



3Dcube®

Hi Performance three-axial accelerometer system

The 3Dcube® is family of ultra-miniature Tactical-Grade Tri-Axis Accelerometers developed to support wide range of application within severe harsh environments.

The super-compact ultra-miniature design along with it's high technical performance makes the 3Dcube® suitable candidate for demanding applications like flight tests & recording, vehicle vibration road tests, aerial vibration testing, structural dynamics and many more.

The 3Dcube offers exceptional performances suitable for demanding applications, like very low VRE (Vibration Rectification Error) suitable for high vibration environments ,also, the out-of-plane measurement principal assures low cross-axis values.

The 3Dcube is calibrated for Temperature, Bias, Scale-Factor and more upon request.

Main Features

- High Performance Tactical Grade Accelerometers
- Very Low VRE (= Vibration Rectification Error)
- DC Response, Differential Mode/Single-Ended
- Individual sensor calibration
- Low Power < 200mA @ 12 VDC
- Miniature, Light Weight

Applications

- Vibration Analysis for UAV/UGV
- Flight Data Acquisition Systems
- Portable Data Acquisition Systems

Specifications

3Dcube®

	AZM3002	AZM3010	AZM3030	AZM3070	Remarks
Full Scale Range	± 2g	± 10g	± 40g	± 70g	
Bandwidth	0...500 Hz	0..1000 Hz	0...2000 Hz	0...2400 Hz	-3dB point
Sensitivity (Differential)	1,200 ± 4 mV/g	240 ± 4 mV/g	60 ± 2 mV/g	34 ± 2 mV/g	
Noise Density	< 30 µg/√Hz	< 20 µg/√Hz	< 20 µg/√Hz	< 25 µg/√Hz	
Resolution	3 µg	30 µg	100 µg	100 µg	
Non-Linearity	0.2 %	0.2 %	0.2 %	0.2 %	% of Input (1σ)
Bias					
Calib Error	3 mg	15 mg	60 mg	110 mg	
Temp Error	110 µg/°C	165 µg/°C	450 µg/°C	800 µg/°C	
Residual	375 µg	500 µg	900 µg	1,600 µg	
Scale Factor					
Temp Error	65 ppm/°C	65 ppm/°C	65 ppm/°C	65 ppm/°C	
T Residual	120 ppm	120 ppm	120 ppm	120 ppm	
VRE	250 µg/g ²	80 µg/g ²	25 µg/g ²	15 µg/g ²	
Cross-Axis	< 1 mRad				
Recovery Time	< 50 msec				
System & Communication					
Interface	Analog, Differential / Single-Ended				
Latency	< 100 µsec				
Start-Up Time	< 1 msec				
Electrical & Mechanical					
Output	2.5 ± 2.4 VDC				
Input Voltage	9 VDC - 36 VDC				
Power Consumption	< 200 mA @ 12 VDC				
Connectors	Micro D-Type, 9-pin				
Size	25 x 25 x 22 mm				
weight	< 40 gr				
Environmental Conditions (Design-to-Spec)					
Temp Operation	-40° C to +71° C		Mil-Spec 810-G Method 501.5 Procedure I		
Shock	500g, 3 msec ½ Sine		Mil-Spec 810-G Method 516.6 Procedure V		
Vibration	12 G rms, 20-2000 Hz		Mil-Spec 810-G Method 514.6 Category 17		
Altitude	70,000 feet		Mil-Spec 810-G Method 500.5 Procedure III		
Enclosure	IP65		EN 595		
MTBF	50,000 Hours		Mil-HDBK 217		

* Specification subject to change without notice

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