

HIGH OUTPUT ACCELEROMETERS

MEASURE SHOCK AND VIBRATION

Ranges from ± 2 to ± 600 G

ACC141 Series



- ✓ Excellent Static and Dynamic Response
- ✓ Gas Damping with Minimal Temperature Effect
- ✓ High Output Signal
- ✓ High Overload Capacity (2000 G Static)
- ✓ Low Transverse Sensitivity (0.012 G/G)
- ✓ Wide Range Calibration
- ✓ 3 m (10') Cable, Standard

The ACC141 Series are linear accelerometers that produce a high level output proportional to the instantaneous acceleration from static to 3000 Hz (depending upon range). The excellent dynamic response is enabled by using air damping which has much better temperature properties than fluid damping. The rugged capacitive sensor allows the high overload properties and delivers excellent accuracy and long term stability. The rugged stainless steel case with O-ring seal provides excellent environmental protection and the integral base plate make installation and mounting quick and isolates the unit from mounting strain.

SPECIFICATIONS

Linearity: $\pm 1.0\%$ full scale

Hysteresis: 0.10%

Repeatability: 0.05%

Transverse Acceleration Effect: $< \pm 0.012$ G/G

Damping: Approximates 2nd order system with 0.7 critical damping [gas squeeze film 0.7 ± 0.2 of critical at 25°C (77°F)]; damping ratio increases approximately $0.27\%/^\circ\text{C}$

Frequency Band: Flat from static to approximately 60% of natural frequency (all ranges)

Resolution: Infinite, limited only by noise level

Operating Temperature: -23 to 65°C (-10 to 150°F)

Zero Shift: $< \pm 0.036\%$ range/ $^\circ\text{C}$ ($< \pm 0.02\%$ range/ $^\circ\text{F}$)

Sensitivity Shift: $< \pm 0.036\%$ range/ $^\circ\text{C}$ ($< \pm 0.02\%$ range/ $^\circ\text{F}$) (slightly higher effect when "A" models are operated at excitation levels below 10 Vdc)

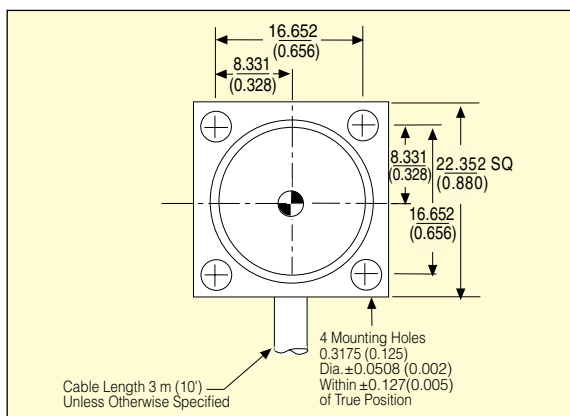
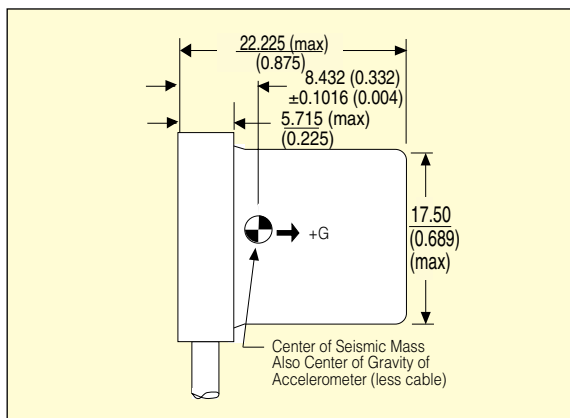
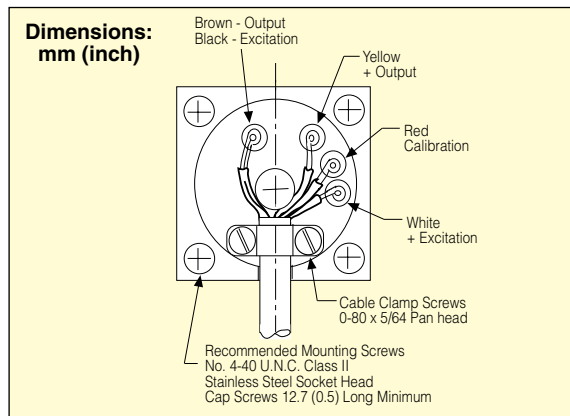
Zero G Output: $< \pm 25$ mV

Full Scale G Output: $< \pm 25\%$ nominal output

Noise Level: $< \pm 0.01\%$ nominal range (RMS)



ACC141A-2, shown actual size.



Calibration: Each unit is supplied with a computer generated plot of output vs acceleration at the specified output voltage

Sensitivity: Reported at the nominal range

Calibration Voltage:
ACC141A: 10 Vdc
ACC141B: 24 Vdc

Excitation Voltage Range:
 3-wire circuit

ACC141A: 5 to 15 Vdc @ 5 mA
 (Cal at 10 Vdc)

ACC141B: 10 to 28 Vdc @ 10 mA
 (Cal at 24 Vdc)

Nominal Output:

ACC141A: ±500 mV

ACC141B: ±1000 mV

Electrical Connection: 3 m (10') cable

Case: Stainless steel, O-ring

Weight: 30 g (1 oz)

RANGE TABLE

NOMINAL RANGE	LINEARITY	NATURAL FREQUENCY	FLAT RESPONSE
±2 G	±1%	300 Hz	200 Hz
±4 G	±1%	440 Hz	260 Hz
±8 G	±1%	570 Hz	300 Hz
±15 G	±1%	840 Hz	400 Hz
±30 G	±1%	1200 Hz	700 Hz
±60 G	±1%	1560 Hz	1000 Hz
±150 G	±1%	2600 Hz	1600 Hz
±600 G	±1%	5000 Hz	3000 Hz



To Order

MODEL NO.	RANGE G	EXCITATION VOLTAGE
	10 Vdc CALIBRATION VOLTAGE	
ACC141A-2	2	10 Vdc
ACC141A-4	4	10 Vdc
ACC141A-8	8	10 Vdc
ACC141A-15	15	10 Vdc
ACC141A-30	30	10 Vdc
ACC141A-60	60	10 Vdc
ACC141A-150	150	10 Vdc
ACC141A-600	600	10 Vdc
24 Vdc CALIBRATION VOLTAGE		
ACC141B-2	2	24 Vdc
ACC141B-4	4	24 Vdc
ACC141B-8	8	24 Vdc
ACC141B-15	15	24 Vdc
ACC141B-30	30	24 Vdc
ACC141B-60	60	24 Vdc
ACC141B-150	150	24 Vdc
ACC141B-600	600	24 Vdc

ELECTRICAL CONNECTIONS

CABLE LEAD	FUNCTION
White	positive excitation
Black	negative excitation
Yellow	positive output
Brown	negative output
Red	calibration signal
Shield	case

Comes complete with computer generated plot of output vs acceleration and operator's manual.

Ordering Examples: ACC141A-4, ±4 G range accelerometer calibrated at 10 Vdc with ±500 mV nominal output.

ACC141B-15, ±15 G range accelerometer calibrated at 24 Vdc with ±1000 mV nominal output.