



## SparkFun Differential I2C Breakout - PCA9615 (Qwiic)

BOB-14589

The SparkFun Differential I<sup>2</sup>C Breakout is the fastest and easiest way to extend the range of your I<sup>2</sup>C communication bus. The breakout uses NXP's PCA9615 IC, which converts the two default I<sup>2</sup>C signals into four differential signals, two for SCL and two for SDA. The differential signals are sent over an Ethernet cable, which attaches to the breakout through the on-board RJ-45 connectors. The differential signaling allows the I<sup>2</sup>C signals to reach distances of up to 100ft. while still maintaining their signal integrity! To make it even easier to get your readings, all communication is enacted exclusively via I<sup>2</sup>C, utilizing our handy Qwiic system so no soldering is required to connect it to the rest of your system. However, we still have broken out 0.1"-spaced pins in case you prefer to use a breadboard.

The simplicity of the Differential I<sup>2</sup>C Breakout is one of its biggest appeals. Other I<sup>2</sup>C communication methods require packetizing I<sup>2</sup>C communication into another protocol, be it RS-485 or 1-Wire. However, the PCA9615 keeps the I<sup>2</sup>C protocol by utilizing a differential transceiver.

Whether you need to extend the range of an I<sup>2</sup>C sensor on an autonomous vehicle plagued with noise from motors or want to create a vast sensor network in your home or office, the Qwiic Differential I<sup>2</sup>C Breakout is a great solution to extend distance and reduce noise susceptibility.

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*The SparkFun Qwiic connect system is an ecosystem of I<sup>2</sup>C 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.*

## FEATURES

- Uses the PCA9615 buffer
- I<sup>2</sup>C Supply voltage range 2.3-5.5V
- Differential Supply voltage range 3-5.5V
- draws 16 $\mu$ A of current
- Extends I<sup>2</sup>C bus up to 100 feet
- Data rate up to 400kHz
- 2x Qwiic Connectors

