

IR Sensor

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The **iTriangle - IR Distance Interrupter** is used to detect any object blocking the path of light. The module consists of an IR LED and photosensor (phototransistor) pair. The light emitted by the IR LED is reflected by any object placed in front of the sensor. This reflection is detected by the photosensor (phototransistor). Any white (or lighter) coloured surface reflects more than a black (or darker) coloured surface.

When the reflected light is detected, it produces a **Digital HIGH** (or Binary **1**) output on the **SIG** pin. The on-board LED indicator will also glow. If no reflection is detected or if the object is too far from the sensor, the output on the **SIG** pin stays at **Digital LOW** (Binary **0**). The on-board LED indicator will be off as well. The detectable range of this sensor is 7.5-40 cm. The module incorporates a Rail-to-Rail Operational Amplifier to amplify the output of phototransistor. There is a potentiometer that can be used to adjust the gain of the amplifier (detection sensitivity).

With this sensor, you can build the following (but not limited to) applications: **line-following robots, optical encoders** and **object counting applications**.

Features

- iTriangle compatible and easy to use
- Highly sensitive and reliable
- Larger detectable distance
- Adjustable sensitivity for various occasions
- More durable

Specifications

Parameter	Value
Operating voltage(V)	3.3 or 5 Volts
Operating current(mA)	Maximum: 20 mA

Parameter	Value
Effective detectable distance	7.5–40 cm
Weight	2.5 g (for the module), 8.5 g (packaged)

Hardware Overview

- **ITR9909 Reflective photosensor** – highly sensitive reflective photosensor.
- **LM393 operational amplifier** – rail-to-rail operational amplifier.
- **LED Indicator** – the LED will turn on when the received infrared light intensity exceeds a preset level.
- **Light sensitivity adjusting potentiometer** – adjust the sensitivity of reflective photosensor to light.

Revision #5

vytvořené 2 roky nazpět uživatelem [Admin](#)

aktualizováno 2 roky nazpět uživatelem [Jiri Krulis](#)