



Presentation

Monitor Pro V7.2 is a real-time client/server SCADA (*Supervisory Control and Data Acquisition*) software solution for industrial sectors and the automation of manufacturing processes.

This software can be used to:

- collect typical data from your devices
- process and analyze this data
- display and save it
- share it with Manufacturing Execution System

The Monitor Pro V7.2 architecture can adapt to application requirements, whatever they are:

- client/server, with one server and one user
- multi-client/server, with one server and several users
- multi-client/multi-server, with several servers and several users
- redundant setup, with 2 redundant servers and several users, ensuring high availability for your installations

Monitor Pro V7.2 is based on a highly flexible, scalable architecture that can be used as both a standalone SCADA interface and in a distributed environment, interfacing with your production management tools.

Monitor Pro V7.2 provides all the Schneider Electric communication protocols, as well as the SQL Server 2000 relational database. It also incorporates state-of-the-art IT technologies such as .Net Remote client.

It is this fusion of Internet-based and industrial communication technologies that makes Monitor Pro V7.2 a Transparent Ready product.

Monitor Pro version V7.2 offers native redundancy, integrated traceability functions, multilanguage functionality, and to many other functions.



Structure of the offer

Monitor Pro V7.2 is a multi-user SCADA application operating with the Microsoft Windows 2000 and Windows XP platforms. The Monitor Pro V7.2 offer is based on a client/server system capable of being extended with additional client stations:

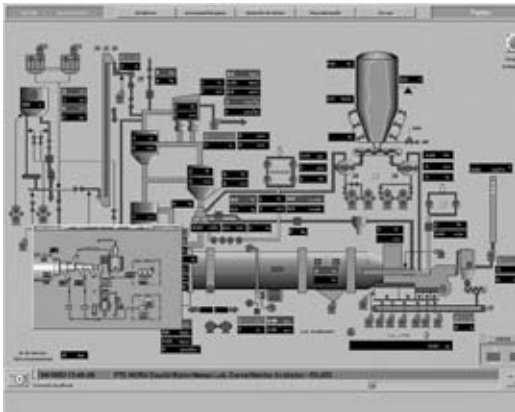
- **Client/server system.** This system performs all the conventional operations of any SCADA system, from collecting and saving data to using it. It is available in several sizes capable of being adapted to your requirements (ranging from 300 process I/O and 4800 tags to an unlimited system configuration). Most of the options from version 7.0 are now integrated (interface with relational databases, redundancy management, etc.).
- **One or more client stations** providing the user interface.

This offer includes 2 types of software license:

- RT/BT license (*Build Time/Run Time*) allowing the application to be built and run
- RT license (*Run Time*) allowing the application built with the RT/BT license to run

The following options are also available for the system bases, if required:

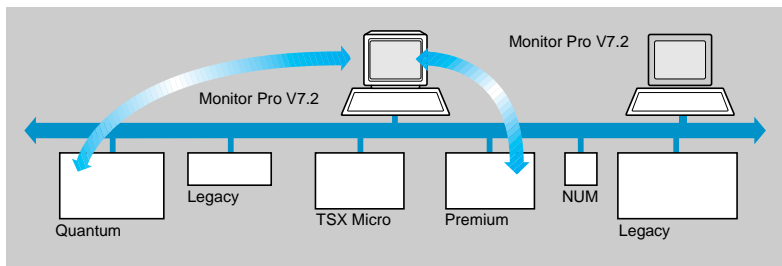
- "CML" (*Compiled Math and Logic*)
- "PAK" (*Program Access Kit*) kit for developing tasks and additional drivers
- Drivers for communicating with third-party devices
- "Power SPC" (*Statistical Process Control*)



Connection to control systems

Monitor Pro V7.2 supervisory software organizes all Schneider Electric control systems. It can be integrated into communication architectures made up of Telemecanique, NUM and third-party PLCs. Monitor Pro V7.2 supports several protocols simultaneously, making it suitable for mixed configurations.

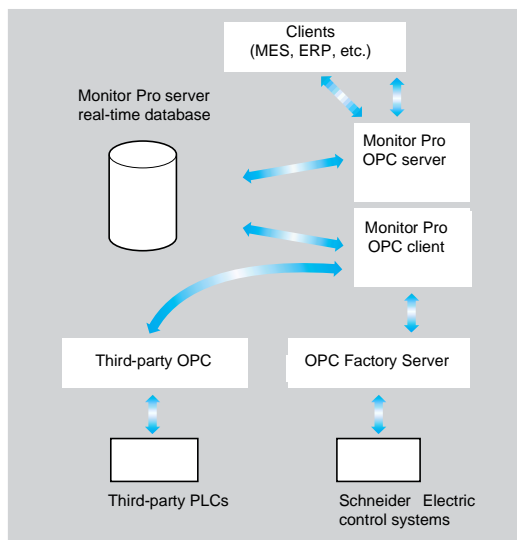
Schneider control systems



Monitor Pro V7.2 includes the OFS (*OPC Factory Server*) data server for interfacing with the Schneider Electric control systems.

In addition, Monitor Pro V7.2 offers Modbus TCP/IP, Modbus Plus, Fipway, Ethway connections as standard so that it can be integrated into ModbusTCP/IP or X-Way architectures.

Monitor Pro V7.2 also comes with communication drivers for the old generation PLCs (Sy/Max, April, etc.).



Third-party control systems

Monitor Pro V7.2 is also an open supervisory program. It can be used to establish complex connections with the main control system devices on the market, using the OPC standard (OLE for Process Control). Several OPC connections can be used in the same SCADA application.

In addition, communication drivers for the main control system devices on the market are optionally available.

Connection to MES (*Manufacturing Execution System*)

Relational databases are the preferred solution for connecting Monitor Pro V7.2 with production management software applications (MES).

This connectivity is achieved using SQL Server 2000 (supplied with Monitor Pro V7.2) or Oracle, as well as with any other ODBC (*Open Data Base Connectivity*) compatible databases.

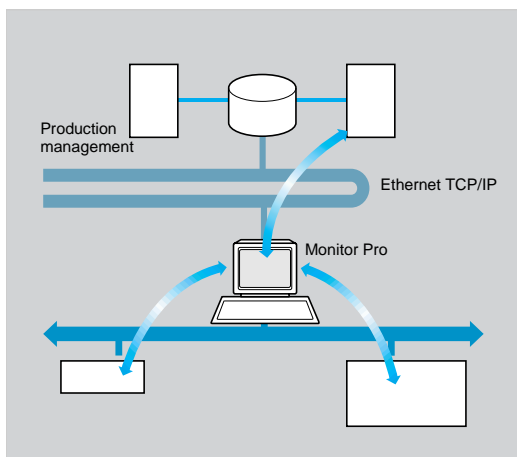
Openness of Monitor Pro V7.2 supervisory software

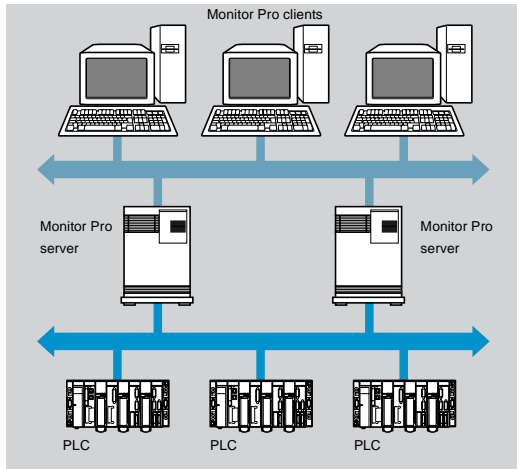
The openness of Monitor Pro V7.2 software is ensured by:

- **“PAK”**: a kit of documented tools for developing new Monitor Pro tasks. They can also be used for developing (additional) communication drivers. The “PAK” tool is offered as an option.
- **OPC Server Access interface**: Monitor Pro V7.2 includes OPC Server Access for interfacing with third-party software applications.

Recommendations for use

⚠ Before capitalizing on the open-access potential offered by Monitor Pro V7.2, it is recommended you consult your Regional Sales Office to ensure that open access is achievable.





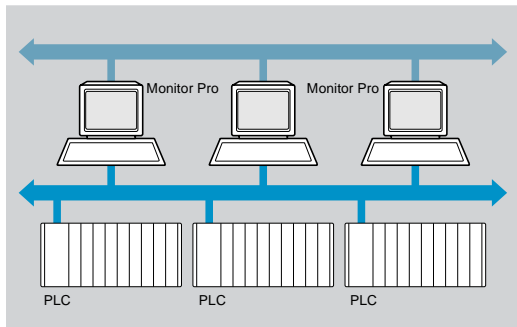
Distributed architectures

Monitor Pro V7.2 offers a wide variety of solutions for distributing application data between servers and operator terminals, whether local or remote.

Native client/server architecture

The native multi-client/multi-server architecture uses standards to provide access to the distributed and remote servers on TCP/IP networks. Operators can access and manage data from a distributed application on multiple servers.

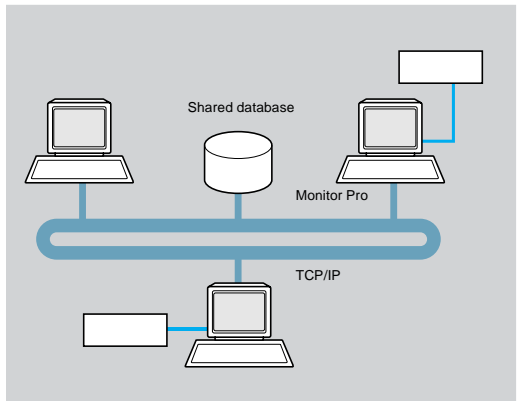
Given that several clients can access the same server, it is possible, for instance, for alarms and their acknowledgement to be distributed to multiple operators. Given also that client stations are independent, it is very easy to develop local graphics without any need to modify the SCADA application on the server or on the other clients.



TCP/IP data exchanges

Multi-station equal access

There is a Monitor Pro V7.2 function available for synchronizing multiple servers among each other so that an identical view of the distributed application can be obtained at a large site or several locations.



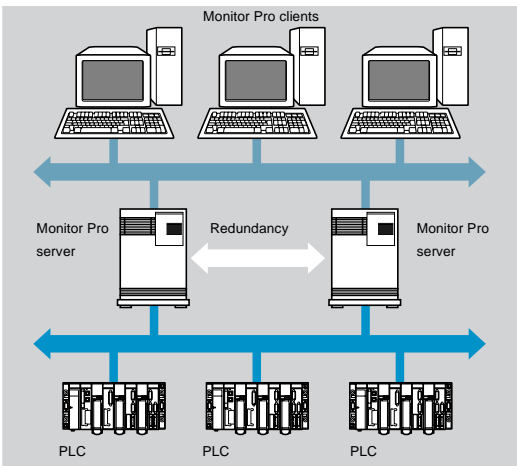
Multiple client/server stations

Monitor Pro V7.2 has an integral multiple client/server station function, "VRN" (*Virtual Real time Network*), that can be used to build an application where data is shared between several supervisor stations.

Each station can be declared as a server and as a client for other stations on the network.

This function known as "VRN" provides a more responsive system with functions capable of meeting the most stringent demands from distributed SCADA applications, while also offering easier implementation.

This function is similar to FL-LAN on Monitor Pro V2.



Redundant architectures

Monitor Pro V7.2 incorporates "VRR" (*Virtual Real-time network Redundancy*) server redundancy services, ensuring the high availability of architectures.

Based on the client/server model, this redundancy setup comprises two or more servers with automatic switching when a fault occurs and with no loss of data. The client operator stations connect automatically to the active server.

A default switching strategy is offered to help set up the architecture. This can be adapted by users to meet their specific needs.

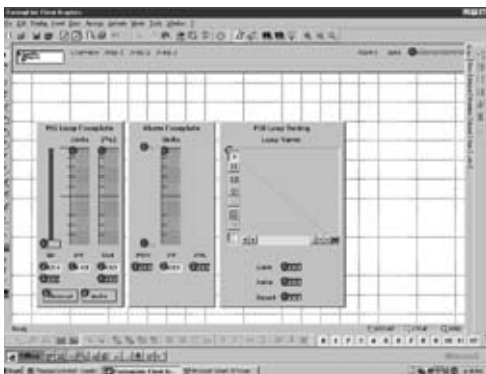
Application design

A Monitor Pro V7.2 supervisory application is designed based on the client system using two object-oriented editors:

- Client Builder, used to develop the graphic interface for the operator stations.
 - Configuration Explorer, used to develop functions on the server side.
- These Windows-based editors make editing and configuring Monitor Pro V7.2 functions much easier.

Note: *Converting Monitor Pro V2.0 applications:*

A Monitor Pro V2 application can be converted to Monitor Pro V7.2 and runs immediately, retaining the V2.0 graphics (generated using the Appedit editor). In this instance, the application does not benefit from the client/server architecture. Carrying out the conversion manually makes it possible to use the new Client Builder format so that full benefit can be derived from using the powerful Monitor Pro V7.2 application.

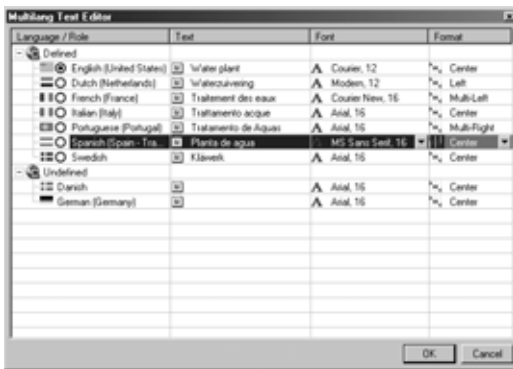


Client Builder - mimic development

Client Builder provides a development and run-time environment that supports dynamic switching between development and run mode in order to speed up application design.

This environment offers a set of tools to help reduce the design time for SCADA applications:

- Object-oriented graphics
- Organization of graphics in layers
- Integration of a security function for user access to objects and commands
- Standard Object Library
- Tree structure. This new function, commonly known as “branching”, can facilitate the simple and secure duplication of graphic objects by merely copying the object and just changing its reference name.
- Management of user object and template library
- Zoom and pan functions for historical trend curves
- ActiveX and Java Bean containers
- Ready-to use ActiveX alarm, trend and database browsing interfaces
- VBA-compatible script integration
- OPC Client



Multilanguage human machine interface

Monitor Pro V7.2 has a text editor supporting multilanguage versions of the HMI. Any text and comments to be displayed on screen can be entered simultaneously in several languages. The language displayed can be selected:

- either in real time according to the operator's choice
- or through a link to a user profile

VBA (Visual Basic for Application) script

With Monitor Pro V7.2 any graphic object can be linked to an animation written in VBA. This animation can take the form of a movement, rotation, resize, link with another object, etc.

Pre-programmed functions (mouse actions, external event, mimic upload, etc.) are available in the VBA editor, making it easier to use this module for making graphic objects behave dynamically.

The VBA editor helps make process control more intelligent. Its advanced debug functions mean that scripts can be debugged quickly.

Note: *Visual Basic scripts from previous Monitor versions can still be run.*

Application design (continued)

Configuration Explorer

Configuration Explorer provides a browser-like hierarchical view for selecting and configuring functions on the server side. Configuration Explorer supports simultaneous development of applications on a network, thus authorizing:

- a single user to access different Monitor Pro servers
- several users to configure a single Monitor Pro server simultaneously.

Tag Explorer

This Configuration Explorer function shows all the tags in the system, including those accessible via OPC.

This function supports user-defined filters. Tags can be copied from Tag Explorer to any of the system editors, thus minimizing the amount of typing and increasing application design productivity.

Object-oriented configuration concept

Monitor Pro V7.2 also introduces the concept of object-oriented configuration. Object-oriented configuration helps high levels of productivity to be achieved in the application development process. Any repetition in configuration is completely eliminated and design errors are reduced, resulting in the reduction of application development times and making application maintenance simpler.

Application objects can be used to build applications using a comprehensive set of predefined objects provided as standard with Monitor Pro V7.2 software. These objects model real-life components (for example, a pump or circuit breaker) and include the various SCADA functions available within the system (e.g., alarms, data logging and messages).

A SCADA application is built simply by moving the required objects to this application. When an object is added to an application, it can be configured in two ways:

- by entering configuration data (e.g., alarm limits and I/O points) via an intuitive user interface
- by loading configuration data from a variety of external data sources, including text files, Excel spreadsheets or any ODBC-compliant database. When using data from external sources, several objects can be generated with a single allocation, allowing large SCADA applications to be created automatically.

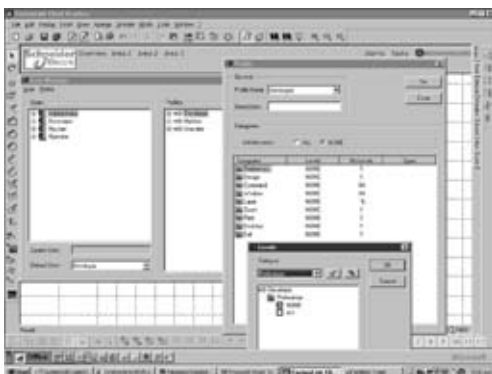
The use of object applications along with branching provides a powerful configuration environment. Object applications can be used to define classes that will then be instantiated. Only the class needs to be modified to automatically change all the instances, thus making maintenance a much simpler task. Likewise, any changes made to the symbols take effect as soon as the mimic page containing them is opened.

Security management

There are some applications that require security access management for the various operators or those providing assistance. This function provides a high-performance solution for preventing any unauthorized access to a particular mimic or to a particular graphic object in a screen.

The security setup in Monitor Pro is based on the Windows NT model where user accounts are managed with associated profiles.

The Monitor Pro V7.2 system administrator uses this tool to create user accounts (name, password), with each account then being assigned a profile. The profile determines the mimics, layers and graphic objects in a layer that users can access, according to their rights, in run-time, in edit mode or from the desktop.



Application design (continued)

Security management (continued)

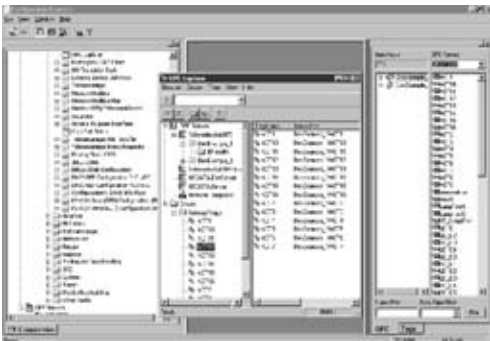
After login, users may only access the screens or graphic objects authorized by their profile. This means that current users may only interact with specific sections or the subset of the SCADA application authorized by their profile.

Profile functions and parameters:

- Management of user accounts, profiles and access levels
- Login/Logout configuration
- Profile parameters including 10 different control categories

Control categories:

- Application administration
- Edit/create application access
- Management of preferences
- Screen access level (maximum of 64 levels managed)
- Object access level (maximum of 64 levels managed)
- Layer access level (maximum of 16 layers managed)
- Zoom mode access
- Print function access
- Desktop access (locking Windows system keys: Ctrl/Esc, Alt/Tab, etc.)
- Application shutdown



Single point tag declaration

In order to increase application design productivity, Monitor Pro V7.2 offers a PLC database integration function. This function is used to provide information to the Monitor Pro V7.2 real-time database from the PLC databases without having to re-enter tags and their attributes. This tool is used to ensure consistency in the PLC and SCADA supervisor databases.

This function is available for different types of PLC: TSX Micro, Premium, Quantum or TSX Series 7 and their respective programming tools (Unity Pro, PL7, Concept, PL7-3), via OFS (OPC Factory Server) or Symbol Database Linker.

The single point tag declaration tool is used to optimize communication by selecting the communication tables that will receive the imported PLC tags. A search and filter function for the various types of tag makes it easier to select the tags to be imported.



Starter applications

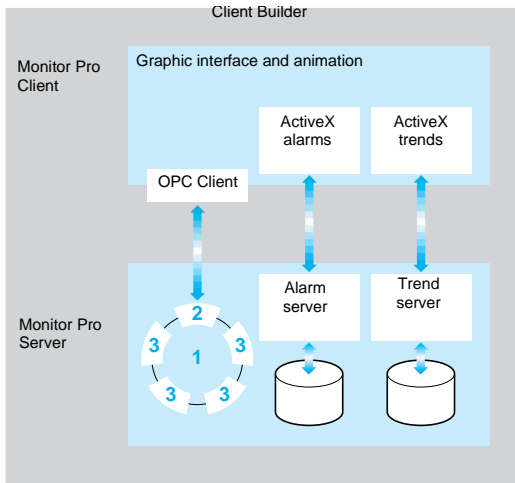
Monitor Pro V7.2 includes in the Configuration Explorer editor a starter application generator for automatically configuring Schneider Electric communication protocols.

Furthermore, the sample SCADA starter application "StarterApp" supplied with Monitor Pro V7.2 software contains sample mimics and templates providing a valuable starting point for building applications.

Run-time environment

The run-time environment comprises both server systems and client interfaces:

- The server systems collect, process and save the data, thus performing all the operations of a SCADA system.
- The clients provide the user interface and represent the different users accessing the network simultaneously. They can access any server system via the network.



- 1 Real-time database
- 2 OPC Server
- 3 Tasks: calculation, reporting, ODBC interface, API communication, etc.

Run-time environment (continued)

Server systems

The system's main feature is that all the data is stored in the real-time database **1** which permanently displays the status of the process currently running. The real-time database is central to all tasks **3** in the process of execution. It resides in the server's RAM and acts as both a storage device and an inter-process communication mechanism. All tasks share information in the real-time database by reading from and writing to the real-time database. Finally, the server automatically performs certain operations, such as:

- recording and generating alarms
- regularly archiving data on the trend server (historical trends database)

Clients

The client applications connect to the server systems via their OPC client interface and access the Monitor Pro real-time database. During run-time, the clients provide interactivity between the control system and the operators with a graphic interface, alarm display and trend curves, etc. Different clients can access the same server or multiple servers via the network, depending on application requirements. Communication between the clients and server systems takes place in real time via the OPC interface.

Real-time database for the server systems

The real-time database stored in the rapid access RAM is the heart of Monitor Pro V7.2 supervisory software. This database contains all the data coming from or going to the process being supervised and is available for supervision processing.

The database size is determined by the server defined by the Monitor Pro V7.2 software that is used (ranging from 300 I/O and 4800 tags to an unlimited number of I/O and tags).

This application image comprises objects defined as symbols representing binary data, single-length words (16 bits), double-length words (32 signed bits), floating point values (64 bits) and text messages (up to 256 bytes max.). Each task can access the whole real-time database and uses this as a means of exchanging data with other tasks. This method of communication reinforces the various tasks' independence from each other.

Diagnostics function

Alarm supervisor

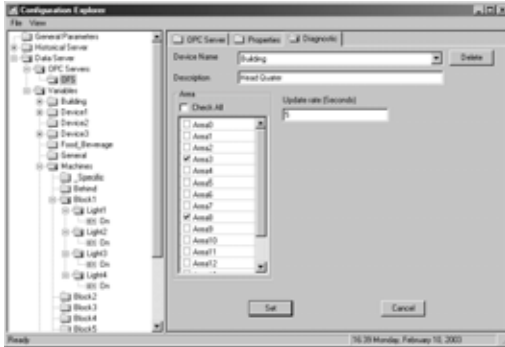
Alarms are generated as a condition of every element in the real-time database (bit or numeric).

The Alarm supervisor offers the following functions:

- detection, display (ActiveX), archiving and real-time printing
- detection conditions on bits or analog values
- user comments added to an alarm and entered in the log
- alarms acknowledged individually or as a group
- details of tag names, messages, acknowledgement data, duration, group, etc. displayed in Alarm Viewer (ready to use and configurable with ActiveX)
- alarm panel (ready to use with ActiveX) that can be displayed in any mimic with a maximum of three lines for the last three alarms
- real-time printing when an event appears and disappears and on return to normal
- filter and sort functions available according to user-defined criteria.
- alarms grouped by user-defined parameters (for instance, type, area, priority, etc.)
- distribution of alarms and acknowledgements (by a single Alarm server)

The alarm function supports parent/child relationships to prevent the generation of nuisance alarms in the event of a whole stream of faults.





Diagnostics function (continued)

Management of “Diag Buffer” alarms

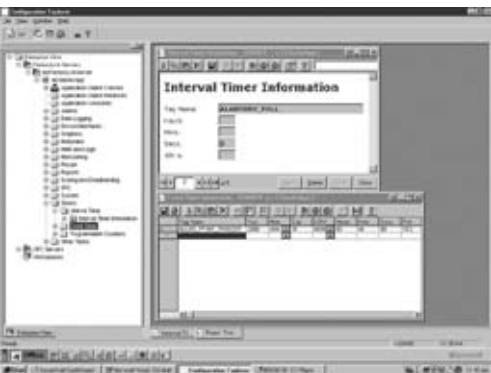
Monitor Pro V7.2 has the “Diag Viewer” interface that can be used to display in the SCADA system alarm data generated by the Premium PLCs (by the PLC system or the DFB function blocks) and stored in its diagnostics buffer. This diagnostics data is displayed using the standard Alarm manager in Monitor Pro V7.2.

The Diag Viewer tool can be used to display the same alarm data, regardless of the display device used (Monitor Pro, Vijeo Look, Unity Pro, PL7 Pro, FactoryCast software or Magelis terminals), thus providing the operator with a consistent overview of the system’s status at every HMI level.



Transparent Ready

Displaying web pages in the mimics offers TSX Micro, Premium, Quantum and Momentum platforms a number of benefits, including access to advanced diagnostics functions via the web servers embedded in these products.



Event and interval timer

Event and interval timing is used to schedule events in terms of:

- absolute date/time
- periodic time intervals

This function links intervals and events with the elements in the real-time database that act as “triggers” for initializing and controlling a function of the system in run-time mode (printing a report, triggering a database entry, triggering a mathematical procedure, PLC communication, etc.).

The only limit to the number of events and intervals that can be defined is the amount of available memory. In addition, event and interval timing also updates global data used by the system (current time and date, day of the week, month and year) and it is stored as predefined system elements in the real-time database.



Interpreted or compiled math logic and functions

Monitor Pro V7.2 can perform various operations of a mathematical or logical nature on a combination of elements in the real-time database. Each operation is controlled by a procedure similar to BASIC, initialized by a trigger that is a user-defined tag in the real-time database.

Each procedure can be run in “interpreted” or “compiled” mode. Any procedure may be switched instantly between these two development modes. This calculation function is a task that is independent from the graphic function, thus boosting its autonomy and performance. It can be used to automate a large number of tasks devolved to the SCADA system (scaling, mathematical formulae, launching external processes, etc.).

Depending on the mode:

- “Interpreted” mode is extremely easy to use thanks to a large set of math and logic instructions and the availability of the option to use system functions.
- “Compiled” mode, the “CML” option in Monitor Pro V7.2, also offers performance and an open language, as well as the possibility of directly integrating C code into the procedures. A third-party ANSI C language compiler (not supplied) is required to generate the source ANSI C code.



Programmable counters

Programmable counters can be used to perform event up/down counting operations by simply configuring the relevant parameters, thus avoiding the need to write additional scripts. They can help incorporate preventive maintenance in the run-time station and streamline PLC application programs.

Outputs from programmable counters can be used to provide inputs for other processes or trigger other events.

Trend curves

The trending function groups the “real-time” and “historical” trend functions.

It enables data from any Monitor Pro V7.2 server to be displayed graphically in order to:

- have greater control over monitored data
- easily detect any change or trend
- make comparisons
- adjust/set up a process

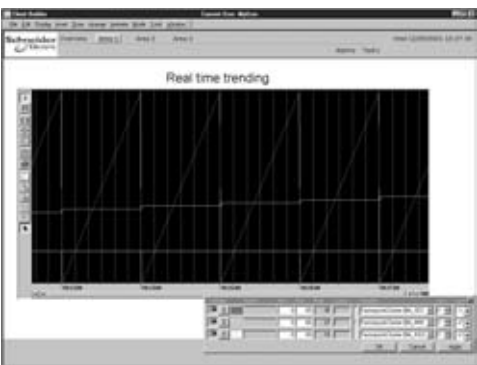
“Real-time” trending can be used to display tags from the Monitor Pro V7.2 real-time database.

“Historical” trending allows you to chart recorded data from the relational database historically or in real time.

One or more items of data (unlimited number) may be displayed as a trend curve in one or more trending windows (unlimited number) in each mimic.

“Real-time” or “historical” trend curves are created in Client Builder using two ready-to-use or configurable predefined objects (ActiveX control). An ActiveX control is connected in run-time mode to a relational database via the independent Trend server integrated in the Monitor Pro V7.2 system. The Trend server collects the data from the relational database and sends it to the ActiveX client.

Different ActiveX controls can be connected to different Trend servers (one per control). One Trend server may be connected to several ActiveX controls and to several relational databases.

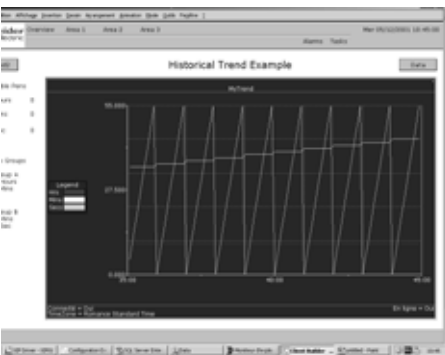


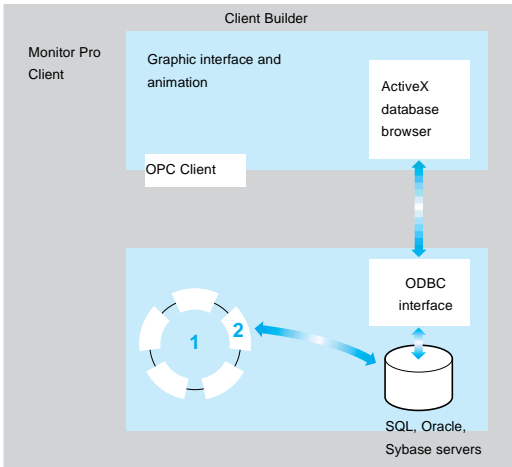
Configurable predefined parameters for trend curves

- Trend type as a function of time or an event
- Source trend server
- Sampling frequencies, stylet display frequencies
- Scrolling direction
- Stylet colors and thresholds, types of line, grid
- Multiple stylets, number of stylets limited only by legibility
- Stylet key
- Multiple configurable axes
- Alternation between historical and real-time mode
- Pan and zoom functions in historical mode
- Assignment and dynamic change of tag information and its representation on the curve
- Cursor return value, help bubble

Interaction between operator and trending

The zoom and pan functions provide detailed analyses or overviews of all the various trends. A grid can be added and a cross hair (vertical cursor moving horizontally) determines the points' coordinates.





1 Real-time database
2 Data storage task

Relational database interfaces

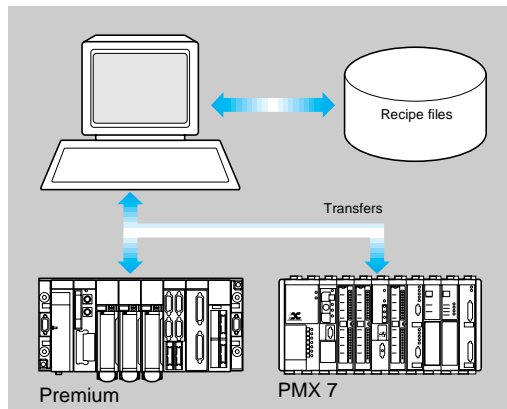
The relational database interfaces guarantee the transfer of data between the Monitor Pro V7.2 real-time database and a relational database. They can create, write, read and update tables in the relational databases. They manage queries from other Monitor Pro V7.2 client tasks and send them to external databases.

Monitor Pro V7.2 client tasks may include:

- Alarm archiving
- Data storage
- Database browser
- Trend logging
- SPC

SQL Server 2000, supplied with Monitor Pro V7.2, is the standard database connection tool.

The database interfaces available for Monitor Pro V7.2 are Dbase IV, Oracle, Sybase, as well as all ODBC (*Open Data Base Connectivity*) compatible databases.



Recipe management

The recipe management function enables the user to:

- Create production recipes
- Store these recipes on hard disk
- Exchange a set of data in both directions between the database and the hard disk (recipe files).

This flexibility in handling data also means a large degree of operational flexibility thanks to quick and simple changes to production instructions. Any recipe can be created based on operator dialog from internal data and/or data from connected PLCs.

Functional specification

This function can manage up to:

- 8000 different types of recipes, each type with an unlimited number of associated files
- 8000 database elements for each type of recipe

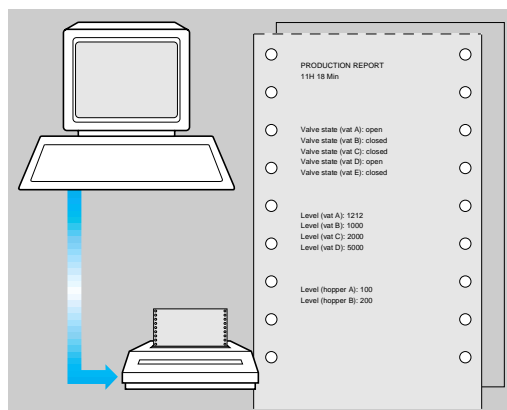
Report generator

Any SCADA supervision or production monitoring tool should not only record variations and production status, and monitor the application, but should provide a hard copy summary of this data too.

The report generator is used to print any data in the database in any format created at the design stage. It is therefore possible, using a form defined by the user, to print up to 2000 types of document with different page layouts.

The reports can also be transmitted via the network or stored on disk in ASCII format.

Combined with the recipe management function, this function means that it is easy to keep a written record of any new recipes that can be read by any user.



Human Machine Interface

Monitor Pro V7.2 supervisory software



Monitor Pro V7.2 software applications

The Monitor Pro V7.2 system base software licenses are intended for PC-compatible machines running the Windows 2000 Service Pack 3 or Windows XP operating system. Supplied in two languages (English and French), these licenses come in the form of a set of CD-ROMs containing:

- The system comprising a server base (RT version or BT/RT version) and a client (see description on page 45205/2)
- A configurable offer that can be used to increase, during the control process, the number of clients up to 64 (also in the RT version or BT/RT version)
- OFS V2.5 data server for an OPC (OLE for Process Control) server
- The interfaces for accessing the databases via SQL Server 2000 (standard and personal editions, Service Pack 3)
- X-Way communication drivers (Fipway, Ethway, XIP, ISAWay) V1.3

The bases come in 11 database sizes ranging from 300 I/O and 4800 tags up to an unlimited size. Software options, client station extensions and third-party communication drivers are available.

In the case of the databases installed in version V7.2, there are upgrade offers available to increase the database's size. For databases stored in a previous version (Monitor Pro V2.0 and V7.0), upgrade references facilitate the migration to version V7.2, thus enabling you to reap the benefit of your investment.

Monitor Pro software licenses include user manuals in electronic format (English and French).

In keeping with the standard procedure for registering Schneider Electric software, the Monitor Pro V7.2 license must be registered within the first 20 days. Each configuration is identified by a serial no. and its composition. These elements supplied with the license are required during software installation and during any required extension process (upgrades or updates).

Pre-configured system bases

I/O and tag sizes	Number of client stations (1)	Options (2)	Reference (3)	Weight kg
RT system bases				
300 I/O, 4800 tags	1 RT	–	MP72 003R 000000	–
500 I/O, 8000 tags	1 RT	–	MP72 005R 000000	–
1000 I/O, 16,000 tags	1 RT	–	MP72 010R 000000	–
1500 I/O, 24,000 tags	1 RT	–	MP72 015R 000000	–
3000 I/O, 48,000 tags	1 RT	–	MP72 030R 000000	–
5000 I/O, 80,000 tags	1 RT	–	MP72 050R 000000	–
8000 I/O, 128,000 tags	1 RT	–	MP72 080R 000000	–
15,000 I/O, 240,000 tags	1 RT	–	MP72 150R 000000	–
		CML	MP72 150R 000010	–
35,000 I/O, 560,000 tags	1 RT	–	MP72 350R 000000	–
		CML	MP72 350R 000010	–
50,000 I/O, 800,000 tags	1 RT	–	MP72 500R 000000	–
Unlimited I/O and tags	1 RT	–	MP72 UNLR 000000	–
BT/RT system bases				
1500 I/O, 24,000 tags	1 BT/RT	–	MP72 015B 000000	–
5000 I/O, 80,000 tags	1 BT/RT	–	MP72 050B 000000	–
	1 BT/RT and 1 RT	–	MP72 050B 000100	–
8000 I/O, 128,000 tags	1 BT/RT	–	MP72 080B 000000	–
15,000 I/O, 240,000 tags	1 BT/RT	CML	MP72 150B 000010	–
	1 BT/RT and 1 RT	–	MP72 150B 000100	–
35,000 I/O, 560,000 tags	1 BT/RT	CML	MP72 350B 000010	–
	1 BT/RT and 1 RT	–	MP72 350B 000100	–
50,000 I/O, 800,000 tags	1 BT/RT	–	MP72 500B 000000	–
Unlimited I/O and tags	1 BT/RT	–	MP72 UNLB 000000	–
		CML	MP72 UNLB 000010	–
		1 BT/RT and 1 RT CML	MP72 UNLB 000110	–

(1) RT: Run Time station, BT/RT: Build Time/Run Time station

(2) CML options: Compiled Math and Logic

(3) This list is not exhaustive, consult your Regional Sales Office.

Human Machine Interface

Monitor Pro V7.2 supervisory software

System base options and extensions

Description	For servers	Reference	Weight kg
Compiled math and logic functions	Run Time or Build Time/Run Time	MP72 CML	–
Development kit library for tasks and additional drivers (PAK, EDIPAK and CFGPAK)	Build Time	MP72 PAK	–
Statistical Process Control	Run Time or Build Time/Run Time	MP72 SPC	–
Description	For system bases	Reference	Weight kg
Client stations for extending installed bases	Run Time	MP72 BTCAL	–
	Build Time/Run Time	MP72 RTCAL	–

Third-party protocol communication driver extensions

Description	For servers	Reference	Weight kg
Siemens devices: CP525, EDI Serial (e.g. SIE), EDI H1MP S5 (Windows 2000 only, DLC protocol, e.g. SH5), 3964R-RAPD Series S5 and S7 (e.g. SIR) S5S (AP Sinec S5 via Ethernet TCP/IP protocol), SH7 and S7D, TIWAY-specific (SIR, SH5, SIE, S5S, SH7 and PRO)	Run Time or Build Time/Run Time	MP72 SIE	–
Rockwell devices: RAPD (including ControlNet, NetDTL, KTDTL, Async). Including old generation Async (ABA), KTDTL (AKT) and NetDTL (ADT). Requires RSLinx OEM 2.31 software, not included	Run Time or Build Time/Run Time	MP72 RCK	–
General Electric Fanuc devices	Run Time or Build Time/Run Time	MP72 GEF	–
Omron Hostlink devices	Run Time or Build Time/Run Time	MP72 OMR	–
FL GEM Semi-conductor devices	Run Time or Build Time/Run Time	MP72 FLG	–
Mitsubishi devices via MECOM protocol (serial link and Ethernet)	Run Time or Build Time/Run Time	MP72 MEE	–
Opto 22 devices via Optimux protocol	Run Time or Build Time/Run Time	MP72 MOPT	–
SECS GW devices via SECS protocol (HSMS/Ethernet link). Includes GW libraries	Run Time or Build Time/Run Time	MP72 MEE	–

Human Machine Interface

Monitor Pro V7.2 supervisory software

Monitor Pro V7.2 system base upgrade

These upgrades are used to increase the database size of an existing system base. The unit reference suggested opposite can be used to migrate a system base to the next size immediately above.

Ordering x unit references means the base is extended x size levels. For instance, **4 x MP72 UPG SYS SIZE** can be used to expand an existing base from 1000 I/O and 16,000 tags to a base containing 8000 I/O and 128,000 tags. See the table below.

Important: The **serial no.** supplied with the base license must be quoted with any upgrade order.

No. of I/O	No. of tags	500	1000	1500	3000	5000	8000	15,000	35,000	50,000	Unlimited
		8000	16,000	24,000	48,000	80,000	128,000	240,000	560,000	800,000	Unlimited
300	4800	1	2	3	4	5	6	7	8	9	10
500	8000		1	2	3	4	5	6	7	8	9
1000	16,000			1	2	3	4	5	6	7	8
1500	24,000				1	2	3	4	5	6	7
3000	48,000					1	2	3	4	5	6
5000	80,000						1	2	3	4	5
8000	128,000							1	2	3	4
15,000	240,000								1	2	3
35,000	560,000									1	2
50,000	800,000										1

Description	From	Unit reference	Weight kg
1 I/O size level extension For an extension involving x size levels, order x unit references	Run Time or Build Time/Run Time server base	MP72 UPG SYS SIZE	–
Upgrade to Build Time/Run Time server base	Run Time server base	MP72 UPG SYS RTBT	–
Upgrade to Build Time/Run Time client station	Run Time client station	MP72 UPG CAL RTBT	–

Monitor Pro base V2.0/V7.0 to V7.2 upgrade

These packages can be used to upgrade bases running an earlier version (Monitor Pro V2.0 or V7.0) to the new version V7.2.

Important: The **serial no.** supplied with the base license must be quoted with any upgrade order.

To V7.2 server base	From version V2.0	From version V7.0	Unit reference	Weight kg
300 I/O, 4800 tags	Small (64 I/O, 1024 tags)	256 server (256 I/O, 4096 tags)	MP72 UPD M003 SYS	–
1500 I/O, 24,000 tags	Large (4096 I/O, 4096 tags)	1024 server (1024 I/O, 16,384 tags)	MP72 UPD L015 SYS	–
5000 I/O, 80,000 tags	X Large (2 ³² tags)	Enterprise Server (unlimited I/O and tags)	MP72 UPD E050 SYS	–
8000 I/O, 128,000 tags	X Large (2 ³² tags)	Enterprise Server (unlimited I/O and tags)	MP72 UPD E080 SYS	–
15,000 I/O, 240,000 tags	X Large (2 ³² tags)	Enterprise Server (unlimited I/O and tags)	MP72 UPD E150 SYS	–
35,000 I/O, 560,000 tags	X Large (2 ³² tags)	Enterprise Server (unlimited I/O and tags)	MP72 UPD E350 SYS	–
50,000 I/O, 800,000 tags	X Large (2 ³² tags)	Enterprise Server (unlimited I/O and tags)	MP72 UPD E500 SYS	–
Unlimited I/O and tags	X Large (2 ³² tags)	Enterprise Server (unlimited I/O and tags)	MP72 UPD EUNL SYS	–
To V7.2 client station	From version V2.0	From version V7.0	Unit reference	Weight kg
Run Time client	Web client	Run Time client MP CAL RT	MP72 UPD RT CAL	–
Build Time/Run Time client	Build Time/Run Time client	Build Time/Run Time client MP CAL	MP72 UPD BT CAL	–
	Web client	Run Time client MP CAL RT	MP72 UPD RTBT CAL	–

Configurable Monitor Pro V7.2 system bases

The document below is used for ordering a system base with x client stations (0 to 64), a software option and a third-party protocol communication interface. If other software options and/or other third-party protocols are required they can only be ordered after the base has been registered. In the case of additional orders, quote the serial number issued by our services. Use a separate form for each order, except where the configurations are completely identical.

Any reference in this format must be validated by our services. Please consult your Regional Sales Office.

The serial number must be quoted for any extension, update or upgrade.

Add 10 characters to complete each reference

1 - Number of identical configurations		MP72	•	•	•	•	••	••	•	•
2 - System base (includes 1 server base and 1 client)	4800 tags, including max. 300 I/O	0	0	3						
	8000 tags, including max. 500 I/O	0	0	5						
	16,000 tags, including max. 1000 I/O	0	1	0						
	24,000 tags, including max. 1500 I/O	0	1	5						
	48,000 tags, including max. 3000 I/O	0	3	0						
	80,000 tags, including max. 5000 I/O	0	5	0						
	128,000 tags, including max. 8000 I/O	0	8	0						
	240,000 tags, including max. 15,000 I/O	1	5	0						
	560,000 tags, including max. 35,000 I/O	3	5	0						
800,000 tags, including max. 50,000 I/O	5	0	0							
Unlimited numbers of tags and I/O	U	N	L							
3 - System base type	BT/RT								B	
	RT								R	
4 - No. of additional client stations	BT/RT can only be used with a BT/RT type system base						00...64			
	RT							00...64		
5 - Options (1)	None									0
	CML - Compiled math and logic functions									1
	"PAK" kit for developing tasks and additional drivers									2
	"CML" and "PAK"									3
6 - Third-party protocol communication interface options	None									0
	Siemens									1
	Rockwell									2
	General Electric Fanuc									3
	Omron Hostlink									4
	FL GEM Semi-conductor Interface									5
	Mitsubishi									6
	Opto 22									7
SECS									8	

(1) The SPC software option **MP72 SPC** can only be ordered following receipt of the serial number issued after the Monitor Pro V7.2 system base has been registered.