



# **Software Environments**

for energy management and control

*Energy efficiency technology*





# Efficiency combined with energy control

## PowerStudio SCADA platform

PowerStudio is powerful, straightforward software with a user-friendly interface

## Information is power

CIRCUTOR is an expert in developing software environments for the management and control of electrical energy efficiency.

These solutions transfer information from remote or mobile measuring units. This information on electrical parameters or consumption is centralised and the management software lets users search and use the data obtained in a fully reliable way.

PowerStudio and PowerVision are two CIRCUTOR software solutions that encompass all the necessary options for analysing the data obtained and making the right decisions for energy efficient installations.

## The key to it all: PowerStudio

PowerStudio is a straightforward, powerful and user-friendly software application, with which you can perform or calculate:

- High-level energy studies.
- Production ratios (energy consumption per unit produced).
- Network quality management.
- Reflection of the information obtained in graphic form or using tables.

It enables full monitoring of power analyzers, meters, earth leakage protection elements and complete control of different magnitudes in any field of application.

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



**Power**studio  
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 S C A D A

We are living in the information age of energy efficiency; having information is vital to knowing, understanding and taking actions to reduce energy costs.

## Powerful and versatile

### Features



#### Communications platform

Service integrated with Windows®. Uninterrupted communications with units configured in the system.



#### Remote edition

Allows applications to be edited online, facilitating application editing tasks by integrators. This action allows users to edit applications located kilometres away with just an Internet connection.



#### Real-time remote query

Allows interaction with the communications motor for application viewing, parameter management, controlling loads remotely, etc.



#### Easy

Software that is extremely easy to use. No programming knowledge is required to develop the applications.

## Features

- Windows® service (it is not necessary to have a user session open for **PowerStudio** to communicate with the units)
- Online display of device parameters (including electrical parameters, process signals, temperatures, etc.)
- Remote device parameterisation
- Real-time display of graphs
- History log
- Historical data represented in graphic and table format
- Export of XML data (OPC and SQL with additional module).



# Organisation

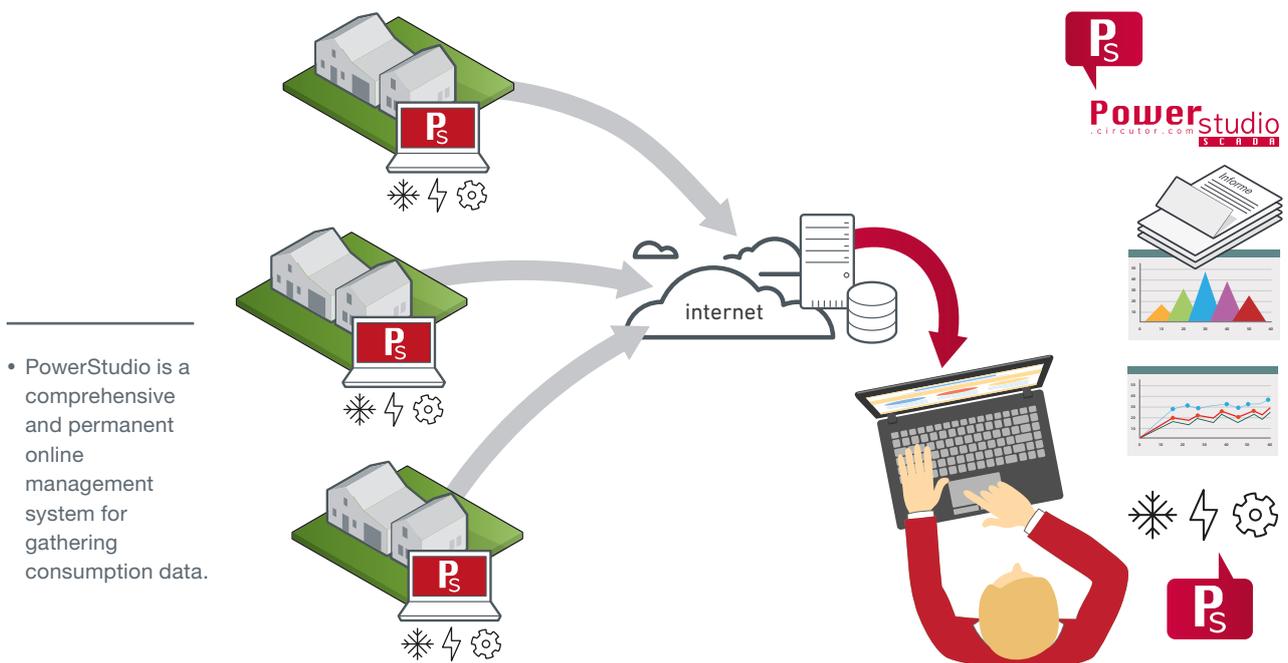
## One can never learn too much

Controlling energy consumption and finding out if it is reasonable is necessary to avoid economic losses that, managed correctly, can be prevented.

Knowing the consumption of different installations and whether it is optimised is a must for all companies that want to be competitive in the current framework. **CIRCUTOR** is an expert in developing software environments for the management and control of electrical energy efficiency.

The solutions developed for this purpose transfer measurements from remote or mobile units to a central server. The management software allows users to search and use the data that has been collected and centralised on the server in a completely reliable way.

**PowerStudio** and **PowerVision** are two **CIRCUTOR** software solutions that encompass all the necessary options for analysing the data obtained and making the right decisions for energy efficient installations.





# Experience

## Results matter

**PowerStudio** is a comprehensive and permanent online management system designed to gather current consumption data.

It allows you to personalise the configuration of SCADA Screens to display data in real time and configure customised reports.

**PowerStudio**, combined with **CIRCUTOR** measuring units, provides accurate information about our energy consumption habits and lets us optimise them in line with real needs.

**PowerVision** can display the data gathered by mobile units.

This software gives you the initial analysis of the installation and first-hand information about its behaviour, allowing you to determine the key measuring points that will be necessary to implement a permanent management system.

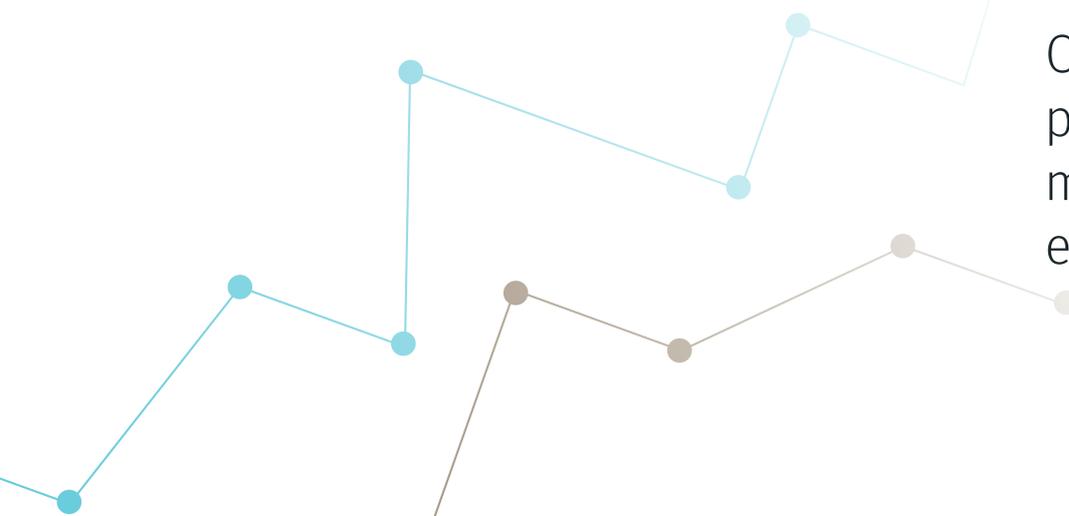
Energy efficiency is the goal of both systems.

*The potential to improve measuring units by equipping them with communications made it possible to gather this data for a very good cause: to better control, predict, take action on and manage electric energy management. CIRCUTOR then developed the first software application on the market for this purpose.*

*The software developed by CIRCUTOR has evolved to leverage the power of the computer platforms that have hit the market since then.*

### **PowerStudio SCADA platform**

Optimum control, prediction, handling and management of electric energy



# Powerstudio

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## Built-in Web Server

PowerStudio SCADA's built-in web server allows any user to access real-time and historical information using a conventional web browser on a PC connected to the same corporate network (LAN) or from the Internet, as long as the computer network is properly configured.

The web server enables unlimited simultaneous user connections, though access to information may be limited by a configured hierarchy of users with user names, passwords and profiles that allow or deny access to SCADA screens, reports, calculations and even unit configurations.

### Built-in XML server

With this format we can look up any parameter in the PowerStudio SCADA platform, including real-time values and stored historical data.

### Export to CSV format

Users can export data tables and configured reports from the PowerStudio client manually.

## Powerstudio

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Real-time display of variables, database creation, table and graphical representation of recorded data, XML server and the exporting of data to files (.txt and .csv extensions)

## Powerstudio

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SCADA

Powerstudio + SCADA screens, reports, events

## Powerstudio

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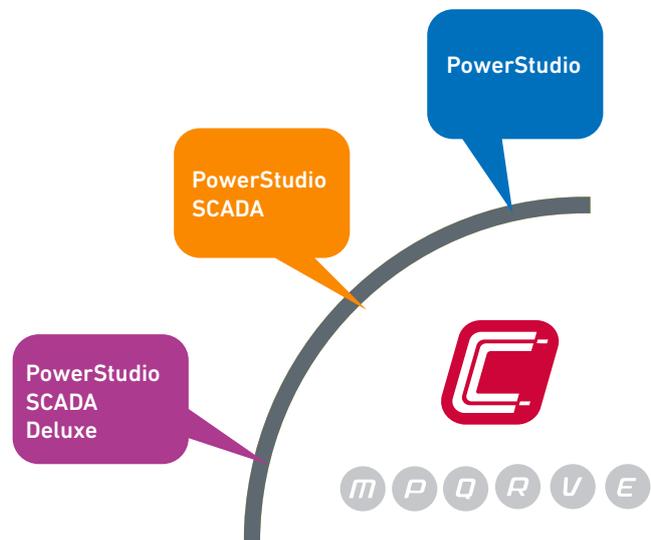
SCADA Deluxe

Powerstudio + Modbus Driver, Generic, OPC client



### Compatible with TABLETS and SMARTPHONES

PowerStudio 4.0 has built-in JAVA and HTML5 support; the latter can be searched from any current browser on mobile systems like tablets and smartphones.





# Compatible

Software compatible with all CIRCUTOR units.

- M Measuring Units:**
  - Converters
  - Centralizers
  - Energy meters
  - Power analyzers
  - Voltmeters, ammeters, process indicators

- P Protection and Control Units**
  - Earth leakage relays
  - Multipoint earth leakage systems

- Q Quality & Metering Units**
  - Multifunction meters
  - Power quality analyzers

- R Power Factor Correction Units**
  - Smart power factor correction regulators

- V Smart Electric Vehicle Charging Units**
  - Smart electric vehicle charging systems

- E Units for generating and controlling renewable energies**
  - Photovoltaic self-consumption kits
  - Inverter with storage management

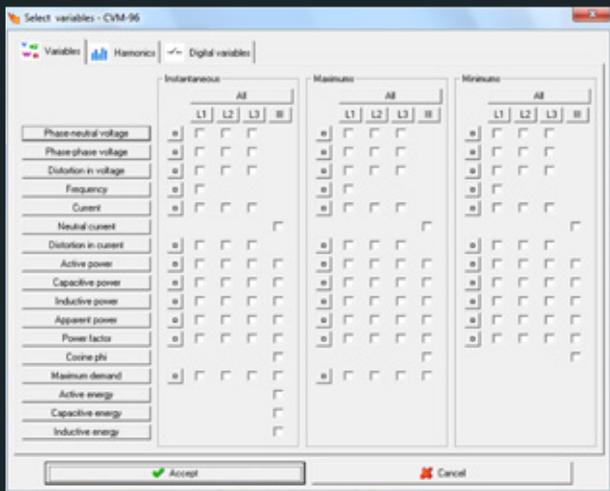
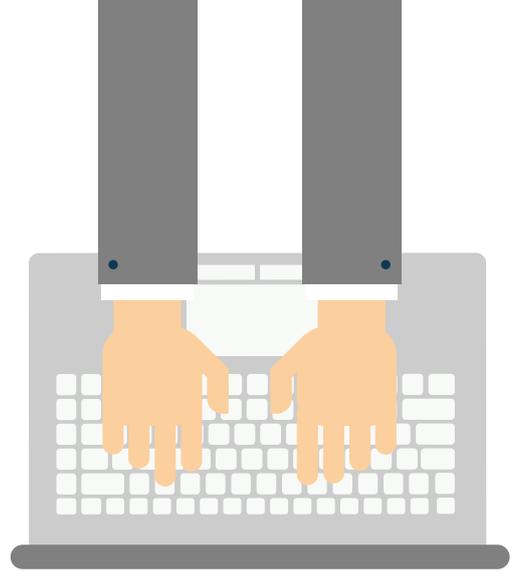


**Power**studio  
circutor.com SCADA



# PowerStudio

This software allows users to monitor their installation, getting first-hand, real-time information on the status of their power lines and even the general low and medium-voltage consumption of their installation. This supervision is important because it provides accurate information about the status of the electrical installation, essential for taking correct decisions. Depending on the features of the units installed, a large number of electrical parameters and processes can be monitored.



## Powerstudio

### PowerStudio enables the following:

- Configuration of the CIRCUTOR measurement and control units connected to the communications network.
- Real-time display of the parameters recorded by the measuring units installed on site.
- Creation of databases.
- Recording and searching the historical data stored on a computer in graphical or table format.
- Built-in XML server.
- Exporting to text files and spreadsheets.
- Access to information through a conventional Internet browser.

### Real-time variables

- Displays all variables measured from all units in real time.

### Tables

- Displays data on tables; this information can be exported to .txt or .csv files.

### Graphs

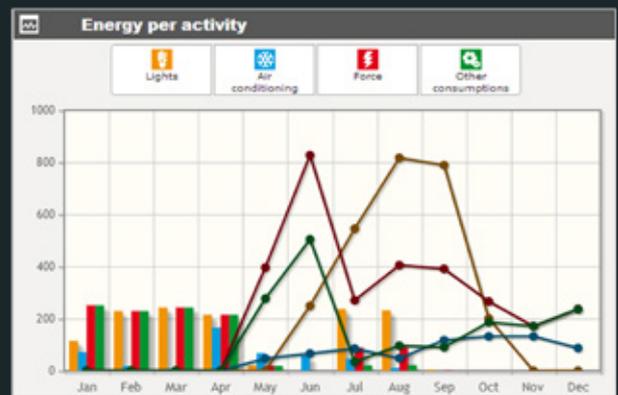
- Graphical representation of the historical data recorded by software. Enables individual configuration of colours and layout.
- Displays multiple parameters simultaneously.

# PowerStudio SCADA

Due to the diversity and number of interconnected units that an installation might contain, it is important to be able to view and update various parameters from several units on a single screen at the same time.

PowerStudio SCADA is designed to allow users to create their own customised screens and reports according to their needs.

PowerStudio SCADA is the tool that can generate reports with the data gathered by the units, with the purpose of implementing preventive or corrective measures in the installation.



## Powerstudio

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S C A D A

In addition to all of the options offered by PowerStudio, PowerStudio SCADA also allows you to:

- Create SCADA screens combining different parameters from different CIRCUTOR units connected to the communications network
- Generate reports or simulate electricity bills for the allocation of energy costs.
- Manage and control events programmed by the user, such as alarms or process automation actions.

### Reports

- PowerStudio SCADA can generate reports for all types of bills, with the allocation of partial costs, production ratios, etc.

### SCADA screens

- With SCADA screens you can configure all kinds of interactive windows, create personalised screens and combine different parameters from different CIRCUTOR units easily, thus obtaining the maximum amount of information possible in an intuitive and user-friendly environment.

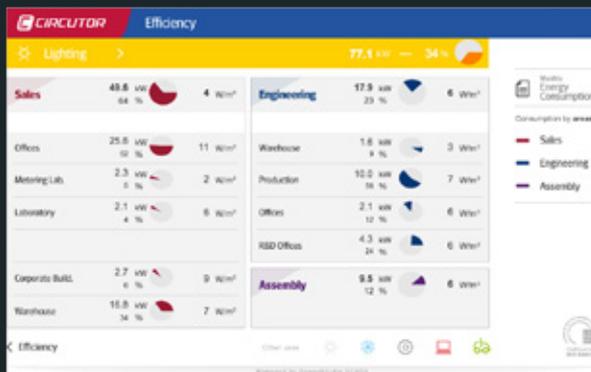
### Events

- With the events module, you can control and automate alarms and events, automatically controlling the installation's most critical and important conditions.

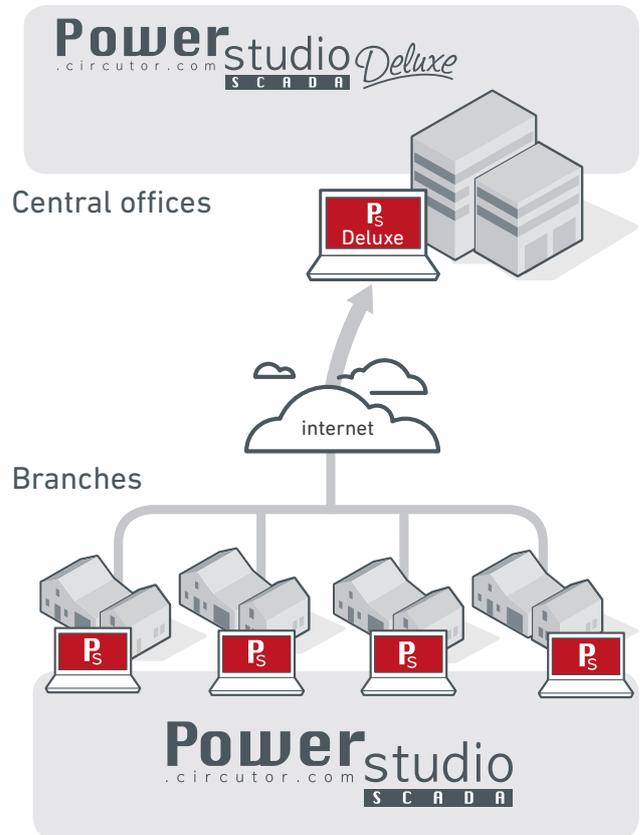
# PowerStudio SCADA Deluxe

In addition to all the features offered by Power Studio Scada, the DELUXE version cover devices with standard connections. The Power Studio Scada Deluxe version not only has all the CIRCUTOR drivers, but features generic connections, so it can communicate with other devices that respond to the Modbus RTU or Modbus TCP protocol through a generic UDP or TCP connection or, consequently, Modbus TCP.

- Interact with any field unit equipped with communications with Modbus/RTU and Modbus/TCP protocols
- Interact with any SCADA application on the market using the OPC server option
- Establish UDP and TCP connections.
- Cascade integration of other PowerStudio, PowerStudio SCADA or PowerStudio SCADA Deluxe systems.



## PowerStudio Integration



### Generic MODBUS

- Driver that can integrate MODBUS communications units in PowerStudio SCADA Deluxe.

### OPC Client

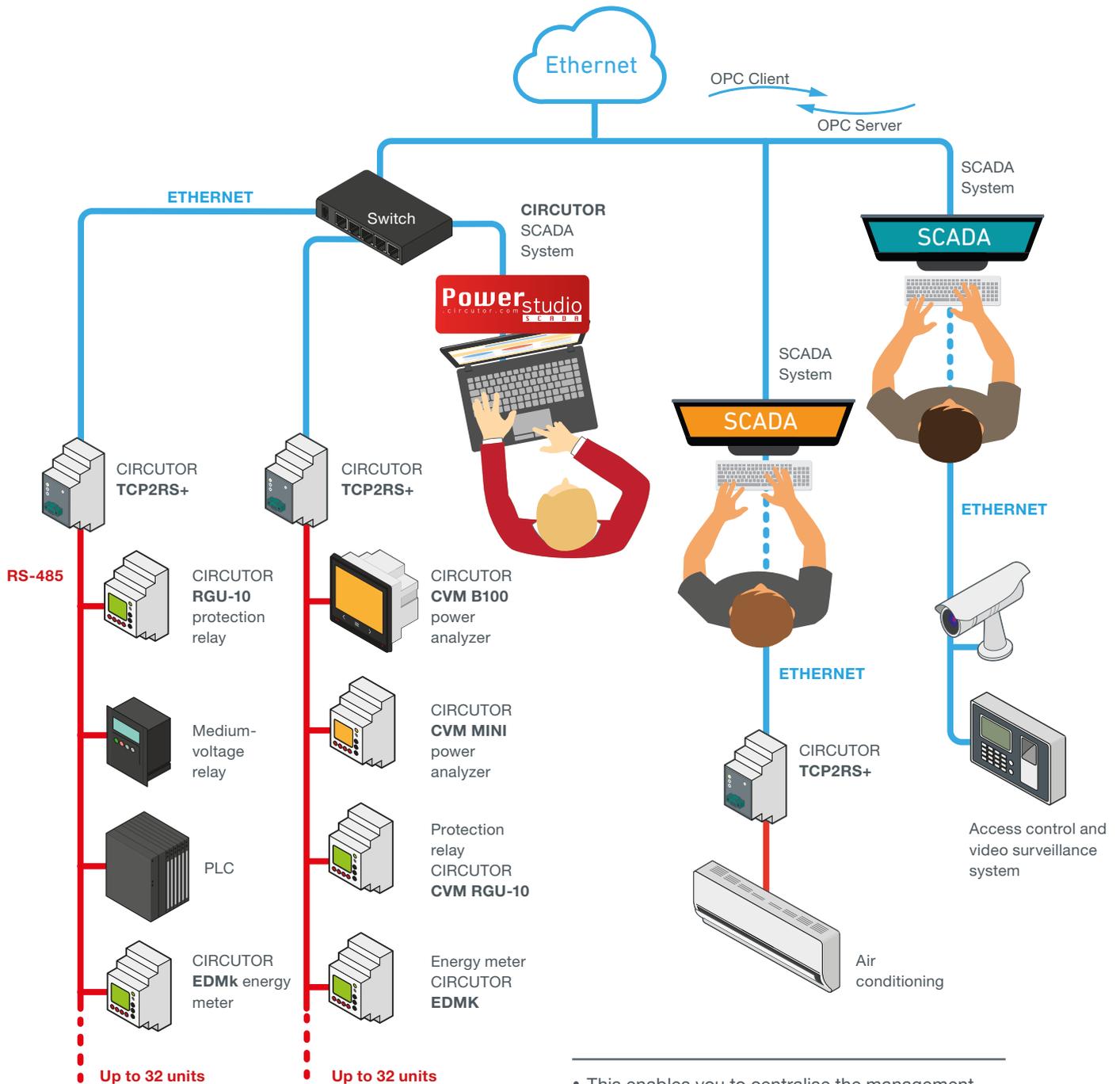
- PowerStudio SCADA Deluxe includes the OPC client, which can integrate the information obtained by other SCADA systems on the market using OPC technology.

# SCADA Applications

**PowerStudio SCADA Deluxe** can create applications on any device equipped with OPC/DA or Modbus communications. **PowerStudio SCADA Deluxe** can:

- Integrate units in the application using a step-by-step wizard for configuring any Modbus unit driver on the market.

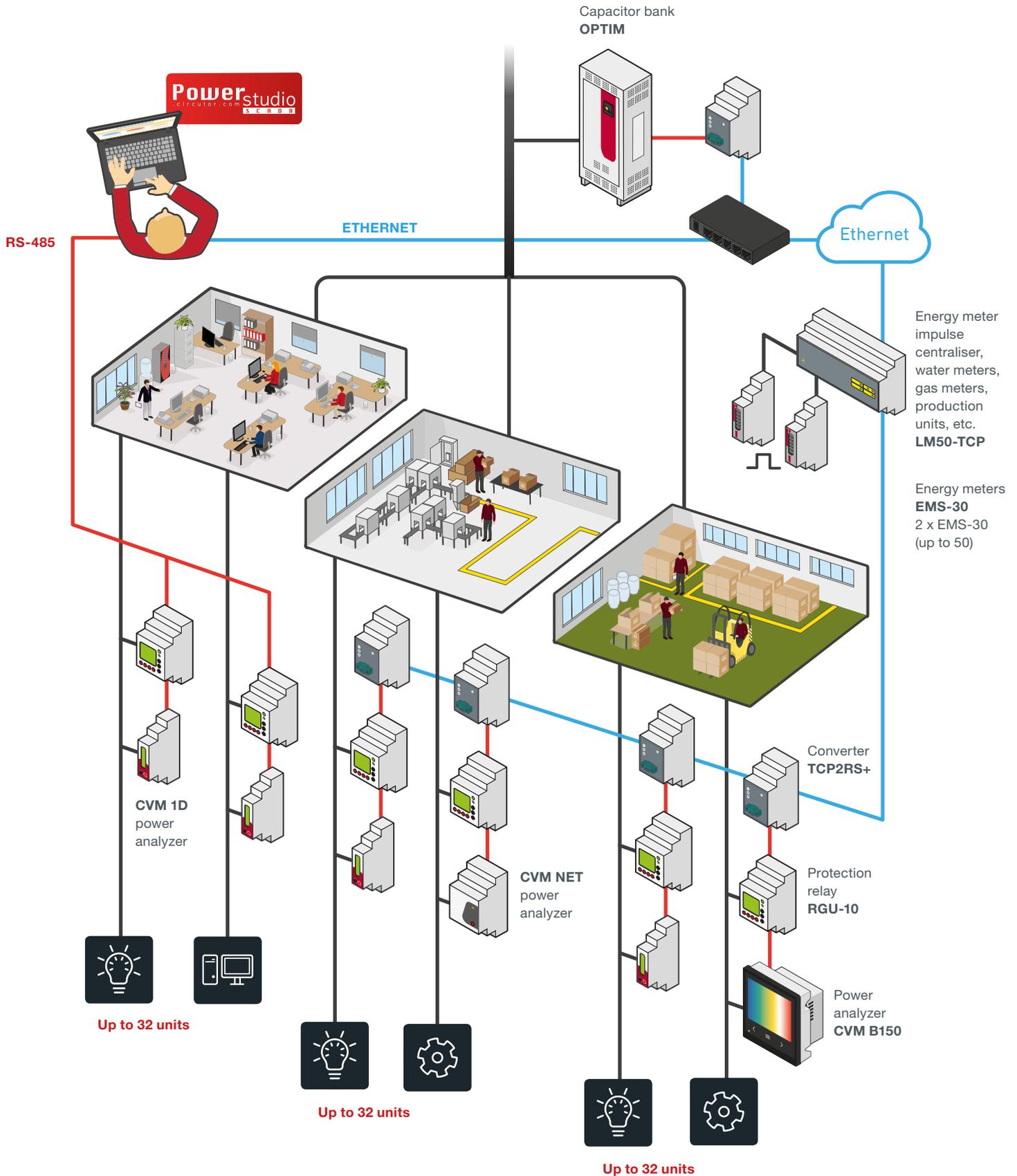
- Integrate identical non-**CIRCUTOR** units in the **PowerStudio** platform using an exportable or cloneable driver.
- Easy data integration from other real-time acquisition systems through OPC/DA.
- Synchronisation of data from other systems in the databases of the **PowerStudio SCADA Deluxe** platform.



- This enables you to centralise the management of one or more installations into a single software application and central sector.

# Architecture

- Energy consumed per unit produced
- Energy used for air conditioning per square metre
- Air conditioning performance (indoor and outdoor temperature)

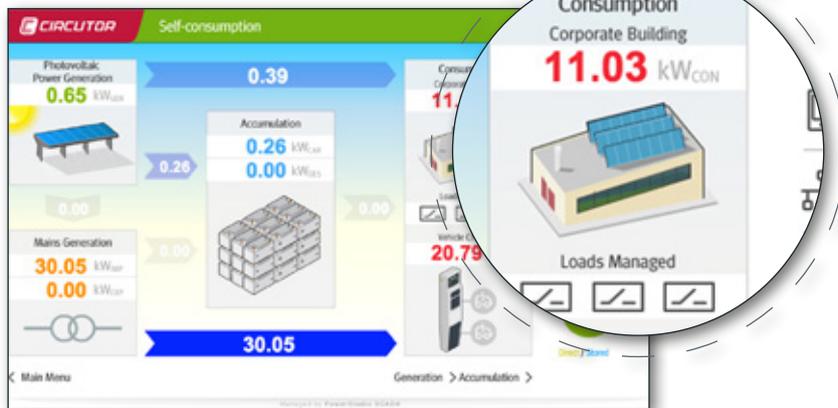


### Multipoint applications



- Displays the desired parameters of various devices on one screen
- Global monitoring of the electrical system
- Forced variables in real time using the keypad (relays)
- etc.

### Photovoltaic applications



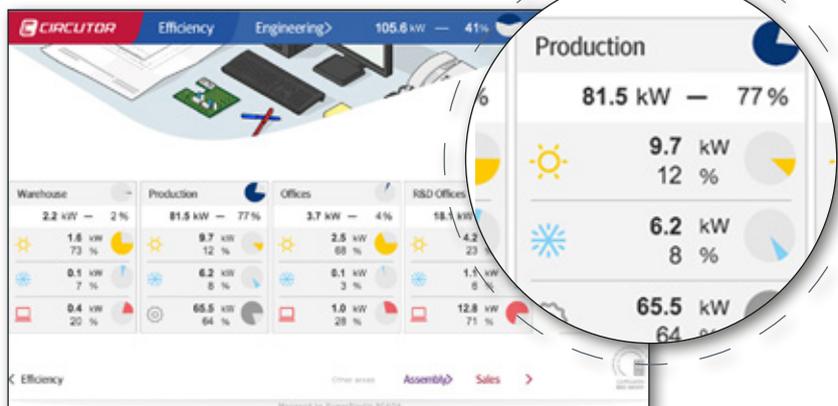
- Power monitoring in photovoltaic power plants
- Monitoring of inverters and their performance
- Monitoring the production of photovoltaic panels
- etc.

### Energy monitoring



- Water and electrical energy consumption
- Monitoring and management of electric vehicle charging processes
- Controlling the relevant electrical parameters of an installation
- etc.

### Energy cost allocation and reports



- Photovoltaic reports
- Energy reports for time periods
- Allocation of energy costs
- etc.

# Multipoint Systems

## EDS, EDS-3G

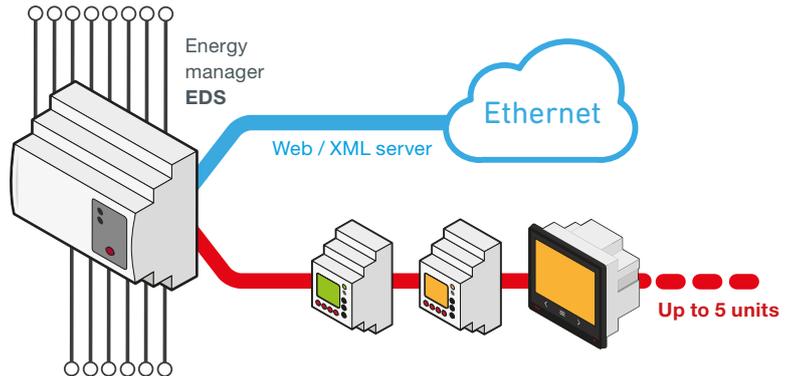
Energy manager equipped with 6 outputs and 8 voltage-free digital inputs. The device is equipped with Embedded PowerStudio management software with built-in data logger and web server, making it easy for users to search for any variable without having to install any additional software on a LAN computer.

- Built-in PowerStudio energy monitoring and control software
- Real-time display, calculation and logging of electrical parameters from the connected units
- Creation of tables and graphs (export option)
- Creation of users and profiles for system access
- Parameterisation and management of automatic events
- Alarm log system and system event management
- E-mail alarms
- Built-in XML server
- OPC integration by optional module

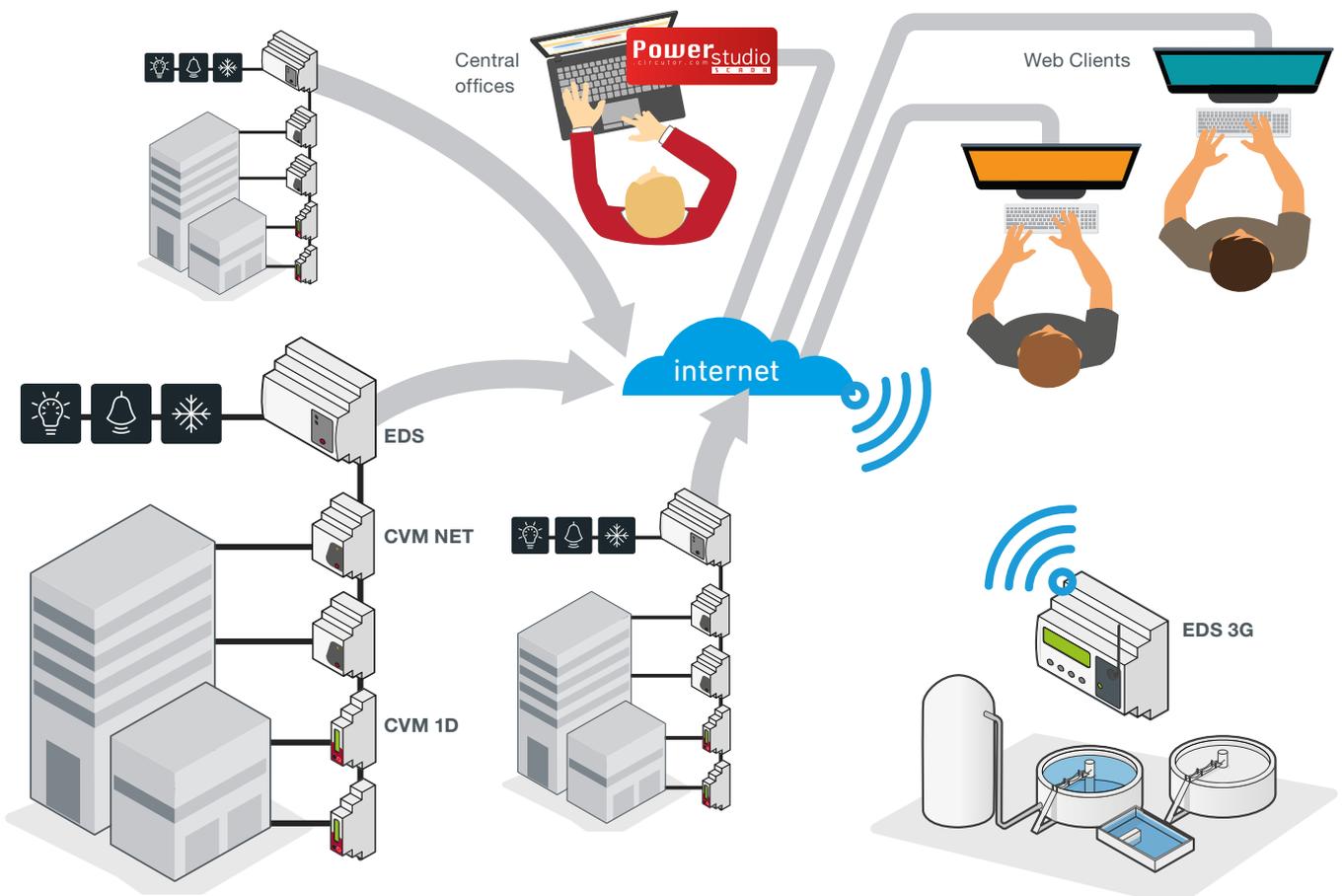


Energy manager  
EDS and EDS 3G

### 8 digital inputs



### 6 digital outputs activation / deactivation



## Additional software

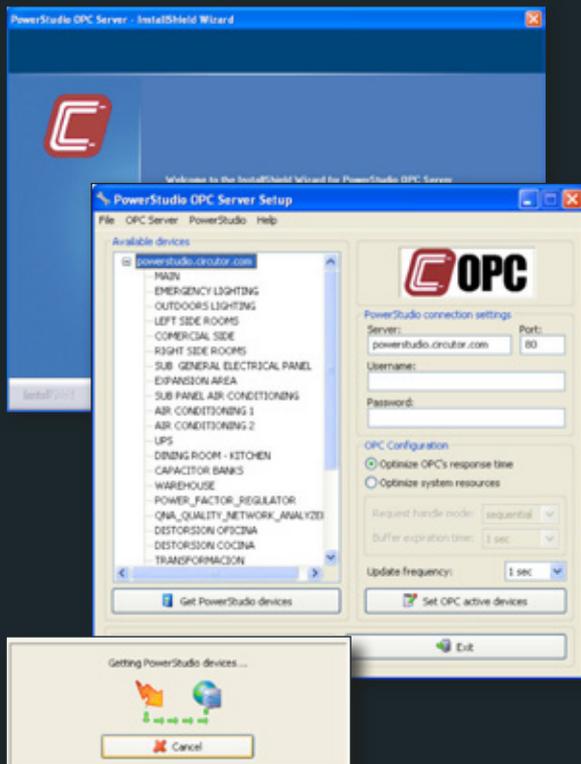
# OPC-DA

### OPC-DA

OPC-DA for PS/PSS/PSSD is a software tool created to quickly and easily integrate all of the electrical parameters from PowerStudio, PowerStudio SCADA or PowerStudio SCADA Deluxe software to a second control SCADA that has an OPC-DA client.

OPC-DA for PS/PSS/PSSD features the Tunnelling function for establishing easy, safe and reliable communications between several networked computers (LAN/VPN/IP). This integration method solves problems associated with the Windows® DCOM configuration.

- Multiple architectures and network topologies.
- Easy configuration and start-up of PS/PSS/PSSD software
- Automatic integration of OPC-DA and PS/PSS/PSSD
- Enables the direct integration of EDS and EDS-3G devices
- Immediate integration of the server and the OPC client
- System robustness (Windows® service)
- IP architectures with the Tunnelling function



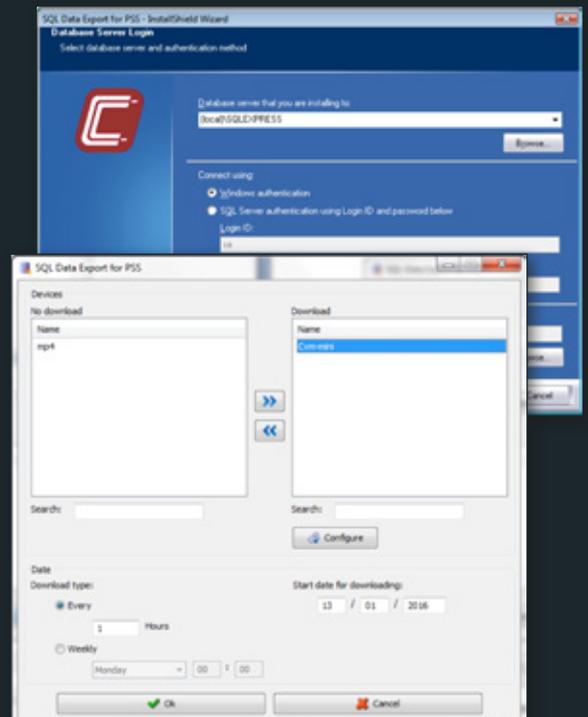
# SQL DATA EXPORT

### SQL Data Export

SQL Data Export for PS/PSS/PSSD is a software tool for integrating PS/PSS/PSSD data into a new or existing SQL database. With SQL Data Export users use SQL queries to integrate the data from field units connected to the supervision system.

SQL Data Export connects to the PS/PSS/PSSD system via an IP connection, facilitating the installation of the SQL export software on the most appropriate computer for the data search or integration project.

- Export of historical data logged in PS/PSS/PSSD to SQL databases
- Enables the direct integration of EDS and EDS-3G devices
- Option of selecting devices or databases to be exported
- Programming the discharge frequency
- Multiple architectures



# Software Environments for energy management and control

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