

# IR Break Beam Sensor (50cm)

SEN0503

## Product Overview

12-02-2022

For the most up-to-date information, visit [www.mouser.com](http://www.mouser.com) or the supplier's website.

## Description

DFRobot SEN0503 IR Break Beam Sensor (50cm) are infrared break-beam sensors that are a simple way to detect motion. This IR break beam sensor detects objects up to 50cm away with a fast and stable response of <2ms. The IR break sensor is easy to install in narrow spaces as it comes in 20mm x 10mm x 9mm dimensions. This SEN0503 operates between -25°C to 60°C temperature range and a 3V<sub>DC</sub> to 5V<sub>DC</sub> voltage range.



The SEN0503 sensor works by having an emitter that sends out a beam of human-invisible IR light, then a receiver across the way that is sensitive to that same light. When something passes between the two and is not transparent to IR, the beam is broken, and the receiver will output a signal to let the user know. In smart robot competitions, this IR sensor can be used with Arduino for simple motion detection, speed detection, and timing.

## Features

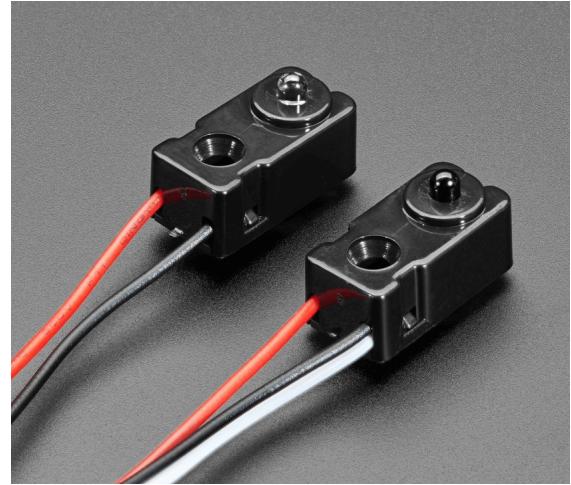
- Fast and stable response speed
- It can be conveniently installed in a narrow space

## Specifications

|  |   |
|--|---|
| • 50cm/(5V), 20cm/ (3.3V) induction distance           | • Indoor (not waterproof) working environment |
| • Induction method:                                    | • 20mm x 10mm x 9mm (LxWxH) dimensions        |
| • Through-beam type (non-transparent)                  | • 25cm/9.84-inch cable length                 |
| • 3V <sub>DC</sub> to 5V <sub>DC</sub> working voltage | • 3mm/0.12-inch light hole                    |
| • 25mA working current                                 | • Transmitter:                                |
| • NPN normally opens the output mode                   | • Red wire = 5V <sub>DC</sub>                 |
| • 100mA output current (can directly drive the relay)  | • Black wire = GND                            |
| • Straight line (infrared light) emitting angle        | • Receiving:                                  |
| • < 10° receiving angle                                | • Red wire = 5V <sub>DC</sub>                 |
| • 2ms response time                                    | • Black wire = GND                            |
| • -25°C to 60°C working temperature                    | • White wire = Out (NPN)                      |

## Kit Contents

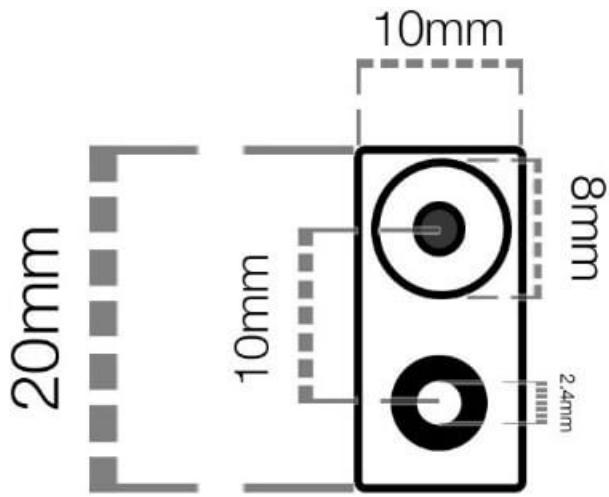
- 1x IR break beam sensor (50cm) - receiver
- 1x IR break beam sensor (50cm) - transmitter



## Applications

- Simple motion detection
- Speed detection
- Timing

## Sensor Dimensions



## Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/dfrobot/dfrobot-sen0503-ir-break-beam-sensor/>