



The TW series thumbwheel is a self centering single-axis device developed for thumb-actuated applications requiring proportional output. Utilizing non-contacting Hall effect technology for long life performance, the TW series thumbwheel delivers up to 5 million thumb actuations. Configuration options include choice of linear voltage outputs as well as wheel colors. The TW series thumbwheel is available as a stand-alone device or may be incorporated into one of our custom joysticks.



## KEY FEATURES

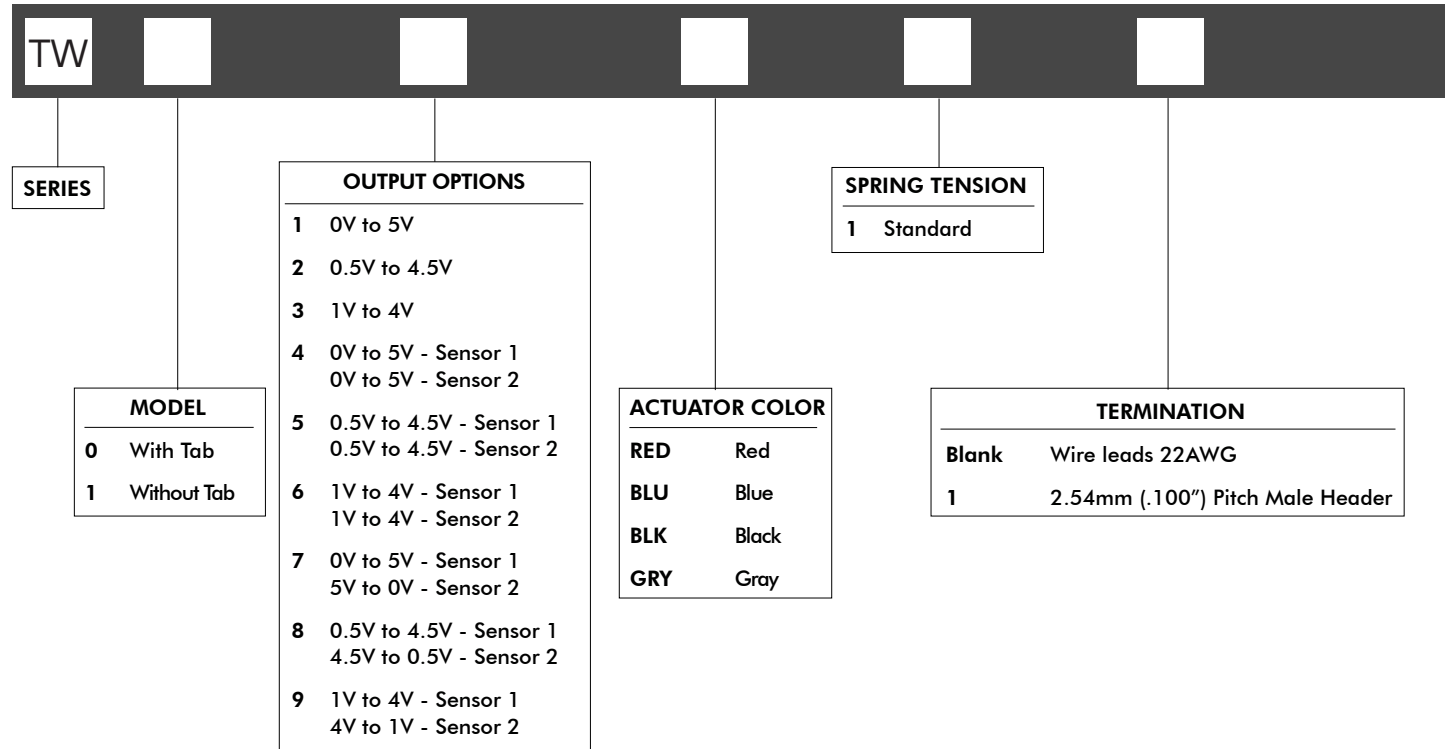
- 5 million cycles**
- Hall effect technology**
- Proportional control**
- Self-centering single-axis design**
- Choice of wheel colors: red, gray, black, or blue**
- Redundant outputs available**



# TW series

## Hall effect thumbwheels

### OPTION SELECTION



#### NOTES:



Mounting accessories: steel spring retainer, insertion tool, and sealing gasket.

### SPECIFICATIONS

#### MECHANICAL (FOR X, Y AXES)

Break Out Force	-	0.7N (0.15lbf)
Mechanical Angle of Movement	-	80° (±40° from center)
Expected Life	-	5 million cycles
Lever Action (Centering)	-	Spring centering

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

#### ELECTRICAL

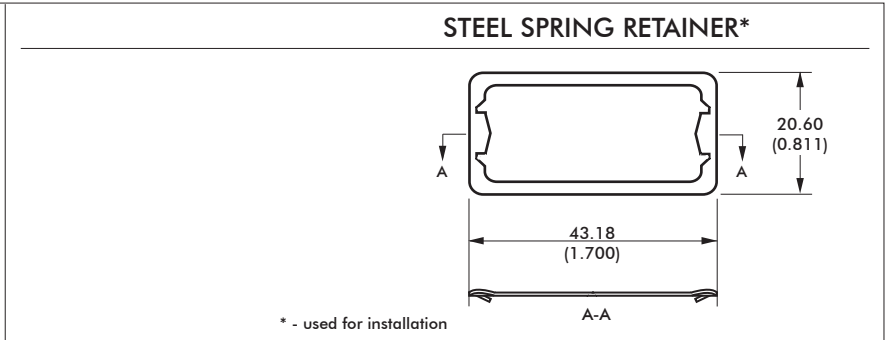
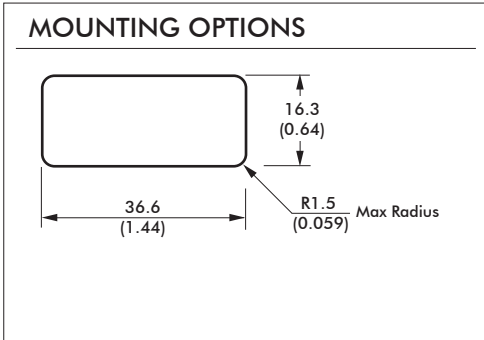
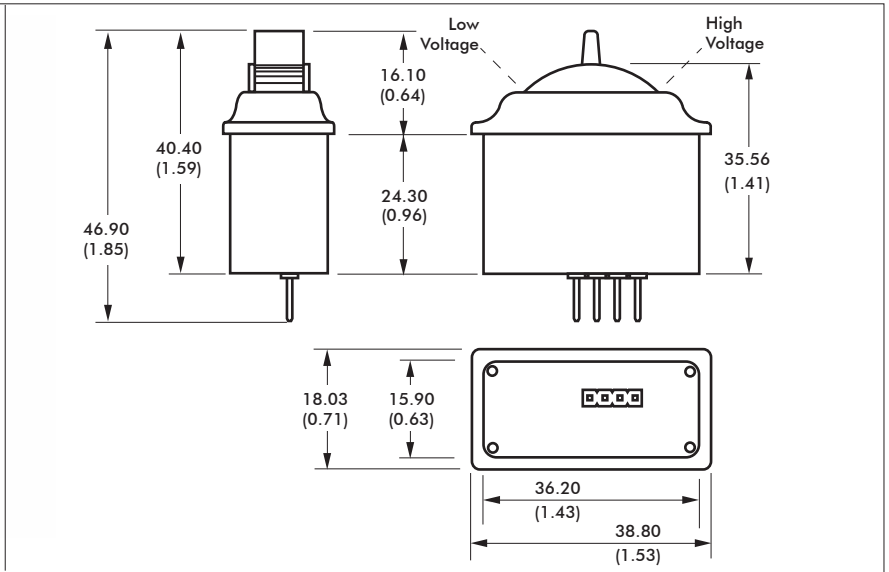
Sensor	-	Hall effect
Resolution	-	1.22mV
Supply Voltage Range	-	5V ± 0.01V
Reverse Polarity Max	-	-10V
Overvoltage Max	-	20V
Output Impedance	-	2Ω
Return to Center Voltage (No Load)	-	±200mV
Error Signal	-	1.0%

NOTES: \* Electronics sealed to IP67.  
Exact specifications are subject to configuration.  
All values are nominal.

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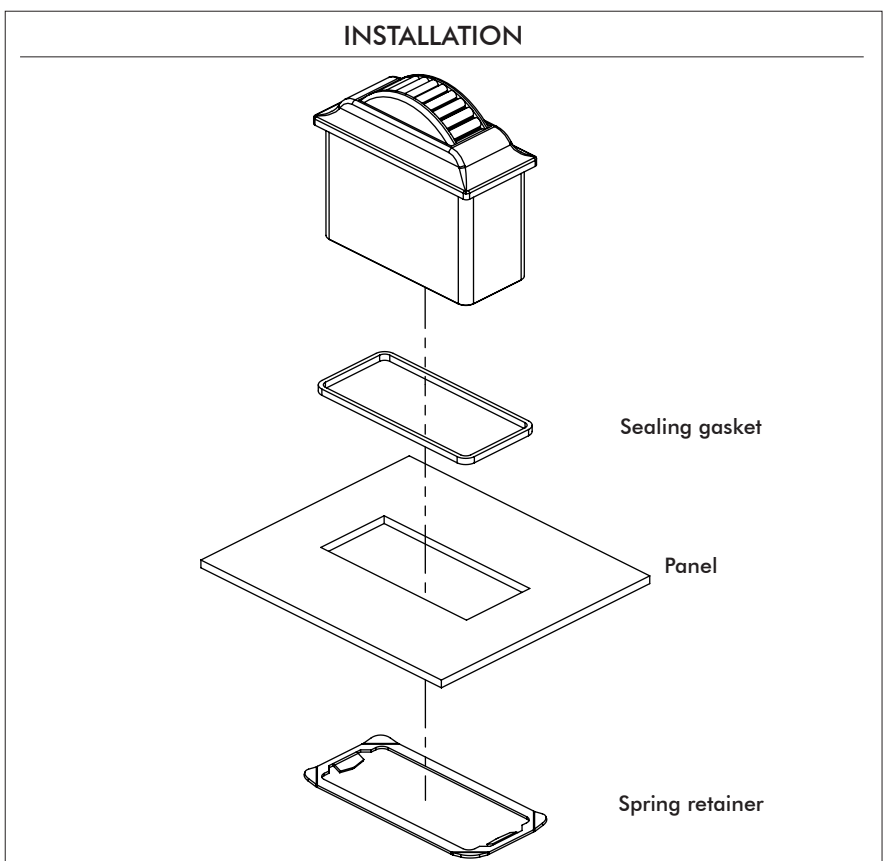
## Hall effect thumbwheels

### DIMENSIONAL DRAWINGS AND MOUNTING DETAILS



#### NOTES:

1. Dimensions are in mm/(inch)



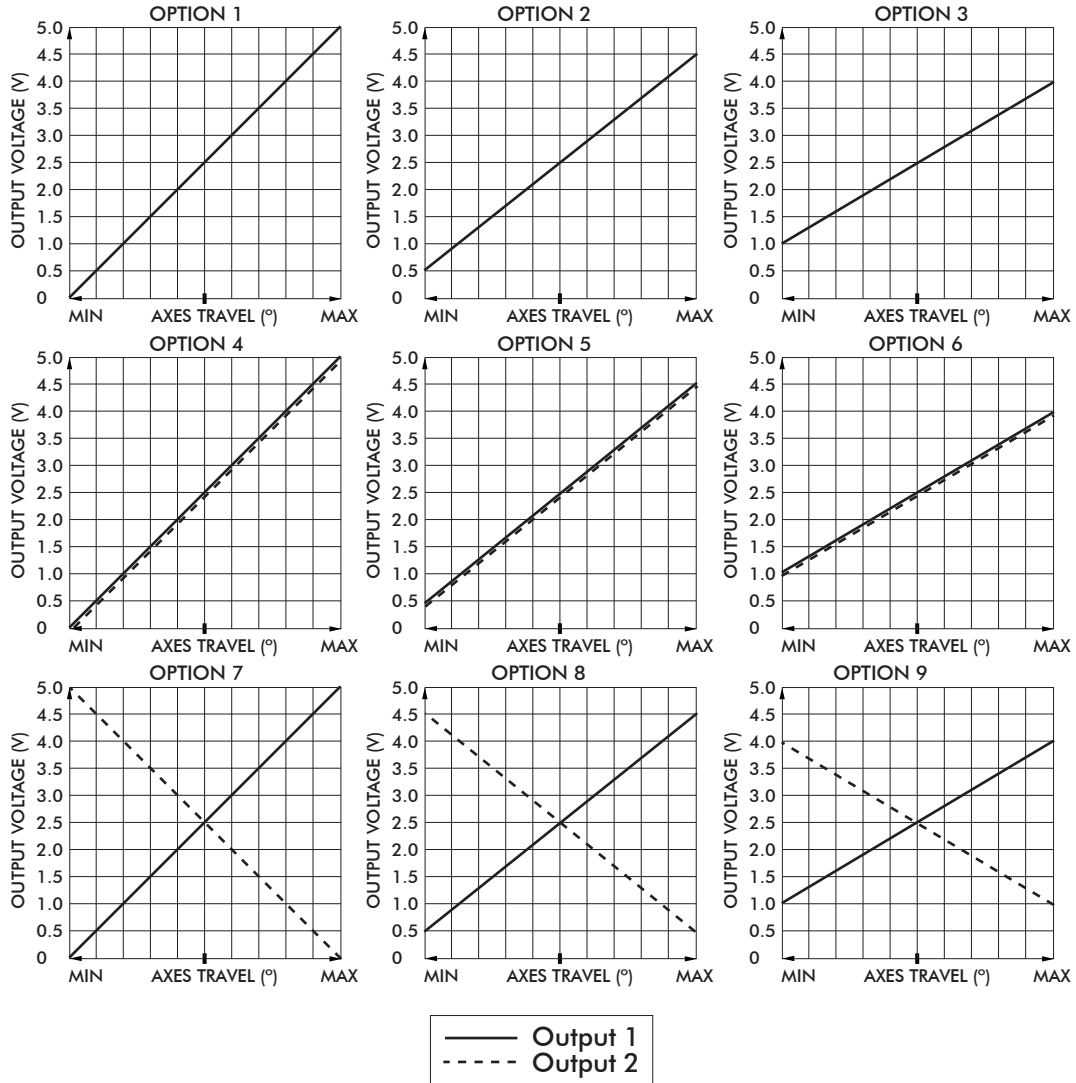
Notes: The company reserves the right to change specifications without notice. Images shown are for illustration purposes only. Dimensions are in mm/(inch).

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### CONFIGURATION OPTIONS

#### LINEAR OUTPUT OPTIONS



CONNECTOR PINOUT	CONNECTOR TERMINATION OPTION
	<ul style="list-style-type: none"> <li>- The TW Series Thumbwheel may be specified with a TE Connectivity 0.100" (2.54mm) pitch header.</li> <li>- Both single and dual output configurations feature 4 position TE 3-647166-4 header connector.</li> </ul>

DEFAULT WIRE COLOR CODE		
COLOR	FUNCTION	AWG
RED	+5V	22
BLACK	Ground	
BLUE	Output alpha	
BLUE/WHITE	Output beta	

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