



GRAYHILL

SERIES 62HN High Torque, Non-Turn Concentric Shaft

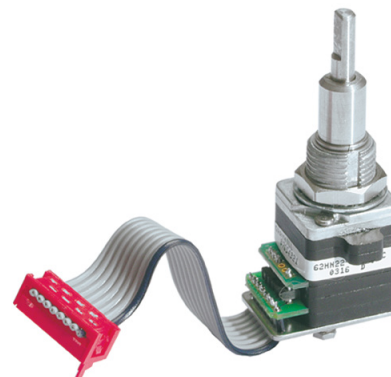
FEATURES

- High Rotational Torque Provides Positive Tactile Feedback
- Non-turn Pushbutton to Ensure Pushbutton Text and Orientation
- Optically Coupled for More than a Million Cycles
- Separate Pushbutton Function

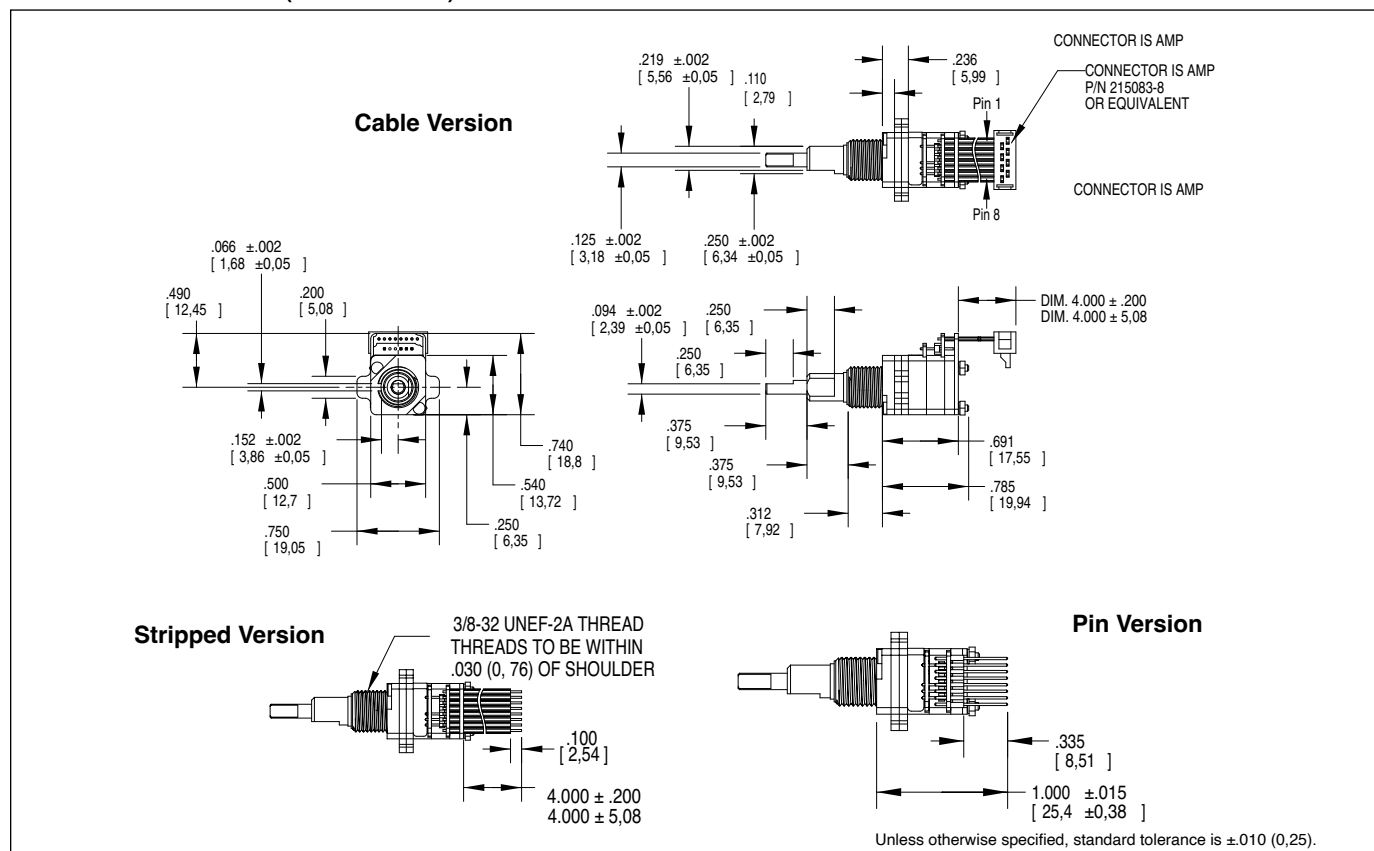
- Compatible with CMOS, TTL and HCMOS Logic
- Available in 8, 12 and 16 Detent Positions
- Choice of Cable Length and Terminations

APPLICATIONS

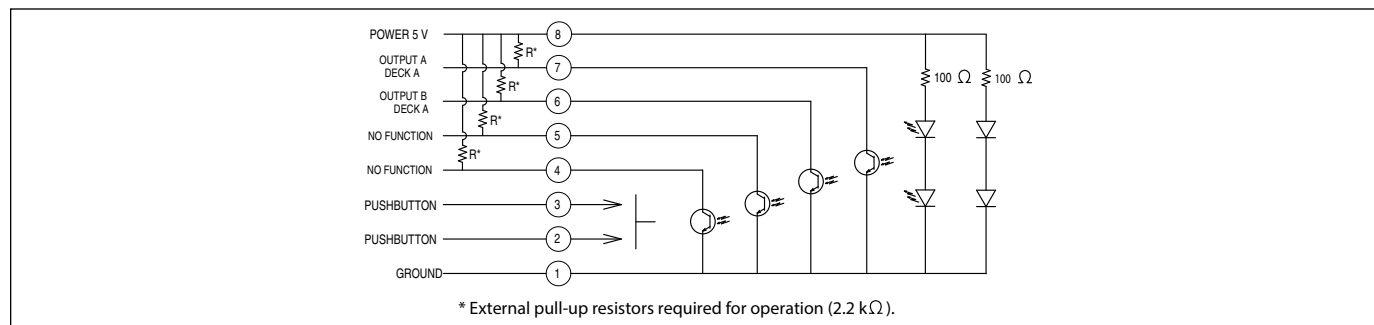
- Avionics



DIMENSIONS in inches (and millimeters)

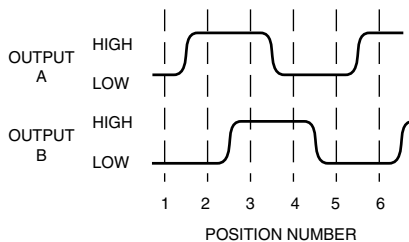


CIRCUITRY





WAVEFORM AND TRUTH TABLE



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: less than 10 ohms (TTL or CMOS compatible)

Pushbutton Life: 3 million actuations minimum

Voltage Breakdown: 250 Vac between mutually insulated parts

Contact Bounce: less than 4 mS at make and less than 10 mS at break

Actuation Force: 1100 ±300g

Shaft Travel: .025±.010 inch

Encoder Ratings

Coding: 2-bit quadrature coded output

Operating Voltage: 5.0 ±.25 Vdc

Supply Current: 30 mA maximum@5.0 Vdc

Logic Output Characteristics:

Logic High: 3.0 Vdc minimum

Logic Low: 1.0 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 for 5 Vdc

Power Consumption: 150mW maximum

Output: open collector phototransistor

Logic Rise and Fall Times: less than 30 mS maximum

Operating Torque: 5.0 in-oz +/- 1.5 in-oz initial

Shaft Push Out Force: 45 lbs minimum

Mounting Torque: 15 in-lbs maximum

Terminal Strength: 15 lbs cable pull-out force minimum

Operating Speed: 100 RPM maximum

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, 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

Relative Humidity: 90–95% at 40°C for 96 hours

Materials and Finishes

Code Housing: Reinforced thermoplastic

Shafts: Stainless steel

Bushing: Zinc casting

Shaft Retaining Rings: Stainless steel

Detent Spring: High carbon steel

Detent Ball: Stainless steel

Detent Section: Hiloy 610

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

Pushbutton Dome: Stainless steel

Phototransistor: Planar Silicon NPN

Infrared Emitter: Gallium aluminum arsenide

Flex Cable: 28AWG, stranded/top coated wire, PVC coated on .050 centers (cabled version)

Header Pins: Brass, tin-plated

Spacer: Hiloy 610

Shim: Stainless Steel

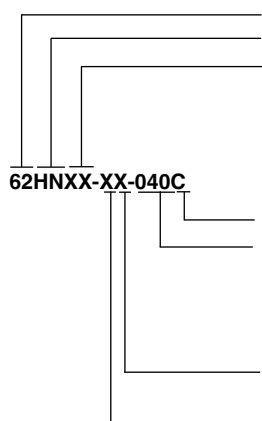
Endcap: Thermoplastic

Non-turn Pin: Stainless steel

Backplate/Strain Relief: Stainless steel

Studs: Stainless steel

ORDERING INFORMATION



Series

Style: HN = High Torque, Concentric, Non-Turn

Angle of Throw: 45 = 45° or 8 positions, 30 = 30° or 12 positions, 22 = 22.5° or 16 positions

Termination: S = stripped cable, C = connector, P = pins

Cable Termination: 040= 4.0in. 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: 62HN22-H9-P)

Pushbutton Option: 0 = w/o pushbutton, 9 = 1100g pushbutton

Rotational Torque: H = High Torque

Custom materials, styles, colors, and markings are available. Control knobs available.

Available from your local Grayhill Component Distributor.

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