OMRON.

Affordable, Flexible, Easy To Use, and Powerful

Are you looking for a Windows® based HMI software package packed with features and large I/O tag counts? Omron's CX-Supervisor is it!

CX-Supervisor is flexible enough for supervision and control of a single machine or a whole manufacturing process. Windows® Explorer-style development environment makes building the most sophisticated graphic interfaces simple. Intuitive Wizards and an extensive on-line help makes it even easier.

CX-Supervisor includes an easy-to-use, event driven script language providing users with the flexibility to customize applications to their exact needs.

CX-Supervisor supports Microsoft® COM/DCOM, DDE, OPC, OLE, ActiveX, and ODBC/ADO standard technologies.

CX-Supervisor Features:

■ Objects/Animation

Drag and drop simple drawing objects or more complex objects such as OLE, trend graphs and alarm monitors. CX-Supervisor also includes libraries of over 3000 graphic symbols or create custom libraries.

■ Recipes

Transfer process data to and from automation equipment.

■ Alarms

Provide notification for unwanted conditions of I/O points during runtime.

■ Security

Limit access to specific project actions for single users or groups.

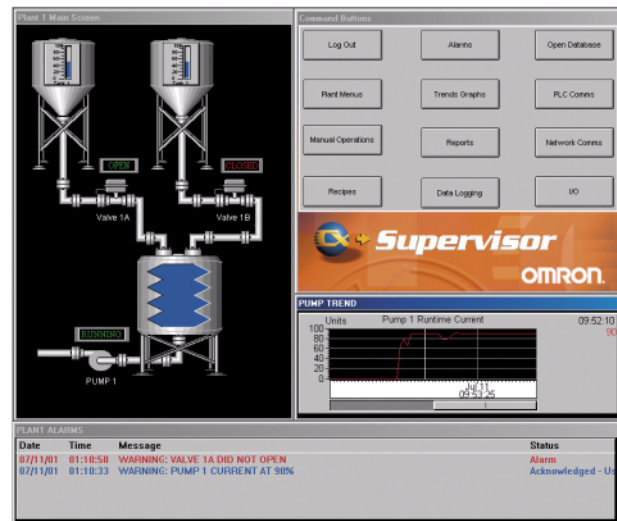### ■ I/O Points Database Reuse

Create I/O tags once in CX-Programmer Project and import to CX-Supervisor.

■ ActiveX Container

CX-Supervisor is an ActiveX container. Use any ActiveX control within CX-Supervisor.

■ Script Language

Choose from CX-Supervisor script, VBA script, and JAVA script.

Example of CX-Supervisor screen image during runtime

■ OPC Client

Use to connect to omron's CX-Server OPC or third party OPC servers, easily connecting plant floor to the rest of the organization.

■ DDE Client/Server Capable

■ Data Logging

View live and historical data during runtime. Log files are not restricted to the PC that is running the CX-Supervisor application. CX-Supervisor includes remote Data Log Viewer that can be used on any PC to review log files and CX-Supervisor's file-handling features can be used to automate the file transfers to the remote PC or Export logged data directly to Excel®.

■ Data Base Connections

Connect to databases using ADO, MSAccess, SQL Server, ODBC for Oracle, Text, etc.

■ Networking

Connect to Omron PLCs using CX-Server, included with CX-Supervisor.

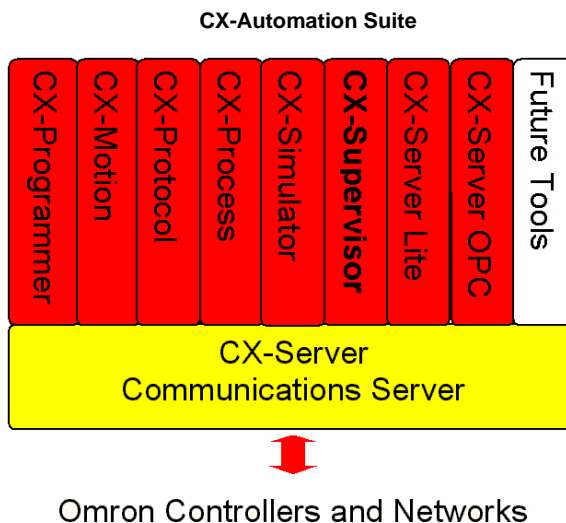# Features and Functions

■ CX-Automation Suite Overview

CX-Supervisor is part of the CX-Automation Suite, a family of Omron Software products designed to reduce engineering effort and provide complimentary functionality.

- Suite Products use Omron's CX-Server for powerful and reliable communications.
- Applications can share the same I/O data points.
- All programs have a common look and feel.
- Develop a single I/O point (tag) database for your PLC program using CX-Programmer and import it directly to CX-Supervisor.
- CX-Supervisor gives you the flexibility to select and group only the points you need or the entire database.
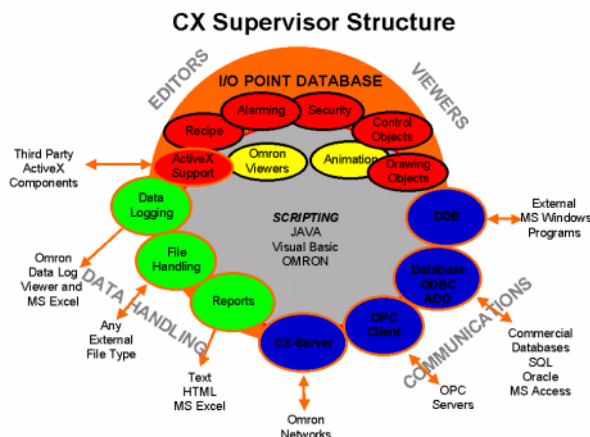
■ CX-Supervisor Application Model

At right is a diagram showing the CX-Supervisor Application Model.

- The I/O point (tag) database is central to all application elements.
- Using the script language the developer can access all of the program areas.
- With all the available choices for communications, CX-Supervisor can access third-party I/O controllers and data servers.

CX-Automation Suite

CX-Supervisor Application Model
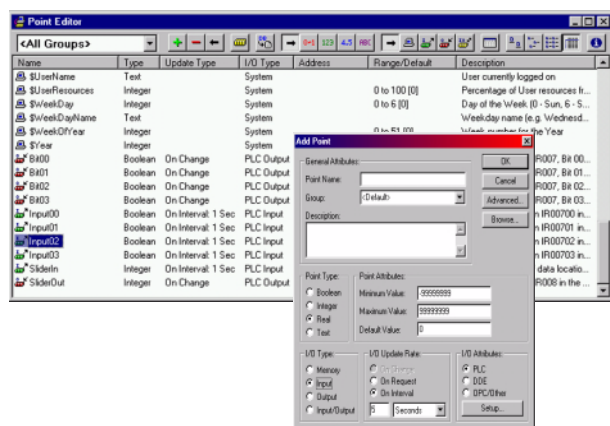
■ CX-Supervisor Development Editors

CX-Supervisor's development editors allow for quick and easy application development. Editors use Windows® Explorer-style navigation and helpful Wizard dialogue boxes enabling you to work fast. Switch between Editors as you go, easily reference and manage all the functional areas of your CX-Supervisor project.

Work Space Editor

A detailed overview of the project can be displayed using the Workspace Editor. Use the Workspace to manage all of the project details. Doubleclick on any item to view or modify.

I/O Points Editor

Create and manage the entire I/O point database with the Points Editor. Configure PLCs, filter data to be viewed, view unused project points. An intuitive "Add Point" dialogue box assists in I/O point creation or import directly from a CX-Programmer project. Drag points from the Points Editor directly onto screen objects for configuration. OPC and DDE points are treated just like any other.
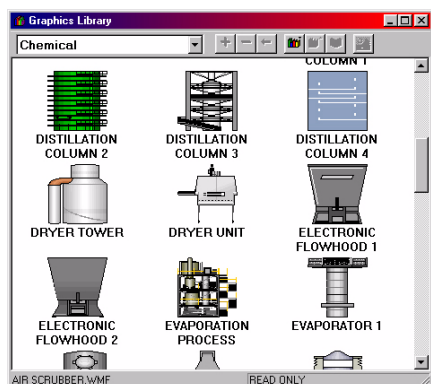

Animation Editor

Animate screen objects with the Animation Editor. The Animation Editor exposes the properties available for the object being animated. Associate the properties with I/O points and create effective animated screen graphics without the need for scripting. Right mouse click a screen object and launch the Animation Editor.

Graphics Editor

CX-Supervisor includes a library of over 3000 hi-resolution graphic objects. Drag and drop graphic objects directly from the library to the display screen, animate the object using the Animation Editor and eliminate the tedious task of drawing screen graphics. You can also save graphics drawn within CX-Supervisor to the libraries for reuse throughout current and future projects.

Recipe Editor

CX-Supervisor recipes are collections of I/O point variables, which have pre-defined values and are stored on disk for use. At runtime, recipes can be downloaded, uploaded, or modified and saved as new recipes. Recipes can also be validated while being downloaded and aborted if a validation fails. The Recipe Editor is used to create, edit, and view recipes for the project. Dialogue Wizards provide the developer with all the steps to creating recipes.

Alarm Editor

Alarms provide notification of problems during runtime of a CX-Supervisor application. Alarms can be monitored in real-time and stored in a log file. CX-Supervisor has three types of alarms to choose from, simple, deadband, and rate of change. The Alarm Editor is used to create, edit, and view alarms for the project. Dialogue Wizards provide the developer with all the steps to creating alarms.
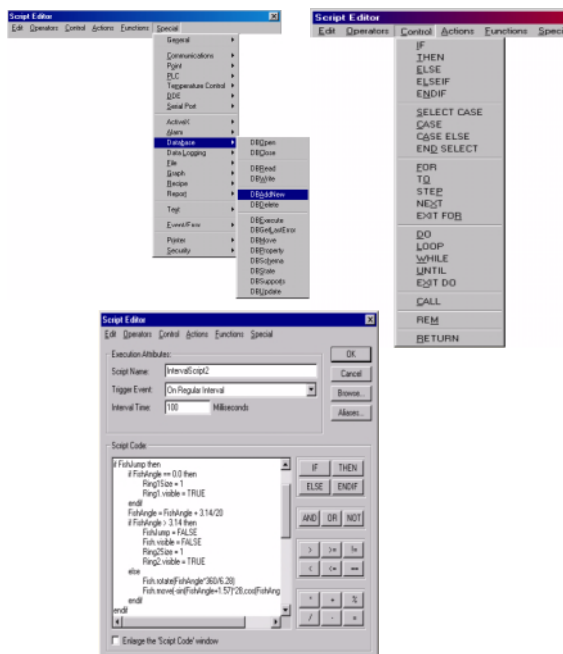
Script Editor

The script editor extends the flexibility of CX-Supervisor by exposing most of the application elements to the script editor. Scripts can be executed based on events, time intervals, projects, as well as at page or object level. There is a wide range of script commands for points, objects, alarms, recipes, files, data logging, and more.

CX-Supervisor's script language is extremely user-friendly, in most cases drop down menus and Dialogue Wizards help the developer build the script code strings requiring only the "filling in" of the specific points from I/O points database. This makes the language easy to use for the novice as well as the seasoned programmer.

CX-Supervisor's script language supports:

- CX-Supervisor Script
- VBA Script (just type "@VBScript" in the code")
- Java Script (just type "@Jscript" in the code")

CX-Supervisor's script language can also use external text files containing script code, excellent for using existing programming.
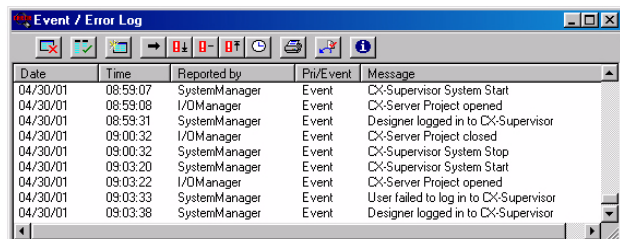
■ CX-Supervisor Runtime Viewers

CX-Supervisor includes a number of informational windows available for viewing during runtime, **requiring no development programming** and can be launched from CX-Supervisor's runtime menu, screen objects or script language. Viewers are Window®-style popup dialogues that assist and prompt operators to HMI operations. There are two types of viewers, those used for general application use and those for use when using Omron PLCs.
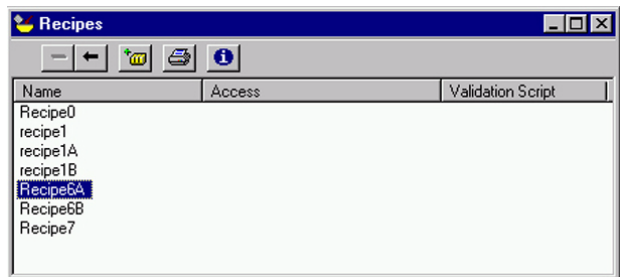
Event/Error Log Viewer

CX-Supervisor's Event/Error Viewer is used to capture system level events and errors during runtime. In the runtime environment the viewer can be displayed at any time. Events can be filtered by date, time, reported by, priority, or associated messages. The information displayed can be configured within the development environment. The viewer can also be configured to automatically display based on the type of event. For example, a communication error with a PLC can trigger the Error/Event Viewer to be displayed alerting the operator to the condition. The number of entries to display can be configured and the viewer can be printed from an icon provided on it's tool bar, or automatically through the script language, assisting maintenance personnel in problem diagnostics.

Recipe Viewer

CX-Supervisor's Recipe Viewer can be launched during runtime from the runtime menu, a screen object, or scripted event. The viewer allows the operator to download, uploaded, or modify and save new recipes during runtime. It's easy to use. The operator selects from the list of available recipes, and double clicks to open. The operator can also make changes and resave as a new recipe. Recipes can be validated while being downloaded and aborted if a validation fails. Recipes can be printed from an icon on the tool bar or automatically through the script language.
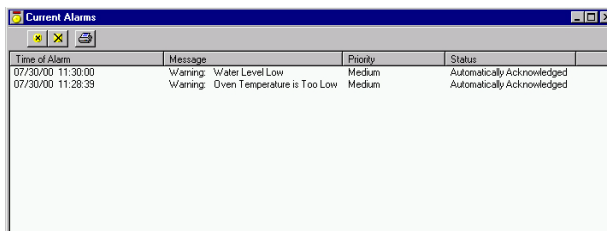

Alarm Viewers

CX-Supervisor has a variety of options available in the way alarms are reported and acknowledged during the runtime environment. There are three types of viewers available for runtime alarms and they can be launched from a screen object or scripted event.
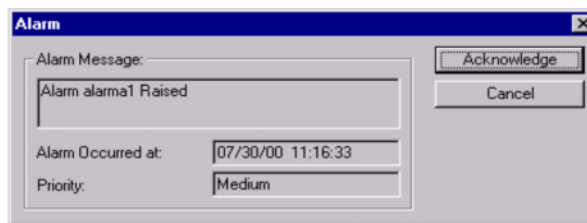
Current Alarm Status Viewer

CX-Supervisor's Current Alarm Status Viewer lists the current unacknowledged alarms for the runtime application. It has been configured in the development environment to display based on the runtime menu, a screen object, or scripted event. Use it to capture all current alarms for the runtime application, even those that have been configured to be auto-acknowledged. Printing of the viewer can be from an icon on the tool bar or automatically through the script language.

Alarm Confirmation Viewer

CX-Supervisor alarm points can be developed to display the Alarm Confirmation Viewer. When an alarm event is raised the viewer is used to alert the operations personnel of the alarm and gives them the ability to acknowledge it. Useful descriptive information for the alarm is shown in the viewer and configuring it for operation is as easy as checking a box during development when defining the specific alarm, or a scripted event can be written.
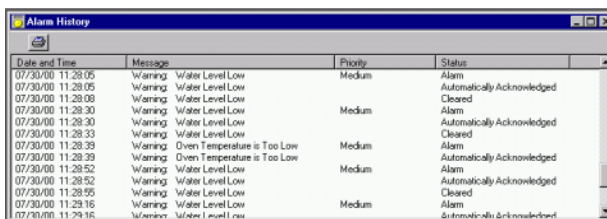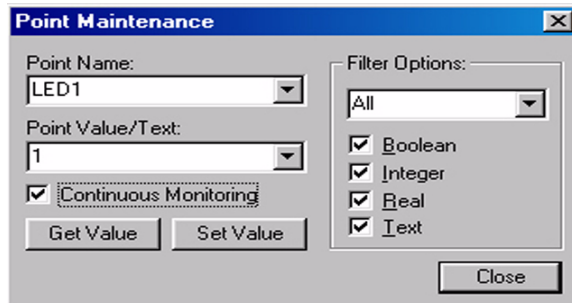

Alarm History Viewer

CX-Supervisor's Alarm History Viewer lists the history of alarms generated in the runtime application. Configure it in the development environment to display based on the runtime menu, a screen object, or scripted event. Use it to display a history of all alarm events. The data is held in a text file created when the application is first run and is added to as alarms are raised. Printing of the viewer can be from an icon on the tool bar or automatically through the script language. The viewer is the perfect maintenance diagnostic tool for pinpointing reoccurring problems.
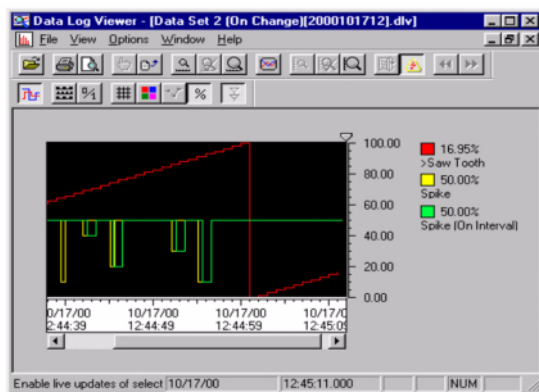
Point Maintenance Viewer

CX-Supervisor's Point Maintenance Viewer displays the I/O point database for the runtime application. Configured in the development environment to display based on the runtime menu, a screen object, or scripted event. Use the viewer to read or write the value of a specific point. The viewer is a valuable diagnostic tool extending the power of CX-Supervisor.
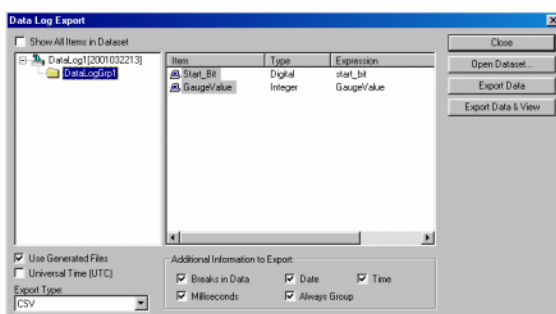

Data Log Viewer

CX-Supervisor's Data Log Viewer displays a graphical representation of logged data. Configured in the development environment to display based on the runtime menu, a screen object, or scripted event, data points can be digital as well as analog and can be displayed as separate graphs. The viewer displays data in real time or from historical files. Many options are available in runtime for setting up the viewer. Pen colors, grids, plot markers, percentages, etc. are some of the features. Graphs can also be printed from the menu choices.

Data Log Export Viewer

CX-Supervisor's Data Log Export Viewer allows logged data to be exported during runtime to a text file or directly into an Excel® spreadsheet. Configure it in the development environment to display based on the runtime menu, a screen object, or scripted event. The viewer is extremely powerful and allows users to tailor the data export to fit their needs. They can choose any one or all the data points that have been logged, click a button and generate a Excel® spreadsheet with the data, it's that easy.
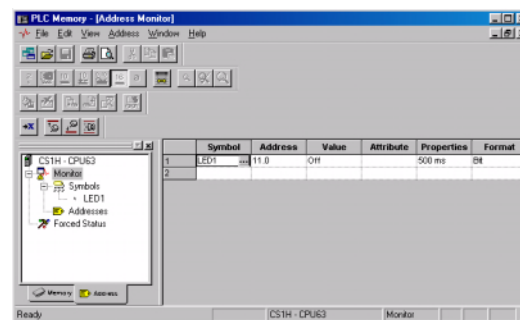

Omron PLC Communication Utility Viewers

CX-Supervisor includes powerful utilities to interface to Omron PLCs. Many of the features available with CX-Programmer are also imbedded within CX-Supervisor allowing access during runtime. *This means when using Omron controllers and CX-Supervisor, direct access to the controller is available from the HMI application without any additional development programming!*

Omron PLC Data Monitor Viewer

CX-Supervisor's PLC Data Monitor Viewer displays Omron PLC data memory values in tabular (spreadsheet-like) format either for individual memory addresses or for a complete memory area. It can be displayed from the runtime menu. The data in each table cell shows you how your program executes under different conditions. You can specify the name or address by typing it into the appropriate cell, then enter the value of the address in the adjacent value cell. You may choose whether you want bit or word values and select their formats. You can also force bits ON or OFF, or clear them. Data from the viewer can be printed directly from its menu choices.
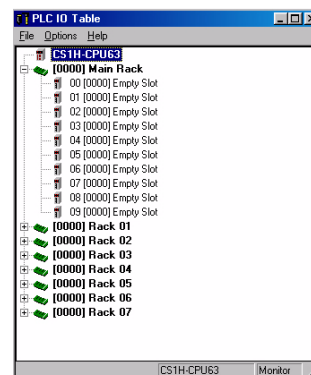

Omron PLC Data Trace/Time chart Viewer

CX-Supervisor's Data Trace and Time Chart Viewer are used to monitor and trace data from Omron PLC memory areas using the same user interface. It can be displayed from the runtime menu. After recording, the bit traces and data values can be displayed in the viewer to reflect the PLC's program execution. Data can be monitored over time. When recording is enabled, the data values will change within the viewer to reflect the PLC's program execution. Data from the viewer can be printed directly from its menu choices.

Omron I/O Table Viewer

CX-Supervisor's I/O Table Viewer is used for defining and displaying all the possible racks and module numbers for active Omron PLCs and their associated I/O. It can be displayed from the runtime menu. Rack, slot, or module address and I/O string information is shown. The viewer displays an Explorer-style map that represents the physical layout of your input and output modules.
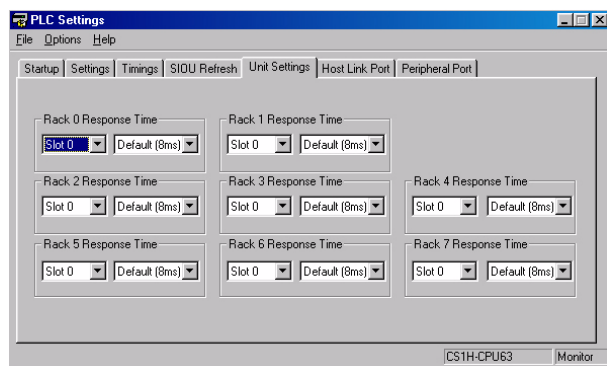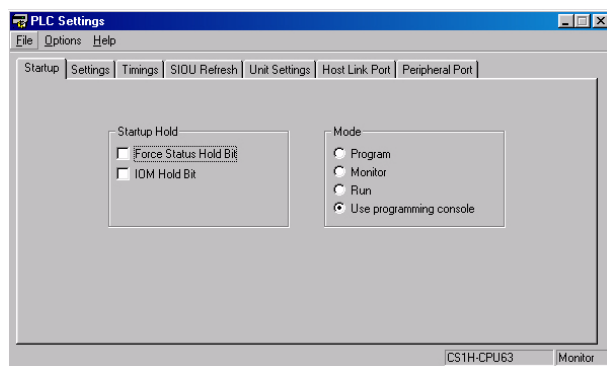
Omron Memory Card Viewer

CX-Supervisor's Memory Card Viewer is used for accessing memory cards used with Omron PLCs. It can be displayed from the runtime menu. The viewer displays an Explorer-style map that represents the physical layout of any memory card components.

Omron PLC Error Viewer

CX-Supervisor's PLC Error Status Viewer displays currently active fatal and non-fatal errors for the connected Omron PLC. It can be displayed from the runtime menu. It can also be used to display the PLC error log and active messages.
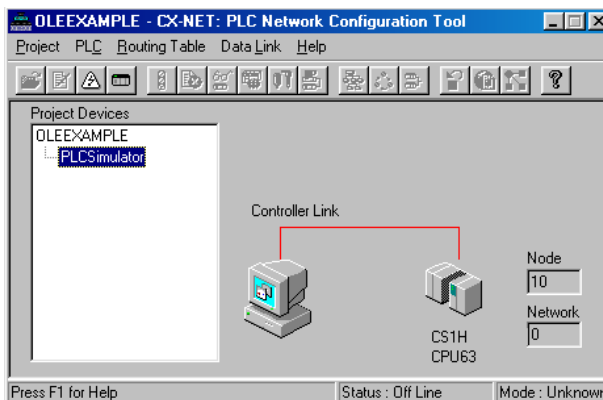
Omron PLC Setup Viewer

CX-Supervisor's PLC Setup Viewer allows verifications and changing of Omron PLC settings. It is displayed from the runtime menu. Available settings depend on the particular Omron PLC used.
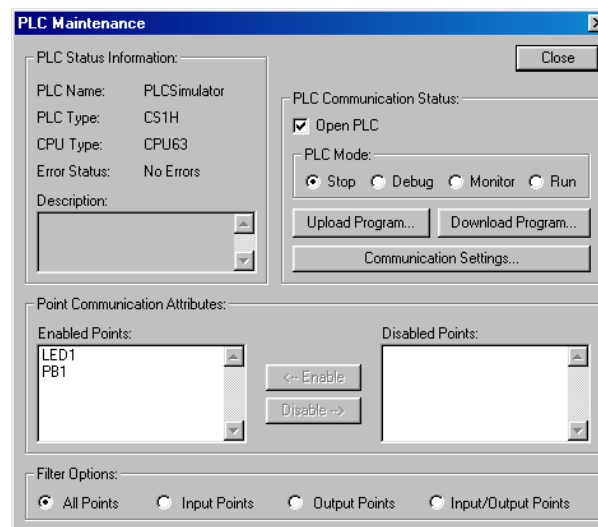
Omron PLC Network Configuration Tool Viewer

CX-Supervisor's PLC Network Configuration Tool Viewer displays information about Omron PLCs on the network. It can be displayed from the runtime menu. Use it to set up and edit routing tables, edit I/O tables, set up and edit data links and perform system tests. You can analyze PLCs present on a network, diagnose network status, perform echo-back testing, create and transfer data links, and create or transfer routing tables for networked PLCs.

Omron PLC Maintenance Viewer

CX-Supervisor's PLC Maintenance Viewer displays Omron PLC information and can be used to reconfigure PLCs during runtime. PLC programs can be uploaded or downloaded and individual I/O points can be enabled or disabled. The viewer can be display from the runtime menu.
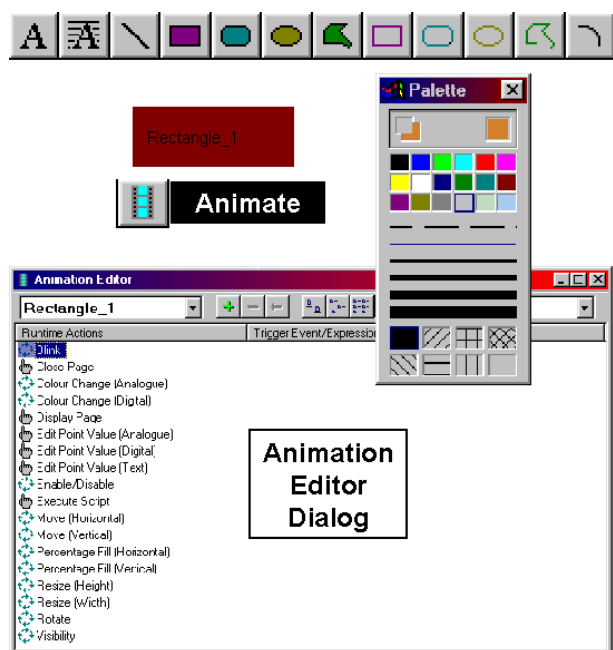
■ CX-Supervisor Additional Features

Drawing and Control Objects

CX-Supervisor provides a variety of screen objects, which form the visual interface for the HMI application. Animation and script language commands can further enhance the objects functionality.
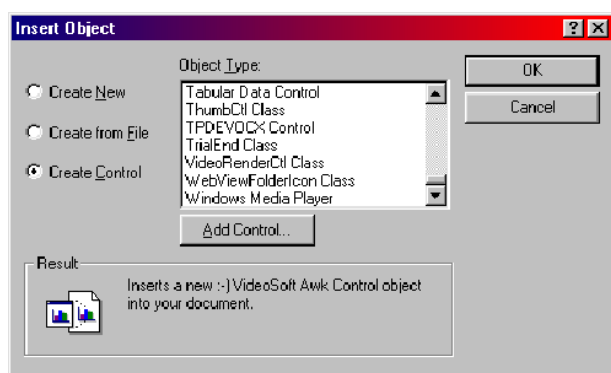
Drawing Objects

Click on the toolbar and drag-and-drop to create the object. The palette allows customization of object colors, patterns, and line sizes. Drawing objects can further be animated with script commands.
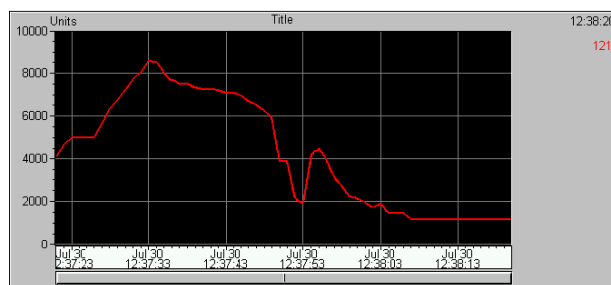

Active X (OLE) Objects

Insert ActiveX objects directly into the CX-Supervisor projects. Some examples are: Omron ActiveX controls, Third Party controls, Web browsers, MP3 players, any standard Windows® ActiveX object.
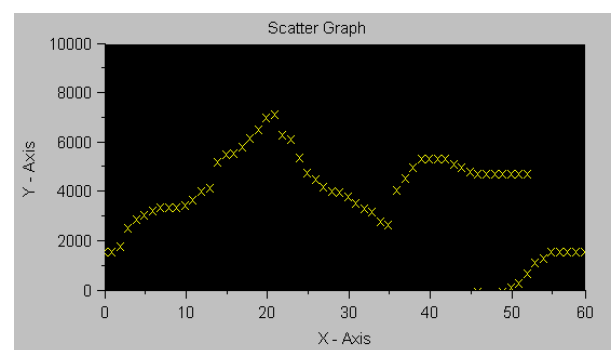

Charts and Graphs

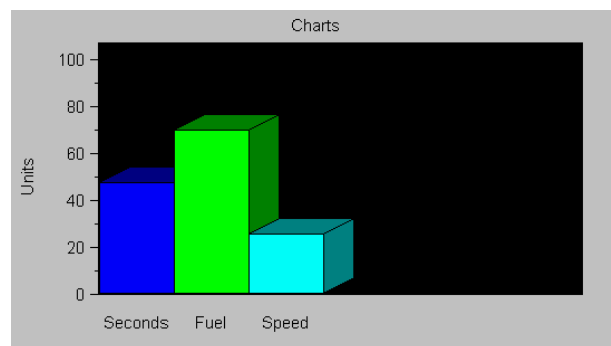CX-Supervisor includes special objects for trend and graphing operations.

Trend Object - Displays and timestamps data at specified intervals. Data can be logged and save to a file.

Scatter Object - Displays data sampled at specified intervals.

Bar Chart Object - Displays data as 2-D or 3-D columns.

Security

CX-Supervisor applications can be developed to limit user access to various runtime functions, such as recipes, reports, control objects, animation, etc. You can define user-level profiles and assign each user different access levels. Users can be added/deleted during runtime.

Reports

Generate reports of I/O point values, report formats can be Text, RTF, or HTML and script commands can be used to automate report generation and printing.

File Handling

During runtime, CX-Supervisor can manipulate files stored on local as well as remote computers using its built file-handling functions. Standard file-handling functions like OpenFile, CloseFile, FileExists, CopyFile, etc. are all part of the script language.
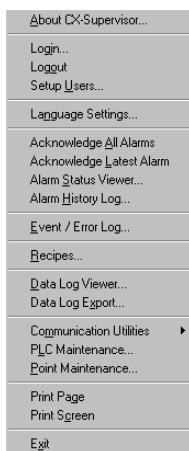
Tool Tips

CX-Supervisor lets the developer assign customized tool tips to screen object that will popup a text message when the mouse is over the object.

Group Editing

Objects that are grouped can be edited without ungrouping. Saving valuable development time.
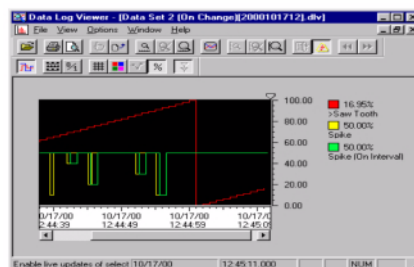
Floating Runtime Menu

CX-Supervisor includes a Floating Runtime Menu that can be accessed by right mouse clicking anywhere within the displayed screen. The menu choices can be configured during development to limit user access based on security levels.

Remote Data Logger Application

CX-Supervisor includes Remote Data Log Viewer which can be distributed and used on any PC to view logged data files. Use CX-Supervisor's file handling features to automate the file transfers to a remote PC or export logged data directly to Excel®.

Product Training

Omron offers basic and advance level training courses for CX-Supervisor development. If you would like more information please contact your local Omron sales office or Omron distributor.