



SERIES  
3711F, 3713F, & 3741F

# MEMS DC RESPONSE ACCELEROMETERS

- Six measurement ranges from  $\pm 2$  to  $\pm 200$  g
- Improved frequency response
- Reduced spectral noise
- Improved broadband resolution
- Single-ended or differential output signal
- Lightweight titanium or aluminum housings

## TYPICAL APPLICATIONS

- Aerospace Vibration Testing - Flutter/Buffering & Landing Gear
- Simulated Environmental Testing with Shakers & Centrifuges
- Suspension, Shock Absorption, and Damping
- Driveability, Ride & Handling
- Brake & Steering Development
- Road Load Data Acquisition



## LOW FREQUENCY MEASUREMENTS WITH GAS-DAMPED, SILICON MEMS TECHNOLOGY

PCB® Series 3711 (single axis), 3713 (triaxial), and 3741 (single axis, differential output) MEMS DC response accelerometers are designed to measure low-frequency vibration and motion and are offered in full-scale ranges from  $\pm 2$  to  $\pm 200$  g to accommodate a variety of 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 +32 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.

Rugged and Durable Series 3711 & 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 +32 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 3711F11**



**Series 3713F11**



**Series 3711F12**  
(with integral cable)



**Series 3713F12**  
(with integral cable)

Precision 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. This includes 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 3741F12**

### SINGLE ENDED OUTPUT – MEMS DC RESPONSE

Sensitivity	Measurement Range (pk)	Frequency (± 5%)	Broadband Resolution (rms)
6.75 mV/g	± 200 g	0 to 1500 Hz	6.00 mg
13.5 mV/g	± 100 g	0 to 1500 Hz	3.50 mg
27.0 mV/g	± 50 g	0 to 1500 Hz	1.50 mg
45.0 mV/g	± 30 g	0 to 1500 Hz	1.00 mg
135 mV/g	± 10 g	0 to 1000 Hz	0.35 mg
675 mV/g	± 2 g	0 to 250 Hz	0.1 mg
Model Number		3711 Single Axis	3713 Triaxial
Overload Limit (Shock)		± 5000 g pk	± 3000 g pk
Temperature Range		-65 to +250 °F (-54 to +121 °C)	-65 to +250 °F (-54 to +121 °C)
Excitation Voltage		5 to 32 VDC	5 to 32 VDC
Housing Material		Titanium	Titanium
Sealing		Hermetic	Hermetic
Size (H x L x W)		0.45 x 0.85 x 0.85 in (11.4 x 21.6 x 21.6 mm)	0.80 in cube (20.3 mm cube)
Weight: Connector style Integral cable style		0.58 oz (16.3 gm) 2.29 oz (65.0 gm)	0.58 oz (17.3 gm) 4.2 oz (119.0 gm)
Electrical Connector		1/4-28 4-Pin or 10 ft (3 m) integral cable	9-Pin or 10 ft (3 m) integral cable
Supplied Accessories			
Easy Mount Clip		080A152	—
Adhesive Base		—	080A12
Mounting Screw / Stud		081A113 / M081A113	081B05 / M081B05
Additional Accessories			
Triaxial Mounting Block		080A153	—
Mounting Cable Connector		AY	EN
Recommended Cable		010	037

### DIFFERENTIAL OUTPUT – MEMS DC RESPONSE

Sensitivity	Measurement Range (pk)	Frequency (± 5%)	Broadband Resolution (rms)
13.5 mV/g	± 200 g	0 to 1500 Hz	6.0 mg
27 mV/g	± 100 g	0 to 1500 Hz	3.5 mg
54 mV/g	± 50 g	0 to 1500 Hz	1.5 mg
90 mV/g	± 30 g	0 to 1500 Hz	0.85 mg
270 mV/g	± 10 g	0 to 1000 Hz	0.35 mg
1350 mV/g	± 2 g	0 to 250 Hz	0.10 mg
Model Number		3741 Single Axis	
Overload Limit (Shock)		± 5000 g pk	
Temperature Range		-65 to +250 °F (-54 to +121 °C)	
Excitation Voltage		5 to 32 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		0.35 oz (9.9 gm)	
Electrical Connector		10 ft (3 m) integral cable to pigtailed	
Supplied Accessories			
Mounting Screws/Studs		(2) 081A103 / (2) M081A103	
Additional Accessories			
Triaxial Mounting Block		080A208	

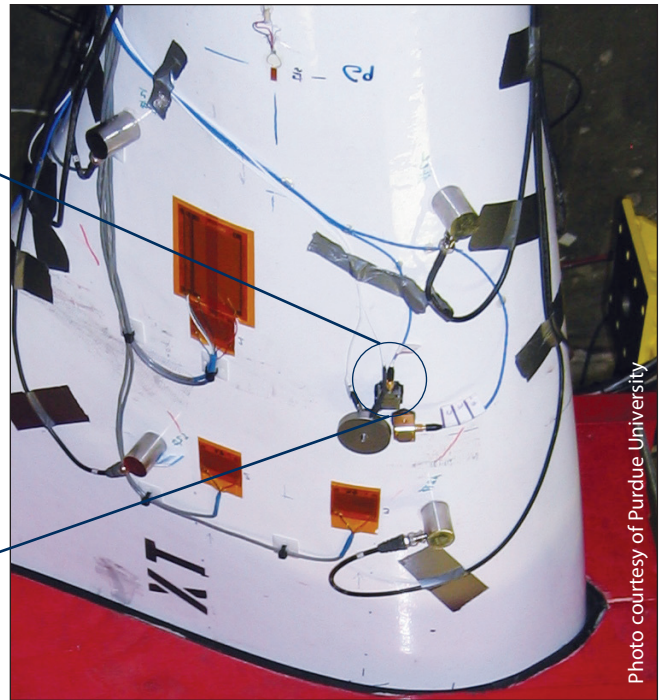
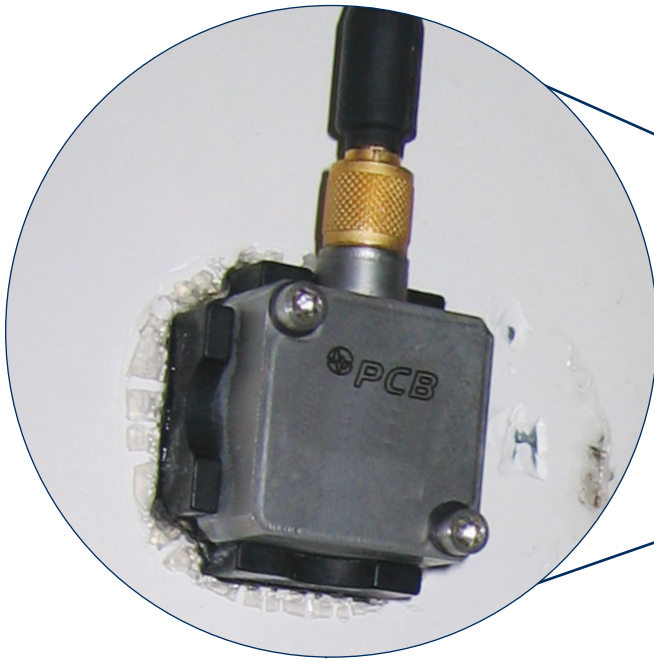


Photo courtesy of Purdue University

## MODEL NUMBERING SYSTEM

### 1) Series

3741F	Single axis, MEMS DC response accelerometer, differential
3713F	Triaxial, MEMS DC response accelerometer
3711F	Single axis, MEMS DC response accelerometer

### 2) Cable

11	Multi-pin, threaded, electrical connector (3711 & 3713 only)
12	Standard, 10 ft (3.0 m) integral cable and pigtail termination

### 3) Measurement Range

2G	± 2 g measurement range
10G	± 10 g measurement range
30G	± 30 g measurement range
50G	± 50 g measurement range
100G	± 100 g measurement range
200G	± 200 g measurement range

### 4) Integral Cable Length (add only if selecting other than standard 10 ft ( 3 m ) length)

/XXX	Specify XXX as desired cable length in feet (specify MXXX for desired cable length in meters)
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### 5) Cable Termination

AY	4-pin plug (Series 3711 & 3741 only)
DZ	Pigtail, stripped and tinned ends (Series 3711 & 3713 only)
EN	9-pin plug (Series 3713F11 only)
HW	9-pin D-sub plug for mating to Model 478A30 signal conditioner (Series 3741 only)
JJ	Pigtail, stripped and tinned ends (Series 3741 only)
LN	8-pin mini DIN for mating to Models 482C27 or 483C28 signal conditioners (Series 3741 only)
LT	8-pin mini DIN for mating to Models 482C27 or 483C28 signal conditioners (Series 3711 only)

### Example

3713F	12	10G	/005	DZ	Triaxial MEMS DC response accelerometer, ± 10 g measurement range, 5 ft (1.5 m) integral cable pigtail
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# RECOMMENDED ACCESSORIES & SIGNAL CONDITIONERS FOR SERIES 3711 AND 3713 MEMS DC RESPONSE ACCELEROMETERS



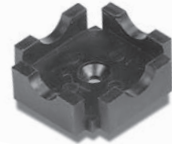
**Model 010D10 Cable**  
10 ft (3 m)  
4-pin plug to 4-pin plug



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



**Model 080A153**  
Easy mount triaxial block, 3711



**Model 080A152**  
Easy mount clip, 3711

## IN-STOCK CABLE DESCRIPTIONS

	English	Metric		English	Metric
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 478A01**  
Single-channel  
unity gain  
internal battery powered



**Model 478B05**  
3-channel  
unity gain  
36 VDC powered  
optional external battery pack

# RECOMMENDED ACCESSORY & SIGNAL CONDITIONERS FOR SERIES 3741 MEMS DC RESPONSE ACCELEROMETERS



**Model 080A208**  
Triaxial mounting block



**Model 482C27**  
4-channel  
incremental gain  
differential, bridge, and  
ICP® sensor types



**Model 483C28**  
8-channel line-powered  
bridge, differential, and ICP® sensor types



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