



# PRODUCT DATASHEET

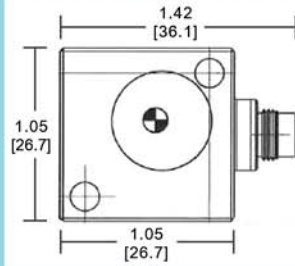
## SERIES 7576A ANALOG 6DOF ACCELEROMETER

### APPLICATIONS:

- Large machinery including industrial off road
- Transportation environment roll, pitch and yaw
- Robotics/machine motion studies
- Platform stabilization
- Aircraft flight dynamics
- Automotive testing
- Ride and handling
- Aerospace testing
- Rollover



### SENSOR SNAPSHOT



6Degrees of Freedom, DC Response

Dimensions: 1.42 L X 1.05 W X 1.05 H

Titanium housing, 55 grams

Rugged, Hermetically Sealed

### WHAT THIS SENSOR DOES FOR YOU:

Series 7576A is an analog six degrees of freedom (6DOF) motion sensor containing a MEMS-based triaxial accelerometer and three MEMS-based gyros to monitor the translational and rotational components of motion at the same physical point. This is used to determine the location of the center of rotation of a rigid body inside space. This compact, high performance, cost effective, titanium sealed sensor fits your most challenging real-world 6DOF application needs, including laboratory weather-exposed test track and laboratory environmental simulation conditions. Series 7576A is offered in a wide variety of ranges to accommodate any motion application.

### DEVICE FEATURES:

Compatible with most ADC with 0 to 5 Volts input

6DOF from one sensor at one central location

Survives harsh environments

Great bias stability

Removable cable

Compact design

Non-ITAR

### LEARN MORE

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Since its founding, Dytran has built a solid 35+ year industry reputation for trusted, field proven experience in the design and manufacture of sensors for dynamic testing.





# PRODUCT SPECIFICATIONS

SERIES 7576A

## PHYSICAL

Weight, Max  
Connector Type  
Material

ENGLISH		SI	
1.9	oz	55	grams
5/16-32 UNEF-2A		5/16-32 UNEF-2A	
Ti-6Al-4V		Ti-6Al-4V	

## ACCELEROMETER PERFORMANCE

Input Range  
Frequency Response ( $\pm 5\%$ )  
Frequency Response ( $\pm 3\text{dB}$ )  
Scale Factor, Nom. [1]  
Output Noise, Typ.  
Non-Linearity, Typ. [2]  
Temperature Range  
Scale Factor Temperature Coefficient [3]  
Axis misalignment, Max.  
Shock Survivability  
Resonant Frequency  
Cross Axis Sensitivity, Max.

$\pm 5$	g	$\pm 49.1$	$\text{m/s}^2$
0-1000	Hz	0-1000	Hz
0-1300	Hz	0-1300	Hz
470	$\text{mV/g}$	47.9	$\text{mV/m/s}^2$
0.000019	$\text{g rms}/\sqrt{\text{Hz}}$	0.00019	$\text{m/s}^2/\sqrt{\text{Hz}}$
0.2	% F.S	0.2	% F.S
-67 to 257	$^{\circ}\text{F}$	-55 to 125	$^{\circ}\text{C}$
67	$\text{ppm}/^{\circ}\text{F}$	120	$\text{ppm}/^{\circ}\text{C}$
10	mrاد	10	mrاد
6000	g	58860	$\text{m/s}^2$
3	kHz	3	kHz
5	%	5	%

## GYRO PERFORMANCE

Input Range  
Frequency Response  
Sensitivity  $\pm 10\%$  [1]  
Rate noise density, Typ.  
Non-Linearity, Typ. [2]  
Temperature Range  
Resonant Frequency  
Cross Axis Sensitivity, Max.

$\pm 50$	$^{\circ}/\text{sec}$	$\pm 50$	$^{\circ}/\text{sec}$
1-1000	Hz	1-1000	Hz
25	$\text{mV}/^{\circ}/\text{sec}$	25	$\text{mV}/^{\circ}/\text{sec}$
0.04	$(^{\circ}/\text{sec})/\sqrt{\text{Hz}}$	0.04	$(^{\circ}/\text{sec})/\sqrt{\text{Hz}}$
0.2	% F.S	0.2	% F.S
-40 to 221	$^{\circ}\text{F}$	-40 to 105	$^{\circ}\text{C}$
14.5	kHz	14.5	kHz
5	%	5	%

## ELECTRICAL

Output Impedance, Nom  
Operating Voltage  
Output Bias Voltage  $\pm 0.5$  VDC  
Operating Current, Typ.  
Power Supply Rejection Ratio

2	$\Omega$	2	$\Omega$
6 to 14	VDC	6 to 14	VDC
2.5	VDC	2.5	VDC
12	$\text{mA DC}$	12	$\text{mA DC}$
>65	dB	>65	dB

### This family also includes:

Model	Input Range (EU) Accel/Gyro	Frequency response (Hz) Accel./Gyro	Sensitivity, $\pm 10\%$ (mV/EU) Accel/Gyro	Max.Shock (0.1ms), g	Noise (EU/ $\sqrt{\text{Hz}}$ ) Accel./Gyro
7576A2	$\pm 10 / \pm 150$	0-2500 / 1-3000	235 / 12.5	6000	0.00004 / 0.04
7576A3	$\pm 30 / \pm 250$	0-3000 / 0.01-2500	78.33.3 / 7	6000	0.000089 / 0.06
7576A4	$\pm 200 / \pm 20000$	0-3800 / 0-2000	11.75 / 0.1	6000	0.0009 / 0.25
7576A5	$\pm 2 / \pm 50$	0-1150 / 1-1000	1175 / 25	6000	0.000088 / 0.04

# TYPICAL RESPONSE GRAPHS

