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]

with sealing boot

SHOWN WITH GRAYHILL P/N 677720 KNob
SOLD SEPARATELY

RECOMMENDED PANEL CUTOUT
Panel thickness should not exceed .075” in area of Ø.900 for sealed versions
SHOWN WITH .025x45° CHAMFER ON Ø.900

CONNECTOR IS MOLEX, P/N 14-56-2084

Actual Size
# Specifications

**Electrical Ratings**
Supply Voltage (VVD): 3.3V ± 0.3V
High Level Input Voltage (VIH, Min): 0.7VDD on SCL & SDA / 0.25VDD+0.8 on Al
Low Level Input Voltage (VIL, Max): 0.3VDD on SCL & SDA / 0.15VDD on Al
Current Draw in Active Mode (IDD1): 3mA
Current Draw in Sleep Mode (IDD2): 100uA
Impact Strength: Method 516.6, Procedure II
Vibration: Random, Meets MIL-STD-810G, 300ms
Physical & Mechanical Ratings

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Terminal Strength:</td>
<td>10 lbs. Minimum, Tested per MIL-STD-202, Method 211A</td>
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<tr>
<td>Push-Out Force:</td>
<td>60 lbs. Minimum</td>
</tr>
<tr>
<td>Pull-Out Force:</td>
<td>45 lbs. Minimum</td>
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<tr>
<td>Shaft Side-Load:</td>
<td>8 lbs. Minimum</td>
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<tr>
<td>Mounting Torque:</td>
<td>3-5 in-lbs recommended, 8 in-lbs. Maximum</td>
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<tr>
<td>Joystick Life:</td>
<td>1 million cycles minimum**</td>
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<tr>
<td>Pushbutton Life:</td>
<td>1 million actuations, minimum</td>
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<tr>
<td>Rotational Life:</td>
<td>1 million turns, minimum in each direction</td>
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**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
Connectors: Phosphor Bronze
Terminals: Thermoplastic
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, 10 V/m, 80 MHz-1000 MHz
Conducted Immunity: Meets IEC 61000-4-6, 10 V RMS, 150 KHz to 80 MHz
Radiated Emissions: Meets ANSI C63.4, Class B
Conducted Emissions: Meets EN 55022, Class B
Electrostatic Discharge: Meets IEC 61000-4-2, 8 kV contact/15 kV air discharge
Power Frequency Magnetic Field: Meets IEC 61000-4-8, 30 A/m

**Ordering Information**

<table>
<thead>
<tr>
<th>Grayhill Series Number</th>
<th>Available Functions: J = Joystick Only, P = Joystick + Pushbutton, R = Joystick + Pushbuttons + Momentary Turn</th>
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</thead>
<tbody>
<tr>
<td>67B - PA- 3C - S - 03C</td>
<td>Joystick Shaft Limiting: 2 = 2-Way 20° Either Direction, 4 = 4-Way 20° in 4 Main Directions, A = All-Way 20° in Any Direction</td>
</tr>
</tbody>
</table>

Termination: C = Cable with Connector, P = Pin Header
Cable Length: 02 = 2.0 inches through 06 = 6.0 inches, 1 inch increments. Leave blank if pinned. Example: 67B-PA-3C-S-P
Seal Option: S = With Sealing Boot, U = Without Sealing Boot
Interface: C = PC
Voltage: 3 = 3.3V

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

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