

# 15200B/25200B/35200B Accelerometer

## Digital Accelerometers User Configurable to $\pm 70 g$

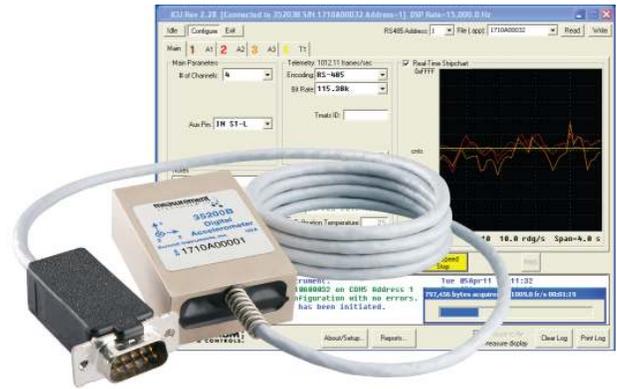
### Digital Accelerometer

These Measurement Specialties digital accelerometers are complete, easy-to-use, user-configurable sensors containing one to three accelerometers, a temperature sensor, signal processor, RS-485 interface and three analog outputs in a small, easy-to-install package.

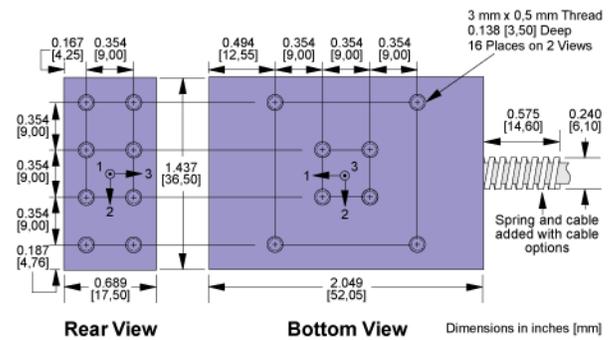
No data acquisition system is required; data is streamed directly to a PC. A connection kit is available to set up and begin testing immediately upon receipt of the sensor.

The analog/digital output range and low-pass filter of each digital accelerometer axis can be set via a built-in RS-485 interface using a free, downloadable Instrument Configuration Utility (ICU). An RS-485 to RS-232 adapter is available.

Calibrated, ranged and filtered data can be streamed out at up to 3 Mbit/ sec via RS-485. Analog output of up to three calibrated, ranged and filtered channels are provided for compatibility with existing systems.

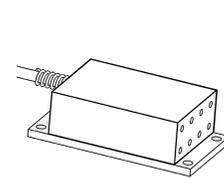


## dimensions

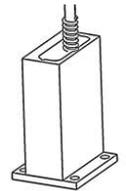


Two through holes and four 3 mm x 0.5 mm threaded holes are provided for mounting.

Mounting adapters (sold separately)



35170A Horizontal



35172A Vertical

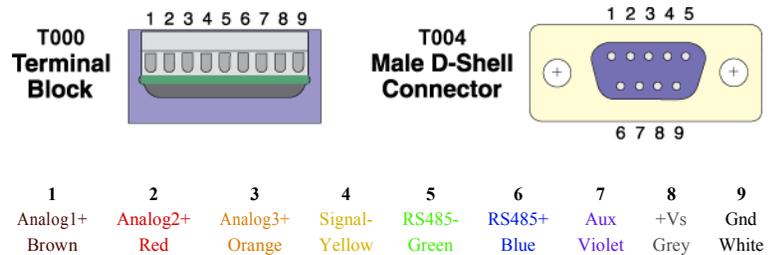
## FEATURES

- User Configurable Settings
- RS485 Serial and Analog Outputs
- High Accuracy and Linearity over Wide Temperature Range
- Built-in Calibration Data
- Built-in Power Supply Regulation
- Easy Installation
- Suitable for Harsh Environments
- DO-160 Version Available
- Three Year Warranty

## APPLICATIONS

- Vehicle dynamics
- Construction Equipment
- Research & Development
- Test & Measurement
- Military/Aerospace

## connections



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# 15200B/25200B/35200B Accelerometer

## performance specifications

$T_A = T_{min}$  to  $T_{max}$ ; Acceleration = 0 g unless otherwise noted; within one year of calibration. Improved specifications available upon request.

PARAMETERS	Min	Typical	Max	Units	Conditions/Notes
<b>Range:</b> Measurement Full Scale					Lower ranges are user configurable
Option R070			±70	g	
Option R050			±50	g	
Option R035			±35	g	
<b>Sensitivity Drift</b> 25°C to $T_{min}$ or $T_{max}$		±0.5		%	Percent of sensitivity at 25 °C
<b>Zero g Drift</b> 25°C to $T_{min}$ or $T_{max}$		±1		g	
<b>Alignment</b>		±3.0		degrees	Deviation from ideal axes
<b>Transverse Sensitivity</b>		±0.25		%	Inherent sensor error, excluding misalignment
<b>Nonlinearity</b>		0.2	2	% FSR	Best fit straight line
<b>Frequency Response</b>	0		400	Hz	Lower filter cutoffs are user configurable*
<b>Noise Density</b>					10 Hz to 400 Hz
Option R070		1.8	3.5	mg/√Hz	
Option R050		1.4	3	mg/√Hz	
Option R035		1.1	3	mg/√Hz	
<b>Temperature Sensor</b>					Accuracy ±1 °C over temperature
Range	-55		125	°C	
Resolution		0.25		°C	
Accuracy		±2	±3	°C	$T_A = -40$ to $+85$ °C
<b>Digital Signal Processor</b>					
Sensor Scan Rate			42,500	Hz	User configurable; channels processed in parallel
<b>Analog Outputs</b>					Configurable to sensor
Voltage Swing	0.25		4.75	V	$I_{out} = 1$ mA max
Impedance to Analog -	100	130	220	Ω	
Nonlinearity			0.15	% FSR	Excluding sensor nonlinearity
<b>Digital Output Word Size</b>			16	bits	Filtered, gained and calibration corrected
<b>Power Supply (<math>V_s</math>)</b>					
Input Voltage Limits	-80		+80	V	-80 V continuous, >38 V if ≤550 ms, duty <1%
Input Voltage – Operating	+8.5		+36	V	
Input Current		55		mA	
Rejection Ratio		>120		dB	DC
<b>Temperature Range (<math>T_A</math>)</b>	-40		+85	°C	Terminal block option T000 rated to -30 °C
<b>Mass</b>		78		grams	
<b>Shock Survival – Sensor</b>	-1500		+1500	g	Any axis for 0.5 ms, limited by oscillator

\*User configurable low-pass filter 3dB cutoff (number poles configurable)

## ordering info

**35200B - R070 - T004 - C002 - K11**

**Instrument**  
35200B  
25200B  
15200B

**Accelerometers**  
R070 : ±70 g 400 Hz  
R050 : ±50 g 400 Hz  
R035 : ±35 g 400 Hz

**Termination**  
T004 : 4 ft. cable with DB9M  
T000 : Terminal block  
Tnnn : Custom length, nnn ft.

**Calibration**  
C001 : Standard room temp cal only  
C002 : C001 cal plus offset data  
over -40 to +85°C range

**Adapter**  
0 : None  
1 : 35170A Horizontal mounting adapter  
3 : 35172A Vertical mounting adapter

**Interface kit**  
0 : None  
1 : Interface kit with US power supply  
2 : Interface kit with int'l power supply  
3 : Interface kit for terminal block (US)  
4 : Interface kit for terminal block (int'l)

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