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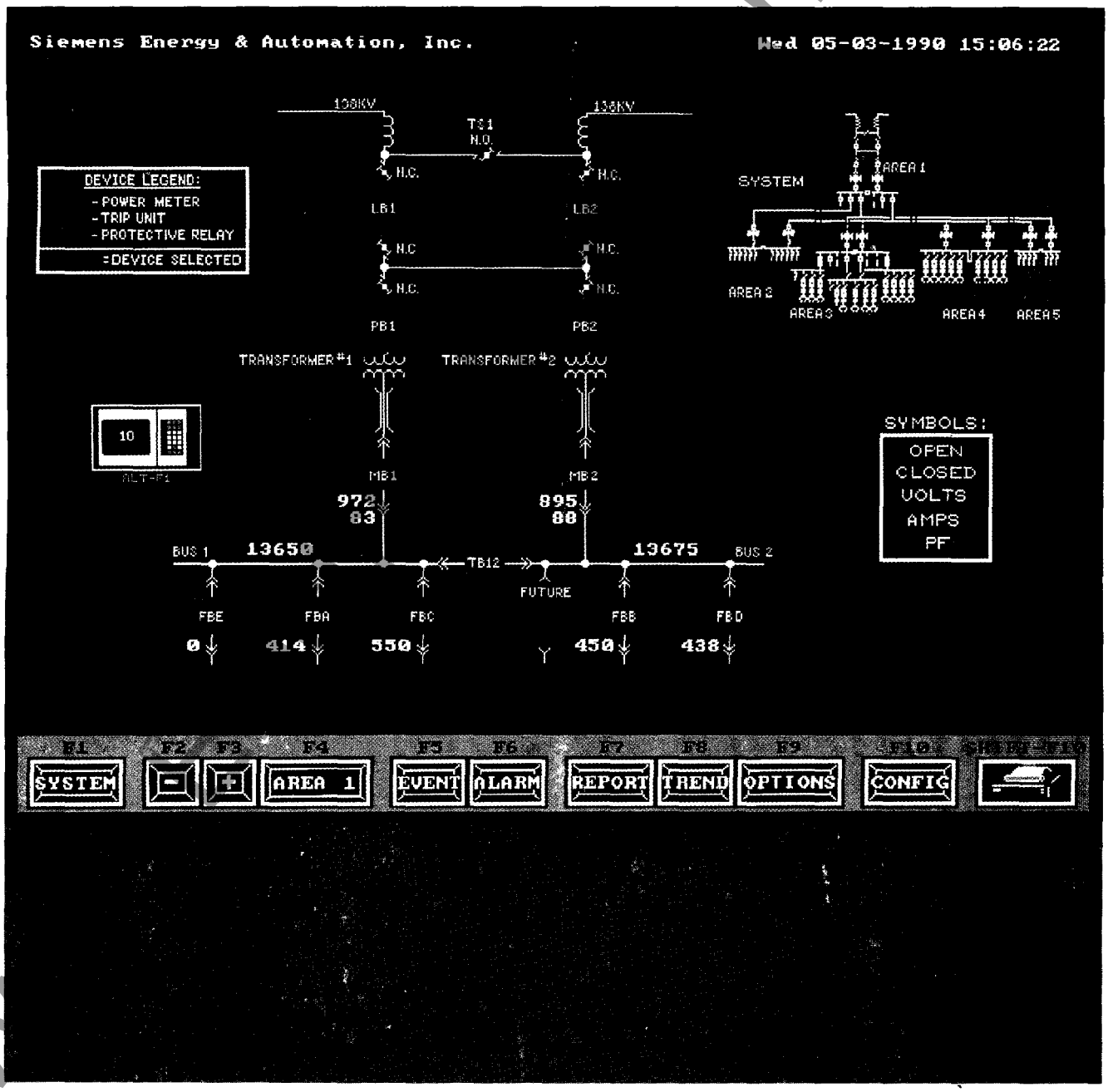
ACCESS.™

The electrical distribution communication system. It puts intelligence on the line.



ACCESS™ brings a new dimension
to electrical distribution.
It's the power to know where
your electricity is going...
the power to identify what's
causing power surges...
the power to manage the
true energy cost of any process...

capable of being routed to any of the four reports with a total of at least 400 data points active at one time. Changing the parameters being logged shall be possible while the system is running after entering a password. Each report shall be capable of logging data to the hard drive at snapshot intervals from 24 hours down to 30 seconds at a user-defined start and stop date and time. A file manager function shall allow viewing and printing the contents of each report file, deletion of files and copying of files to the 3.5 inch drive for archival. The file manager function shall not require the operator to memorize DOS or other commands for file manipulation.

- A trending function shall be provided to allow the operator to view selected data in graphic form. At least four trend charts shall be capable of running concurrently with up to eight measured parameters each. Measured parameters from any connected device may be routed to any of the trend charts. The trend charts shall operate as electronic "strip chart recorders," with different color "pens" for each measured parameter and most recent data on the left. Changing the parameters being trended shall be possible while the system is running after entering a password. Each trend chart shall be capable of showing either real-time or historical data on command. Trending parameters shall be periodically written to the hard drive, regardless of which screen or function is currently active. The real-time data mode shall display continuously-updated measured parameters within a 60 minute window. Current values for each of the trended parameters shall also be numerically displayed. The historical mode shall allow the operator to graphically display data over a variable window as far back as three months. A cursor shall be provided to allow the operator to scan the historical window and obtain a numerical readout of each measured parameter at the selected time.

The host personal computer shall periodially provide a sychronizing time message to downstream devices so that protective device tripping events and other device time-stamped data shall be within one second resolution for the entire system.

The system shall be capable of operating user-supplied software as a separate task while continuing to monitor and log data for the electrical system. Alarm conditions shall be audibly annunciated, allowing the operator to exit the selected software in an orderly fashion to view and acknowledge the alarm condition. Instructions shall be supplied to allow user installation of spreadsheet, database, word processing or other software. It shall be possible to import the report files defined above into the spreadsheet or database software. On-line accessability to the operating system shall also be provided.

(The following option can be specified:) A dial up modem port shall be provided for remote access to real-time and event log data residing in the host computer. Software shall be provided to run on any IBM-compatible PC (specify 286 or 386) that will allow a user to dial up the host computer and display data in simple table format. Security shall be provided to prevent unauthorized access.

(The following option can be specified:) A function shall be provided to transform selected electrical parameters into manufacturing process or department allocation units. A separate allocation screen shall be provided to display the results (specification should include clear description of what parameters are to be combined to create the allocation screen).

(The following optional function can be provided:) The host personal computer shall be capable of acting as a gateway to communicate with another data collection and communication system to be supplied by others. The physical communications link shall be (pick one: ☐ RS-232; ☐ Ethernet). A protocol document shall be provided to define data structure and transfer mechanism for communication with the other system. The host personal computer shall be capable of providing data on request from the upstream system as defined in the protocol document. The information to be transmitted will be the most recent device data buffered in the database memory of the communications coprocessor card(s). Software to reside on the upstream system to be provided by others.

Documentation for user operation of the host personal computer software shall be provided along with a communications interconnection diagram. The communications interconnection diagram shall clearly indicate location, name, address and type for each communicating device. Manuals for all hardware shall also be supplied. Separate line items shall be included in the bid proposal for operator training and commissioning.

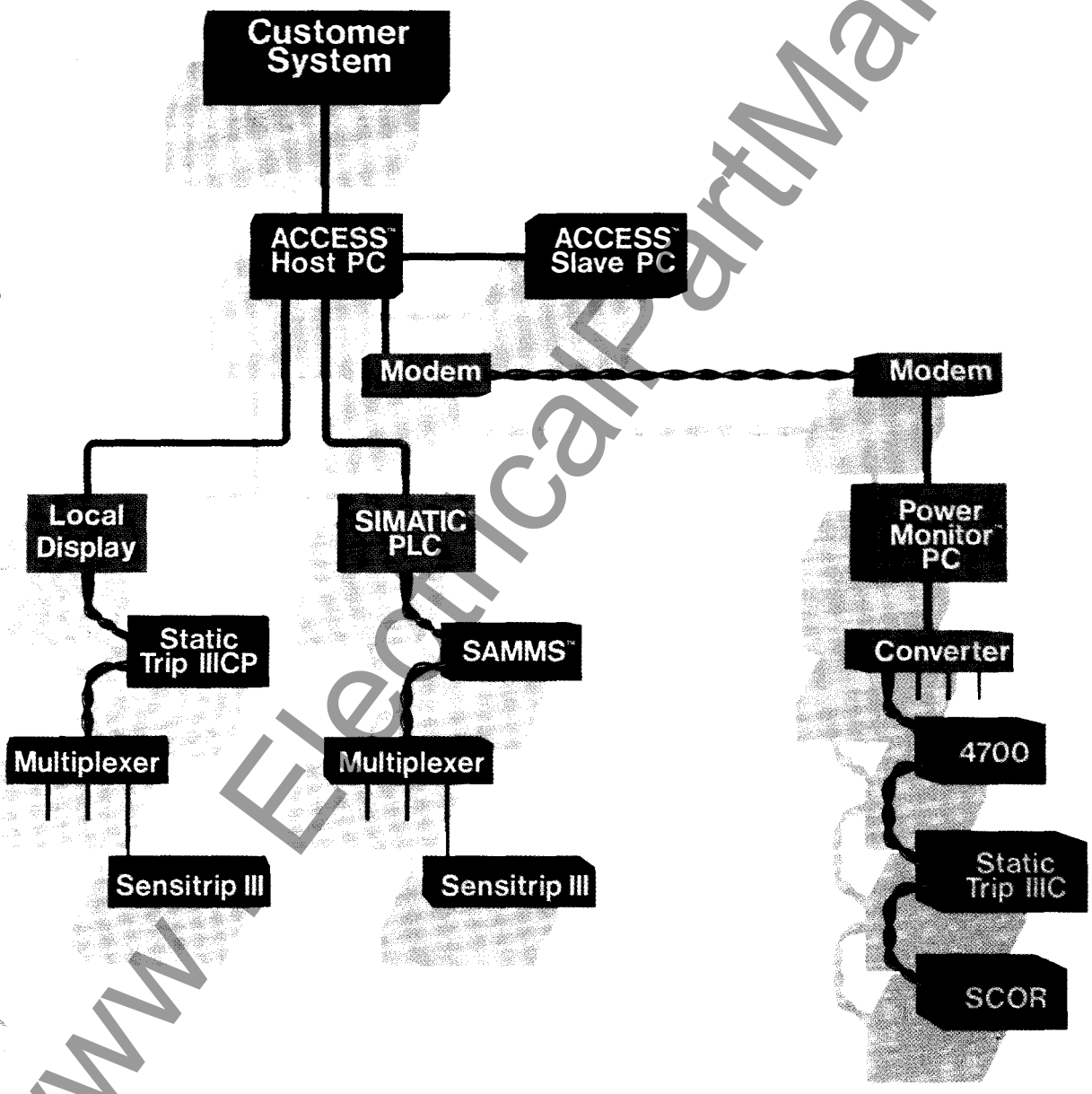
Slave Personal Computer (requires host personal computer)

A slave personal computer shall provide an alternate window to the data being monitored in the host personal computer. The slave PC shall be networked to the host PC and provide the operator the same displays for overview of each group of electrical equipment with summary data and status, detailed data screens for each device, alarm indication and event logs for each group of equipment, and data logging, trending and report generation. Hardware shall be identical to the host PC with the exception of communications coprocessor card(s) required by the host for connection with downstream devices. Software shall be identical to the host PC, except that device configuration and report/trend configuration shall only be changed at the host. The slave PC workstation shall otherwise operate independently from the host, including printing screens, viewing and printing report files, and operating optional MS-DOS software.

Reference Publications

Static Trip III Tripping System, SG3169
4700 Power Meter, SG3089
SCOR Overcurrent Relay, SG3079
Power Monitor™ Display and Monitoring Unit, SG3129
SAMMS™ Motor Protection Relay, CC3325
SIMATIC® Programmable Logic Controllers, B552
Sensitrip III Tripping System 2.2.3-1

Electrical Distribution Communication System.



Example of switchboard devices

Motor control center example

Retrofit example

Guide Form Specification

The following specification guide may be used to assure that important features of the ACCESS host personal computer and slave personal computer are integrated into your electrical equipment or retrofit specifications. The descriptions below are designed to be used along with guide specifications for "ACCESS compatible" intelligent communicating devices, such as SCOR and SAMMS protective relays, Static Trip IIIC and Sensitrip III trip units, 4700 power meter, Power Monitor display and monitoring unit and SIMATIC programmable logic controllers. Guide specifications for each of these components are included in the reference publications noted at the end of this specification guide.

Host Personal Computer

A host personal computer shall be provided for centralized monitoring of data from the intelligent display, control, metering and protective devices described elsewhere in this specification. The host PC shall provide a simple user interface from which the operator can display an overview of each group of electrical equipment with summary data and status, detailed data screens for each device, alarm indication and event logs for each group of equipment, and data logging, trending, and report generation.

The hardware shall consist of an industrial grade IBM-compatible personal computer with monitor, keyboard, mouse, communications coprocessor(s) and printer. The personal computer and monitor shall be designed for continuous 24 hour-a-day operation. The hardware shall include:

- A personal computer including a 20 MHz Intel® 80386 processor with expansion socket for 80387 math coprocessor, 60 MB hard disk with 15 ms average access time, 1.44 MB 3.5" floppy disk drive, VGA graphics output, communications coprocessor card(s), real-time clock with battery backup, and RS-232 serial, parallel printer, keyboard and mouse ports. A full 101 key industrial-type keyboard and mouse pointing device shall also be provided. The unit shall use filtered positive displacement forced air cooling. The power supply shall be self-ranging 100-125 VAC, 50/60 Hz 150 watt minimum. The personal computer shall have an operating temperature range of 0-50 degC with relative humidity of 5-95% non-condensing. The computer shall be a table top IBM model 7561 or approved equal (optional: The computer shall be a 19-inch rack-mounted IBM model 7562 or approved equal).
- A color VGA monitor with 19-inch diagonal screen and impact-resistant screen cover. The monitor shall use filtered positive displacement forced air cooling. The monitor shall be a table top IBM model 7554 or approved equal (optional: The monitor shall be a 19-inch rack-mounted IBM model 7554 or approved equal). (Optional: The monitor shall include a touch screen option to be used as a pointing device in conjunction with the host system software.
- An industrial 80 column width dot-matrix printer capable of at least 120 characters per second. The printer shall support a graphics generator so that CRT screen dumps, as well as text, can be printed. The printer shall be IBM model 5533 or approved equal.

The host system software shall be multi-tasking and capable of supporting MS-DOS software in addition to the system software described below. The system software shall be modular and utilize a global real-time database which can interface with separate tasks such as animated pixel graphics, interval and event timing, math and logic operations, report generation and data logging, trending, alarm supervision, print spooling, file management and networking. Communications tasks and database management shall be included as part of the communications coprocessor function to off-load the main processor.

Software shall be provided to allow the operator to display and log information, as described below. Two levels of user access shall be provided, with a password required to change configuration or manipulate files. The run-time software, including all application-specific screens and device drivers, shall be preloaded on the hard disk with backup copies provided on floppy disk. The software shall support use of both the mouse pointing device and the keyboard to navigate from screen to screen or manipulate files. A consistent set of function key definitions shall be shown at the bottom of every screen to guide the operator. The following functions shall be provided:

- Application-specific screens shall be used to allow the operator an overview of the entire electrical system being monitored. An overall system-level screen shall show alarm conditions for each area or group of equipment and allow the operator to select area screens for more detailed information. The area screens shall show summary data and status for each group of electrical equipment and allow the operator to select detailed data screens for each device being monitored in that area plus an event log for each group or area. The application-specific screens shall be created with user input and approval, and the bid proposal shall clearly indicate the number of these screens included.
- Detailed data screens shall be provided for each protective or metering device included in the system. These standard screens shall include present values for each parameter being measured, status information for the selected device, and minimum and maximum measured values along with date and time of occurrence. A user-defined name of at least six alphanumeric characters shall identify which device is being viewed.
- An "ALARM" function key shall allow the operator to acknowledge and silence audible alarms from any screen. Pressing the "ALARM" key will automatically display the area screen with the alarm condition.
- A "PRINT" key shall allow the operator to dump any screen to the printer on command, including real-time data being displayed at that time.
- A report function shall be provided which will allow the operator to periodically log selected data to the hard disk. At least four separate report formats shall be provided capable of logging data concurrently. Measured parameters from any of the connected devices shall be

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