AEROSPACE FLIGHT TEST

Including ENDEVCO sensors, electronics, and cables

PCB PIEZOTRONICS
AN AMPHENOL COMPANY

pcb.com | 800 828 8840

SENSORS FOR FLIGHT TESTING

PCB Piezotronics' portfolio of cutting-edge sensors is meticulously crafted to meet and exceed the exacting requirements of flight testing. Built for high precision in complex setups, the accelerometers, dynamic force sensors, and force transducers contained in this catalog have been carefully engineered for a range of critical test types.

PCB's Endevco product line extends our offering to provide advanced measurement devices proven to withstand the challenges of extreme environments, including cryogenic sensors. Building upon a foundation of two of the world's most diverse sensor and related electronics product lines, the models in this catalog support the following applications:

- Flutter testing of airframes
- Turbulent airflow measurements
- Engine testing
- Vibroacoustic testing
- Vehicle dynamics studies
- Missile and rocket launches
- Structural vibration tests

Additionally, you will find an assortment of acoustic measurement products and accessories, including condenser, prepolarized, externally polarized, array, probe, low-profile surface, and special purpose microphones.

Complementing PCB's sensor line is signal conditioning specifically designed for aerospace vehicle power availability, severe vibration environments, challenging EMI conditions, constrained space requirements, and the temperature extremes encountered in flight testing.

Because of the complexity of flight testing and breadth of PCB's product line, this catalog includes only the most popular subset of PCB's flight test sensors and signal conditioners. PCB also manufactures aerospace and defense sensors for other applications, such as aerospace vehicle ground testing, environmental testing, Health and Usage Monitoring (HUMS), fuze/safe and arm, and blast testing.

For a complete exploration of other options, including customized solutions, we invite inquiries to PCB's application engineering team. Our longstanding commitment to Total Customer Satisfaction extends to the willingness to devote engineering and manufacturing resources to meet your unique and challenging requirements.

SINGLE AXIS, PIEZOELECTRIC ACCELEROMETERS FOR VIBRATION AND MEASUREMENT

PCB® offers various types of accelerometers to suit all applications

- The teardrop accelerometers are very small and lightweight. This design exhibits minimum mass loading effects and installs adhesively into tight locations.
- The through hole or ring-type configurations install conveniently with a through bolt which may be rotated to achieve desired location of electrical connection. Ring-type accelerometers are also low profile, allowing installation in tight areas.

SINGLE AXIS, PIEZOELECTRIC ACCELEROMETER

MODEL 352C23

- Sensitivity: 5 mV/g
- Measurement Range: ±1000 g pk
- Frequency Range (±10%): 1.5 Hz to 15k Hz

SINGLE AXIS, PIEZOELECTRIC ACCELEROMETER

MODEL 352C22

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g pk
- Frequency Range (±10%): 0.7 Hz to 13k Hz

SINGLE AXIS, PIEZOELECTRIC ACCELEROMETER

MODEL 352A24

- Sensitivity: 100 mV/g
- Measurement Range: ±50 g pk
- Frequency Range (±10%): 0.8 Hz to 10k Hz

SINGLE AXIS, PIEZOELECTRIC ACCELEROMETER

MODEL 353B15

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g pk
- Frequency Range (±10%): 0.7 Hz to 18k Hz

SINGLE AXIS, PIEZOELECTRIC ACCELEROMETER

MODEL 353B15

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g pk
- Frequency Range (±10%): 0.7 Hz to 18k Hz

SINGLE AXIS, PIEZOELECTRIC ACCELEROMETER

MODEL 355B03

- Sensitivity: 100 mV/g
- Measurement Range: ±50 g pk
- Frequency Range (±10%): 0.6 Hz to 12k Hz

RING-STYLE ICP® ACCELEROMETER

MODEL 355A40

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g
- Frequency Range (±5%): 1 to 20000 Hz

MINIATURE RING-STYLE ICP® ACCELEROMETER

MODEL 355A44

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g
- Frequency Range (±5%): 1 to 5500 Hz

This is a small sample of PCB's ICP® accelerometer offering; for our full offering, please refer to PCB's Test & Measurement catalog or www.pcb.com

TRIAXIAL, PIEZOELECTRIC ACCELEROMETERS FOR VIBRATION MEASUREMENT

PCB® offers triaxial accelerometers in a large range of sizes.

- Miniature triaxial accelerometers are especially well-suited for applications demanding high frequency range, small size and light weight.
- High temperature, charge output, triaxial accelerometers (found on page 6) deliver high-impedance measurement signals directly from their piezoelectric sensing elements. No internal circuitry is used, which permits operation to extreme temperatures.
- Triaxial accelerometers, used for structural analysis, are constructed of aluminum or titanium for the lowest mass, and exhibit excellent phase response and measurement resolution.

TRIAXIAL, PIEZOELECTRIC ACCELEROMETER

MODEL 356A01

- Sensitivity: 5 mV/g
- Measurement Range: ±1000 g
- Frequency Range (±5%): 1 to 5k Hz

HIGH-VOLTAGE, TRIAXIAL ICP® ACCELEROMETER

MODEL HV356A03

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g pk
- Frequency Range (±5%): 2 to 6.8k Hz
- TEDS enabled

HIGH-VOLTAGE, TRIAXIAL ICP® ACCELEROMETER

MODELS HV356A44 & HV356A45

- Sensitivity: 50 / 100 mV/g
- Measurement Range: ±100 / 50 g pk
- Frequency Range (±5%): 0.7 to 5k Hz
- TEDS compliant

TRIAXIAL, PIEZOELECTRIC ACCELEROMETER

MODEL 356A06

- Sensitivity: 5 mV/g
- Measurement Range: ±1000 g
- Frequency Range (±5%): 2 to 8k Hz (y, z axis), 8k Hz (x-axis)

TRIAXIAL, PIEZOELECTRIC ACCELEROMETER

MODEL 356A19

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g
- Frequency Range (±5%): 1 to 13k Hz

TRIAXIAL, PIEZOELECTRIC ACCELEROMETER

MODEL 354C10

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g
- Frequency Range (±5%): 2 to 8k Hz

TRIAXIAL, PIEZOELECTRIC ACCELEROMETER

MODEL 354B04

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g
- Frequency Range (±5%): 0.6 to 10k Hz

TRIAXIAL, PIEZOELECTRIC ACCELEROMETER

MODEL 356A15

- Sensitivity: 100 mV/g
- Measurement Range: ±50 g
- Frequency Range (±5%): 2 to 5k Hz

ISOTRON® ACCELEROMETER

ENDEVCO MODEL 65HTLPF

- Sensitivity: 10 mV/g
- Measurement Range: ±500 g pk
- Frequency Range (±5%): 1k/5k Hz

HIGH TEMPERATURE ACCELEROMETERS

Many operating engine environments generate temperatures in excess of 550 °F (288 °C). Above this temperature, many of the design features and materials used in high temperature accelerometers change considerably. For 550 °F to 1400 °F (288 °C to 760 °C) operating environments, we offer a range of both single ended (measurement output as a signal and ground) and differential (measurement output as a plus and minus signal) sensors. The former tend to be smaller and more suitable for short-term testing needs, while the latter are more appropriate for long-term monitoring applications.

Obviously, the environments in which these sensors operate are challenging. In fact, in some of the highest temperature operating environments, the operating sensor measures vibration signatures while glowing red hot! These sensors are complemented by both lab-grade and in-line charge amplifier systems. This differential charge amplifier is suitable for interfacing to any of PCB's differential charge output accelerometers. The accelerometers and charge amplifiers summarized here are only a small subset of the available sensors that are on our web site. Of course, custom designed accelerometers are always available. This is a small sample of PCB's high temperature offering. For more please see our HUMS and Gas Turbine brochures, or visit PCB.com.

MODAL TRIAXIAL ACCELEROMETER

ENDEVCO MODEL 2220E

- Sensitivity: 3 pC/g
- Measurement Range: ±1000 g pk
- Frequency Range (±5%): 10k Hz
- Temperature Range: -67 to 500 °F (-55 to 260 °C)

CHARGE OUTPUT ACCELEROMETER

MODEL 357B69

- Sensitivity: 3.5 pC/g
- Measurement Range: ±500 g
- Frequency Range (±5%): 6k Hz
- Temperature Range: -65 to 900 °F (-54 to 482 °C)

SMALL CHARGE OUTPUT ACCELEROMETER

MODEL 357A67

- Sensitivity: 3 pC/g
- Measurement Range: ±1k g
- Frequency Range (±10%): 10k Hz
- Temperature Range: -76 to 392 °F (-60 to 200 °C)

CHARGE OUTPUT ACCELEROMETER

MODEL 356A71

- Sensitivity: 10 pC/g
- Measurement Range: ±500 g
- Frequency Range (±5%): 5k Hz
- Temperature Range: -95 to 490 °F (-70 to 254 °C)

DIFFERENTIAL OUTPUT ACCELEROMETER

MODELS 357C71, 357C72, & 357C73

- Sensitivity: 10, 50, 100 pC/g
- Measurement Range: ±1000, ±500, ±300 g
- Frequency Range (±5%): 4k, 2.5k, 2k Hz
- Temperature Range: -65 to 900 °F (-54 to 482 °C)

DIFFERENTIAL PIEZOELECTRIC ACCELEROMETER

ENDEVCO MODELS 6222S-20A, 6222S-50A, & 6222S-100A

- Sensitivity: 20 / 50 / 100 pC/g
- Measurement Range: ±2000 / 1000 / 500 g pk
- Frequency Range (±5%): 9k / 6k / 6k Hz
- Temperature Range: -65 to 500 °F (-54 to 260 °C)

LOW THERMAL COEFFICIENT ACCELEROMETERS

High and low temperature extremes and thermal transients can play havoc with the quality of your data. Piezoelectric crystals are required for accurate and efficient dynamic measurements at temperature extremes, and during fast thermal gradients often exhibit undesired spiking phenomena. PCB® has developed a family of accelerometers employing new crystal designs and processes pioneered at PCB®, to minimize and eliminate this effect.

ICP® ACCELEROMETER
MODEL 320C03

- Sensitivity: ±500 g pk
- Measurement Range: 10 mV/g
- Frequency Range (±5%): 1 to 6k Hz

ICP® ACCELEROMETER
MODEL 320C52

- Sensitivity: ±500 g pk
- Measurement Range2: 10 mV/g
- Frequency Range (±5%): 1 to 10k Hz

ICP® ACCELEROMETER
MODEL 320C53

- Sensitivity: ±5000 g pk
- Measurement Range: 1 mV/g
- Frequency Range (±5%): 1 to 5k Hz

UHT-12™, ICP® TRIAXIAL ACCELEROMETER
MODEL 339A30

- Sensitivity: ±500 g pk
- Measurement Range: 10 mV/g
- Frequency Range (±5%): 2 to 8k Hz

UHT-12™, ICP® TRIAXIAL ACCELEROMETER
MODEL HT339C31

- Sensitivity: ±500 g pk
- Measurement Range: 10 mV/g
- Frequency Range (±5%): 2 to 8k Hz

UHT-12™, ICP® TRIAXIAL ACCELEROMETER
MODEL 339B32

- Sensitivity: ±500 g pk
- Measurement Range: 10 mV/g
- Frequency Range (±5%): 2 to 10k Hz

UHT-12™, ICP® TRIAXIAL ACCELEROMETER
MODEL TLD339A34

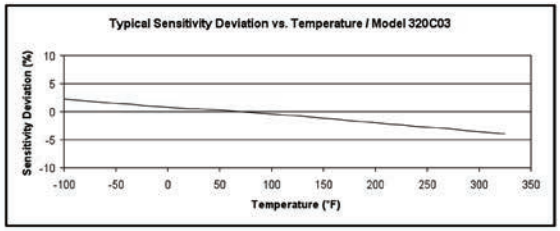
- Sensitivity: ±100 g pk
- Measurement Range: 50 mV/g
- Frequency Range (±5%): 2 to 5k Hz

UHT-12™, ICP® TRIAXIAL ACCELEROMETER
MODEL TLD339A36

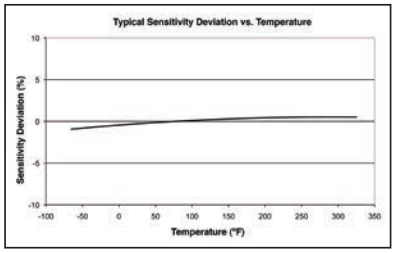
- Sensitivity: ±500 g pk
- Measurement Range: 10 mV/g
- Frequency Range (±5%): 2 to 5k Hz

UHT-12™, ICP® TRIAXIAL ACCELEROMETER
MODEL TLD339A37

- Sensitivity: ±50 g pk
- Measurement Range: 100 mV/g
- Frequency Range (±5%): 0.3 to 4k Hz



Model 320C03



Series 339A

VC MEMS ACCELEROMETERS

PCB® and Endevco variable capacitance MEMS (VC MEMS) accelerometers are used to measure low frequency motion down to DC. These accelerometers are ideal for flight testing applications with low frequency and amplitude requirements. Our VC sensors feature silicon MEMS sensing elements for uniform, repeatable performance and high frequency overload protection.

The rugged and durable series 3711 & 3713 VC MEMS accelerometers are hermetically sealed in a robust titanium housing allowing for a very stable and accurate measurement in the most severe operating environments. The single-ended, low-noise, low-impedance output signal may be transmitted over long cable lengths without degradation.

The precision series 3741 and 3743 VC MEMS accelerometers sensors offer a differential output signal for common-mode noise rejection and incorporate many advanced features. This includes supply voltage regulation and temperature compensation for superior performance over the entire operational temperature range.

The 3753A is our lowest profile and lightest weight triaxial VC MEMS accelerometer. It offers amplified VDC output for clean data in noisy environments and features excellent performance over a wide operating temperature range -40 to +121 °C.

Endevco 7290G series has a long history of serving the flight test application. Known for its reliability and repeatability, it also features a fast recovery time when exposed to an over-range.

SINGLE-ENDED VC MEMS ACCELEROMETER

SERIES 3711F

- Measurement Ranges: ±2g, ±10g, ±30G, ±50, ±100 and ±200
- Frequency response from 0 up to 1500 Hz (±5%)
- Hermetically sealed titanium housing with 4-pin integral connector

DIFFERENTIAL VC MEMS ACCELEROMETER

SERIES 3741F

- Measurement Ranges: ±2g, ±5g, ±10g, ±30G, ±50, ±100 and ±200
- Frequency response from 0 up to 1500 Hz (±5%)
- Anodized aluminum housing with integral 4-conductor shielded cable

DIFFERENTIAL VC MEMS ACCELEROMETER

ENDEVCO 7290G & 7290GM5

- Measurement Ranges: ±2g, ±5g, ±10g, ±30G, ±50, ±100 and ±200
- Frequency response from 0 up to 2000 Hz (±5%)
- Anodized aluminum housing with integral 4-conductor shielded cable

SINGLE-ENDED TRIAXIAL VC MEMS ACCELEROMETER

SERIES 3713F

- Measurement Ranges: ±2g, ±10g, ±30G, ±50, ±100 and ±200
- Frequency response from 0 up to 1500 Hz (±5%)
- Hermetically sealed titanium housing with 9-pin integral connector

DIFFERENTIAL TRIAXIAL VC MEMS ACCELEROMETER

SERIES 3743G11 & 3743G12

- Measurement Ranges: ±2g, ±5g, ±10g, ±30G, ±50, ±100 and ±200
- Frequency response from 0 up to 1500 Hz (±5%)
- Stainless steel housing with integral M8x1 8-pin connector or integral cable rated to IP67

TRIAXIAL VC MEMS ACCELEROMETER

SERIES 3753A

- Measurement Ranges: ±2g, ±5g, ±10g, ±30G, ±50, ±100 and ±200
- Frequency response from 0 up to 750 Hz (±5%)
- Compact, lightweight IP 67 package

MICROPHONES

PCB and Endevco offer a variety of acoustic measurement products, including condenser, modern prepolarized, traditional externally polarized, array, probe, low-profile surface, and special-purpose microphones. Microphone products are complemented by an assortment of preamplifiers, signal conditioners, A-weighting filters, handheld calibrators, and accessories. A large number of established aerospace, military and defense, automotive, universities, OEM's, consultants, and white goods (appliance manufacturers have trusted their test requirements to PCB.

The following selection is an example of our wide range of acoustic sensors and accessories.

PREPOLARIZED (0V) PRECISION FREE-FIELD CONDENSER MICROPHONE

MODEL 377C01

- Nominal Microphone Diameter: 1/4”
- Frequency Range: 3 Hz to 80 kHz
- Dynamic Range: 165 dB re 20 µPa

PREPOLARIZED (0V) PRECISION PRESSURE CONDENSER MICROPHONE

MODEL 377A12

- Nominal Microphone Diameter: 1/4”
- Frequency Range: 4 Hz to 20k Hz
- Dynamic Range: 182 dB re 20 µPa

PREPOLARIZED (0V) PRECISION FREE-FIELD CONDENSER MICROPHONE

MODEL 377B02

- Nominal Microphone Diameter: 1/2”
- Frequency Range: 3.15 Hz to 20 kHz
- Inherent Noise: 15 dBA

PREPOLARIZED (0V) PRECISION RANDOM INCIDENCE CONDENSER MICROPHONE

MODEL 377C20

- Nominal Microphone Diameter: 1/2”
- Frequency Range: 3.15 Hz to 16 kHz
- Dynamic Range: 146 dB re 20 µPa

ICP® LOW NOISE (0V) PRECISION FREE-FIELD MICROPHONE SYSTEM

MODEL 378A04

- Nominal Microphone Diameter: 1/2”
- Frequency Range: 10 Hz to 16 kHz
- Inherent Noise: 5.5 dBA

EXTERNALLY-POLARIZED (200V) PRECISION FREE-FIELD CONDENSER MICROPHONE

MODEL 2540

- Nominal Microphone Diameter: 1/2”
- Frequency Range: 4 Hz to 40k Hz
- Dynamic Range: 160 dB re 20 µPa

MODERN PREPOLARIZED AND TRADITIONAL, EXTERNALLY-POLARIZED PRECISION CONDENSER MICROPHONES

A wide variety of traditional, externally-polarized and modern prepolarized free-field, pressure, and random incidence precision condenser microphones are available from PCB. Externally-polarized models operate from a 200 V power source, while prepolarized models can operate from low cost, constant current (2 to 20 mA) ICP® signal conditioners. Prepolarized microphones can be interchanged with similar ICP accelerometer set-ups, allowing tests and measurements with same data acquisition system. Furthermore, they show excellent performance suitable for aerospace and defense dedicated testing.

- Proven rugged design
- Exceptional performance in high humidity
- Individually tested for performance
- Meet IEC and ANSI standards
- Can be utilized in Type 1 systems
- Operate from ICP sensor power (prepolarized)

CE

HIGH TEMPERATURE, 1/2" ICP® PREAMPLIFIER
MODEL HT426E01

CE

1/4" ICP® PREAMPLIFIER
MODEL 426B03

CE

1/2" ICP® PREAMPLIFIER
MODEL 426E01

CE

1/2" 200V PREAMPLIFIER
MODEL 426A30

1/2" 48V PREAMPLIFIER
MODEL 426A14

ICP® ARRAY MICROPHONES WITH INTEGRAL PREAMPLIFIER

MODELS 130F20, 130F21, 130F22

- Microphone Diameter: 1/4”
- Sensitivity: 45 mV/Pa
- Dynamic range: 24 dBA to 122 dB
- Free-Field response
- BNC, 10-32, SMB connectors

ICP® ELECTRET SURFACE MICROPHONE

MODEL 130B40

- Low profile: 1/8” height
- Sensitivity: 8.5 mV/Pa
- Dynamic Range: 150 dB re 20 µPa
- Integral Cable

ICP® ARRAY MICROPHONES WITH INTEGRAL PREAMPLIFIER

MODEL 130A23

- Microphone Diameter: 1/4”
- Sensitivity: 14 mV/Pa
- Dynamic Range: 30 dBA to 143 dB
- Free-field response
- SMB connector

MICROPHONE PREAMPLIFIER POWER SUPPLY

MODEL 480A25

- 0 and 200 volt polarization voltage
- Extended battery life (40 hours)
- 0, 20, and 40 dB gain
- Selectable flat (Z), A, and C-weighting

MICROPHONE CALIBRATORS

Model CAL200
Acoustic Calibrator

Model CAL250
Acoustic Calibrator

SERIES 103B - ICP® HIGH-INTENSITY, SOUND PRESSURE SENSORS

PCB Series 103B has played a major role in the development of supersonic aircraft and rockets. This tiny instrument is also useful for measuring transient pressure events, air turbulence, and other such acoustic phenomena on structures or aerodynamic models.

- Capable of high-intensity sound measurement of 191 dB with 86 dB resolution
- Acceleration compensated, ceramic element virtually eliminates vibration sensitivity

ICP® HIGH-INTENSITY, SOUND PRESSURE SENSOR

MODELS 103B01 & 103B11

- Measurement Range: 3.3 / 10 psi
- Sensitivity: 1500 / 500 mV/psi
- Resonant Frequency: ≥ 13k Hz

CE

ICP® HIGH-INTENSITY, SOUND PRESSURE SENSOR

MODELS 103B02 & 103B12

- Measurement Range: 3.3 / 10 psi
- Sensitivity: 1500 / 500 mV/psi
- Resonant Frequency: ≥ 13k Hz

SERIES 106B - ICP® FOR HIGH INTENSITY, ACOUSTIC PRESSURE SENSORS

Model 106B and 106B50 are high sensitivity, acceleration-compensated, ICP® quartz pressure sensors suitable for measuring intense acoustic phenomena. In fact, the series is widely used for measuring acoustic fields in operating launch vehicles and their associated payloads. The Series 106 family range spans from acoustic pressures of less than 80 dB to several psi. Similar piezoelectric technology is employed in PCB's complete range of hermetically sealed dynamic pressure sensors. These products measure pressure fluctuations from acoustic levels to tens of thousands of psi and frequencies from nearly DC to tens of kHz. Their ability to measure only pressure fluctuations above a specified frequency imposed on large static pressure fields makes them uniquely suited for such applications as combustion instability monitoring.

ICP® HIGH-INTENSITY, SOUND PRESSURE SENSOR

MODEL 106B52

- Measurement Range (±2 V output): 1 psi
- Sensitivity: 5000 mV/psi
- Resonant Frequency: ≥ 40k Hz

ICP® HIGH-INTENSITY, SOUND PRESSURE SENSOR

MODEL 106B50

- Measurement Range (±2 V output): 5 psi
- Sensitivity: 500 mV/psi
- Resonant Frequency: ≥ 40k Hz

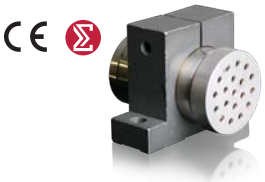
ICP® HIGH-INTENSITY, SOUND PRESSURE SENSOR

MODEL 106B

- Measurement Range (±2 V output): 8.3 psi
- Sensitivity: 300 mV/psi
- Resonant Frequency: ≥ 60k Hz

PIEZOELECTRIC MICROPHONES

Measuring high intensity acoustic noise and very low pressure fluctuations in harsh environments, piezoelectric microphones use either quartz or manmade ceramic elements. They are designed for a wide range of environmental conditions including insensitivity to altitude changes, and vibration compensation is incorporated into the sensing element. They are self-generating devices that require no external power source for operation. These pressure sensors are useful for measuring transient pressure events, air turbulence, and other such acoustic phenomena on aircraft structures, rockets, or aerodynamic models.



PIEZOELECTRIC MICROPHONE

ENDEVCO MODEL 2510

- Measurement Range: 100 to >180 (dB SPL)
- Sensitivity: 31 pC rms @ 140 dB SPL
- Resonant Frequency: 30k Hz
- Bracket mount

PIEZOELECTRIC MICROPHONE

ENDEVCO MODEL 2510M4A

- Measurement Range: 100 to >180 (dB SPL)
- Sensitivity: 31 pC rms @ 140 dB SPL
- Resonant Frequency: 30k Hz
- Flush mount

ICP® HIGH-INTENSITY, SOUND PRESSURE SENSOR

MODEL 116B

- Measurement Range: 100 psi
- Sensitivity: 6 pC/psi
- Resonant Frequency: ≥ 55 kHz

DYNAMIC ICP® PRESSURE SENSORS

For measurement of short wavelength pressure pulses, micro ICP® pressure sensors feature micro-second response time that accurately measure pressure peaks from fast rising shock waves and very high frequency pressure phenomena. Miniature high sensitivity ICP® probes are used to measure small dynamic pressures such as turbulence, noise, sound, and pulsations, especially in adverse environments. They measure dynamic pressure, but with very high resolution.

HIGH RESOLUTION ICP® PRESSURE PROBE WITH CLAMP NUT

MODEL 112A22

- Measurement Range: 50 psi
- Sensitivity: 100 mV/psi
- Resonant Frequency: ≥ 250k Hz

LOW PROFILE, HIGH RESOLUTION ICP® PRESSURE PROBE, INTEGRAL CABLE

MODEL 112M362

- Measurement Range (±5 V output): 50 psi
- Sensitivity: 100 mV/psi
- Resonant Frequency: ≥ 500k Hz

MICRO ICP® PRESSURE SENSOR, INTEGRAL CABLE, FOR HIGH FREQUENCY OR TOA MEASUREMENTS

MODEL 132B38

- Measurement Range (±5 V output): 50 psi
- Sensitivity: 140 mV/psi
- Resonant Frequency: ≥ 1000k Hz

PIEZORESISTIVE PRESSURE SENSORS

For measurement of short wavelength pressure pulses, micro ICP® pressure sensors feature micro-second response time that accurately measure pressure peaks from fast rising shock waves and very high frequency pressure phenomena. Miniature high sensitivity ICP® probes are used to measure small dynamic pressures such as turbulence, noise, sound, and pulsations, especially in adverse environments. They measure dynamic pressure, but with very high resolution.

LOW PROFILE PIEZORESISTIVE PRESSURE TRANSDUCER

ENDEVCO MODEL 8515C

- 15 and 50 psia ranges
- 200 mV full range
- Low profile, 0.030 inch thin
- Absolute reference

MINIATURE PIEZORESISTIVE PRESSURE TRANSDUCER

ENDEVCO MODEL 8510B

- 1, 2 and 5 psig ranges
- 300 mV full scale output
- Rugged, miniature
- Gage

PIEZORESISTIVE PRESSURE TRANSDUCER

ENDEVCO MODEL 8507C

- 1, 2 and 5 psig ranges
- 300 mV full scale output
- Rugged, miniature
- High resonance frequency
- Temperature compensated

MINIATURE, 3-CHANNEL, ICP® SIGNAL CONDITIONER

MODEL 485M49

- For use with ICP® triaxial accelerometers
- 18-30 VDC supply voltage
- 4.0 (±1) mA DC supply current for ICP® sensor
- 1 to 100k Hz frequency response (±5%)
- 1.45H x 2.90W x 0.70D in (36.8H x 73.7W x 17.8D mm)

SINGLE CHANNEL IN LINE SIGNAL CONDITIONERS

AIRBORNE CHARGE AMPLIFIER

ENDEVCO MODEL 2680B

- Input: PE
- Adjustable Gain: 0.1 - 100 mV/pC
- Operating Temperature: -67 to 212 °F (-55 to 100 °C)

AIRBORNE CHARGE AMPLIFIER

ENDEVCO MODEL 2777A

- Input: DIFF PE
- Gain: 2 / 10 mV/pC
- Operating Temperature: -5 to 185 °F (-15 to 85 °C)

PORTABLE SYSTEM VERIFICATION INSTRUMENTS

HANDHELD SHAKER

MODEL 394C06

Model 394C06 is a small, self-contained, battery powered, vibration exciter specifically designed to conveniently verify accelerometer and vibration system performance. It accepts sensors weighing up to 210 grams and delivers a controlled, 1 g mechanical excitation at 159.2 Hz.

ACCELEROMETER SIMULATOR

ENDEVCO MODEL 4830B

The 4830B accelerometer simulator is a hand held battery operated signal generator designed specifically to simulate the electrical output of common types of accelerometers. The instrument contains a highly accurate oscillator with an adjustable output level and is ideal for setting up, testing and the diagnosis of faults within data acquisition systems, environmental test systems, or simply as a flexible signal generator.

ICP® SENSOR SIMULATOR

MODEL 401B04

Model 401B04 ICP® sensor simulator installs in place of an ICP® sensor and accepts test signals from a voltage function generator. The unit serves to verify signal conditioning settings, cable integrity, and tune long lines for optimum system performance. This unit requires power from an ICP® sensor signal conditioner.

VIBRATION ACCESSORIES

PCB® offers a wide selection of accessories and cables that complement our sensors for testing electric vehicles, hybrid electric vehicles, and internal combustion fuel cell vehicles. See our website for the complete offering of these products.

PCB designs and manufactures many of its own cables and connectors, specializing in custom cables, lengths, and connectors for dynamic testing. In these tough and challenging environments, accuracy depends as much on cables and connectors as it does on transducers. Our engineers are well versed in all the critical parameters in cable and connector designs that can affect signal transmission. As a result, these parameters are carefully optimized in our products to ensure data quality and reliability. When it comes to this kind of in-house custom capability, ordinary commercial cable and transducer companies don't compare.

4-CONDUCTOR, SHIELDED, FEP CABLE

MODEL 010GXX

- Used with triaxial ICP® accelerometers
- General purpose
- 1/4-28 4-socket plug to (3) BNC plugs

IP68 4-CONDUCTOR, SHIELDED, FEP CABLE

MODEL 034WXX

- Used with triaxial ICP® accelerometers
- Low noise
- IP68 Rated 1/4-28 4-socket plug to (3) BNC plugs

IP68 4-CONDUCTOR, SHIELDED, POLYURETHANE CABLE

MODEL 078WXX

- Used with triaxial ICP® accelerometers
- Rugged, low noise
- IP68 Rated 1/4-28 4-socket plug to (3) BNC plugs

SHIELD GROUNDED TERMINATION

MODEL NF & NV

- Connector Style: Triple Splice, BNC/10-32 Plug
- Used with triaxial ICP® accelerometers
- Grounds 4-conductor shield across triple splice

LOW NOISE COAXIAL CABLE

SERIES 003CXX

- Used with single axis accelerometers
- Low noise
- 10-32 coaxial plug to BNC plug

4-CONDUCTOR, SILICONE JACKETED CABLE

ENDEVCO MODEL 3027B

- Used with triaxial ICP® accelerometers
- Flexible
- 1/4-28 4-socket plug to pigtail leads

LOW NOISE COAXIAL CABLE

ENDEVCO MODEL 3090C

- -452 to 500 °F
- Low noise
- 10-32 plug to 10-32 plug

ULTRA RUGGED LOW NOISE COAXIAL CABLE

ENDEVCO MODEL 3090CM67

- Metallic isolated overbraid for abrasion protection
- Aramid reinforcement braid
- 10-32 SS wire lock hex plug to 10-32 SS wire lock hex plug

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