



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

TW

SERIES

MODEL

0 With Tab

1 Without Tab

OUTPUT OPTIONS

1 0V to 5V

2 0.5V to 4.5V

3 1V to 4V

4 0V to 5V - Sensor 1
0V to 5V - Sensor 2

5 0.5V to 4.5V - Sensor 1
0.5V to 4.5V - Sensor 2

6 1V to 4V - Sensor 1
1V to 4V - Sensor 2

7 0V to 5V - Sensor 1
5V to 0V - Sensor 2

8 0.5V to 4.5V - Sensor 1
4.5V to 0.5V - Sensor 2

9 1V to 4V - Sensor 1
4V to 1V - Sensor 2

COLOR

RED Red

BLU Blue

BLK Black

GRY Gray

SPRING TENSION

1 Standard

TERMINATION

Blank Wire leads 22AWG

1 2.54mm (.100") Pitch Male Header

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.

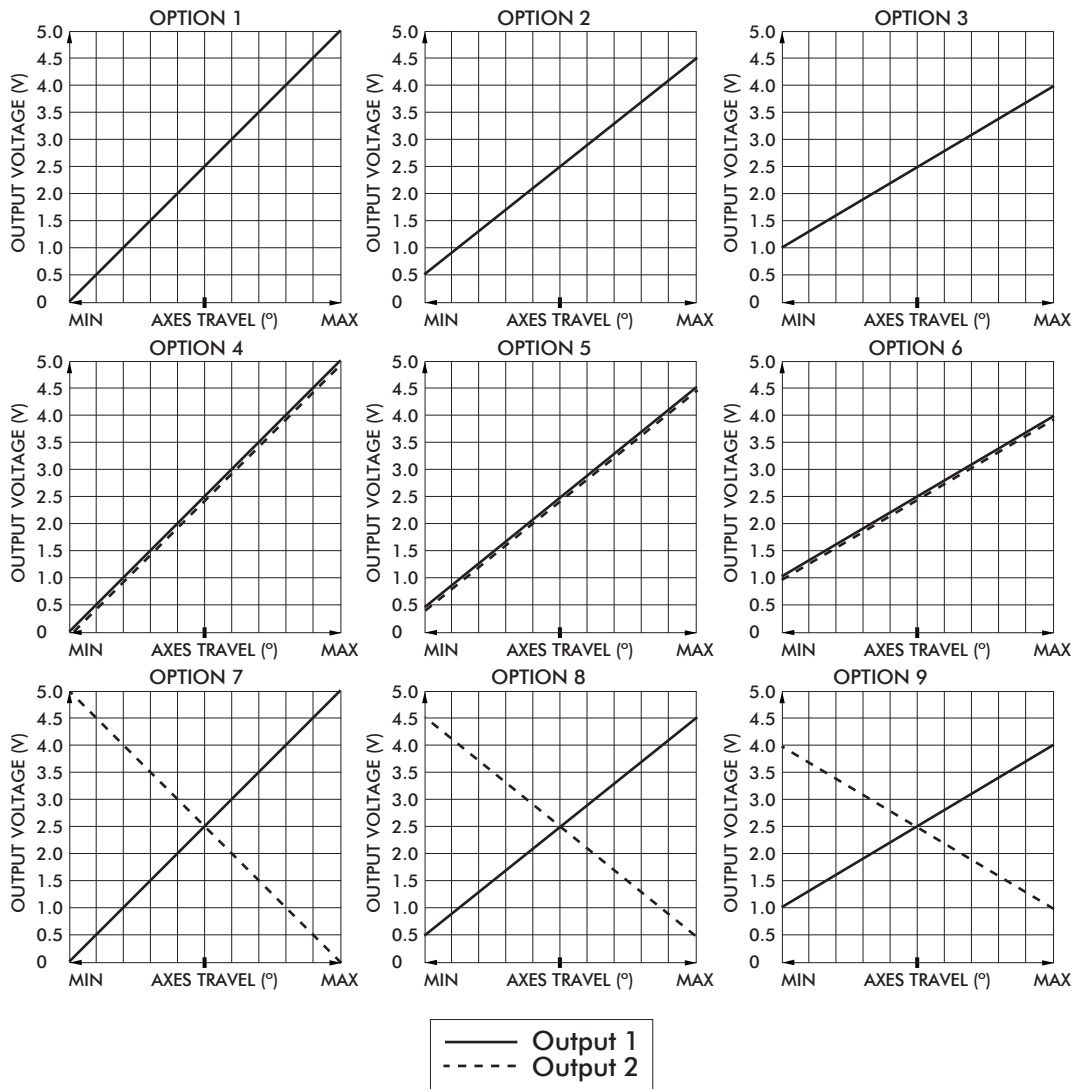
Note: The company reserves the right to change specifications without notice.

TW series

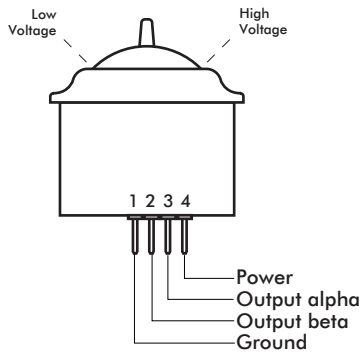
Hall effect thumbwheels

CONFIGURATION OPTIONS

LINEAR OUTPUT OPTIONS



CONNECTOR PINOUT



CONNECTOR TERMINATION OPTION

- 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	

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