

# Laser Sensor User Manual

## 1. Features

Boost converter chip	PT1301
Operating voltage	2.5V-5.0V
Dimensions	53.0mm*18.0mm
Fixing hole size	2.0mm
Effective distance	0.8m(typ), 1.5m(max)

Operating principle:

A laser sensor contains a transmitter and a receiver.

In the transmitter, there is an oscillating tube can generate a shockwave in a frequency of 180KHz. After amplified by a transistor, the shockwave is applied to the laser tube for exciting.

In the receiver, there is a receiving tube, matching to the oscillating tube, can receive the reflected light. Since the laser sensor adopts modulation processing technology, the receiving tube can only receive the reflected light in a same frequency, efficiently preventing from the visible light.

## 2. Applications

This module can be applied to obstacle detection, counter device in the pipeline intellectual robot, obstacle avoidance car, etc.

## 3. Interface

Pin No.	Symbol	Descriptions
1	DOUT	Digital output
2	GND	Power ground
3	VCC	Positive power supply (2.5V-5.0V)

## 4. How to use

We will illustrate the usage of the module with an example of obstacle detection by connecting a development board.

- ① Download the relative codes to the development board.
- ② Connect the development board to a PC via a serial wire and the module to the development board. Then, power up the development board and start the serial debugging software.

Here is the configuration of the connection between the module and the development board.

Port	STM32 MUC pin
DOUT	GPIOA.4
GND	GND

VCC	3.3V
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Port	Arduino pin
DOUT	D2
GND	GND
VCC	5V

- ③ The detected result can be checked by a signal indicator on the module. The signal indicator will turn on, when a barrier is placed above the sensor.
- ④ And the signal indicator will turn off, when the barrier is away from the sensor.

**Notices: Laser directly to eyes is forbidden, which will hurt the eyes.**