

# TW series

Single axis self-centering thumb controls •  
non-contacting Hall effect technology



## DISTINCTIVE FEATURES

- Analog outputs
- Spring return to center
- Choice of 4 wheel colors
- 5 million lifecycles
- Electronics sealed up to IP67



## 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)
- Sealing: IP67 (electronics)
- EMC Immunity Level: EN61000-4-3 (extended)
- EMC Emissions Level: EN61000-6-3: 2001
- ESD: EN61000-4-2 (extended)



## ELECTRICAL SPECIFICATIONS

- Supply Voltage Range: 5.00 VDC  $\pm$  0.250 VDC
- Reverse Polarity max: -10 VDC
- Overvoltage max: 20 V
- Output Impedance: 2  $\Omega$
- Return to Center Voltage Tolerance (no load):  $\pm$  200 mV



## MECHANICAL SPECIFICATIONS

- Operating Force: 0.7 N (0.15 lbf)
- Maximum Vertical Load: 111 N (25 lbf)
- Maximum Horizontal Load: 133 N (15 lbf)
- Mechanical Angle of Movement: 80° ( $\pm$  40° from center)
- Expected Life: 5 million lifecycles
- Mass/weight: 35 g  $\pm$  5 g (1.23 oz  $\pm$  0.18 oz)
- Lever Action (centering): Spring

The company reserves the right to change specifications without notice.



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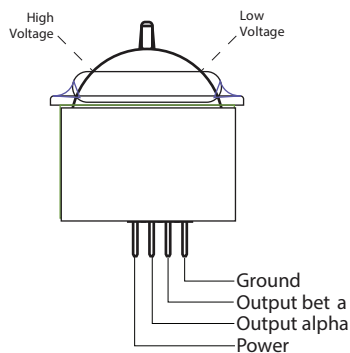
## MATERIALS

- Body: Glass filled nylon
- Actuator: Glass filled nylon



## CONNECTIONS

### CONNECTOR PINOUT



- Connector termination option : The TW Series Thumbwheel may be specified with a TE Connectivity 2.54 mm pitch male header. When selected from the "Option Selection" guide, both single and dual output configurations feature a four position TE 3-647166-4 connector
- Optional mating harness The TW Series is available with an optional mating harness. the four function harness is part number 505-498.
  - Wire type : 22 AWG 25 cm PTFE
  - Connector: Molex 0050579504

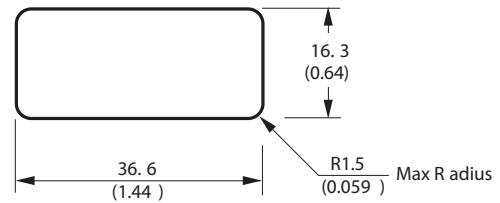
DEFAULT WIRE COLOR CODE		
COLOR	FUNCTION	AWG
Red	+5 V	22
Black	Ground	
Blue	Output alpha	
Blue/White	Output beta	

CIRCUIT	WIRE COLOR
Pin1	Black
Pin2	Blue/White
Pin3	Blue
Pin4	Red

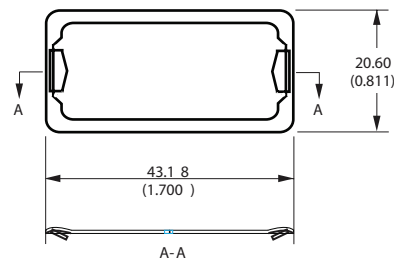


## MOUNTING

### PANEL CUT-OUT



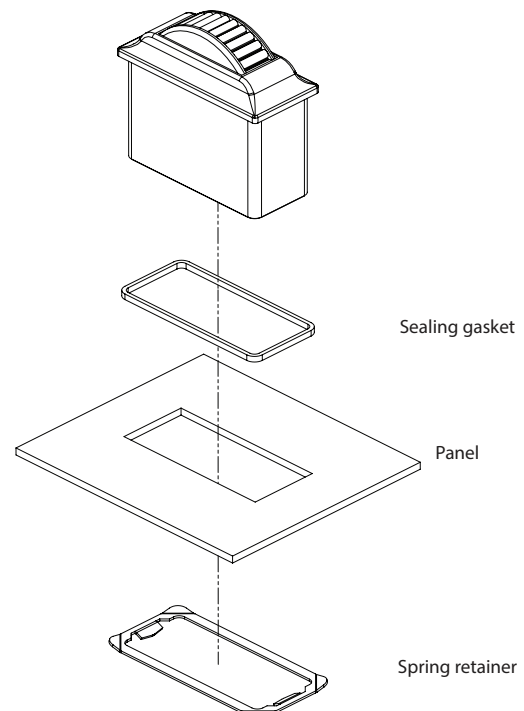
### STEEL SPRING RETAINER\*



\* - used for installation



## INSTALLATION



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## BUILD YOUR PART NUMBER

SERIES	MODEL	OUTPUT OPTIONS	ACTUATOR COLOR	SPRING TENSION	TERMINATION
<b>TW</b>					
<ul style="list-style-type: none"> <li><b>0</b> With tab</li> <li><b>1</b> Without tab</li> </ul>		<ul style="list-style-type: none"> <li><b>1</b> 0V to 5V</li> <li><b>2</b> 0.5V to 4.5V</li> <li><b>3</b> 1V to 4V</li> <li><b>4</b> 0V to 5V - Sensor 1 0V to 5V - Sensor 2</li> <li><b>5</b> 0.5V to 4.5V - Sensor 1 0.5V to 4.5V - Sensor 2</li> <li><b>6</b> 1V to 4V - Sensor 1 1V to 4V - Sensor 2</li> <li><b>7</b> 0V to 5V - Sensor 1 5V to 0V - Sensor 2</li> <li><b>8</b> 0.5V to 4.5V - Sensor 1 4.5V to 0.5V - Sensor 2</li> <li><b>9</b> 1V to 4V - Sensor 1 4V to 1V - Sensor 2</li> </ul>	<ul style="list-style-type: none"> <li><b>BLK</b> Black</li> <li><b>RED</b> Red</li> <li><b>BLU</b> Blue</li> <li><b>GRY</b> Grey</li> </ul>	<ul style="list-style-type: none"> <li><b>1</b> Standard</li> </ul>	<ul style="list-style-type: none"> <li><b>1</b> 2.54 mm (.100") Pitch Male Header</li> <li><b>2</b> 22AWG 41cm PTFE</li> <li><b>3</b> 28AWG 41cm PTFE</li> <li><b>4</b> 2.54 mm (.100") Pitch Male Header with Mating Harness 25cm</li> </ul>

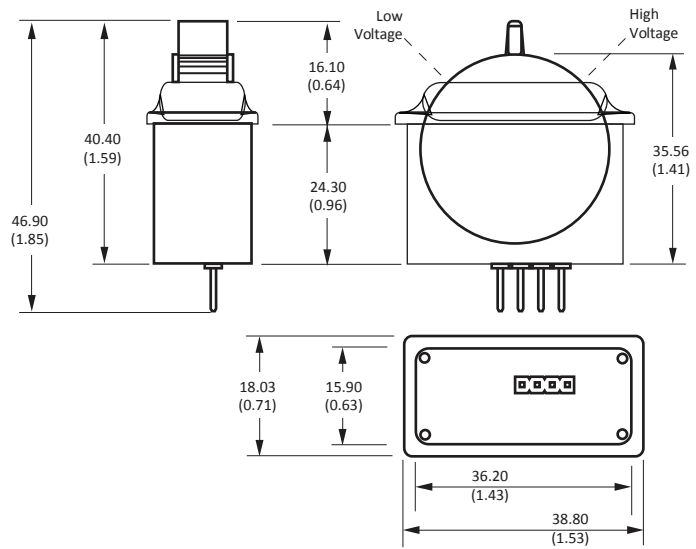
### EXAMPLE APPLICATION



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## DIMENSIONS



## VOLTAGE OUTPUT OPTIONS

