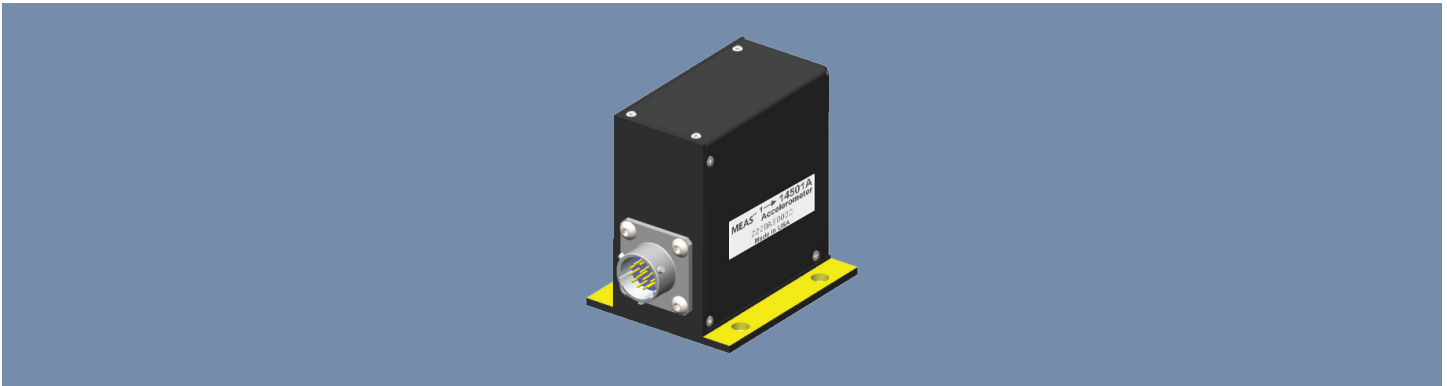


High Performance, Low g Uniaxial Accelerometer

±0.5 g



- **IdentiCal™ Interchangeable Sensors** eliminate the management of calibration data and allow convenient interchangeability of individual sensors. With standardized sensitivity and offset, there is no need to enter new parameters for each unit. The 14501A is perfect for high volume use.
- **High Accuracy and Linearity over Wide Temperature Range** The output of the 14501A is directly proportional to the acceleration of its axis. The DC-coupled output is fully scaled, referenced, and temperature compensated.
- **Compare to Force Balance Accelerometers** Improvements in the areas of axis alignment and gain and offset stability make it one of the most accurate MEMS-based accelerometers available, especially under demanding environmental conditions. Tested to DO-160 standards.
- **Built-in Power Supply Regulation** Unregulated DC power from 28 VDC ±4 VDC is all that is required to measure acceleration.
- **Self-Test on Digital Command** A TTL-compatible self-test input causes a simulated acceleration to be injected into all axes to verify channel integrity and wiring connections.
- **Earth Friendly Design** Lead-free design makes the 14501A environmentally safe while Measurement Specialties' assembly process ensures reliable functionality. Fully-potted electronics eliminates the possibility of tin whiskers-related failures.
- **Three-Year Warranty** - These Measurement Specialties accelerometers are covered by a three-year return to factory warranty.

*Technical Data subject to change without notice

The 14501A is an interchangeable uniaxial accelerometer capable of accurately measuring acceleration under demanding environmental conditions.

The 14501A provides enhanced accuracy and durability features to meet the challenges of your application. In addition to its robust construction, increased precision is achieved through improved offset and gain compensation.

Each axial sensor has been tested over the -40 to +70 °C temperature range and has a nominal full scale output swing of ±7.5 Volts.

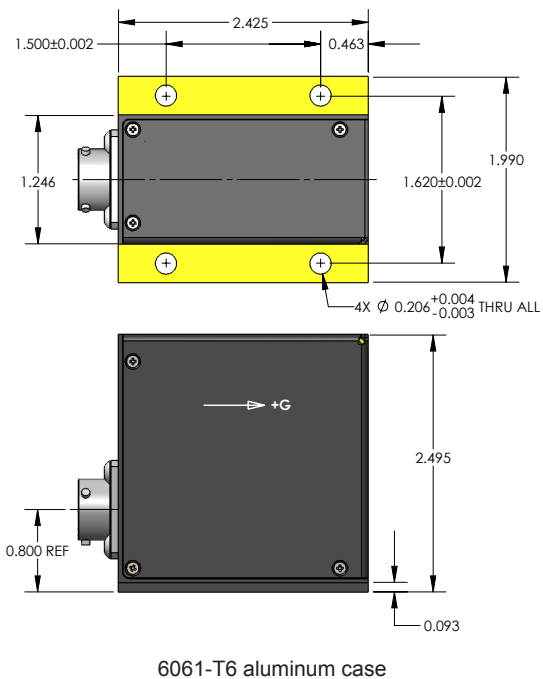
Specifications for 14501A - improved specifications available upon request

$T_A = T_{MIN}$ to T_{MAX} ; $24 \leq V_S \leq 32$ V; Acceleration = 0 g, unless otherwise noted; within one year of calibration.

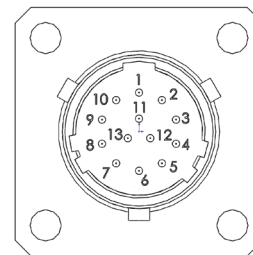
Parameter	Min	Typical	Max	Units	Conditions/Notes
Range & Sensitivity* at 25 °C		15.00		V/g	Maximum error $\pm 0.75\%$ of nominal at 25 °C
Sensitivity Drift 25°C to T_{MIN} or T_{MAX}		0.01		% FSR	
Offset at 25 °C, Zero g Bias Level		0.005		V	Max error 0.05% of FS at 25 °C
Offset Drift 25 °C to T_{MIN} or T_{MAX}		0.01		% FSR	
Alignment, Deviation from Ideal Axes		± 0.1		degrees	
Transverse Sensitivity		0.2		%	Inherent sensor error, excluding misalignment
Nonlinearity		0.05		% FSR	Best fit straight line
Frequency Response	0		4	Hz	-3 dB pt $\pm 10\%$
Noise Density		110		$\mu\text{g}/\sqrt{\text{Hz}}$	$T_A = 25$ °C
Self Test Pull-up Resistor	5			k Ω	Logic "1" ≥ 3.5 V, Logic "0" ≤ 1.5 V, "0" causes self test
Outputs Output Voltage Swing	-7.5		7.5	V	Measuring equipment >10 M Ω recommended $I_{OUT} = 1$ mA, Capacitive load <1000 pF
Power Supply (V_S) Input Voltage Limits Input Voltage - Operating Input Current Rejection Ratio	24 24	30 >120	32 28	V V mA dB	No load, quiescent DC
Temperature Range (T_A)	-40		+70	°C	
Mass		159		grams	
Shock Survival	-3500		+3500	g	Any axis for 0.5 ms, powered or unpowered

*Identical sensors are interchangeable, any with same range have same value

Mechanical



Connections



Pin	1	2	3	4	5	6	7	8	9	10, 11, 12, 13
Signal	+28 VDC Input	Gnd	+28 VDC Input	Gnd	Sig (Hi)	Sig (Lo)	Self Test	Not Used	Case Gnd	Not Used

Ordering Information

