



Hot Spot Monitoring for Switchgear

Key Benefits

- Wireless and battery-free, ideal for high voltage environments
- Real-time hot spot temperature information
- Direct measurement
- Low cost of ownership

The Challenge

Switchgear are a key safety part of distribution substations and factories. During normal operation, switchgear permit to switch on or off generators, feeders and other electrical equipment. When a failure occurs on any part of a power system, more current flows through the equipment, threatening **damage to the equipment and interruption of service to the customers.**

The major issues in switchgear hot spot generation is in **connections.** Poor connections between busbars and busbars connections with incoming cable feeders may generate hot spots.

In order to improve operation and reduce risk, managers need solutions to monitor **hot spot generation** in switchgear, allowing them to take real time decisions based on objective data.

The Farsens Solution

A solution for switchgear needs to address the following issues:

- No wires are allowed – **wireless solution.** Switchgear being in high voltage environments, wires do not comply with insulation requirements.
- Batteries are not desired – **battery-free solution.** High temperatures also require that no batteries are used in these environments. Moreover, maintenance due to battery changes is not required.

Farsens has developed **UHF RFID temperature sensor tags** that can be implemented in switchgear. By placing a fixed RFID reader in a safe place, sensor tags are located in switchgear hot spots to provide real time information about the status of the asset.

Contact temperature sensors for switchgear temperature monitoring

The Electra UHF RFID tags feature thermistors to monitor contact temperature in busbars or connections.

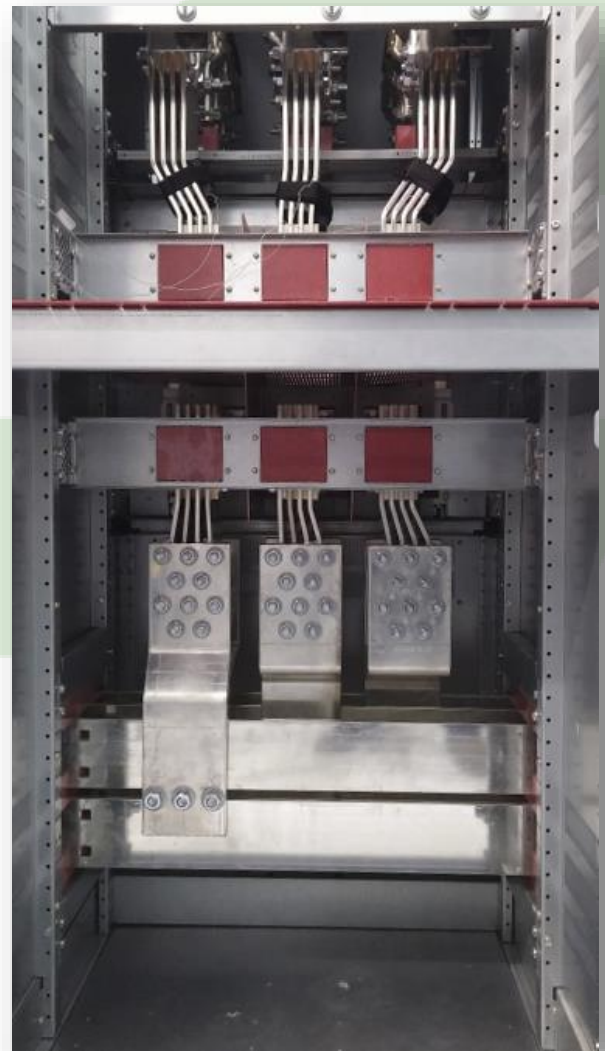
Electra comes in a plastic ABS package. It can be easily screwed or strapped in key locations to provide users with accurate, direct measurements.

The main advantages of Electra tags include:

- Continuous monitoring
- Low cost of ownership – lower acquisition cost, minimum installation costs and very limited maintenance costs
- Temperature monitoring at the source of failure via thermistors
- Direct measurement – sensor data not altered by dust or dirt

Key characteristics of Electra tags

- Contact temperature (thermistor)
- EPC C1G2 compliant – compatible with commercial RFID readers
- 96 bit EPC / 32bit TID
- 860MHz to 960MHz operation



Busbars
Inside of switchgear



Electra
Contact temperature sensor tag

Farsens S.L.

Paseo Mikeletegi 54, Planta 0
20009 San Sebastian - Spain
Phone/fax: +34 943 308013



www.farsens.com
info@farsens.com
<http://blog.farsens.com>