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| **Environmental parameter** | **Selected sensor** | **Reason for selection** |
| Air temperature | DS18B20 | DHT11 and DS18B20 are the two candidate sensors selected to measure the external air temperature. Out of them DS18B20 was selected as the most suitable due to its low price and water proofing characteristics. |
| Relative humidity | BME280 | Four low cost sensors, HR202, DHT11, DHT22 and BME280 were compared and BME280 was selected as the candidate transducer to measure the relative humidity considering its accuracy and range. |
| Atmospheric pressure | BME280 | The BME280 sensor can measure both relative humidity and atmospheric pressure. Hence, the same sensor was selected as the candidate transducer to measure the atmospheric pressure. The sensors like MPL3115A2 and BMP280 are relatively higher in price compared to BME280. Although the MD-PS002 sensor is lower in price, the range of measurement is limited compared to other sensors. |
| Wind speed | Wind speed sensor | 0-5V Anemometer equipped with mechanical three cups was selected to measure the wind speed. The sensor shell and wind cup is made up of aluminium alloy. The sensor has high strength, weather resistance, corrosion resistance and waterproof. |
| Wind direction | Wind direction sensor | 4-20mA wind direction sensor was selected to measure the wind direction. This was entirely made up of aluminium alloy material to ensure high resistance to weathering. |
| Precipitation | Davis Aerocone Rain Collector – 6465 | Davis Aerocone Rain Collector – 6465 was selected mainly considering its cost and the weather resistance capability. It was designed to meet the guidelines of the World Meteorological Organization. The body and base of rain collector are constructed with tough, UV resistant plastic. |
| Solar radiation | Sl1145 UV IR Visible sensor | The previously used BH1750FVI sensor was incapable to measure the whole spectrum of Electromagnetic radiation and the illumination under bright sunlight condition. Hence, SI1145 UV IR Visible Sensor was selected to measure the solar radiation, while also considering its cost. |
| Soil moisture | YL - 69 | YL-69 sensor was selected as the candidate sensor to measure the soil moisture, mainly due to its low cost. |