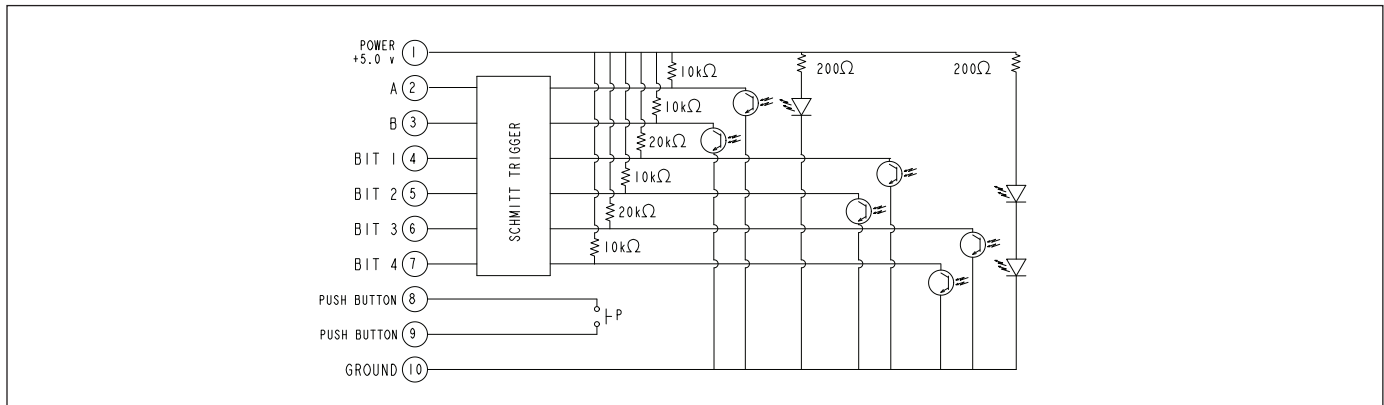
POSITION	OUTPUT A	OUTPUT B
#1	○	○
#2	○	○
#3	○	○
#4	○	○





Optical Encoders

SWITCH SCHEMATIC



SPECIFICATIONS

Rotary

Electrical and Mechanical Ratings

Operating Voltage: 5.00 ± 0.25 Vdc

Supply Current: 35mA TYP at 5 Vdc

Power Consumption: 175mW TYP at 5Vdc

Output: Direct output from inverting Schmitt trigger

Output Code: 2-Bit quadrature, channel A leads channel B by 90° in cw rotation

Logic Output Characteristics:

High: No less than 3.5 Vdc

Low: No greater than 1.0 Vdc

Mechanical Life: 500K rotational cycles

(through all positions and a full return)

Rotational Torque: medium torque option

3.00±2.00 in-oz, torque shall be within 50% of initial value throughout life

Mounting Torque: 15 in-oz. maximum

Shaft Push/Pull Out Force: 25 lbs minimum

Terminal Strength: 15 lbs terminal minimum

Joystick

Electrical and Mechanical Ratings

Operating Voltage: 5.00 ± 0.25 Vdc

Supply Current: 35mA at TYP at 5 Vdc

Power Consumption: 175mW TYP at 5Vdc

Output: Direct output from inverting Schmitt trigger

Logic Output Characteristics:

High: No less than 3.5 Vdc

Low: No greater than 1.0 Vdc

Mechanical Life: 500K cycles

(through all positions and a full return)

Angle of Throw: 8° max. in all directions

Pushbutton

Electrical and Mechanical Ratings

Rating: 10 mA at 5 Vdc resistive

Contact Resistance: less than 10 ohms

Contact Bounce: < 4ms make, 10 ms break

Mechanical Life: 500K actuations minimum

Actuation Force: option 7 = 485 ± 115grams

Pushbutton Travel: 0.033 ± 0.015 inches to contact; 0.075 inches maximum

Environmental Ratings

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

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

Relative Humidity: 96 hours at 90-95% humidity at 40°C

Vibration: Harmonic motion with amplitude of 15g, within a varied 10 to 2000 Hz

Mechanical Shock:

Test 1: 100g for 6ms half-sine wave with a velocity change of 12.3 ft/s

Test 2: 100g for 6ms sawtooth wave with a velocity change of 9.7 ft/s

Thermocycle: 4 hours cycling between -40°C to 85°C

Materials and Finishes

Bushing: Thermoplastic

Shaft Outer: Thermoplastic

Cable ASM: .050 round conductor flat cable, PVC coated. Conductors are stranded, top-coated wire

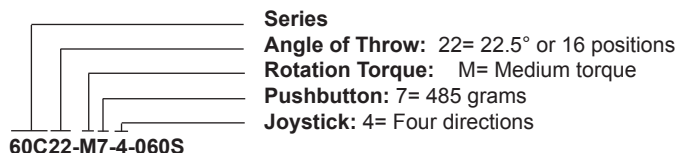
Solder: 95.5% SN, 4% AG, 0.5% CU **Dome:** Stainless steel

This product series is ROHS Compliant.

OPTIONS

Contact Grayhill for custom terminations, rotational torque, number of positions, shaft configurations, and resolutions. Control knobs are also available.

ORDERING INFORMATION



Termination: 0.050" center ribbon cable with; C= Connector; S= 0.1" stripped end
Cable Length: 025 thru 250 in 1/2 inch increments, 060= 6.0 inch cable

Available from your local Grayhill Distributor. For prices and discounts, contact a local sales office, an authorized distributor, or Grayhill.