



Presentation

Vijeo Look is a SCADA (*Supervision Control And Data Acquisition*) software package for stand-alone stations. It is based on open and standardized technologies. Easy-to-implement, it offers all the standard functions of a graphic supervision tool. Vijeo Look is supplied with a pre-configured OFS (*OPC Factory Server*) Data Server. Compatible with PCs running Windows 98, Windows NT4 Workstation, Windows 2000 Professional or Windows XP Professional operating systems. It enables the user to create applications based on Schneider Electric PLCs of type Twido, Nano, Micro, Momentum, Premium, Atrium PCX and Quantum, as well as TSX 7, APRIL 1000 and AEG Compact PLCs.

Vijeo Look interfaces easily with industrial software such as MES (*Manufacturing Execution System*) and ERP (*Enterprise Resource Planning*) systems as well as with commonplace office software packages.

Vijeo Look is the ideal solution for machine manufacturers and for independent production units.

The functions of Vijeo Look supervision software can be used for:

- Acquisition of PLC tags.
- Visualization of these tags.
- Process supervision and control.
- Recording of the values of the PLC tags or internal tags of the process in a database.
- Embedded software processing.

The Inputs/Outputs are tags from the OPC Server (or those of the Inputs/Outputs of Micro/Premium PLCs exchanged automatically). They are used for visualization and embedded processing.

Simple and innovative, Vijeo Look offers optimal solutions, whilst also opening the way, after migration of the application, to use of Monitor Pro SCADA software.



Structure of the offer

2 types of software license are available for Vijeo Look:

- "Build Time/Run Time" for application development and execution.
- "Run Time" for the execution of applications created with a "Build Time"/"Run Time" license.

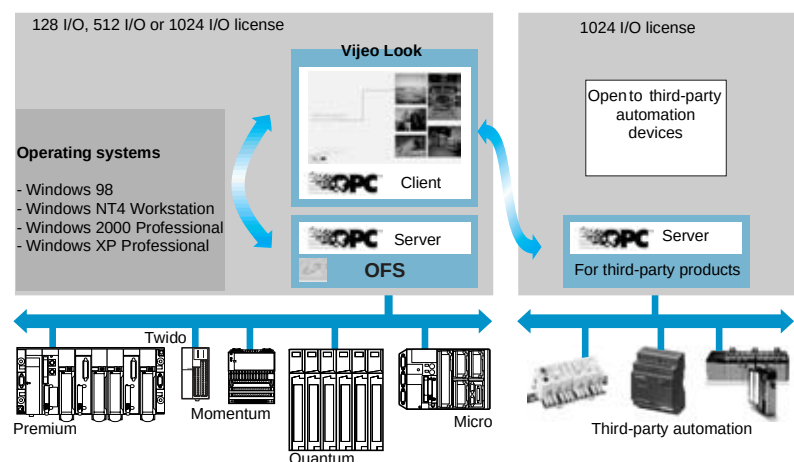
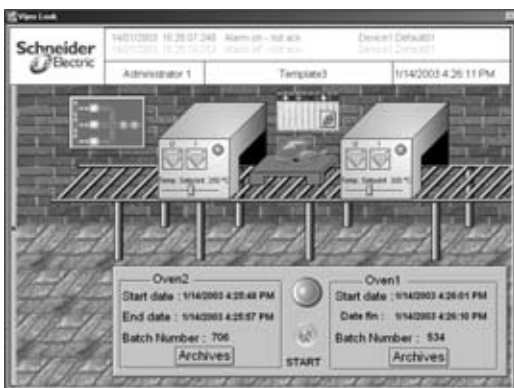
Three Input/Output configurations are proposed for each type of license: 128, 512 or 1024 Inputs/Outputs.

Depending on the hardware configuration and application requirements, certain precautions for use should be taken, see "Recommendations for use" page 43207/14.

Nota : Only the tags used for visualization, embedded processing and logged tags are taken into account in the calculation of the number of Inputs/Outputs. It should be noted that, for all licenses, the internal tags and the specific alarm-type tags used in the alarm viewer (for visualization and acknowledgement) are not counted. Similarly, tags used for recipe management only are not counted.

For the 1024 Inputs/Outputs license, tags of the "log" type (recorded but not visualized) and tags of the "trend" type (recorded) used in the trend viewer in log mode are not counted.

The offer also includes license upgrade solutions (from 128 to 1024 Inputs/Outputs for example).

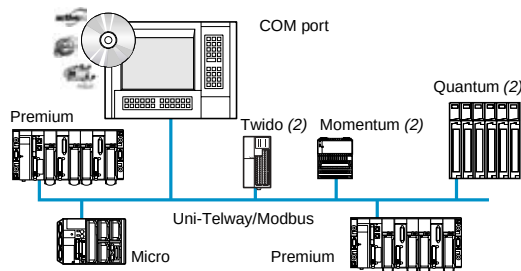


Connection to Schneider PLCs

Vijeo Look supervision software can be integrated into communication architectures for Schneider Electric automation devices as well as into third-party automation architectures (1)

Connection to Uni-Telway/Modbus buses

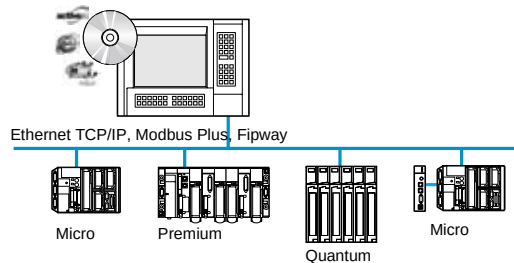
Connections to a Uni-Telway or Modbus bus are made via the RS 232 serial link interface, in point-to-point or via RS 485 in multipoint (Input/Output port built into PC terminal).



Connection to Ethernet/Modbus Plus/Fipway networks

Connections to Ethernet, Modbus Plus or Fipway networks are made by adding a network card to the PC terminal:

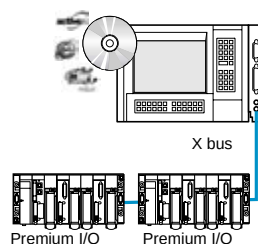
- TCC ETH01, Ethernet TCP/IP 10/100BASE-T network module on PCI bus.
- TSX ETH PC 101M, Ethernet 10BASE-T network module on ISA bus.
- 416 NHM 300 30, Modbus Plus network module on PCI bus.
- AM SA85 030, Modbus Plus network module on ISA bus.
- TSX FPC 10M, Fipway network module on ISA bus.



Connection to X bus of the Premium automation platform

In order to connect to X Bus on a Premium platform you need to add an Atrium coprocessor to the PC terminal as specified below:

- T PCX 57 203M/353M, Atrium PCX 57 coprocessor on ISA bus (this card physically occupies 2 consecutive long slots).



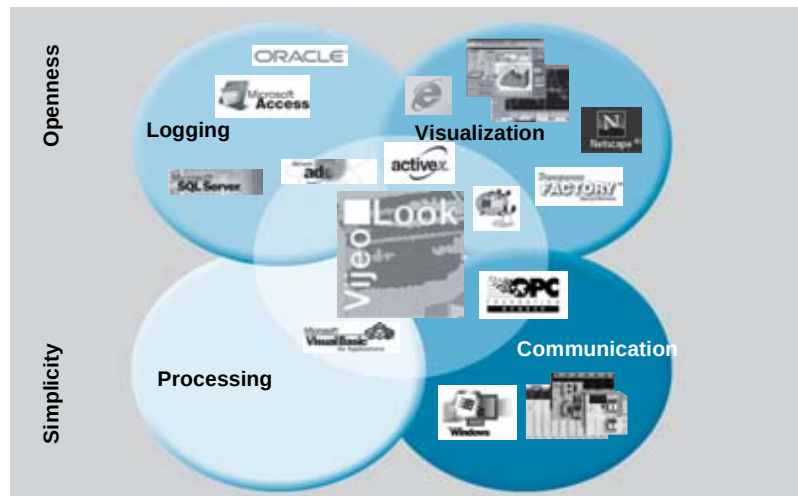
Connection to third-party PLCs

Vijeo Look is an open supervision software package. It may establish connections with all the main automation devices on the market over a large number of serial or network protocols (1). Consult your Regional Sales Office.

(1) Only with 1024 Input/Output Vijeo Look software package.

(2) Only with Modbus connection.

Structure of the software



Communication function (1)

PLC tags are acquired exclusively by connecting to PLCs via the OPC Server, supplied with the OFS Data Server software included with Vijeo Look.

In the case of "all or nothing" and analog Input/Output tags of Micro or Premium PLCs (and TBX/Momentum remote Inputs/Outputs), acquisition in the Vijeo Look database is carried out by default and in a transparent way.

As an OPC Server, Vijeo Look enables you to create and enhance tags, then make them available.

Development and visualization functions

Tags can be visualized as:

- Values.
- Animated color graphics.
- Recipe management.
- Historical and real-time trend curves.

Process supervision and control are executed by the PLCs by performing:

- Updates of certain PLC data.
- Diagnostics.
- Acknowledgement of alarms.

Diagnostics function

The diagnostics function enables the visualization and acknowledgement of alarms, whether these be alarms from the Premium platform's "Diag Buffer" or alarm-type OPC tags.

Embedded processing function

It is possible to embed processing associated with certain steps in the process by using VBA (*Visual Basic for Application*) programs.

Logging and traceability functions (1)

The values of the PLC tags selected in the databases are recorded so as to meet process traceability requirements.

(1) Depending on the hardware configuration and application requirements, certain precautions for use should be taken, see Recommendations for use, page 43207/14.

Standards built into Vijeo Look

Vijeo Look is based on the following standards:

- ActiveX controls (including the WEB browser) (1).
- Java Bean components (1).
- OPC interface and OFS Data Server software for communication and exchange of data between PLCs and applications (2).
- Microsoft Visual Basic for Application software for data processing.
- ActiveX Data Object interface for linking to the majority of databases on the market.
- LapLink GOLD software for application transfer and maintenance.

For further details, see page 443207/13.



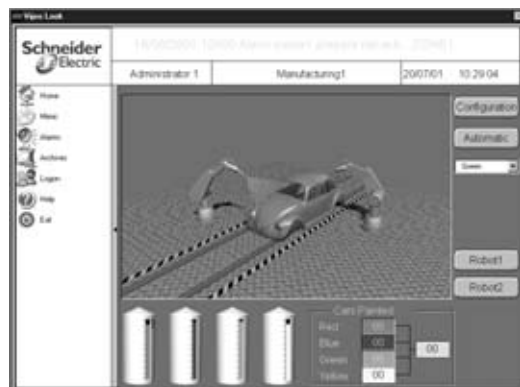
Communication function (3)

As a Client/Server OPC system, Vijeo Look enables local or remote transfers to be performed in real-time for the acquisition of PLC tags, as well as enabling data exchanges with other applications in the software package. In runtime, the real-time data are collected via the OPC Communication Server giving direct access to the real-time database of Vijeo Look.

Vijeo Look includes additional functions making it possible to:

- Carry out direct explicit exchanges with the Boolean and analog Inputs/Outputs of the Micro/Premium PLCs (and their TBX/Momentum remote Inputs/Outputs).
- Add up to 16 parameters of the user's choice, in addition to the OPC tags described in the standard.
- Create logical OPC tag filters making it easy for the user to select the tags that he wishes to save in the database.
- Associate labels and threshold values to each OPC tag.

- (1) These 2 technologies use an object-based approach and allow you to make optimum use of the components on the market to perform functions as wide-ranging as sending e-mail messages, visualization and 3D animation etc.
- (2) Only the 1024 Input/Output software package supports openness to third-party OPC Servers for heterogeneous PLC connections.
- (3) Depending on the hardware configuration and application requirements, certain precautions for use should be taken, see "Recommendations for use" page 43207/14.



Application development and visualization

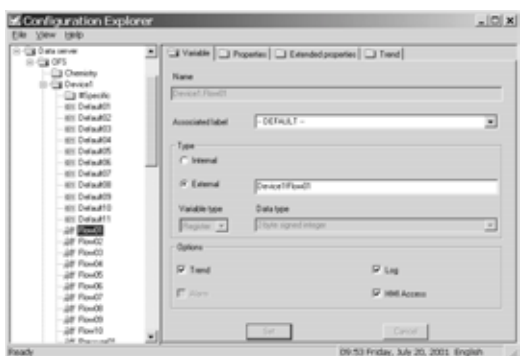
Vijeo Look provides everything necessary for the development and visualization of the animated synoptics of PC applications.

HMI (Human/Machine Interface)/SCADA Vijeo Look applications are made up of several interlinked interactive windows which provide menus, process synoptics and status pages.

On-line configuration of windows allows the user to make modifications on-the-fly without the need for compilation and without having to restart the application.

A Vijeo Look supervision application is developed using the Configuration Explorer tool. The link with the PLC program is easily established on the basis of the:

- Symbols file, created by the PL7 or Concept development and implementation software.
- Choice of communication protocol.
- Choice of PLC address.



Configuration Explorer

A configuration screen, similar to Windows Explorer, provides a structured view of the configuration used for the Vijeo Look application.

This screen gives access to the visualization of all tags and can be used to develop the graphic interface and its associated functionalities. This easy-to-use interface always offers default selections. Amongst other things, it can be used for:

- Enhancement of tags.
- Tag scaling.
- Configuration of additional OPC Servers.
- Configuration of databases.
- Tag “typing”.
- Creation of trend group numbers.
- Definition of the tag recording policy for the databases.
- Filter management.

Via the OPC browser, it is possible to select all the tags managed by the RTDS (*Real Time Data Server*) and to enhance them in order to meet the application requirements (e.g. minimum and maximum values, scale, etc.).

Selecting a tag in the Configuration Explorer window introduces the concept of object-oriented configuration.

All tags (whether they be internal or from the PLC) can belong to the main types of non-exclusive tag listed below:

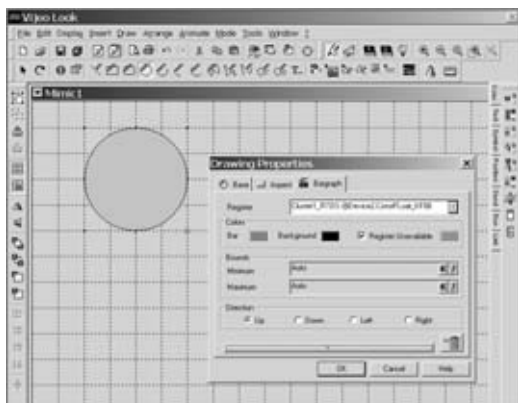
- Human/Machine Interface (HMI).
- Diagnostics and alarms.
- Embedded processing.
- Recipe management.
- Historical and trends.

Creation of graphic objects

Via its unified configuration interface, Vijeo Look allows the user to easily define the behavior of each object. The functionalities are programmed by selecting from the possible options that can be associated to each tag.

A toolset for graphic creation is supplied with the software:

- “Zoom” and “Panoramic” functions.
- Native Vijeo Look drawing elements.
- Graphic object library
- Embedded processing.
- ActiveX and Java Bean containers.
- Alarming, trending and browsing interfaces.



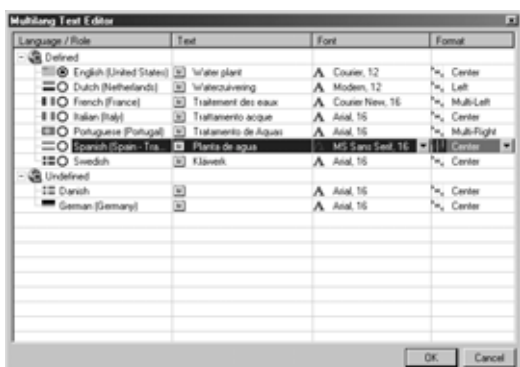
Application development and visualization (continued)

Native Vijeo Look drawing elements

Vijeo Look has its own graphic editor. The animations are accessible via a menu. They can be used for color changes, filling of shapes, exchange, movement, rotation and enlargement of objects. The following file formats can be used: BMP, WMF, animated GIF, AVI or JPG.

The graphic objects created are reusable without the need for any specific tools. The modification of an object automatically applies to all screens which use this object.

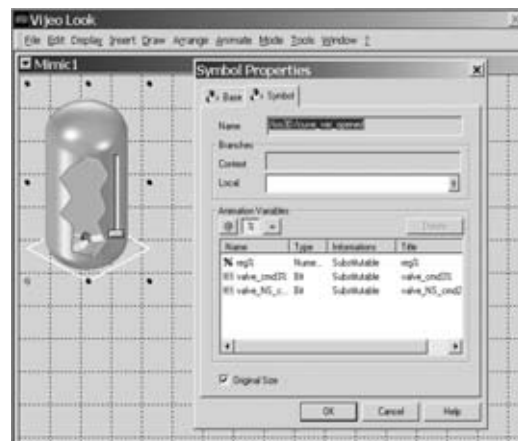
Configurable directories enable the user to organize and distinguish the objects according to categories.



Multi-language human/machine interface

Vijeo Look has a text editor for internationalizing the human/machine interface. All texts and comments displayed can be entered simultaneously in several languages. The displayed language can be chosen as follows:

- Either on the fly, according to the operator's selection;
- or in association with a user profile.



Graphic object libraries

Vijeo Look offers ready-to-use graphic object libraries. Approximately one hundred animated graphic objects (gates, reactors, potentiometers, displays, etc.) are available in 2D or 3D. These are ready-to-“wire” to PLC tags.

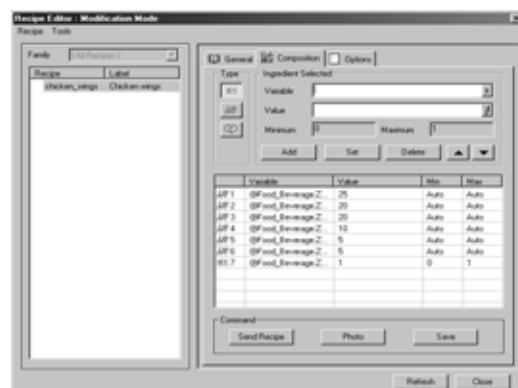
These libraries are completed with collections of more specific symbols (PID, XBT-L1000 dialog software objects, thumbnails of Schneider components, mechanical elements such as conveyors, etc.)

New graphic objects can be created in 2 simple steps:

- Select the object to be animated.
- Assign the tag used for the animation.

The newly created object can be used in several synoptics. Vijeo Look shares the same Java Beans library as FactoryCast.

Using the same graphic engine, Vijeo Look and Monitor Pro generate high levels of consistency for the end-user of the supervisor.



Recipe management.

The recipe management function enables the user to:

- Create, modify and select manufacturing recipes.
- Store these recipes on hard disk.
- Exchange these recipes.

This easily adaptable data management system provides highly flexible operation, based on the simplicity and speed of changing recipe orders. Any procedure can be built up, using an operator dialog, from internal information and/or information output by connected PLCs.

Characteristics of the function

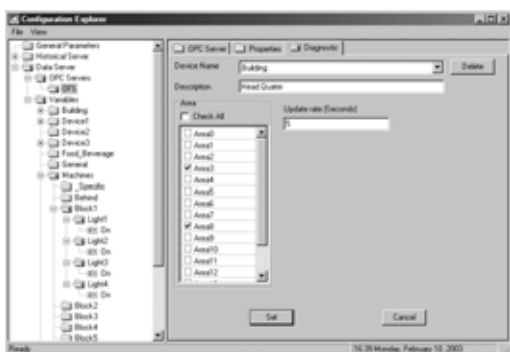
- This function handles up to
- 1000 recipes for each project
- 1000 database elements for each recipe.



Diagnostic functions

Vijeo Look meets the various diagnostics requirements of PLC users by providing the alarm management and advanced diagnostics functions offered on Ethernet FactoryCast modules (Ethernet TCP/IP network modules for Micro, Momentum, Premium and Quantum automation platforms).

These possibilities are further extended by those offered by the "Diag Viewer" function of the Premium platform. This function enables diagnostics events and alarms generated on the basis of data stored in the "Diag Buffer" to be displayed in full transparency. The "Diag Buffer" of the Premium platform is a space in data memory managed by the diagnostics DFBs of this platform.



Management of "Diag Buffer" alarms and internal alarms

Vijeo Look enables the visualization and acknowledgement of alarms, whether these be alarms from the Premium platform's "Diag Buffer" or tags defined in alarms in Vijeo Look.

Vijeo Look features the same diagnostics components as those used in Schneider Electric HMI or software products such as "Diag Viewer" included in PL7 Pro, Monitor Pro V7 or with Magelis and CCX 17 terminals. The "Diag Viewer" tool offers the operator a consistent and homogeneous overview of the status of the system.

Internal alarms are generated according to criteria specified in the Vijeo Look Real-time Server. The alarm function has the following advantages:

- Criteria can be based on digital or analog values or messages.
- User comments can be appended to an alarm and become part of the log.
- Tag name, message, acknowledge status, time, etc. can be displayed in the alarm screen.
- Filtering and sorting based on the user criteria.
- Alarms can be grouped by user-defined parameters, such as type, area, priority, etc.



Transparent Factory

The possibility to view Web pages in the Vijeo Look synoptics amongst other things gives access on Micro, Momentum, Premium and Quantum platforms to the advanced diagnostics functions of Ethernet FactoryCast modules.

A demonstration of FactoryCast is available on the following website:
<http://webplc.schneiderautomation.fr> or <http://195.6.140.163>

Embedded processing function

With Vijeo Look, it is possible to assign an animation written in VBA (*Visual Basic for Application*) to any graphic object. This animation can be a movement, rotation, modification in size, link with another object etc.

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

The VBA capability of Vijeo Look renders process control more intelligent. Its advanced "debug" functionalities allow for rapid debugging of scripts.



Logging and traceability function (1)

All internal or external tags can be recorded in a database. It is possible to select:

- The type of database.
- The location of the database.
- The name of the table.

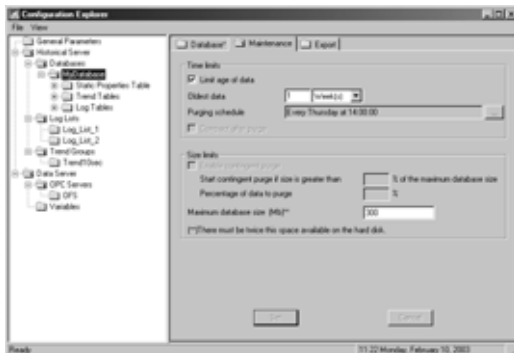
Data from one application can be recorded in different databases. This flexibility of use means you do not have to manage data handling and transfers.

The memory space required for recording is minimal, because of the transparent use of the relational model: the tag attributes that remain unchanged over time (descriptor, unit, etc.) are only recorded once.

The log of all application events consists of objects defined in the form of symbols representing all data types.

All data in the database can be identified in symbol form, that is by names of objects such as "Valve, Pump, Flowrate, Temperature, Motor, Fault, etc.". Each change in the state of a tag is monitored and indicated so that it can be processed by Vijeo Look.

The viewers are configured simply by using the settings, meaning that no programming is required.



Recording and visualization of modifications

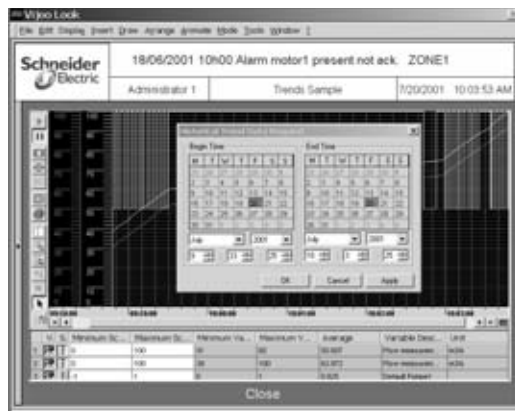
All the data transiting via the Vijeo Look Real-time Data Server can be stored either in one of the Jet Engine (*Microsoft Access*) or the MSDE (*Microsoft Data Engine*) databases supplied with Vijeo Look, or in another market-standard database (MS SQL Server, ORACLE, SYBASE, etc.).

The parameters of the MSDE database can be set, in the sense that it can be limited in size or in time (with automatic deletion of the oldest data).

These archived data can be exported in CSV (*Comma Separated Values*), ADTG (*Advanced Data TableGram*) or XML format.

States and measurements can be stored as trends. The tag values can be stored on a change of state or periodically in the form of logs.

(1) Depending on the hardware configuration and application requirements, certain precautions for use should be taken, see "Recommendations for use" page 43207/14.



Logging and traceability function (continued)

Recording and visualization of trends and trend curves

The associated tags are recorded in the database when there is a change of value, or periodically. Trends can be viewed, in real-time or on the basis of saved data, displayed as curves of two types:

- Real-time trending lets you chart data from any database. The frequency with which the trend curves are updated can be configured in the parameters
- Historical trending allows the user to view changes in the value of a tag between two determined dates.

Furthermore, the following functions can be applied to any trend curve during runtime:

- Panoramic.
- Zoom.
- Alternation between historical data and real-time data.
- Dynamic parametering.

Vijeo Look can manage up to 8 independent trend curves with their keys in its viewer (automatic scale). The trend curves can be printed directly in BMP format from the tool bar.

If a production problem occurs, the systematic recording of alarms and faults provides a simple means of performing diagnostics enabling rapid troubleshooting, so reducing process downtime to a minimum.

The enhancement of PLC data, with parameters specific to production management (batch number etc.), gives the manufacturer the possibility of retracing the production chain should a problem occur which has a bearing on the components used in the manufacturing of the product concerned.



Security

Vijeo Look offers all the security functions necessary to allow the user to guarantee a suitable working environment for each user profile. The Human/Machine Interface is based on a user and profile system. The security profiles are associated with graphic objects.

Access security is defined by:

- User identification by name and password.
- The user profile (including the HMI presentation language and the Vijeo Look software language).
- Object category, (access level and presentation).

Vijeo Look only authorizes a single connection and hence a single user at a time. The user profile should be associated with the graphic objects (window, entry fields, animation etc.) required. Each object may have a list of authorized profiles. The objects are visible and modifiable depending on the user profile. The graphic objects have the following security categories:

- Ergonomics, possibility of modifying the appearance of the HMI.
- Drawing, possibility of modifying the content of the HMI.
- Desktop, possibility of accessing the operating system.
- Printing.
- Exit, possibility of shutting down the application.
- Zoom.
- Calque, list of calques authorized for visualization.
- Window, possibility of opening certain windows.
- Supervisory control, possibility of forcing the value of the tag.
- Manufacturing procedures.

The system offers the user the possibility of adding additional security categories. In the configuration of the supervision application, it is possible to choose whether to use the security system proposed by Vijeo Look or the security management system proposed by the station's operating system.

Standard components included in Vijeo Look

ActiveX controls

Vijeo Look enables the simple integration of ActiveX control components offered by independent editors. ActiveX is a standard which enables software components to interact, either on the same machine or between two remote machines connected across a network, independent of the language used to develop them.

It is possible to link these properties to the real-time value of the tags from an OPC Server, in particular from a Schneider Electric OFS Data Server.

Address of Internet site: www.active-x.com

Java Bean components

Vijeo Look enables the user to execute and visualize Java Bean components. The architecture of Java Bean components makes it possible to develop solutions for networks with heterogeneous hardware environments and operating systems.

Software components using API (*Application Programmers Interface*) Java Beans are portable. The properties of these ActiveX Java Beans are accessible in Read and in Modify.

It is possible to link these properties to the real-time values of the tags from an OPC Server, in particular from a Schneider Electric OFS Data Server.

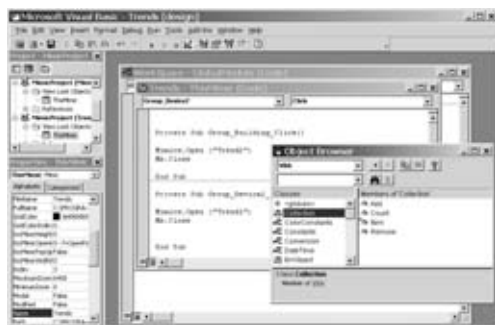
Address of Internet site: www.jars.com

OPC Data Server and interfaces

Vijeo Look is both an OPC Server and Client. The standardized OPC interface not only enables the SCADA application to dialog with PLCs, but also to exchange data with other software programs which are not linked in any way to industrial applications but that have an OPC interface.

For further information on OFS Data Server and the OPC standard, see pages 43105/2 and 43105/3 .

Address of Internet site: www.opcfoundation.org



Standard components included in Vijeo Look (continued)

Visual Basic for application

Vijeo Look is supplied with Microsoft Visual Basic for Application (VBA) making it possible to adapt generic functionalities to user-specific requirements.
It is possible to access:

- Methods.
- Events.
- ActiveX properties.
- The project environment.
- OPC variables.
- Native Vijeo Look drawing elements.

VBA is a universal tool which makes it possible to access and modify all the properties of the set of graphic objects embedded in the synoptics.

Vijeo Look and the ActiveX Data Object interface

Vijeo Look enables the user to save all the tags (inputs, outputs or internal) transiting via the OPC Server in the database.

Vijeo Look is based on the ADO (*ActiveX Data Objects*) format and includes, as standard, an MSDE (*Microsoft Data Engine*) relational database that is accessible via the front-end of MS-Access (not supplied).

Vijeo Look can record its tags in any database with an ADO Server. The ADO Server is used to manage:

- Relational and non-relational databases.
- E-mail and file systems.
- Text and graphics.
- Custom business objects.

The main characteristics of the ADO server are as follows:

- Ease of use.
- Programmable cursor control.
- Management of complex cursors (such as cursor batches, and Server-side and Client-side cursors).
- Capacity to return several sets of results for a single query.
- Execution of synchronous, asynchronous or event-based queries.
- Re-use of objects with or without modification of their properties.
- Advanced management of the recordset cache memory.
- Flexibility to adapt to different environments thanks to an interface which accepts the databases of all the major suppliers on the market.
- Excellent error retrieval.
- High levels of performance.

“Automation journey” project management

Vijeo Look offers a unique solution for the commissioning, deployment and maintenance of applications. All types of Vijeo Look license are supplied with LapLink GOLD software for application transfer and remote control.

Archiving and restoring projects

Allows the user to save the whole application (including the OPC configuration) in a single file, in order to facilitate deployment of the application on “RunTime” machines.

LapLink GOLD software

LapLink GOLD offers advanced remote maintenance services such as:

- Full control of a remote Vijeo Look station enabling the user to address diagnostics and remote maintenance problems.
- Downloading of the latest versions of Vijeo Look.

The advantages of this solution are being able to:

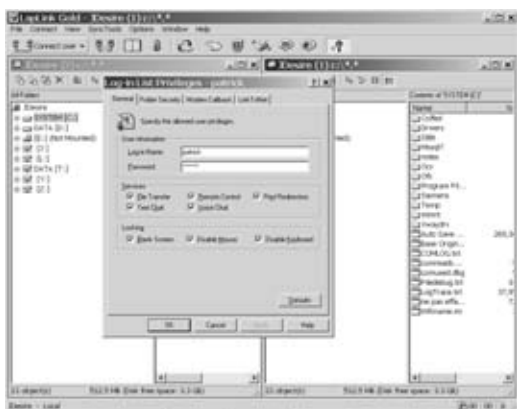
- Have a single interface independent of the media used for application transfer or remote control.
- Generate added value for machines from box-builders, allowing them to offer maintenance services for their machines.
- Guarantee the durability of applications with regard to developments in Microsoft Windows operating systems.

LapLink GOLD offers the following functions:

- Transfers between real-time databases: reports, commands, summary information, etc.
- Use of Server resources (hard disk, printer, etc.).
- PC-to-PC file transfer without having to use a Server.
- File management services (copy, delete, rename directory, type and print).
- Triggering of any real-time database element on event (alarm, time, calculation results, etc.).

Available with any type of Vijeo Look license, LapLink Gold is simple to implement. Two Vijeo Look stations can communicate via:

- Serial, parallel or USB port (cable to be ordered separately depending on the type of link).
- IrDA-compatible infrared port.
- Modem, as LapLink GOLD manages Modems transparently (according to TCP/IP or proprietary protocols).



▲ Recommendations for use

Vijeo Look is an open product, based on the most widely used IT standards. The choice of these technologies ensures that users of Vijeo Look will have an optimal, future-proof, open and stable solution, constructed from widely used software elements which are universally recognized as high-performance quality solutions.

However, although the use of these technologies in Vijeo Look is completely transparent, the openness which they offer means that users must implement the appropriate tools and must have the necessary skills to ensure their problem-free implementation.

This applies to MSDE, a true deterministic relational database, which Vijeo Look provides and uses to store and output logs in an optimal way, or VBA, which enables any kind of task to be executed "virtually" under Vijeo Look.

For example, the users are responsible for using VBA for accessing an MSDE database by means of SQL requests, both in respect of the tools and the documentation used.

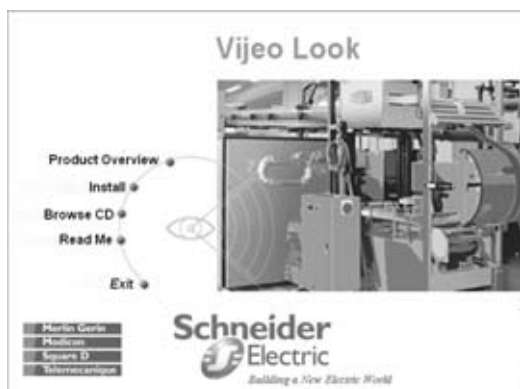
This type of use lies outside the scope of the technical support provided by Schneider Electric, since the problems involved relate to database management, rather than to supervision.

In addition to the problems associated with openness, the user should be well aware of the limits of the various components, to ensure that Vijeo Look is matched to the requirements of the application:

- **Choice of databases (observed behavior compatible with Microsoft recommendations).** Vijeo Look offers you the possibility of storing data in a Jet Engine (MS-ACCESS engine) or MSDE (MS-SQL Server 2000 engine) database:
 - the Jet Engine database is not recommended (although it can be chosen, and this option is supported), because of its performance (limited to 800.000 records),
 - the MSDE database, which can have its size and record duration set under Vijeo Look, is recommended for volumes of data up to 2 GB (i.e. approximately 5,500,000 records),
 - for larger volumes of data, we recommend that you use a professional database such as MS-SQL Server 2000 (not supplied), and have it installed by experts.

- **Limitation relating to the frequency of data acquisition.** Vijeo Look is an entry-level SCADA software package for a stand-alone machine, which means that acquisition, visualization and archiving of data occur on the same machine. You must therefore have reasonable expectations in terms of:

- data acquisition frequencies,
- the number of tags that you want to store in the database,
- the number of alarms you want the application to process.



References

As supplied, the Vijeo Look software package consists of an application CD-ROM, an X-Way drivers CD-ROM, an introduction and installation manual for the software, and the user license certificate. The application CD-ROM includes:

- Vijeo Look software.
- OFS Data Server software.
- LapLink GOLD software.
- User manual in CHM format.
- A demonstration application and a multimedia self-learning tool.

In terms of the drivers necessary for the OPC Communication Server, in order to guarantee a standard version for each driver, a set of X-Way drivers is supplied on CD-ROM ref. TSX CD DRV 13M. It contains PC drivers for Fipway, Fipio, Ethway, XIP/ISaway, Uni-Telway (V1/V2) buses and networks.

The Human/Machine (HMI) interface of the software and the documentation for Vijeo Look are available in 5 languages (French, English, German and Spanish). It is possible to select 2 of the 5 available languages on installation. The software allows the user to switch languages at any time.

Vijeo Look includes software protection that allows the user to:

- Freely transfer the license from one PC to another.
- Perform a functional upgrade of the Vijeo Look license (e.g. increase in size from 128 to 1024 Inputs/Outputs) without having to re-install the software.

References (continued)

PC platforms supported

Vijeo Look can be executed on various types of PC platform, handling both their diversity and specificities. In particular, it features:

- A software keyboard (for terminals without keyboards).
- Assignment of keyboard shortcuts (accelerator keys) for terminals without pointing devices.
- Transparent management of *Touch Screens*.

Minimum PC configuration with assistance provided

Vijeo Look can be installed in PC workstations running Windows98, NT4 Workstation (Service Pack 6), Windows 2000 Professional or Windows XP Professional.
The table below shows the recommended typical and minimum configurations.

Configuration	Minimum	Recommended typical
Processor	350 MHz	500 MHz...1.8 GHz
Memory	128 MB	256 MB ... 1024 MB
Screen		
Resolution	800 x 600	1024 x 768
Colors	256	True color
Disk space		
System disk	200 MB	500 MB
Free space for installation	50 MB	100 MB
Target disk	600 MB	4 GB

Designation	No. of Inputs/ Outputs	Reference	Weight kg
Type of Vijeo Look software license (version V2.0)			
"Build Time/Run Time"	128 I/Os	VJL SMD BTS V20M	—
	512 I/Os	VJL SMD BTM V20M	—
	1024 I/Os	VJL SMD BTL V20M	—
"Run Time"	128 I/Os	VJL SMD RTS V20M	—
	512 I/Os	VJL SMD RTM V20M	—
	1024 I/Os	VJL SMD RTL V20M	—
"Build Time/Run Time" software upgrades	128 to 512 I/Os	VJL UPG BTS 2M V20M	—
	128 to 1024 I/Os	VJL UPG BTS 2L V20M	—
	512 to 1024 I/Os	VJL UPG BTM 2L V20M	—
"Run Time" software upgrades	128 to 512 I/Os	VJL UPG RTS 2M V20M	—
	128 to 1024 I/Os	VJL UPG RTS 2L V20M	—
	512 to 1024 I/Os	VJL UPG RTM 2L V20M	—
Software upgrades from "Run Time" to "Build Time/Run Time"	1024 I/Os	VJL UPG RT2 BT V20M	—

Software updates and subscriptions

Vijeo Look V1.0 to V2.0 license

Consult your Regional Sales Office.

Connection cables

VJL XC A● connection cables enable HMI/SCADA applications to be transferred between two Vijeo Look stations using LapLink software.

Designation	Operating system	Description	Reference	Weight kg
Serial link cable (blue)	Windows 98, Windows NT, Windows 2000 or Windows XP	4 SUB-D-type 9 and 25-pin female connectors 2 m long	VJL XC AS	—
Parallel link cable (yellow)	Windows 98	2 SUB-D-type 25-pin female connectors 2 m long	VJL XC AP	—
USB link cable (gold)	Windows 98, Windows 2000 or Windows XP	2 USB type connectors 1.6 m long	VJL XC AU	—