

# What are Smart Passive Sensors (SPS)?

- ▶ Battery free, wireless, energy harvesting sensors enable remote sensing and data capture in Industrial IoT and Automotive applications where it is not practical to deploy a traditional electronic sensor network.
- ▶ What to Consider in Smart Passive Sensors?
  - Analysis of...
    - Temperature
    - Proximity
    - Leak Detection
    - Fluid Level Monitoring
    - Many more...

**Video:** **Turnkey Solution for Data Sensing and Collection:** Providing a complete turnkey solution for Cloud Computing, Industrial, Healthcare, Livestock, Transportation, and Automotive applications, Smart Passive Sensors by ON Semiconductor provide a battery-free, wireless solution for Data Sensing and Collection.

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**Webcast:** **Introduction to Smart Passive Sensors:** Smart Passive Sensors are used to sense, collect, transmit, and aggregate data in digital farming, industrial construction, cold chain tracking, predictive maintenance and many more applications. Join us for a quick introduction to smart passive sensor technology.

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# Predictive Maintenance — Data Centers

- ▶ In data centers, optimizing energy efficiency is becoming increasingly important due to regulatory requirements and rising costs of cooling. The IoT is driving more data to the cloud, leading to an increased demand for computing power.
- ▶ A temperature sensor network that is deployed within a data center provides the data needed to optimize energy efficiency while still supplying enough cooling for computing equipment.
- ▶ How Do These Tags Help?
  - Senses to maintain the correct ambient air temperature levels throughout the facility.
  - Wireless tags for simplicity to install and monitor.
  - Battery-Free to decrease energy costs.

## Application Note:

### Data Center Environmental Monitoring Using Smart Passive Sensors

Sensor applications in a data center fall into two main categories: sensors inside the rack and sensors outside the rack. This application note covers both inside and outside the rack sensors, as well providing further detail on temperature sensors for data centers.

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## Webcast: How to Wirelessly Temperature Monitor Data Centers:

As data centers become larger and larger, the amount of power required for cooling server racks becomes substantial. Check out an inexpensive solution to monitor inlet temperatures inside the server racks here.

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# Predictive Maintenance — Power Switch Gear

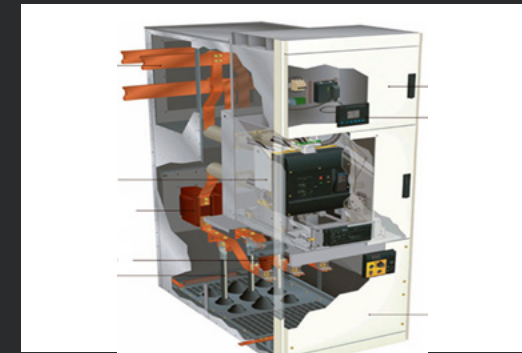
- ▶ Monitoring temperature on connections inside high power switchgear is critical to identify high resistance points and schedule equipment maintenance before catastrophic failure.
- ▶ Solution?
  - Wireless sensors can be placed directly on high voltage connections without risk of short circuits or interference.
  - Removes need for manual temperature measurements = increased employee safety.
  - Continuous monitoring to analyze temperature trends and schedule preventative maintenance when convenient for facility.
  - Early detection of failures = less equipment downtime.

## Data Sheet:

### Smart Passive Sensors for Temperature Sensing

The small form factor and battery-free capabilities of Smart Passive Sensors allow them to be designed into applications where size and accessibility are at a premium.

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## Webcast:

### How to Wirelessly Temperature Monitor High-Power Switchgear:

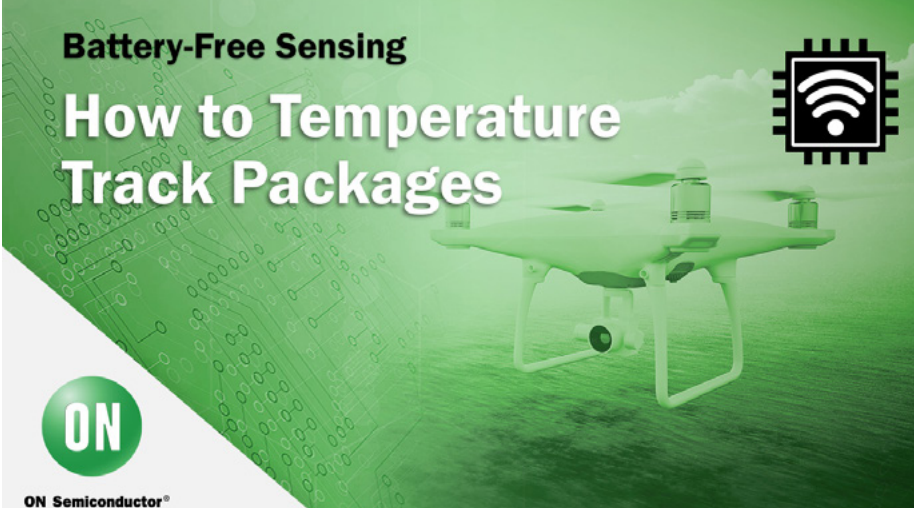
Monitoring temperature on connections inside high power switchgear is critical to identify high resistance points and schedule equipment maintenance before catastrophic failure. Learn about a solution for safely and quickly monitoring power switch gear here.

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# Using SPS for Temperature Sensing – Cold Chain

- ▶ SPS data logger tags monitor temperature-sensitive packages from end-to-end to ensure that the delivery remained within the specified temperature boundaries the entire journey. By reducing handling and cost, these tags help optimize productivity and enable greater granularity in tracking cold chain shipments.
- ▶ Advantages of these tags?
  - Lower Product Loss Costs
  - Reduce Product Loss
  - Reduce Health Risks
  - Increase Speed of Tracking and Analysis



**Battery-Free Sensing**  
**How to Temperature Track Packages**

**ON**  
ON Semiconductor®

**Webcast:**  
Having large temperature excursions while transporting products with a short shelf life can contribute to a quarter or more of food products spoiling. Join in our webcast discussion of how to alleviate this issue by temperature tracking packages.

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# Where Should I Start?



[All Things IoT](#)



[Battery-Free  
Wireless Sensors](#)



[Getting Started Guide:  
SPS Tag Reader Hub](#)



[Proximity, Temperature,  
Moisture, and Fluid Level  
Detection Real Time  
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