OEM SENSORS.COM™

Wireless Compass Sensor

Technical Overview

General Description

The wireless compass sensor uses a highly sensitive 3 axis digital compass to return the orientation of the device in regards to magnetic north. Great for tracking directional behavior and positioning.

Features

- 3-Axis Magnetoresistive Sensors.

Principle of Operation

The OEM Wireless Digital Compass uses a 3-Axis magnetoresistive sensor to accurately measure both the direction and the magnitude of Earth's magnetic fields. The sensor converts any incident magnetic field in the sensitive axis directions to a differential voltage output which the device then converts to directional information which is reported to the software.

OEM Sensor Core Specifications

- Power: 3.0 V coin cell battery
- Communication: RF 900, 868 and 433 MHz
- Antenna: 4" wire antenna
- Operating Temperature: -40° to 85°C (-40° to 185°F)
- Device Range: 250 - 300 ft. non-line-of-sight*
- Only 1 inch by 1 inch

* Actual range may vary depending on environment.

Applications

- Digital Compass
- Device Orientation
- Device Directional Movement
- And many more...

Specifications	
Supply Voltage	2.0 - 3.6 VDC *
Current Consumption	0.7 µA (sleep mode) 2 mA (radio idle/off mode) 2 mA (measurement mode) 25 mA (radio RX mode) 35 mA (radio TX mode)
Operating Temperature Range	-40°C to +85°C (-40°F to +185°F) **
Performance	0.7% BFSL Accuracy
Available Frequencies	900 MHz (25 Ch.), 868 MHz (5 Ch.) and 433 MHz (15 Ch.)
Certifications FC CE Industry Canada	900 MHz product; FCC ID: ZTL-RFSC1 and IC: 9794A-RFSC1. 868 and 433 MHz product tested and found to comply with: CISPR 22:2008-09 / EN 55022:2010 - Class B and ETSI EN 300 220-2 V2.4.1 (2012-05).

Technical Specifications	
Field Range (Full scale (FS) - total applied field)	-8 to +8 gauss
Mag Dynamic Range (3-bit gain control)	±1 to ±8
Resolution (VDD=3.0V, GN=2)	5 milli-gauss typ.
Linearity (±2.0 gauss input range)	0.1 ±% FS max
Hysteresis (±2.0 gauss input range)	±25 ppm typ.
Cross-Axis Sensitivity (Cross field = 0.5 gauss)	±0.2% FS / gauss
Output Rate (Continuous Measurement Mode)	0.75 to 75 Hz
Output Rate (Single Measurement Mode)	160 Hz max
Measurement Period	6 msec typ.
Gain Tolerance	±5%
Gain Tolerance (Ambient, unbiased)	-40 to +125°C
Operating Temperature Range (Board Circuitry and Battery)	-20°C to +60°C (-4°F to +140°F) **
Optimal Battery Temperature Range (Coin Cell)	+10°C to +50°C (+50°F to +122°F)

* Hardware can not withstand negative voltage. Please take care when connecting a power device.
** At temperatures above 100°C, it is possible to lose programmed memory.

For more product information, to get a quote, or to place an order, please contact our sales department at 801-561-5555. Visit us on the web at www.oemsensors.com.

OEMSensors.com | 7304 South Cottonwood, Suite #204 | Midvale, Utah 84047 | 801-561-5555 | www.oemsensors.com