

TW series

Hall effect thumbwheels

Distinctive features and specifications



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

MECHANICAL (FOR X, Y AXIS)

- 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 ± .250V
- 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.

TW						
SERIES						
	Model	Output Options	Actuator Color	Spring Tension		Termination
0	With Tab	1 0V to 5V	BLK Black	1 Standard		1 2.54mm (.100") Pitch Male Header
1	Without Tab	2 0.5V to 4.5V	RED Red			2 22AWG 41cm PTFE
		3 1V to 4V	BLU Blue			3 28AWG 41cm PTFE
		4 0V to 5V - Sensor 1	GRY Gray			4 2.54mm (.100") Pitch Male Header with Mating Harness 25cm
		5 0V to 5V - Sensor 2				
		6 0.5V to 4.5V - Sensor 1				
		7 0.5V to 4.5V - Sensor 2				
		8 1V to 4V - Sensor 1				
		9 1V to 4V - Sensor 2				
		10 0V to 5V - Sensor 1				
		11 5V to 0V - Sensor 2				
		12 0.5V to 4.5V - Sensor 1				
		13 4.5V to 0.5V - Sensor 2				
		14 1V to 4V - Sensor 1				
		15 4V to 1V - Sensor 2				

NOTES:



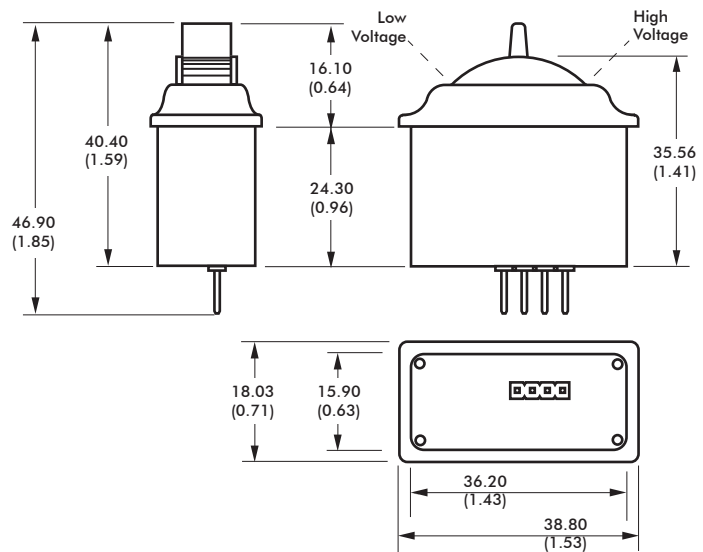
Mounting accessories: steel spring retainer, insertion tool, and sealing gasket.

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

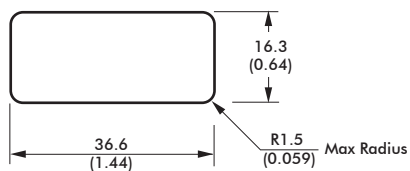
TW series

Hall effect thumbwheels

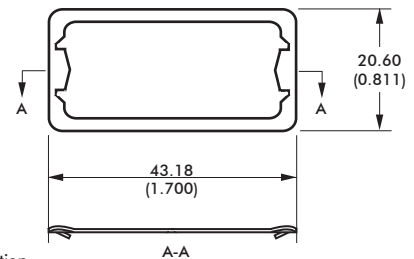
Overview



MOUNTING OPTIONS



STEEL SPRING RETAINER*



* - used for installation

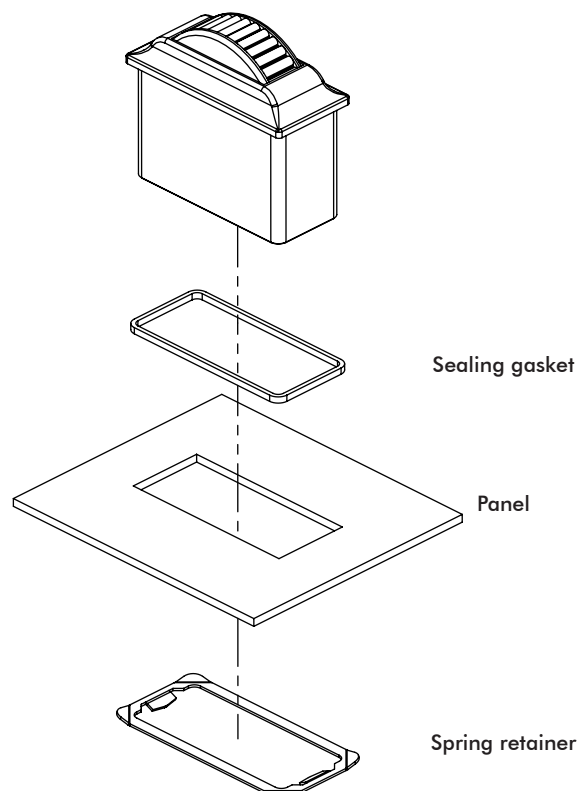
NOTE:

1. Dimensions are in mm/(inch).

EXAMPLE APPLICATION



INSTALLATION



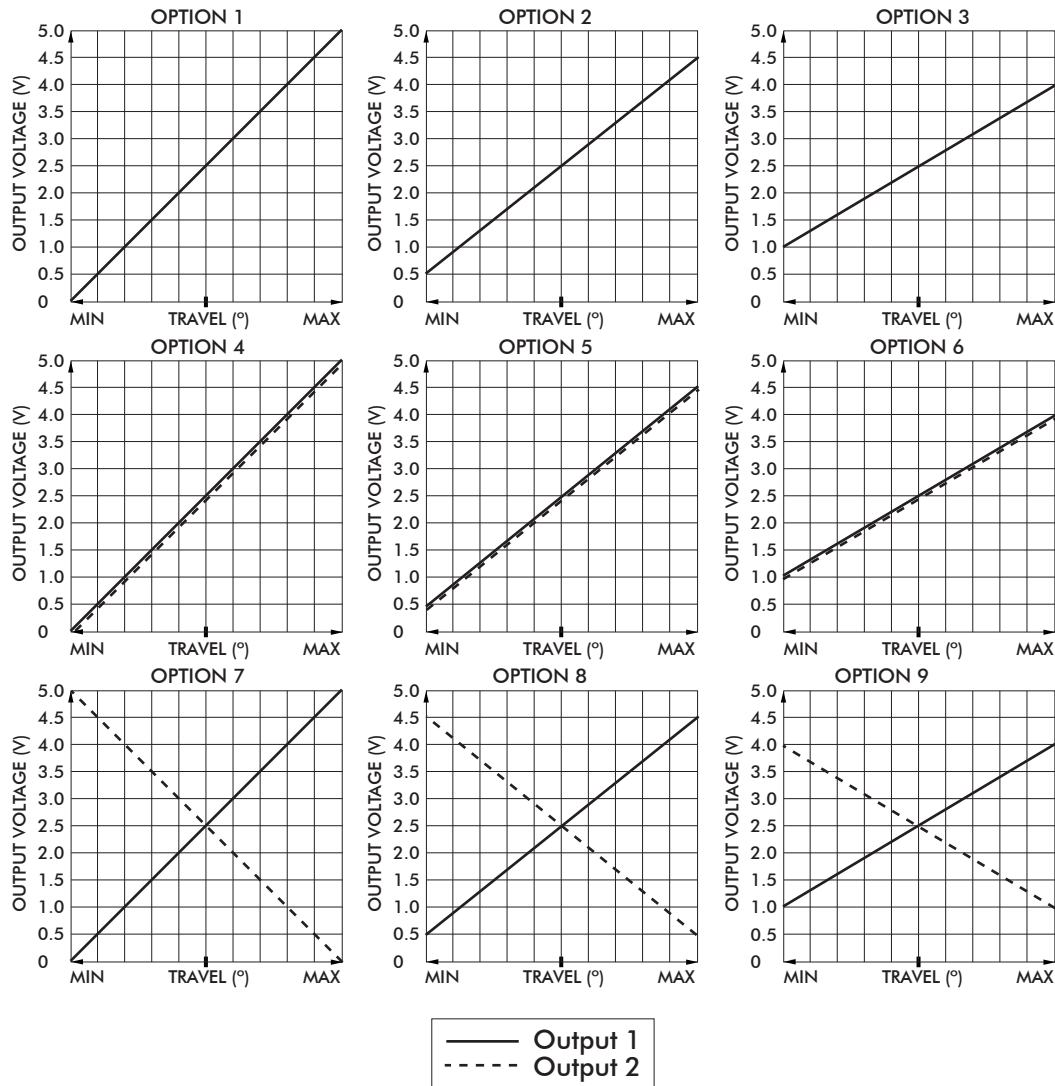
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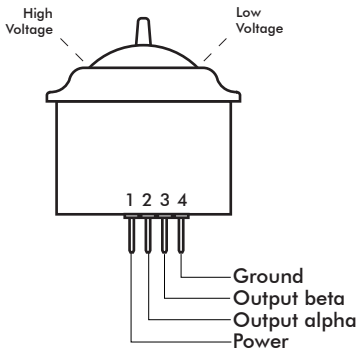
Hall effect thumbwheels

Overview

VOLTAGE OUTPUT OPTIONS



CONNECTOR PINOUT



CONNECTOR TERMINATION OPTION

The TW Series Thumbwheel may be specified with a TE Connectivity 2.54mm 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: 22AWG 25cm PTFE
Connector: Molex 0050579504

DEFAULT WIRE COLOR CODE

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

CIRCUIT	WIRE COLOR
PIN 1	BLACK
PIN 2	BLUE/WHITE
PIN 3	BLUE
PIN 4	RED

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