Dew Point Calculation

HDC1xxx Humidity Sensor

Dew Point: definition

The dew point is the temperature at which the water vapor contained in a volume of air at a given atmospheric pressure reaches saturation and condenses to form dew.
A simplified approximation used to calculate the dew point (Td) starting from the actual air temperature (T) and relative humidity (RH), is the Magnus formula:

$$Td = \frac{b \cdot \left[ln\left(\frac{RH}{100}\right) + \frac{a \cdot T}{b + T} \right]}{a - ln\left(\frac{RH}{100}\right) - \frac{a \cdot T}{b + T}}$$

Where:

- Td = dew point temperature in ºC
- RH = measured relative humidity in %
- T = measured temperature in ºC
- a = 17.271
- b = 237.7