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## Hall Effect Standard Joysticks Model 1100

### Option 0 Model 1100 (2 axis)

[Option 0 Model 1100 Drawing](#)



### Option 1 Model 1100 (2 axis)

[Option 1 Model 1100 Drawing](#)



### STANDARD FEATURES:

- Reliable, non-contacting Hall Effect sensors
- Corrosion resistant stainless steel pivot pins
- Durable rubber boot and sealing gasket
- Industrial quality solid magnets
- Precision centerless ground stainless steel shaft
- Non-binding Teflon™ coated wires

### OPTIONAL FEATURES:

- Dual decode
- Center detect
- USB
- Desktop housing
- Environmental: IP57 above panel

### PHYSICAL SPECIFICATIONS:

- Joystick travel: 36° (18° from center)
- Centering: single spring, omnidirectional
- Return to center repeatability: ±1%
- Panel thickness: 0.046 to 0.125in. (1.17 to 3.17mm)
- Housing: high impact glass-filled nylon
- Shaft: 0.25 in (6.35mm) diameter, stainless steel
- Handle: thermoset phenolic (model 1100 ball tip)
- Boot and gasket: thermoplastic rubber
- Operation force: X/Y axes = 2.25N nominal
- Breakout force: X/Y axes = 1.25N nominal
- Weight (2 axis w/ball tip handle) = 0.2 lbs (0.091 kg)
- Weight (3 axis w/one button) = 0.215 lbs (0.098kg)
- Operating temperature: -40°C to 85°C
- Storage temperature: -55°C to 165°C
- Flammability rating: 94HB
- Mechanical MTBF: 3,000,000 cycles under normal use

### ELECTRICAL SPECIFICATIONS:

- Supply voltage: Vdd = 5V
- Center voltage: 2.5V (±25mV)
- Supply current (2 axis): 4.8mA min to 11.0mA max
- Supply current (3 axis): 7.2mA min to 16.5mA max
- Resolution: Infinite
- Response: 40-80uSec
- Output current: ±2mA
- Output voltage tolerance: ±2%
- Electrical MTBF: 1,000,000 operational (power on) hours

**CH Products**  
 970 Park Center Dr.  
 Vista, CA 92081  
 Tele 760-598-2518  
 Tele (USA Only)  
 FAX 760-598-2524



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  - Trackball

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### Configuration Guides

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[HFX Hand Grip Joysticks Configuration Guide](#) | [HFX T-Bar Fader Configuration Guide](#)  
[Trackball Configuration Guide](#)

### HFX Standard Joysticks Part Number Configuration & Availability Guide

| Description        | Key   | Feature                              | Feature Availability |      |      |      |
|--------------------|-------|--------------------------------------|----------------------|------|------|------|
| Model              | HFX-1 | Mod. 1100, 2 axis                    | 1100                 |      |      |      |
|                    | HFX-2 | Mod. 1200, 2 axis with pushbutton    |                      | 1200 |      |      |
|                    | HFX-3 | Mod. 1300, 3 axis                    |                      |      | 1300 |      |
|                    | HFX-4 | Mod. 1400, 3 axis with pushbutton(s) |                      |      |      | 1400 |
| Joystick Handle    | 0     | Ball Tip                             | X                    |      |      |      |
|                    | 1     | Tapered (see note 2)                 | X                    |      |      |      |
|                    | 2     | 2 axis with pushbutton               |                      | X    |      |      |
|                    | 3     | 3 axis                               |                      |      | X    |      |
|                    | 4     | 3 axis with 1 pushbutton             |                      |      |      | X    |
|                    | 5     | 3 axis with 2 pushbuttons            |                      |      |      | X    |
|                    | 6     | Low profile                          |                      |      | X    |      |
| Limiter Plate      | S     | Square                               | X                    | X    | X    | X    |
|                    | D     | Diamond                              | X                    | X    | X    | X    |
|                    | R     | Round                                | X                    | X    | X    | X    |
|                    | M     | Slotted (single axis)                | X                    | X    | X    | X    |
|                    | P     | Plus "+"                             | X                    | X    | X    | X    |
|                    | X     | Cross "x"                            | X                    | X    | X    | X    |
| Mounting Option    | 0     | Flush                                | X                    | X    | X    | X    |
|                    | 1     | Drop In                              | X                    | X    | X    | X    |
|                    | 2*    | Raised                               | X                    | X    | X    | X    |
|                    | 3     | Snap On                              | X                    | X    | X    | X    |
|                    | 4     | Rear Mount                           | X                    | X    | X    | X    |
| Output Option      | 0     | 0V to +5V rail-to-rail               | X                    | X    | X    | X    |
|                    | 1     | +0.5V to 4.5V with Fault Detection   | X                    | X    | X    | X    |
|                    | 2     | +0.25V to 4.75V with Fault Detection | X                    | X    | X    | X    |
|                    | 3     | +2V to +3V                           | X                    | X    | X    | X    |
|                    | 4     | +1V to +4V                           | X                    | X    | X    | X    |
| Additional Options | DC    | Center Detect                        | X                    | X    | X    | X    |
|                    | U     | USB (Universal Serial Bus)           | X                    | X    | X    | X    |
|                    | D**   | Dual Decode                          | X                    | X    | X    | X    |

|                 |      |                                |   |   |   |   |
|-----------------|------|--------------------------------|---|---|---|---|
|                 | F    | Friction Clutch                | X | X | X | X |
|                 | V*** | Voltage Regulator              | X | X | X | X |
| Housing Options | MJ0  | MJ Housing with 0 buttons      | X | X | X | X |
|                 | MJS  | MJ Housing with 2 buttons      | X | X | X | X |
|                 | MJ4  | MJ Housing with 4 buttons****  | X | X | X | X |
|                 | MJ4S | MJ Housing with 4 buttons***** | X | X | X | X |

**Notes:**

- 1) X denotes availability.
- 2) Tapered handle is not compatible with either the Flush or Rear Mount Option A mounting options or the friction clutch.
- 3) Example Part Number: HFX-11D11: HFX Model 100, 2 Axis Joystick, tapered handle, Diamond Limiter Plate, Drop-in Mounting, and +0.5V to +4.5V output with fault detection.

\* = Denotes charge contact factory for pricing.

\*\* = Dual Decode CANNOT be used with USB or Voltage Regulator.

\*\*\* = Contact Factory for Available Voltage Options.

\*\*\*\* = Buttons located in the four corners of the housing.

\*\*\*\*\* = Buttons are located 3 on the right side of the housing and one button is in the lower left corner.

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[HFX Standard Joysticks Part Number Configuration & Availability Guide](#)

**Configuration Guides**

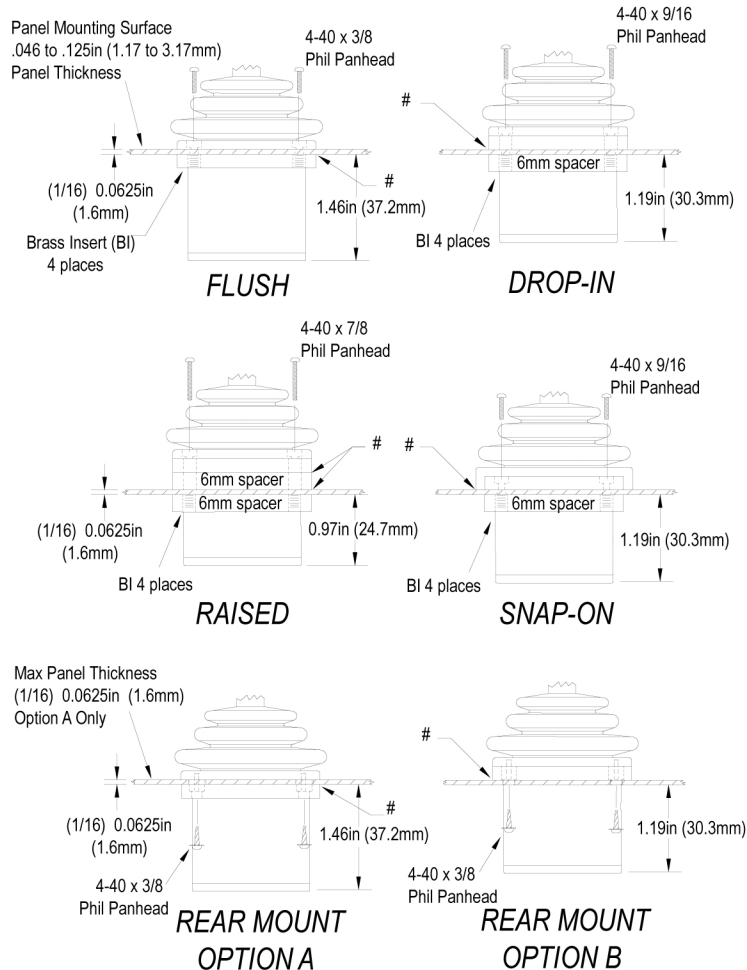
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**Mounting Options:** In order to suit a variety of integration requirements, the HFX joystick offers six different mounting options from which to choose.



Notes: 1) # indicates suggested position for optional gasket  
2) Mounting screws are included with each unit

**Limiter Plate Options:** The limiter plates are used to determine the deflection pattern of the HFX joystick.

Max Deflection  
36° (+/-18°)

Square



Diamond



Circle



Slotted  
(Single Axis)



Plus



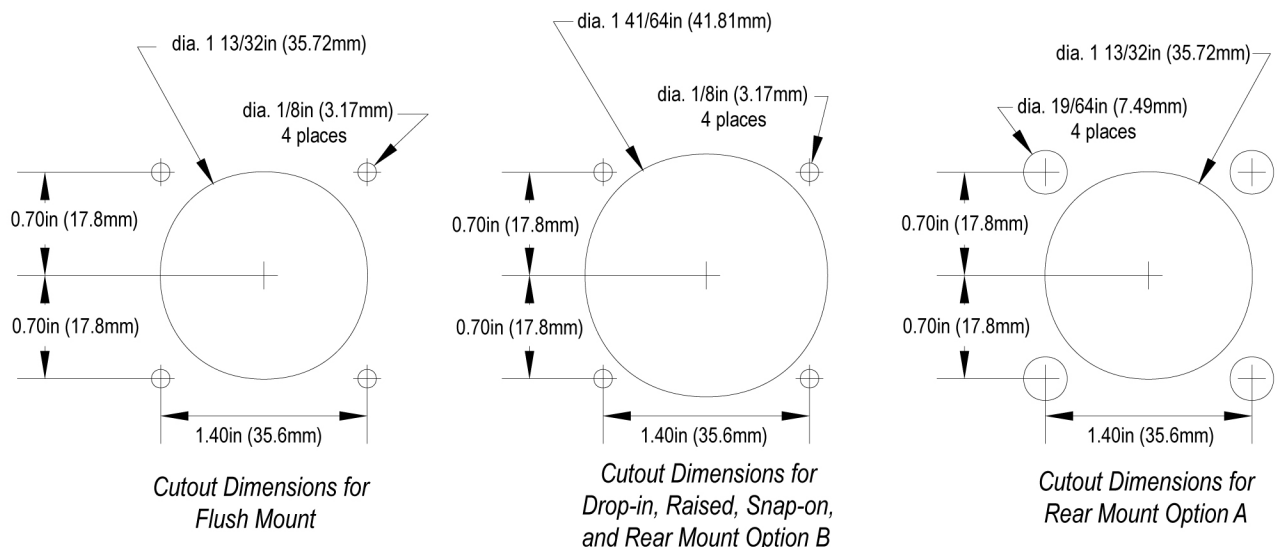
Cross  
(X)



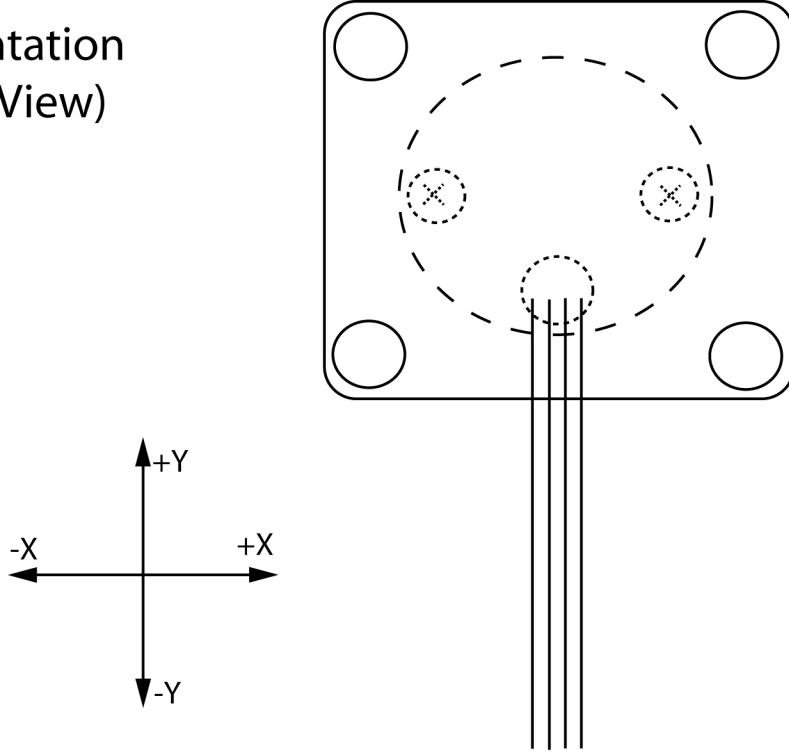
### Wire Color Code

|                 |                     |
|-----------------|---------------------|
| Red = Vdd       | Green = Z-axis*     |
| Black = Gnd     | White = Switch Com* |
| Blue = X-axis   | Orange = Switch 1*  |
| Yellow = Y-axis | Violet = Switch 2*  |
| * = optional    |                     |

### Mounting Cutout Dimensions

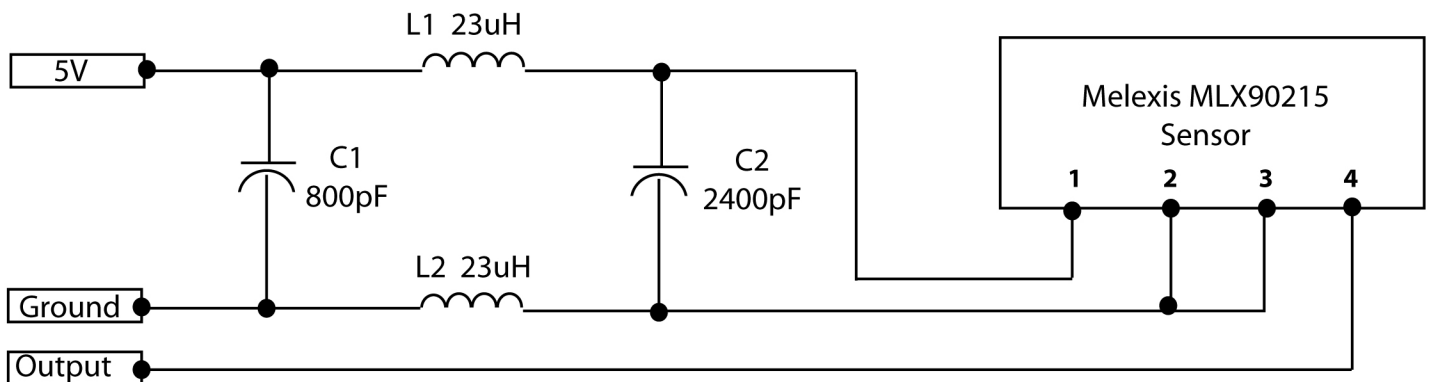


## Orientation (Top View)



## Example Wiring Diagram (optional)

The recommended wiring for additional filtering of the HFX joystick is to attach an 800pf capacitor and wire per diagram below.



Pin 1 =Vdd (Supply)  
Pin 2 = Vss (Ground)  
Pin 3 = Vss (Ground)  
Pin 4 = Output