



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# FR series

## Hall effect 3-position thumb controls

Distinctive features and specifications



- Non-contact Hall effect technology
- Three position, ON-OFF-ON analog output
- 3 million lifecycles
- Submersible to 1m (3.28ft) per IP68
- Choice of handle color
- Redundant outputs available

### ENVIRONMENTAL

- Operating Temperature: -40°C to +85°C (-40°F to +185°F)
- Storage Temperature: -40°C to +85°C (-40°F to +185°F)
- Sealing: Submersible to 1m per IP68<sup>4</sup>
- EMC Immunity Level: EN61000-4-3
- EMC Emissions Level: EN61000-6-3:2001
- ESD: EN61000-4-2

### MECHANICAL

- Initial Actuation Force:
  - 260g Nominal into position 2<sup>3</sup>
  - 360g Nominal out of position 2<sup>3</sup>
- Maximum Vertical Load: 200N<sup>3</sup>
- Maximum Horizontal Load: 150N<sup>3</sup>
- Mechanical Life: 3,000,000 full forward to full back

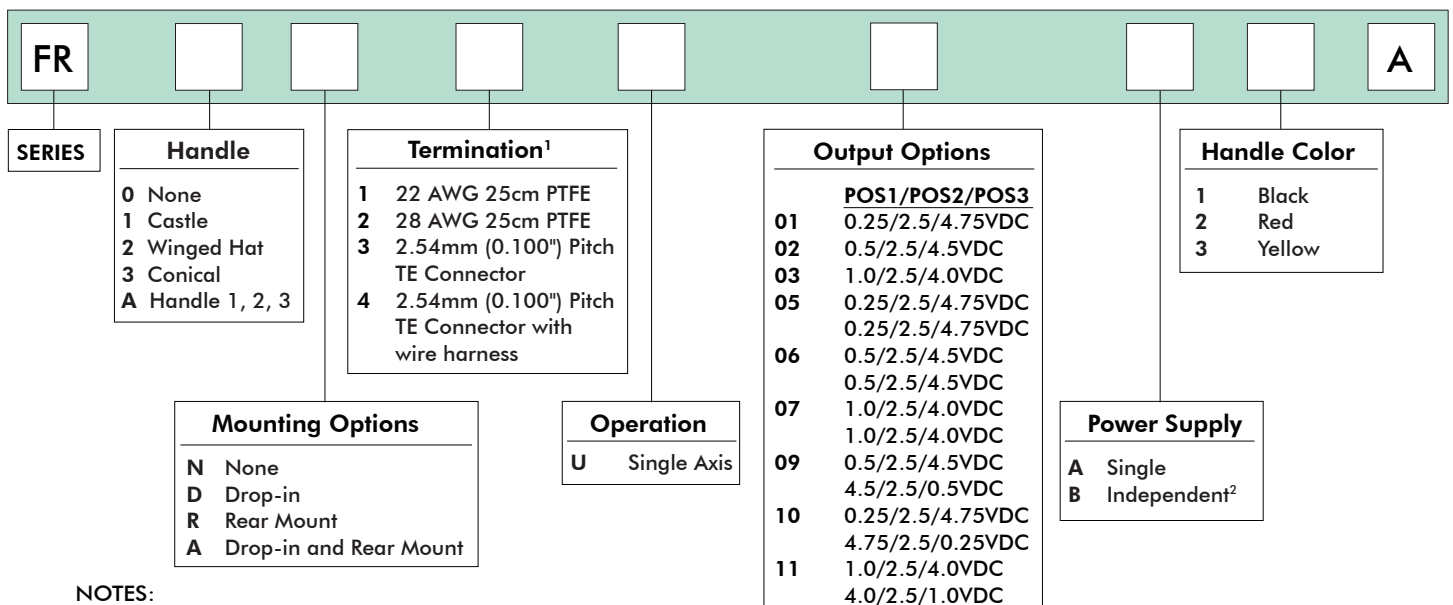
### ELECTRICAL

- Supply Voltage Range: 5.00V ± 0.01V
- Reverse Polarity Max: 10V
- Overvoltage Max: 20V
- Return to Center Voltage Tolerance (POS2): 2.50V ±0.50V
- Output Voltage Tolerance at Full Travel/Detent Position (POS1, POS3): ±0.25V

### MATERIALS

- Handle/Actuator: Glass filled nylon
- Body: Glass filled nylon
- Boot: Silicone

NOTE: All values are nominal.



### NOTES:



Mounting accessories.

Standard hardware includes: – For the Drop-in option: 4 push in connectors, drop-in bezel and an O-ring.  
 – For the Rear mount option: 4 x 1/2 FH SS Phil Screws and a rear mount bezel.

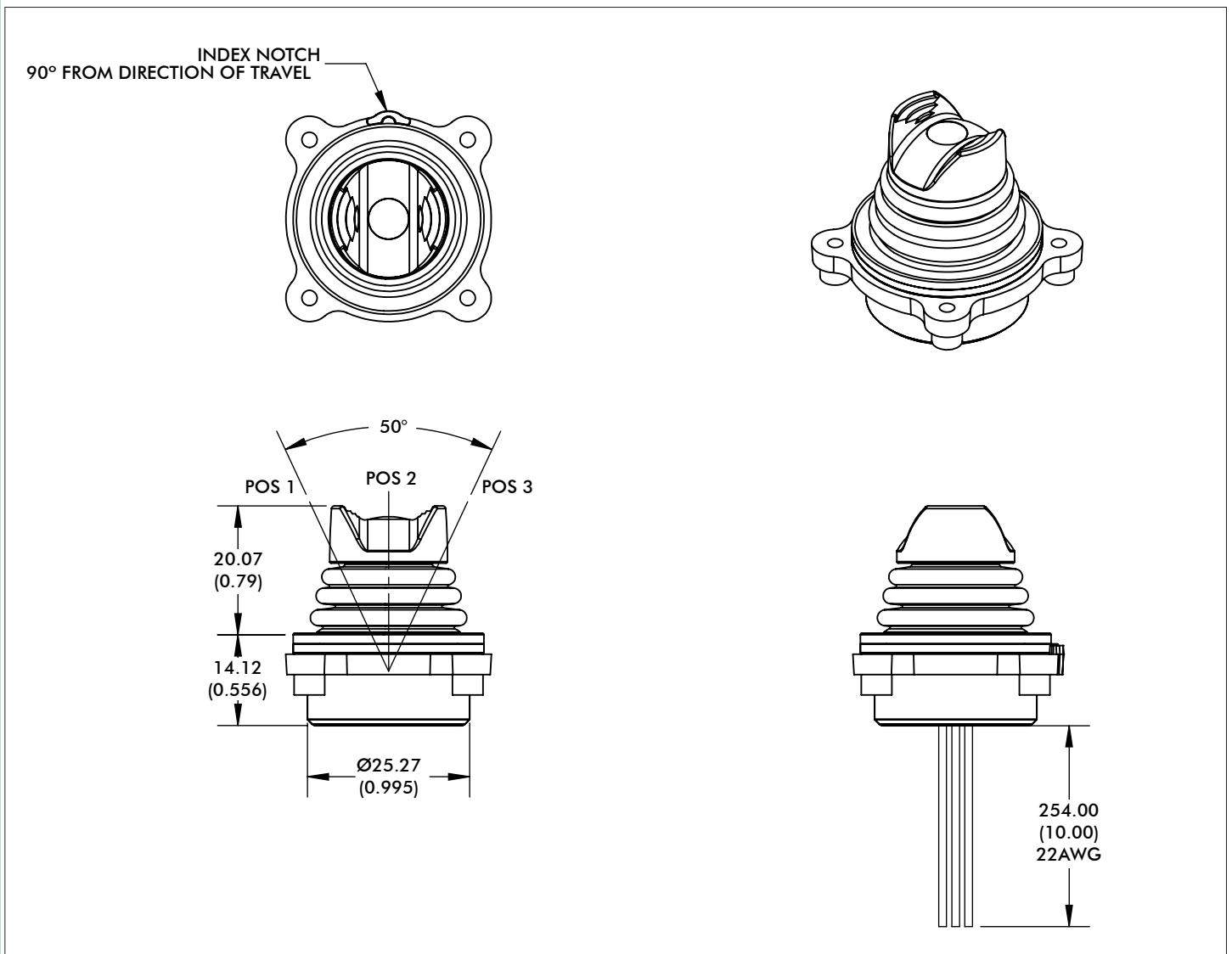
- 1-1 – Wires are thick, robust, and best suited for stand alone applications.
- 1-2 – Wires are thin and best suited for tightly constrained wire routing.
- 2 Only available on dual output.  
Not available with Termination Options 3 or 4.
- 3 Force applied to the top of the castle cap.
- 4 All options are IP68 rated, however Drop-in mounting does not prevent panel ingress.

Note: The company reserves the right to change specifications without notice.

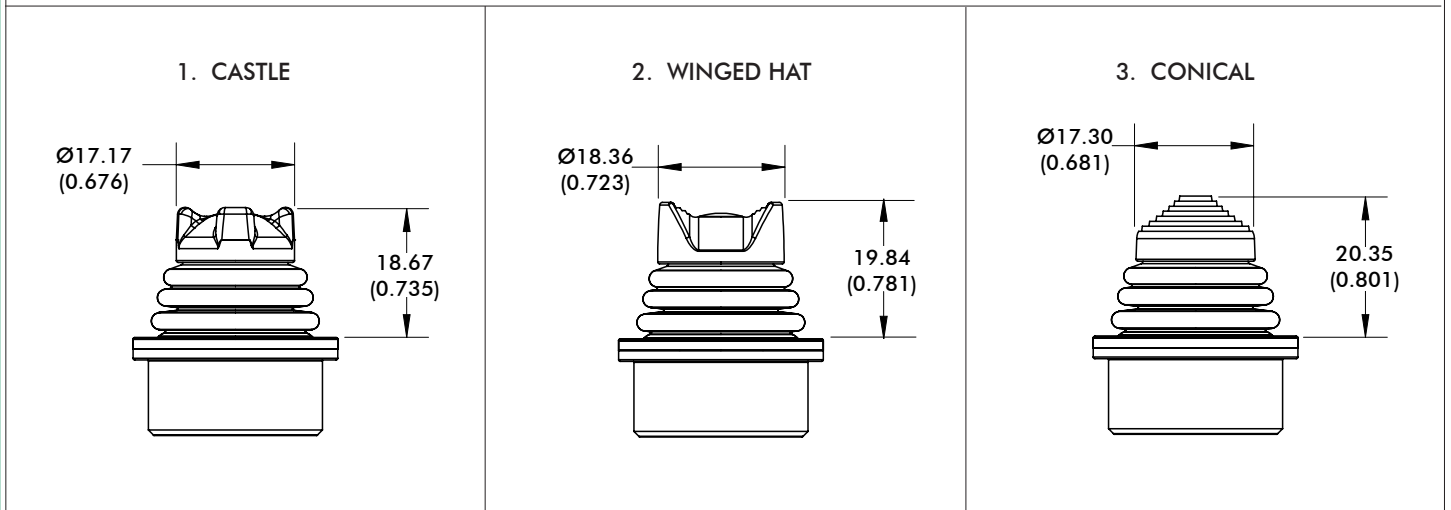
# FR series

## Hall effect 3-position thumb controls

Overview



### HANDLE OPTIONS



NOTE: Dimensions are in mm/(inch).

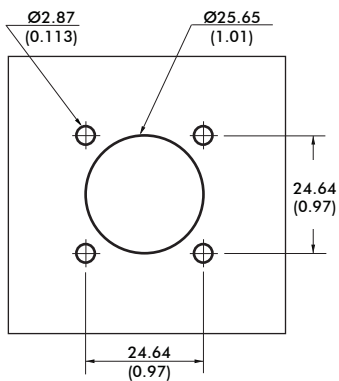
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## Hall effect 3-position thumb controls

Overview

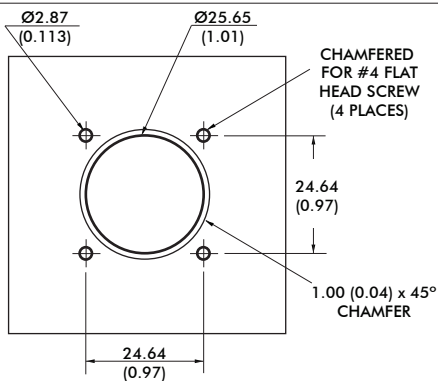
### DROP-IN OPTION CUTOUT DIMENSIONS



4 x PUSH IN CONNECTORS



### REAR MOUNT OPTION CUTOUT DIMENSIONS



4 x 1/2 FH SS PHIL SCREW



#### NOTES:

- 1 The maximum panel thickness for the Rear Mount configuration is 2.032mm/(0.08in).
- 2 The under panel depth for the Drop-in configuration is 16.02mm/(0.631in).
- 3 Dimensions are in mm/(inch).

#### WIRING SPECIFICATION

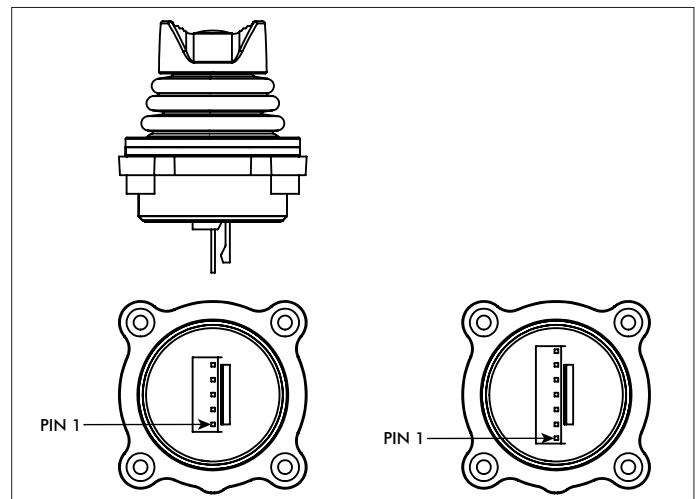
- Black: Ground & button common
- Red: Power (5V)
- Blue: X axis output (alpha)
- Blue/White Stripe: X axis output (beta)
- Red/White Stripe: Power (5V) (beta)
- Black/White Stripe: Ground (beta)

#### CONNECTOR TERMINATION OPTION

Single output configurations feature a five position TE 3-647166-5 connector. Dual output configurations feature a seven position TE 3-647166-7 connector. A mating harness is not included, but may be specified for single output configurations at the time of order for an additional charge. The five function harness is part number 505-499.

#### PINOUT SPECIFICATION

	TE 3-647166-5	TE 3-647166-7
Pin 1	Not used	Not used
Pin 2	5VDC	GND
Pin 3	X (alpha)	X (alpha)
Pin 4	GND	Not used
Pin 5	Not used	Not used
Pin 6	-	5VDC
Pin 7	-	X (beta)



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