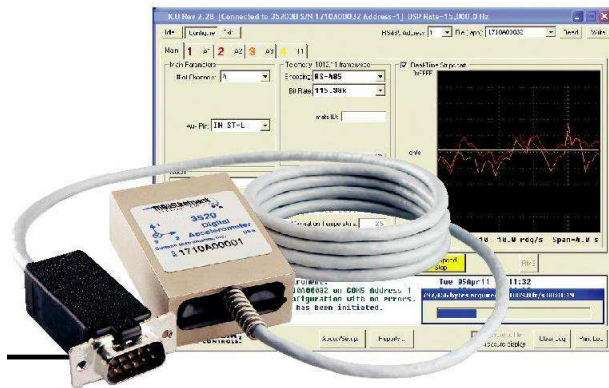


# Preliminary



## 15207A 25207A 35207A

Uniaxial

Biaxial

Triaxial

### SPECIFICATIONS

- Digital Accelerometers
- User Configurable to  $\pm 70$  g
- Wide Bandwidth to 10 kHz

### Inertial Measurements Made Fast and Easy

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.

All channels are sampled simultaneously to avoid data skewing. The digital signal processor takes 16-bit samples, filters, ranges, and calibration compensates at up to 42,500 samples/sec/channel. Digital data can be streamed out at up to 3 Mbit/sec.

The output range, filter frequency and calibration of each channel, as well as telemetry configuration, can be set by the user via the RS-485 command processor. CRC-16 error checking is used to ensure command and data integrity.

The built-in temperature sensor can be used by critical applications to correct for any residual temperature effects

### FEATURES AND BENEFITS

#### User Configurable Settings

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

#### RS-485 Serial and Analog Outputs

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.

#### High Accuracy and Linearity over Wide Temperature Range

Accelerometer accuracy is improved by minimizing variations due to temperature and aging effects. Each axial sensor has been tested and compensated over the -40 to +85°C temperature range.

#### Built-in Calibration

Calibration data for each sensor is maintained in the accelerometer. All digital data output is fully calibrated and easily converted to user specified engineering units.

**Self-Test**

Self-test commands help verify channel integrity and wiring connections.

**Small Size**

Complete conditioned uniaxial, biaxial and triaxial accelerometers with digital signal processing in just two cubic inches.

**-Built-In Power Supply Regulation**

Continuous unregulated DC power from +8.5 to +36 volts is all that is required to measure accelerations on all axes. 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 with Minimal Wiring Requirements**

A built-in terminal block or cable with 9-pin connector simplifies wiring. Wiring can be minimized by daisy-chaining the two multidrop RS-485 pins on up to 30 digital accelerometers. Tapped holes on bottom and back simplify horizontal or vertical mounting.

**Suitable for Harsh Environments**

These accelerometers are robust and can be used in harsh environments, surviving 1500 g powered or unpowered.

**Warranty**

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

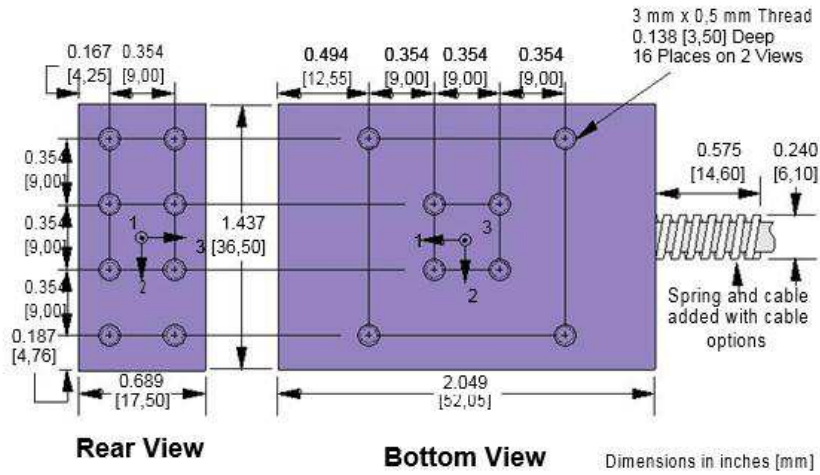
**SPECIFICATIONS FOR 15207A, 25207A AND 35207A - improved specifications available upon request**

T<sub>a</sub> = T<sub>min</sub> to T<sub>max</sub>; acceleration = 0 g unless otherwise noted; within one year of calibration.

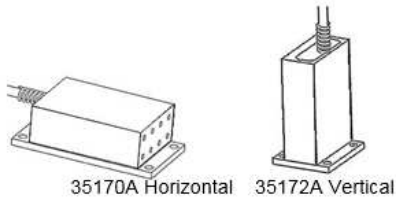
Parameter	Min	Typical	Max	Units	Conditions/Notes
<b>Accelerometer Full Scale Range</b>			±70	g	Lower ranges are user configurable
<b>Sensitivity Drift</b> 25°C to T <sub>min</sub> or T <sub>max</sub>		±0.5		%	Percent of sensitivity at 25°C
<b>Zero g Drift</b> 25°C to T <sub>min</sub> or T <sub>max</sub>		±1.5		g	Some units to 3 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 <sup>†</sup>		10 <sup>†</sup>	kHz	Lower filter cutoffs are user configurable
<b>Noise Density</b>		2.5		mg/√Hz	
<b>Temperature Sensor</b>					
Range	-55		125	°C	
Resolution		0.25		°C	
Accuracy		±2	±3	°C	T <sub>a</sub> = -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 I <sub>out</sub> = 1 mA max
Voltage Swing	0.50		4.50	V	
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 (V<sub>s</sub>)</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		50		mA	
Rejection Ratio		>120		dB	DC
<b>Temperature Range (T<sub>a</sub>)</b>	-40		+85	°C	Terminal block Option T000 rated to -30°C
<b>Mass</b>		78		grams	
<b>Shock Survival</b>	±1500		±1500	g	Any axis for 0.5 ms, powered or unpowered

<sup>†</sup>User configurable low-pass filter 3dB cutoff (number poles configurable)

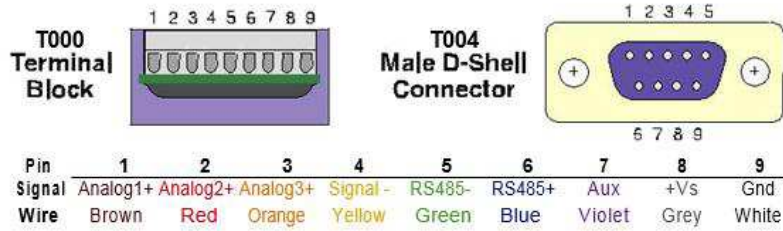
## MECHANICAL



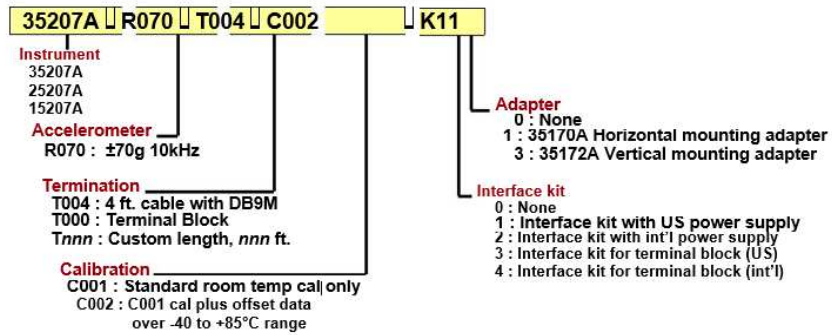
Mounting  
Adapters  
(sold separately)



## CONNECTIONS



**ORDERING INFORMATION**



**NORTH AMERICA**

Measurement Specialties, Inc.,  
 a TE Connectivity Company  
 2236 N. Cleveland-Massillon Road  
 Akron, OH 44333  
 USA  
 Tel: +1-330-659-3312  
 Sales: pvg.cs.amer@meas-spec.com

**EUROPE**

MEAS France SAS  
 a TE Connectivity Company  
 26 Rue des Dames  
 F78340 Les Clayes-sous-Bois  
 France  
 Tel: +33 (0) 130 79 33 00  
 Fax: +33(0) 134 81 03 59  
 Sales: pfg.cs.emea@meas-spec.com

**ASIA**

Measurement Specialties (China), Ltd.,  
 a TE Connectivity Company  
 No. 26 Langshan Road  
 Shenzhen High-Tech Park (North)  
 Nanshan District, Shenzhen 518057  
 China  
 Tel: +86 755 3330 5088  
 Fax: +86 755 3330 5099  
 Sales: pfg.cs.asia@meas-spec.com

**TE.com/sensorsolutions**

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.