SparkFun Qwiic Scale - NAU7802

SEN-15242

The SparkFun Qwiic Scale is a small breakout board for the NAU7802 that allows you to easily read load cells to accurately measure the weight of an object. By connecting the board to your microcontroller you will be able to read the changes in the resistance of a load cell and, with some calibration, you'll be able to get very accurate weight measurements. This can be handy for creating your own industrial scale, process control or simple presence detection. Utilizing our handy Qwiic system, 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.

By connecting a load cell to the Qwiic Scale you will be able to translate sensor data into something your microcontroller can read. The NAU7802 is an ADC with built in gain and I²C output to amplify and convert the readings from a standard load cell. A load cell is basically a device that translates pressure or force into electrical signals. In most cases this signal is very small and needs to be amplified. There are many popular chips that read the change and amplify it, but the NAU7802 goes one step further and converts everything to a true I²C output (attached to a Qwiic connector).

The board provides a four spring terminal to connect your load cell with no soldering required. In addition to the I²C pins, the board also breaks out an interrupt pin and AVDD to the edge of the board. The differential input signals (plus a second set of input signals) are broken out to the middle of the board, as well.

The SparkFun Qwiic connect system is an ecosystem of I²C 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

- Operating Voltage: 3.3V (NAU7802: 2.7V-5.5V)
- 24-bit Dual-Channel Analog to Digital Converter
- Programmable Gain Amplifier
- On-chip temperature sensor
- Simultaneous 50Hz and 60Hz rejection
- Programmable PGA gains from 1 to 128
- Programmable aDC data output rates
- External differential reference voltage range from 0.1V to 5V
- Low Power Consumption and Programmable Power Management Options
  - <1uA standby current
- 2x Qwiic Connectors