

SERIES 68P

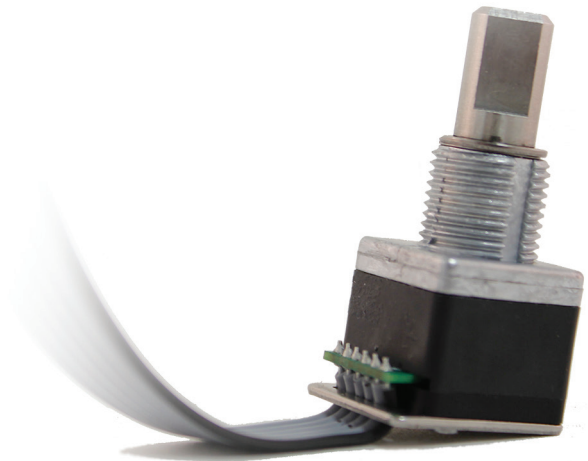
Long Life Potentiometer Substitute

FEATURES

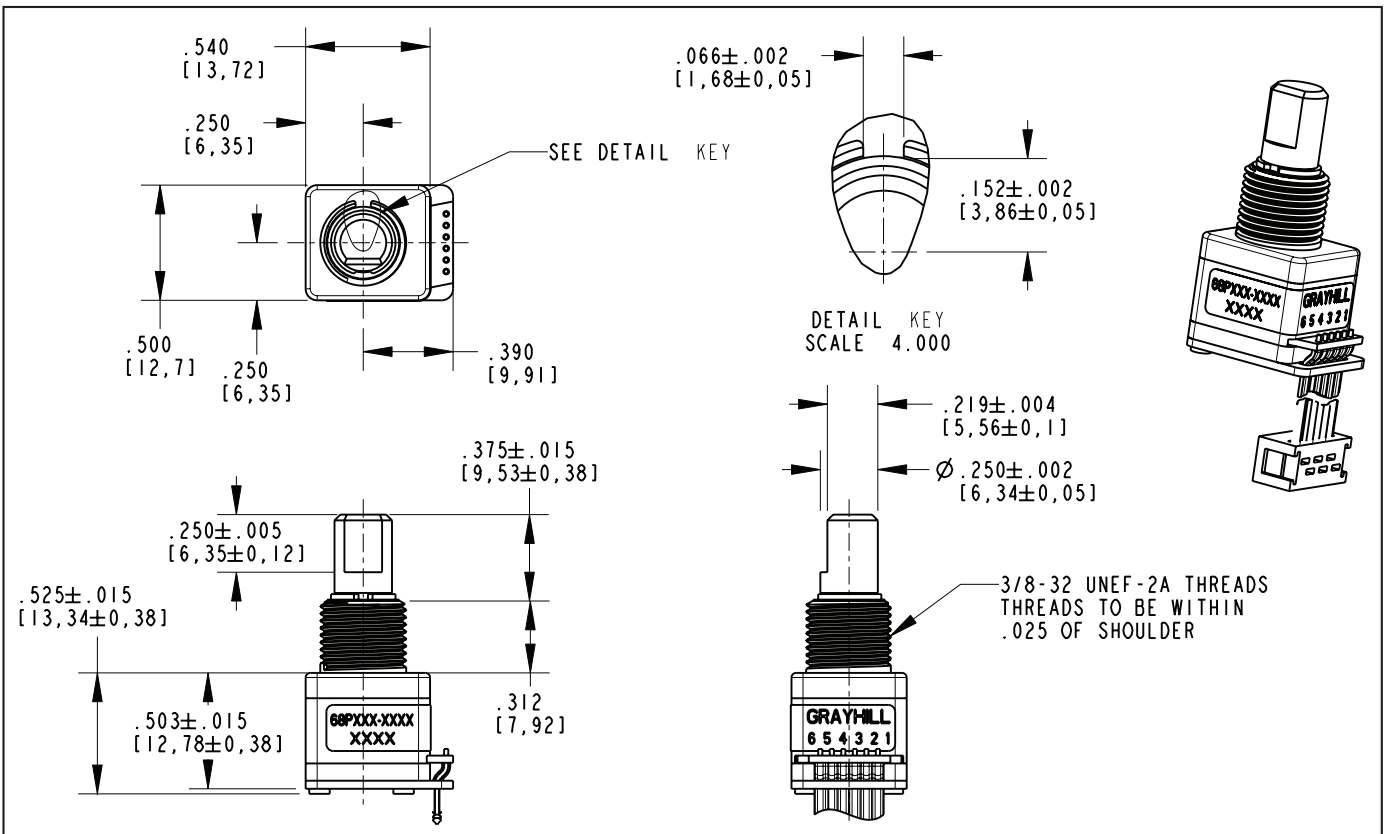
- Ratiometric analog output
- Debris resistant Hall effect sensor technology
- 3 million rotational cycles
- Single or redundant output
- Custom output options

APPLICATIONS

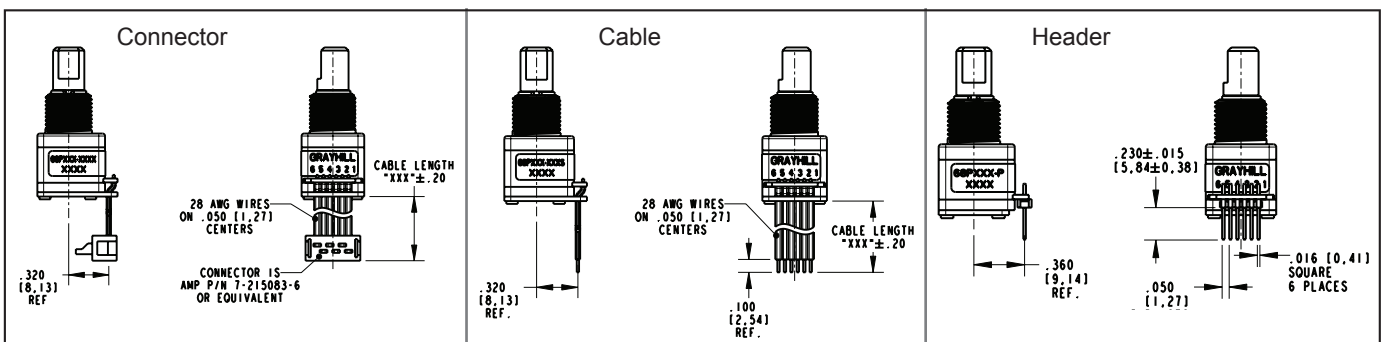
- Test & Measurement equipment
- Audio / Visual equipment
- Agriculture & Construction throttle control
- Potentiometer substitute with long life



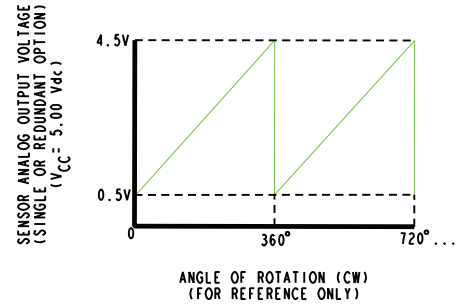
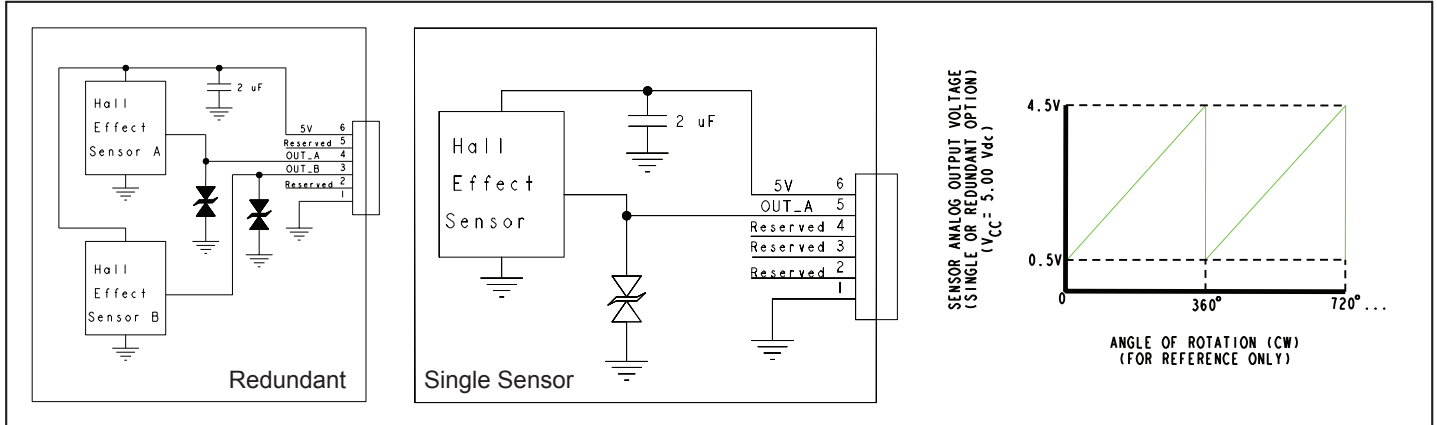
DIMENSIONS in inches [millimeters]



TERMINATION OPTIONS



ELECTRICAL SCHEMATIC



* Customized electrical outputs are available. Contact Grayhill for additional details.

SPECIFICATIONS

Electrical Ratings

Operating Voltage: Minimum 4.5V, maximum 5.5V (VDD)
Supply Current Redundant Sensors: Typical 22mA, maximum 40mA
Supply Current Single Sensor: Typical 11mA, maximum 20mA
Isource: 6mA (Vout Error ≤ 1%)
Isink: -6mA (Vout Error ≤ 1%)
Power-Up Time: 10ms
System Propagation Delay: 100 μs

Output Leakage Current: Minimum -20μA, maximum 20μA
DC Supply Voltage @ PIN VDD
Overvoltage: Minimum -18V, maximum 27V
Sensor Error: When an internal sensor error occurs, the output goes to ≤ 4% of supply (VDD)

EMC Ratings

Radiated Immunity: IEC 61000-4-3
Conducted Immunity: IEC 61000-4-6
Radiated Emissions: ANSI C63.4
Conducted Emissions: EN 55022

Electrostatic Discharge: IEC 61000-4-2
Power Frequency Magnetic Field: Tested per IEC 61000-4-8

Physical & Mechanical Ratings

Mechanical Life: 3,000,000 cycles of operation. 1 cycle is a rotation through all positions and a full return
Average Rotational Torque: 1.5 in-oz maximum
Maximum rotational speed: 100 rpm
Mounting Torque: 15 in-lbs. maximum
Shaft Pushout / Pullout Force: 45 lbs. / 45 lbs. minimum
Terminal Strength: 15 lbs. minimum. Cable or Header pullout force
Solderability: 95% free of pin holes & voids

Environmental Ratings

Operating Temperature: -40°C to 85°C
Storage Temperature: -55°C to 100°C
Humidity: 96 hours @ 90-95% humidity @ 40°C

Mechanical Vibration: Harmonic motion with amplitude of 15g within a varied frequency of 10 to 2000 Hz for 12 hours

Mechanical Shock:

Test 1: 100g for 6 ms half-sine wave with a velocity change of 12.3 ft/s.
 Test 2: 100g for 6 ms sawtooth wave with a velocity change of 9.7 ft/s.
Seal: IP67, Meets IEC 60529

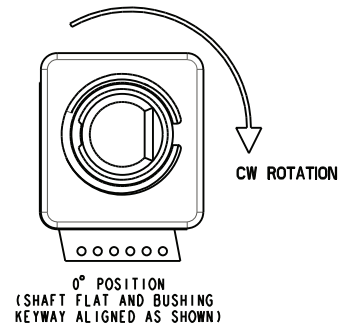
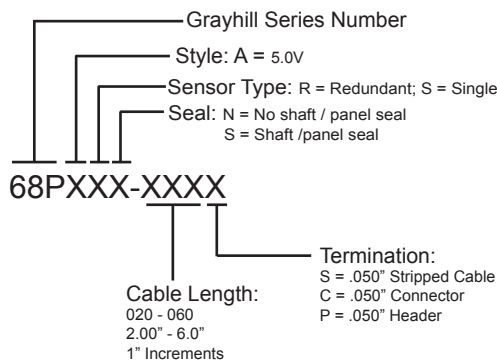
Materials and Finishes

Bushing: Zamak 2
Shaft: Stainless Steel
Housing: Zytel FR - 50; Glass Reinforced Nylon 6/6
Hex Nut: Nickel plated brass
Washers: 302 Stainless Steel
Shaft Seal: Silicone
Panel Seal: Silicone
Header Pins: Tin plated phosphate bronze
Lockwasher: Spring steel, zinc plate with clear trivalent chromate finish
Cable: Copper stranded with topcoat in PVC

Hall Effect

Encoder has ratiometric analog output (output levels are proportional to the supply voltage). Specifications on this datasheet apply @ VDD = 5.00 V.

ORDERING INFORMATION



For prices and custom configurations, contact a local sales office, an authorized distributor, or Grayhill's sales department.