



MEMS DC Response Accelerometers

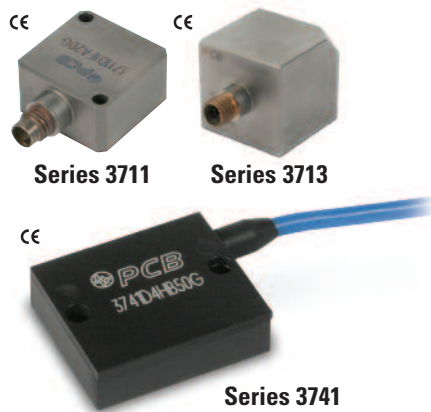
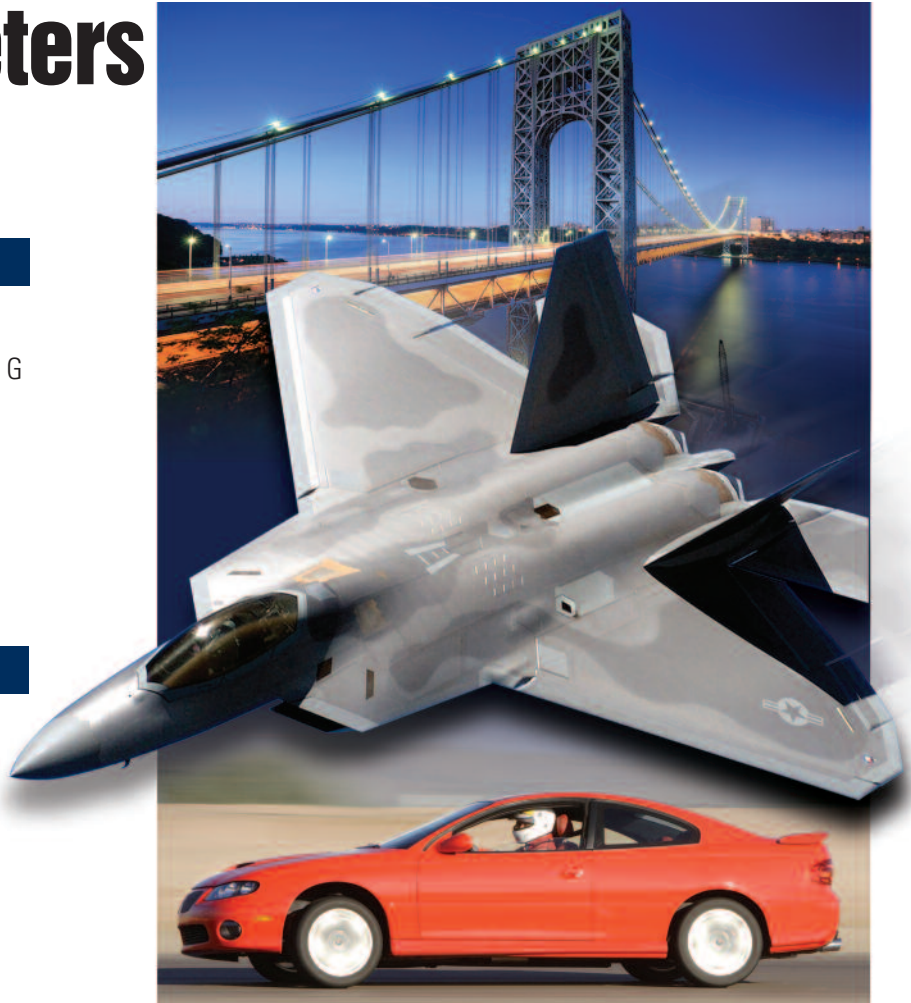
Gas-damped, silicon MEMS sensing elements

Highlights

- High frequency overload protection
- Measurement ranges from ± 2 to ± 200 G
- Lightweight titanium and aluminum housings
- Constant & low frequency acceleration measurements
- Single-ended or differential output signal

Applications

- Aerospace vibration testing - flutter, GVT, etc.
- Simulated environmental testing with shakers & centrifuges
- Suspension, shock absorption and damping studies
- Driveability and Ride & Handling
- Brake & Steering Development
- Road Load Data Acquisition



PCB® Series 3711 (uniaxial), 3713 (triaxial), and 3741 (uniaxial) MEMS DC response accelerometers are designed to measure low-frequency vibration and motion and are offered in full-scale ranges from ± 2 to ± 200 g to accommodate a variety of ground testing requirements. The units feature gas-damped, silicon MEMS sensing elements for uniform, repeatable performance and offer high frequency overload protection.

Electrically, the units offer a single-ended or differential output signal with power, signal, and ground leads for each channel. Supply voltage regulation permits operation from +5 to +30 VDC and the low-noise, low-impedance output signal may be transmitted over long cable lengths without degradation.

As with all PCB® instrumentation, these sensors are complemented with toll-free applications assistance, 24-hour customer service, and are backed by a no-risk policy that guarantees total customer satisfaction or your money refunded.

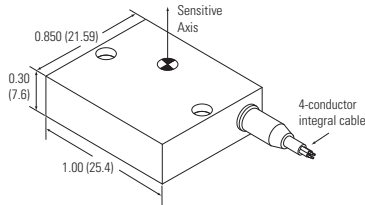


Series 3741, 3711 & 3713

Precise and Low-Profile Series 3741 MEMS DC Response sensors are low-profile and low-mass with mechanical overload stops and a hard-anodized aluminum housing for added durability. The units offer a differential output signal for common-mode noise rejection and incorporate many advanced features including supply voltage regulation and a proprietary temperature compensation circuit for stable performance over the entire operational temperature range. Each unit is provided with an integral, 4-conductor, 10 ft (3 m) shielded cable. An optional mounting adaptor, Model 080A208, facilitates triaxial measurement configurations.



Series 3741



Series 3741

Dimensions shown are in inches (millimeters)

Differential Output – DC Response

Sensitivity	Measurement Range (pk)	Frequency ($\pm 10\%$)	Broadband Resolution (rms)
10 mV/g	± 200 g	0 to 2000 Hz	5.1 mg
20 mV/g	± 100 g	0 to 2000 Hz	4.5 mg
40 mV/g	± 50 g	0 to 2000 Hz	2.5 mg
66.7 mV/g	± 30 g	0 to 2000 Hz	2.5 mg
200 mV/g	± 10 g	0 to 200 Hz	1.1 mg
1000 mV/g	± 2 g	0 to 150 Hz	0.3 mg
Overload Limit (Shock) for ± 30 g, ± 50 g, ± 100 g, ± 200 g		$\pm 10,000$ g pk	
Overload Limit (Shock) for ± 2 g, ± 10 g		$\pm 5,000$ g pk	
Temperature Range		-65 to +250 °F -54 to +121 °C	
Excitation Voltage		6 to 30 VDC	
Housing Material		Anodized Aluminum	
Sealing		Epoxy	
Size (H x L x W)		0.30 x 1.00 x 0.85 in 7.62 x 25.4 x 21.6 mm	
Weight (without cable)		10 gm	
Electrical Connector		10 ft (3 m) Integral Cable	
Output Configuration		Differential	
Supplied Accessories			
Mounting Screws/Studs		(2) 081A103 (2) M081A103	
Additional Accessories			
Triaxial Mounting Block		080A208	

MODEL NUMBERING SYSTEM FOR SERIES 3741 MEMS DC RESPONSE ACCELEROMETERS

1.) Series

3741 Single axis, MEMS DC response accelerometer with standard, 10 ft (3.0 m) integral cable and pigtail termination

2.) Full-scale output

D ± 2 VDC

3.) Excitation voltage

4 6 to 30 VDC

4.) Electrical connection

HB Shielded, 4-conductor, Teflon® jacket, integral cable (Series 010)

5.) Measurement Range

2G ± 2 g measurement range corresponding to 1000 mV/g sensitivity
 10G ± 10 g measurement range corresponding to 200 mV/g sensitivity
 30G ± 30 g measurement range corresponding to 66.7 mV/g sensitivity
 50G ± 50 g measurement range corresponding to 40 mV/g sensitivity
 100G ± 100 g measurement range corresponding to 20 mV/g sensitivity
 200G ± 200 g measurement range corresponding to 10 mV/g sensitivity

6.) Integral cable length (add only if selecting integral cable other than standard 10 ft (3.0 m) length)

/XXX Specify XXX as desired cable length in feet (specify MXXX for desired cable length in meters)

7.) Cable termination

HW 9-pin D-sub plug for mating to Model 478A30 signal conditioner
 LN 8-pin mimi DIN for mating to Model 482C27 signal conditioner

Example:

3741 D 4 HB 2G /005 HW Single axis DC response accelerometer, ± 2 VDC full-scale output, 6 to 30 VDC excitation voltage, 5-ft integral cable, ± 2 G measurement range, 9-pin D-sub plug cable termination.



Single Ended Output – DC Response

Sensitivity	Measurement Range (pk)	Frequency ($\pm 10\%$)	Broadband Resolution (rms)
10 mV/g	± 200 g	0 to 1500 Hz	5.3 mg
40 mV/g	± 50 g	0 to 1500 Hz	4.4 mg
100 mV/g	± 20 g	0 to 1500 Hz	3.6 mg
700 mV/g	± 3 g	0 to 150 Hz	1.1 mg

Model Number	3711 Single Axis	3713 Triaxial
Overload Limit (Shock)	± 5000 g pk	± 5000 g pk
Temperature Range	-65 to +250 °F -54.0 to +121 °C	-65 to +250 °F -54 to +121 °C
Excitation Voltage	5 to 30 VDC	5 to 30 VDC
Housing Material	Titanium	Titanium
Sealing	Hermetic	Hermetic
Size	0.45 x 0.85 x 0.85 in 11.4 x 21.6 x 21.6 mm (H x L x W)	1.1 in Cube 28 mm Cube
Weight	Connector style Integral cable style	78 gm 169 gm
Electrical Connector	1/4-28 4-Pin or 10 ft (3 m) Integral Cable	9-Pin or 10 ft (3 m) Integral Cable
Output Configuration	Single-Ended	Single-Ended

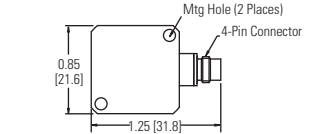
Supplied Accessories		
Easy Mount Clip	080A152	—
Adhesive Base	—	080A190
Mounting Screws/Studs	(2) 081A113 (2) M081A113	081A05 M081A05

Additional Accessories		
Triaxial Mounting Block	080A153	—
Recommended Cables	010	037

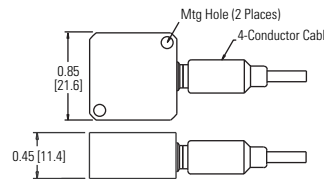
Rugged and Durable Series 3711 and 3713 MEMS DC Response sensors are hermetically sealed in a robust titanium housing allowing for a very stable and accurate measurement in the most severe operating environments. In addition, this series is inherently insensitive to base strain and transverse acceleration effects. Supply voltage regulation permits operation from + 5 to + 30 VDC and the single-ended, low-noise, low-impedance output signal may be transmitted over long cable lengths without degradation. The series is available in single axis and triaxial versions with a 10 ft (3 m) integral cable or a multi-pin, threaded, electrical connector for easy installation and setup.



Series 3711



Series 3711 with 4-pin connector

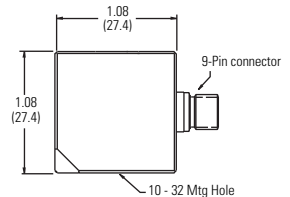


Series 3711 with integral cable

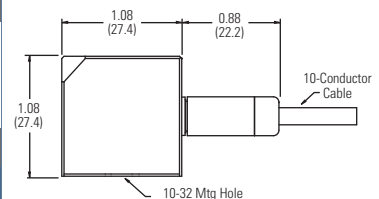
Dimensions shown are in inches (millimeters)



Series 3713



Series 3713 with 9-pin connector



Series 3713 with integral cable

Dimensions shown are in inches (millimeters)

MODEL NUMBERING SYSTEM FOR SERIES 3711 & 3713 DC RESPONSE ACCELEROMETERS

1.) Series

3711 Single axis, high sensitivity, MEMS DC response accelerometer
3713 Triaxial, high sensitivity, MEMS DC response accelerometer

2.) Full-scale output

D ± 2 VDC

3.) Excitation voltage

1 5 to 30 VDC

4.) Electrical connection

- FA 4-pin hermetic jack (applies only to Series 3711 single axis sensors)
- FB 010 Series 4-conductor integral cable (applies only to Series 3711 single axis sensors)
- FD 9-pin hermetic jack (applies only to Series 3713 triaxial sensors)
- FE 037 Series 10-conductor integral cable (applies only to Series 3713 triaxial sensors)

5.) Measurement Range

- 3G ± 3 g measurement range corresponding to 700 mV/g sensitivity
- 20G ± 20 g measurement range corresponding to 100 mV/g sensitivity
- 50G ± 50 g measurement range corresponding to 40 mV/g sensitivity
- 200G ± 200 g measurement range corresponding to 10 mV/g sensitivity

6.) Integral cable length (add only if selecting integral cable other than standard 10 ft (3.0 m) length)

/XXX Specify XXX as desired cable length in feet (specify MXXX for desired cable length in meters)

7.) Cable termination

- AY 4-pin plug (applies only to Series 3711 single axis sensors)
- BZ Blunt cut
- DZ Pigtail, stripped and tinned ends
- EN 9-pin plug (applies only to Series 3713 triaxial sensors)

Example:

3711 D 1 FB 3G /005 AY Single axis DC response accelerometer, ± 2 VDC full-scale output, 5 to 30 VDC excitation voltage, 5-ft integral cable, ± 3 G measurement range, 4-pin plug cable termination.



Recommended Accessory & Signal Conditioner for Series 3741 DC Response Accelerometers



Model 080A208
Triaxial Mounting Block



Model 482C27
4-channel
Incremental gain
Differential, single-ended
Bridge & ICP® sensor types

LIFETIME WARRANTY
Products Guaranteed for Life & More!
Call us today or visit www.pcb.com for more details.

Recommended Accessories & Signal Conditioners for Series 3711 and 3713 DC Response Accelerometers



Model 010D10 Cable
10 ft (3 m)
4-pin plug to 4-pin plug



Model 037P10 Cable
10 ft (3 m)
9-pin plug to pigtails



Model 080A153
Triaxial Mounting Block



Model 080A152
Easy mount clip

IN-STOCK CABLE DESCRIPTIONS

	English	SI		English	SI
Cabling for Single Axis Sensors (Series 010 – 4-Conductor Cable)			Cabling for Triaxial Sensors (Series 037 – 10-Conductor Cable)		
4-Pin Plug to 4-Pin Plug			9-Pin Plug to Pigtails		
Model 010D05	5 ft	1.5 m	Model 037P05	5 ft	1.5 m
Model 010D10	10 ft	3.0 m	Model 037P10	10 ft	3.0 m
Model 010D20	20 ft	6.1 m	Model 037P20	20 ft	6.1 m
Model 010D30	30 ft	9.1 m	Model 037P30	30 ft	9.1 m
4-Pin Plug to Pigtails			9-Pin Plug to Three 4-Pin Plugs		
Model 010P05	5 ft	1.5 m	Model 037A10	10 ft	3.0 m
Model 010P10	10 ft	3.0 m	Model 037A20	20 ft	6.1 m
Model 010P20	20 ft	6.1 m	Model 037A30	30 ft	9.1 m
Model 010P30	30 ft	9.1 m			



Model 445B01
Single-channel
Gain x1, x10, x100
100 to 240 VAC powered



Model 478A01
Single-channel
Unity gain
Internal battery powered



Model 478B05
3-channel
Unity gain
36 VDC powered
Includes AC power adaptor
Optional external battery pack



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