

SERIES 67B Hall Effect Joystick

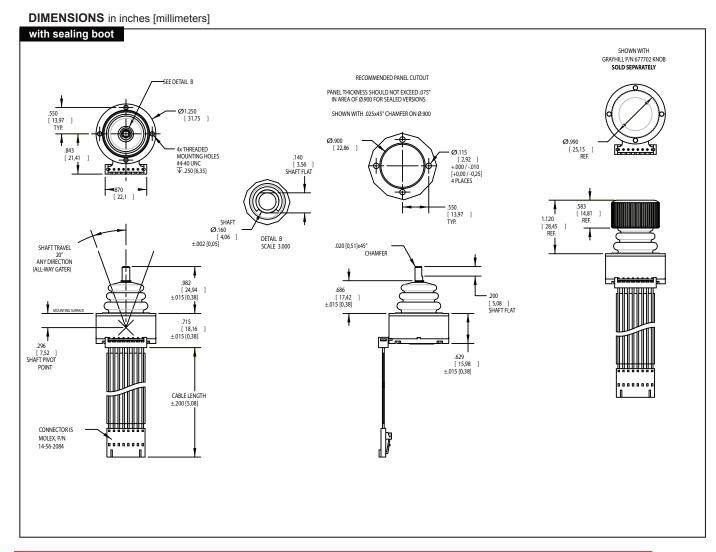
FEATURES

- Proportional output joystick, pushbutton, & momentary rotary select in one device
- · Shaft and panel seal to IP67
- Rugged and compact: 1.25 inch diameter
- · Long operational life
- RoHS compliant
- i²c output (see www.grayhill.com for User Manual)

APPLICATIONS

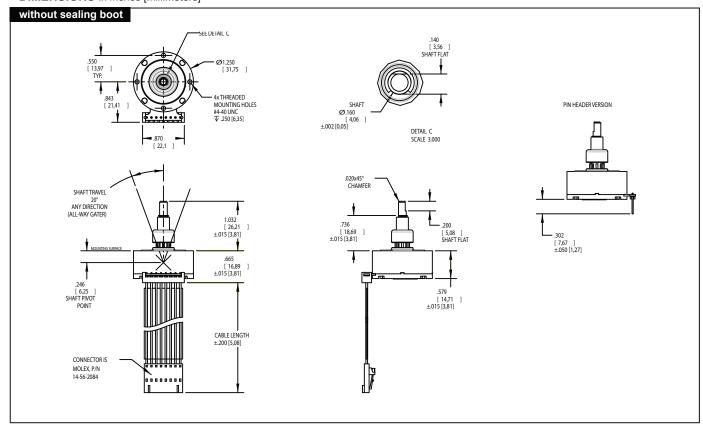
- Medical imaging X-ray, CT scanner, MRI patient tables
- Military vehicles display navigation
- · Handheld remote control devices
- Material handling equipment and crane operations

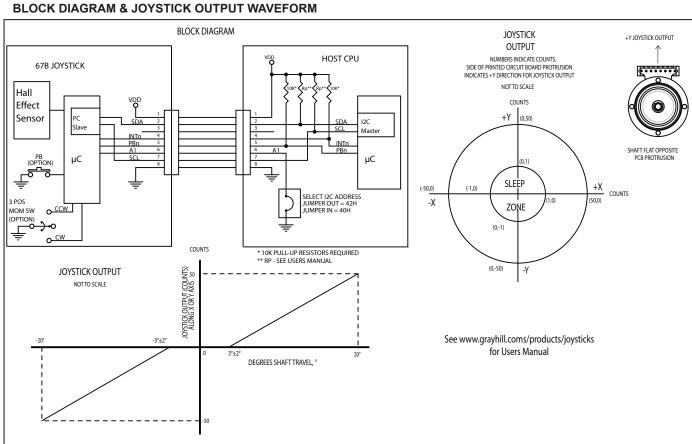




DIMENSIONS in inches [millimeters]

Grayhill







SPECIFICATIONS

Electrical Ratings
Supply Voltage (VVD): 3.3V ± .0.3V
High Level Input Voltage (VIH, Min):
0.7*VDD on SCL & SDA / 0.25*VDD+0.8 on Al
Low Level Input Voltage (VIL, Max):
0.3*VDD on SCL & SDA / 0.15*VDD on Al
Current Draw In Active Mode (IDDI): 3mA
Maximum @ VDD = 3.3V (J & P options only)
Current Draw In Sleep Mode (IDD2): 100uA
Maximum @ VDD = 3.3V (J & P options only)
Current Draw in Active Mode (IDD3): 4mA
Maximum @ VDD = 3.3V (R option has active mode only)

Typical Operating Current: 4.0 mA at Vcc = 3.3V, T = 25°C

Maximum Operating Current: 7.0 mA over $3.0 \le Vcc \le 3.6V$, $-40^{\circ}C \le T \le 85^{\circ}C$ Maximum Current Sunk By Any I/O Pin: 25mA

Leakage Current: ±5 nA Typ., ±125 nA Max Low Level Output Voltage (VOL): 0.6V On INTn & SDA @ IOL = 6mA, @ VDD = 3.3V Measurement Frequency (Active Mode): 50 Samples/Sec

Response Time, Active Mode (T1): 20ms* Response Time, Sleep Mode (T2): 80ms* Output @ Maximum Joystick Deflection (XMax, YMax): 50 Units

Output With Joystick Shaft Released

(Center Position): (0,0)

Nominal Startup Time (TP, W): 300ms

Physical & Mechanical Ratings

Vibration: Random, Meets MIL-STD-810G,

Method 514.6, Procedure I

Mechanical Shock: Meets per MIL-STD 202,

Method 213B Test Condition A

Transit Drop: Meets per MIL-ST-810G, Method

516.6, Procedure II

Terminal Strength: 10 lbs. Minimum, Tested per MIL-STD-202, Method 211A

Push-Out Force: 60 lbs. Minimum
Pull-Out Force: 60 lbs. Minimum

Shaft Impact: 0.5 lb. Weight dropped 20x from

height of 1m

Shaft Side-Load: 45 lbs. Minimum

Mounting Torque: 3-5 in-lbs recommended, 8

in-lbs. Maximum

Joystick Actuation Force: 300g Peak ± 25% Joystick Life: 1 million cycles minimum** Pushbutton Life: 1 million actuations,

minimum

Rotational Life: 1 million turns, minimum in

each direction

Materials and Finishes

Housing: Thermoplastic **Backplate:** Thermoplastic

Lockwashers: 304 Stainless Steel Hex Nuts: 303 Stainless Steel Shim Washers: 304 Stainless Steel

Shaft: 303 Stainless Steel

Cable Assembly: 26 AWG Stranded Copper

Conductors

Connector Body: Thermoplastic Terminals: Phosphor Bronze O-Rings: Fluorosilicone

Sealing Boot: Silicone Rubber Molded over

Thermoplastic Insert

Environmental Ratings

Seal: IP67, Meets IEC 60529 (sealed version

only)

Altitude: Tested per MIL-STD 202,

Method 105C

Thermal Shock: Meets MIL-STD 202,

Method 107G

Operating High Temperature: +85°C, Tested per IEC 68-2-14, Test Na
Operating Low Temperature: -40°C, Tested per IEC 68-2-14, Test Na
Storage High Temperature: +100°C, Tested per IEC 68-2-2, Method Ba
Storage Low Temperature: -55°C, Tested per IEC 68-2-1, Method Aa
Humidity: Meets MIL-STD 202,

Method 103B

Humidity, 85/85: 500 hours tested per MIL-

STD 202

Method 103B,

Solar Radiation: Tested per MIL-STD 810G,

Method 505.5, Procedure II

Chemical Resistance: Meets ISO 16750-5

Dielectric: Meets MIL-STD 202G,

Method 301

Insulation Resistance: Tested per MIL-STD

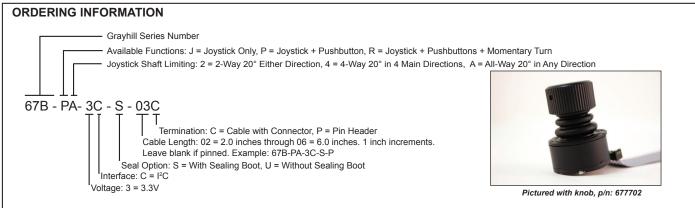
202G, Method 302

EMC Ratings

Radiated Immunity: Meets IEC 61000-4-3 Conducted Immunity: Meets IEC 61000-4-6 Radiated Emissions: Meets ANSI C63.4 Conducted Emissions: Meets EN 55022 Electrostatic Discharge: Meets IEC 61000-4-2 Power Frequency Magnetic Field: Meets IEC

61000-4-8

^{**}One cycle is defined as a complete revolution of the shaft around the fixed perimeter, or one actuation in each of the 4 main directions, with return to center between each actuation.



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

^{*}Response time is the time from joystick movement to when new X,Y position data is available.



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