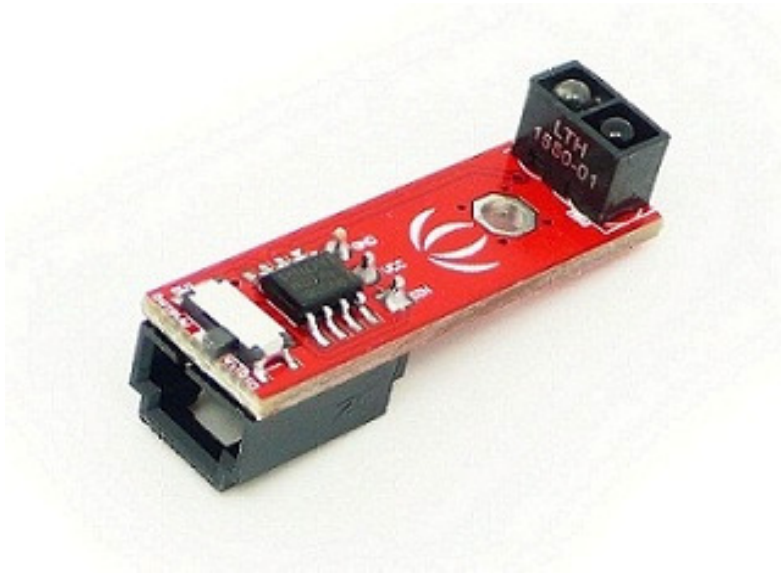


Electronic brick – Line Finder



Line finder is designed for line following robotic. It consists two parts - an IR emitting LED and an IR sensitive phototransistor. It can output either analog signal or digital signal to a microcontroller so the robot can reliably follow a black line on a white background, or vice versa.

Features

- Electronic brick compatible interface
- Small size
- 5V DC power supply
- Indicator LED
- Analog/ digital output
- Distance adjustable
- 3mm screw hole for mounting

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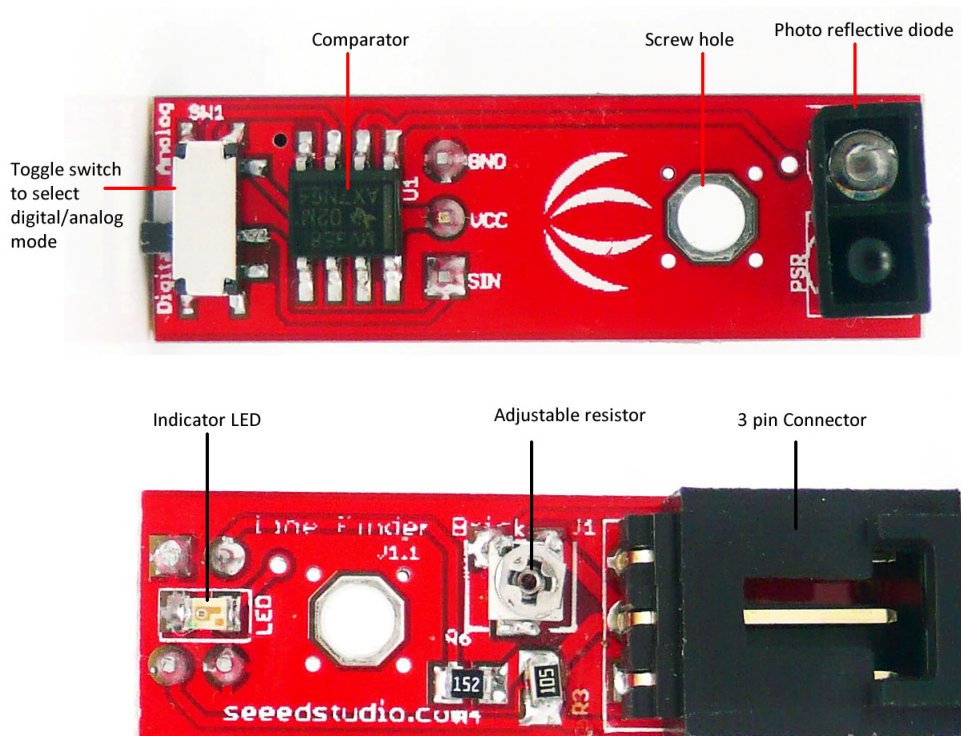


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Specifications

Indicator LED	Red (lighten shows black line detected, ignore it in analog mode)
Power supply	5V DC
Digital output mode	TTL (High when black is detected, Low when white is detected)
Analog output mode	0-4.6V
Connector	3 pin Buckled Electronic Brick interface
IO structure	2 power pins and 1 signal pin
Connectivity	Compatible with Arduino
Dimension	11mm*34mm*1.6mm
ROHS	YES

Structure overview



Comparator: MV358

MV358 is used as voltage comparator.

>>Datasheet:

<http://www.xyk-ic.com/product-details.asp?id=16858>

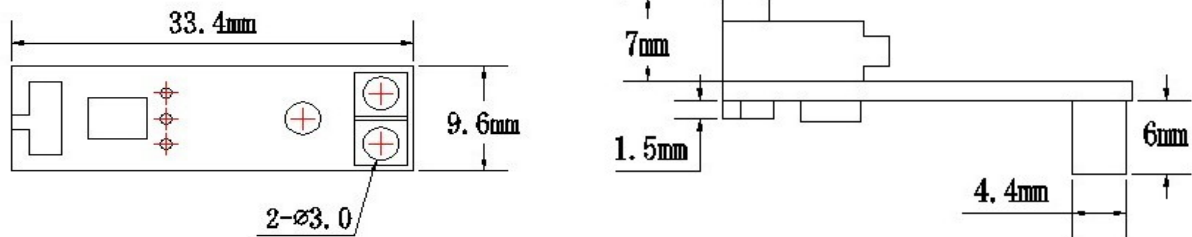
Photo reflective diode: RS-06WD

RS-06WD is designed to detect surface color.

>>Datasheet:

<http://www.watirony.com/eng/>

Dimensions



Hardware Installation

1. Digital output mode

In this mode, the brick will return HIGH when black line is detected, and LOW when white line is detected.

Using the adjustable resistor the detection range can be changed from 1.5cm to 5cm.

If the sensor can't tell between black and white surfaces, you can also use the adjustable resistor to set a suitable reference voltage. The default reference voltage is 3.3V.

2. Analog output mode

In this mode, the brick will return an analog voltage value, which depends on the surface color.

In analog mode using adjustable resistor cannot affect the detection range; it can only affect the LED trigger voltage. Since the LED is just for reference, you could turn it off by adjusting the trigger voltage.

Revision History

Rev.	Descriptions	Release date
1.0	Initial public release	11.08.2010