



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

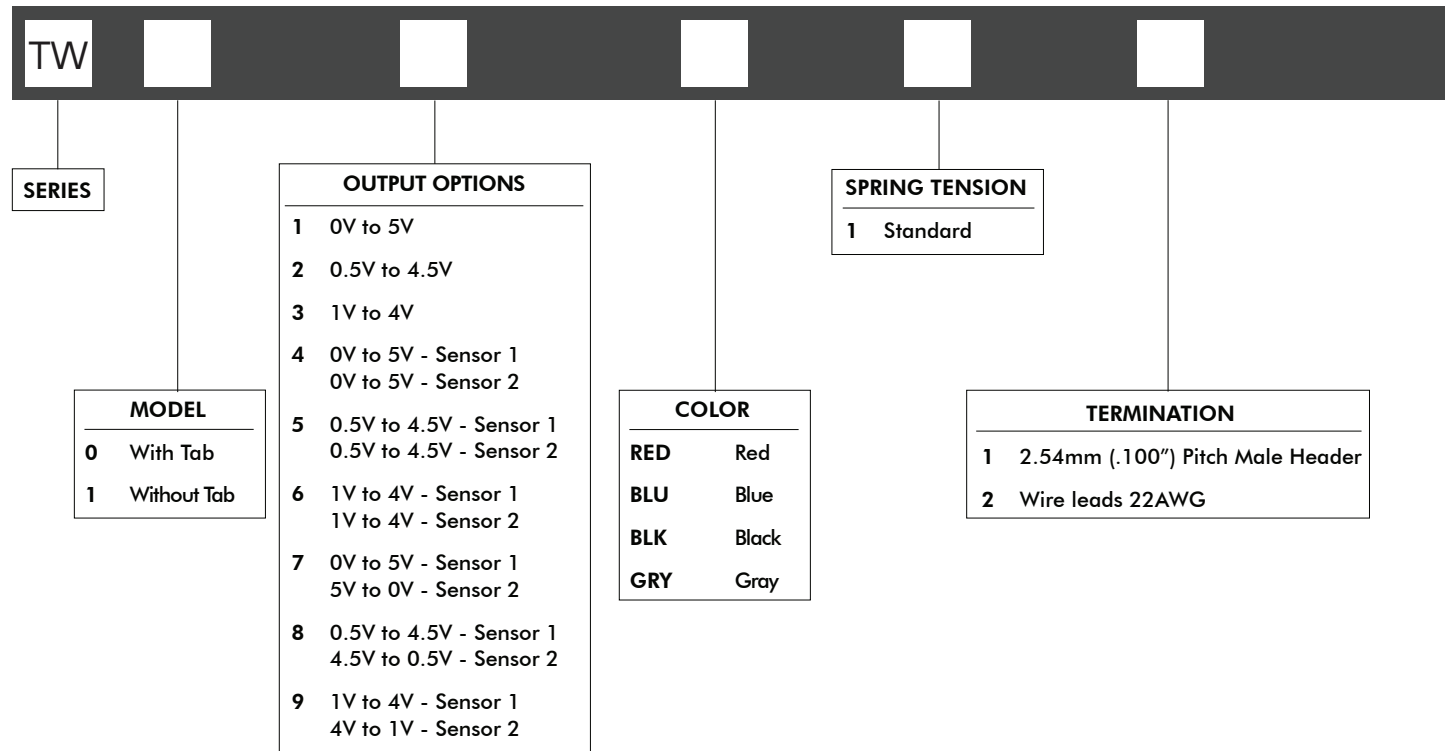
- 5 million cycles**
- Hall effect technology**
- Proportional control**
- Self-centering single-axis design**
- Choice of wheel colors: red, gray, black, or blue**
- Redundant outputs available**



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

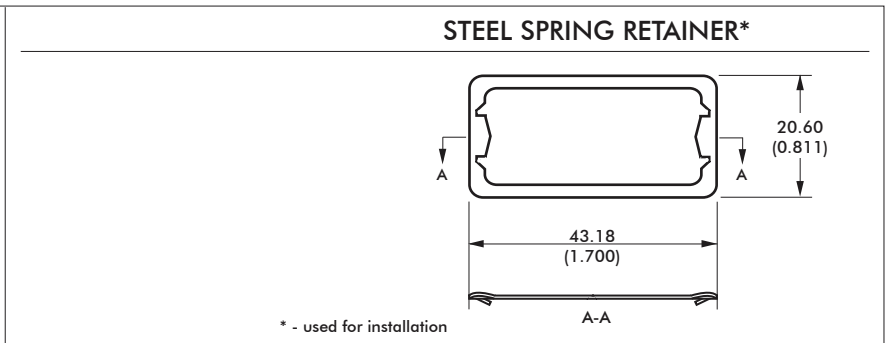
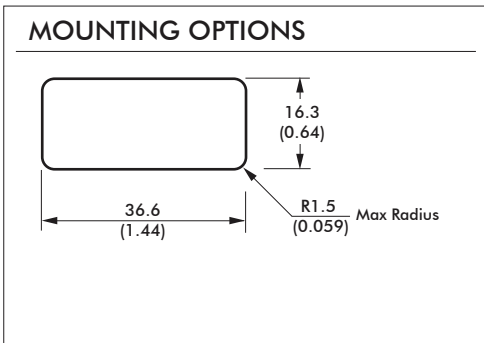
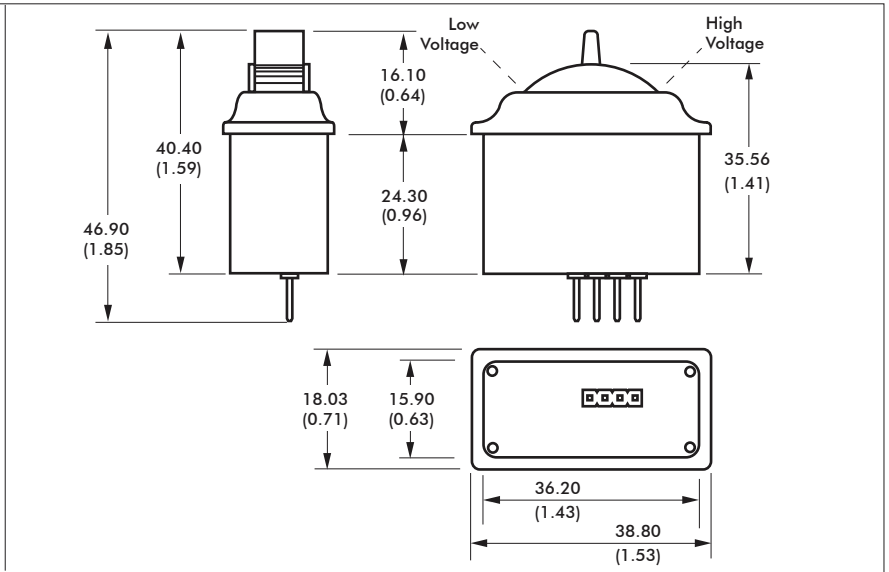
| | | |
|------------------------------------|---|-------------|
| Sensor | - | Hall effect |
| Resolution | - | 1.22mV |
| Supply Voltage Range | - | 5V ± 0.01V |
| Reverse Polarity Max | - | -10V |
| Overvoltage Max | - | 20V |
| Output Impedance | - | 2Ω |
| Return to Center Voltage (No Load) | -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

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

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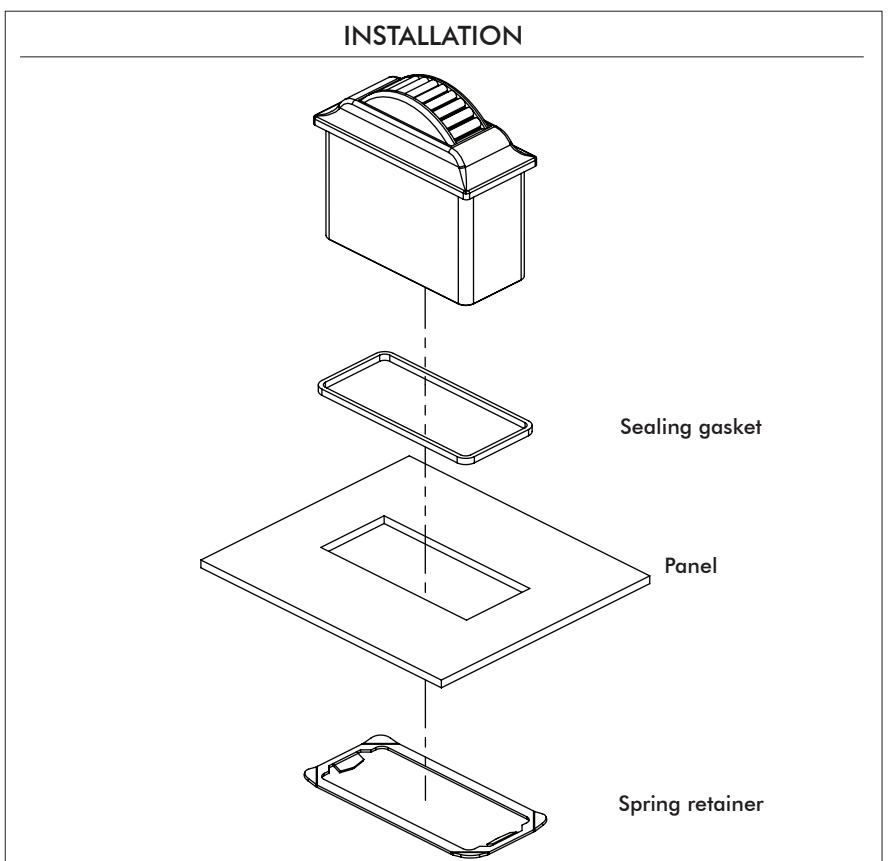
Hall effect thumbwheels

DIMENSIONAL DRAWINGS AND MOUNTING DETAILS



NOTES:

1. Dimensions are in mm/(inch)



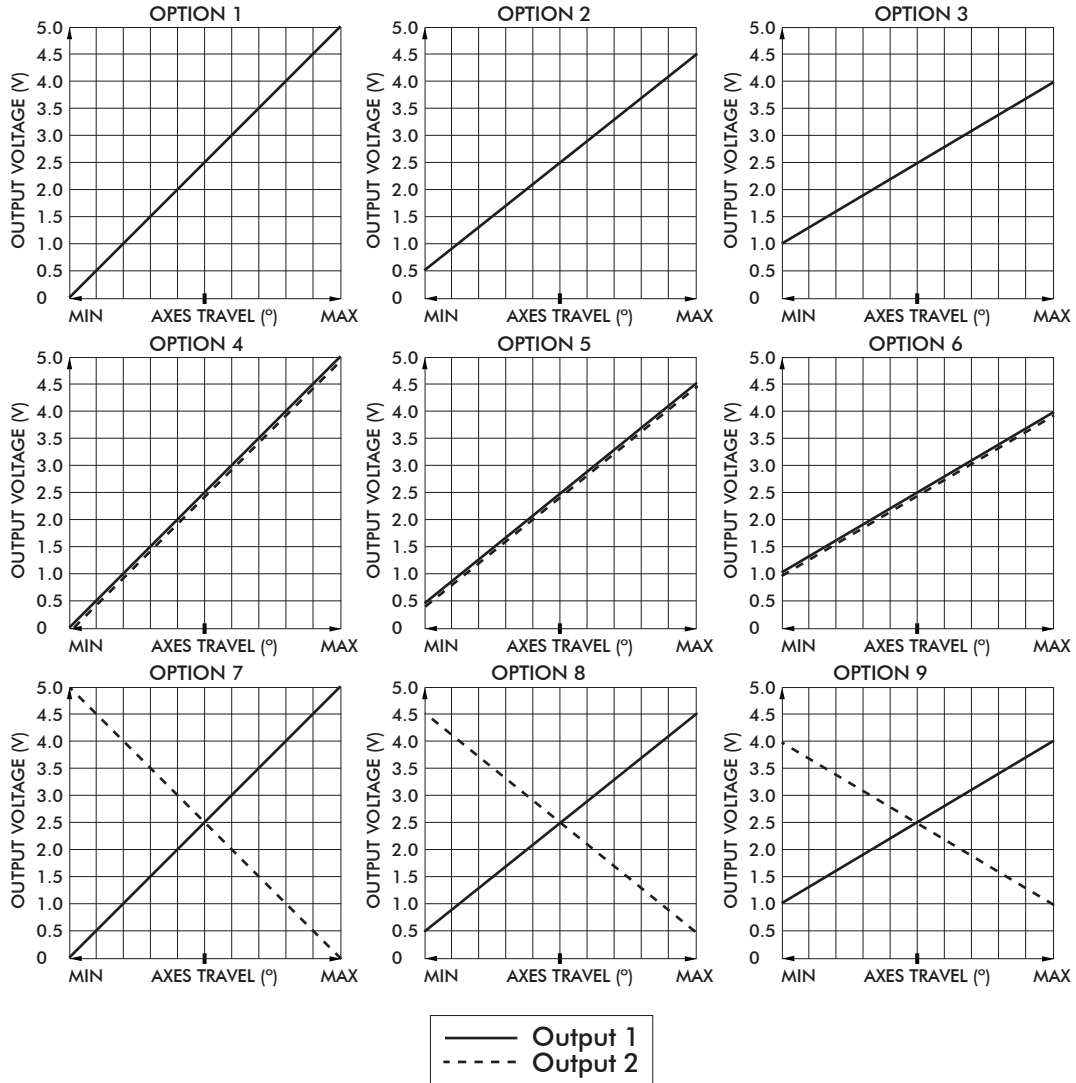
Notes: The company reserves the right to change specifications without notice. Images shown are for illustration purposes only. Dimensions are in mm/(inch).

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CONFIGURATION OPTIONS

LINEAR OUTPUT OPTIONS



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

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

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