

Interchangeable, Rugged Uniaxial Accelerometer ±1 g to ±15 g



Preliminary Technical Data*

Features and Benefits

IdentiCal™ Interchangeable Sensor



IdentiCal™ 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. 13203CC is perfect for high volume use.

Rugged for Harsh Environments

The 13203CC is robust to perform well in harsh environments. The 6061-T6 case with electroless nickel finish plus a Teflon cable with a shield bonded to the case provide improved resistance to EMI, lightning, or other disturbances. The enclosure is rated IP65. The unit has resilient power and will survive 5000 g powered and unpowered. The 13203CC has a 22 AWG cable with only four wires to connect.

High Accuracy and Linearity over Wide Temperature Range

The output of the 13203CC is directly proportional to the acceleration of its axis. The DC-coupled output is fully scaled, referenced, and temperature compensated. When used in demanding temperature environments, the 13203CC is one of the most accurate accelerometers available.

Small Size

Complete conditioned accelerometer package in less than a cubic inch; it may be easily mounted for any axis orientation.

Built-In Power Supply Regulation

Unregulated DC power from +8.5 to +36 Volts is all that is required to measure acceleration. The 13203CC is operational with transients of +80V for 550 ms compatible with MIL-STD-704A.

Earth Friendly Design

Lead-free design makes the 13203CC environmentally safe while Spectrum Sensors' assembly process ensures reliable functionality. Fully potted electronics eliminates the possibility of tin whiskers-related failures.

Three Year Warranty

Spectrum Sensors' rate sensors are covered by a three year return to factory warranty. Extended warranties are available.

Precisely Measure Rates Over Temperature

The Spectrum Sensors 13203CC is an interchangeable and rugged uniaxial accelerometer capable of accurately measuring acceleration under demanding environmental conditions. A tough, compact housing holds potted electronics and a shielded heavyweight cable. Its cubical form allows mounting with the sensing axis oriented in any direction.

The 13203CC 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 +85°C temperature range and has a nominal full scale output swing of ±2 Volts. Sensors are available in various fixed sensitivities, each with a 2.500 V offset. The 13203CC can also be ordered with different bandwidths and wiring configurations.

Specifications for 13203CC - improved specifications available upon request

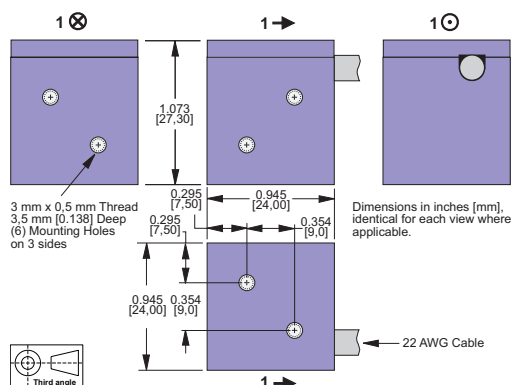
$T_A = T_{MIN}$ to T_{MAX} ; $8.5 \leq V_S \leq 36$ V; Acceleration = 0 g unless otherwise noted; within one year of calibration.

Parameter	Min	Typical	Max	Units	Conditions/Notes
Range & Sensitivity* at 25°C					Must specify via Option Rnnn, see Ordering Info
Option R015		0.130		V/g	<i>Maximum error $\pm 0.75\%$ of nominal at 25°C.</i>
Option R010		0.200		V/g	
Option R006		0.330		V/g	
Option R005		0.400		V/g	
Option R004		0.500		V/g	
Option R003		0.660		V/g	
Option R002		1.000		V/g	
Option R001		2.000		V/g	
Sensitivity Drift 25°C to T_{MIN} or T_{MAX}		± 0.3	1	% FSR	
Offset at 25°C Zero g Bias Level		2.500		V	Max error ± 50 mg of nominal at 25°C
Offset Drift 25°C to T_{MIN} or T_{MAX}		± 20		mg	
Alignment Deviation from Ideal Axes		± 1.5		degrees	
Transverse Sensitivity		0.25		%	Inherent sensor error, excluding misalignment
Nonlinearity		0.1		% FSR	Best fit straight line
Frequency Response	0		800	Hz	Upper cutoff per Option Bnnn, -3dB pt $\pm 10\%$
Noise Density		100		$\mu\text{g}/\sqrt{\text{Hz}}$	$T_A = 25^\circ\text{C}$
Outputs					Measuring equipment > 10 M Ω recommended $I_{OUT} = 1$ mA, Capacitive load < 1000 pF
Output Voltage Swing	0.25		4.75	V	
Power Supply (Vs)					
Input Voltage Limits	-80		+80	V	-80V continuous, > 38 V if ≤ 550 ms, duty $< 1\%$
Input Voltage - Operating	+8.5		+36	V	
Input Current		12		mA	No load, quiescent DC
Rejection Ratio		> 120		dB	
Temperature Range (T_A)	-40		+85	°C	
Mass		38		grams	
Shock Survival	-5000		+5000	g	Any axis for 0.5 ms, powered or unpowered

Data subject to change without notice

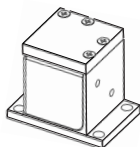
*Identical sensors are interchangeable, any with same range have same value

Mechanical

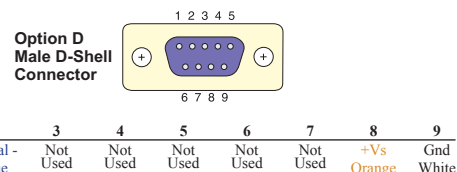


6061-T6 aluminum case with electroless nickel finish plus integrated cable with shield bonded at the case

Shown with
34170B
mounting
adapter (sold
separately)



Connections



Ordering Information

13203CC	-	R015	-	B800	-	T2.5B
Instrument 13203CC						
Range						
R015 : ± 15 g						
R010 : ± 10 g						
R006 : ± 6 g						
R005 : ± 5 g						
R004 : ± 4 g						
R003 : ± 3 g						
R002 : ± 2 g						
R001 : ± 1 g						
Bandwidth						
B800 : 0 to 800 Hz						
B380 : 0 to 380 Hz						
B208 : 0 to 208 Hz						
B142 : 0 to 142 Hz						
B094 : 0 to 94 Hz						
B066 : 0 to 66 Hz						
B031 : 0 to 31 Hz						
B6.6 : 0 to 6.6 Hz						
Connector						
A : None, tinned leads						
B : None, DIN 46228 terminal tubes						
C : 6-pin M12 connector						
D : 9-pin DB9M connector						
Termination Length						
T2.5 : 2.5 ft. cable						
T004 : 4 ft. cable						
Tnnn : Custom length, nnn ft. (call SI)						

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