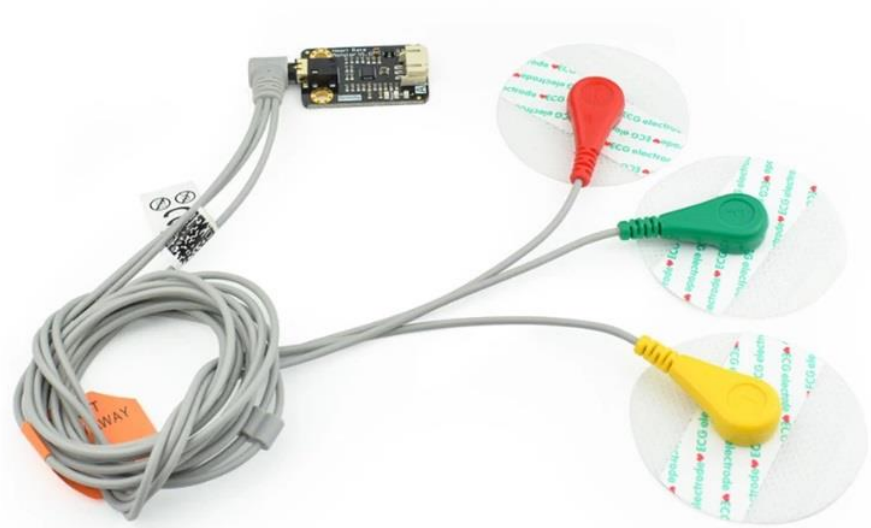
Gravity: Analog Heart Rate Monitor Sensor (ECG) for Arduino

Overview

The DFRobot Heart Rate Monitor Sensor is used to measure the electrical activity of the heart. This electrical activity can be charted as an ECG and output as an analog reading. An ECG signal can be extremely noisy so we have included an AD8232 chip on the PCB which will provide a clear signal from the PR and QT Intervals. Using the Arduino IDE "Serial Plotter" feature you are also able to view plotted ECG output on your PC!

Please Note: This product is NOT a medical device and is not intended to be used as such or as an accessory to such nor diagnose or treat any conditions.



Order Code

Order Code	Brand	Description
E36003-001	DFRobot	Gravity: MAX30102 PPG Heart Rate and Oximeter Sensor

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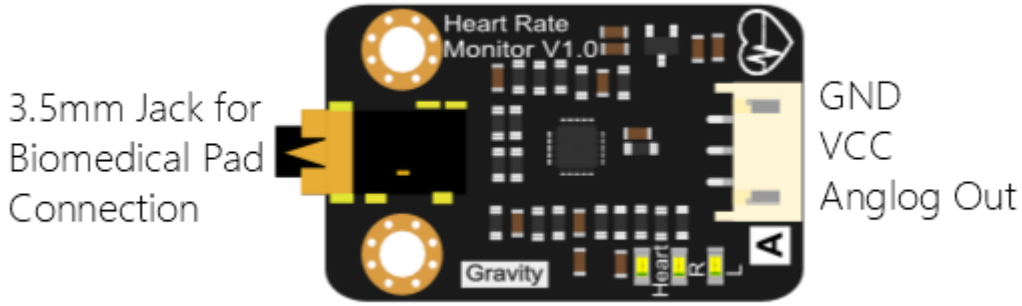
Specification

- Input Voltage: 3.3 - 6V (5V recommended)
- Output Voltage: 0 - 3.3V
- Operating current: <10mA
- Dimension: 35 x 22(mm), 1.378" x 0.866"(in)
- Interface Type: PH2.0-3P

Board Overview



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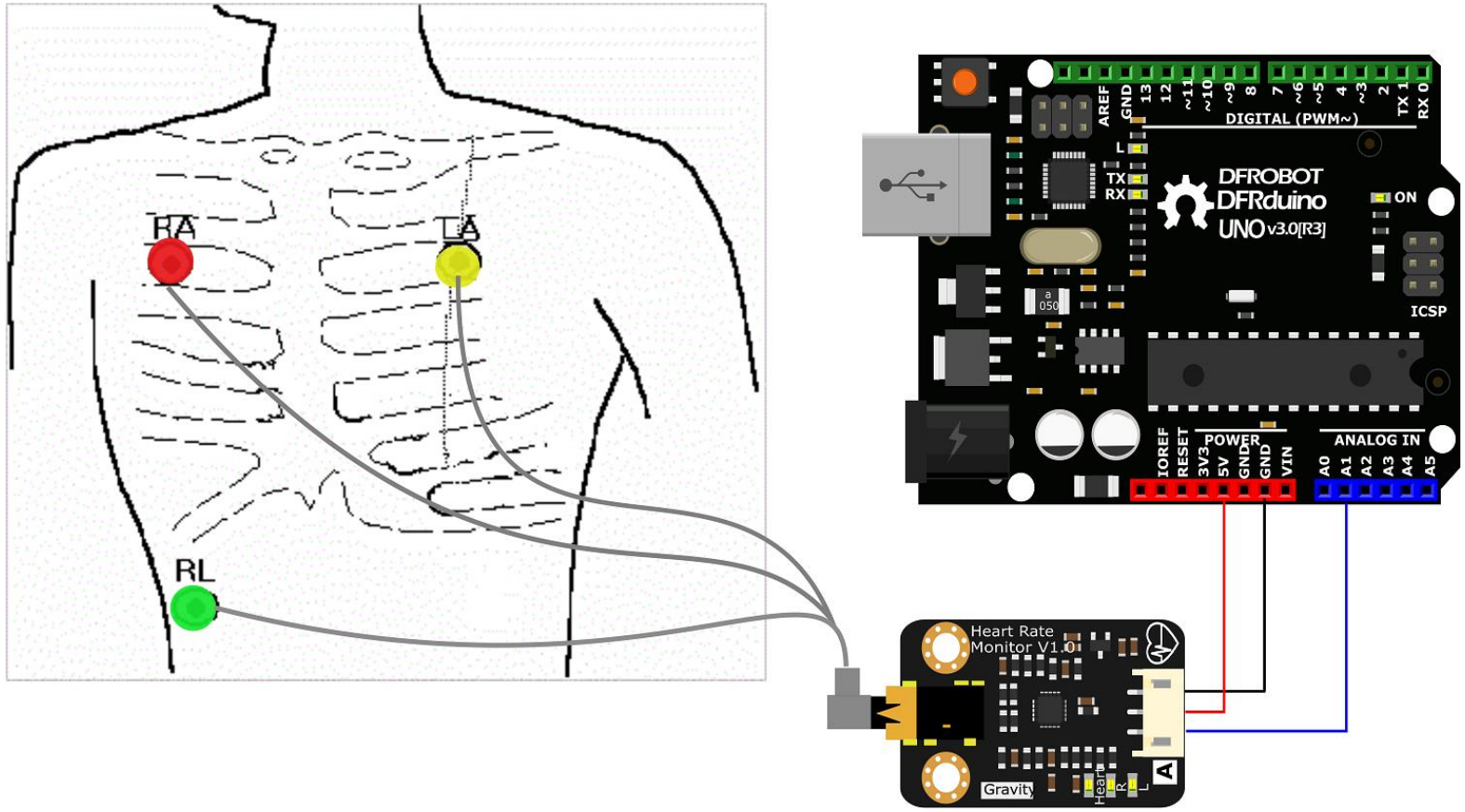
Connection Diagram



NOTE:
An ECG signal can be quite noisy due to surrounding muscle activity. The further the sensor pads are from the heart, the more muscle noise you will see. To improve the signal quality, follow these simple tips:
Keep sensor pads as close to the heart as you can
Make sure the RA and LA sensor pads are on correct sides of the heart
Try not to move too much while taking a measurement
Try to use fresh pads for each measurement. The pads loose the ability to pass signals with multiple applications
Prepare and clean the area you plan to stick pads. This will help make a good connection (hair is not a good conductor)
You may have to adjust sensor placement for different individuals

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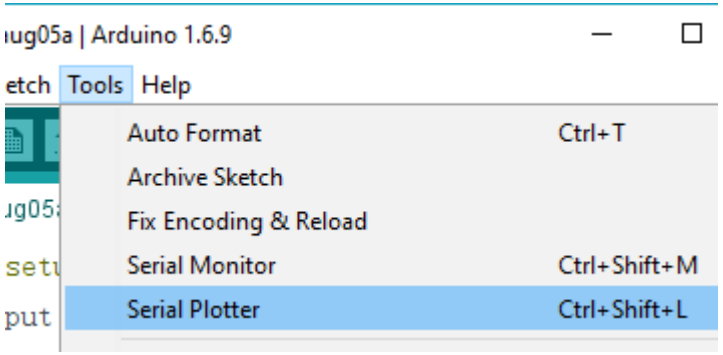
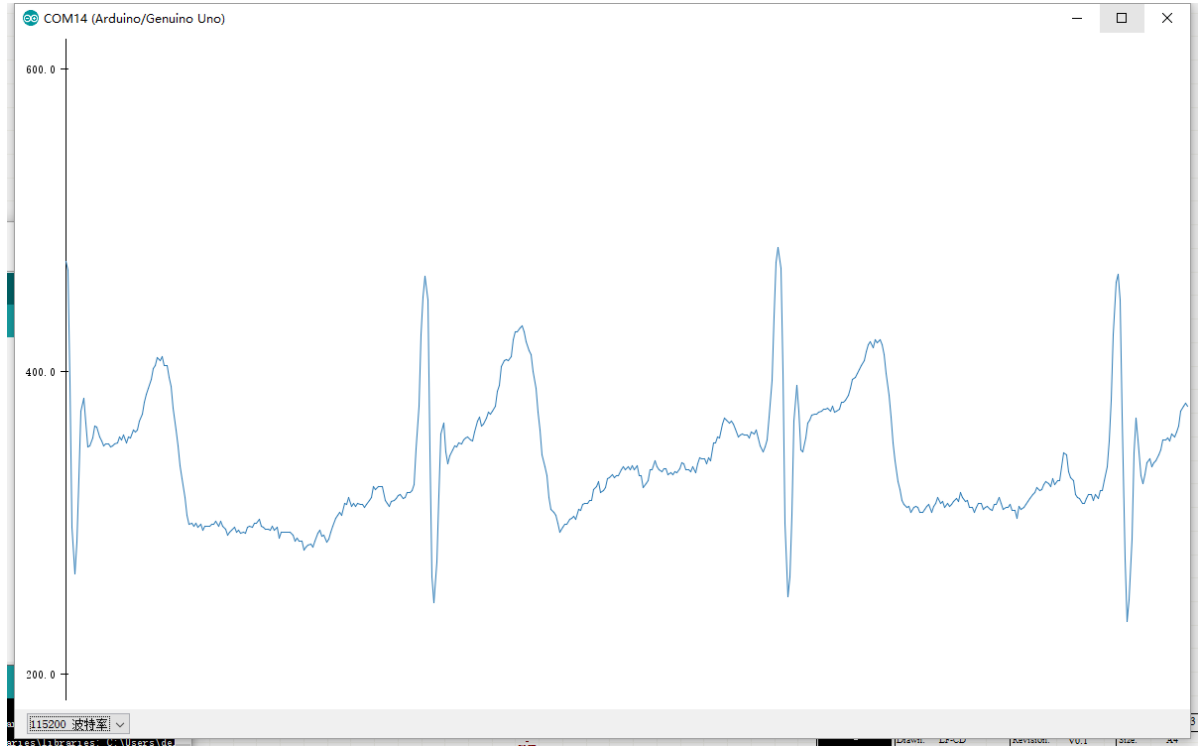
Sample Code1

Please download sample code1

1.Open the Arduino IDE 1.6.6 (or above) "Serial Plotter";



2.Then you could see the output signal from the microcontroller - A1 port, the ECG.



NOTE: If you found there was a lot of jamming waveforms, they may come from the body's static electricity. Touch something metal to discharge any static electricity

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Sample Code2

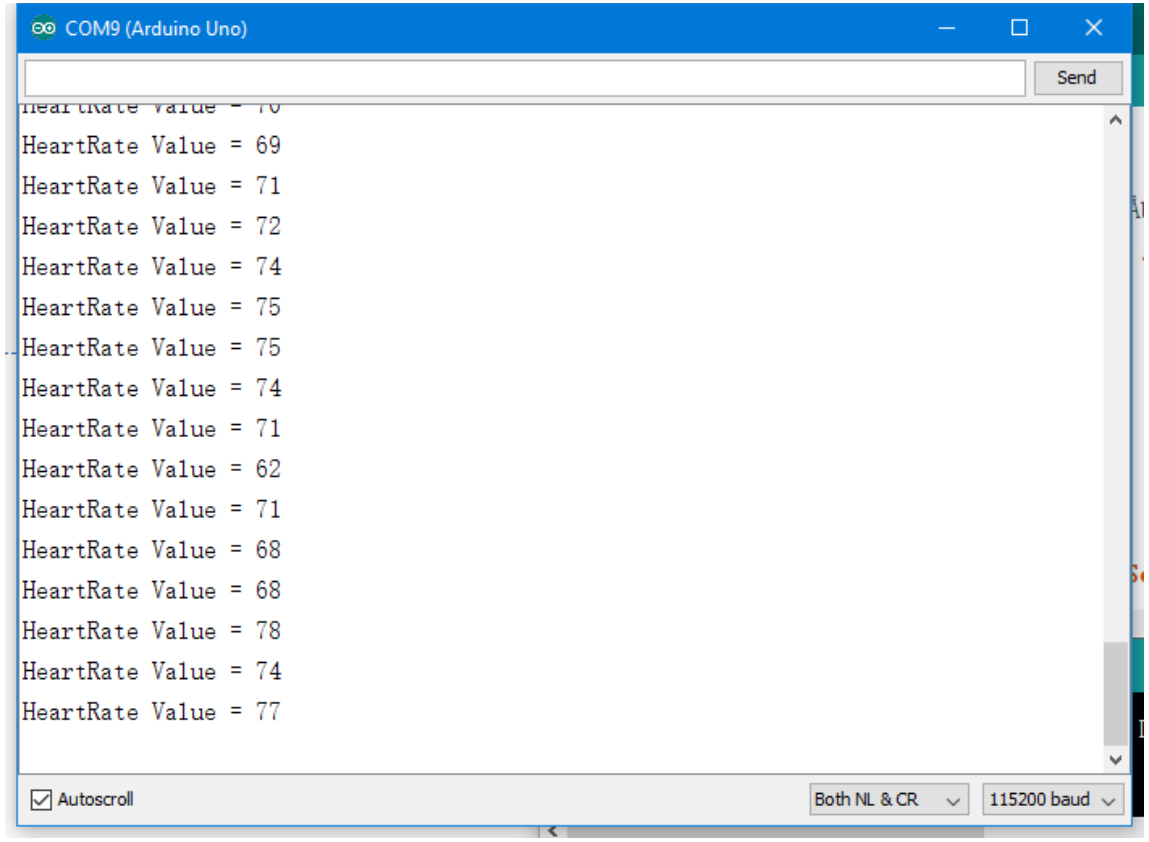
click to download the head file HeartSpeed

Please download sample code2

Expected Result

1.Open the Arduino IDE 1.6.6 (or above) "Serial Port";

2.Then you could see the output signal in BPM.



Documents

- AD8232 datasheet

Revision History

Date	Revision	Change description
30/10/2025	1.0	Initial release