SERIES 67A

Hall-Effect Joystick

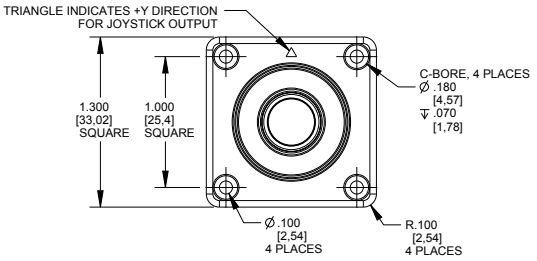
FEATURES

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

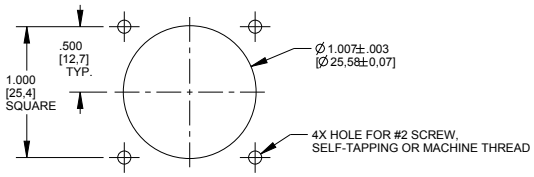
APPLICATIONS

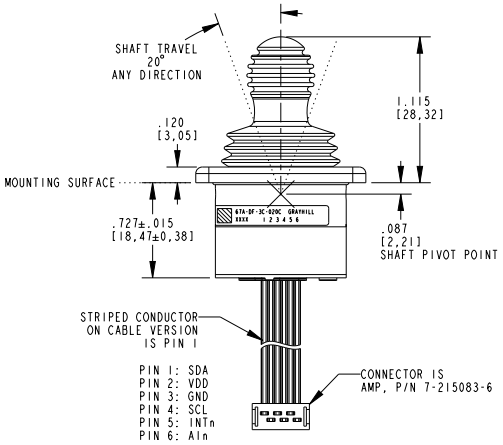
- Medical
- Military vehicles and devices
- Mobile electronics for outdoor use

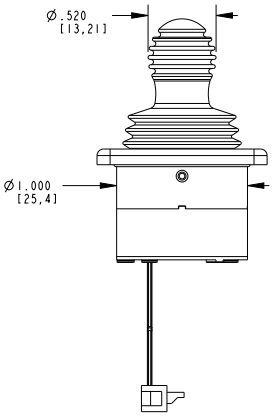
DIMENSIONS in inches [and millimeters]

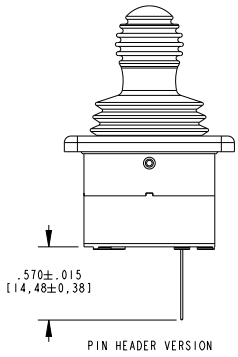


Recommended Panel Cutout

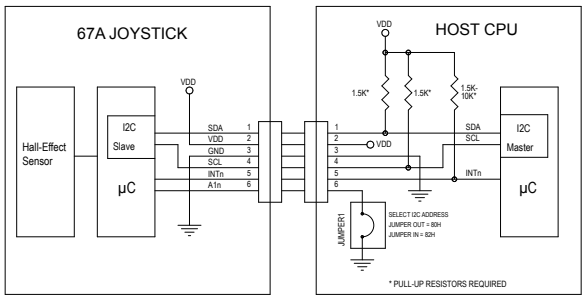


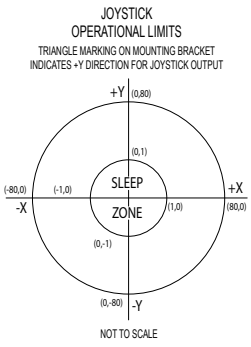


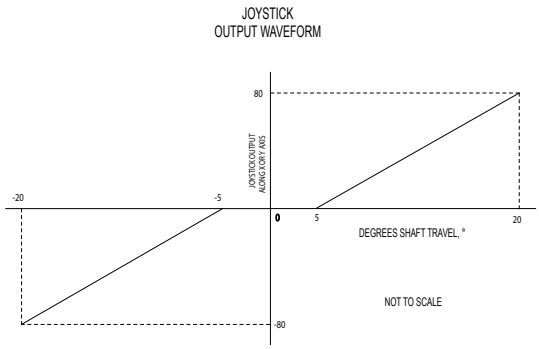




BLOCK DIAGRAM AND JOYSTICK OUTPUT WAVEFORM







Specifications are subject to change.

SPECIFICATIONS

Electrical Ratings

Supply Voltage (VVD)	3.3 V ± .0.3 V
High Level Input Voltage (VIH, Min)	0.7* VDD on SCL & SDA / 0.25* VDD+0.8 on AIn
Low Level Input Voltage (VIL, Max)	0.3* VDD on SCL & SDA / 0.15* VDD on AIn
Current Draw in Active Mode (IDDI)	3 mA maximum at VDD = 3.3V
Current Draw in Sleep Mode (IDD2)	100 uA maximum at VDD = 3.3V
Maximum Current Sunk by Any I/O Pin:	25mA
Leakage Current:	±5 nA Typ., ±125 nA maximum
Low Level Output Voltage (VOL)	0.6 V on INTn and SDA at IOL = 6 mA, at VDD = 3.3 V
Measurement Frequency (Active Mode)	50 Samples/sec
Response Time, Active Mode (T1)	20 ms*
Response Time, Sleep Mode (T2)	80 ms*
Output at Maximum Joystick Deflection (XMax, YMax):	80 units
Output With Joystick Shaft Released (Center Position)	(0,0)
Nominal Startup Time (TP, W)	300ms, Max

Physical and 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-ST-810G, Method 516.6, Procedure II
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 Actuation Force	300g peak ± 25%
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°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	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

*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

Available from your local Component Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

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Series

Number of Axes
D = Dual Axis (X&Y)

Knob Style
F = Fingertip

Voltage
3 = 3.3 V

Interface: C = 12C

Termination
C = .050 Cable with connector
P = .050 Pin header

Cable Length
020 = 2.0 in. cable
030 = 3.0 in. cable
040 = 4.0 in. cable
050 = 5.0 in. cable
060 = 6.0 in. cable
Leave blank if pinned.
Example: 67A-DF-3C-P

Specifications are subject to change.