

Miniature Z-Axis Hall Effect Joystick



With Pushbuttons

JHT Z-Axis



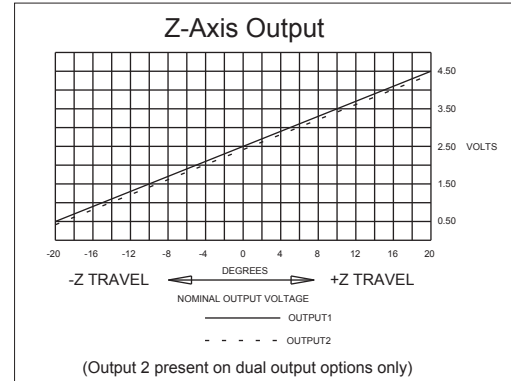
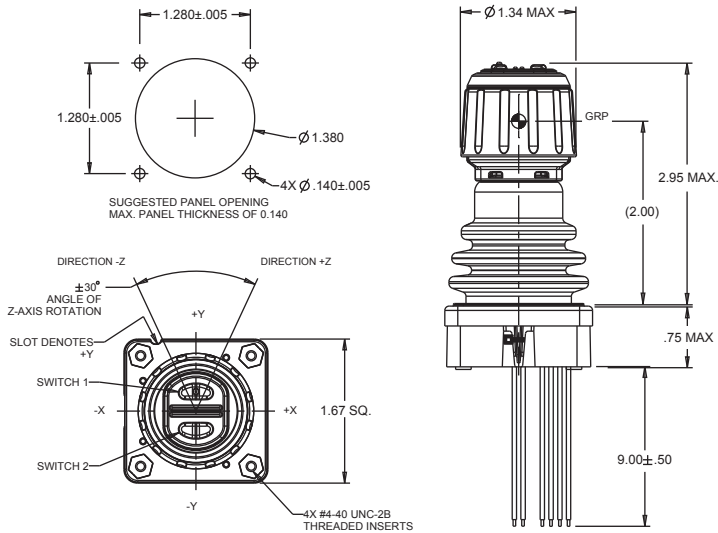
Without Pushbuttons

The JHT Z-Axis Miniature Series Hall Effect Joystick allows for a 60° rotational movement of the knob at the top of the joystick. Z-Axis options include detent, friction hold or spring return to center. Its compact design is the ideal solution where space is limited and precision control is required, while its robust construction is suited for demanding applications. The JHT joystick has been tested to five million cycles in all directions with no degradation of performance. The Z-Axis and/or pushbuttons have been tested to one million cycles. Various gating options are also available. The JHT Z-Axis electronics are sealed to IP68S and can withstand EMI/RFI per SAE J1113 specifications. The JHT Z-Axis has numerous applications and is ideal for construction equipment, unmanned vehicles, hydraulic controls, industrial vehicle controls, medical and surgery equipment and surveillance video cameras.

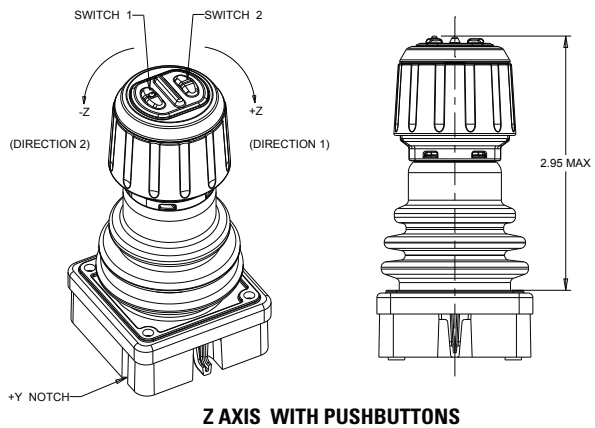
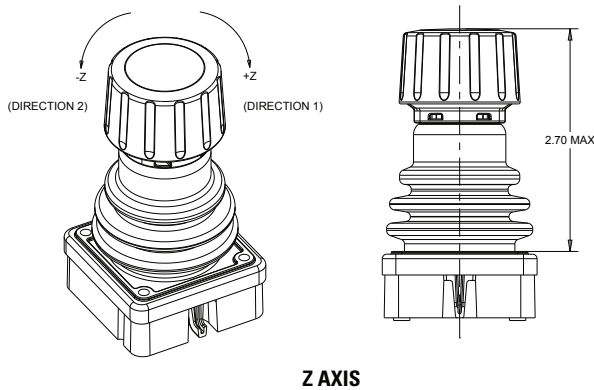
JHT Z-Axis Key Features:

- 60° rotational movement of the knob
- Compact design
- Contactless analog output Hall effect technology
- 5 million operational cycles in all directions (Joystick)
- Joystick electronics sealed per IP68S
- Optional pushbutton switches available
- 3.3V and 5V SPI Output Options
- RoHS compliant

Standard Characteristics/Ratings:				
GENERAL:				
Sensor Type:	Hall effect analog, factory programmed ground and supply line break detection; over voltage and reverse voltage protection			
Design:	Contactless sensing			
ELECTRICAL RATINGS: Rated at Vcc = 5V @ 20°C Load = 1ma (4.7KΩ)				
Electrical - Analog Joystick				
Supply Voltage	Units	Min	Typ	Max
Output Voltage Tolerance at Center	VDC @ 5V Vcc	-0.25	N/A	+0.25
Output Voltage Tolerance Full Travel	VDC @ 5V Vcc	-0.25	N/A	+0.25
Supply Current* (B = 0, Vcc = 5V, Io = 0)	mA	N/A	10	12
Output Impedance	kΩ	N/A	1	N/A
*Single output per axis. Dual output per axis available. Supply current 20mA typical.				
Electrical - Joystick Z-Axis Return to Center				
Supply Voltage	Units	Min	Typ	Max
Output 1+2 Voltage, +Z, -Z 0° Deflection	VDC @ 5V Vcc	2.25	2.50	2.75
Output 1+2 at Full Travel +Z Direction	VDC @ 5V Vcc	4.25	4.50	4.55
Output 1+2 at Full Travel -Z Direction	VDC @ 5V Vcc	0.45	0.50	0.75
Supply current (per sensor) B = 0, Vcc = 5V, Io = 0	mA	N/A	N/A	10.0
Output - Source Current Limit B = -X, Vo = 0	mA	-1.0	N/A	1.0
Electrical - Joystick Z-Axis Friction				
Supply Voltage	Units	Min	Typ	Max
Output 1+2 at Full Travel +Z Direction	VDC @ 5V Vcc	4.25	4.50	4.55
Output 1+2 at Full Travel -Z Direction	VDC @ 5V Vcc	0.45	0.50	0.75
Supply current (per sensor) B = 0, Vcc = 5V, Io = 0	mA	N/A	N/A	10
Output - Source Current Limit B = -X, Vo = 0	mA	-1.0	N/A	1.0
Electrical - Joystick Z-Axis 3 Detent				
Supply Voltage	Units	Min	Typ	Max
Output 1+2 Voltage, +Z, -Z 0° Deflection	VDC @ 5V Vcc	2.25	2.50	2.75
Output 1+2 at Full Travel +Z Direction	VDC @ 5V Vcc	4.25	4.50	4.55
Output 1+2 at Full Travel -Z Direction	VDC @ 5V Vcc	0.45	0.50	0.75
Supply current (per sensor) B = 0, Vcc = 5V, Io = 0	mA	N/A	N/A	10.0
Output - Source Current Limit B = -X, Vo = 0	mA	-1.0	N/A	1.0
Joystick				
Mechanical Life:	5,000,000 cycles in all directions			
Travel Angle	Units	Min	Typ	Max
Over Travel Angle	Degrees	18	20	22
Max Allowable Radial Force (Styles 11, 12 & 21) @ GRP	Lbs.	N/A	N/A	50
Max Allowable Radial Force (All Other Styles) @ GRP	Lbs.	N/A	N/A	15
Z-Axis				
Mechanical Life:	1,000,000 cycles in all directions			
Travel Angle (Total)	Units	Min	Typ	Max
Operational Torque with Detent	Degrees	56	60	64
Operational Torque with Friction Hold	OZ	10	20	30
Operational Torque with Friction Hold	OZ	1.0	4.0	7.0
Operational Torque Return to Center	OZ	8.0	16	24



JHT Z-Axis Switch/Style Boot Configuration



JHT Z-Axis Schematics

