

# MT6 Miniature Inertial Measurement Unit

The MT6 is a miniature inertial measurement unit, providing serial digital output of 3D acceleration data and 3D rate of turn (gyro) data. The MT6 excellently matches the needs of those who want to measure kinematics, dynamics and orientation of objects and human body segments.

## Features

- 3D acceleration, rate of turn data available
- high update rate, max. 512 Hz
- all solid state miniature MEMS inertial sensors inside
- compact design
- digital serial input/output
- temperature compensation in software
- easily integrated in any system/application
- Software Development Kit available for easy integration in OEM applications

## Fields of use

- Biomechanics
- Animation
- Virtual Reality/Augmented Reality
- Robotics
- Aerospace
- Autonomous vehicles
- Marine industry
- Bore industry

The MT6 is a miniature digital inertial measurement unit that measures 3D rate-of-turn and acceleration.

The MT6 can be used with Xsens' software to provide easy to use, calibrated sensor outputs. The MT6 can easily be integrated in any system or application in biomedical and industrial applications, for measurement of body motion, balance and stabilization, navigation or control.



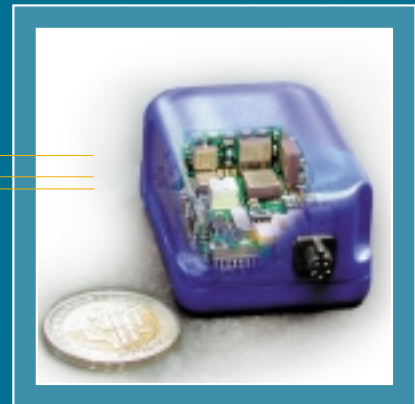
# Specifications MT6-B

## Sensor performance

		rate of turn	acceleration	temperature
Unit		[deg/s]	[m/s <sup>2</sup> ]	[°C]
Dimensions		3	3	-
Full Scale	(units)	+/- 900	+/- 20	-55...+125
Linearity	(% of FS)	0.1	0.2	<1
Bias stability	Compensated	5	0.02	-
	(units 1 $\sigma$ ) <sup>(1)</sup>			
Scale factor stability	Uncompensated	1	0.02	-
	(units per °C) <sup>(2)</sup>			
Scale factor stability	Compensated	-	0.05	-
	(% 1 $\sigma$ ) <sup>(1)</sup>			
Noise	Uncompensated	0.15	0.03	-
	(% per °C) <sup>(2)</sup>			
Alignment error <sup>(4)</sup>	(units RMS)	0.7	0.01	0.0625 <sup>(3)</sup>
Bandwidth	(deg)	0.1	0.1	-
	(Hz)	50	30	-

## Physical Specifications

Interface:	Serial (RS-232 max 460k8 bps)
Operating Voltage:	5.5 V (adapter available)
Supply Current:	30 mA
Ambient Temperature	
Operating Range:	0°C - 55°C
Outline Dimensions:	39 x 54 x 28 mm (W x L x H)
Weight:	35 g



## Absolute maximum ratings<sup>(6)</sup>

Shock (any axis):	5000 m/s <sup>2</sup> (500 g) powered 10000 m/s <sup>2</sup> (1000 g) unpowered
Supply Voltage:	-0.3 V ... 12 V
Operating/Storage Temperature:	-5 °C ... 60°C

NOTE: Drops onto hard surfaces can cause shocks of greater than 5000 m/s<sup>2</sup> and exceed the absolute maximum rating of the device. Vibrations can damage the device; refer to technical documentation for details. Care should be taken when handling to avoid damage.

- <sup>1</sup> temperature compensated, deviation over operating temperature range (1 $\sigma$ )  
<sup>2</sup> not compensated for temperature, temperature dependence dominating error source  
<sup>3</sup> minimal resolution of digital readout, absolute accuracy is  $\pm 0.5$  °C  
<sup>4</sup> after compensation of non-orthogonality in software  
<sup>5</sup> stresses above Absolute Maximum Ratings may cause permanent damage to the device; for vibration survival refer to technical documentation

