

OEM Orientation Sensor

Model V9.1G



Small, rugged and lightweight, the Model V9.1G Orientation Sensor is an extremely compact, eight-degree-of-freedom orientation board that gives true orientation in world coordinates. It features a wide range of VIN, from 2V to 18V. In addition to true orientation, raw output of the 3-axis magnetometer, 3-axis accelerometer and 2-axis gyro (pitch and yaw) sensors are easily accessible. Customizable user-settable addresses allow multiple sensors to be daisy-chained together. A USB to RS485 adapter is available to provide power and communication.

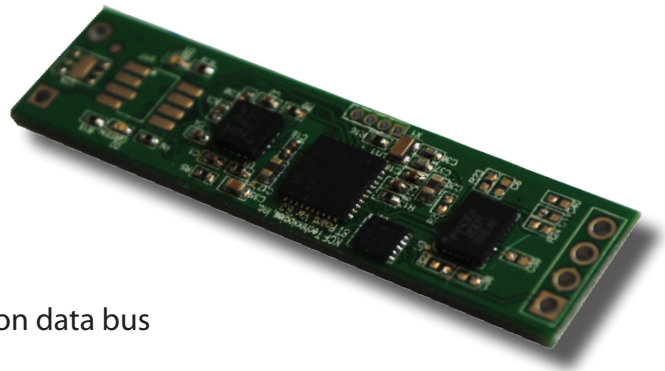
Applications

- Robotics
- Research
- OEM industrial products

Features

- Small footprint
- Unique serial address allows multiple sensors on data bus

Note: 3D orientation uses accelerometer and magnetometer sensors only.



Specifications

Sensors

Accelerometer

Range: x,y,z: +/- 2 g
or +/- 6 g
Bandwidth: x,y,z: 1.8 kHz
Nonlinearity: 0.50% FS

Magnetometer

Range: +/- 6 Gauss
Nonlinearity:
+/- 1 gauss 0.1% FS
+/- 3 gauss 0.4% FS
+/- 6 gauss 1.4% FS
Bandwidth: 5 MHz

Gyro

Range: y, z: +/- 300°/sec
or +/- 1200°/sec
Resolution: y,z: 140 Hz

General

Orientation Range: x,y,z: 360°
A/D Resolution: 10 bit
Orientation Accuracy: +/- 0.5° typical for static test conditions
+/- 5.0°
Orientation Resolution: +/- 2.0°
Output Options: Acceleration (x,y,z), Magnetic field (x,y,z),
Actual orientation in world coordinates,
Angular rate (y,z)
Interface: RS485
Data rate: 72 Hz
Filtering: Sensors sampled at 144 Hz and filtered
Baud rate: 115200 baud

Supply voltage: 2-20 volts DC
Power consumption: Less than 320 mW

Mechanical

Connectors: 4 holes, 0.05" dia,
0.1" spacing on circuit board
Dimensions: 12.7 mm x 51 mm x 6.2 mm /
0.5" x 2.0" x 0.24"
Weight: 3.8 grams / 0.134 ounces
Shock Limit: 1000 g (unpowered), 500 g (powered)
Operating Temp: -40°C to +75°C / -40°F to +167°F

Product Information:
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