

## 2-axis inclinometer PEI-Z290AL-V3



Range  $\pm 90^\circ$ , dual axis  
 Power Supply 8-36VDC  
 Voltage output versus sine of angle  
 Silicon 3D MEMS sensor  
 Drip- & dust-proof  
 Mechanical Shock resistance  $>20'000g$   
 Resolution  $< 0.001^\circ$

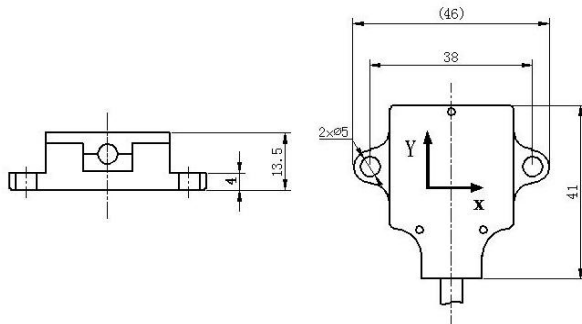
### Operating / Environmental characteristics

Parameter	Condition	Min	Typ	Max	Units
Supply voltage		8		36	VDC
Static operating current	Without load		10	18	mA
Output load	resistive	10			K $\Omega$
	capacitive			20	nF
Operating temperature		-40		85	$^\circ\text{C}$
IP grade			IP65		

### Performance characteristics

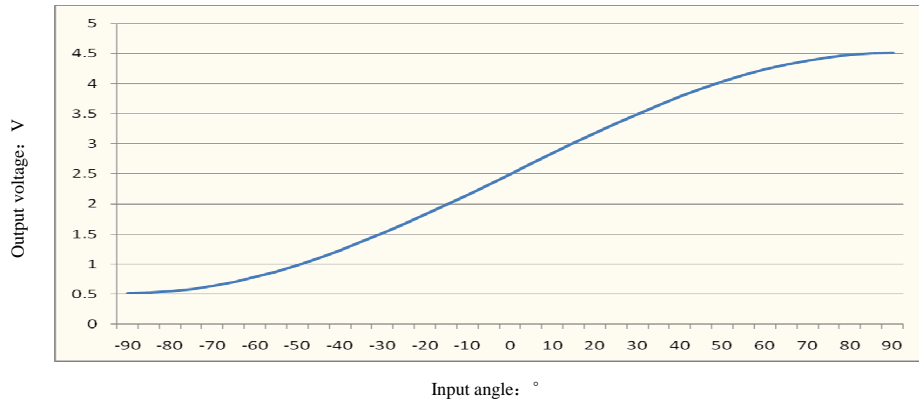
Parameter	Condition	Min	Typ	Max	Units
Measuring range	X axis		$\pm 90$		$^\circ$
	Y axis				
Resolution		0.001			$^\circ$
Non-linearity sinus output				0.1 $^\circ$	
Zero output voltage		2.465	2.5	2.535	VDC
Offset zero point error				1	$^\circ$
Offset temperature error	0 $\sim$ +70 $^\circ\text{C}$		$\pm 0.2$	$\pm 0.3$	$^\circ$
	-25 $\sim$ +85 $^\circ\text{C}$		$\pm 0.4$	$\pm 0.6$	$^\circ$
Sensitivity			2		V/g
	Near 0 degree	32	35	38	mV/ $^\circ$
Sensitivity temperature error	0 $\sim$ +70 $^\circ\text{C}$		-0.8...0.3		%
	-25 $\sim$ +85 $^\circ\text{C}$		-1.5...0.5		%
Cross axis sensitivity			3		%

### Mechanical Dimension and connection



Wire color	Name	Function
Red	Vcc	Power supply
Blue	GND	Ground
Yellow	Out X	X axis output
Green	Out Y	Y axis output

### Input-output characteristics



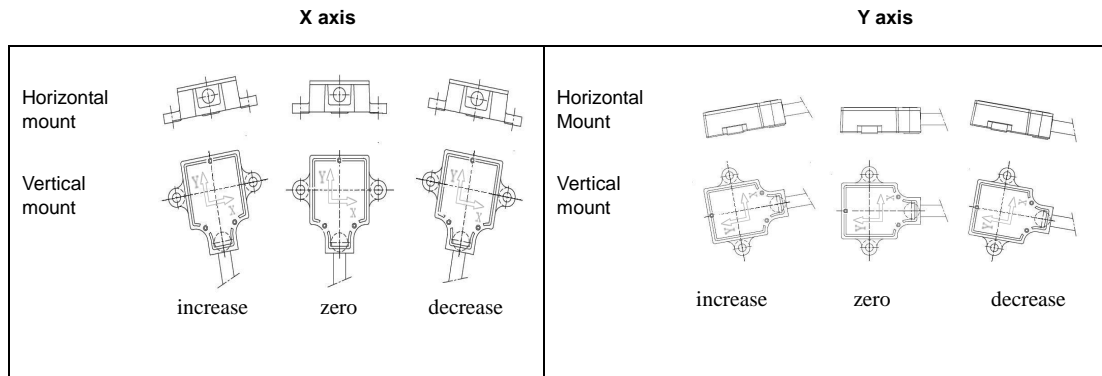
### Voltage- angle conversion

$$\text{Inclination angle} = \arcsin \left( \frac{\text{Vout} - \text{Voffset}}{\text{Sensitivity}} \right)$$

Vout: analog output voltage

Voffset: 2.5V, output voltage at zero point.

### Measuring direction



### Ordering information: PEI-Z290AL-V3

Specification is subject to change without notification !