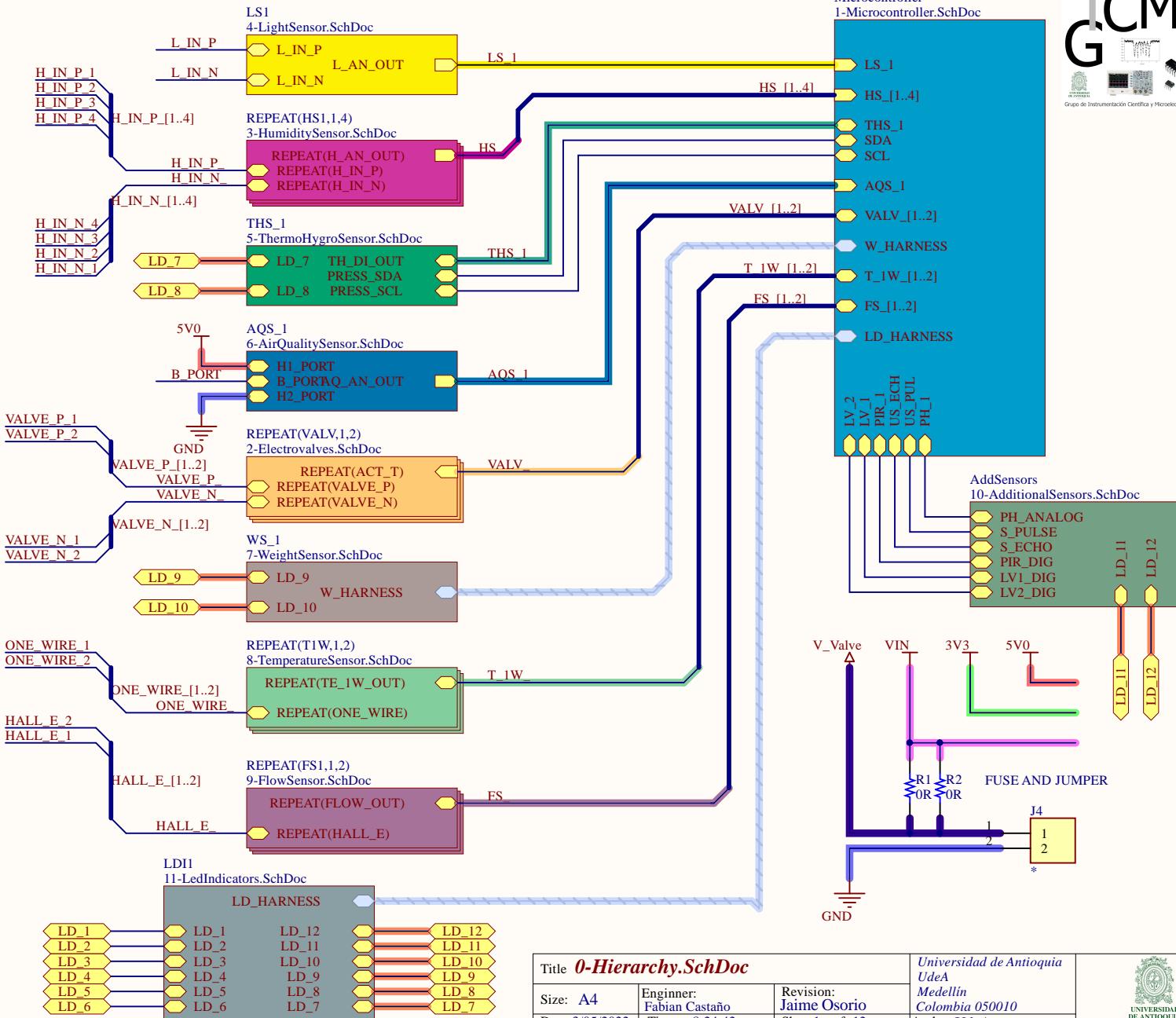
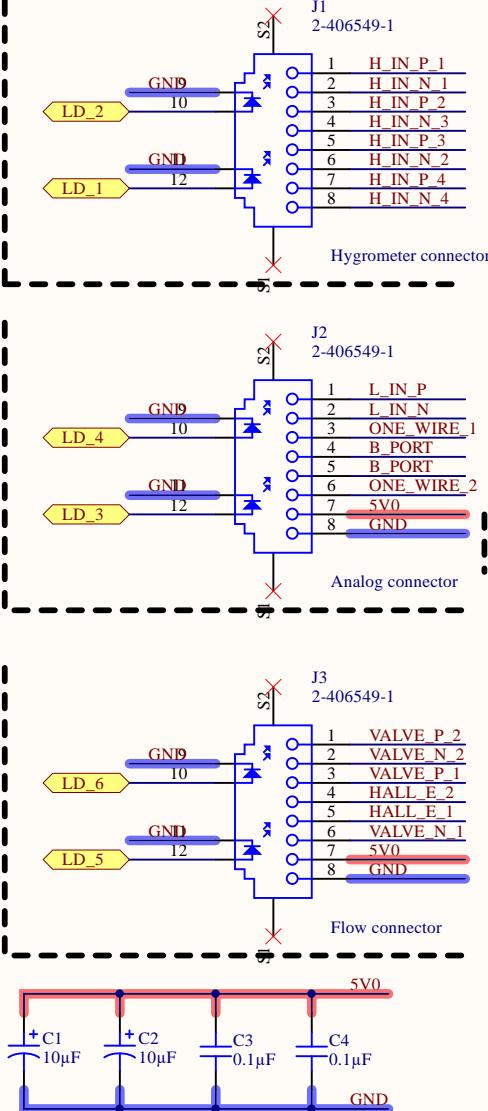
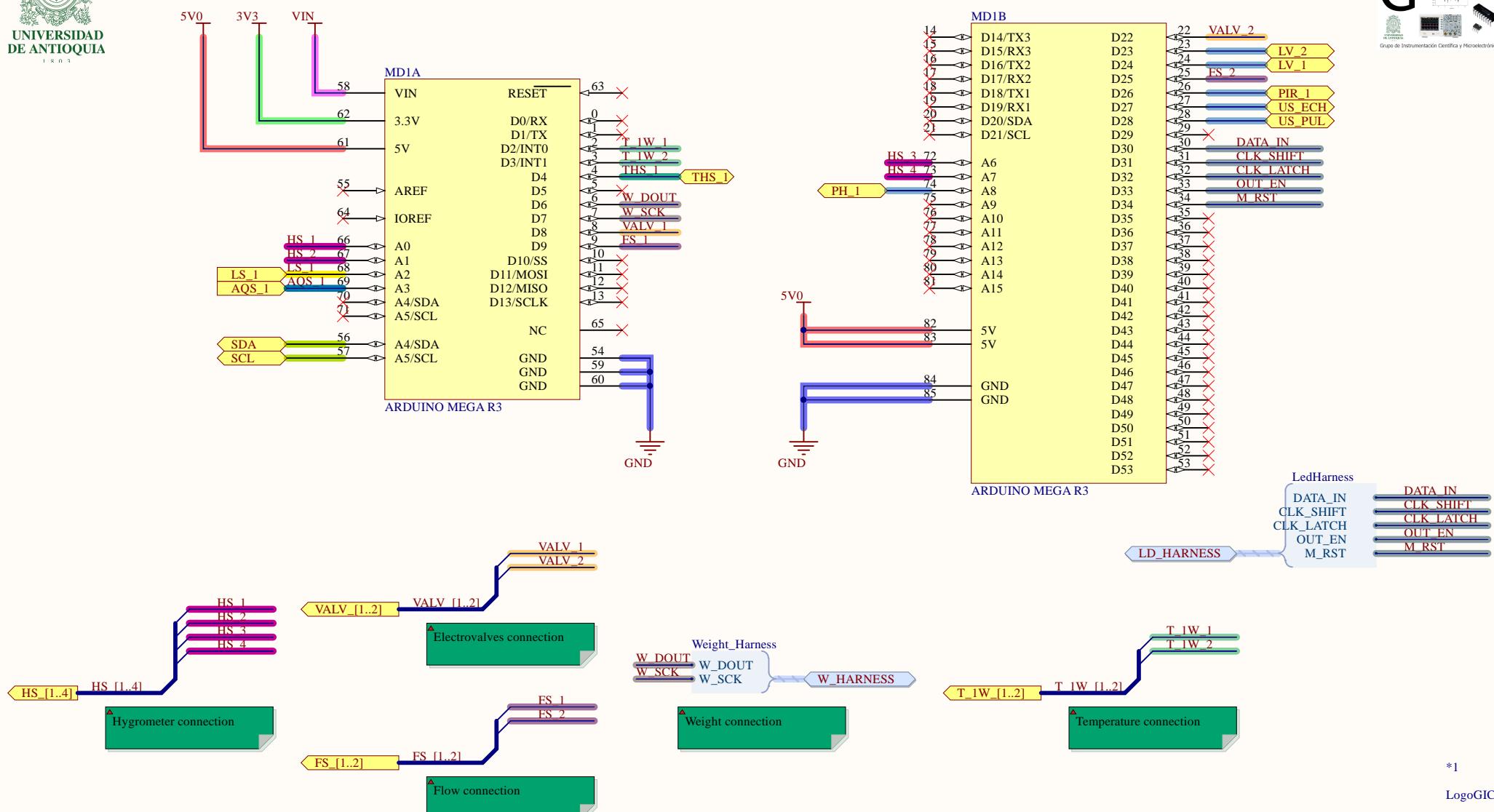


Importante: Conectar 5V0 y GND a los sensores OneWire y a los puertos H del sensor de calidad del aire, hacer esto en la tarjeta de interface

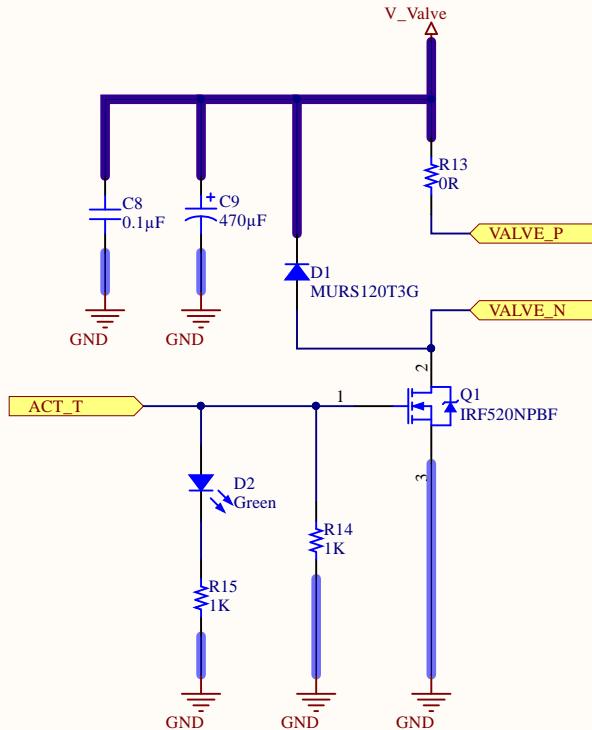
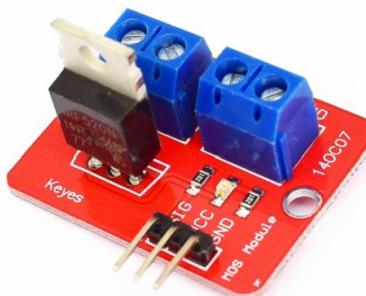


Title **0-Hierarchy.SchDoc**

Size: A4	Engineer: Fabian Castaño	Revision: Jaime Osorio
Date: 3/05/2022	Time: 8:24:42 p.m.	Sheet 1 of 12
Author: UdeA		
File: D:\GitHub\GreenhousePrj\Hardware\GreenHouse-hwd\0-Hierarchy.SchDoc		

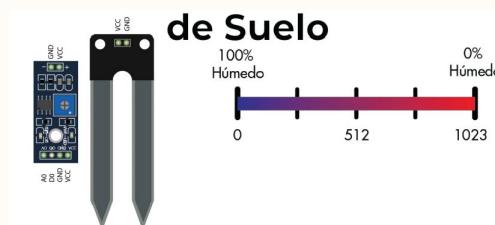
Title **I-Microcontroller.SchDoc**

Size: A4	Engineer: Fabian Castaño	Revision: Jaime Osorio	Universidad de Antioquia UdeA Medellín Colombia 050010
Date: 3/05/2022	Time: 8:24:42 p.m.	Sheet2 of 12	Author: UdeA
File: D:\GitHub\GreenhousePrj\Hardware\GreenHouse-hwd\I-Microcontroller.SchDoc			

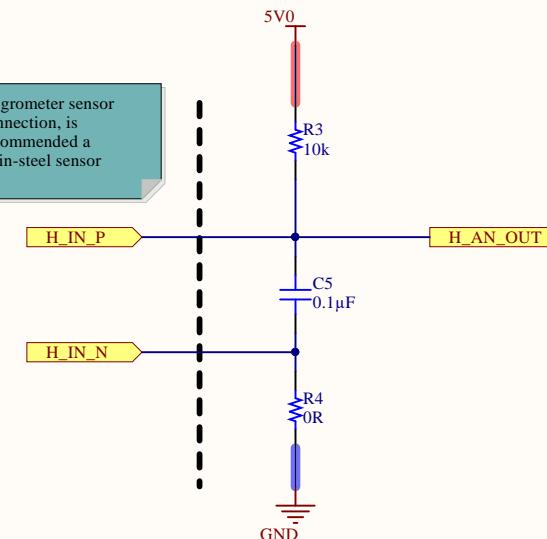

**Características:**

- Voltaje de funcionamiento: 3.6-6.5V
- Resistencia de la bobina: 9Ω
- Presión de funcionamiento: 0.05-1.0MPa
- Ancho de pulso: 30ms
- Corriente de funcionamiento: 500mA
- Rosca G1/2
- Conexión DN15mm macho
- Material plástico
- Formas de trabajo: válvula de apertura de pulso positivo, válvula de apagado de pulso negativo
- Vida útil: 30 millones de veces

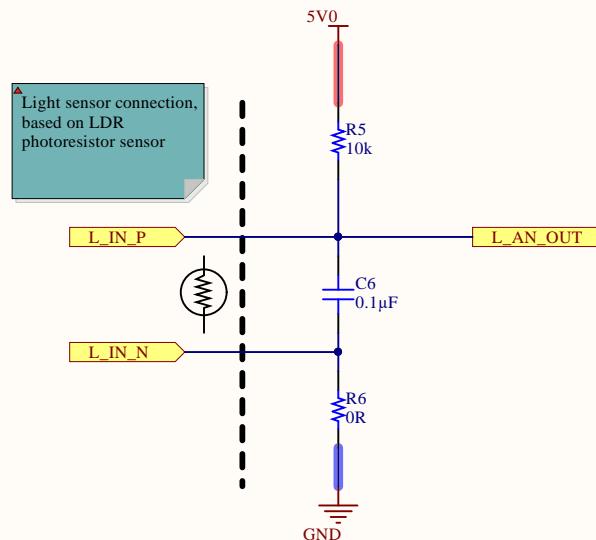
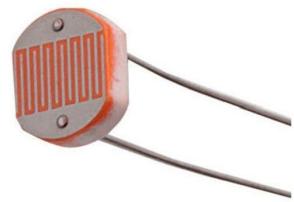
<https://www.didacticaselectronicas.com/index.php/hidro%20%C3%A1ulica-y-neum%C3%A1tica/v%C3%A1lvulas/electrov%C3%A1lvula-pl%C3%A1stica-211b-v%C3%A1lvulas-solenoides-electrov%C3%A1lvulas-sensor-es-de-flujo-electro-valvulas-v%C3%A1lvulas-electromagn%C3%A9ticas-de-pulsos-pl%C3%A1sticas-de-pulsos-detail>



▲ Hygrometer sensor connection, is recommended a stain-steel sensor



Title <b>3-HumiditySensor.SchDoc</b>			<i>Universidad de Antioquia UdeA Medellín Colombia 050010</i>	
Size: A4	Engineer: Fabian Castaño	Revision: Jaime Osorio	Date: 3/05/2022 Time: 8:24:42 p.m. Sheet4 of 12	



Title <b>4-LightSensor.SchDoc</b>			Universidad de Antioquia UdeA Medellín Colombia 050010	
Size: A4	Engineer: Fabian Castaño	Revision: Jaime Osorio	Date: 3/05/2022 Time: 8:24:42 p.m. Sheet 5 of 12	



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DE ANTIOQUIA



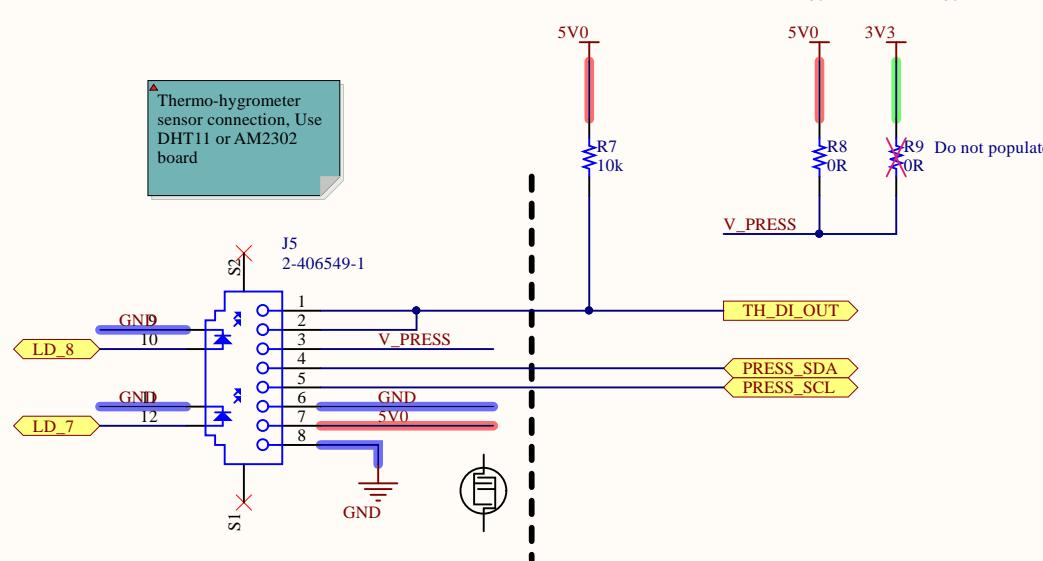
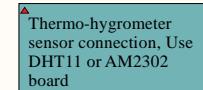
URL to buy pressure sensor:

<https://www.didacticaselectronicas.com/index.php/sensores/presion-atm/sensor-de-presion-atmosferica-bmp180-sensores-de-presion-atmosferica-relativa-barometros-bmp180-detail>

<https://www.didacticaselectronicas.com/index.php/sensores/presion-atm/sensor-de-presion-atmosferica-bmp280-sensores-de-presion-relativa-atmosferica-barometros-bmp180-detail>

▲ UBI to buy the RJ45 connector:

[https://www.didacticaselectronicas.com/index.php/suiche-s-y-conectores/conectores2016-02-07-20-36-39/\\_rj45/puerto-ethernet-rj45-conectores-puertos-para-ethernet-rj45-rj-45-detal](https://www.didacticaselectronicas.com/index.php/suiche-s-y-conectores/conectores2016-02-07-20-36-39/_rj45/puerto-ethernet-rj45-conectores-puertos-para-ethernet-rj45-rj-45-detal)



The RJ45 Pinout

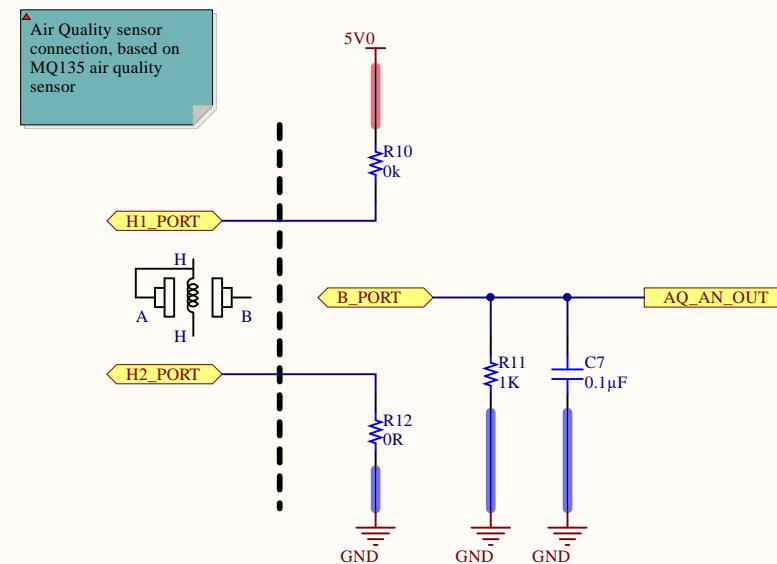
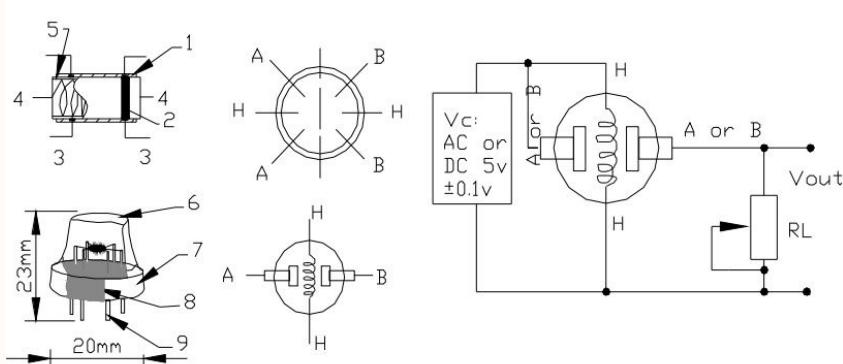
RJ45 Pinout  
T-568B

- 1. White Orange
  - 2. Orange
  - 3. White Green
  - 4. Blue
  - 5. White Blue
  - 6. Green
  - 7. White Brown
  - 8. Brown



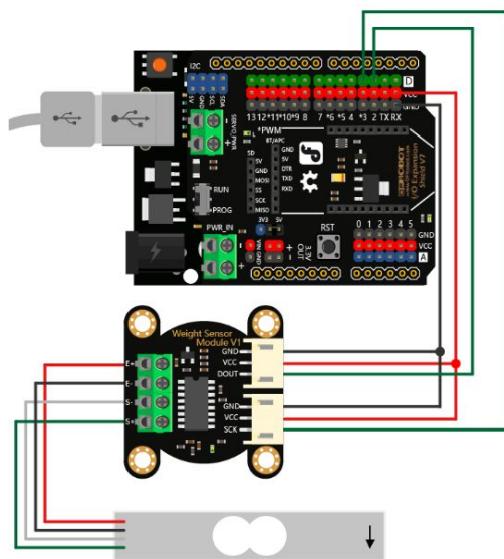
 Bittrex

Title <b>5-ThermoHygroSensor.SchDoc</b>			<i>Universidad de Antioquia UdeA Medellín Colombia 050010</i>	 <b>UNIVERSIDAD DE ANTIOQUIA</b>
Size: <b>A4</b>	Enginner: <b>Fabian Castaño</b>	Revision: <b>Jaime Osorio</b>		
Date: <b>3/05/2022</b>	Time: <b>8:24:42 p.m.</b>	Sheet <b>6</b> of <b>12</b>	Author: <b>UdeA</b>	
File: <b>D:\GitHub\GreenHousePrj\Hardware\GreenHouse-hw\5-ThermoHygroSensor.SchDoc</b>				

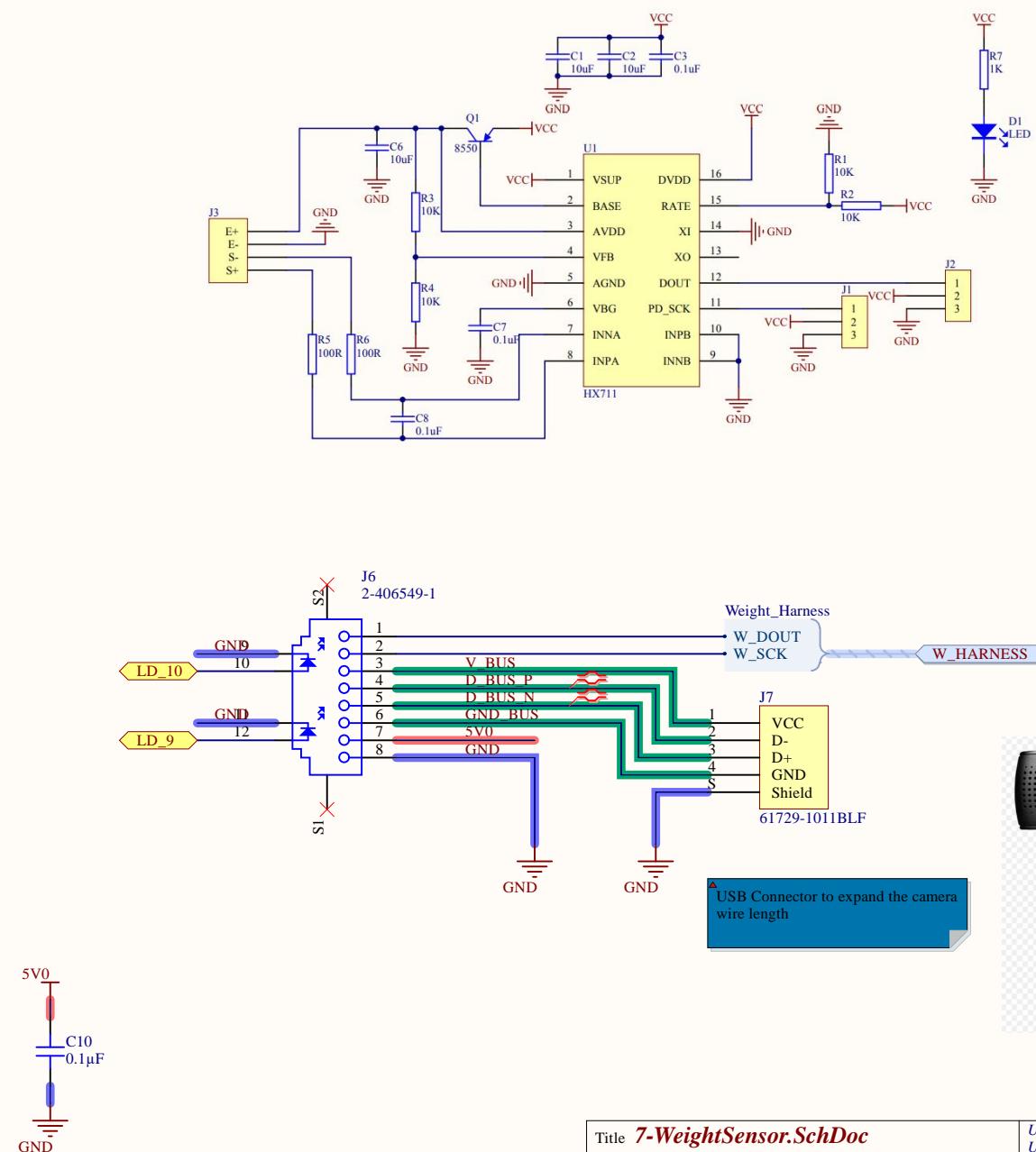


Title **6-AirQualitySensor.SchDoc**

Size: A4	Engineer: Fabian Castaño	Revision: Jaime Osorio	Universidad de Antioquia UdeA Medellín Colombia 050010
Date: 3/05/2022	Time: 8:24:42 p.m.	Sheet7 of 12	Author: UdeA
File: D:\GitHub\GreenhousePrj\Hardware\GreenHouse-hwd\6-AirQualitySensor.SchDoc			



▲ Reference design:  
[https://wiki.dfrobot.com/Weight\\_Sensor\\_Module\\_S\\_KU\\_SEN0160](https://wiki.dfrobot.com/Weight_Sensor_Module_S_KU_SEN0160)

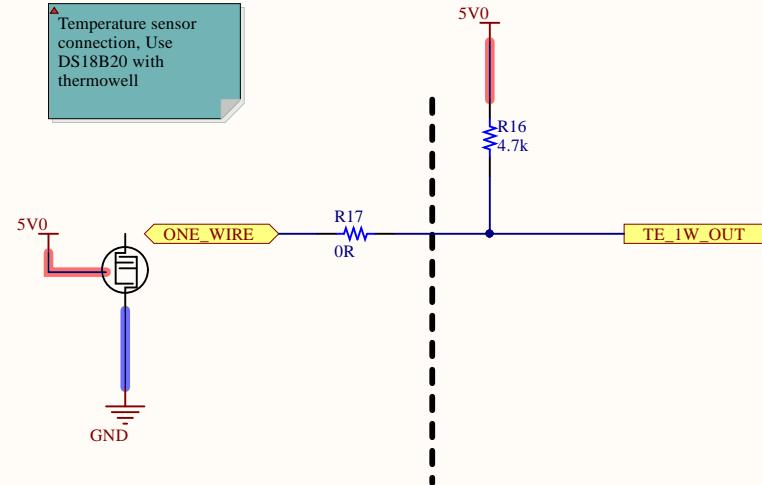


Title **7-WeightSensor.SchDoc**

Size: A4	Engineer: Fabian Castaño	Revision: Jaime Osorio	Universidad de Antioquia UdeA Medellín Colombia 050010
Date: 3/05/2022	Time: 8:24:43 p.m.	Sheet 8 of 12	Author: UdeA
File: D:\GitHub\GreenhousePrj\Hardware\GreenHouse-hwd\7-WeightSensor.SchDoc			



Temperature sensor connection, Use DS18B20 with thermowell



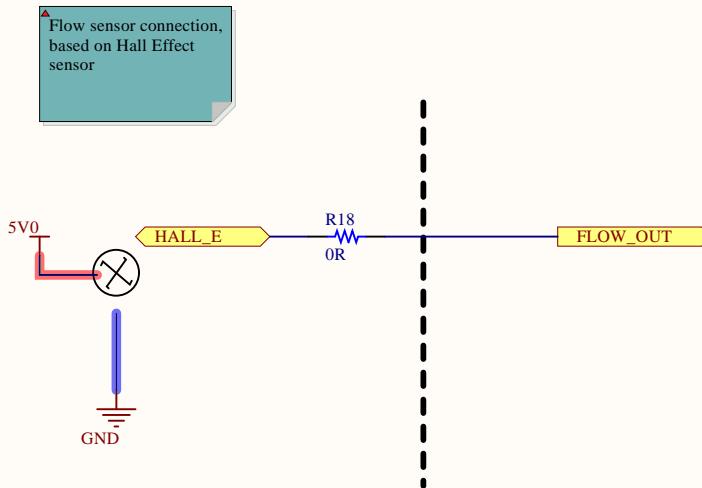
Title: **8-TemperatureSensor.SchDoc**

Size: **A4**      Engineer: **Fabian Castaño**      Revision: **Jaime Osorio**

Date: **3/05/2022**   Time: **8:24:43 p.m.**   Sheet**9** of **12**   Author:**UdeA**

File: **D:\GitHub\GreenhousePrj\Hardware\GreenHouse-hwd\8-TemperatureSensor.SchDoc**





Características:

- Voltaje de funcionamiento: 3VDC 18VDC máximo
- Corriente de funcionamiento: 15mA
- Rango de flujo: 1 - 25 L/min
- Presión del agua: ≤ 1.5MPa
- Pulso:  $F(\text{Hz}) = (11 \times Q) \pm 5\%$ ,  $Q = \text{L/min}$
- Temperatura de funcionamiento: - 40°C 80°C
- Máximo voltaje de salida del pulso: > 4.7V (Voltaje de entrada en 5V)
- Mínimo voltaje de salida del pulso: < 0.5V (Voltaje de entrada en 5V)

<https://www.didacticaselectronicas.com/index.php/sensores/flujo-y-nivel/sensor-de-flujo-de-agua-media-pulgada-lat%C3%B3n-yf-b1-v%20C3%A1lvulas-sensores-de-flujo-de-fluido-de-agua-media-pulgada-detail>

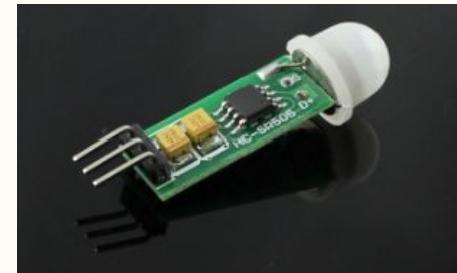
Distance sensor



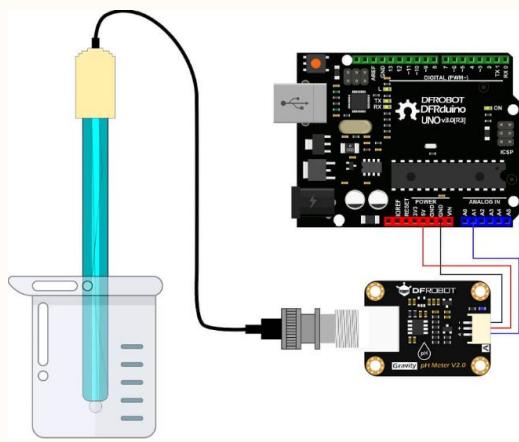
Level sensor



PIR Sensor

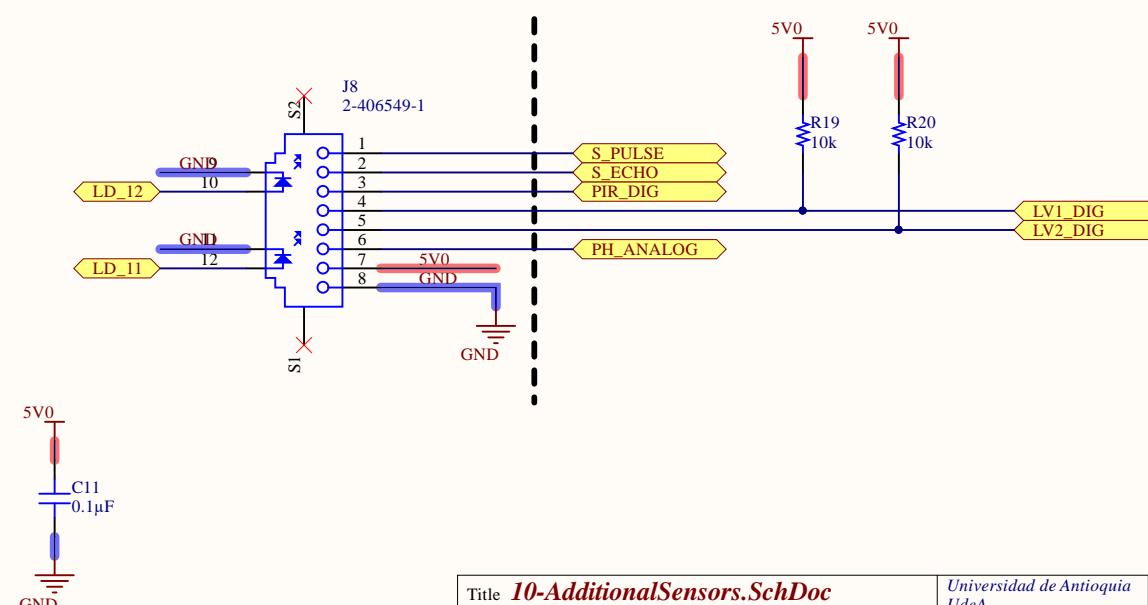


pH sensor

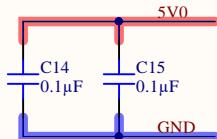
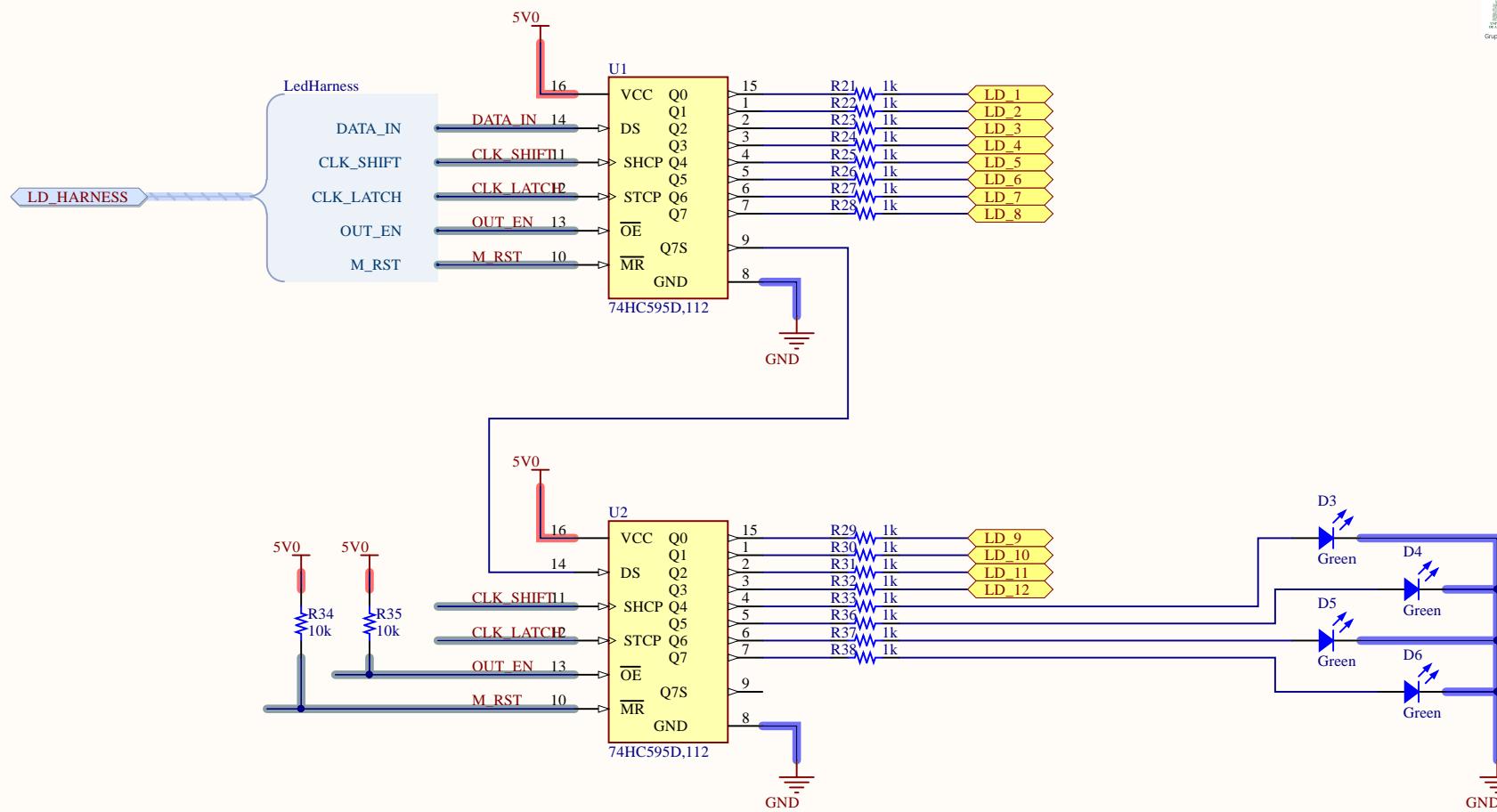


Ultrasound sensor: HC-SR04  
[https://naylampmechatronics.com/blog/10\\_tutorial-de-arduino-y-sensor-ultrasonico-hc-sr04.html](https://naylampmechatronics.com/blog/10_tutorial-de-arduino-y-sensor-ultrasonico-hc-sr04.html)

pH sensor  
<https://www.dfrobot.com/product-1782.html>


**Title *10-AdditionalSensors.SchDoc***

Size: A4	Engineer: Fabian Castaño	Revision: Jaime Osorio	Universidad de Antioquia UdeA Medellín Colombia 050010
Date: 3/05/2022	Time: 8:24:43 p.m.	Sheet11 of 12	Author: UdeA
File: D:\GitHub\GreenhousePrj\Hardware\GreenHouse-hwd\10-AdditionalSensors.SchDoc			



Title <b>11-LedIndicators.SchDoc</b>			<i>Universidad de Antioquia UdeA Medellín Colombia 050010</i>	 <b>UNIVERSIDAD DE ANTIOQUIA</b>
Size: A4	Enginner: Fabian Castaño	Revision: *		
Date: 3/05/2022	Time: 8:24:43 p.m.	Sheet 12 of 12	Author: UdeA	
File: D:\GitHub\GreenhousePrj\Hardware\GreenHouse-hwd\11-LedIndicators.SchDoc				