Metrohm DropSens

DRP-SENSTH

(Temperature and Humidity Analog sensor)

Product Summary

SENSTH is a Temperature and Humidity anolog sensor builds on a new CMOSens® sensor chip developed by Sensirion. Its functionality includes enhanced signal processing, temperature and humidity can be read out at different pins. Additionally, the wide supply voltage range of 2.4 V to 5.5 V guarantees compatibility with diverse assembly situations.

Recommended Operating Condition

The sensor shows best performance when operated within recommended normal temperature and humidity range of 5 – 60 °C and 20 – 80 %RH, respectively. Long term exposure to conditions outside normal range, especially at high humidity, may temporarily offset the RH signal (e.g. +3%RH after 60h at >80%RH). After returning into the normal temperature and humidity range the sensor will slowly come back to calibration state by itself. Prolonged exposure to extreme conditions may accelerate ageing.

Conversion of the Signal Output

Relationship between the ratiometric analog voltage output and the measured:

Relative Humidity: $RH = -12.5 + 125 \cdot \frac{V_{RH}}{V_{DD}} = -\frac{10}{0.8} + \frac{100}{0.8} \cdot \frac{V_{RH}}{V_{DD}}$

Temperature: $T[°C] = -66.875 + 218.75 \cdot \frac{V_T}{V_{DD}} = -45 - \frac{17.5}{0.8} + \frac{175}{0.8} \cdot \frac{V_T}{V_{DD}}$

$$T[°F] = -88.375 + 393.75 \cdot \frac{V_T}{V_{DD}} = -49 - \frac{31.5}{0.8} + \frac{315}{0.8} \cdot \frac{V_T}{V_{DD}}$$

Sensor Specification:

Supply Voltage:	2.4 – 5.5V DC
Measurement accuracy:	Temperature: ± 0.3 Cº Humidity: ± 2%
Operating temperatura range:	-40 Cº ; 125 Cº
Operating humidity range:	0% RH ; 100% RH
Resolution:	0.1 Cº ; 0.1% RH
Comunication interface	Voltage analog output
Wiring identification	Red – VDD Black – GND Yellow – Temperature Green – Humidity