

Water PH Sensor

The following is the Arduino code for the sensor and it has been tested

```
#include <SoftwareSerial.h>

#define RO 5

#define DI 4

//#define RE 6

//#define DE 7

const uint32_t TIMEOUT = 800UL;

//const byte get_ID [] = {0xFE, 0x03, 0x02, 0x00, 0x00, 0x01, 0x91, 0xBD};

const byte pH_cmd [] = {0x01, 0x03, 0x00, 0x00, 0x00, 0x01, 0x84, 0x0A};

int16_t getData      (const byte* cmd, byte length);

void printHexByte (byte b);
```

```
byte values[7] = {0};
```

```
SoftwareSerial mod(RO, DI); // Rx pin, Tx pin
```

```
void setup() {
```

```
    Serial.begin(9600);
```

```
    mod.begin(9600);
```

```
    //pinMode(RE, OUTPUT);
```

```
    //pinMode(DE, OUTPUT);
```

```
    delay(500);
```

```
}
```

```
void loop() {
```

```
    float val1 = 0.0;
```

```
    Serial.print("Water pH: ");
```

```
    val1 = getData(pH_cmd, sizeof(pH_cmd));
```

```
    Serial.print(val1/100);
```

```
    Serial.println();
```

```
    //delay(1000);
```

```
    delay(5000);  
  
}  
  
int16_t getData( const byte* cmd, byte length) {  
  
    uint32_t startTime = 0;  
  
    uint8_t byteCount = 0;  
  
    uint16_t val_out = 0;  
  
    //digitalWrite(DE, HIGH);  
  
    //digitalWrite(RE, HIGH);  
  
    delay(10);  
  
    mod.write(cmd, length);  
  
    mod.flush();  
  
    //digitalWrite(DE, LOW);  
  
    //digitalWrite(RE, LOW);  
  
  
    startTime = millis();  
  
    while ( millis() - startTime <= TIMEOUT ) {
```

```
if (mod.available() && byteCount < sizeof(values) ) {  
  
    values[byteCount++] = mod.read();  
  
    //printHexByte(values[byteCount - 1]);  
  
}  
  
}  
  
//Serial.println();  
  
//TODO: you have to cast from values array the selected value to print it  
out  
  
// and return in val_out  
  
val_out = (uint16_t)((values[3]&0x00ff)<<8 | (values[4]&0xff));  
  
return val_out;  
  
}  
  
void printHexByte(byte b)  
  
{  
  
    Serial.print((b >> 4) & 0xF, HEX);  
  
    Serial.print(b & 0xF, HEX);  
  
    Serial.print(' ');
```



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}