Sensors

Voltage:
https://how2electronics.com/interfacing-0-25v-dc-voltage-sensor-with-arduino/
Use a 25V sensor that way we can use both 3.3V and 5V options for arduinos

https://www.amazon.com/Diymall-Voltage-Sensor-Dc0-25v-Arduino/dp/B00NK4L97Q

Always good to have some extra space, could increase accuracy by using a range from 0-12V to compensate can also use a higher bit ADC

Current:

https://www.engineersgarage.com/non-invasive-current-sensor-with-arduino/
Use a non invasive current sensor, will have to make adaptor to make it arduino compatible

Non invasive means a ring around a wire that generates a current, will need a circuit to go along with it so that Arduino can read it

https://www.amazon.com/UEETEK-SCT-013-000-Non-Invasive-Current-Transformer/dp/B071L2K1GL
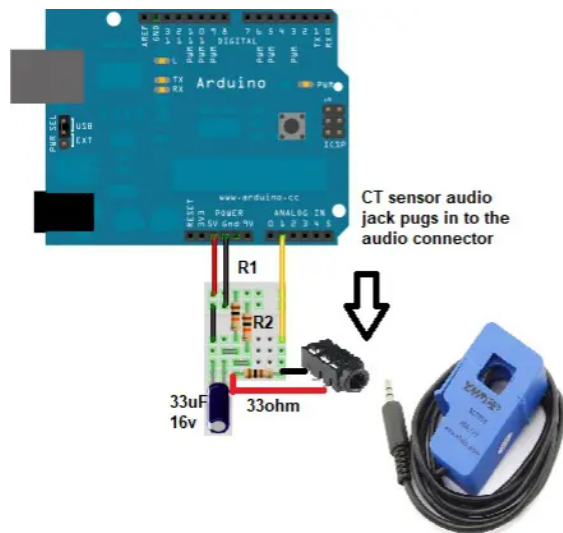
**** We probably want two of these I/V sensors for the input and output??
Biggest challenge with this will be scaling it

Temperature:
Humidity:
Pressure:

https://lastminuteengineers.com/bme280-arduino-tutorial/
All in one sensor for enviormental stuff would be ideal

Bosch – BME280

This precision sensor can measure relative humidity from 0 to 100% with ±3% accuracy, barometric pressure from 300Pa to 1100 hPa with ±1 hPa absolute accuracy, and temperature from -40°C to 85°C with ±1.0°C accuracy.

The pressure measurements are so precise (low altitude noise of 0.25m), you can even use it as an altimeter with ±1 meter accuracy.

The module comes with an on-board LM6206 3.3V regulator and I2C Voltage Level Translator, so you can use it with a 3.3V or 5V logic microcontroller like Arduino without worry.

The BME280 consumes less than 1mA during measurements and only 5µA during idle. This low power consumption allow the implementation in battery driven devices such as handsets, GPS modules or watches.

Wind Sensor:

Low profile wind sensor which uses thermal technology to measure wind speed at an accuracy of about +-2%. Very low cost and does not take up much space.

https://moderndevice.com/products/wind-sensor

Spinny Boy(Davis Anemometer)

http://cactus.io/hookups/weather/anemometer/davis/hookup-arduino-to-davis-anemometer

Already has arduino support documented, kinda pricy though at 120 dollars. Also not 100% clear on voltage and curren, though should be able to run off 5 volt.Can also calculate wind direction as well as speed

Arduinos/MCU

Arduino Nano 33 IoT (Wifi Enabled)
    -Compatible with IOT dashboard
Arduino Nano
    -