MINI PROPORTIONAL OUTPUT THUMBWHEEL

SHORTER BEHIND PANEL DEPTH

Paddle
Wheel Style

Knurled
Wheel Style

The HTWM offers the same performance as the standard HTW Proportional Thumbwheel but with a much shorter behind panel depth, ideal for use in grip, armrest and panel applications. Available with eight output options, the HTWM offers a spring-return-to-center, single axis thumbwheel actuator that provides linear change in voltage output in either direction from center. Options include increasing or decreasing voltage output from the center position to the full travel position, and single or dual (redundant) outputs per axis. The HTWM offers snap-in style mounting and a three million cycle rotational life. The HTWM electronics are sealed to IP68S and have excellent EMI/RFI immunity.

Features:

- **Shorter behind panel depth: 0.96" max.**
- **8 output options**
- **Spring-return-to-center single axis actuator**
- **Rocker switch style mounting**
- **3 million cycle rotational life**
- **Electronics sealed to IP68S**
- **Excellent EMI/RFI immunity**
- **RoHS/WEEE/Reach compliant**

Standard Characteristics/Ratings:

MECHANICAL:

Mechanical Life:	3,000,000 full forward to full back
Max Allowable Radial Load:	30.0 lbs.

ELECTRICAL RATINGS: Rated at Vcc = 5V @ 25°C Load = 1mA (4.7KΩ)

Electrical	Units	Min	Typ	Max
Supply Voltage	VDC	4.5	5	5.5
Output Voltage Tolerance at Center @ 5V Vcc	VDC	-0.25	N/A	+0.25
Output Voltage Tolerance at Full Travel @ 5V Vcc	VDC	-0.25	N/A	+0.25
Supply Current Per Sensor	mA	N/A	N/A	10

ELECTRONICS:

Seal Integrity:	Electronics IP68S

ENVIRONMENTAL:

Operating Temp Range:	-40°C to +85°C
Humidity:	96% RH, 70°C, 96 hours
Vibration:	Per MIL-810F minimum integrity
Sand/Dust:	Per SAE J1455
EMI:	Withstand per MIL-STD-461D/SAE J1113-22
RFI:	Withstand 100V/M 14Hz to 1GHz

MATERIALS:

Button:	Thermoplastic
Bezel:	Thermoplastic
Wires:	18 AWG

SHORTER BEHIND PANEL DEPTH

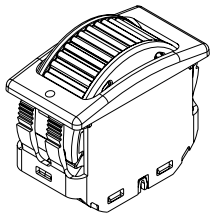
HTWM PART NUMBER CODE

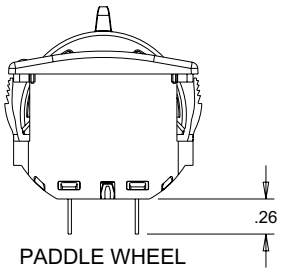
HTWM – X X X X X X X

Travel	Output 1*	Output 2**	Operating Force	Button Style	Termination	Bezel Color	Button Color
1. +/- 40°	**A.** 2.5 +/- 2.0VDC	NONE	**1.** 5.0 oz.	**1.** Knurled Wheel	**A.** 18 AWG Wires, 18.3" Long, Stripped Ends	**1.** Red	**1.** Red
	B. 2.5 +/- 2.0VDC	2.5 +/- 2.0VDC		**2.** Paddle Wheel	**B.** 0.025" SQ. Pins	**2.** Black	**2.** Black
	C. 2.5 +/- 2.0VDC	2.5 -/+ 2.0VDC				**3.** Orange	**3.** Orange
	D. 2.5 +/- 1.5VDC	NONE				**4.** Yellow	**4.** Yellow
	E. 2.5 +/- 1.5VDC	2.5 +/- 1.5VDC				**5.** Green	**5.** Green
	F. 2.5 +/- 1.5VDC	2.5 -/+ 1.5VDC				**6.** Blue	**6.** Blue
	G. 1.0 - 4.0VDC	1.0 - 4.0VDC				**7.** Violet	**7.** Violet
	H. 0.5 - 4.5VDC	0.5 - 4.5VDC				**8.** Gray	**8.** Gray
						9. White	**9.** White

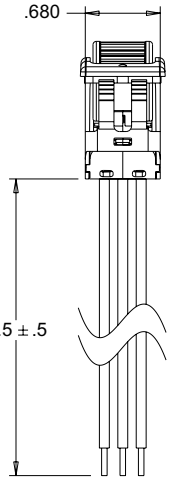
* Outputs are from the center position to the full travel position in each direction. Options A–F provide increasing voltage in Direction 1 and decreasing voltage in Direction 2 from a single output. Options G and H provide increasing voltages in both directions from two separate outputs.

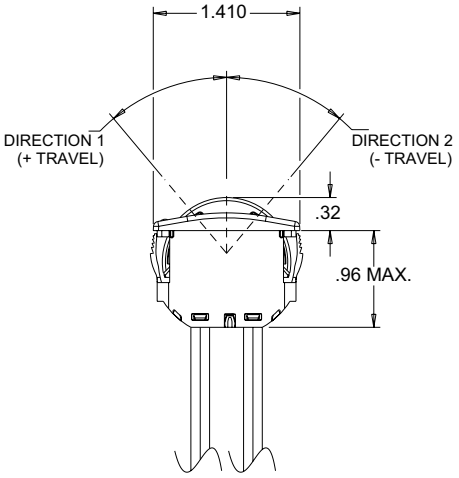
** Options B and E provide redundant output 2 which duplicates output 1. Options C and F provide redundant output 2 which is inverse of output 1.

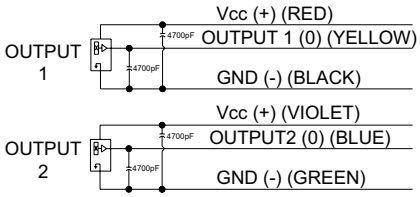




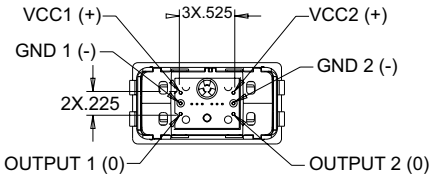
PADDLE WHEEL
BUTTON STYLE







OUTPUT 2 IS NOT PRESENT
IN ALL CONFIGURATIONS



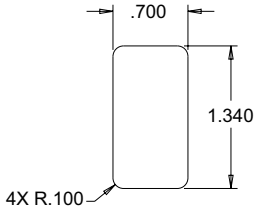
PINNED
TERMINATION
NOT ALL PINS ARE PRESENT
IN ALL OUTPUT CONFIGURATIONS

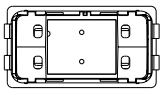
MOUNTING:

RECOMMENDED PANEL THICKNESS: 0.150 OPTIMUM THICKNESS
(0.040 MIN. - 0.200 MAX.)

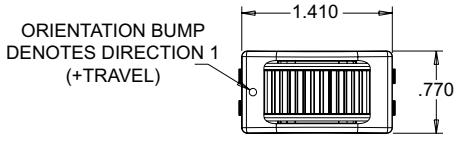
RECOMMENDED PANEL OPENING: 0.700 X 1.340 OPTIMUM
(0.695/0.705 X 1.335/1.345}

RECOMMENDED PANEL RADII: 0.100 OPTIMUM
(0.090 - 0.110 MAX.)





NOT ALL WIRES ARE PRESENT
IN ALL OUTPUT CONFIGURATIONS



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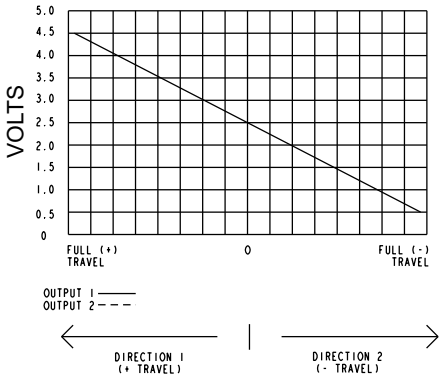
SHORTER BEHIND PANEL DEPTH

OPTION A



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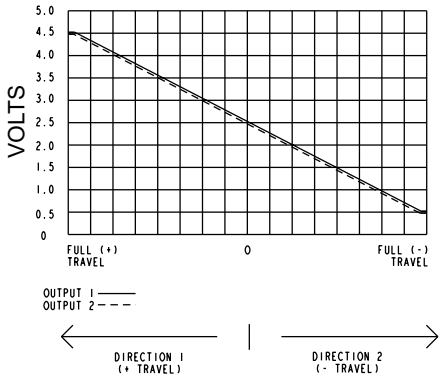

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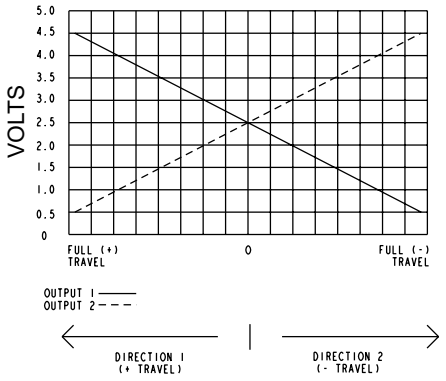
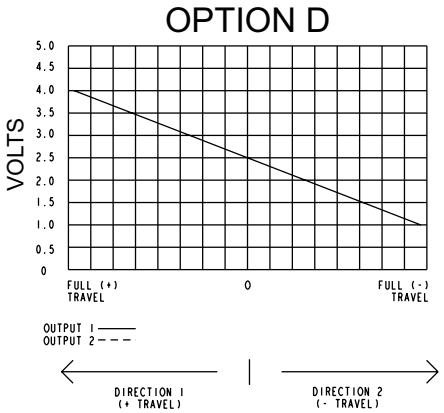


OPTION D



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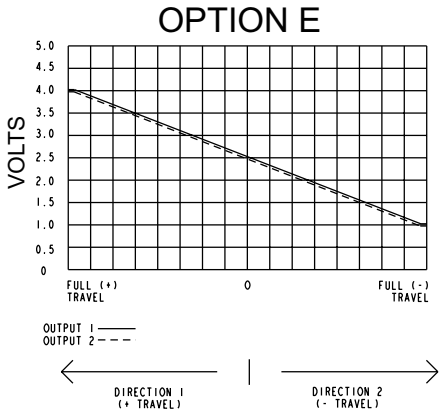

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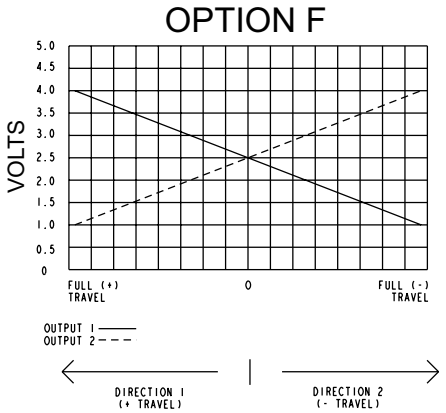
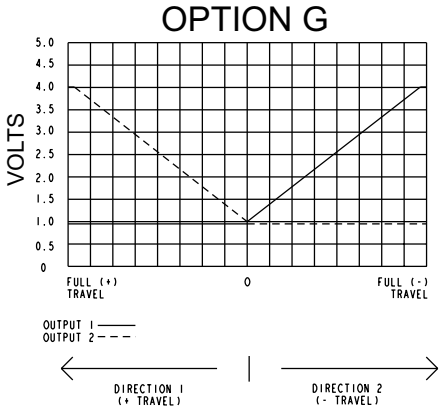


OPTION G



OPTION H