CUSTOMER SUCCESS STORY

UPGRADING THE LECTURE HALL TECHNOLOGY AT THE UNIVERSITY OF SIEGEN

Reduction of service calls on the University of Siegen campus through intelligent electricity management

Objective:
Reduction of service calls through monitoring and control of AV installations on campus.
“Green University”: Automatic switching off of the AV installations during standby and inactivity as well as a schedule function to avoid continuous operation at night.

Product solution:
Expert Power Control 8031-1
Power distribution units with 8 switchable IEC C13 load outputs, precise current measurement on the input side and integrated type 3 surge protection

University of Siegen reduces service calls in seminar rooms and lecture halls

Universities and colleges increasingly rely on visual digital media. The analogue chalkboard has become obsolete and white boards and touch displays are used in the lecture hall.

In order for the AV devices to function properly, on-site service calls have previously been necessary. The responsible technicians have to undertake lengthy journeys in order to usually just restart the technology.

At the same time, it is important to adapt electricity consumption to future, environmentally friendly requirements. The CO2 footprint should be kept to a minimum in order to live up to the motto of a green university.

But how can both aspects be reconciled?

"Without GUDE, we would not be able to reliably monitor and control around 270 rooms at the University of Siegen so easily and quickly. The time-consuming service calls have become significantly fewer and we no longer have to walk across the entire site under immense time pressure if the technology breaks down."

MATTHIAS BRÜCK
TECHNICIAN
UNIVERSITY OF SIEGEN

Modern AV equipment in the desk of the Friedrich Schadeberg lecture hall
Photo: © University of Siegen

1 | AV extensions in the lecture hall center at the University of Siegen

Around 17,000 students are enrolled at the University of Siegen, attending the 5 faculties. In 2021/22, the campus 'Unteres Schloss' was built in the city center to offer students additional, modern teaching space. The lecture hall center created there in the university town has the special feature that it was built on the building of the now closed Galeria Karstadt Kaufhof.

The lecture hall center consists of a large lecture hall with almost 600 seats and two smaller lecture halls with 200 seats each as well as 7 seminar rooms, each of which can accommodate 50 students. In addition to the new building, over 270 rooms on the previous campus were also technically modernized.

In order to be able to operate the media technology in the classrooms sustainably, switchable Power Distribution Units (PDU) from GUDE Systems were used in the current AV installations.

Connections of the Expert Power Control 8031-1
Photo: © GUDE Systems

2 | Over 130 GUDE Power Distribution Units contribute to the "green university".

The University of Siegen has set itself the goal of becoming a 'green university'. In order to achieve this goal and be prepared for future requirements, the university relies on the PDUs from GUDE. The requirements include, among other things, reducing electricity consumption and the carbon footprint to a minimum. In addition, on-site service calls should be avoided by allowing technicians to control the AV technology centrally and remote.

3 | Simply switch off: PDUs reduce power consumption

19 PDUs switch and monitor the AV installations throughout the lecture hall center at the University of Siegen. In the large lecture hall, the Friedrich Schadeberg lecture hall, four PDUs 'Expert Power Control 8031-1' are in use around the clock.

Up to eight circuits can be switched with the 'Expert Power Control 8031-3', each of which is protected with type 3 voltage protection. This voltage protection secures the devices connected to the PDU from overvoltage. This protects the AV installation in the lecture hall center from frequent failure situations.

Across the University of Siegen, more than 130 GUDE PDUs already ensure ongoing operations in lecture halls and seminar rooms - and the trend is rising. In the new lecture hall center, the switchable PDUs are firmly anchored in 19-inch racks. They can be switched off via the IP network when they are not in use. In addition, the switching PDUs can be used to set up schedules, for example to interrupt the power supply at night. This means that standby devices do not have to run continuously. This noticeably reduces power consumption.

An example calculation: The LED wall in the large lecture hall of the Lecture Hall Center is 14 meters wide and 4.5 meters high. For comparison, a 15 square meter LED wall consumes 20 Cent per hour in standby mode. This corresponds to a consumption of around 42 Euro per month if it continues to run on standby for around 7 hours at night. *Photo: © University of Siegen*

Furthermore, the integrated environmental monitoring in the 19-inch racks in the large lecture hall of the lecture hall center reduces the risk of a fire occurring in addition to the general fire alarm system. The switchable PDUs measure temperature and humidity using sensors. If configurable threshold values are exceeded, the system sends an alarm message to the user by email. For example, in the event of a cable fire, an increased temperature can be detected early and the device reports this to the technicians.

This means that technicians can see from their central location whether there has been a fire in the company and, if in doubt, they can remotely restart the devices or switch them off completely.

Good to know

Standby devices passively consume power even when they are not being actively used. The pixels on LED walls, for example, are not switched off, but are simply set to black. 'Standby' is essentially the passive state of the device, which waits for an active action from the user, including pressing the on button on a remote control.

Even if the standby state allows faster access to the device, the AV installation continues to consume energy during this time. Switching off the power supply, on the other hand, switches the device off completely and the power consumption drops to zero during this time.

The advantages at a glance

- Reduces power consumption and CO2 emissions by switching off standby devices
- Avoid overloading the power grid thanks to delayed switching on of the connected devices
- Surge protection using the integrated type 3 voltage protection
- Less complex service calls required
- No walking distances and less time spent for technicians

4 | Remote technology instead of expensive and time-consuming service calls

Two technicians are on duty on the Siegen University campus. This is a fairly manageable number considering that they have to monitor and maintain the AV technology in around 270 seminar rooms and lecture halls. During each of their service calls, they take the time and effort to restart the AV installations on site and eliminate the source of the problem. This gives you a quick idea of how complex a service call is. Especially when the most common reason for an error is simply a problem with the software that is crippling the hardware.

Remote monitoring of the AV installations supports them so that the technicians do not have to rush from lecture hall to lecture hall on campus. Thanks to remote technology, the media technicians can restart the hardware from a central location and check for errors reported by the sensors. This saves both time and money from an otherwise time-consuming service call.

Bird's eye view of the University of Siegen
Photo: © University of Siegen

5 | Conclusion & outlook

The use of the switching power distribution units at the University of Siegen shows that the PDUs can reduce service calls to a minimum. Not only do they require less time, but they also reduce the amount of walking distance for the AV technicians. This not only saves the media technicians the effort, but also the frustration and dissatisfaction of professors and students when the AV technology does not work properly. Cost-intensive service calls can be reduced or even avoided entirely thanks to location-independent remote access.

Standby devices no longer have to run 24/7 or on weekends and electricity costs can be saved. The reduced energy consumption through the PDUs supports the sustainable motto “Green University” of the University of Siegen.

The risk of fire is also reduced by temperature and humidity measurements and the alarm message when threshold values are exceeded, so that smoldering fires can be detected preventively. This contributes directly to fire protection.

Expert Power Control 8031-1 controls and monitors the power supply in the 19-inch rack in the lecture hall desk
Photo: © University of Siegen

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