CONSTRUCTION & AGRICULTURAL VEHICLE TESTING & DEVELOPMENT

PCB PIEZOTRONICS
AN AMPHENOL COMPANY

pcb.com/off-highway | 1 800 828 8840

THE TOUGHEST SENSORS FOR TOUGHEST ENVIRONMENTS

PCB® offers a wide selection of products with reliable accuracy for testing in the extreme environments experienced by off highway vehicles. From one extreme to the other, we can provide sensors for your toughest equipment in the most challenging conditions no matter if they are baking in the desert sun, freezing in the arctic winter, or mired in mud at a construction site.

ELECTRICALLY ISOLATED ACCELEROMETERS

As equipment, drivetrains, and electric powertrains become increasingly advanced, more and more electronic systems are added to the vehicles to increase safety and performance. The additional electronics can potentially cause interference while testing the equipment. PCB® has developed special electrically isolated accelerometers to avoid electrical noise in your measurements.

GROUND ISOLATED HIGH TEMP MINIATURE TRIAXIAL ACCELEROMETERS

MODEL HTJ356B01

Sensitivity: (±20%) 5 mV/g

Measurement Range: ±1000 g pk

Frequency Range: (±5%) 2 to 8000 Hz

Weight: 0.04 oz (1.0 gram)

GROUND ISOLATED MINIATURE TRIAXIAL ACCELEROMETERS

MODEL J356A03/NC

Sensitivity: (±20%) 10 mV/g

Measurement Range: ±500 g pk

Frequency Range: (±5%) 2 to 8000 Hz

GROUND ISOLATED TRIAXIAL ACCELEROMETER WITH TEDS

MODELS J356A43, J356A44, J356A45

Sensitivities Available From: (±10%) 10 mV/g to 100 mV/g

Measurement Range Available From: ±500 g pk (±4905 m/s² pk) to ±50 g pk (±490 m/s² pk)

Frequency Range:(±5%) 0.7 to 7000 Hz

GROUND ISOLATED MINIATURE TRIAXIAL ACCELEROMETERS

MODEL 354B04, 354B05

Sensitivity: (±20%) 10 mV/g or 100 mV/g

Measurement Range: ±500 g pk or ±50 g pk

Frequency Range: (±5%) 2 to 10000 Hz

ACCELEROMETER, ICP®, TRIAXIAL

MODEL 356A15

Sensitivity: (±10%) 100 mV/g (10.2 mV/(m/s²))

Measurement Range: ±50 g pk (±490 m/s² pk)

Frequency Range: (±5%) 2 to 5000 Hz

ACCELEROMETER, ICP®, TRIAXIAL

MODEL 356A19

Sensitivity: (±10%) 10 mV/g (1.02 mV/(m/s²))

Measurement Range: ±500 g pk (±4905 m/s² pk)

Frequency Range: (±5%) 1 to 13000 Hz

ACOUSTICS

ICP® microphones are used to measure sound pressure levels inside cabs, measure pass-by noise levels, confirm equipment conforms and meet the multitude of different safety and engineering standards present in the industry today.

1/2" PREPOLARIZED FREE-FIELD MICROPHONE

MODEL 378B02

- Sensitivity: 50 mV/Pa (± 1.5 dB)
- Frequency Range: 3.75 Hz – 20 kHz (± 2 dB)
- Dynamic Range: 15.5 dBA – 137 dB
- TEDS Compliant

1/2" WATER AND DUST RESISTANT ICP® MICROPHONE SYSTEM

MODEL 130A24

- IP55 Rated for harsh environments
- Frequency Range: 20 Hz - 16000 Hz
- Dynamic Range: 30 dBA – 143 dB
- TEDS Compliant

1/4" FREE-FIELD ICP® ARRAY MICROPHONE SYSTEM

SERIES 130F

- Low noise floor: 24 dBA
- Frequency Range: 10 Hz - 20000 Hz (+/- 4 dB)
- Integral preamplifier & various connector options
- TEDS Compliant

ICP® PROBE MICROPHONE

MODEL 377B26

- Sensitivity: 2.15 mV/Pa
- Temperature Range: -40 to +800 °C
- Dynamic Range: 44 dBA – 165 dB

ICP® ELECTRET SURFACE MICROPHONE

MODEL 130B40

- Sensitivity: 8.5 mV/Pa
- Dynamic Range: 32 dBA – 143 dB
- Low profile 1/8" (3mm) height to minimize wind noise

DC RESPONSE ACCELEROMETERS

PCB® series 3711F, 3713F, 3741F, and 3743F DC response sensors are used to measure low frequency motion down to zero hertz. These accelerometers are used in applications with low frequency and amplitude requirements, as well as road load data acquisition (RLDA), drivability, ride and handling, and vehicle performance testing. Each series includes a full scale measurement range from ± 2g to ± 200g and features low spectral noise with high resolution. DC response sensors feature capacitive silicon MEMS sensing elements for uniform, repeatable performance and high frequency overload protection.

SINGLE-ENDED MEMS ACCELEROMETERS

SERIES 3711F & 3713F

Sensitivities:
6.75 mV/g to 675mV/g (± 3%)

Measurement Ranges:
±2 g pk to ±200 g pk

Frequency response
from 0 Hz up to 2500 Hz (±10%)

Case isolated, hermetically sealed titanium housing

Available with integral cable or multi-pin, threaded electrical connector

Available in single-axis or triaxial configurations

DIFFERENTIAL OUTPUT, SINGLE AXIS MEMS ACCELEROMETERS

SERIES 3741F

Sensitivities:
13.5 mV/g to 1350 mV/g (± 3%)

Measurement Ranges:
±2 g pk to ±200 g pk

Frequency response
from 0 Hz up to 2500 Hz (±10%)

Ground isolated, hard-anodized aluminum housing

Integral, 4-conductor shielded cable

DIFFERENTIAL OUTPUT, TRIAXIAL MEMS DC ACCELEROMETERS

SERIES 3743F

Sensitivities:
13.5 mV/g to 1350 mV/g (± 3%)

Measurement Ranges:
±2 g pk to ±200 g pk

Frequency response
from 0 Hz up to 2500 Hz (±10%)

Case isolated, hermetically sealed titanium housing

9-Pin threaded electrical connector

HIGH TEMPERATURE ACCELEROMETERS

PCB's high temperature accelerometers utilize proprietary piezoelectric crystals for optimal performance and the best accuracy in high temperature environments. The UHT-12™ crystal has better resolution and thermal performance than any accelerometer on the market today. It features a sensitivity that remains more consistent over a wide temperature change and the absence of pyroelectric noise spikes up to 1200 ºF (649 ºC).

CHARGE OUTPUT UHT-12™ ACCELEROMETER

MODEL 357E92

Sensitivity: (±10%) 2.3 pC/g

Measurement Range: ±1000 g pk

Frequency Range: (±5%) 3000 Hz

Temperature Range: -67 to 1200 °F (-55 to 649 °C)

MINIATURE CHARGE OUTPUT UHT-12™ ACCELEROMETER

MODEL 357A63

Sensitivity: (±10%) 0.53 pC/g

Measurement Range: ±5000 g pk

Frequency Range: (±10%) 10000 Hz

Temperature Range: -65 to 900 °F (-54 to 482 °C)

UHT-12™ LOW THERMAL COEFFICIENT ICP® TRIAXIAL ACCELEROMETER

MODEL 339A30

Sensitivity: (±10%) 10 mV/g

Measurement Range: ±500 g pk

Frequency Range: (±5%) 2 to 8000 Hz

Temperature Range: -65 to 325 °F (-54 to 163 °C)

TRIAXIAL ICP® ACCELEROMETER

MODEL HT356A02

Sensitivity: (±10%) 10 mV/g (1.02 mV/(m/s²))

Measurement Range: ±500 g pk (±4900 m/s² pk)

Frequency Range: (±5%) 5000 Hz

Temperature Range: -65 to +250 ºF (-54 to +121 °C)

TRIAXIAL LIGHTWEIGHT MINIATURE ICP® ACCELEROMETER

MODEL HT356B01

Sensitivity: 5 mV/g

Measurement Range: 1000 g

Frequency Range: (±5%) 8000 Hz (y or z axis), 5000 Hz (x axis)

Temperature Range: -65 to +356 ºF (-54 to +180 °C)

UHT-12™ LOW THERMAL COEFFICIENT ICP® TRIAXIAL ACCELEROMETER

MODEL 339B32

Sensitivity: (±10%) 10 mV/g

Measurement Range: ±500 g pk

Frequency Range: (±5%) 2 to 10000 Hz

Temperature Range: -65 to 325 °F (-54 to 163 °C)

LOW THERMAL COEFFICIENT ICP® TRIAXIAL ACCELEROMETER WITH TEDS

MODEL TLD339A34

Sensitivity: (±10%) 50 mV/g

Measurement Range: ±100 g pk

Frequency Range: (±5%) 2 to 5000 Hz

Temperature Range: -65 to 325 °F (-54 to 163 °C)

LOW THERMAL COEFFICIENT ICP® TRIAXIAL ACCELEROMETER WITH TEDS

MODEL TLD339A36

Sensitivity: (±10%) 10 mV/g

Measurement Range: ±500 g pk

Frequency Range: (±5%) 2 to 5000 Hz

Temperature Range: -65 to 325 °F (-54 to 163 °C)

HIGH TEMPERATURE ICP® TRIAXIAL ACCELEROMETER

MODEL HT356A33

Sensitivity: (±10%) 10 mV/g

Measurement Range: ±500 g pk

Frequency Range: (±5%) 2 to 10000 Hz

Temperature Range: -65 to 325 °F (-54 to 163 °C)

UHT-12™ LOW THERMAL COEFFICIENT ICP® TRIAXIAL ACCELEROMETER

MODEL 339B31

Sensitivity: (±10%) 10 mV/g

Measurement Range: ±500 g pk

Frequency Range: (±5%) 2 to 8000 Hz

Temperature Range: -65 to 356 °F (-54 to 180 °C)

UHT-12™ LOW THERMAL COEFFICIENT ICP® TRIAXIAL ACCELEROMETER WITH TEDS

MODEL TLD339A37

Sensitivity: (±10%) 100 mV/g

Measurement Range: ±50 g pk

Frequency Range: (±5%) 0.3 to 4000 Hz

Temperature Range: -65 to 356 °F (-54 to 180 °C)

HIGH TEMPERATURE ICP® TRIAXIAL ACCELEROMETER WITH TEDS

MODEL HT356A43

Sensitivity: (±10%) 10 mV/g

Measurement Range: ±500 g pk

Frequency Range: (±5%) 1.6 to 7000 Hz

Temperature Range: -65 to 325 °F (-54 to 163 °C)

HIGH TEMPERATURE ICP® TRIAXIAL ACCELEROMETER WITH TEDS

MODEL HT356A44

Sensitivity: (±10%) 50 mV/g

Measurement Range: ±100 g pk

Frequency Range: (±5%) 12 to 7000 Hz

Temperature Range: -65 to 325 °F (-54 to 163 °C)

FORCE, LOAD & TORQUE

PCB® load cells feature advanced structural design, making them extremely durable, perfect for vehicle life cycle testing and structural testing. The TORKDISC® torque sensor system is designed for vehicle applications requiring in-line rotary torque measurements such as drive line measurements, while our force sensors are excellent for automotive fatigue testing applications.

ROD END LOAD CELL
MODEL 1381-04A

Measurement Range: 20 k lb (89 kN)

Sensitivity: 2.00 mV/V

50% static overload protection

ICP® FORCE SENSOR
MODEL 208C03

Measurement Range: 500 lb (2.224 kN) Compression/Tension

Height: 0.625 in (15.88 mm)

Low Frequency Response: (-5%) 0.0003 Hz

GENERAL PURPOSE LOW PROFILE LOAD CELL
SERIES 1200

Measurement Range: 500 to 50k lbf (2200 to 220k N)

English and Metric sizes

PT and PC connector styles

S-TYPE LOAD CELL
MODEL 1631-01C

Measurement Range: 500 lb (2224 N)

Size: Height: 3.0 in (76.2 mm)

10 ft - Integrated Cable

ROTARY TORQUE SENSOR
MODEL 3125-01A

Measurement Range: 5,000 in-lb (565 N-m)

Mounting: Keyed shaft

Maximum Speed: 7,900 RPM

PEDAL FORCE TRANSDUCER
MODEL 1515-110-03A

Measurement Range: 300 lbf (1,334 Nm)

Sensitivity: 2.00 mV/V

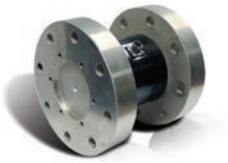
Height: 0.84 in (21.4 mm)

TORKDISC® TELEMETRY SYSTEM
MODEL 5302D-02A

Measurement Range: 5,000 in-lb (565 Nm)

Maximum Speed: 15,000 RPM

16 Bit Telemetry



REACTION TORQUE SENSOR
MODEL 2302-02A

Measurement Range: 20,000 lbf-in (2,259 Nm)

50% static overload protection

5 in (127 mm) diameter steel flange

STRAIN SENSOR
MODEL 740B02

Sensitivity: 50 mV/με

Measurement Range: 100 pk με

Frequency Range: 0.5 to 100,000 Hz

Temperature Range: -65 to +250 °F (-53 to +121 °C)

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