

# SENIS - Customer Reference:

## CERN - Switzerland



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Sune Jakobsen, CERN

### CERN, Switzerland

[home.cern](http://home.cern)

Accelerators at CERN boost particles to high energies before making them collide inside detectors. The detectors gather clues about the particles – including their speed, mass, and charge – from which physicists can determine a particle's identity.

The new scintillating-fibre particle-tracking detector (SciFi detector) of the Large Hadron Collider beauty (LHCb) experiment is installed 100 meters underground in the cavern that houses the experiment.

The LHCb experiment specializes in investigating the slight differences between matter and antimatter by studying a type of particle called the "beauty quark"

“The LHCb SciFi detector at CERN is making an upgrade on the monitoring boards. On the original version the current in each of the 256 heating wires were measured by measuring the voltage drop over a resistor. This had the undesired feature that the high power of the heating power was electrical connected to the monitoring system. In case of problems this resulted in burned monitoring boards and erratic behaviour of the rest of the monitoring system.

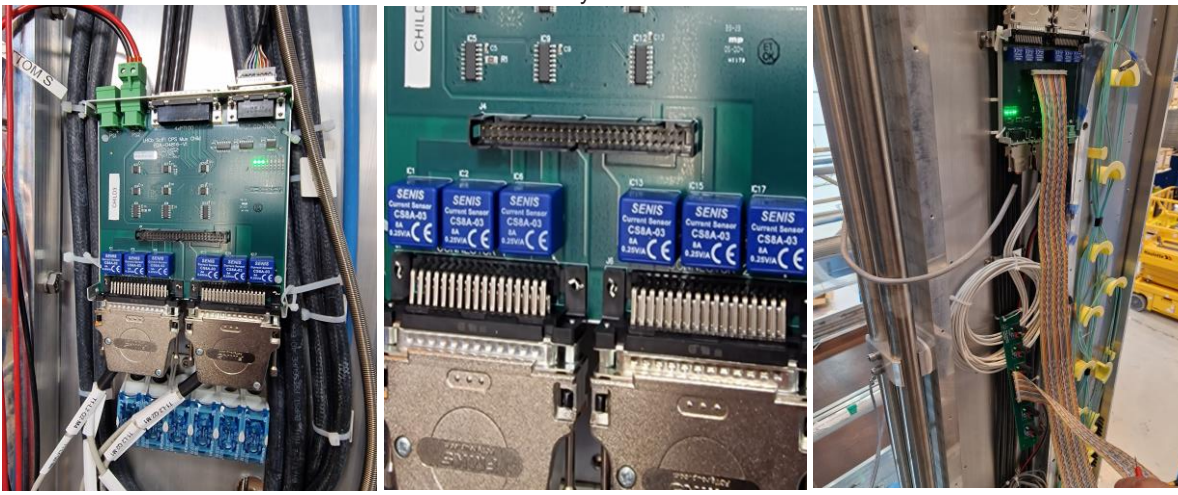
On the upgraded monitoring boards, the current in each of the 256 heating wires are instead measured via the magnetic field in the wire to be monitored. This is done inside a magnetic shielded component provided by SENIS. The heating power is therefore electrically separated from the monitoring system.

A first prototype of the new boards with the SENIS component has been successfully tested and a full production is about to be launched for installation end of 2024” says Sune Jakobsen of CERN.

SENIS CS series current sensors offer low current sensing with high voltage isolation capability. The SENIS CS sensor incorporates the high sensitivity Hall IC and a multi-turn coil to further increase sensitivity.

Typical applications include Process Control; Applications in laboratories and in production lines. Due to its design, the CS sensor can be used in any application that requires continuous current sensing (no time limit).”

- SENIS AG



### About SENIS Group, Switzerland

SENIS Group, Switzerland develops, manufactures, and supplies advanced sensors and instruments for magnetic field and electric current measurement and the corresponding development and engineering services. Our solutions and services assist our clients in the automotive, consumer electronics, test and measurement industries, and research institutes to create powerful, robust, and effective products.