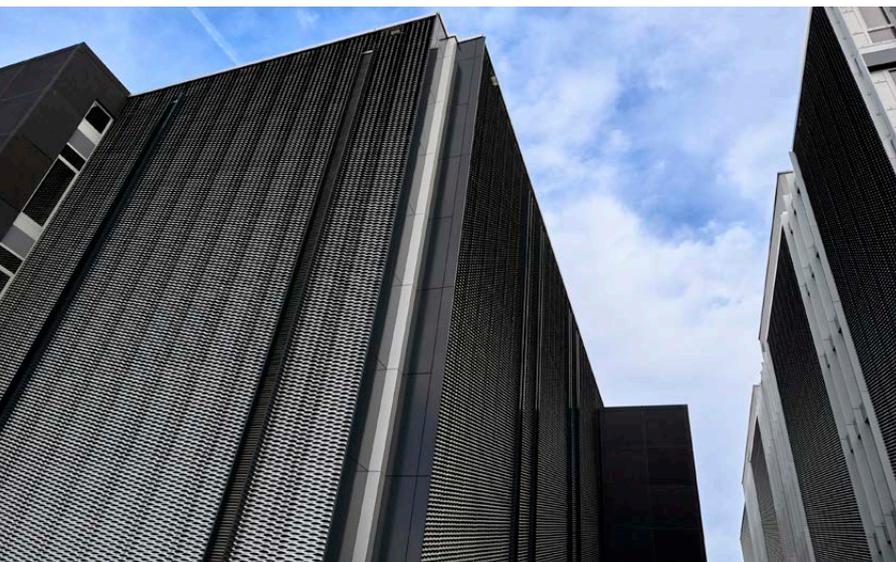


UniSec switchgear to Safe Host data center Gland, Switzerland



A reliable and energy-efficient power distribution solution based on UniSec medium-voltage switchgear to safeguard the distribution of power and ensure uptime in the largest data center in Switzerland.

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01 Safe Host 2 (SH2)
is the largest data
center colocation
facility in Switzerland

Project at a glance

- Customer: Betelec
- End-customer: Safe Host
- Segment: Data center
- ABB products: Air-insulated switchgear UniSec, Relion® 615 and 620 series protection and control relays, indoor vacuum circuit breaker VD4, KEVCD combisensors, Remote Terminal Unit RTU 540, Vacuum cast coil transformers

Customer challenges

Strict requirements were applied from both the utility and the data center owner for a secure and flexible medium-voltage solution to ensure continued operation at the data center and to avoid unplanned and costly power outages. The solution was also to meet the stringent requirements set for safety and internal arc protection.

The customer was looking for an optimized total cost of ownership (TCO), taking into account also the costs of operation and not only purchase price. Further, the customer has a firm commitment to making resource-efficient and environmentally sound choices to support a greener world.

ABB solution

To ensure that power is distributed without any interruptions, ABB installed the modular UniSec switchgear, which can be scaled easily to accommodate future expansion needs.

To meet the customer's requirement of a greener choice, ABB offered the air-insulated switchgear equipped with vacuum circuit breakers, current and voltage combisensors, and Relion protection relays. These devices are connected together and communicate to a Remote Terminal Unit, the RTU540, which in turn communicates to the external supervisory system, using the IEC 60870-5-104 protocol. The communication between the relays and sensors is implemented according to the IEC 61850 standard for power system automation. To ensure safety, the switchgear meets the IAC AFLR internal arc classification, as specified in the IEC 62271-200 standard.

Thanks to the use of sensor technology, the continuity of service is maximized. The sensors have a broad current range, 50 kVA up to 40 MVA, and do not need to be replaced as conventional metering transformers do, if the rated current changes more than originally planned. Replacing the metering transformers would also involve powering down the equipment and possibly cause service disruptions.



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01 The UniSec switchgear is painted in a range of colors at SH2 to ensure ease of use - the color scheme matches the low-voltage feeders, busbars and UPSs located in another room

02 Relion protection and control relays can be operated also locally, but are usually accessed remotely from the control room

Customer benefits

- Flexibility to expand the power system and seamlessly add more switchgear panels
- Accurate measurements and easy data management in the power system with sensor technology
- Native IEC 61850 communication between the station equipment for improved speed and reliability of the power system and reduced switchgear cabling
- Turnkey system, including fast power source switching logic and communication to the supervision system and power system protection with the Relion protection relays
- Meets requirements from both the utility, with the VD4 circuit breaker at 1250A, and the data center's requirement of outgoing circuit breakers at 630A
- Considerable energy savings with sensors instead of conventional metering transformers



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About the project

Betelec is an engineering company based in Geneva, Switzerland. Safe Host is a Swiss company that provides a complete range of data center services.

The data center in Gland is known as SH2 and it is Switzerland's largest carrier-neutral data center colocation facility with 14,400 m² capacity.

To the SH2 data center there is a dual power feed of 40 MVA. The Safe Host data center uses only hydro power to support the company's green values.

ABB also provided project management and engineering services to the SH2 project.

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