

# BG Systems JFx Joystick

## JFx™

### Overview

The JFx series joysticks are robust high precision joysticks. Typical applications for the JFx range from computer labs, to interactive museum exhibits, to industrial equipment, to remotely piloted vehicles, and military equipment such as computer based training systems. The rugged design means that they will provide reliable service for extended periods, backed by a two year warranty.

### Key Features

#### Mechanical

The motion mechanism is based on two gimbals machined from solid aluminum alloy blocks. The gimbals rotate about hardened stainless steel shafts and shielded ball bearings. Internal mechanical parts are anodized aluminum and stainless steel. Three spring stiffnesses are available in the lateral and longitudinal axes, and two in the rotational axis. Light springs are standard.

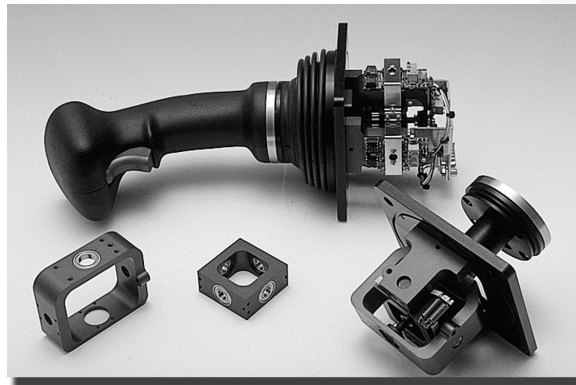
#### Electrical

In every axis the position of the stick is measured by a magnetic Hall Effect sensor, which provides output voltage through a signal conditioning amplifier. The sensing system is contactless, which improves performance and reliability over extended periods. The centering repeatability error is less than 0.5%. Switches provide a closed contact to a common input.

#### Mounting & Connectors

The joystick is mounted with four 1/4" bolts in a 3.8" cutout. Under panel depth requirement is 3.5", including the connector. The connector is either a DB-15 or a high density DB-26, which

The JF3 model has roll, pitch and twist displacements and the JF2 just has roll and pitch. Additional analog channels are available when either the proportional rocker or force joystick options are chosen. The joysticks come standard with a single position trigger. Various configurations of switches can be mounted in the head of the grip and on the side. Custom configurations can be accommodated.



carries power to the stick and the output signals.

#### Reliability

The mechanical and electrical assembly has been subjected to 5,000,000 cycle test at 20 Hz with no impact on performance.

#### Warranty

The JFx joysticks carry a 2 year warranty from the date of installation in customer equipment.

#### Grip

The standard grip is cast aluminum and is ambidextrous in most configurations. The standard configuration has a single position trigger with a two position

trigger available as an option. Various thumb actuated switches can be mounted at the top of the grip. Examples include: momentary pushbuttons, latching push-buttons, two and 4 position switches,



### JFx Options

Part Number	Description	Position
JFx-2-xx-xx-xx	2 position trigger	
JFx-x-xx-MP-xx	Momentary pushbutton	Any
JFx-x-xx-CH-xx	4 position "coolie hat" switch	Any
JFx-x-xx-CA-xx	4 position "castle" switch	Any
JFx-x-xx-2P-xx	2 position switch	Any
JFx-x-00-PRh-00	Horizontal proportional thumb rocker	Center
JFx-x-xx-PRv-xx	Vertical proportional thumb rocker	Center
JFx-x-xx-PRxs-xx	Proportional rocker with spring centering	
JFx-x-xx-FJ1-xx	2-axis miniature force joystick	Any
-Sxx	Side switch option	
-Pxx	Pinkie switch option	

### Ordering Information

Part Number	Description
JF3-1-00-00-00	3 axis
JF2-1-00-00-00	2 axis
Switch options replace any -00-	

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proportional rockers, and miniature force joysticks.

The grip can also be ordered with buttons mounted on the side in two locations.

The side switch is a thumb operated switch and the “pinkie switch” is operated by the little finger. These are mounted on the left side of the joystick for right hand operation. If left hand operation is required please contact BG Systems for availability.

The joystick above shows a JF3-1-MP-CA-MP-SMP-PMP configuration.

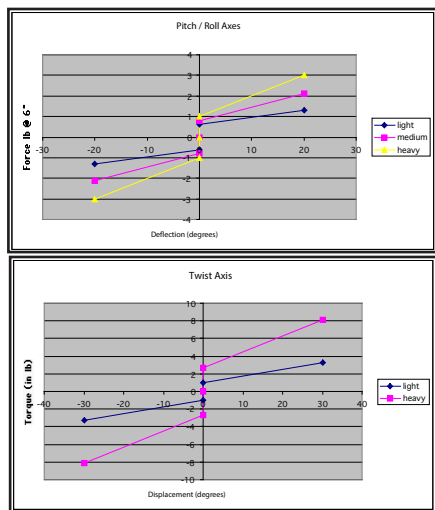
### Technical Specifications

#### Electrical

Input Voltage	5 vDC
Output Voltage	0.0 to 5.0 vDC
Center Voltage	2.5 vDC
Output Current	10 mA max
Supply Current (JF2)	14 mA
Supply Current (JF3)	20 mA
Switch Operation	contact closing

#### Physical

Lateral Travel	22°
Longitudinal Travel	22°



### Joystick Options

The JF<sub>x</sub> joysticks can be ordered with options listed in the table below. The switch or button options for the top of the grip have three locations: left, center and right. The proportional rockers use friction hold, but spring loading is available by adding an ‘s’ to the part number. The vertical proportional rocker option is only available in the center position. With the horizontal proportional rocker

it is not possible to mount any other switches.

To specify options on the joystick, note that the xx in the part number are:

JF <sub>x</sub>	2 or 3 axis
JF3-x	1 or 2 position trigger
JF3-1-xx	Left Switch option
JF3-1-00-xx	Center switch option
JF3-1-00-00-xx	Right switch option
-Sxx	Side switch option



JF3-x-MP-CH-MP



JF3-x-2P-CA-MP



JF3-x-MP-CA-CH



JF3-x-MP-MP-MP



JF3-x-CA-FJ1-2P



JF3-x-CA-PRv-2P

### Installation Drawing

