

CIRCUTOR solutions for the banking sector

EDS Application

BANKING SECTOR

 **CIRCUTOR**
Energy efficiency technology



EDS Application. Banking sector

The banking sector is part of a target group of business sectors known as multi-point. They are known as such because they offer services over extensive geographical areas, obligating them to invest heavily in assets. This allows them to obtain significant coverage rates depending on the area or the service rendered.

Given the level of investment involved, they must often develop extensive supplier networks, which enables them to keep their infrastructure in optimum working condition for the activities they carry out, which are attracting new clients and earning their loyalty.

A series of parameters are needed in order to implement the business of attracting clients and earning their loyalty:

- Branch office in a location suitable for serving existing clients and for capturing new ones
- Pleasant environment on the premises that is conducive to conducting business

The comfort level inside the bank branch is basically determined by two main sources of electrical energy consumption: air conditioning and lighting. While they do not have a direct impact on the client's comfort level, miscellaneous supplies can represent a significant expense for these types of installations.



Working hours in the banking sector are not extensive, which means that installing timers is not a viable option.

Habits vs. energy costs

The most important *handicap* for any installation is to be sure that, when the workday is over, equipment that uses electrical energy is disconnected, thus avoiding electricity usage that does not generate value for the company.

Since disconnection of this equipment is usually done manually, it is very common for the equipment to be left on accidentally. The resulting cost is carried directly to operating expenses, reducing profits.

If you multiply these expenses by "x" banking locations or branch offices, the overall cost associated with the use of the installations can represent potential savings for corporate energy managers.

Unnecessary costs in the bank office's daily operations

$$1 + 2 + 3 + \dots + n = \text{Cost } 0\text{€}$$

Particularities

The reality is that working hours in the banking sector are not extensive, so the installation of timers with set hours programmed is not a viable solution. In addition, there are different national, regional and local holidays in each location or region.

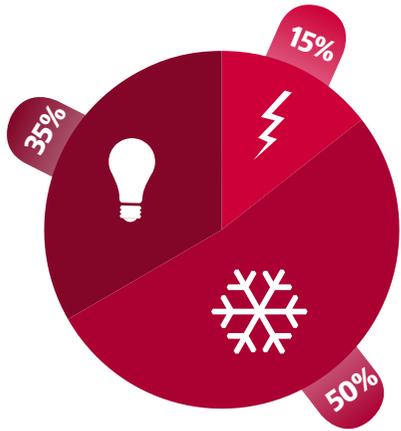
As mentioned above, multi-point clients are usually surrounded by networks of suppliers located near the site, which favours the potential for daily incidents enormously.

This means that the facility is being accessed not only by bank personnel but by maintenance, cleaning and other personnel who provide the offices with indispensable services. There is a constant influx of people that includes not only the bank's clients but also external vendors who provide services at the installations.

For example, if the cleaning people enter the bank in the afternoon when the offices are closed and leave the lighting or air conditioning on when they go, the loads are left on all night until the next morning.



Manual disconnection can increase electricity costs due to carelessness on the part of personnel (internal or external).



The loads that create a comfortable atmosphere in an installation are divided into: air conditioning, lighting and power (computers, printers, etc.)

Centralised supervision and control system

If the object is to ensure disconnection of the loads when there is no physical presence or activity in the bank, the offices must be equipped with an automatic disconnection system.

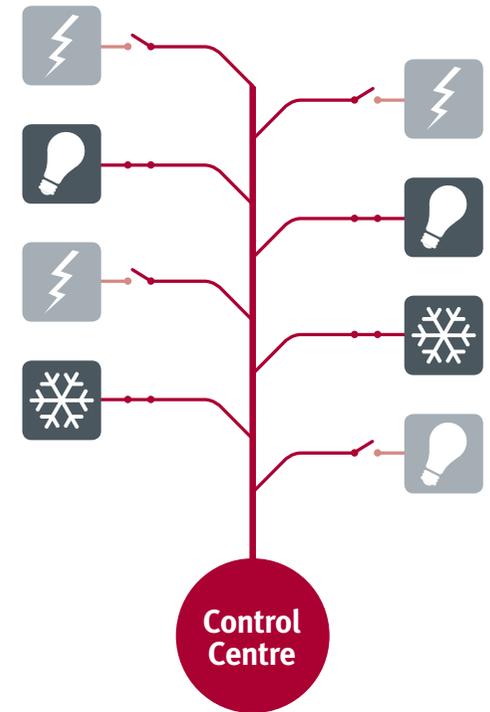
To do so, we must prepare the installation so that, via disconnection of a switch, contact or remote switch, the various loads that provide comfort and climate control (air conditioning, lighting and power) to the installation may be shut down. It is important that the electrical design of these three elements is such that they can be used individually, regardless of when the facility is occupied or being used.

→ Air Conditioning

On average, air conditioning accounts for approximately 50% of a bank's electricity usage. In the summer months, the percentage can climb to 55%. Obviously, the units should shut themselves off as a function of their operation, and never by power or by supply of the load itself.

→ Lighting

Lighting is obviously an important aspect of comfort; proper lighting of the installation will result in better customer service. Unfortunately, the cost of lighting can account for up to 35% of the total electricity bill.



→ Power

In addition to lighting and air conditioning, there are numerous loads connected to the network. Obviously, many of them cannot be disconnected without jeopardising the bank's operations and even its security.

However, there are many small loads that are either left on or on *stand by*, generating around 10-15% of the site's overall electricity usage. This includes loads such as printers, computer screens, coffee makers, etc. Equipment that is prone to damage if the electricity is disconnected will not be connected to these automatic disconnection circuits. Rather, it will be permanently connected to the power supply.

Once the circuits or installations are equipped with disconnection devices, the site is ready for the installation of a centralised supervision and control system.

*Thanks to the centralised system,
each electric load of the installation
can be monitored and controlled
individually and in real time.*

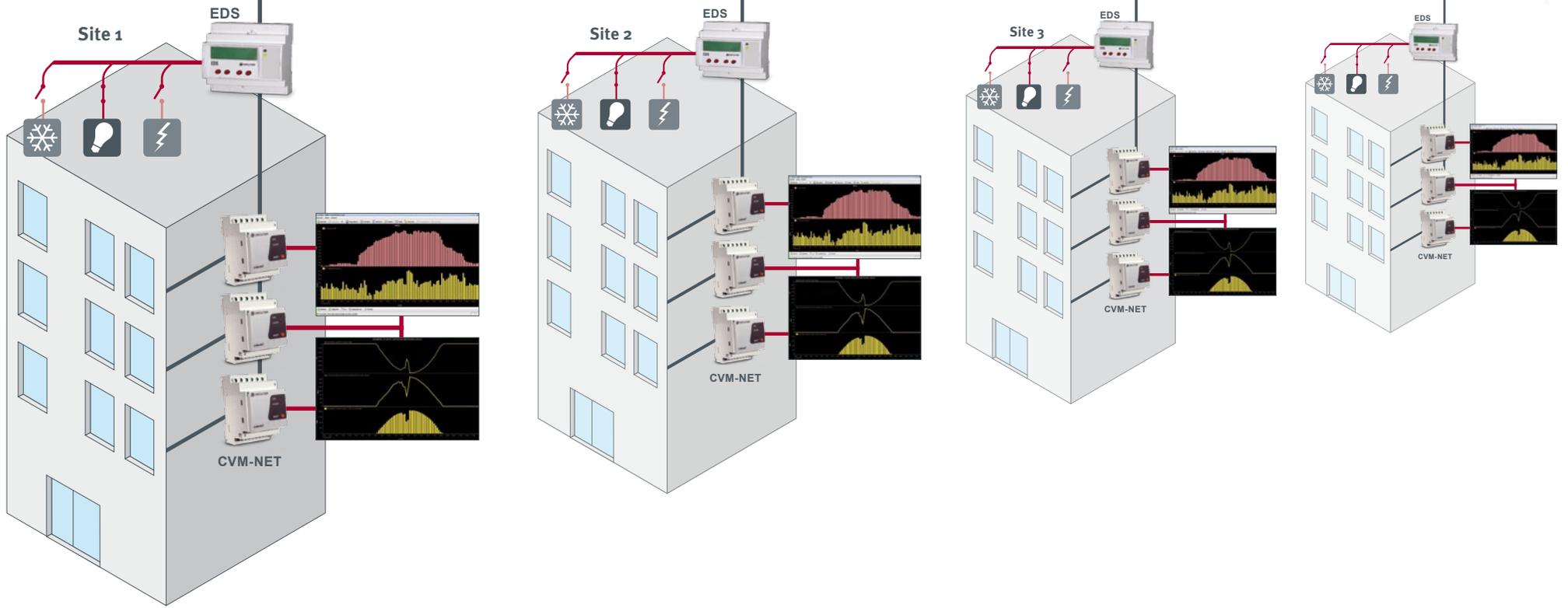
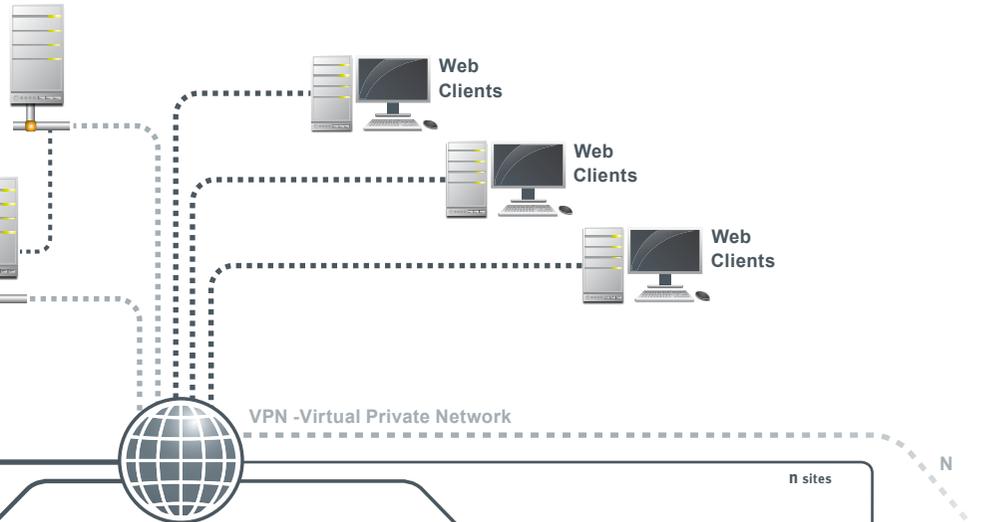


PowerStudio Dacs 3.0 Server

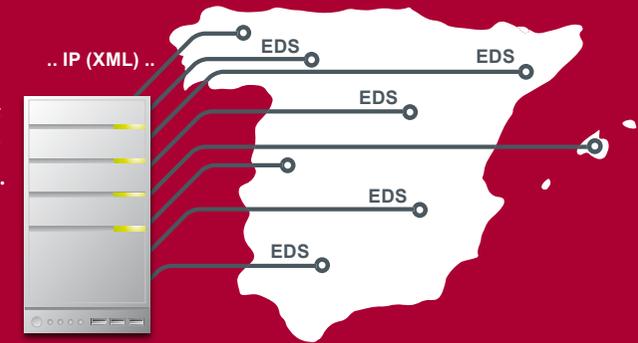
Built-in XML servers, Multiposition Web Server, 32/64 bit technology, O.S.: Linux/Windows

Security Server (optional)

Dynamic data exchange.
Remote shutdown of installations upon activation of alarm (XML commands).



A central computer supervises all of the control points at each one of the installations.



The System

The system is monitored by a central computer located in a secure *hosting* centre, which communicates with the **EDS** control elements located in each office using IP communications.

EDS is a unit equipped with 4 relay outputs for attacking the power circuits and four digital inputs (open or hot, depending on the model). Inside, there is a monitor and control application that responds to XML type requests (**Embedded PSS**).

Centralised manual disconnection

All **EDS** are monitored remotely, providing information on the status of all offices. Sometimes, personnel are required 24 hours a day, 365 days a year. These people supervise the installations remotely and are the ones in charge of disconnecting the loads in the afternoon, evening or on weekends.

Mass disconnection alarms can also be scheduled, depending on the site profile.

While this monitoring system has a positive impact on energy costs, the reality is that the disconnection could be even more efficient with an automatic disconnection system.

Centralised automatic disconnection

The banking sector's maxim is to apply the highest safety standards to daily

operations. That is why whenever the office is left unattended, or when everyone goes home for the day, the person in charge activates the security system, activating the alarm in the office.

Activation of this system sends an activation signal remotely confirming that the workday is over or that there is no one in the office at the time. The security systems give real time status reports, and it is precisely then when the energy-consuming loads should be disconnected completely.

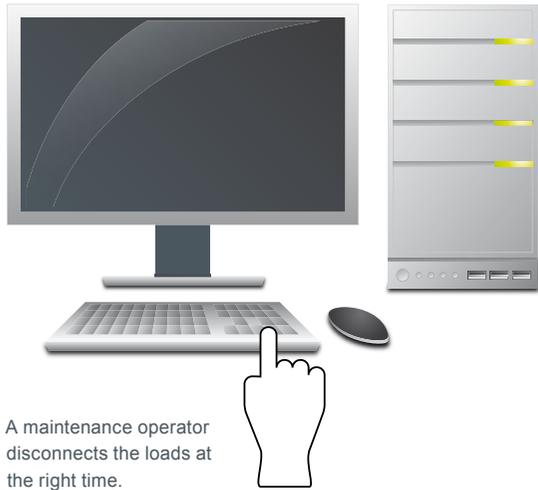
Therefore, the most efficient option is to combine the security system with the energy efficiency system, thereby forcing the automatic disconnection of local loads (air conditioning, lighting and power).

While it may seem complex, the solution simply involves developing a module for sending XML sentences to the local disconnection modules, which in turn attack the electrical energy efficiency system and consequently the power circuits of the loads.

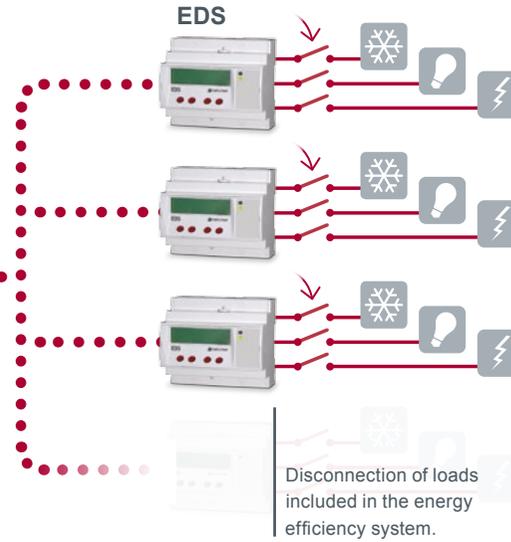
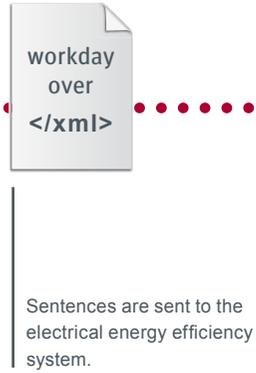
Because the system uses a standardised programming language that is easy to replicate in an unlimited number of offices, it can easily be installed in a very large number of bank offices.

In fact, if necessary the system disconnection signal can take the form of a local, on-site digital signal.

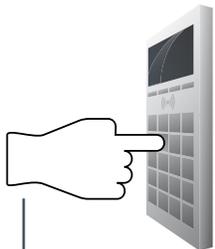
Centralised manual disconnection



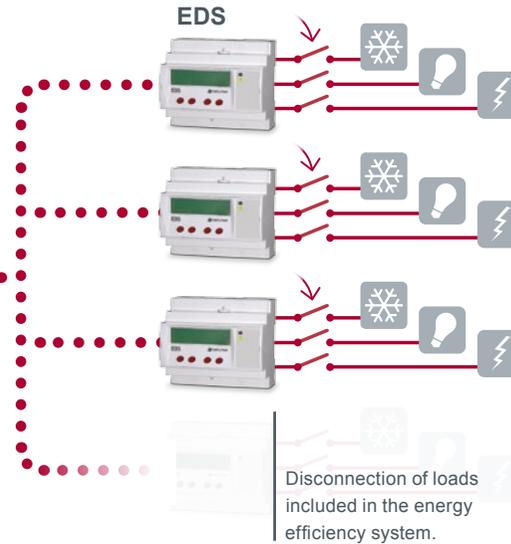
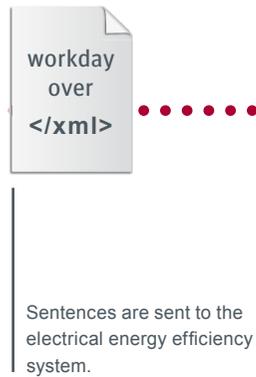
A maintenance operator disconnects the loads at the right time.



Centralised automatic disconnection



Activation of security system by office manager.



By installing this electrical energy efficiency system, the company can obtain savings up to 15%.

EDS Application. CIRCUTOR products used in the system.

PowerStudio Dacs

Energy Management Software



PowerStudio is a powerful, simple, user-friendly *software* programme which offers:

- High-level energy studies.
- Production ratios
- Network quality
- Reflection of the information obtained in graphic form or using tables.

Offers complete monitoring of power analyzers, meters, earth leakage and complete control of different magnitudes.

PowerStudio, in conjunction with **CIRCUTOR** equipment and systems, adapts to your particular needs by providing tools for the supervision and control of your installations.

EDS

With built-in web servers and **Embedded PowerStudio**



Efficiency Data Server is a device equipped with **Embedded PowerStudio** and a built-in web server, which enables query of any electrical variable by the user. There are 4 voltage-free digital inputs and 4 programmable relay outputs.

The most salient features include:

- Real time display, calculation and logging of parameters from the connected equipment
- Creation of tables or graphics
- Creation of users and profiles
- Automatic event management and parameterisation
- Alarm recording system and system event management
- email alarms
- Built-in XML server
- RS-485 port for connecting up to 5 **CIRCUTOR** devices
- Ethernet connection.

CVM-NET

Three-phase power analyzer for DIN rail (3 modules)



CVM NET is a power analyzer for measuring balanced and unbalanced three-phase networks specifically designed to measure up to 230 electrical parameters and to transmit data via an RS-485 communication bus.

The most salient features include:

- DIN rail format of just 3 modules
- 72 x 72 mm panel assembly, with front panel adapter
- Current reading using external transformers ... / 5 A*
- Possibility of measuring medium and low voltage systems
- RS-485 Interface
- 2 programmable digital outputs

*... / 250 mA in **MC** model

MC3 63 / 125 / 250 A

Three-phase efficient transformers



The new **MC3** measurement system comprises three efficient transformers in a single enclosure. The reduced size makes it a simple, efficient innovative system for measuring current by phases. It offers significant advantages during the installation phase of power analyzers in modular panels. Available in 63, 125 and 250 A versions, in accordance with the **IEC 60044-1** transformer standard.

 **CIRCUTOR**

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