



DYTRAN
INSTRUMENTS, INC.



DC-MEMS SENSORS



ADVANCED SENSORS FOR A DYNAMIC WORLD



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DC-MEMS ACCELEROMETERS

DC-MEMS response accelerometers are used for steady-state linear acceleration and low frequency dynamic events, flight test, transportation environment replication/simulation, modal and structural analysis, ride quality, road load, tilt and inclination measurements, among many others. Dytran offers a wide range of configurations, including single axis and triaxial designs, and our new, fully analog 7576A six degree of freedom sensor and the innovative VibraCorder™ II.

Single Axis, High Performance, Differential Output

Series 7500A: High Precision MEMS Accelerometer

Features: Differential output, removable cable, ultra low noise, hermetic

Benefits: Eliminates common mode noise, ultra high resolution excellent for use in harsh environments

- Available in 8 ranges: 2g, 5g, 10g, 25g, 50g, 100g, 200g, 400g
- Sensitivities (mV/g): 1,000, 400, 200, 80, 40, 20, 10, 5
- Available frequency ranges ($\pm 3\text{dB}$) from:
0-400 Hz to 0-2500 Hz
- 13 grams



Series 7509A: DC Response Accelerometer

Features: Differential output, integral cable, low noise, industry standard thru-hole

Benefits: Low cost, eliminates common mode noise

- Available in 8 ranges: 2g, 5g, 10g, 25g, 50g, 100g, 200g, 400g
- Sensitivities (mV/g): 2,000, 800, 400, 160, 80, 40, 20, 10
- Available frequency ranges ($\pm 3\text{dB}$) from:
0-400 Hz to 0-2500 Hz
- 13 grams



Series 7531A: DC Response Accelerometer

Features: Integral cable, low current consumption, easily mounted with adhesives or mounting screws

Benefits: Low cost, single ended output, internal voltage regulation

- Available in 8 ranges: 2g, 5g, 10g, 25g, 50g, 100g, 200g, 400g
- Sensitivities (mV/g): 2,000, 800, 400, 160, 80, 40, 20, 10
- Available frequency ranges ($\pm 3\text{dB}$) from:
0-400 Hz to 0-2500 Hz
- 13 grams



Series 7600B High Precision MEMS Accelerometer

Features: Differential output, removable cable, low noise, hermetic

Benefits: Drop in replacement for piezo-resistive sensors, stable output over varying temperatures, eliminates common mode noise

- Available in 8 ranges: 2g, 5g, 10g, 25g, 50g, 100g, 200g, 400g
- Sensitivities (mV/g): 2,000, 800, 400, 160, 80, 40, 20, 10
- Available frequency ranges ($\pm 3\text{dB}$) from:
0-400 Hz to 0-2500 Hz
- 13 grams



Series 7604A: High Precision MEMS Accelerometer

Features: Environmental boot, differential output, integral cable, hermetic

Benefits: Splash proof operation, drop in replacement for piezo-resistive sensors, eliminates common mode noise

- Available in 6 ranges: 5g, 10g, 25g, 50g, 100g, 200g
- Sensitivities (mV/g): 100, 50, 20, 10, 5, 2.5
- Available frequency ranges ($\pm 3\text{dB}$) from:
0-400 Hz to 0-1750 Hz
- 3.6 grams



Series 7700A: High Precision MEMS Accelerometer

Features: Rugged, mini 4-pin connector, removable 10-32 stud, hermetic

Benefits: Drop in replacement for piezo-resistive sensors, rugged, small packaging, ideal for flight testing

- Available in 6 ranges: 5g, 10g, 25g, 50g, 100g, 200g
- Sensitivities (mV/g): 100, 50, 20, 10, 5, 2.5
- Available frequency ranges ($\pm 3\text{dB}$) from:
0-600 Hz to 0-2500 Hz
- 8 grams



Triaxial High Performance

Series 7503D: High Precision MEMS Accelerometer

Features: Differential output, removable cable, titanium, hermetic

Benefits: Ultra high resolution, eliminates common mode noise

- Available in 10 ranges: 2g, 5g, 10g, 25g, 50g, 100g, 200g, 400g, D9: $\pm 5(X&Y)$, $\pm 25(Z)$, D10: $\pm 5(X&Y)$, $\pm 50(Z)$
- Sensitivities (mV/g): 2,000, 800, 400, 160, 80, 40, 20, 10
D9: 800(X&Y), 160(Z), D10: 800(X&Y), 80(Z)
- 0 to 400 Hz frequency range ($\pm 3dB$)
- 38 grams



Series 7533A: High Precision MEMS Accelerometer

Features: Integral cable, low current consumption

Benefits: Low cost, single ended output, internal voltage regulation

- Available in 5 ranges: 2g, 3g, 5g, 16g, 200g
- Sensitivities (mV/g): 420, 300, 174, 57, 6.5
- Axes X&Y: 0 to 1,600 Hz frequency range ($-3dB$)
- Axis Z: 0 to 550 Hz frequency range ($-3dB$)
- 6 grams



Six Degrees of Freedom (6DOF) Sensor

Series 7576A provides end users with a highly capable, cost effective, small size 6DOF accelerometer for a myriad of sensing applications. These sensors contain three MEMS-based single axis accelerometers and three MEMS-based gyro sensors 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. Typical uses for the 7576A series include: vehicle dynamics, ride and handling, rollover, automotive safety, aerospace testing, large machinery including industrial off-road, aircraft flight dynamics, aircraft ground test, helicopter evaluation, amusement ride, and playground surface investigation.

Series 7576A: Analog 6DOF Sensor

Features: Available in various ranges, great bias stability, hermetic

Benefits: Improved electrical noise performance, enhanced frequency response, excellent for use in harsh environments

- Accel sensitivity (mV/g): 500, 250, 83.33, 12.5, 1250
- Accel range: $\pm 5g$, $\pm 10g$, $\pm 30g$, $\pm 200g$, $\pm 2g$,
- Gyro sensitivity (mV/ $^\circ$ /sec): 25, 12.5, 7, 0.1, 25
- Available Accel. frequency ranges ($\pm 3dB$) from: 0-1150 Hz to 0-3800 Hz
- 55 grams



Translational Movement



Rotational Movement



6 Degrees of Freedom



ADVANCED SENSING

Portable Vibration Recorders

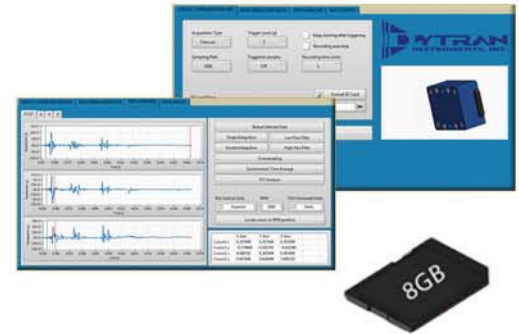
These powerful and portable data loggers are designed to capture critical vibration data, solve problems, and move product development forward. Units include easily installed, user-configurable software that optimizes data collection, an internal accelerometer that eliminates the need for external cable runs and complex signal conditioning, and a removable memory card that plugs directly into your laptop or PC. Ideal for use in the following applications: automotive vibration testing, remote vibration measurements, rotating machinery diagnostics, impact testing, sports equipment, safety equipment, recreational vehicles, transportation monitoring, playground testing as well as suspension testing.

VibraCorder™: 6 DOF Vibration Recorder

Features: Portable, compact, event comparison, high pass/low pass filtering, data overlay

Benefits: This model has a built-in-3-axes MEMS accelerometer capable of recording acceleration in three orthogonal directions and write data on a removable SD card

- Available in 2 ranges: 16g, 200g
- Up to 24 hrs of recording time
- Magnet mount or screw mount
- Several sampling rates available up to 3,200 samples/second
- Environmentally sealed with IP64 rating



VibraCorder™ II: Next Generation 6DOF Vibration Recorder

Features: Portable, compact, option for external power, event triggered relay (user configurable), anti-aliasing filtering, real time stamp

Benefits: Captures on-the-spot 6DOF, static, and dynamic acceleration. Built-in firmware handles acceleration in three axes as well as gyroscope data on the removable Micro SD-card

- Range: 16g
- Multi-day recording capabilities
- Mounting: (4) 10-32 screws
- Several sampling rates available up to 4,280 samples/second
- Environmentally sealed with IP65 rating



Dual Element Sensor Technology

Our innovative ELF™ technology sensor combines a piezoelectric sensor (excellent high frequency response and low noise) and variable capacitance MEMS accelerometer (true DC response) to create an extremely wide frequency response bandwidth from DC (0Hz) to 10KHz. Ideal for rail testing, wind turbine testing, flight testing, HUMS, machinery monitoring, and for structural response applications.

Model 7705A: (Extended Low Frequency) ELF™ Accelerometer

Features: Differential mode, removable cable, low noise, hermetic, runs on strain gage power

Benefits: Stable output over varying temperatures, drop in replacement replacement for piezo-resistive sensors, runs on straining gage power

- Available in 3 ranges: 200g, 40g, 20g
- Sensitivities (mV/g): 10, 50, 100
- 0 to 10,000 Hz frequency range ($\pm 10\%$)
- 15 grams



USB Powered

The VibraScout™ 6D is a plug-and-play, cost effective portable data acquisition system. It contains an 8-pole elliptical anti-aliasing filter and measures X, Y, Z acceleration, along with roll, pitch, and yaw. In-field data collection, Noise, Vibration and Harshness (NVH) studies, end-of-line testing, static angular measurements, ride quality, vibration measurement and diagnosis of rotating machinery are all possible with VibraScout™ 6D. Simply load the VibraScout™ software on a laptop or tablet and plug the sensor cable into the USB port.

Model 7586A: VibraScout™ 6D USB Powered Sensor and Analysis Software

Features: Portable, compact, no external power supply or signal conditioning needed, anti-aliasing filter

Benefits: This USB Digital 6 degrees of freedom sensor plugs directly into your laptop or PC for instant acquisition of triaxial or 6DoF data

- Range: 14g
- Multi-day recording capabilities
- Several sampling rates available up to 4,000 samples/second
- Environmentally sealed with IP65 rating



CVLD Accelerometers

These sensors are designed with an advanced, internal electrical circuit to simulate a CVLD (Constant Voltage Line Driver) sensor. This allows for variable capacitance DC MEMS acceleration measurements to be made over data acquisition channels normally reserved for current mode sensors. These CVLD sensors are tailored for use in the following applications; flight testing, flutter testing, and low frequency aircraft/airframe vibration measurements.

Series 7506A: High Precision MEMS Accelerometer

Features: Low pass filtered, ultra low noise, 4-20 mA loop compatible, hermetic

Benefits: Great for measuring static & dynamic anomalies throughout a vehicle during flight, ideal for extended cable runs

- Available in 2 ranges: $\pm 50g$, $\pm 400g$
- Sensitivities ($\mu A/g$): 100, 13
- 0 to 300 Hz frequency range (-3dB)
- 70 grams



Series 7508A: High Precision MEMS Accelerometer

Features: Ultra low noise, 4-20 mA loop compatible, hermetic

Benefits: Great for measuring static & dynamic anomalies throughout a vehicle during flight, ideal for extended cable runs

- Range: $\pm 400g$
- Sensitivity ($\mu A/g$): 13
- 0 to 2,500 Hz frequency range (-3dB)
- 70 grams



Model 7563A: High Precision MEMS Accelerometer

Features: Ultra low noise, 4-20 mA loop compatible, hermetic

Benefits: Great for measuring static and dynamic anomalies throughout a vehicle during flight, ideal for extended cable runs

- Available in 4 ranges: $\pm 2g$, $\pm 50g$, $\pm 100g$, $\pm 400g$
- Sensitivities ($\mu A/g$): 2,500, 100, 50, 12.5
- Available frequency ranges (-3dB): 0-400 Hz to 0-2,500 Hz
- 85 grams



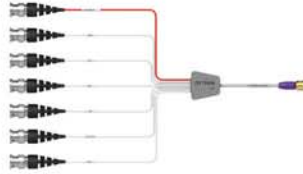
DC-MEMS CABLES AND ACCESSORIES

Popular Cable Choices for DC-MEMS Sensors

Dytran designs & manufactures a wide variety of cables for your testing & monitoring requirements. Our cable assemblies are designed & manufactured in the USA & are made with our customers challenging environments in mind. We offer a broad range of standard products as well as custom cables made to customer specifications.

6445A Series: 9-pin (5-16/32) plug to (7) BNC plugs

- Eight conductor
- For use with 6DOF Sensor
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A15) 15 ft
- Compatible with 7576A



6776A Series: 4-pin plug to (2) BNC plugs

- Coaxial, four conductor
- For use with extended low frequency (ELF™) sensor
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A20) 20ft
- Compatible with 7705A



6854A Series: 4-pin plug (1/4-28) to pigtails

- Four conductor
- General purpose
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A15) 15 ft
- Compatible with 7300A, 7500A



6877 Series: 4-pin plug (1/4-28) to 4-pin jack

- Four conductor
- General purpose
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A20) 20 ft
- Compatible with 7300A, 7500A



6895A Series: 4-pin plug (M4.5 x 0.35) to cutoff

- Four conductor
- General purpose, low outgassing
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A20) 20 ft
- Compatible with 7600B, 7602B, 7700A



6948 Series: 4-pin plug (M4.5 x 0.35) to MS6476L10-6P bayonet plug (Bendix)

- Four conductor
- General purpose, flexible
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A20) 20 ft
- Compatible with 7600B, 7602B



6949A Series: 4-pin plug (M4.5 x .35) to D-SUB 9-pin plug

- Four conductor
- Miniature
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A20) 20ft
- Compatible with 7600B, 7602B, 7700A



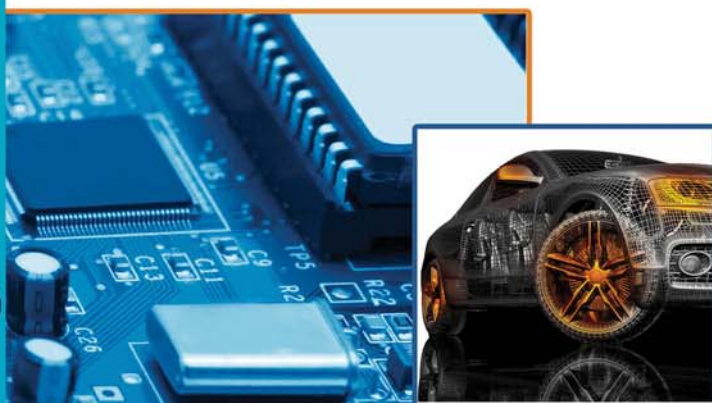
6956A Series: 4-pin plug to (3) D-SUB 9-pin jacks

- Eight conductor
- General purpose
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A20) 20 ft
- Compatible with 7503D, 7563A, 7603B, 7623B



6964A Series: 9-pin plug to flying leads

- Eight conductor
- General purpose
- Teflon™ jacket
- (A05) 5 ft; (A10) 10 ft; (A20) 20 ft
- Compatible with 7503D, 7563A, 7603B, 7623B, 7576A



Mounting Base

Model 6213 Adhesive Mounting Base

- 10-32 stud mount
- 0.63 inch hex
- 0.260 inches thick
- Stainless steel
- Compatible with 7705A



Model 6258 Magnetic Mounting Base

- 10-32 stud
- 0.625 inch hex
- 0.39 inches thick
- Stainless steel
- Compatible with 7705A



Mounting Block

Model 6364: Triaxial Mounting Block

- 8-32 UNC-2A x 1.25L screw mount
- 1 inch cube
- Aluminum
- Compatible with 7300A, 7500A, 7504A



Model 6748: Triaxial Mounting Block

- (2) 5-40 x 1.00 inch mounting screws
- 1 inch cube
- Anodized aluminum
- Compatible with 7531A, 7533A



Model 6749: Triaxial Mounting Block

- 4-40 threads
- 1.00 x 1.00 x 0.75 inches
- Aluminum
- Compatible with 7600B, 7602B



Mounting Screws

Model 6247: Mounting Screw

- 6-32 thread
- 0.4 inches long
- Stainless steel
- Compatible with 7586A



Series 6535: Mounting Screw

- 8-32 thread
- Available in 0.50, 0.75 inches long
- Stainless steel
- Compatible with 7300A, 7500A, 7504A



Model 6746: Mounting Screw

- 4-40 thread
- 0.31 inches long
- stainless steel
- Compatible with 7602B



Mounting Stud

Series 6200: Mounting Stud

- 10-32 to 10-32
- 0.27 inches long
- Available materials: beryllium copper, stainless steel



Model 6691: Mounting Stud

- 1/4-28 to M6
- 0.38 inches long
- Beryllium copper



Signal Conditioner

Model 4010: Signal Conditioner

- Line powered
- 3 channel
- D-SUB input connectors
- BNC output connectors
- Compatible with 7300A, 7500A, 7563A, 7600B1, 7503D



Customer Benefits Programs

Sensor Select™ Inventory Stocking Program with Lifetime Warranty

Dytran Sensor Select™ is an inventory stocking program designed for rapid delivery of our most popular models. The program ensures better availability of the products that our customers need most, and Sensor Select™ products come with an enhanced Lifetime Warranty against defects in materials and workmanship. Sensor Select™ is the best way to look for small quantities of the most popular products to get you the sensors you need without having to tour the entire product line.



Sensor Select™ Total Customer Satisfaction Money Back Guarantee

Dytran guarantees Total Customer Satisfaction on all Sensor Select™ products ONLY (does not apply to the entire product line). If you are not satisfied with the performance of any Sensor Select™ product for any reason during the first one year after delivery beginning from time of shipment from Dytran, you may: return the product to us and receive a 100% refund, or exchange the product for another model better suited to your measurement application.



5-Year Standard Product, 2-Year Modified Product, 1-Year Cable & Accessories Warranty

Dytran warrants Standard Products (defined as products manufactured as Catalog Model numbers for regular inventory-keeping purposes) to be free of defects in materials and workmanship for a period of five years after shipment. Modified "M-Number" Products (defined as products designed, manufactured, and tested to customer-specific requirements) are warranted to be free of defects in materials and workmanship for a period of two years after shipment. Cables and Accessories are warranted to be free of defects in materials and workmanship for a period of one year after shipment.



The Quad™ Sensor Educational Donations

The Quad™ offers a unique opportunity for undergraduate and graduate degree engineering students and faculty members to obtain Dytran sensors for their thesis papers and research experiments free of charge. To become eligible, simply contact our Total Customer Satisfaction representative at the factory in Chatsworth, CA to receive authorization.



Sensor Exchange™ Qualified Sensor Trade-In Program

Dytran customers are offered an additional Sensor Select™ Benefit when you trade in qualifying competitive IEPE, Charge Mode and DC response MEMS sensors for an equivalent Dytran model. Customers may receive up to 15% off the purchase price of any NEW Dytran equivalent model (ask our Sales Applications Engineers for assistance in determining qualifying models).



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AS9100 CERTIFIED
A2LA ACCREDITED TO ISO 17025
ISO 9001 CERTIFIED