WinPM and SIEServe

WinPM

WinPM™ is supervisory software designed for monitoring and control of any facility's electrical distribution system. WinPM can run on a single computer or in a networked environment. Multiple computers running WinPM can share data and control devices over a LAN using TCP/IP. WinPM can monitor an entire electrical system consisting of hundreds of field devices in multiple locations.

Electrical System Management

WinPM monitors and collects data of an electrical system by interfacing to any communicating electrical device such as power meters, relays, and trip units. Alarms can be setup to trigger if a specific value, such as voltage, current, or KW demand, is exceeded. Alarms can alert via audible and visual messages on a PC, fax, or pager message, and/or automatically control a connected device.

Analysis

Power quality, such as transients, sags, swells, and harmonics, can be monitored and analyzed by viewing triggered waveforms, continuous data sampling, relay trip logs, and setpoint event messages.

Historical data logs can be generated to provide load profile information, kilowatt demand usage patterns, harmonic, and power factor trends. These historical data logs can provide trending on any measured value.

Device Configuration

ACCESS field devices can be configured remotely by specifying protective settings. Certain field devices can be configured to record waveforms.

Device Control

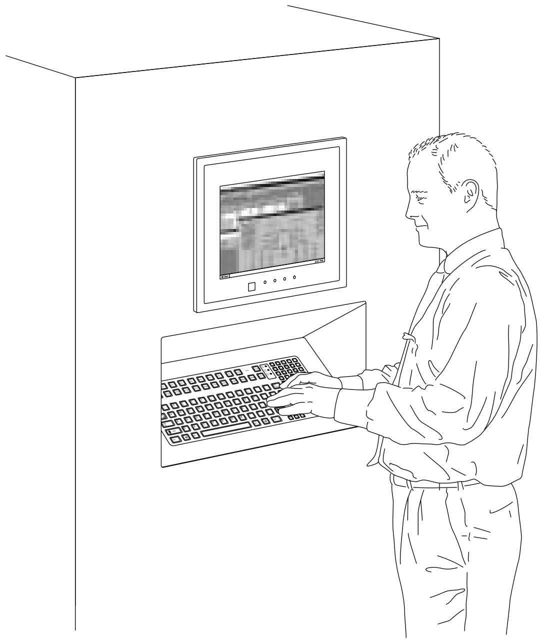
Certain devices can be controlled directly from WinPM. For example, motors can be started and stopped using Siemens Advanced Motor Master System (SAMMS) devices.

SIEServe

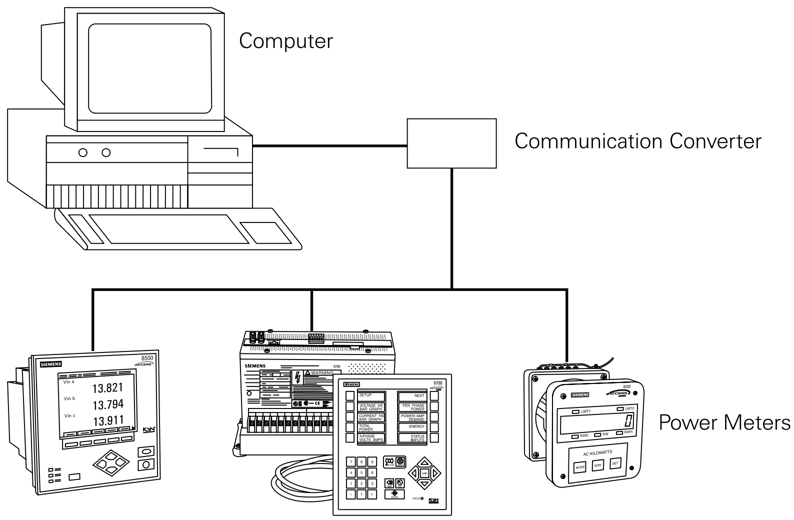
SIEServe™ is another electrical distribution software product designed by Siemens. SIEServe allows for the retrieval and display of data from Siemens power meters, trip units, and relays. SIEServe, though not as robust as WinPM, provides a simple way to monitor an electrical distribution system from a desktop. Data retrieved by SIEServe can be linked to spreadsheets for charting or word processing programs for other reporting functions. SIEServe does not have the control capabilities of WinPM.

Industrial Computer

Siemens software, such as WinPM and SIEServe, will run on most personal computers. In some applications it may be desirable to locate a supervisory computer in a harsh industrial environment. The Siemens industrial personal computer was designed for this purpose. The Siemens industrial computer is dust proof and drip proof to NEMA 4, NEMA 4X, and NEMA 12 specifications. There is a 10.4" flat screen monitor and full keypad with an integrated pointing device. This computer is designed for panel mounting.

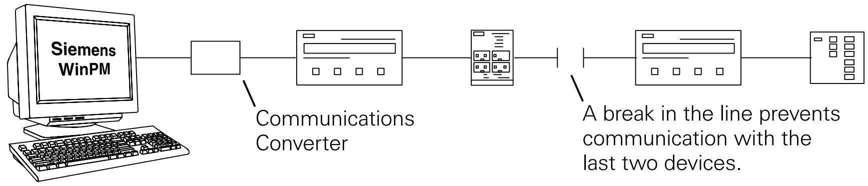


The ACCESS system allows a variety of devices to communicate electronically. In the following illustration, for example, several power meters are connected to a single computer.



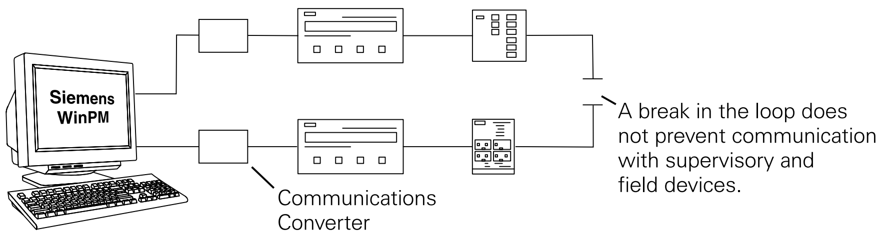
Straight-Line Topology

Field devices can be connected to supervisory devices with either straight-line or loop topology. In straight-line topology the supervisory device connects to a field device, which in turn connects to another field device, terminating at the farthest device. Straight-line topology allows for longer runs; however, if a break in the line should occur the supervisory device would be unable to communicate with devices on the far side of the break.



Loop Topology

In loop topology the cable is connected in a similar manner to straight-line topology. Rather than terminating the connection at the farthest device, a complete loop is formed by bringing the cable back to the supervisory device. Loop topology requires more cable than straight-line topology, which adds expense to the system and shortens the distance from the last device on the loop to the supervisory device. The main advantage to loop topology is the ability to continue to communicate with each device if there is a break in the system.

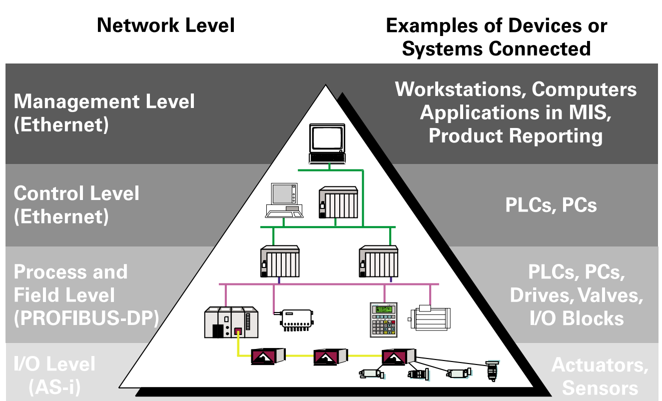


Protocols

Network protocols are rules that allow devices to communicate with each other. A protocol identifies how devices should identify each other, the form communicated data takes, and how the data is interpreted at its final destination. Several protocol standards have evolved in the electrical industry. Siemens ACCESS supports the following protocols at various levels.

PROFIBUS DP

PROFIBUS DP is an open bus standard for a wide range of applications in various manufacturing and automation applications. PROFIBUS DP works at the field device level such as, power meters, I/O devices, motor protectors, circuit breakers, and lighting controls. An advantage to PROFIBUS DP is the ability to communicate between devices of different manufacturers.



ModBus RTU

ModBus RTU is a protocol originally developed by MODICON, which is now part of Schneider Automation. ModBus RTU protocol has been widely used by other companies.

DNP 3.0

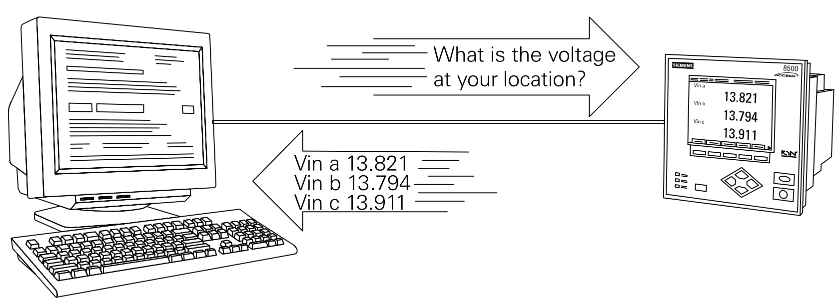
Distributed Network Protocol 3.0 (DNP 3.0) was developed by Harris Distributed Automation Products. This protocol is an open and public protocol based on standards developed by the International Electrotechnical Commission (IEC). This protocol is often used by large power utility companies.

SEABus and SEABus Plus

The rules that govern the communication of the ACCESS system are known collectively as SEABus and SEABus Plus. Both protocols are used to communicate between supervisory and field devices. SEABus and SEABus Plus are open protocols available to anyone who wants to connect their equipment to the ACCESS system.

A supervisory device can support unlimited field devices. Each field device in the ACCESS system has a unique address. A packet is simply a unit of data that is routed between an origin (supervisory device) and a destination (field device). Data bytes are grouped into packets containing from 5 to 260 characters. Data bytes contain a unique address for a given field device and instructions for the field device.

A supervisory device, for example, may initiate communication by sending a packet requesting information such as voltage from a specific field device. The field device would respond by sending a packet back with the requested information.

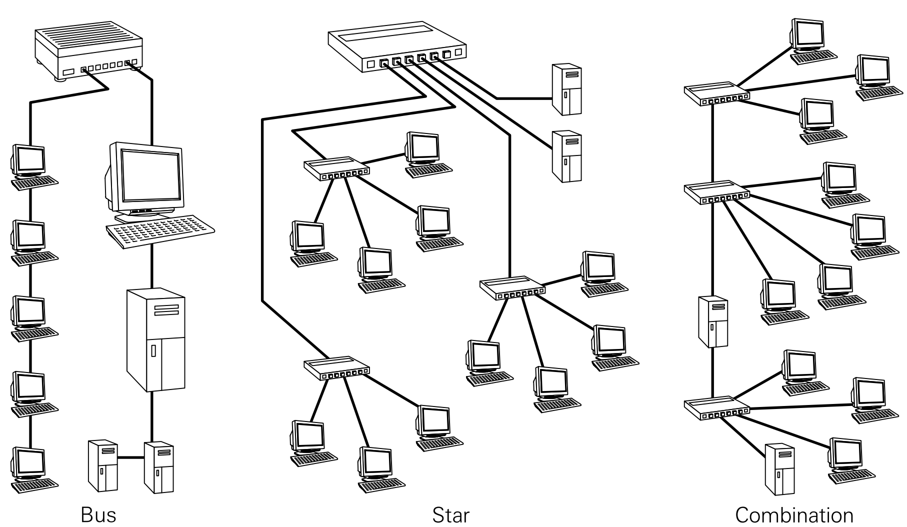


Local Area Network (LAN)

In any complex power monitoring system the need for rapid information flow is critical. Conditions at any point in the system may impact the entire power distribution system. This need for information flow often requires that intelligent devices, such as supervisory PCs, be interconnected by a local area network (LAN). A LAN is a communication system designed for private use in a limited area.

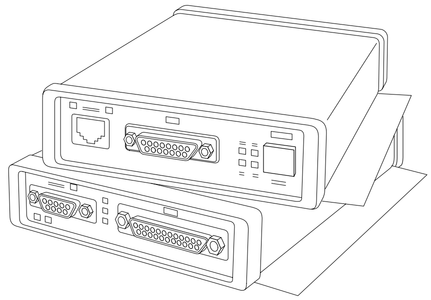
A node is an active device, such as a computer or printer, connected to the network. A LAN can be arranged with nodes in a bus, star, or a combination of bus and star.

One example of a widely used LAN is Ethernet. Ethernet uses a bus topology and an access control system that allows devices to initiate communication only if a carrier signal is not present. By comparison, Token Ring networks use a ring topology and a signal called a token to determine which device can communicate.

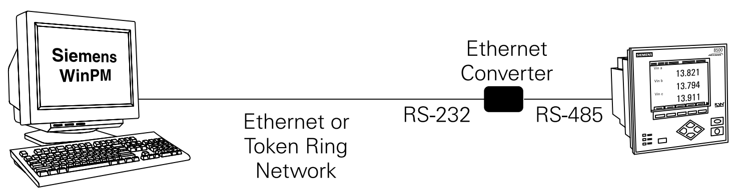


Ethernet Converter

The Siemens Ethernet converter connects many ACCESS field devices throughout a facility to a supervisory computer. The Ethernet converter can be configured so that Siemens ACCESS components can communicate through the Ethernet or Token Ring.



The Ethernet converter can connect RS-232 and RS-485 devices directly to a LAN.



The converter is also capable of connecting up to two protocols, such as SEABus and ModBus RTU.