

# 15203B /25203B /35203B Accelerometer

## Digital Accelerometers User Configurable $\pm 1$ to $\pm 15 g$

### 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.

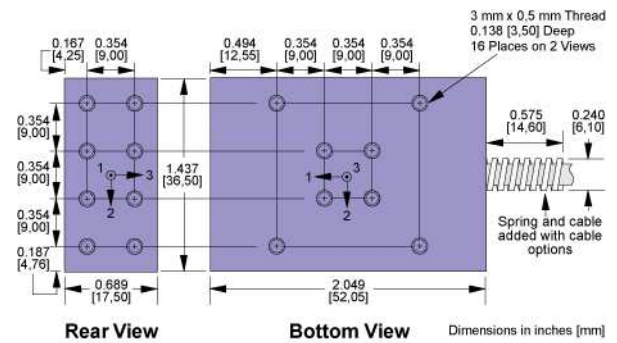
No data acquisition system is required; data is streamed directly to a PC. A connection kit is available to set up and begin testing immediately upon receipt of the sensor.

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.

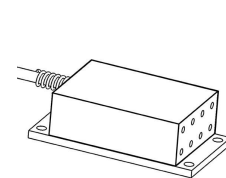


## dimensions

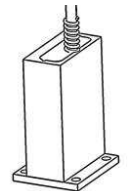


Two through holes and four 3 mm x 0.5 mm threaded holes are provided for mounting.

Mounting adapters (sold separately)



35170A Horizontal



35172A Vertical

## FEATURES

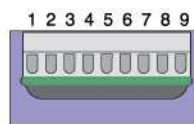
- User Configurable Settings
- RS485 Serial and Analog Outputs
- High Accuracy and Linearity over Wide Temperature Range
- Built-in Calibration Data
- Built-in Power Supply Regulation
- Easy Installation
- Suitable for Harsh Environments
- DO-160 Version Available
- Three Year Warranty

## APPLICATIONS

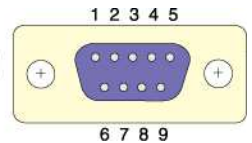
- Vehicle dynamics
- Construction Equipment
- Research & Development
- Test & Measurement
- Military/Aerospace

## connections

T000  
Terminal  
Block



T004  
Male D-Shell  
Connector



Pin	1	2	3	4	5	6	7	8	9
Signal	Analog1+	Analog2+	Analog3+	Signal-	RS485-	RS485+	Aux	+Vs	Gnd
Wire	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

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# 15203B/25203B /35203B 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					On each axis, user configurable
Option R015			±15	g	
Option R006			±6	g	
<b>Sensitivity Drift</b> 25°C to $T_{min}$ or $T_{max}$		±0.65		%	Percent of sensitivity at 25 °C
<b>Zero g Drift</b> 25°C to $T_{min}$ or $T_{max}$		±60		mg	Repeatable, can be compensated
<b>Alignment</b>		±1.0	±3.0	degrees	Deviation from ideal axes
<b>Transverse Sensitivity</b>		±0.25		%	Inherent sensor error, excluding misalignment
<b>Nonlinearity</b>		0.1		% FSR	Best fit straight line
<b>Frequency Response</b>	0		800	Hz	Lower filter cutoffs are user configurable*
<b>Noise Density</b>		120		µg/√Hz	$T_A = 25$ °C
<b>Temperature Sensor</b>					
Range	-55		125	°C	
Resolution		0.25		°C	
Accuracy		±2.0	±3.5	°C	$T_A = -40$ to $+85$ °C
<b>Digital Signal Processor</b>					
Internal Word Size			32	bits	
Sensor Scan Rate		15,000	42,500	Hz	User configurable; channels processed in parallel
<b>Analog Outputs**</b>					
Configurable to sensor					
Voltage Swing	0.25		4.75	V	$I_{out} = 5$ mA
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	Continuous
Input Current		50		mA	
Rejection Ratio	80	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)

\*\*Each channel's offset and gain are configurable

## ordering info

