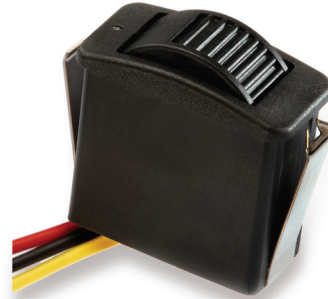


PROPORTIONAL OUTPUT THUMBWHEEL



Paddle Wheel



Knurled Wheel

OTTO's HTWE control is a spring return to end, single axis, proportional output thumbwheel. Utilizing non-contact Hall effect technology, the HTWE delivers one million actuations. Electronics are sealed to IP68S. The HTWE is available as an individual control ideal for panel mountings, or may be incorporated into one of OTTO's joysticks.

Features:

- Spring-return-to-end single axis actuator
- Knurled & Paddle style actuators
- Wire or pinned termination options
- Variety of button & bezel colors
- 8 output options
- Rocker switch style mounting
- Snaps into 1.47" x 0.710" panel opening
- 1 million cycle rotational life
- Electronics sealed to IP68S
- Excellent EMI/RFI immunity
- RoHS/WEEE/Reach compliant

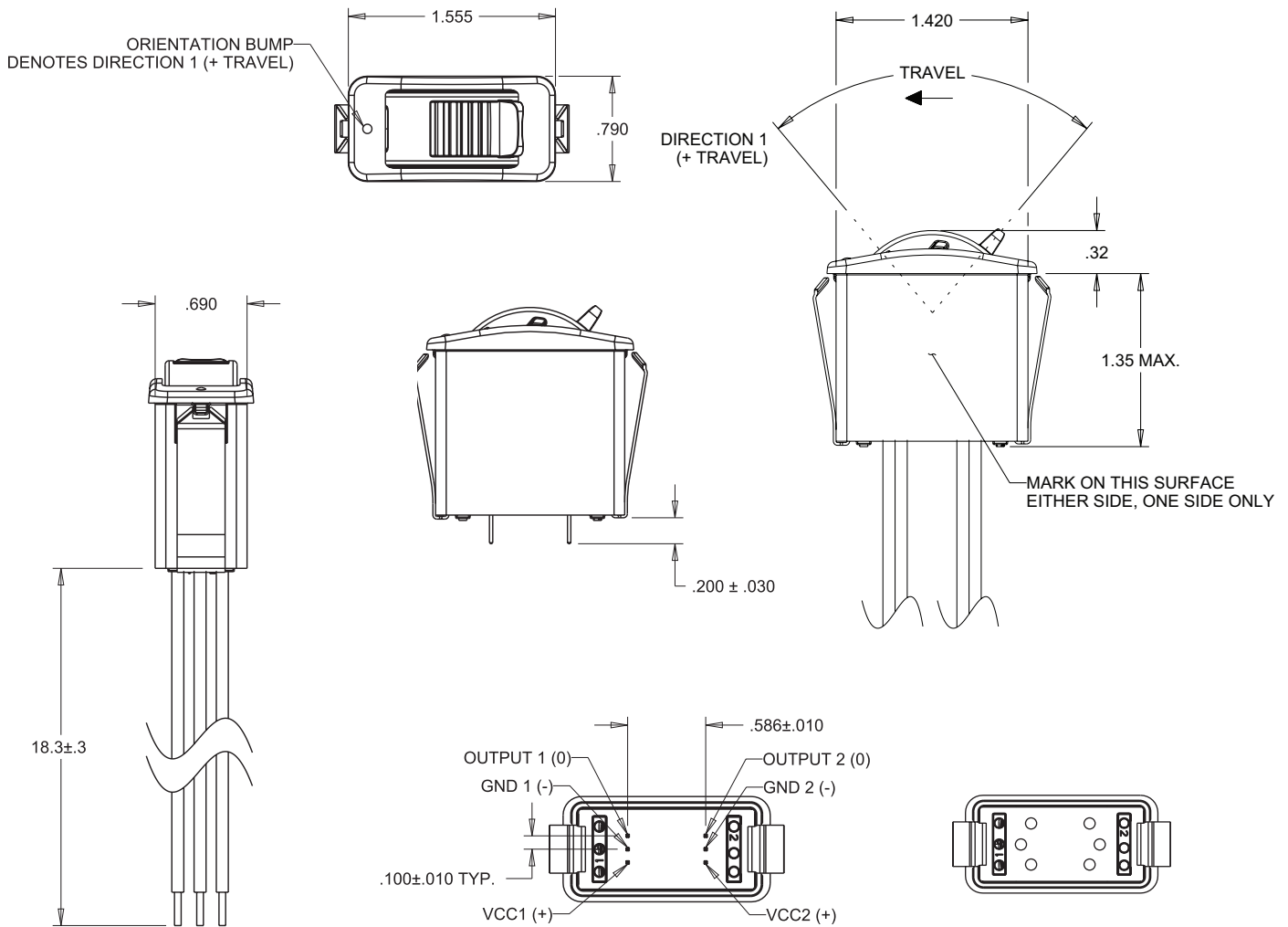
Standard Characteristics/Ratings:				
MECHANICAL:				
Mechanical Life: 1,000,000 full forward to full back				
Max Allowable Radial Load: 30.0 lbs.				
ELECTRICAL RATINGS: Rated 5V @ 25°C Load = 1mA (4.7KΩ)				
Electrical	Units	Min	Typ	Max
Supply Voltage	VDC	4.5	5.0	5.5
Output at Rest	VDC @ 5V Vcc	-25	N/A	+25
Output at Full Travel	VDC @ 5V Vcc	-25	N/A	+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			
EMI:	Withstand per SAE J1113			
RFI:	Withstand per SAE J1113			
MATERIALS:				
Button:	Thermoplastic			
Bezel:	Thermoplastic			
Snap Arms:	Stainless steel			
Wires:	18 AWG			

HTWE RETURN TO END STANDARD THUMBWHEEL

	HTWE	-	X	X*	X	X	X	X	X
Travel	1. 80°								
Output 1	A. 0.5 - 4.5VDC								
Output 2	B. 0.5 - 4.5VDC			NONE					
	C. 0.5 - 4.5VDC			0.5 - 4.5VDC					
	D. 1.0 - 4.0VDC			4.5 - 0.5VDC					
	E. 1.0 - 4.0VDC			NONE					
	F. 1.0 - 4.0VDC			1.0 - 4.0VDC					
				4.0 - 1.0VDC					
Operating Force					1. 10 oz typ				
Button Style						1. Knurled Wheel			
						2. Paddle Wheel			
Termination							A. 18 AWG Wires, 18.3" Long, Stripped Ends		
							B. 0.025" SQ. Pins		
Bezel Color								1. Red	
								2. Black	
								3. Orange	
								4. Yellow	
								5. Green	
								6. Blue	
								7. Violet	
								8. Gray	
								9. White	
Button Color									1. Red
									2. Black
									3. Orange
									4. Yellow
									5. Green
									6. Blue
									7. Violet
									8. Gray
									9. White

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

PROPORTIONAL OUTPUT THUMBWHEEL



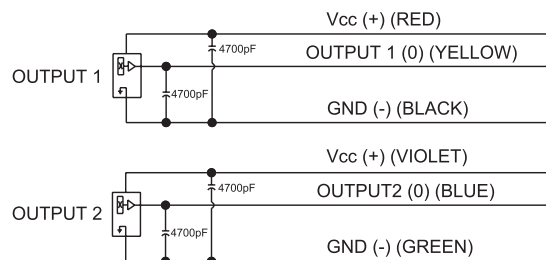
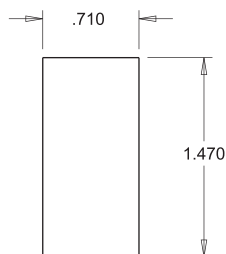
PINNED TERMINATION

NOT ALL PINS ARE PRESENT
IN ALL OUTPUT CONFIGURATIONS

MOUNTING:

RECOMMENDED PANEL THICKNESS: 0.100 OPTIMUM THICKNESS
(0.050 MIN. - 0.120 MAX.)

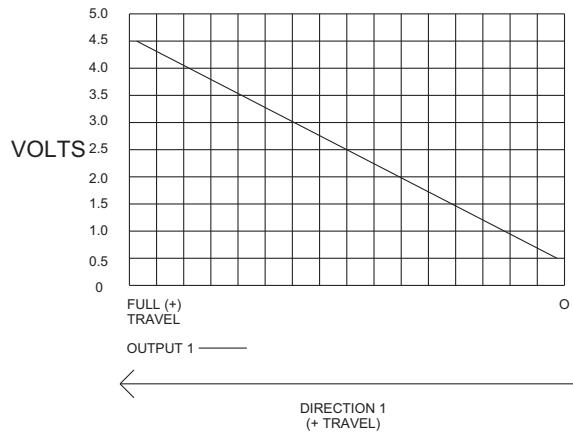
RECOMMENDED PANEL OPENING: 0.710 X 1.470 OPTIMUM
(0.710/0.720 - 1.460/1.480)



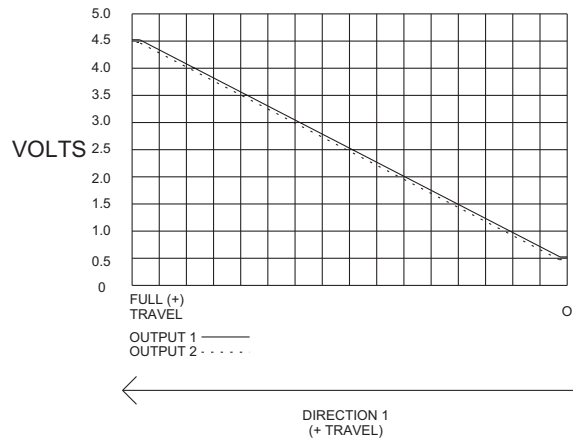
OUTPUT 2 IS NOT PRESENT IN ALL CONFIGURATIONS

PROPORTIONAL OUTPUT THUMBWHEEL

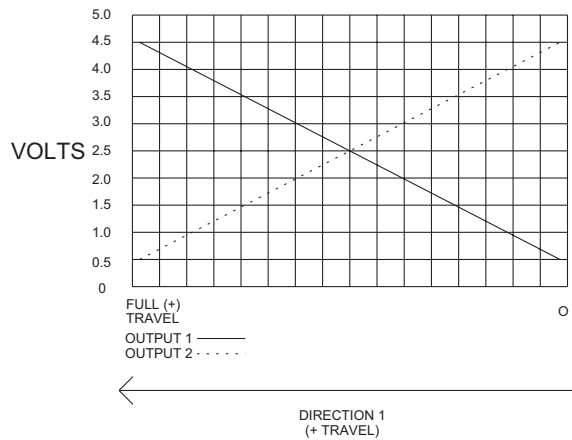
OPTION A



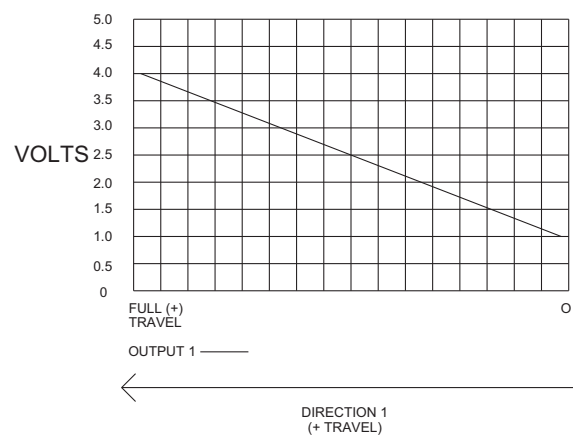
OPTION B



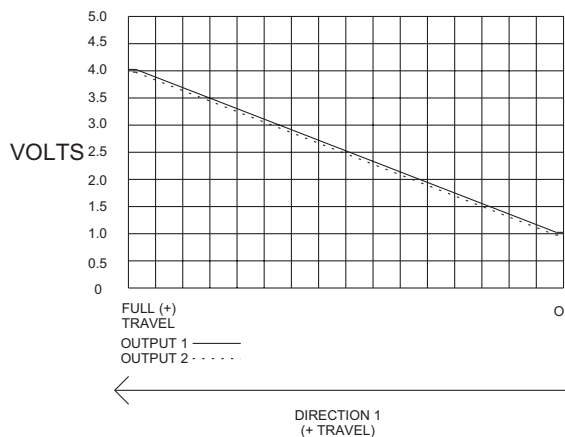
OPTION C



OPTION D



OPTION E



OPTION F

