Vijeo Designer

Classic HMI Configuration software
Quick access to product information

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- Characteristics, Dimensions and drawings, Mounting and clearance, Connections and schemas, Performance curves
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Selection guide

HMI Configuration software

Applications

Touchscreen Configuration software with UI design and gestures

Compatible products

<table>
<thead>
<tr>
<th>Type</th>
<th>Harmony STO Color</th>
<th>Harmony ST6</th>
<th>Harmony GTU Premium Box</th>
<th>Harmony IPCs</th>
<th>Windows compatible computers</th>
</tr>
</thead>
</table>

Maximum number of targets

1

Operating system on terminals

Proprietary for Harmony STO Color, Harmony ST6 and Harmony GTU
Windows Operating System for Harmony IPCs

Functions

Reading/writing of PLC variables

Yes

Display of variables

Yes

Data processing

Yes

Sharing of variables between HMI applications

–

Syllables of variables to external database

–

Internationalization

16 languages supported by 26 type of fonts

Development of graphic applications

Native library of graphic objects

Yes

Curves and alarms

Yes

Scripts

Block Script

Communication between HMI application and PLCs

Via I/O drivers: Schneider Electric or third-party protocols (Mitsubishi, Omron, Rockwell Automation, Siemens)

Uploading of applications

–

Simulation of HMI applications

Yes

Recipe management

Yes, up to 256 recipes, 600,000 ingredients in total

Report and barcode printing

–

Screen capture

Yes, for Harmony IPCs in PNG format

Access security

Password protected

Interface languages

Screens in 9 languages: English, French, German, Italian, Portuguese, Spanish, Traditional Chinese, Simplified Chinese, Korean and documentation in electronic format available in 4 languages: English, French, German, Italian

OS compatibility

Windows 7, Windows 8, Windows 8.1, Windows 10 (32-bit/64-bit)

Software type

EcoStruxure™ Operator Terminal Expert

Pages

For more information, please refer to DIA5ED2140703EN catalog

Configuration software for data-intensive and complex visualization

Classical Configuration software for the complete HMI range

Harmony STU and Harmony GTU

Harmony Panel PCs and Box PCs

Harmony GTU/STU/GTU, Magelis XBTGH

Harmony STU/GTU/GTU, Magelis XBTGH

Harmony Panel PCs and Box PCs

Harmony Panel PCs and Box PCs

Harmony Panel PCs and Box PCs

Proprietary for Harmony STU/GTU, Harmony GTU/GTU and Magelis XBTGH

Proprietary for Harmony STU/GTU, Harmony GTU/GTU and Magelis XBTGH

Windows 8.1, Windows 10 IoT Enterprise

Yes, up to 8,000 internal and external variables

Yes, with expression editor or Java programming

Yes, with the Intelligent Data Service extension

Up to 15 languages supported by 34 Western alphabets, 4 Asian alphabets and 2 Middle Eastern alphabets embedded in the application

Yes, user customizable

Yes, with log

Java

Yes

Yes

Yes

Yes

Yes, up to 32 groups, 1,034 ingredients for 256 recipes per group, proprietary or CSV format, complete multilingual support for labels and ingredients

On the fly alarms, log data. Up to 9,999 active alarms, records, or logs

Main USB Barcode supported for Harmony with Windows OS and Main Serial Barcode supported for other Harmony.

Yes

Yes

Yes

Yes

Yes

Yes

Yes

More technical Information on www.se.com

(1) Magelis XBT and Harmony GTU/GTU terminals behave transparently on restoration of power.

(2) Depending on the compatible product.
Vijeo Designer
Classic HMI Configuration software

**Presentation**

The cross-platform Vijeo Designer™ configuration software can be used to create operator dialogue applications for controlling automation systems for the following panels:
- Harmony STU (Vijeo Designer Limited Edition is sufficient)
- Harmony GTO
- Harmony GTU
- Harmony GTUX
- Harmony GK
- Magelis XBTGH portable
- Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU)

Vijeo Designer and a suitable panel can be combined to provide a solution for each and every control station requirement, at the cost of a simple software reconfiguration.

Capable of supporting video image streaming, the Harmony Vijeo Designer offer provides access to new types of application. Users can view their process instantly or subject to a delay, on the same screen as the HMI dialogue.

Vijeo Designer uses Harmony Ethernet TCP/IP connectivity and is, therefore, able to support WEB Gate remote access, the sharing of application data between panels, the transfer of recipes and logs for variables, and much more.

Applications can take on an international nature, because Vijeo Designer supports up to 15 languages simultaneously in one project (40 alphabets are available on the Harmony GTU/ GTUX/GTO/GK). The interface and documentation for Vijeo Designer are available in 7 languages: English, French, German, Italian, Brazilian Portuguese, Simplified Chinese and Spanish.

Vijeo Designer is the HMI component of SoMachine and EcoStruxure™ Machine Expert. Vijeo Designer will run on any PC with Windows 10 Professional or Windows 7 or Windows 8.1. It supports WYSIWYG simulation (1) of the developed application (without the target Harmony GTO/GK/GTU/GTUX or Harmony Panel PCs and Box PCs ), simulation of the PLC variables (I/O, internal bits and words) and ensures that the application runs in total security on the Harmony GTO/GK/ GTU/GTUX or Harmony Panel PCs and Box PCs.

**Configuration**

Classic HMI Configuration software enables operator dialogue projects to be processed quickly and easily thanks to its advanced ergonomics using up to 5 configurable windows:

1. Browser window
2. Object List window
3. Recipes window
4. Library of Animated Graphic Objects and Image Objects window
5. Report window

The software also offers a complete set of application management tools for:
- Project creation, whereby a project comprises one or a number of applications for Harmony GTO/GK/GTU/GTUX, Harmony Panel PCs and Box PCs with sharing of variables between panels (up to 8 panels and 300 variables)
- Recipe management (32 groups of 256 recipes with up to 1024 ingredients)
- Cross-referencing of application variables
- Documentation of views for an application
- A full simulation mode for testing the application from the design office
- Bar code reader management via:
  - USB port on Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU) and Harmony GTU (with Box HMIG5U2)
  - COM1 or COM2 serial port on Harmony GK/GTO/GTU/GTUX
- USB keyboard and mouse support for all panels incorporating a USB port (only one peripheral can be connected at any one time)
- Retrieval of symbol files for PLC variables generated by PL7, Concept, ProWORX 32 and Unity Pro software (2)
- Report printing
- Barcode printing

---

2. DDT structured types and “unlocated” variables are supported.
**Graphics editor**

The graphics editor in Vijeo Designer offers interface consistency for simple objects as well as for more sophisticated ones. It enables application developers to create views easily based on:

- Simple objects to be configured:
  - points, lines, rectangles, ellipses, arcs
  - bar graphs, meters, tanks, fillers, pie charts, curves
  - polylines, polygons, regular polygons, Bézier curves, scales
  - texts, images or alarm summary, etc.
- Preconfigured advanced objects: switches, radio buttons, indicators, buttons, tanks, bar graphs, potentiometers, selector switches, text or number fields, enumerated lists, etc.
- Screen masks and skeletons for type applications

**Object animations**

8 types of graphic-object animation support the rapid creation of animated mimics on the basis of:

- Pressing the touch panel
- Change of color
- Filling
- Movement
- Rotation
- Size
- Visibility
- Display of associated value

**Library of animated graphic objects**

The library of animated graphic objects makes the creation of mimics very efficient thanks to the numerous “ready-made” animation objects. It includes more than 4000 2-D and 3-D “industrial” vector images. Simply “drag and drop” the object using the mouse to position it on the mimic being created.

User-defined objects can be added to this library using the same simple “drag and drop” method.

**Java scripts**

Vijeo Designer supports data processing using Java language scripts. This function facilitates the running of complex animations, the automation of tasks within the panel and the management of calculations in order to relieve the load on the PLC programs.

The scripts (50 lines, max.) can be associated with:

- Variables
- Operator actions
- Screens
- The application itself

**User-customizable resources**

To enable applications to be customized in accordance with customer requirements, Vijeo Designer features a new resource concept that makes it possible to define styles (colours, images, character fonts, text lists).

To quickly customize a generic application to meet customer requirements, simply assign these styles to the objects concerned.

The resource concept is supported by the following native objects: *Meter, Bar Graph, Slider, Potentiometer, Selector, Text List* and *Image List*. 
Advanced functions

Based on new information technologies, Vijeo Designer features a large number of advanced functions for processing a higher volume of data, both faster and more reliably:

- Multimedia data management in the most popular formats:
  - image display (jpeg, bmp, emf and png files)
  - text display and processing (txt files)
  - sound message processing (wav files)
- Alarm or curve logs recorded
- Zoom in/out function on trending curves for a detailed analysis
- Alarm management. All variables can be categorized as “Alarms” and can be customized in respect of visualization and acknowledgment. These Boolean and analogue threshold type alarms can be printed on the fly.
- Multimode application transfer: via serial link, USB, Ethernet and Compact Flash memory card (on multifunction panels)
- Backup of application source files on the panel or iPC to facilitate maintenance
- User-friendly data exchange between PC and panel using the Data Manager tool
- Integrated FTP server for downloading/uploading recipes via Ethernet TCP/IP and restoring logs to Harmony GTO/GK/GTU/GTUX and Harmony Panel PCs and Box PCs
- Multimode application transfer: via serial link, USB, Ethernet and Compact Flash memory card (on multifunction panels)
- Action table for associating a particular behavior with an event
- Use of a USB memory stick (up to 4 GB) for application downloads/uploads, data retrieval or recipe exchange
- E-mail on action and event (the e-mail text can contain up to 1000 characters)

WEB Gate remote connection

Vijeo Designer supports a WEB Gate remote connection with any platform which has an Ethernet connection point.

WEB Gate supports remote visualization of Vijeo Designer applications with Internet Explorer on most of the PC running Windows OS (1). The size of the page displayed is determined by the panel.

WEB Gate supports the display of pages similar to those in the Vijeo Designer application, or of different pages, i.e. startup pages and navigation pages can be differentiated in order to indicate the type of access (panel/WEB Gate).

Several connections are possible at the same time, with the number depending on the size of the application.

The high security mode of WEB Gate excludes any risk of applications jamming as a result of variables being modified via the panel and WEB Gate at the same time.

For increased confidentiality:
- WEB Gate access can be restricted to only those PCs whose IP address appears in the licensing list.
- Some Vijeo Designer functions are not supported by WEB Gate:
  - application shutdown, restart
  - panel configuration
  - reading of an acoustic animation (sound file)
  - display a recorded video sequence

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WEB Maintenance remote diagnostics
In addition to WEB Gate, Vijeo Designer features the embedded diagnostics service WEB Maintenance - Transparent Ready WEB Server Class B15 (1). This server’s navigation bar features an option for accessing the following functions:
- WEB Gate
- Animation tables
- Web interface for retrieving data files (recipes, logs, multimedia files)

Note: Panels programmed using Vijeo Designer can be accessed directly via their names. This function is supported by the DHCP and DNS network services.

Integrated diagnostics
Vijeo Designer can be used to access the “Diag buffer” function of Modicon M340/Premium/Quantum PLCs via the following protocols:

<table>
<thead>
<tr>
<th>PLC Type</th>
<th>Modicon M340</th>
<th>Premium PL7</th>
<th>Premium Unity Pro</th>
<th>Quantum Unity Pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITE-Series</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNITE-TCP/IP XWAY</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UMAS Modbus TCP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UMAS Modbus RTU</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>UMAS Modbus Plus</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>UMAS UNITE-Series</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>UMAS UNITE-TCP/IP XWAY</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UMAS Modbus TCP USB PPP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Accessible
Not accessible

(1) Please refer to our website www.se.com.
Communication protocols between the HMI application and the PLCs

Communication between the operator dialogue application and the connected control equipment is established using a communication protocol (driver), which is selected when creating the application in Vijeo Designer.

**Schneider Electric protocols**

Vijeo Designer supports the following Schneider Electric protocols:

- Modbus RTU Master
- Modbus TCP/IP Master
- Modbus Plus (1)
- Modbus 32-bit extensions
- ELAU PacDrive (ELAU C00x/LMCx00)
- Unitelway
- UniTE TCP/IP
- USB panel port for Modicon M340 CPUs
- FIPIO (2), FIPWAY (2)

All Schneider Electric drivers provide IEC access to input bits/words and output bits/words: Modbus (RTU and TCP/IP), Modbus Plus (GMU and USB), Uni-Telway, Xway.

Direct I/O access authorizes access to the hardware input and output registers.

Register addresses comply with the syntax of IEC standards and the address rules for UNITY configuration software (%I, %IW, %Q, %QW).

If requested by the user, the variables associated with a PLC can be read ("on demand scan" function). The DDT and unlocated variables of Unity Pro are supported.

**Third-party protocols**

Vijeo Designer supports the following third-party protocols:

**Emerson**

ROC Plus (SIO) and ROC Plus TCP/IP protocols.

**Mitsubishi**

Melsec protocols: A/Q CPU (SIO), A/Q Ethernet (TCP), QnU Ethernet (TCP), A/IQ Link (SIO), QnA CPU (SIO), Q Ethernet (UDP), QnU Ethernet (UDP), FX (CPU), QUTE for Q00JCPU.

Except for Melsec-A Link (SIO) protocol, Mitsubishi serial link protocols do not work on the RJ45 port.

**Omron**

Sysmac protocols: FINS (SIO), LINK (SIO), FINS (Ethernet) and Trajexia.

**Rockwell Automation**

Allen-Bradley protocols: DF1-Full Duplex, RS DataHighway 485, Ethernet IP (3) (PLC5, SLC500, MicroLogix, ControlLogix), Ethernet IP native (ControlLogix), Ethernet IP High Speed access, Ethernet IP Explicit.

**Siemens**

Simatic protocols: MPI (S7-300/400), MPI Direct, RK512/3964R (S7-300/400), PPI, Siemens Ethernet (ISO-on-TCP/Profinet), MPI pass-through function.

**Toyoda**

Toyopuc Ethernet PC3J (TCP/IP) and Toyopuc Link (SIO) protocols.

(1) Via USB Modbus Plus gateways: XBTZGUMP with proprietary OS, TSXCUSBMBP for Harmony with Windows OS.
(2) Via USB FIPIO gateway TSXCUSBFIP.
(3) Certified ODVA compatibility.

*Note: For more information on connection of Harmony panels to field buses, please refer to the following catalogs: Harmony GTQ (DAISED213061602), Harmony GK (DAISED2130601602), Harmony GTUX (DAISED2181203EN), Magelis XBTGH (DAISED2131102EN).*
References

All licences for the Classic HMI Configuration software listed below consist of a DVD containing:
- Vijeo Designer software, including:
  - Copyright-free stand-alone installation of Data Manager
  - User documentation in electronic format, including:
    - Online help for the software
    - User Manual for the supported targets
    - A multimedia self-learning tool lasting 1 hour 30 minutes in English/French
- The supported communication protocols

Note: Harmony STU panels can be programmed using Vijeo Designer Limited Edition. Vijeo Designer V6.2 supports applications created with any version of Vijeo Designer ≥ V4.6. If you are updating an earlier application, please consult our Schneider Electric Customer Care Centre.

### Single-station Build Time licences

<table>
<thead>
<tr>
<th>Description</th>
<th>Licence type</th>
<th>Application transfer cable</th>
<th>Reference</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vijeo Designer configuration software</td>
<td>Single (1 station)</td>
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<td>VJDSNDTGSV62M</td>
<td>0.125</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USB Harmony STU</td>
<td>VJDSUDTGAV62M</td>
<td>0.330</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Harmony GTO/GK/GTU/GTUX,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Magelis XBTGH</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Multi-station Build Time licences

<table>
<thead>
<tr>
<th>Description</th>
<th>Licence type</th>
<th>Number of stations</th>
<th>Reference</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vijeo Designer configuration software</td>
<td>Group</td>
<td>3</td>
<td>VJDGNDTGSV62M</td>
<td>0.125</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>10</td>
<td>VJDTNDTGSV62M</td>
<td>0.125</td>
</tr>
<tr>
<td></td>
<td>Facility</td>
<td>Unlimited number of stations on one site</td>
<td>VJDFNDTGSV62M</td>
<td>0.125</td>
</tr>
</tbody>
</table>

### Run Time licences (2)

<table>
<thead>
<tr>
<th>Description</th>
<th>Licence type</th>
<th>Number of stations</th>
<th>Reference</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vijeo Designer Run Time licence for Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU)</td>
<td>Single</td>
<td>1</td>
<td>VJDSNRTMPC</td>
<td>–</td>
</tr>
</tbody>
</table>

(1) For references of application transfer cables (PC to Harmony GTO/GK/GTU/GTUX and Magelis XBTGH panels) and information on included USB cable XBTZG935 for PC connection, refer to the respective product catalogs: Harmony GTO (DIA5ED2136160EN), Harmony GK (DIA5ED2136161EN), Harmony GTU (DIA5ED2146011EN), Harmony GTUX (DIA5ED2181203EN), Magelis XBTGH (DIA5ED2131102EN).

(2) The Run Time licence drives the execution of an application. It is only used for Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU).
Vijeo Designer
Classic HMI configuration software
Vijeo Design'Air - Application for tablets and smartphones

Presentation
Vijeo Design'Air is an application for Android and iOS tablets and smartphones. They enable you to connect remotely to an HMI panel over a WiFi network and display a graphical view of the same on your tablet and smartphone.

During the design phase, you can set the HMI panel to be detected by Vijeo Design'Air. The HMI’s accessibility level can be configured to provide view only mode or full control and also secured by requiring user authentication for login.

Vijeo Design'Air supports the following features:
- HMI Auto-detect: scans and detects available HMI panels on a nearby network.
- Remote monitoring: connects tablets and smartphones to HMI panels, and allows remote viewing and controlling of HMI projects at run time.
- Advanced screen: takes advantage of advanced graphic and multi-touch capabilities of tablets and smartphones and applies it to the automation industry.

Architecture
In this configuration, the HMI panel acts as the server, while the tablet or smartphone acts as the client. The server and client communicate over a WiFi wireless, 3G, 4G, or LTE network.

After connection is established, you can use some of the functionalities of tablets and smartphones to remotely interact with the HMI panel. For example, you can perform touch or swipe actions to start or stop a process or to navigate between screens. You can also use pinch action to zoom in and out of a screen for better viewing.

Vijeo Design'Air compatible HMI panels
Below is the list of Harmony HMIs that are compatible with Vijeo Design'Air:
- Harmony STU
- Harmony GTO
- Harmony GTU
- Harmony GTUX
- Harmony GK
- Magelis XBTGH portable
- Harmony SCU
- Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU)

Note: Download Vijeo Design'Air from Google Play or App Store in iTunes.
Vijeo Designer
Classic HMI configuration software
Vijeo Design’Air Plus - Application for tablets and smartphones

Presentation
Vijeo Design’Air Plus is an application for Android and iOS tablets and smartphones which enables you to create a tablet/smartphone project specifically for the tablet/smartphone display size. At runtime, an operator can access the user application to display data and control automation processes on the tablet/smartphone.

The Vijeo Designer’s drawing tools can be used to create and edit a visual representation of the automation process. You can draw shapes and parts (such as rectangles, arcs, and pies), Toolchest parts (such as numeric displays, switches, and bar graphs), use the gradient feature to enhance the color of the drawn objects, and set up an Alarm panel for remote alarm monitoring.

Vijeo Design’Air Plus supports the following features:
- HMI project design: enables the HMI designer to create a tablet/smartphone project of the automation process using enhanced drawing tools.
- Remote access and control: enables an operator to control automation processes, provide the ability to view and monitor data, change variable values, and monitor and acknowledge alarms.
- Enhanced data display: takes advantage of the advanced graphic and multi-touch capabilities of tablets and smartphones and applies them to automation industry.

Architecture
Vijeo Design’Air Plus allows the operators to select a user application, and on successful login downloads and launches the tablet/smartphone application. The operator can view and monitor an automation process, and for example, change values in numeric displays and string displays. In the Alarm panel, the operator can monitor and acknowledge alarms.

Vijeo Design’Air Plus compatible HMI panels
Below is the list of Harmony HMIs that are compatible with Vijeo Design’Air:
- Harmony STU
- Harmony GTO
- Harmony GTU
- Harmony GTUX
- Harmony GK
- Magelis XBTGH portable
- Harmony Panel PCs and Box PCs (HMIBMP, HMIBMU)

Note: Download Vijeo Design’Air Plus from Google Play or App Store in iTunes.
HMI configuration software
Vijeo Designer configuration software
Product reference index

<table>
<thead>
<tr>
<th>V</th>
<th>VJDFNĐTGSV62M</th>
<th>9</th>
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</thead>
<tbody>
<tr>
<td>V</td>
<td>VJDSNĐTGSV62M</td>
<td>9</td>
</tr>
<tr>
<td>V</td>
<td>VJDSNDTG62M</td>
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</tr>
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<td>V</td>
<td>VJDSNRTMPC</td>
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<td>V</td>
<td>VJDSUDTGAV62M</td>
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<tr>
<td>V</td>
<td>VJDTNDTG62M</td>
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</table>
The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

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DIA5ED2130614EN
March 2020 - V4.0