



Part Number: SEN0192

Description: Gravity: Digital Microwave Sensor (Motion Detection)

INTRODUCTION

The microwave sensor applies the Doppler effect to detect moving objects using microwaves. This differs from the method used by a regular [infrared \(IR\) sensor](#) as microwave is sensitive to a variety of objects that are microwave-reflective, and its sensor readings are not affected by the ambient temperature.

This type of microwave sensor is widely used in industrial, transportation and civil applications such as measuring vehicle speed, liquid levels, automatic door motion detection, automatic washing, production line material detection and car reversing sensors etc.



The microwave detection method has the following advantages compared to other methods:

1. Non-contact detection
2. Readings not affected by temperature, humidity, noise, air, dust or light - suitable for harsh environments
3. Strong resistance to radio frequency interference
4. Low output, unharmed to human
5. Wide detection range and high velocity
6. Supports non-living object detection

APPLICATIONS

The microwave sensor can be useful together with other sensors to enhance its measurement accuracy. For example, [Microwave sensor](#) could decrease the pseudo fault report rate of human motion detection. And it does a good job in safety & security work.

SPECIFICATION

- Working Voltage: 5V + 0.25V
- Working Current (CW): 60mA max., 37mA typical
- Interface: Gravity 3-Pin interface (Digital)
- Size: 48.5x63mm
- Emission parameters:
 - Detection Distance: 2-16M continuously adjustable
 - Emission Frequency: 10.525 GHz
 - Precision Frequency Setting: 3MHz
 - Output Power (minimum): 13dBm EIRP
 - Harmonic Emission: < -10dBm
 - Average Current (5%DC): 2mA typ.
 - Pulse Width (Min.): 5uSec
 - Load Cycle (Min.): 1%
- Reception Parameters:
 - Sensitivity:(10dB S/N ratio) 3Hz to 80Hz
 - Bandwidth: -86dBm
 - 3Hz to 80Hz Bandwidth Clutter: 10uV
 - Antenna Gain: 8dBi
 - Vertical 3dB Beam Width: 36 degrees
 - Level 3dB Beam Width: 72 degrees

SHIPPING LIST

- Microwave Sensor x1
- [Digital Sensor Cable](#) x1