

SHT-40

TEMPERATURE AND HUMIDITY SENSOR

Overview

The SHT40 sensor module measures humidity ($\pm 1.8\% \text{RH}$) and temperature ($\pm 0.2^\circ \text{C}$) via I2C, operating from 0–100 %RH and -40 – 125°C . It runs on 3.3–5 V with $0.4\mu\text{A}$ power. NIST-traceable and JEDEC-qualified, it's ideal for weather monitoring, HVAC, agriculture, and IoT, with mobile app cloud integration.

Key Features

- High-accuracy digital humidity and temperature sensing using I²C interface.
- Ultra-low power operation, ideal for IoT and portable devices.
- Reliable performance even in condensing environments.
- Integrated variable power heater for moisture management.



Technical Specifications

- Relative Humidity Accuracy: $\pm 1.8\% \text{RH}$ (typical)
- Temperature Accuracy: $\pm 0.2^\circ \text{C}$ (typical)
- Supply Voltage (Breakout): 3.3 V to 5 V
- Average Current Consumption: $0.4\mu\text{A}$ (at 1 Hz measurement rate)
- Idle Current: 80 nA
- Communication Interface: I²C (Fast Mode Plus, CRC checksum)
- Operating Range: 0 to 100 %RH, -40°C to $+125^\circ \text{C}$
- Fully functional in condensing environments
- Integrated variable power heater
- Default I²C Address: 0x44

Applications

- Weather monitoring systems
- HVAC (Heating, Ventilation, and Air Conditioning) systems
- Smart agriculture and greenhouse control
- IoT and smart home devices
- Industrial and consumer environmental monitoring