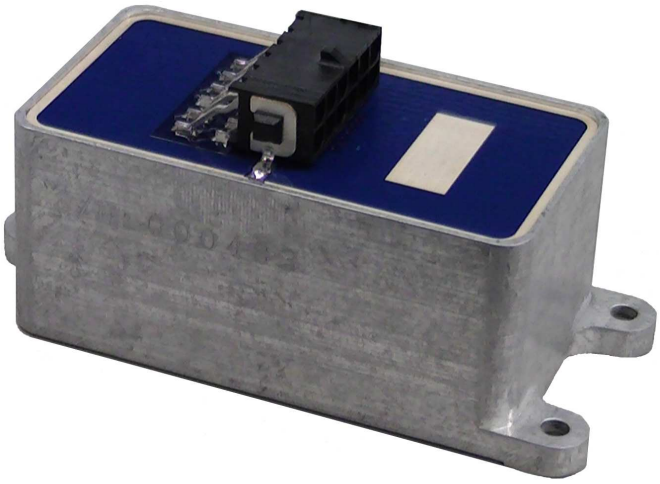
Single Axis Vertical Reference System

ADS-C132-3AD

Description:

Introducing the ADS-C132-3AD, Watson Industries newest sensor system! It is a much smaller, yet fully functional vertical reference system that can serve as a replacement for a Watson VRS in many applications.



The Watson Industries Single Axis Vertical Reference System is a solid-state gyro package that measures angular displacement and rate, especially where dynamic motion may interfere. Under these conditions, the effects of lateral accelerations severely limit the performance of an ordinary accelerometer or pendulous device.

The Watson Single Axis Vertical Reference achieves exceptional performance by integrating the output of a vibrating structure gyro to get an estimate of the attitude, which is then compared to accelerometers to find the error. The error is filtered over a long time constant and subtracted from the rate gyro output to correct biases in a closed loop error correction system. This process lets the gyro measure short-term attitude accuracy above the correction loop frequency while the accelerometer serves as the long-term reference.

The ADS can be a functional replacement for mechanical gyros, which are often more expensive, larger, heavier and less reliable than this solid-state sensor. It is especially suited for applications where there is limited bank and elevation such as ships, underwater vehicles, some land vehicles, and certain camera applications.

- Solid State, Strap Down System
- High Accuracy
- Low Cost, Low Power
- Rugged, High Reliability
- Analog and RS-232 Digital Outputs
- One Year Limited Warranty
- Engineering Support

Applications:

The ADS is used to stabilize and control ships and submersibles, to stabilize antenna platforms, to instrument automobiles, and for many other applications.

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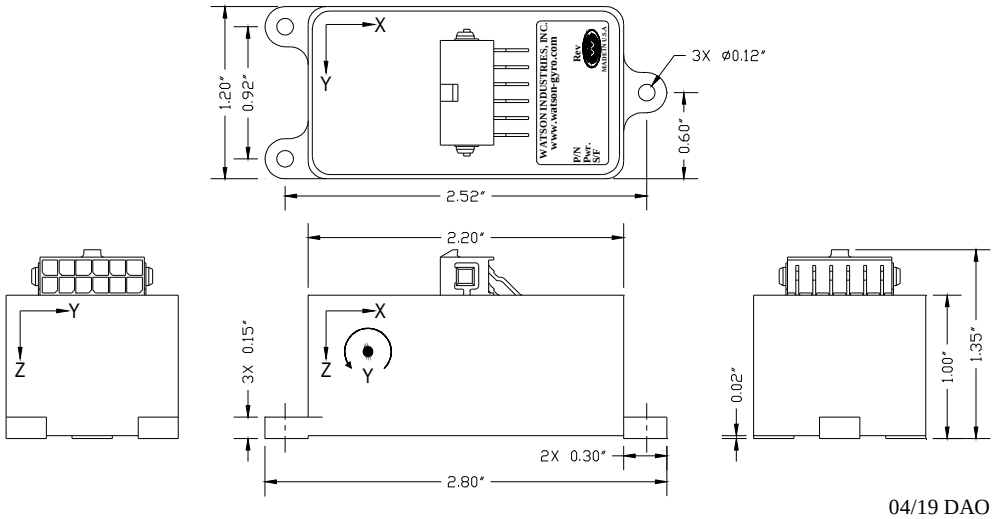
Attitude			
	Range: Elevation	±180° (±50° †)	Digital (Analog)
	Resolution:	0.02°	Binary mode (14 bit)
	Analog Scale Factor:	10°/V †	±5V Output
	Accuracy: Static	±0.5°	(up to 75°)
*	Accuracy: Dynamic	0.5%	
Angular Rate			
	Range: Pitch	±100°/sec	
	Resolution:	0.025°/sec	Binary mode (14 bit)
	Analog Scale Factor:	20°/sec/V	±5V Output
	Scale Factor Accuracy:	0.5%	
	Bias: Pitch	< 0.3°/sec	±0.02°/sec Binary mode (14 bit)
	Non-Linearity:	< 0.2%	Full scale range
	Bandwidth:	50 Hz	
	Noise:	< 0.06°/sec rms	
Acceleration			
	Range: X, Z	±10g	
	Resolution:	4mg	
	Scale Factor Accuracy:	1%	
	Bias:	< 10mg	
	Non-Linearity:	0.5%	Full scale range
	Bandwidth:	3 Hz	
Environmental			
	Temperature: Operating	-40°C to +85°C	
	Temperature: Storage	-55°C to +85°C	
	Vibration: Operating	5g rms	20 Hz to 2 KHz
	Vibration: Survival	10g rms	20 Hz to 2 KHz
	Shock: Survival	500g	1mS ½ sine wave
Electrical			
	Frame Rate:	250 Hz	Maximum
	Startup Time: Data	5 sec	
	Startup Time: Fully operational	10 sec	
	Input Power:	8 to 45VDC	0.5W
	Input Current:	40mA @ 12VDC	20mA @ 24VDC
	Digital Output:	RS-232	
	Analog Output:	±5VDC	
	Analog Output Impedance:	300 Ohm	Per line
Physical			
	Axis Alignment:	< 2°	
	Size: Including Mounting Flanges	1.2"W x 2.8"L x 1.35"H	3.0 x 7.1 x 3.4 (cm)
	Weight:	2.1 oz	60 grams
	Connection:	Amp 4-794627-2 (12 pin)	

* Actual accuracy can be calculated as the listed percentage multiplied by the change in value over the entire dynamic maneuver.

† The Analog output range for Elevation is menu selectable. This also changes the analog scale factor for Elevation.

- Specifications are subject to change without notice.
- This product may be subject to export restrictions. Export Classification ECCN 7A994.

Dimensions:



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