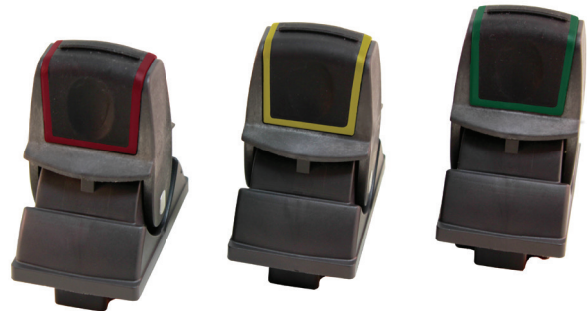


## SERIES 68B Hall Effect Rocker Switch

### FEATURES

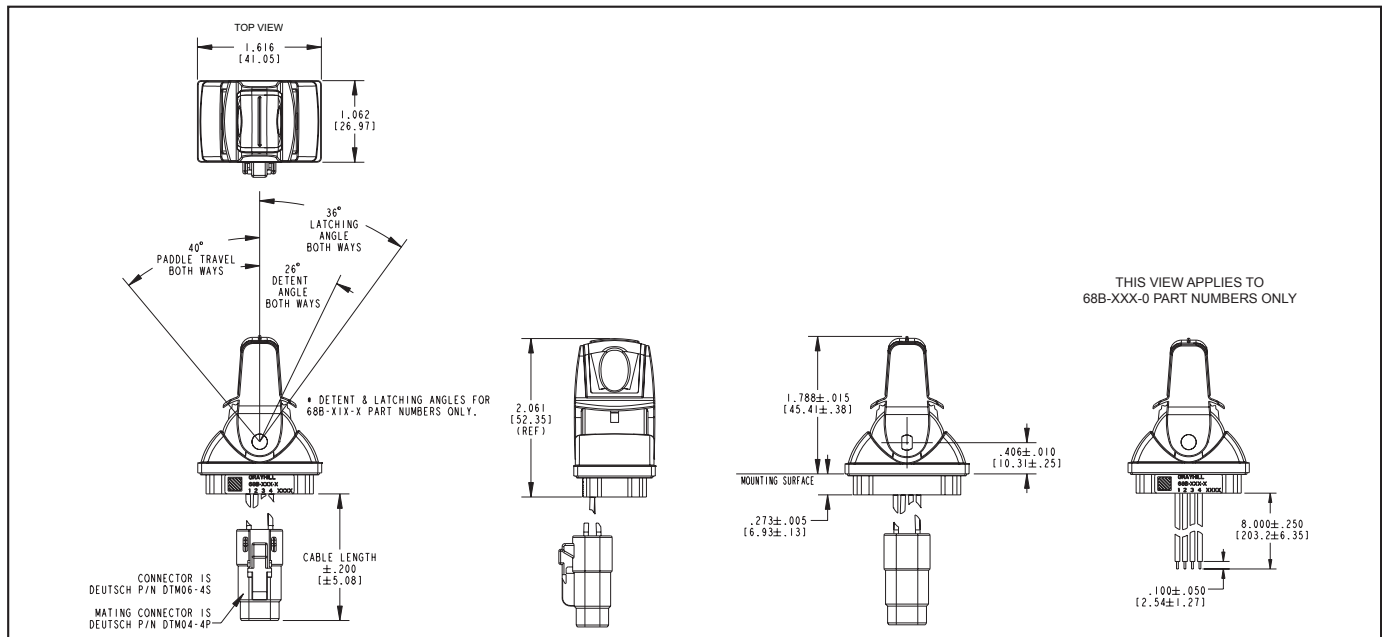
- Ratiometric analog output
- Sealed to IP67 dynamic - even during actuation
- Rugged industrial design suited for outdoor use
- Provides positive tactile feedback in any environment
- Long operational life
- Redundant output for safety
- Available with 26° detent and 36° latching, friction hold, or spring return (no detent)
- Choices of cable length
- Choices of accent color



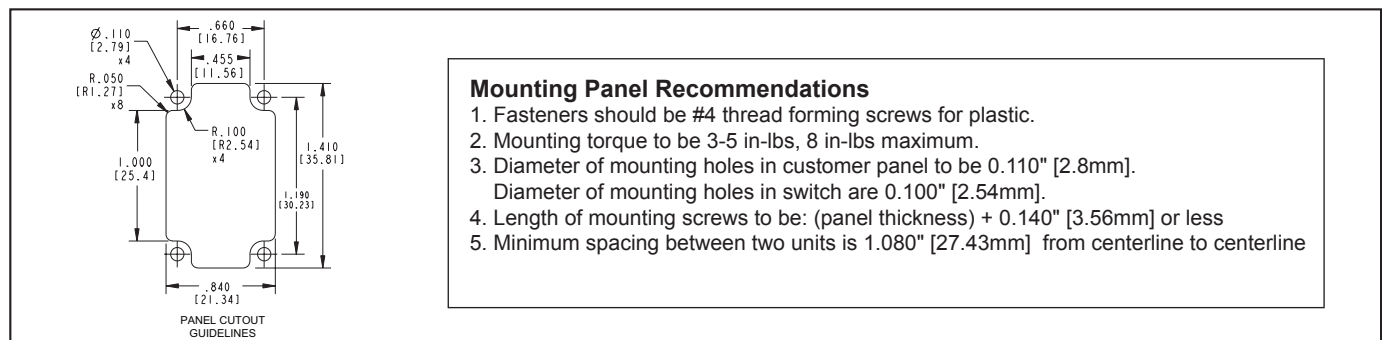
### APPLICATIONS

- Dash-panel and armrest controls
- Hydraulic fluid flow control
- Engine speed control
- Heavy duty industrial equipment
- Remote control belly boxes

### DIMENSIONS in inches, [mm]

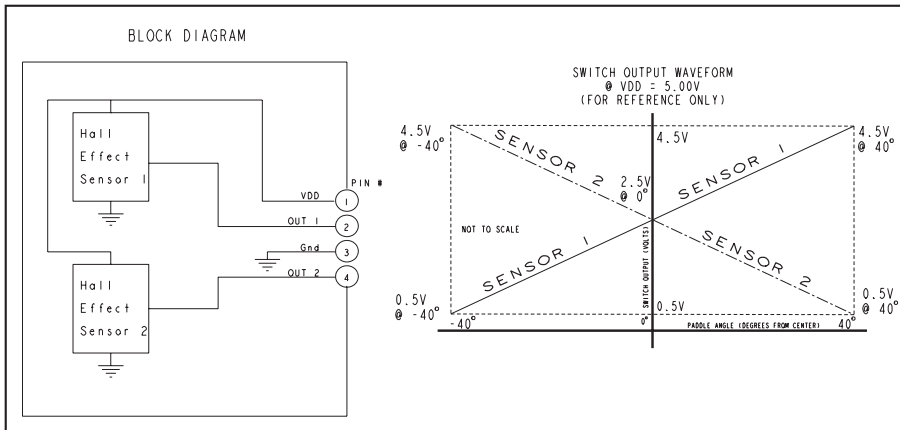


### MOUNTING PANEL OPTIONS

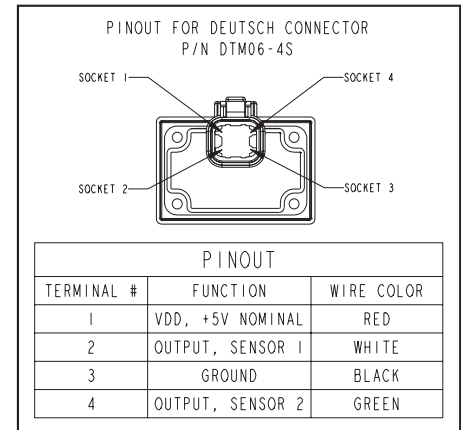


Joysticks

## BLOCK DIAGRAM & JOYSTICK OUTPUT WAVEFORM



## PINOUT AND WIRE COLOR CHART



## SPECIFICATIONS

### Electrical Specifications

**Operating Voltage on Pin 1 (VDD):** 5.0V ± 0.5V

**Absolute Maximum Voltage\* on Pin 1 (VDD):** -18 V min, +18 V max (t < 1 h)

**Operating Current:** 15 mA typ., 20 mA, max.  
**Output Voltage is Analog (Ratiometric to Operating Voltage)**

**Output at Center Position:** 50% VDD  
**Output at Full Travel:** 10% VDD or 90% VDD depending on configuration

**Output Voltage Tolerance:**  
± 3% VDD at full travel  
± 5% VDD at center position

**Output Current:** 1 mA, max.

**Recommended Load:** 10 K Ohm pull-down resistor.

**Sensor Error:** When a sensor error occurs, the output goes to < 4% of operating voltage (VDD)

\*Exceeding the Absolute Maximum Voltage may result in permanent damage to the device. This is a stress rating only and functional operation of the device at those or any other conditions above those indicated in the operation listings of this specification is not implied.

### Physical & Mechanical Ratings

**Vibration:** Random, meets MIL-STD-810G, Method 514.6, Procedure I

**Mechanical Shock:** Meets MIL-STD 202, Method 213B Test Condition A

**Transit Drop:** Meets MIL-STD-810G, Method 516.6, Procedure II

**Terminal Strength:** 10 lbs. minimum, tested per MIL-STD-202, Method 211A

**Push-Out Force:** 45 lbs. minimum

**Pull-Out Force:** 45 lbs. minimum

**Paddle Impact:** 0.5 lbs. weight dropped 3x from height of 0.3m

**Paddle Side-Load:** 45 lbs. minimum

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

**Latching Actuation Force:** 1300g PEAK ± 300g

**Detent Actuation Force:** 800g PEAK ± 200g  
**Return to Center Life:** 2 million cycles minimum\*\*

**Detent Life:** 200,000 cycles minimum

**Latching Life:** 200,000 cycles minimum

**Friction Hold Life:** 200,000 cycles minimum

\*\* One cycle is defined as full travel from the center to the +40° direction, then full travel to the -40° direction, then return to the center

### Environmental Ratings

**Seal:** IP67 as mounted

**Altitude:** Meets MIL-STD-810G, Method 500.4, Procedure I

**Thermal Shock:** Meets MIL-STD-810G, Method 503.4, Procedure I

**Operating High Temperature:** +85°C, Meets IEC 68-2-2, Test Aa

**Operating Low Temperature:** -40°C, Meets IEC 68-2-1, Test Aa

**Storage High Temperature:** +100°C, Meets IEC 68-2-2, Method Aa

**Storage Low Temperature:** -55°C, Meets IEC 68-2-1, Method Aa

**Damp Heat Cycle:** Meets IEC/EN 60068-2-38 Z/A/D

**Humidity, 85/85:** Meets MIL-STD 202, Method 103B, 500 hours

**Solar Radiation:** Meets ISO 4892-2, Method A, Cycle 1, 1000 hours

**Chemical Resistance:** Meets IEC 60068-2-74

**Salt Fog:** Meets MIL STD 810G

**Dielectric:** Meets MIL-STD-202G, Method 301

**Insulation Resistance:** Meets MIL-STD-202G, Method 302

### Materials and Finishes

**Paddle:** Thermoplastic with elastomer finger grip

**Cable Assembly:** 22AWG stranded, tin-coated copper wires in PVC insulation

**Connector Body:** Thermoplastic

**Terminals:** Nickel

**RoHS Compliant**

### EMC Ratings

**Radiated Immunity:** Meets ANSI/ASAE EP455 5.16 (100 V/M, 0.014-1000 MHz, 3 orientations)

**Radiated Emissions:** Meets ISO 14982, Sec 6.4 (Broadband), Sec 6.5 (Narrowband) limits

**Conducted Emissions:** Meets CISPR 25, Class 5

**Electrostatic Discharge:** Meets ANSI/ASAE EP455 5.12, Level 1

**Power Frequency Magnetic Field:** Meets IEC 61000-4-8, 30 A/m

## ORDERING INFORMATION

### ACCENT COLOR

- 1 = Black
- 2 = Blue
- 3 = Purple
- 4 = Yellow
- 5 = Green
- 6 = Red

# 68B-XXX-X

### SUPPLY VOLTAGE\*

5 = 5.0V

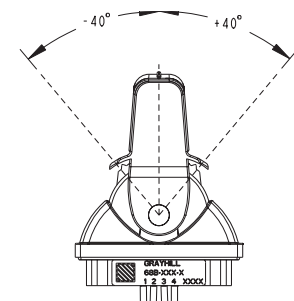
\*Output is proportional to VDD

### PADDLE FUNCTION

- 0 = No detent or latching
  - 1 = 26° detent + 36° latching
  - 2 = Friction hold
- (Custom options available, contact Grayhill)

### TERMINATION

- 0 = No Connector; 8" wires with stripped ends
- 4 = 4.00" Cable with Deutsch Connector
- 6 = 6.00" Cable with Deutsch Connector
- 8 = 8.00" Cable with Deutsch Connector



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

# Mouser Electronics

Authorized Distributor

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[68B-405-0](#)