XL403A

FEATURES AND BENEFITS

High Accuracy and Linearity over Wide Temperature Range
The voltage output for the XL403A is directly proportional to the acceleration along the axis. Each DC-coupled output is fully scaled, referenced, and temperature compensated. Accuracy is improved by minimizing variations due to temperature and aging effects, resulting in sensors that are more stable over temperature than piezoelectric or piezoresistive devices.

Calibration Certificate
Each XL403A is supplied with a calibration certificate listing sensitivity and offset, as well as the on-axis and transverse alignment parameters needed to ensure rapid and efficient system implementation. The alignment data can be used to compensate the measured values if needed.

Self-Test on Digital Command
A TTL-compatible self-test input causes a simulated acceleration to be injected into the accelerometer to verify channel integrity.

Small Size
Complete conditioned uniaxial, biaxial, or triaxial accelerometer in less than a cubic inch.

SPECIFICATIONS

±1 g to ±15 g Rugged Uniaxial, Biaxial, or Triaxial Accelerometer for Quick Shipment

Get Started on Simplified Acceleration and Temperature Measurements

The Measurement Specialties **XL403A** is ready when you are. In stock and ready to ship, you can be taking measurements in less time than with built-to-order accelerometers.

The small size and built-in power regulation allow the XL403A to fit where other accelerometers can't. Choose bandwidth up to 800 Hz and range options of ±1 g to ±15 g to measure accelerations
on one, two or three axes.

Tested over the -40 to +85°C temperature range, the accelerometers have a nominal full scale output swing of ±2 Volts. The zero g output level is nominally +2.5 Volts. Precise values are available on the included calibration certificate.

-Built-In Power Supply Regulation
Unregulated DC power from +8.5 to +36 Volts is all that is required to measure acceleration and temperature. Reverse power voltages of up to -80 V can be withstood indefinitely. Transients of +80 V for 550 ms compatible with MIL-STD-704A can be withstood with full operation.

Easy Installation
Integrated cable with 9-pin connector makes it easy to wire. Two through-holes and four tapped holes simplify mounting.

-Suitable for Harsh Environments
The XL403A is robust and can be used in harsh environments. The unit will survive 5000 g powered or unpowered.

Earth Friendly Design
Lead-free design makes the XL403A environmentally safe while Measurement Specialties' assembly process ensures reliable functionality. Fully potted electronics eliminates the possibility of tin whiskers-related failures.

Warranty
These Measurement Specialties accelerometers come with a three-year factory warranty.

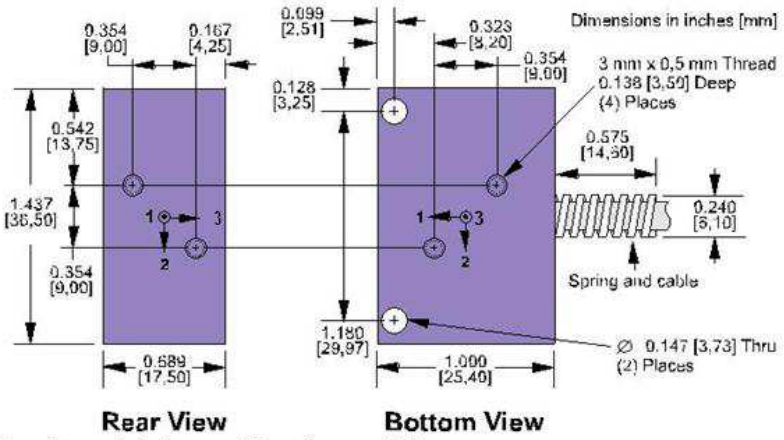
SPECIFICATIONS - *improved specifications available upon request*

Ta = Tmin to Tmax; 8.5 ≤ Vs ≤ 36 V; Acceleration = 0 g unless otherwise noted; within one year of calibration.

Parameter	Min	Typical	Max	Units	Conditions/Notes
Range					
Measurement Full Scale	±1		±15	g	On each axis. Must specify via Option Rnnn
Sensitivity					
At 25°C, Option R005		400†		mV/g	Precise values on cal certificate
Drift T_{min} to T_{max}		±0.65	±3	%	Percent of sensitivity at 25°C
Zero g Bias Level					
At 25°C		2.50 ±0.010		V	Precise values on cal certificate
Drift T_{min} to T_{max}		20		mg	At 1.25°C/min. temperature rate of change
Alignment					Precise values on cal certificate
Deviation from Ideal Axes		±1.0	±3.0	degrees	Can be compensated if required
Transverse Sensitivity		±0.25		%	Inherent sensor error, excluding misalignment
Nonlinearity		0.1	0.5	% FSR	Best fit straight line
Frequency Response, 5-pole	0		800	Hz	Upper cutoff per Option Bnnn, -3dB pt ±10%, 5-pole Butterworth filter
Noise Density		100		µg/√Hz	10 Hz to 400 Hz
Self-Test Pull-up Resistor	5			kΩ	Logic "1"≥ 3.5 V, Logic "0"≤ 1.5 V, "0" causes self-test
Temperature Sensor					Accuracy ±1°C
Sensitivity		6.45		mV/°C	
0°C Bias Level		509		mV	
Outputs					
Output Voltage Swing	0.50		4.50	V	I_{out} = ±0.5 mA
Capacitive Drive Capability		1000		pF	
Power Supply (Vs)					
Input Voltage Limits	-80		+80	V	-80 V continuous, >38 V if ≤550 ms, duty <1%
Input Voltage - Operating	+8.5		+36	V	Continuous
Input Current		12		mA	
Rejection Ratio		>120		dB	DC
Temperature Range (T_a)	-40		+85	°C	
Mass		38		grams	Precise values on cal certificate
Shock Survival	-5000		+5000	g	Any axis for 0.5 ms, powered or unpowered

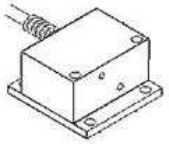
†*Scale linearly with range option Rnnn; see Ordering Information*

MECHANICAL

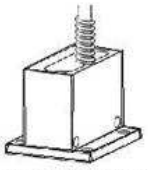


Two through holes and four 3 mm x 0.5 mm threaded holes are provided for mounting.

Mounting adapters (sold separately)

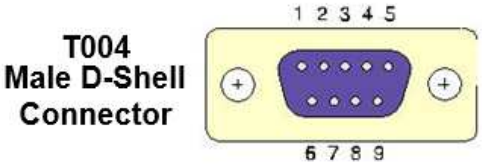


35173A Horizontal



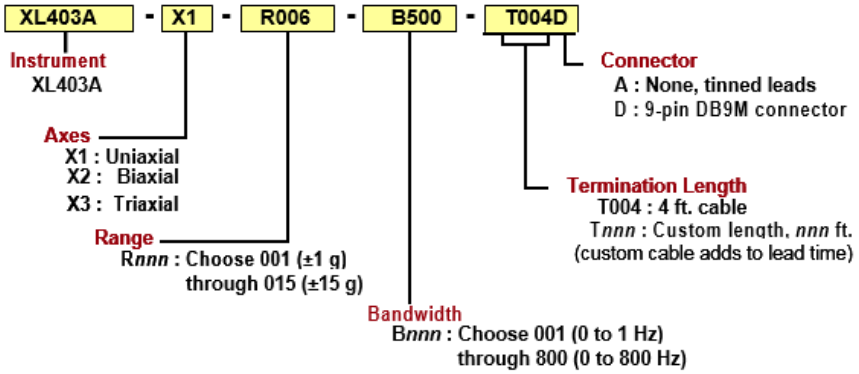
35172A Vertical

CONNECTIONS



Pin	1	2	3	4	5	6	7	8	9
Signal	Analog1+	Analog2+	Analog3+	Signal -	Reserved	Reserved	Self Test	+Vs	Gnd
Wire	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

ORDERING INFORMATION



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