Software

Our MELSOFT suite of Automation software is designed to help you integrate your production process and maximise your business potential. MELSOFT embodies a wide range of software to optimise your plant productivity; from visualisation and control systems to historic and downtime monitoring capabilities. A core design feature of our software is that it is scalable. It is a well accepted truism that one solution rarely fits all, so within each application category there are a range of products offering different levels of functionality and connectivity designed to meet your individual needs. All products are based on Microsoft standards (OPC etc), giving you a broad range of connectivity options and a familiar interface. The MELSOFT suite consists of three main areas:

- **Visualisation.** This type of software is aimed at monitoring and controlling your automation processes.
- **Programming.** Our extensive range of programming software enables users to write their own PLC code for their application. We have software solutions for each of the following products groups; Servos, Inverters, Logic Blocks, PLCs, HMIs and Networking.
- **Communication.** Our communication software is designed to integrate our products with common third party software packages. This provides you with the reliability and quality of Mitsubishi Electric hardware, combined with the familiarity of software packages/tools such as Microsoft Excel, ActiveX and OPC.

Unified Engineering Environment: iQ Works

iQ Works integrates the functions necessary to manage every part of the system cycle.

System design

The intuitive system configuration diagram allows for the graphic assembly of systems, centralized management of disparate projects and batch configuration of the entire control system.

Programming

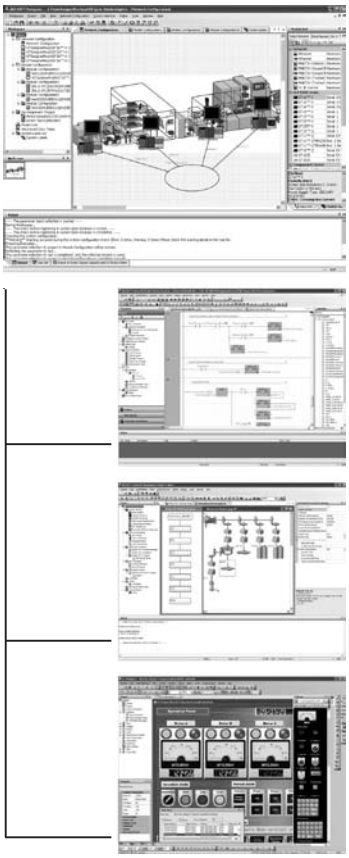
Use system labels to seamlessly share device data between GOTs, PLCs and motion controllers. Save the time and hassle of changing device values in each program by using the update system labels feature.

Test and startup

Debug and optimize programs using the simulation functions. Use the included diagnostics and monitoring functions to quickly identify the source of errors.

Operation and maintenance

Speed up the process of commissioning, configuring and updating the system by using the batch read feature. Virtually eliminate the confusion associated with system management.



MELSOFT Navigator

is the heart of iQ Works. It enables the effortless design of entire upper-level systems and seamlessly integrates the other MELSOFT programs included with iQ Works. Functions such as system configuration design, batch parameter setting, system labels and batch read all help to reduce TCO.

MELSOFT GX Works2

represents the next generation in MELSOFT PLC maintenance and programming software. Its functionality has been inherited from both GX and IEC Developer, with improvements made throughout to increase productivity and drive down engineering costs.

MELSOFT MT Works2

is a comprehensive motion CPU maintenance and program design tool. Its many useful functions, such as intuitive settings, graphical programming and digital oscilloscope, simulator, different Motion OS support, assistance help, to reduce the MT Works2 associated with motion systems.

MELSOFT GT Works3

is a complete HMI programming, screen creation and maintenance program. In order to reduce the labor required to create detailed and impressive applications, the software's functionality has been built around the concepts of ease of use, simplifications (without sacrificing functionality) and elegance (in design and screen graphics).

Visualisation Software

Soft HMI

GT Works3 (GT SoftGOT1000)

GT Works is a wide-ranging visualisation control tool from Mitsubishi Electric. A major benefit of GT Works is that visualisation screens can be created independently of their final target platform, i.e. a hardware platform such as GOT1000 or a PC based platform such as GT SoftGOT1000.
GT SoftGOT1000 is a PC based HMI module within GT Works. A further benefit of GT SoftGOT1000 is that it inherits the advanced simulation features of GT Works. It can be simulated in a stand-alone configuration or in conjunction with GX simulator, linking both PLC and HMI simulation code for a true integrated approach.

- Advanced simulation of HMI operations and optional HMI/PLC simulation code.
- Platform independent, screens created can be used for SoftHMI or hardware based HMIs.
- Remote monitoring by intranet LAN.

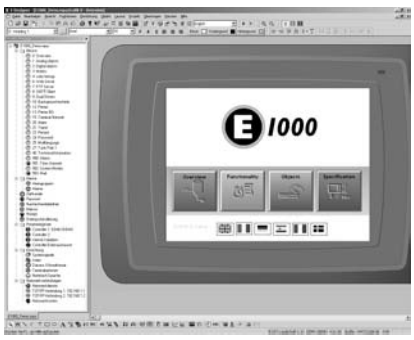
HMI Programming

GT Works3

As part of GT Works, GT Designer is a drawing program designed to create HMI screens for GOT1000 series. A user-friendly Windows environment provides the user with a simple and recognisable interface, reducing the time of their learning curve and the training costs associated with it. The package consists of:

- An extensive picture and graphics library editor that enables you to modify the graphics to meet your exact specifications.
- A tree format of the project gives you an overview of the structure of the project. This gives you the opportunity to navigate through your project and add, delete or move any programs or functions, creating a more logical flow to your menu structure.
- The combination of GT Simulator and GX Simulator allows you to test both the HMI and PLC coding offline, on your PC without the need to connect to physical hardware (also see GT SoftGOT1000).

E Designer



E Designer is a complete PC-based programming software program for the E Series HMIs. Projects are built from menu hierarchies or as sequences, providing the user with an easy to follow logical progression of operations. The main features of E Designer are:

- A pre-defined library of graphics and symbols provides a straightforward and efficient basis to set-up your project, reducing the cost and time of the implementation.
- The use of "Vector Graphics" gives you the flexibility to alter the design of your objects and symbols, and "personalise" them, to meet your individual requirements e.g. a flashing red and yellow graphic can be used to symbolise an alarm sounding, alerting the user of an occurring danger.
- E Designer supports a multi-language set-up. This enables you to program and run your project in a wide variety of languages, including: English, German, French, Spanish, Italian and Japanese.

PLC Programming

GX Works2/GX Works2 FX

GX Works2 is the PLC programming environment of the next generation. It supports all PLC of the MELSEC System Q, L and FX series and offers numerous functions to faciliate programming work and support the user. GX Works2 FX has the same functionality as GX Works2 but just for FX PLC´s.

The following programming languages are available:

- ST (Structured Text)
- SFC (Sequential Function Chart)
- LD (Ladder Diagram)
- FBD (Function Block Diagram)
- IL (Instruction List) – planned capability

The main features of GX Works2 are:

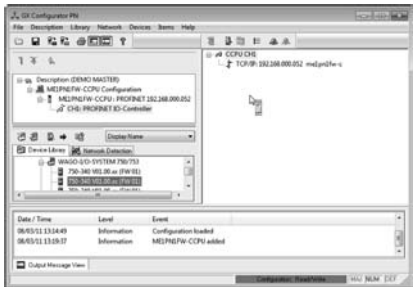
- Integrated parameterization of special function modules (analog, temperature, positioning, counter, network)
- Use of program and function block libraries save time for programming and minimizes errors.
- Integrated simulation allows offline testing of the software and the configuration.
- Comprehensive diagnostics and debugging functions support the user in troubleshooting and fault clearance.
- Revision verification and restoration makes it possible to restore old program versions or to compare with programs from the PLC.
- GX Works2 is compatible with GX Developer and GX IEC Developer projects (as far as the editors are supported)

GX Configurator DP

GX Configurator DP is a setup and configuration software for Profibus DP networks. It can be used to configure Mitsubishi Electric Profibus DP master and all slave modules including Inverters and HMI's as well as other manufacturers products.

- Easy to use drag & drop configuration system
- Automatic generation of program modules that can be integrated directly in to the GX IEC Developer package
- Configurations can be transferred via the PLC's programming port or over networks

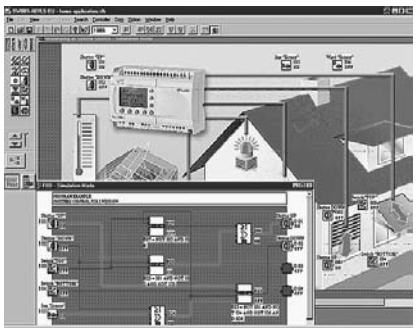
GX Configurator PN



GX Configurator PN is the configuration tool for Profinet I/O modules. This software offers functions for the configuration of the Profinet I/O network, testing the configuration and transfer of the settings to the Profinet module.

- Various capabilities for the transfer of parameter data: Direct connection to the local Profinet module or via a network.
- Easy configuration of Profinet I/O slaves using GSD files provided by the device manufacturer.
- Available as 32 bit version for MS Windows® XP, Vista and MS Windows® 7.

Alpha - ALVLS (AL-PCS/WIN)



The original visual based function block programming software for logic controllers. Easy to use Windows based software that requires no prior experience or training by the user. Program elements are placed on screen, with inputs on the left and outputs on the right and the function blocks in the middle.

- Easy to use and easy to learn
- Point, click, drag and drop programming
- Program simulation - no controller needed
- Real time program monitor
- Process visualisation

Robots programming

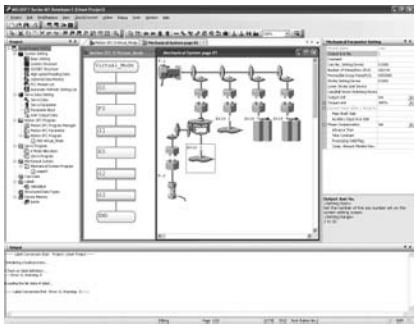
RT ToolBox2

The RT ToolBox2 software helps you to program all MELFA robots and manage your projects. A intuitive user interface makes projects easy to understand and organise, even for beginners. RT ToolBox2 is also available with a simulator that enables you to simulate your robot program and calculate the expected work cycle times before you have built up your application.

- Function-based parameter management
- Range of recording and monitoring functions
- Program and monitor multiple robots in a network
- Includes both Position Repair and Maintenance Forecast functions
- Syntax highlighting and online Teach-In

Servo/Motion programming

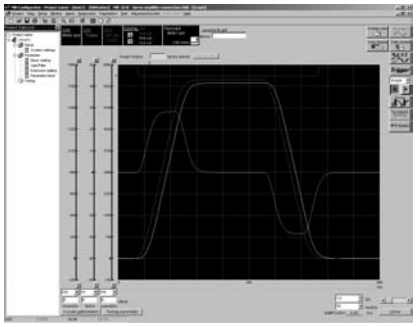
MT Works2



MT Works2 is an integral start-up software used to structure and configure a system for MELSEC System Q motion controller applications.

- The system settings and servo data can be set intuitively with graphical screens
- Various operating system software corresponding to the machine and control details is available with the motion controller. Providing a programming environment matching the application.
- Start-up and debugging time can be shortened by using system tests and program debugging.
- The system and program operation state can be checked with the monitor function and digital oscilloscope function allowing any problems to be resolved quickly.

MR Configurator2



MR Configurator2 is a user-friendly software for easy setup, tuning and operation. Tuning, monitor display, diagnosis, reading/writing parameters, and test operations are easily performed on a personal computer. This start-up support tool achieves a stable machine system, optimum control, and short setup time.

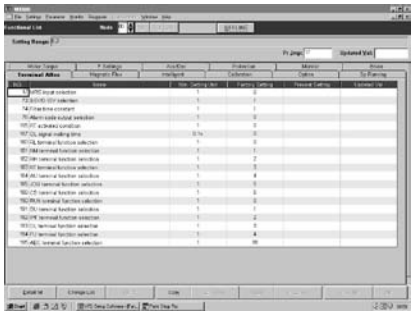
- Graph display function allows the servo motor state to be easily monitored.
- Machine analyser function, gain search function and machine simulation function for high performance adjustments.
- Optimum Control, allows the response setting value to be set making use of the servo's "high level real-time automatic tuning".
- The servo system can be tested easily using a PC.

FX Configurator FP

FX Configurator FP is a special configurator tool for the FX3U PLC SSCNETIII positioning module. This software reduces programming and setup time for any level of positioning application.

Special applications

FR Configurator

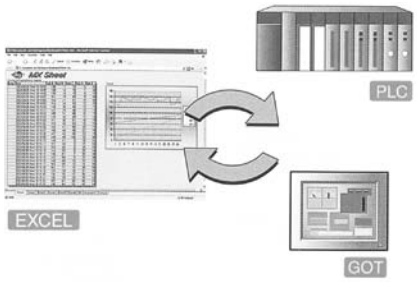


FR Configurator is a powerful frequency inverter configuration and management tool. It runs in Windows making it possible to manage your inverters with a standard PC. It allows the inverters to be monitored and the parameters to be configured, providing a user friendly environment to control single or multiple inverters.

- Machine analyser system, allows the resonant frequency of the machine to be tested as the motor is accelerated.
- Trace Function, emulates an oscilloscope.
- Parameter setting and editing
- Monitoring functions make maintenance easy
- Test Operation function and automatic tuning
- Diagnostics and help functions

PC Data Management

MX Sheet

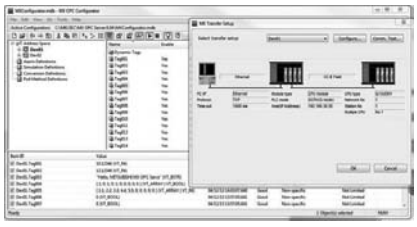


The device data in the PLC can be monitored in real-time with Excel, and recipe data in Excel can be transferred to the PLC.

MX Sheet enables users to gather data from their PLC and analyse it using the familiar tools and functions of Excel. MX Sheet can analyse and display real-time data in tables, graphs and charts as it happens.

It also features a useful automatic report function, whereby data displayed on Excel automatically saves and prints at a specific time or condition triggered by the PLC.

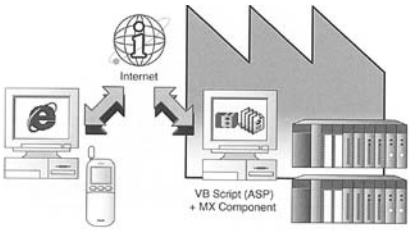
MX OPC Server



The MX OPC Server is a Mitsubishi Electric I/O driver OPC Data Access (DA) and Alarm/Events (AE) server that provides the interface and communications protocol between a wide range of Mitsubishi Electric hardware and your process control software. Mitsubishi Electric drivers incorporate OLE Automation technology and OPC compliance to provide flexibility and ease-of-use.

Mitsubishi Electric's drivers incorporate OLE Automation technology and can therefore expose their features to scripting tools and other applications. Because the drivers are OLE Automation applications you can create and manipulate objects exposed in the I/O Server from another application. You can also create tools that access and manipulate driver objects.

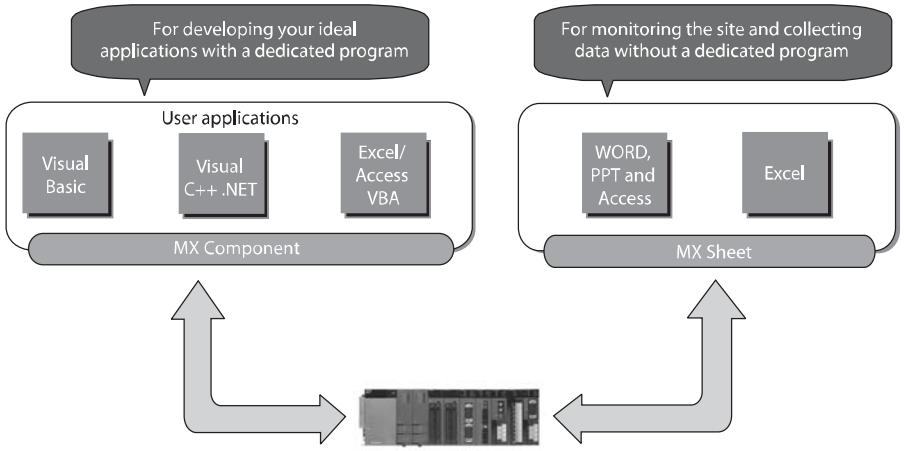
MX Component



Just by accessing the Web Pages created with VBScript (ASP function) using Internet Explorer or mobile devices, the factory's PLC can be remotely monitored and operated.

MX Component provides users with powerful ActiveX controls that simplify the communication between a PC and PLC. Users to not have to design complex communication protocols and is ideal for implementing specific software applications requiring PLC connectivity.

MX Component supports a wide variety of powerful and standardised programming languages such as Visual C++ .NET, VBA and VB Script.



Life Cycle Engineering Software

MAPS – Mitsubishi Electric Adroit Process Suite

The Mitsubishi Electric Adroit Process Suite (MAPS) is a life-cycle software tool that offers value along the entire value chain. It addresses the shortcomings of most PLC SCADA integration tools in that it offers value to the engineering and integration phases. MAPS offers customers the ability to handle the normal extensions and maintenance of any automation solution.

This single integrated package takes users through all the phases of process design, engineering design, control system design, installation, commissioning, acceptance testing and ongoing maintenance; helping to maintain consistency and integrity within an automation system, improving quality and reducing costs.

- Pre-defined and user configurable PLC Function blocks and associated SCADA graphics based on S88/S95 standards to reduce engineering time and effort significantly
- The MAPS solution is a structured single point of configuration. Using the MAPS Enterprise Manager, allows for bulk engineering and reduced effort which enables rapid configuration of your engineering design, SCADA and PLC project and on-going life-cycle management of the automation solution.
- Cost reductions of between 30 % and 50 % can be achieved when using the wizard approach to projects inside MAPS, allowing the user to benefit from the reduced time spent on design and configuration.
- In MAPS reports can be created, covering I/O schedules, PLC and SCADA tag configuration. As these reports are generated from a database that is constantly updated, reports always show the current status of the configuration. That ensures that the project on handover reflects the as-built up to date configuration of the automation project.
- The MAPS solution offers customers the capability of on-going management of their PLC/SCADA projects and the plant´s as-built electrical documentation. Whether tags are changed in the design, PLC, SCADA or the MAPS management environment, the project ensures that databases and documentation are synchronised.