TFmini-i LiDAR Laser Range Sensor

SEN0505

Product Overview

01-20-2023

For the most up-to-date information, visit www.mouser.com or the supplier's website.

Description

DFRobot TFmini-i LiDAR Laser Range Sensor is an industrial-grade medium-range distance sensor. The sensor has a maximum detection range of up to 12m and an adjustable frame rate of 1KHz. This rangefinder has a PC/ABS/PMMA enclosure with IP65 water and dust resistance. The TFmini-i LiDAR sensor supports a wide range of input voltages (7V to 30V) with reverse protection to protect the internal circuit and adopts the RS485 communication interface and standard Modbus protocol.

The TFmini-i LiDAR sensor features ±6cm (0.1m~6m) and ±1% (6m~12m) accuracy, 1cm distance resolution, 100Hz frame rate, and 70Klux ambient light immunity. This sensor also features a 100mA peak current, ≤0.8W @12V power consumption, 850nm central wavelength, and 2° Field Of View (FOV). The TFmini-i LiDAR sensor can be used on the Arduino UNO R3 through the TTL to RS485 shield and can also be used on the Raspberry Pi through the USB to RS485 module. Typical applications include the detection of vehicles and pedestrians, vehicle collision avoidance and safety warning systems, UAV-assisted takeoff and landing, and altimeters.

Features

- Wide range of input voltages (7V to 30V) with reverse protection
- RS485 interface communication
- Adjustable frame rate with a maximum of 1KHz
- Medium range detection (0.1m to 12m)
- IP65 protection for industrial application
- Compatible with Arduino UNO R3 and Raspberry Pi

Specifications

- Accuracy:
  - ±6cm (0.1m~6m), ±1% (6m~12m)
- 1cm distance resolution
- 100Hz frame rate
- 70Klux ambient light immunity
- -20°C to 60°C operating temperature range
- Enclosure rating:
  - IP65
- Operating range:
  - 0.1m to 12m @90% reflectivity
  - 0.1m to 7m @10% reflectivity
  - 0.1m to 12m @90% reflectivity and 70Klux
  - 0.1m to 7m @10% reflectivity and 70Klux
- 50mm x 34mm x 41mm dimensions
- PC/ABS/PMMA enclosure material
- 70cm cable length

Optical Parameters

- VCSEL light source
- 850nm central wavelength
- Photobiological safety:
  - Class(EN60825)
- 2° FOV

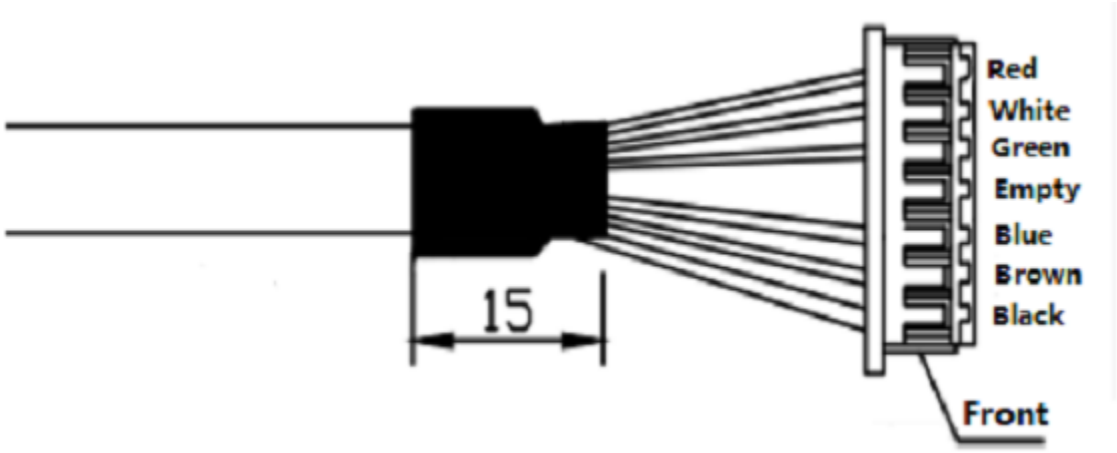
Electrical Parameters

- 7V to 30V supply voltage
- ≤65mA @12V average current
- ≤0.8W @12V power consumption
- 100mA peak current

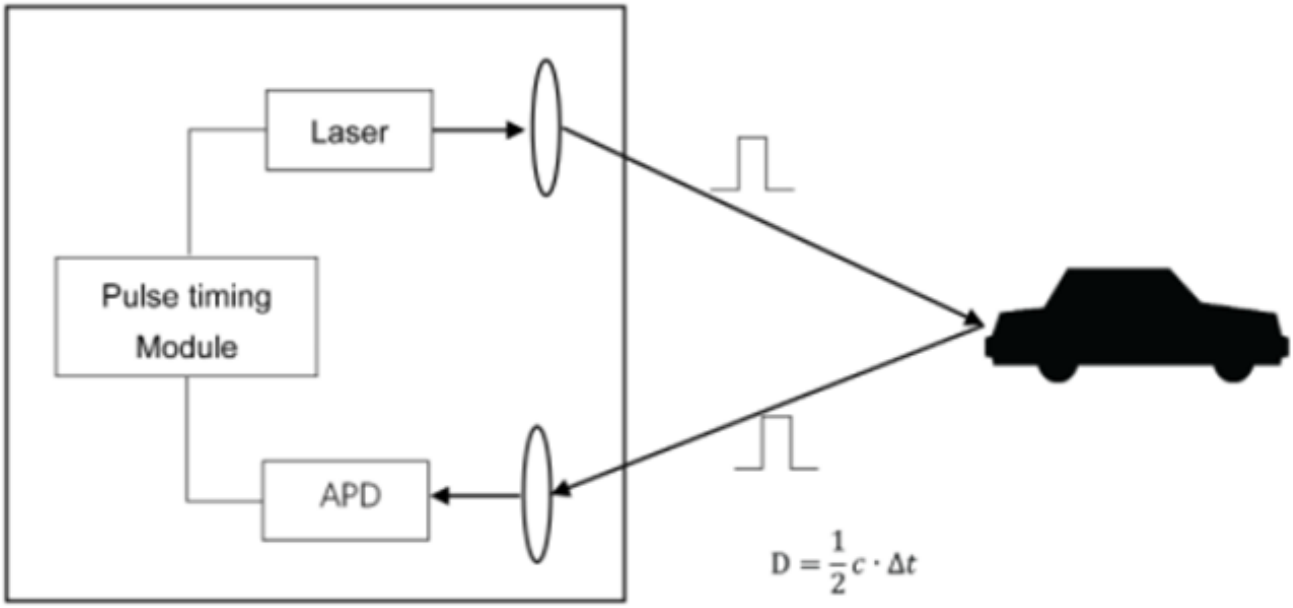
Applications

- Detection of vehicle and pedestrian
- Vehicle collision avoidance and safety warning systems
- UAV-assisted takeoff and landing
- Altimeter

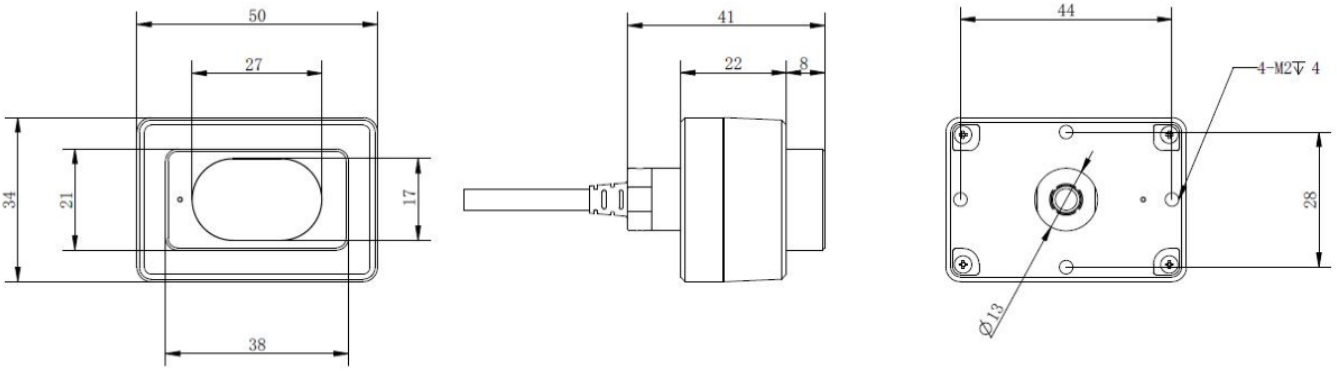
Pinout Diagram



Overview



Dimensions in mm



Mouser Part Number

View Part

To learn more, visit https://www.mouser.com/new/dfrobot/dfrobot-tfmini-ilLidar-sensor/