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Find the *Moog / Crossbow Technology IMU400CA-100* at our website: *Click HERE*

New

IMU

6DOF INERTIAL MEASUREMENT UNIT

- High Stability MEMS Sensors
- Gyro and Accel Range Options
- Analog and Digital Outputs
- No Calibration Required
- EMI & Vibration Resistant



Applications

- Navigation and Control
- Marine Dynamics
- Vehicle Testing

IMU400CC

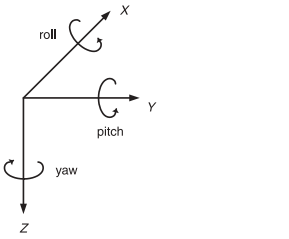
The IMU400CC is a high performance solid-state six-degree-of-freedom (6DOF) Inertial Package intended for OEM Navigation and Control, dynamics testing and instrumentation applications. This high reliability strap-down inertial system provides accurate measurement of angular rate and linear acceleration.

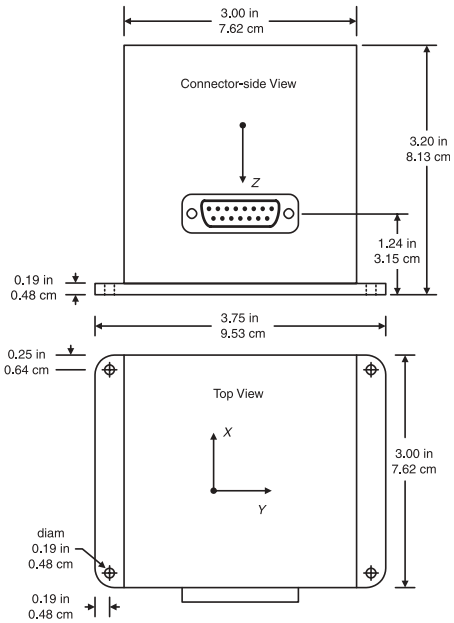
The IMU400CC series product builds on the performance of the IMU400CB series. It features higher performance sensors, including new silicon MEMS gyroscopes with wider bandwidth and improved bias stability. New design features in the IMU400CC series reduce sensitivity to vibration and EMI.

The IMU400CC achieves its excellent performance by employing proprietary algorithms to characterize and correct for the effects of temperature, linearity and misalignment. Fully compensated angular rate and acceleration outputs are provided in both analog and digital (RS-232) formats.

Crossbow continues to manufacture the IMU300 series, although it recommends the IMU400 for most applications. Contact Crossbow for more information on the IMU300.

Each Inertial System comes with a User's Manual offering helpful hints on programming, installation, and product information. In addition, Crossbow's GYRO-VIEW software is included to assist you in system development and evaluation, and allows you to perform data acquisition.





inertial systems

Document Part Number: 6020-0020-01

Analog Technology Group | Quality Instrumentation | Outstanding Delivery (949) 833-3050 | E-mail: sales@atg.com

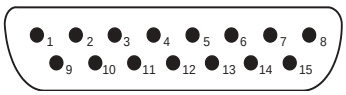
Specifications	IMU400CC-100	IMU400CC-200	Remarks
Performance			
Update Rate (Hz)	> 100	> 100	Continuous Update Mode
Start-up Time Valid data (sec)	< 1	< 1	
Angular Rate			
Range Roll, Pitch, Yaw (°/sec)	± 100	± 200	
Bias: Roll, Pitch, Yaw (°/sec)	<± 1.0	<± 1.0	
Scale Factor Accuracy (%)	< 1	< 1	
Non-Linearity (% FS)	< 0.3	< 0.3	
Resolution (°/sec)	< 0.025	< 0.05	
Bandwidth (Hz)	> 25	> 25	-3 dB point
Random Walk (°/hr$^{1/2}$)	< 2.25	< 4.5	Typical
Acceleration			
Range X/Y/Z (g)	± 2	± 10	
Bias: X/Y/Z (mg)	<± 8.5	<± 12	
Scale Factor Accuracy (%)	< 1	< 1	
Non-Linearity (% FS)	< 1	< 1	
Resolution (mg)	< 0.25	< 1.25	
Bandwidth (Hz)	> 75	> 75	-3 dB point
Random Walk (m/s/hr$^{1/2}$)	< 0.1	< 0.5	
Environment			
Operating Temperature (°C)	-40 to +71	-40 to +71	
Non-Operating Temperature (°C)	-55 to +85	-55 to +85	
Non-Operating Vibration (g rms)	6	6	20 Hz - 2 KHz random
Non-Operating Shock (g)	1000	1000	1 ms half sine wave
Electrical			
Input Voltage (VDC)	9 to 30	9 to 30	
Input Current (mA)	< 250	< 250	
Power Consumption (W)	< 3	< 3	at 12 VDC
Digital Output Format	RS-232	RS-232	"See Digital Data Format"
Analog[1] Range (VDC)	± 4.096	± 4.096	Pins 8, 9, 10, 12, 13, 14
	0 to 5.0	0 to 5.0	Pins 5, 6, 7
Physical			
Size (in)	3.0 x 3.75 x 3.2	3.0 x 3.75 x 3.2	Including mounting flanges
(cm)	7.62 x 9.53 x 8.13	7.62 x 9.53 x 8.13	Including mounting flanges
Weight (lbs)	< 1.4	< 1.4	
(kg)	< 0.64	< 0.64	
Connector	15 pin sub-miniature "D" male		

Notes:

[1]All DAC Analog outputs are fully buffered and are designed to interface directly to data acquisition equipment

Specifications subject to change without notice

15 Pin "D" Connector Male Pinout



Pin	Function
1	RS-232 Transmit Data
2	RS-232 Receive Data
3	Input Power
4	Ground
5	X-axis accel voltage[1]
6	Y-axis accel voltage[1]
7	Z-axis accel voltage[1]
8	Roll-axis angular rate[2]
9	Pitch-axis angular rate[2]
10	Yaw-axis angular rate[2]
11	NC – Factory use only
12	X-axis acceleration[3]
13	Y-axis acceleration[3]
14	Z-axis acceleration[3]
15	NC – Factory use only

Notes

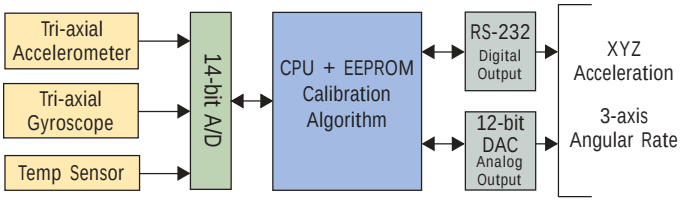
1 The accelerometer voltage outputs are taken directly from the accelerometers without compensation or scaling.

2 The angular rate analog outputs are scaled to represent degrees/second. Outputs are created by a D/A converter.

3 Actual output depends on IMU measurement mode.

Pin Diagram





IMU Block Diagram

Ordering Information

Model	Description	Gyro (°/sec)	Accel (g)
IMU400CC-100	High performance 6 DOF IMU	± 100	± 2
IMU400CC-200	High Performance 6 DOF IMU	± 200	± 10

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