

SERIES 68B Hall Effect Rocker Switch

FEATURES

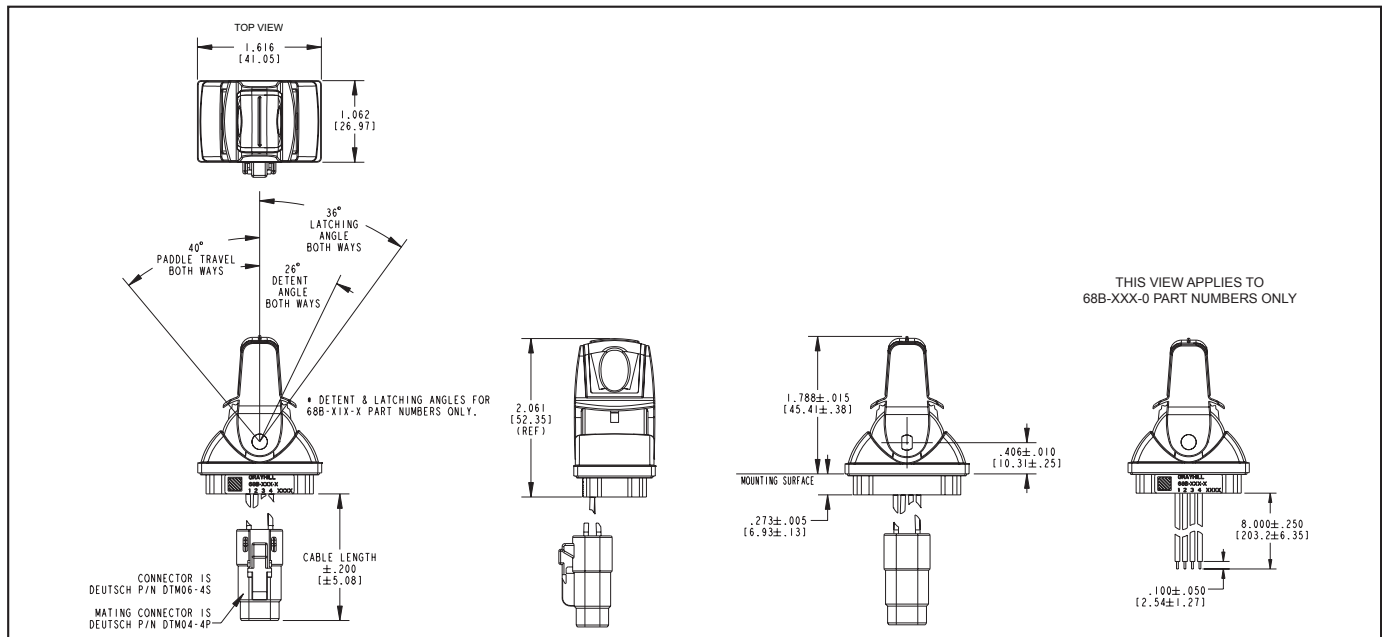
- Ratiometric analog output
- Sealed to IP67 dynamic - even during actuation
- Rugged industrial design suited for outdoor use
- Provides positive tactile feedback in any environment
- Long operational life
- Redundant output for safety
- Available with 26° detent and 36° latching, friction hold, or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



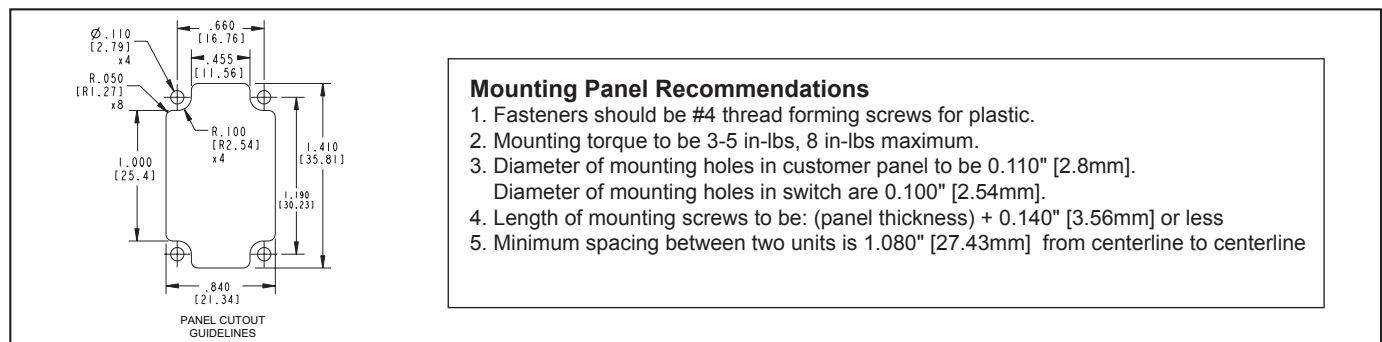
APPLICATIONS

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

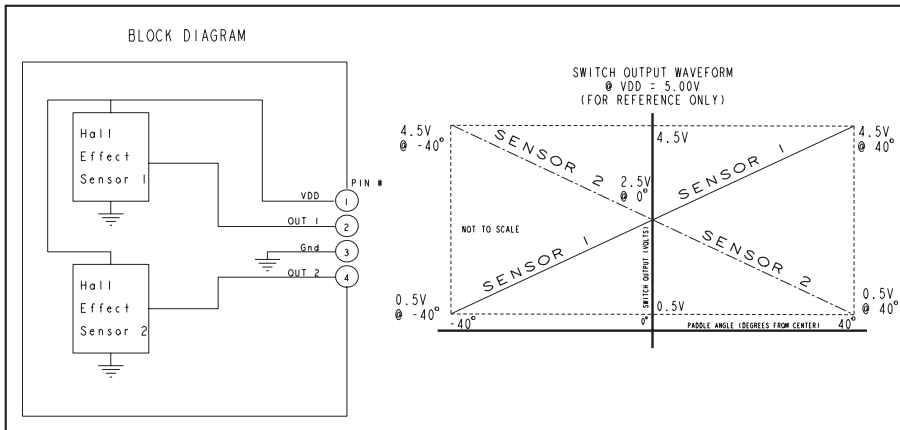
DIMENSIONS in inches, [mm]



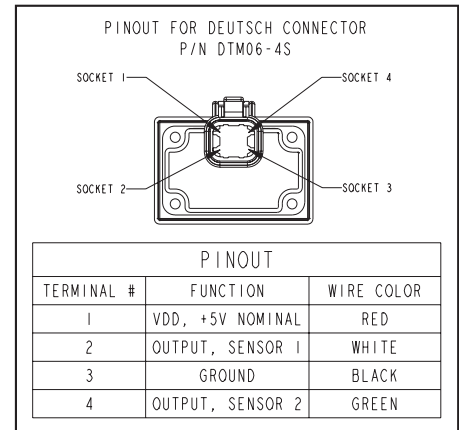
MOUNTING PANEL OPTIONS



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 0.3

Paddle Side-Load: 45 lbs. minimum

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

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/AD

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)

Conducted Immunity: Meets IEC 61000-4-6, Level 3

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, 100 V/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)

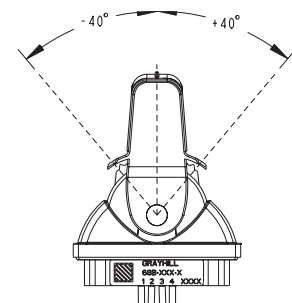
TERMINATION

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.