

# FG series

Fixed Grip™ hand grip controllers •  
fully customizable & ambidextrous operation



## DISTINCTIVE FEATURES

- Custom configured
- Analog or USB outputs
- Rugged hand operation
- Readily available with TS series thumbstick
- Operator presence paddle option



## ENVIRONMENTAL SPECIFICATIONS

- Operating Temperature: -40 °C to +85 °C (-40 °F to +185 °F)
- Storage Temperature: -40 °C to +85 °C (-40 °F to +185 °F)
- Above panel sealing: Up to IP65 (subject to final specifications)
- EMC Immunity Level (V/M): EN61000-4-8:2009
- EMC Emissions Level: EN61000-4-3: 2006
- ESD: EN61000-4-2:2008



## ELECTRICAL SPECIFICATIONS

- Electrical Resistive Load: 5 A (subject to selected switch)
- Electrical Inductive Load: 3 A (subject to selected switch)
- Low Level: 10 mA @ 30 mV (subject to selected switch)
- Electrical Life: 1 million cycles 5 A @ 28 VDC  
Resistive snap-action (depending on selected switch)



## MECHANICAL SPECIFICATIONS

- Operating Force: 7.5 N ±2.0 N (1.69 lbf ±0.11 lbf)
- Maximum Vertical Load: 1000 N (224.8lbf)
- Maximum Horizontal Load: 600 N (134.9 lbf)
- Mechanical Angle of Movement: 40°
- Expected Life: 1 million lifecycles
- Mass/weight: 317.5 g (11.2 oz)

The company reserves the right to change specifications without notice.

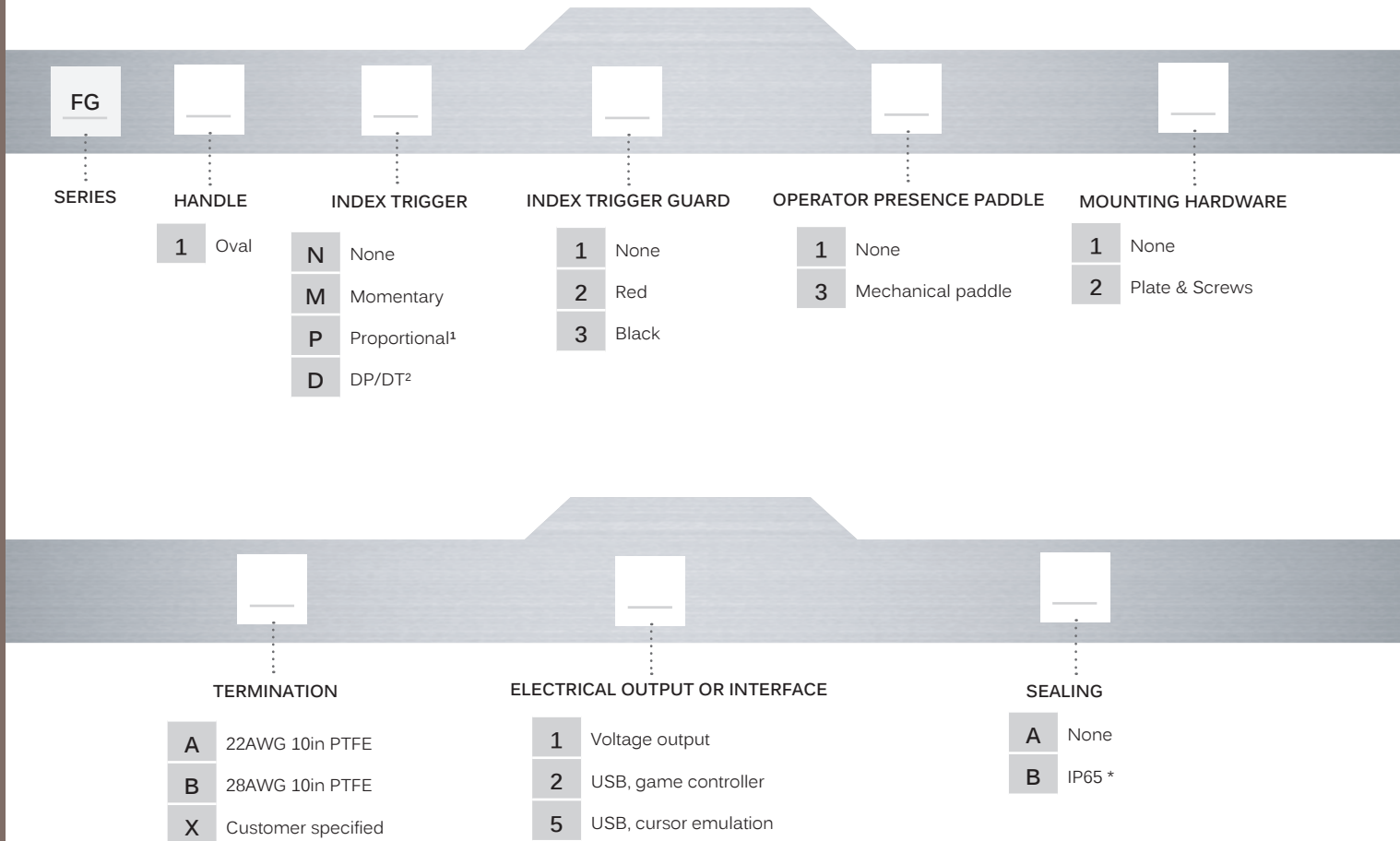


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## BUILD YOUR PART NUMBER



### Notes:

<sup>1</sup> 0.5V to 4.5V output

<sup>2</sup> Double pole / double throw

\* Above panel (dependant on handle configuration)



## ABOUT THIS SERIES

### Notes:

1. Dimensions are in mm/(inch)

2. Faceplate:

The FG series Fixed Grip hand controller features a modular faceplate that can be customized for specific applications. Ambidextrous for most configurations, the faceplate may be populated with a variety of thumb actuated switches including momentary pushbuttons, latching pushbuttons, two or three way toggle switches, 4 or 5 way trims and miniature proportional joysticks. Every FG faceplate is custom configured to order. Please consult APEM for options.

3. Index Trigger:

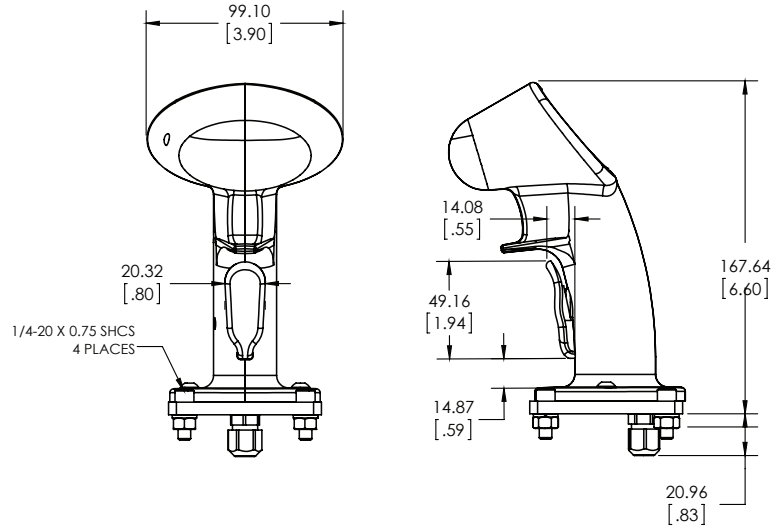
The FG series Fixed Grip controllers may be equipped with or without an index trigger switch. Index trigger configuration options include a single pole normally open momentary switch, a double pole double throw tactile switch, or a proportional Hall effect device.

Index Trigger Options: N: None M: Momentary, single pole normally open P: Hall effect, 0.5V to 4.5V proportional output D: Double pole, double throw

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## DIMENSIONS



## HANDLE OPTIONS



Index trigger with trigger guard



Index trigger



No index trigger

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## USB OPTIONS

- Supply Voltage Range: 5.00 VDC
- Maximum current: 70 mA
- USB version: 2.0
- Connector style: USB-A

## USB GAME CONTROLLER

Featuring USB 2.0 HID compliant interface, APEM's USB joysticks are recognized as standard HID "game controller" devices. Adhering to the HID specification, APEM's USB joysticks are plug-and-play with most versions of Windows. Joystick button and axis assignments are dependent upon the controlled application.

### Features

- USB 2.0 HID compliant "game controller" device
- Easy to install and operate
- Functions determined by controlled application
- 12-bit (0 to 4095) axis resolution

### Termination (supplied cable)

- USB Male Type A Connector (198 cm)
  - (72" +/-1") - overmolded cabled - Mini B to Male Type A USB connector (option 0U)
  - (84" +/-1") - overmolded cable - Male Type A USB connector (option 2U)

## USB CURSOR EMULATION

The Cursor Emulation option converts multi-axis joystick output into a mouse or cursor control device. The Cursor Emulation option is ideal for vehicle applications subjected to dirt and high vibration which makes operating a traditional cursor control device difficult. Cursor simulation is only compatible with Window OS.

### Features

- HID compliant "mouse" device

### Button Function

- B1: Left Mouse Click
- B2: Right Mouse Click

### Termination (supplied cable)

- USB Male Type A Connector (185 cm):
  - (72" +/-1") - overmolded cabled - Mini B to Male Type A USB connector (option 0U)

## SUPPORTED OPERATING SYSTEMS: USB GAME CONTROLLER AND CURSOR EMULATION

### Windows Operating System

- Windows 7
- Windows 8.1
- Windows 10

### Linux Operating System

APEM's USB joysticks are compatible with Linux, although system compatibility is not guaranteed. The user is responsible for verifying specific Linux OS compatibility.

### Custom Firmware

Custom configurations and firmware is available upon request. Available options include:

- 8-bit axis resolution
- 10-bit axis resolution
- Signed bit axis resolution
- Custom USB product name



## VOLTAGE REGULATOR SPECIFICATIONS

The Voltage Regulator allows APEM's Hall effect joysticks to operate with a range of supply voltages..

### Voltage Regulator - Unipolar

- Supply Voltage Range: 8-35 VDC
- Output Voltage Range: see output options
- Maximum Current: 90 mA

### Voltage Regulator - Bipolar

- Supply Voltage Range: 11-35 VDC
- Output Voltage Range: ±10 VDC
- Maximum Current: 90 mA

### Termination (flying leads)

- 28 AWG 20.32 cm (8.0") ±1.54 cm (1") PTFE