

Software User Guide

After the ventilator has booted up, a helpful setup screen is shown.

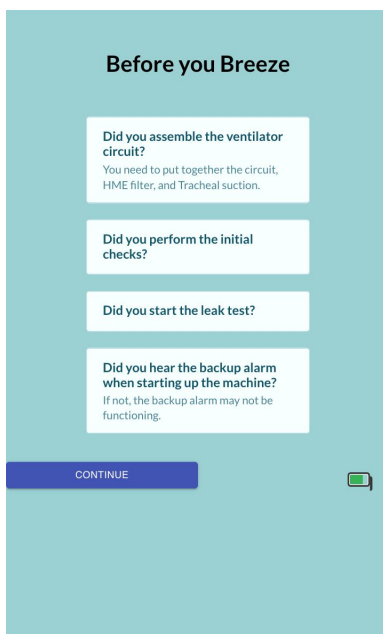
The interface consists of three main control screens: the observation screen, the parameters screen and the alarms screen.

On the observation screen two values are displayed at all times to facilitate monitoring the patient's condition: tidal volume and pressure.

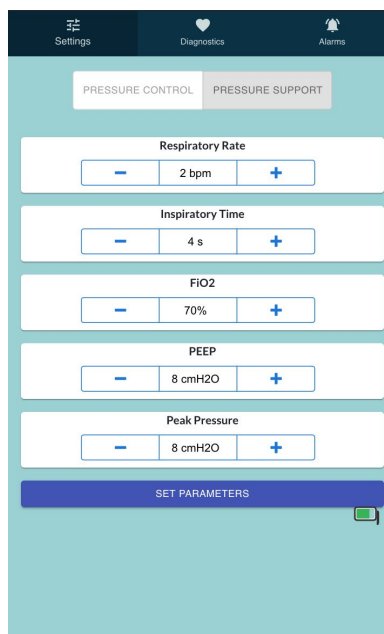
On the parameters screen, the parameters for the mechanical ventilation can be set as detailed-in the next section.

On the alarms screen, the alarm thresholds must be set and a history of the alarms that have sounded in the last 24 hours will be displayed. The alarm history allows for retrospective evaluation and patient status monitoring. A standby mode can also be turned on which holds the pressure.

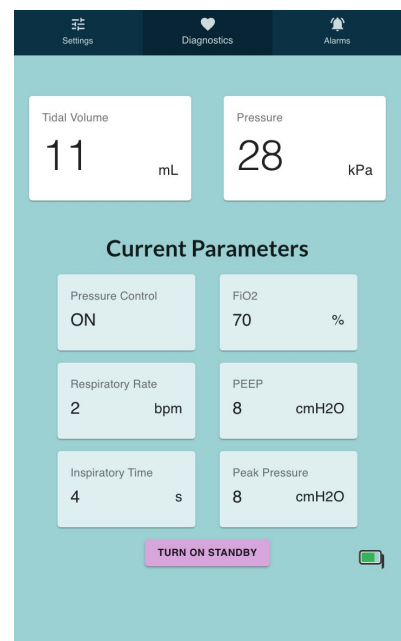
We are in the process of incorporating recommendations in the software for how to set each parameter, and for how to respond in the case of alarms.



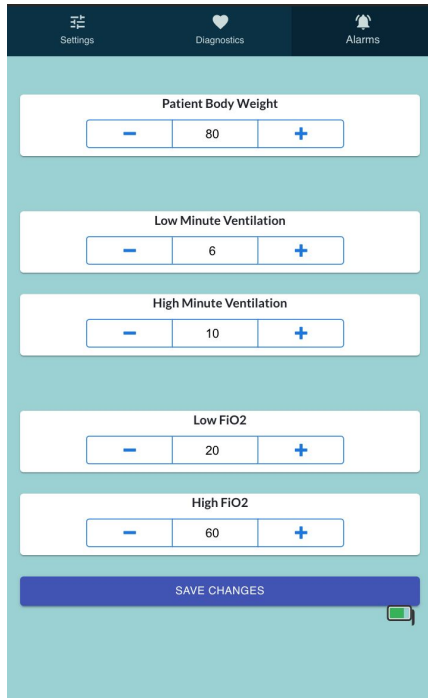
Setup screen



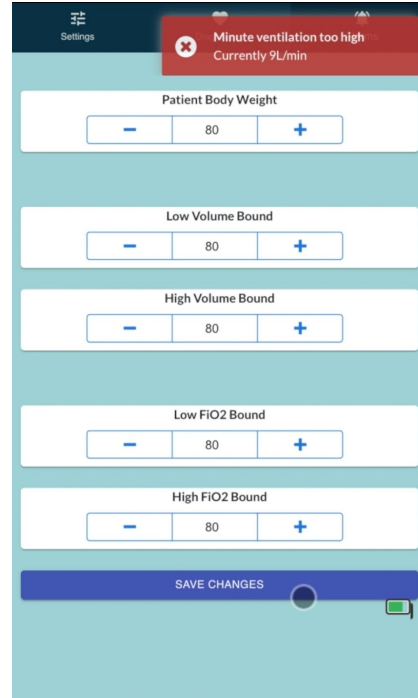
Settings screen



Diagnostics screen



Alarms screen



Example alarm

Downloading the Code

The code is available on GitHub for download: <https://github.com/rhotter/covid19-ventilator>

Installing the Software

Installing the Arduino Software

Download the Arduino IDE (<https://www.arduino.cc/en/main/software>) and the code on Github.

In the Arduino IDE, click File → Open. Navigate to the code folder that you downloaded. Select the `arduino.ide` in `covid19-ventilator/firmware/arduino`. Click the upload button.

Installing the Raspberry Pi Software

The raspberry pi software will be available on our webpage (in development). You will have to simply navigate to our webpage on the Raspberry Pi and click download and install.