

TF02-i LiDAR Laser Range Sensor (40m)

SEN0504

Product Overview

11/30/2022

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

Description

DFRobot TF02-i LiDAR Laser Range Sensor (40m) is an industrial-grade medium-range distance sensor. This sensor comes with a maximum detection range of up to 40m with a 1KHz adjustable frame rate. The LiDAR laser range sensor consists of a PC/ABS/PMMA enclosure material with IP65 water and dust resistance. The TF02-i LiDAR features 7V to 30V wide range of input voltages with reverse protection to protect the internal circuit. The TF02-i LiDAR laser range sensor also features an RS485 communication interface and standard Modbus protocol. Typical applications include detecting vehicles and pedestrians, collision avoidance and safety warning systems, UAV-assisted takeoff and landing, and altimeter.



Features

- Adjustable frame rate with a maximum of 1KHz
- IP65 protection for industrial application
- Compatible with Arduino UNO R3 and Raspberry Pi

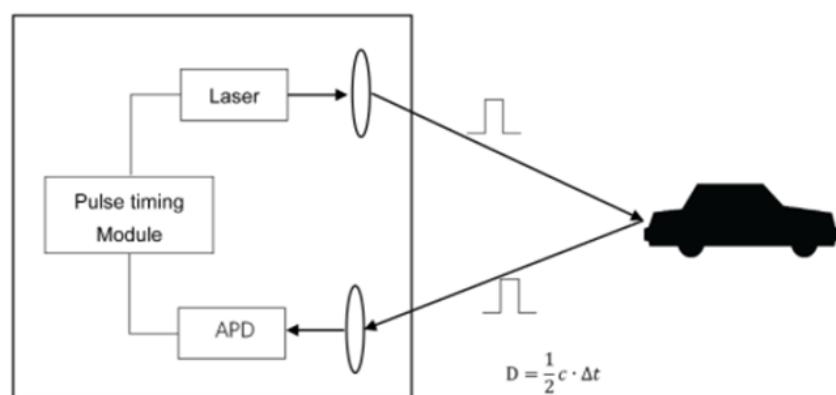
Applications

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

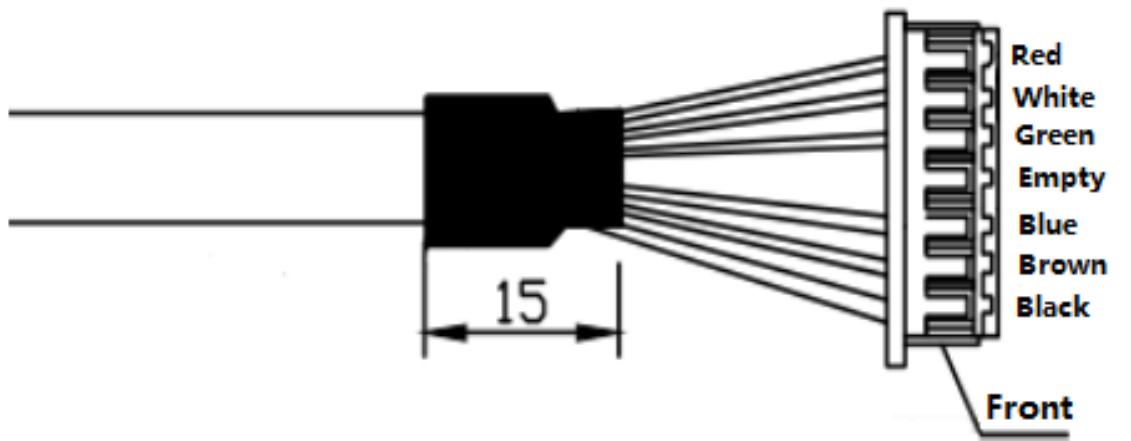
Specifications

- Product Performance:
 - Operating range:
 - 0.1m to 40m at 90% reflectivity
 - 0.1m to 13.5m at 10% reflectivity
 - 0.1m to 40m at 90% reflectivity and 100Klux
 - 0.1m to 13.5m at 10% reflectivity and 100Klux
 - $\pm 5\text{cm}$ (0.1m to 5m) and $\pm 1\%$ (5m to 40m) accuracy
 - 1cm distance resolution
 - 100Hz frame rate
 - 100Klux ambient light immunity
 - -20°C to 60°C operating temperature
 - $1\sigma < 2\text{cm}$ (0.1m to 35m at 90% reflectivity) repeatability
- Optical parameters:
 - VCSEL light source
 - 850nm central wavelength
 - Class1 (EN60825) photobiological safety
 - 3° FOV (Field of view)
- Electrical parameters:
 - 7V to 30V supply voltage
 - $\leq 70\text{mA}$ at 12V average current
 - $\leq 0.85\text{W}$ at 12V power consumption
 - 100mA peak current
- Others:
 - RS-485 communication interface
 - 69mm x 41.5mm x 31.5mm dimensions
 - PC/ABS/PMMA enclosure material
 - -30°C to 80°C storage temperature range
 - 60g weight (with cable)
 - 70cm cable length

Functional Diagram



Pinout Diagram



Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/dfrobot/dfrobot-tf02-i-lidar-sensor/>