![sparkfun START SOMETHING]

SHOP   **LEARN**   **BLOG**   **SUPPORT**

SparkFun Distance Sensor Breakout - RFD77402 (Qwiic)

◉ SEN-14539 ROHS✔ ✿ ⚡

~~$15.95~~ **$13.56**

-	-	+	+

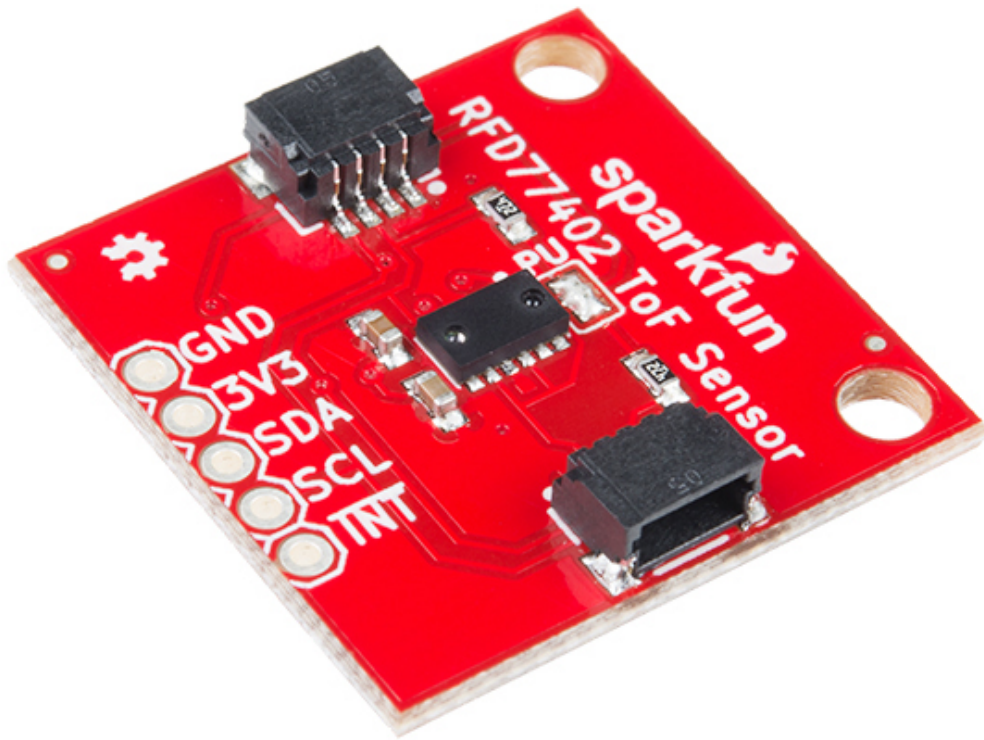Sale ends July 08, 2019 23:59 MDT

Stock availability

ℹ️ **Notice.** This product requires other products in order to function properly.
See essential products.

♡   ☰▾

15% off

ⓒ images are CC BY 2.0

~~$15.95~~ **$13.56**   - - + +

Sale ends July 08, 2019 23:59 MDT   Stock availability

DESCRIPTION   FEATURES   DOCUMENTS

The SparkFun Distance Sensor Breakout utilizes the RFD77402 3D ToF (Time of Flight) sensor module from Simblee to give you the most accurate measurements at short range. The RFD77402 uses an infrared VCSEL (Vertical Cavity Surface Emitting Laser) module to measure the amount of time it takes to bounce off a target. This allows low-cost millimeter readings up to two meters! To make it even easier to use this breakout, all communication is enacted exclusively via I^2C, utilizing our handy Qwiic system. However, we still have broken out 0.1" spaced pins in case you prefer to use a breadboard.

Thanks to the RFD77402's 850nm VCSEL and electronic driver and optical receiver sensor, this breakout is ideal for distance measurements ranging from 100mm to 2000mm, 1D gesture recognition, obstacle detection and avoidance in robotics applications, and more! The RFD77402 utilizes an I^2C interface that supports a direct 8-bit addressing scheme to access the module user's register set and an additional 16-bit indirect addressing scheme that is mainly used for debugging purpose or special operations.

The SparkFun Qwiic Connect System is an ecosystem of I^2C sensors, actuators, shields and cables that make prototyping faster and less prone to error. All Qwiic-enabled boards use a common 1mm pitch, 4-pin JST connector. This reduces the amount of required PCB space, and polarized connections mean you can't hook it up wrong.

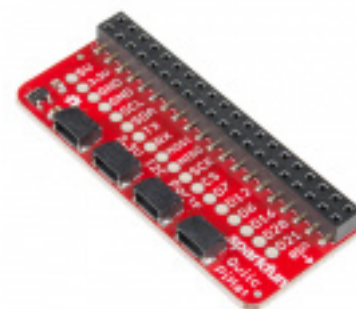**Note:** CLASS 1 LASER PRODUCT CLASSIFIED IEC 60825-1 2014.

GET STARTED WITH THE QWIIC RFD77402 BREAKOUT HOOKUP GUIDE

Hookup Accessories for SparkFun Distance Sensor Breakout - RFD77402 (Qwiic)
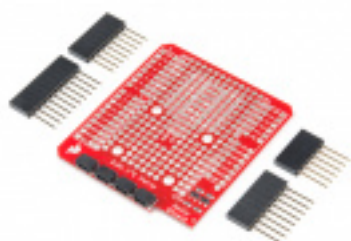
SparkFun Qwiic Shield for Arduino

SparkFun Qwiic HAT for Raspberry Pi

DEV-14352

~~$6.95~~

$5.91

DEV-14459

~~$5.95~~

$5.06

★★★★★ 1

Similar Items for SparkFun Distance Sensor Breakout - RFD77402 (Qwiic)

SparkFun Proximity Sensor Breakout - 20cm, VCNL4040 (Qwiic)

◉ SEN-15177

~~$6.95~~

$5.91

TF03 Long-Distance LiDAR Module

⊖ SEN-15180

$228.95

SparkFun Distance Sensor Breakout - RFD77402 (Qwiic) Product Help and Resources

TUTORIALS

VIDEOS

SKILLS NEEDED

Frequently Bought Together

Qwiic Cable - 100mm
◉ PRT-14427
$1.50

SparkFun Distance Sensor Breakout - 4 Meter, VL53L1X (Qwiic)
◉ SEN-14722
~~$21.95~~
$18.66
★ ★ ★ ☆ ☆ 6

| COMMENTS 12 | REVIEWS 0 |

Comments

⚙ Looking for answers to **technical questions?**

Log in or register to post comments.

Member #1488180 / about 7 months ago * / ★ 2

Are there 3d models or 2d drawings of the part that I can download? I am trying to use this in a custom robot and need to put the part in a 3d model of it or I need the hole dimensions to model it myself.

Thanks

Red Squirrel / about 3 months ago * / ★ 1

If there should only be one set of pull up resistors per I2C bus, then why do you (Sparkfun):

1) put the pull up resistors on each sensor/device (of which there can be many) rather than the microcontroller (of which there is only one)

2) close the pull up jumpers by default, requiring all but one to be opened

3) use solder to close the jumpers, requiring tedious desoldering on all but one peripheral? (So much for 'no soldering required')

I noticed that you did #1 (resistors on microcontroller) for the blynk board and #3 (trace instead of solder) for many products, but never #2 (default no pull up resistors). I would assume you have a reason for doing what you are doing but you have been very inconsistent with minor details like pull up resistors, power LEDs (why do some boards need them and some don't?), etc.

I want answers! :)

> **Englandsaurus** / about 3 months ago / ★ 2
>
> The Qwiic system has had quite a few features added to it since its inception (like the power LED, which is standard on many recent boards), we put pull-ups on everything because we never know when you'll be using an MCU/Slave that for some reason doesn't have them. We've moved towards trace jumpers on many of the recent Qwiic boards to eliminate production issues, although many old boards still have solder jumpers. Also, you can usually daisy chain quite a few Qwiic devices before running into the issue of too strong of a pullup on your I2C lines (This depends on MCU and cabling) so most of the time you shouldn't have to worry about removing pull-ups.
>
> In short, some of these minor details have changed as we've learned what exactly we want the system to look like. Hope this helps. We also put pull ups everywhere on the chance you're using some 3rd party product without them.
>
> > **M-Short** / about 3 months ago / ★ 1

One of the main reasons was microcontrollers may or may not have pullups and we wanted to make sure our I2C boards will plug and play. Whether or not your microcontroller has pullups or not you should be able to plug in the board and just get started, you only tend to start running into problems when you have quite a few (in which case the new trace solder jumpers are the easiest option for change). In other words what Englandsaurus said as well as wanting these to be as easy as possible to start with.

Red Squirrel / about 3 months ago / ★ 1

I'm glad I don't have to worry about removing every single pull up jumper/solder, although "quite a few" is vague. There is not much you can change now, but couldn't you have made a separate QWIIC pull up resistor board to put in any circuit that didn't already have a Sparkfun MCU/adapter board with them?

P.S. The power leds are keeping me up at night, literally. They shine through the 3d printed enclosure of my recent alarm clock project.

⚑ CF / about 3 months ago / ★ 2

You're free to make your own boards without LEDs and resistors if you wish.

Red Squirrel / about 3 months ago / ★ 1

I know but I choose "QWIIC" for a reason. Despite what I've said, its a great product line.

Talobab / about a year ago / ★ 1

Easy to setup and use, but I'm seeing +/- 6mm when 250 mm away... so don't expect a solid reading.

⚑ Englandsaurus / about a year ago / ★ 1

What is the object you are detecting the distance from out of curiosity?

Talobab / about a year ago / ★ 1

I tried it with several different objects to start, but for the final testing I used a white wall. Actually, if you look at your hookup guide, you'll even see similar numbers in the screenshots there... I just didn't catch that detail when I was reading it...

Member #413976 / about a year ago / ★ 1

Could this be used as a water level sensor, or would the signal just go through the water?

VonChurdhousen / about a year ago / ★ 1

I've seen the Lidar Lite go through glass. Depends on the attenuation coefficient for water at the wavelength, but in general it's not 100% for near ir. I would go with sonar for measuring water level. You could also float a reflector of appropriate material on the surface of the water if you want to use ir or are concerned about the wide beam angle from sonar.