

SERIES 67A Hall Effect Joystick

FEATURES

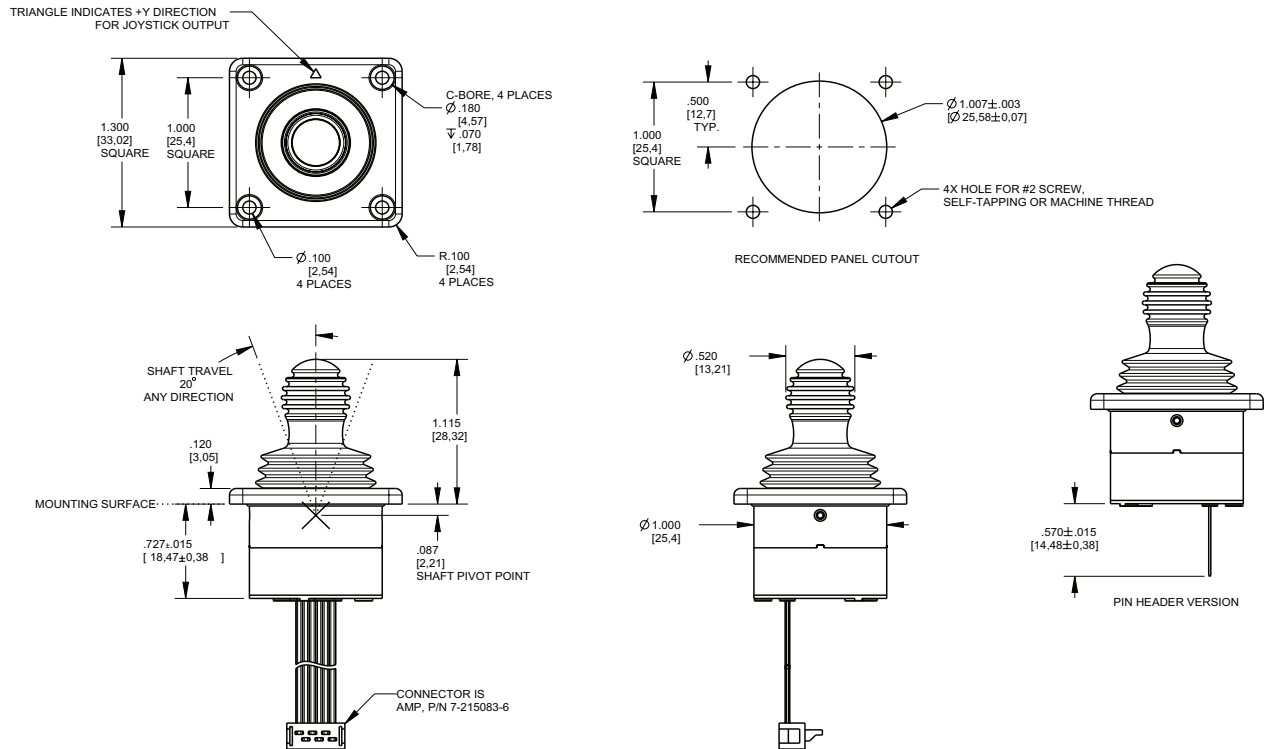
- Proportional output
- Shaft and panel seal to IP67
- Compact: 1-inch square flange
- Long operational life
- RoHS compliant

APPLICATIONS

- Medical
- Military vehicles and devices
- Mobile electronics for outdoor use

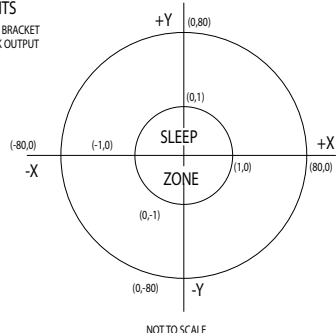


DIMENSIONS in inches (and millimeters)

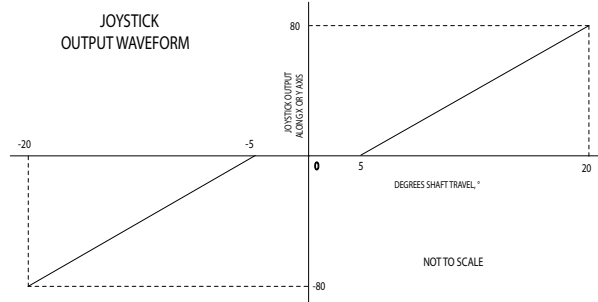


JOYSTICK OPERATIONAL LIMITS

TRIANGLE MARKING ON MOUNTING BRACKET INDICATES +Y DIRECTION FOR JOYSTICK OUTPUT



JOYSTICK OUTPUT WAVEFORM



SPECIFICATIONS

Electrical Ratings

Supply Voltage (VDD): $3.3V \pm 0.3V$
High Level Input Voltage (VIH, Min):
 $0.7 \times VDD$ on SCL & SDA / $0.25 \times VDD + 0.8$ on AIn
Low Level Input Voltage (VIL, Max):
 $0.3 \times VDD$ on SCL & SDA / $0.15 \times VDD$ on AIn
Current Draw In Active Mode (IDD1): 3mA
 Maximum @ VDD = 3.3V
Current Draw In Sleep Mode (IDD2): 100uA
 Maximum @ VDD = 3.3V
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): 80 Units
Output With Joystick Shaft Released (Center Position): (0,0)
Nominal Startup Time (TP, W): 300ms, Max

Physical & Mechanical Ratings

Vibration: Random, Tested per MIL-STD-810G,
 Method 514.6, Procedure I
Mechanical Shock: Tested per MIL-STD 202,
 Method 213B Test Condition A
Transit Drop: Tested per MIL-STD-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 lbs. 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 Life: 1 million cycles minimum**

Environmental Ratings

Seal: IP67, Tested per IEC 60529
Altitude: Tested per MIL-STD 202,
 Method 105C
Thermal Shock: Tested per MIL-STD 202,
 Method 107G
Operating High Temperature: $+85^{\circ}C$,
 Tested per IEC 68-2-14, Test Na
Operating Low Temperature: $-40^{\circ}C$,
 Tested per IEC 68-2-14, Test Na

Storage High Temperature: $+100^{\circ}C$,

Tested per IEC 68-2-2, Method Ba

Storage Low Temperature: $-55^{\circ}C$,

Tested per IEC 68-2-1, Method Aa

Humidity: Tested per MIL-STD 202,
 Method 103B

Humidity, 85/85: Tested per MIL-STD 202,
 Method 103B, 500 hours

Solar Radiation: Tested per MIL-STD 810G,
 Method 505.5, Procedure II

Chemical Resistance: Tested per
 ISO 16750-5

Dielectric: Tested per MIL-STD 202G,
 Method 301

Insulation Resistance: Tested per MIL-STD
 202G, Method 302

EMC Ratings

Radiated Immunity:

Tested per IEC 61000-4-3

Conducted Immunity:

Tested per IEC 61000-4-6

Radiated Emissions: Tested per ANSI C63.4

Conducted Emissions:

Tested per EN 55022

Electrostatic Discharge:

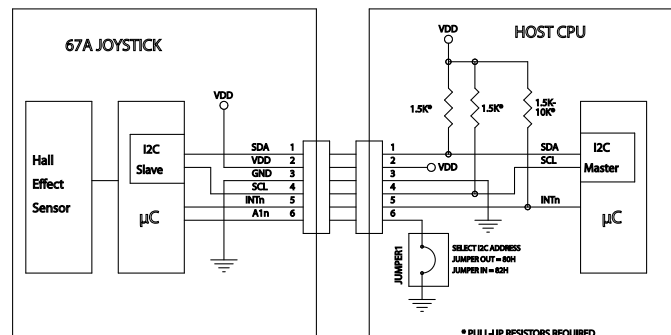
Tested per IEC 61000-4-2

Power Frequency Magnetic Field:

Tested per IEC 61000-4-8



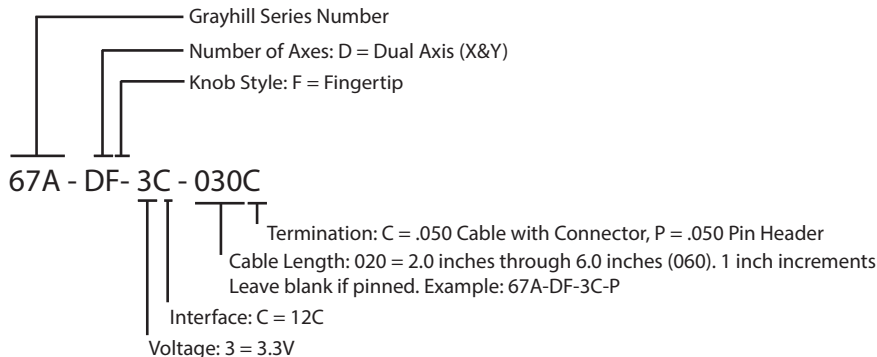
Block Diagram



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

**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.

ORDERING INFORMATION



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