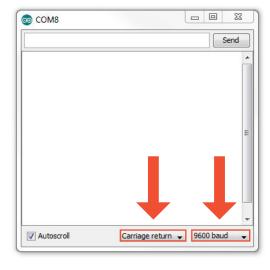




Arduino pH Sample Code



//This code was written to be easy to understand.
//Code efficiency was not considered.
//Modify this code as you see fit.
//This code will output data to the Arduino serial monitor.
//Type commands into the Arduino serial monitor to control the pH circuit.
//This code was written in the Arduino 1.6.5 IDE
//An Arduino UNO was used to test this code.

#include <SoftwareSerial.h> #define rx 2 #define tx 3

SoftwareSerial myserial(rx, tx);

//define how the soft serial port is going to work.

//define what pin rx is going to be.

//define what pin tx is going to be.

String inputstring = "";
String sensorstring = "";
boolean input_stringcomplete = false;
boolean sensor_stringcomplete = false;
float ph;

//a string to hold incoming data from the PC
//a string to hold the data from the Atlas Scientific product
//have we received all the data from the PC
//have we received all the data from the Atlas Scientific product
//used to hold a floating point number that is the pH

//we have to include the SoftwareSerial library, or else we can't use it.

void setup() {
 Serial.begin(9600);
 myserial.begin(9600);
 inputstring.reserve(10);
 sensorstring.reserve(30);
}

//set up the hardware
//set baud rate for the hardware serial port_0 to 9600
//set baud rate for software serial port_3 to 9600
//set aside some bytes for receiving data from the PC
//set aside some bytes for receiving data from Atlas Scientific product

void serialEvent() {
 char inchar = (char)Serial.read();
 inputstring += inchar;
 if (inchar == '\r') {
 input_stringcomplete = true;
 }
}

void loop() {

//if the hardware serial port_0 receives a char //get the char we just received //add it to the inputString

//if the incoming character is a <CR>, set the flag

```
if (input_stringcomplete) {
  myserial.print(inputstring);
  inputstring = "";
  input_stringcomplete = false;
}

if (myserial.available() > 0) {
  char inchar = (char)myserial.read();
  sensorstring += inchar;
  if (inchar == '\r') {
    sensor_stringcomplete = true;
}
```

//here we go...

//if a string from the PC has been received in its entirety
//send that string to the Atlas Scientific product
//clear the string
//reset the flag used to tell if we have received a completed string from the PC
//if we see that the Atlas Scientific product has sent a character.
//get the char we just received

//if the incoming character is a <CR>, set the flag

```
if (sensor_stringcomplete) {
                                     //if a string from the Atlas Scientific product has been received in its entirety
 Serial.println(sensorstring);
                                     //send that string to the PC's serial monitor
 ph = sensorstring.toFloat();
                                     //convert the string to a floating point number so it can be evaluated by the Arduino
 if (ph >= 7.0) {
                                     //if the pH is greater than or equal to 7.0
                                     //print "high" this is demonstrating that the Arduino is evaluating the pH as a number
  Serial.println("high");
                                     //and not as a string
 if (ph <= 6.999) {
                                     //if the pH is less than or equal to 6.999
                                     //print "low" this is demonstrating that the Arduino is evaluating the pH as a number
  Serial.println("low");
                                     //and not as a string
 sensorstring = "";
                                     //clear the string:
                                     //reset the flag used to tell if we have received a completed string from the Atlas Scientific product
 sensor_stringcomplete = false;
```