

TACTICAL INERTIAL MEASUREMENT UNIT (IMU)

FEATURES

- Miniature in size
- High Dynamic Range
- Low Bias Instability
- Low Angle Random Walk
- Continuous Self-Diagnosis
- High mechanical Shock Survivability
- Digital SPI Interface



APPLICATIONS

- Guidance, Navigation and Control
- Drone Navigation and Control
- Unmanned Ground Vehicle
- Flight Control Systems
- Robotics
- Guided Projectiles

DESCRIPTION

The Castor series, Model: CSTR-IMU1640 is a high-end tactical class inertial measurement unit consisting of high-performance triaxial MEMS Accelerometer and triaxial Gyroscope sensors based on latest MEMS technology. The IMU is equipped with a high-speed processor that runs superior digital signal processing algorithms delivering control grade inertial measurement data. The IMU output is available over a Digital SPI interface. Its rugged and modular design makes it suitable for integration with control computers and other application hardware.

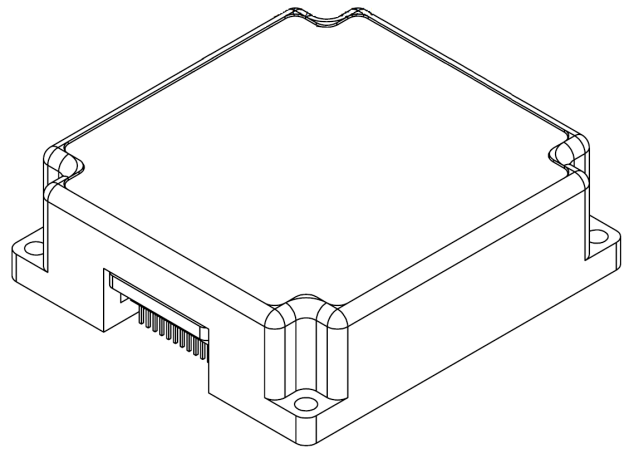
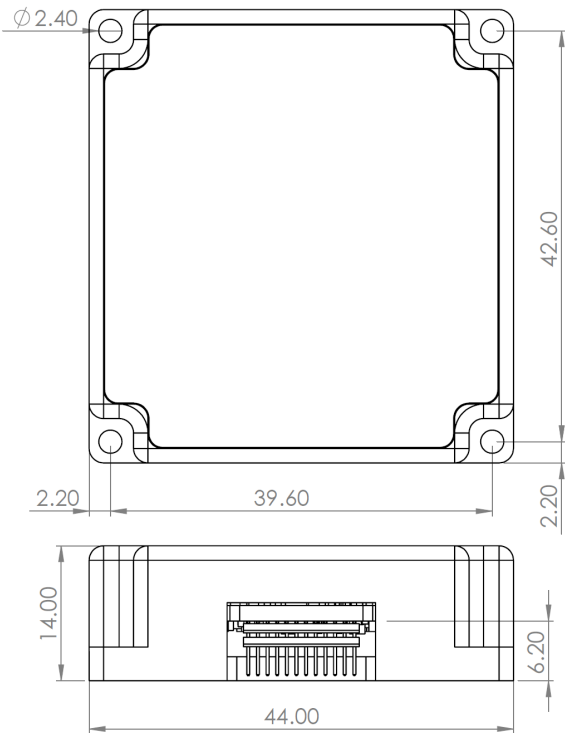
The sensing elements of each axis are factory-calibrated for bias, mis-alignment and are compensated for temperature effects to be usable across the entire operating temperature range. The miniature MEMS IMU, CSTR-IMU1640 offers <1 °/hr bias instability performance and is suitable for inertial guidance and control applications where size is the constraint.

TECHNICAL SPECIFICATIONS

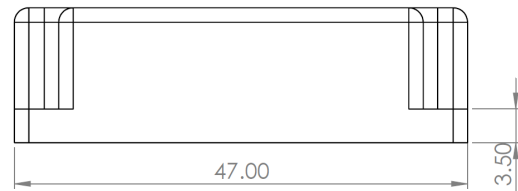
Parameter Name	Parameter Value
	CASTOR
	IMU1640
Acceleration	
Range (g)	±16 g / ±40 g (overrange)
Bias Instability (µg)	<20
Bias Repeatability (mg)	±1.5
Raw Bandwidth (Hz)	400
Gyro	
Range (°/s)	±480
Bias Instability (°/hr)	<1
Bias Repeatability (°/s)	±0.03
Raw Bandwidth (-3 dB) (Hz)	400
ARW (°/sqrt(hr))	<0.15
Electrical	
Input Voltage (V DC)	3 to 3.6
Power Consumption (W)	<1
Diagnostics	Onboard Temperature, Voltages, Sensor Health
Update Rate (Hz)	Up to 4250
Interface	SPI, 4 x Digital I/Os
Physical	
Dimensions (mm)	47 (L) x 44 (W) x 14 (H)
Weight (gm)	<80
Environmental	
Operating Temperature (°C)	-40 to +71
Survival Shock (g)	Up to 1500

MECHANICAL DIMENSIONS

All the dimensions in mm



ISOMETRIC VIEW FOR REFERENCE



ORDERING INFORMATION

CSTR - IMU1640 (Product Code: 26002)