Condition monitoring for EV-Charger

Water ingress and high humidity monitoring for more reliability

Water ingress continues to pose a significant problem, affecting performance and posing risks of corrosion to electronic systems over time. By installing our sensors into EV chargers or battery electric vehicle applications, we guarantee reliability and safety. This ensures the functional safety of systems in vehicle and charging systems. Our sensors help safeguard their systems against water ingress and condensation, thereby enhancing performance and longevity.

Application challenges

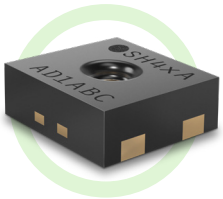
1. Outdoor installation or in areas with high moisture with changing conditions
2. Water ingress
3. Unknown thermal and humidity state
4. Limited space for design-in features

Sensirion's solutions

1. Precise flow measurement
2. Compatible with highly viscous liquids
3. Air in line and bubble detection flag
4. Smallest footprint in a robust DFN

SENSIRION

Sensirion sensor solution:



SHT4xA humidity and temperature sensor (automotive grade):

Size (LxWxH): 1.5 × 1.5 × 0.5 mm³

Additional sensor features

- Wide voltage range – ideal for battery driven applications
- Ultra low power consumption
- Solid accuracy over a wide operating range

Other applications

- Mass Air Flow applications
- Battery Management System
- ADAS/AD
- Mobile and stationary charging
- Safety relevant application

FAQs

- **What is the reason for using humidity and temperature sensors in EV charger?**
  EV charger may be exposed to harsh environmental conditions such as high humidity or rain. This can lead to condensation within the application causing harm to sensitive electronics. The sensor can help to monitor the conditions within the application.
- **Our EV charger uses an active cooling system with a liquid coolant. Is a sensor useful to monitor the cooling system as well?**
  Yes, water leakage can lead to failure and problems during the charging process. Sensirion`s product SHT4x can detect water ingress to give an early warning to the system.
- **Do you have an automotive graded SHT4x sensor in your portfolio?**
  Yes, we have an automotive graded version in our SHT4x product family, namely SHT4xA .
- **What is the qualification of the sensor for the automotive industry?**
  Our automotive graded version is AEC-Q100 qualified. Furthermore, additional stress tests are performed.
- **Is the functionality of your sensors impacted in condensing environments?**
  Our sensors are fully functional in condensing environments.

Getting started

SHT41A evaluation kit

Useful documents

Datasheets, application notes handling instructions, samples codes, step files, certificates

Related sensors

↗SHT40 humidity/temperature sensor
↗SHT41 humidity/temperature sensor
↗SHT45 humidity/temperature sensor

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