

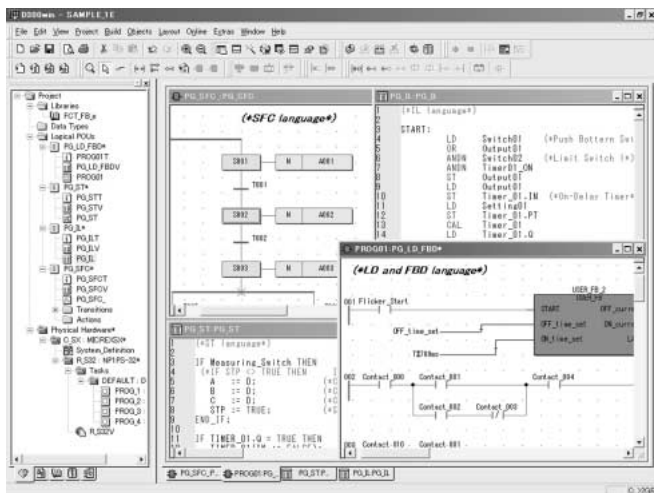
**Programming Support Tool**  
**Programming Support Tool Conforming to**  
**International Standard IEC 61131-3 (D300win):**  
**NP4H-SEDBV3**

■ **Features**

● **Complete conformity to IEC 61131-3 International Standard**  
 D300win supports five types of program representations completely conforming to the IEC 61131-3 International Standard. It allows the programmer to code the combination of program representations best suited for the control target.

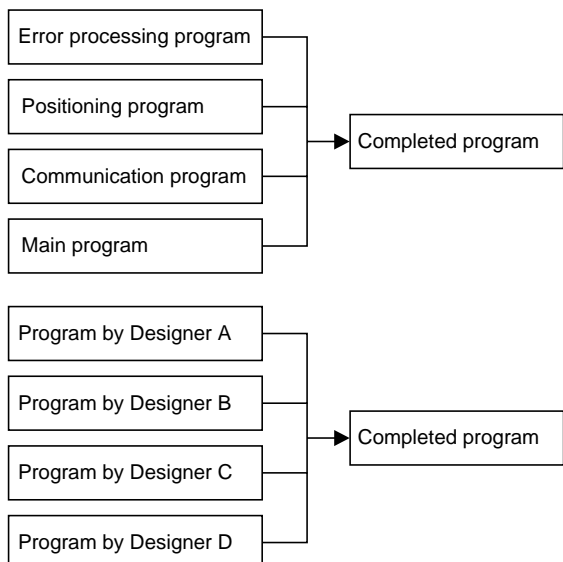
● **Supported representations**

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



● **Structured programming**

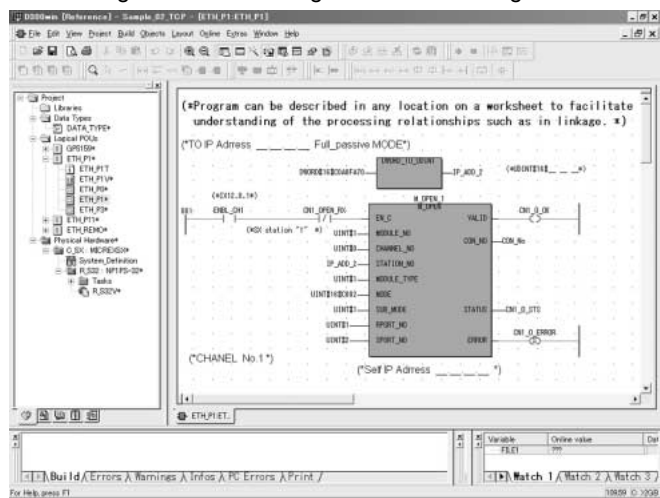
Programmability in units of POU or worksheets allows separate program creation for each function or process so that the programmer can easily generate programs with a structured design and good readability. In addition, this structured programming enables multiple designers to divide the design work to effectively reduce the program creation time.



● **Free description of programs and comments**

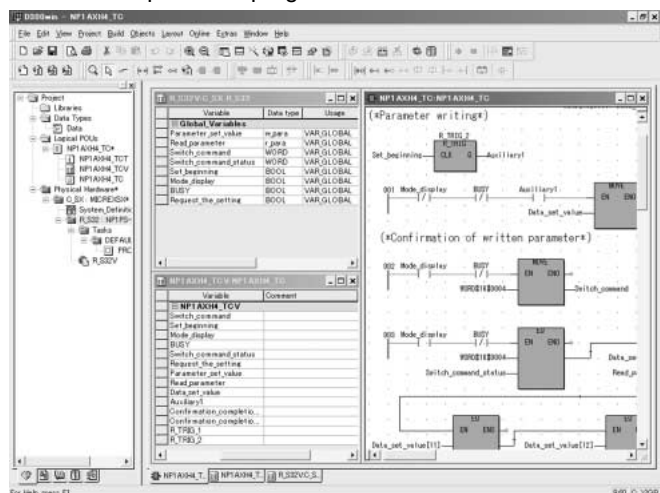
Programs can be described in any location on a worksheet to facilitate understanding of the processing relationships such as in linkage between the interlock condition and the sequence processing section/computing section, allowing efficient programming.

In addition, when a comment is described on a worksheet, the programmer can put a local comment for each circuit block as well as a comment in units of contacts, coils, or circuits, greatly contributing to ease of reading and understanding.



● **Programming with variables (labels)**

Differing from conventional programming, the D300win Programming Support Tool uses label programming (addresses are automatically assigned) in which the address section is described like conventional comments, enabling program coding without being conscious of memory addressing. After the programming, any changes in address assignment can be accommodated by merely changing the corresponding label definition to update the program.



# Programmable Controllers

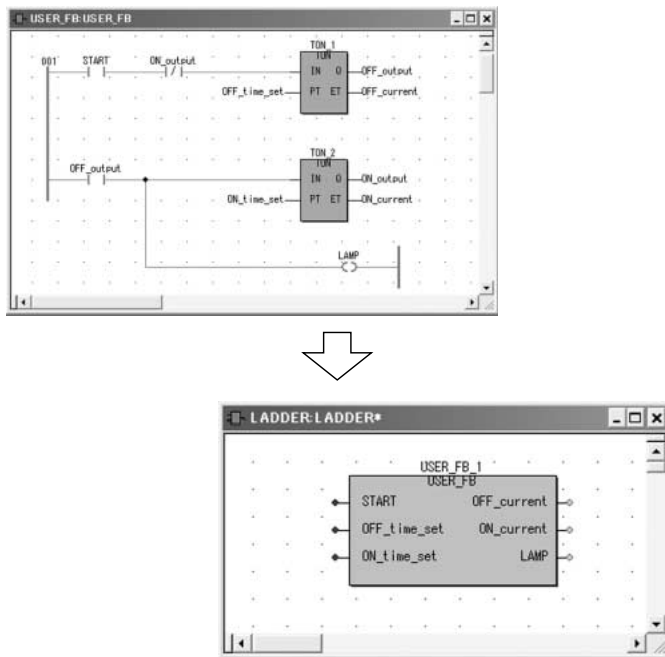
## MICREX-SX series SPH

### Programming Support Tool (D300win)

- **Integrates user-original circuits into an FB**

Frequently used routine programs or circuits can be integrated into an FB so that the programmer can easily reuse them. For FB generation, the user can select a language compatible with IEC 61131-3 supported by D300win instead of a special language. If the programs or circuits are stored in library form, the target function can be effectively used without being conscious of debugging.

This is also effective for circuit standardization or structuring if a single control block is integrated into an FB.

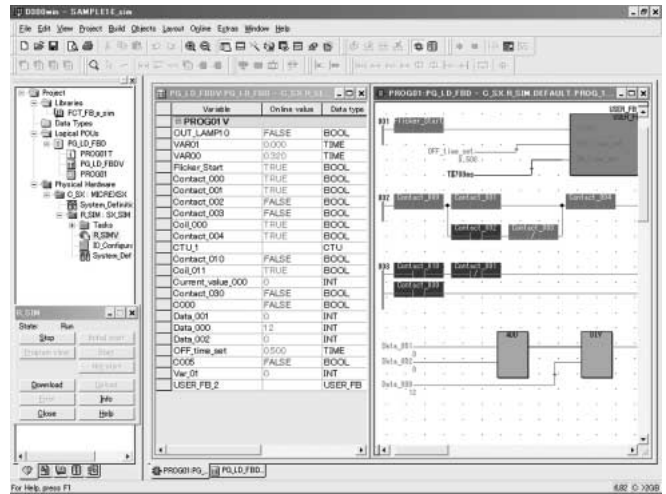


- **Enlarge/reduction display, multi-window display**

Frequent demands at the time of programming include legibility, with large characters and display of many circuits to facilitate understanding of the entire process. The tab-key screen selection function, overview function, and quadruple display function make it easier to grasp the program structure and improve program editing efficiency.

- **Error & jump check function**

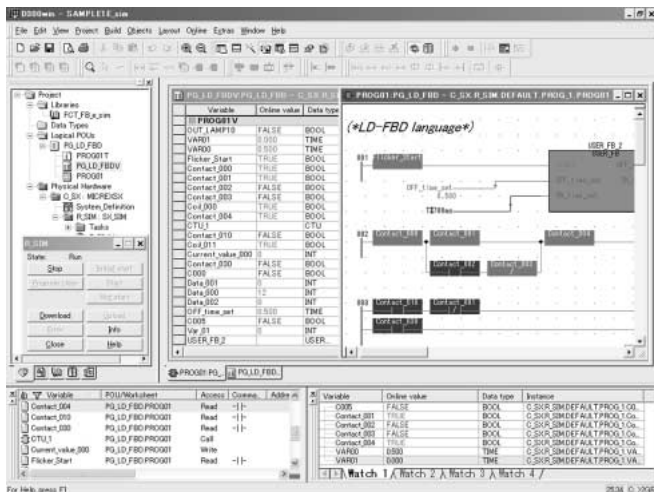
The tool performs program syntax check at the time of program compilation to detect syntax errors. It is possible to jump to an error position by double-clicking an error detection section. This function, together with the cross-reference function and data watch window function, exhibits its power in program correction and testing.



- **Simulation function**

This tool enables program logic test using the software PLC function for simulation built in D300win, without using the actual unit.

It performs operating simulation of a program written with a programming language conforming to IEC 61131-3. It enables forced ON/OFF and monitoring of any signal, possibly resulting in remarkable improvement of the programming and debugging efficiency for the SX series.



# Programmable Controllers MICREX-SX series SPH Programming Support Tool (D300win)

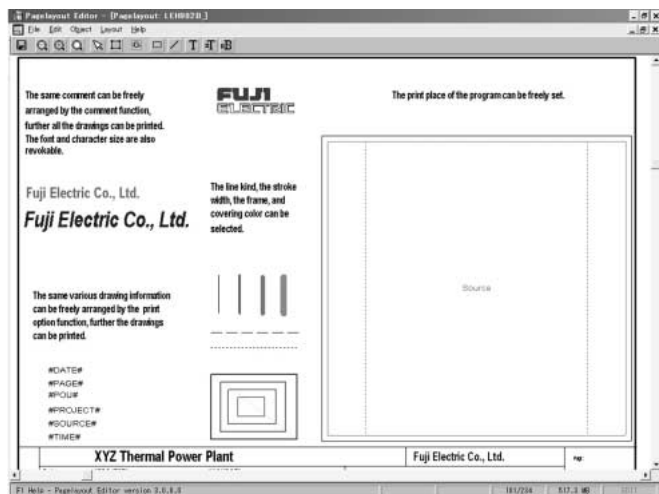
## ● Documentation function

The documentation preparation function has been substantially improved. Not only can it print drawing numbers, dates, page, and drawing borders, but also company logos and comments. It also augments the print preview function, which allows the user to verify the print state on the screen before beginning printing, and the scaled printing function which eliminates the need to select the paper size.

## Layout function

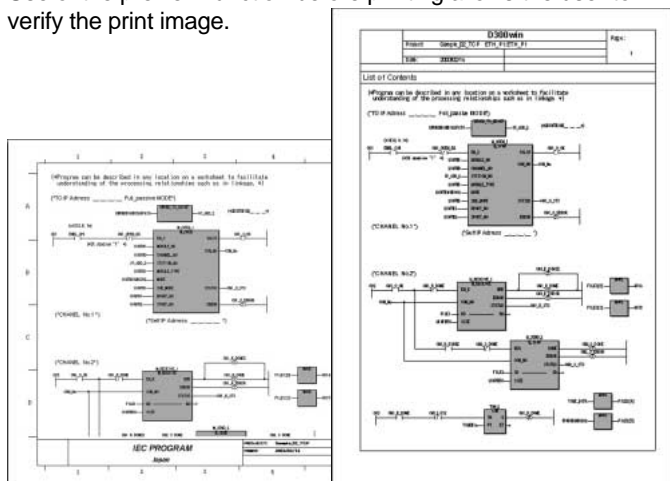
The layout function allows the user to print a program list in a free, user-original format. The created layout can be stored as a layout library, which can be used when necessary.

- Frame creation: Program list can be printed with frames. The frames can be freely designed facilitating reproduction of a conventionally used drawing sheet.
- Company logo: Company logo can be attached to a document. It is created as BMP data and pasted to the frames.
- Drawing number: Drawing number can be placed in a specified position within the frame.
- Page: Page number can be placed in a specified position within the frame.
- Comment: Comments can be placed in a specified position within the frame.



## Preview function

Use of the preview function before printing allows the user to verify the print image.



## Scaled printing

Documents can be printed in enlarged or reduced size. The paper size can be freely selected according to the purpose. The number of programs printed on a single sheet can be freely adjusted to provide united documentation.

## ● Function module support

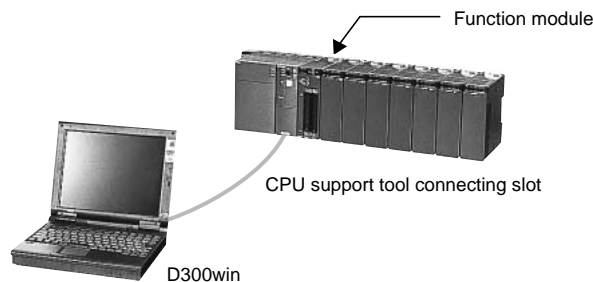
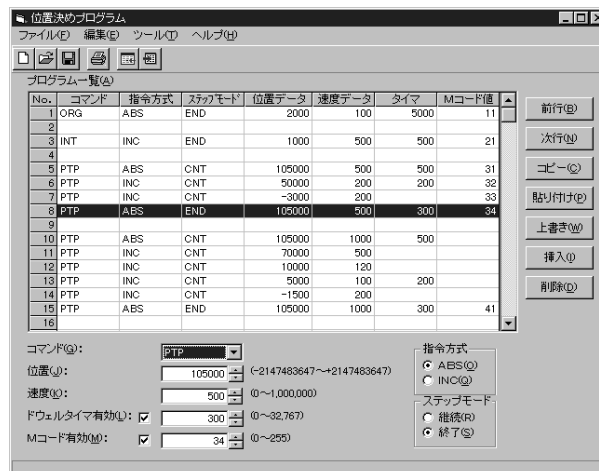
The function module support (built-in each extended FB software package) has been realized as a common support tool. Thus, a dedicated loader is not required.

## Sharing program definitions including variable names

Labels and files defined/created with the D300win programming support tool can be used as is from the function module support tool. This allows not only reducing the programming workload, but also unifying management of programs.

## Sharing the support tool connection port

The function module support tool can be used even when the IEC programming support tool remains connected to the CPU module. The support function can be used only by starting the function module support tool, thus, it is not necessary to change the connection by replacing the CPU module with the function module. Parameter transmission between the CPU module and the function module is carried out by the extended FB.



# Programmable Controllers

## MICREX-SX series SPH

### Programming Support Tool (D300win)

#### ● POD cooperated support

Screen creation for the Programmable Operation Display (POD) can be performed using variable names set with D300win.

#### POD screen creation software

POD screen creation software and D300win run on a personal computer, which is the common platform.



#### ● USB interface

The connection method using the full-speed USB (Universal Serial Bus) 1.1 has been added as a loader connection method. Communication with the advanced CPU module (NP1PS-□□R) can be performed at high speed using a commercial USB cable.

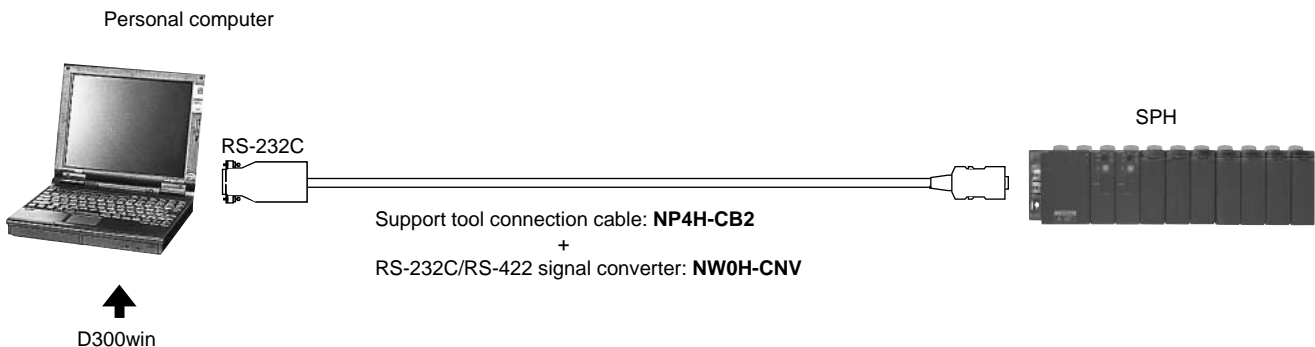
#### ● Uploading and downloading a project

This tool makes it possible to download a project to the user ROM card (compact flash card) attached to the advanced CPU module (NP1PS-□□R), upload it from the user ROM card, and perform project collation.

#### ■ Operating environment

Item	Specification	
D300win system software	<b>NP4H-SEDBV3</b>	
Hardware	IBM-PC/AT compatible	
CPU	Intel Pentium 233MHz or higher (350MHz or higher recommended when WindowsXP is used)	
Hard disk	Free space of 220M bytes or more ( D300win system software: 100MB or more Standard extension FB software package: 120MB or more )	
CD-ROM unit	1 unit (x 4 speed or faster), media: ISO 9660 format	
Memory capacity	64M bytes or more (128M bytes or more recommended when WindowsXP is used)	
Keyboard	101 keyboard	
Mouse	USB mouse, serial mouse, bus mouse, or PS2 mouse	
Indicator	800 x 600-dots resolution or higher (1024 x 768-dots resolution or higher recommended)	
Communication interface	RS-232C	
	Ethernet	Possible
	ISDN	Possible (analog port is used)
	USB	Possible with V1.1 (Target CPU: NP1PS-□□R)
	P/PE-link	Possible
	SX bus	Possible
	FL-net	Possible
OS	WindowsNT4.0 (SP6 or later)/2000/XP	
Other software	Internet Explorer 5.0 or later	
Portability	Depends on commercial mobile personal computer.	
Environmental durability	Depends on environmental conditions of commercial personal computer.	

#### ■ System configuration



# Programmable Controllers **MICREX-SX series SPH** Programming Support Tool (SC Matrix)

## Programming Automatic Generation Tool SC Matrix: NP4H-SESV2 [Japanese Version]

### ■ Features

#### ● Suitable for process step control

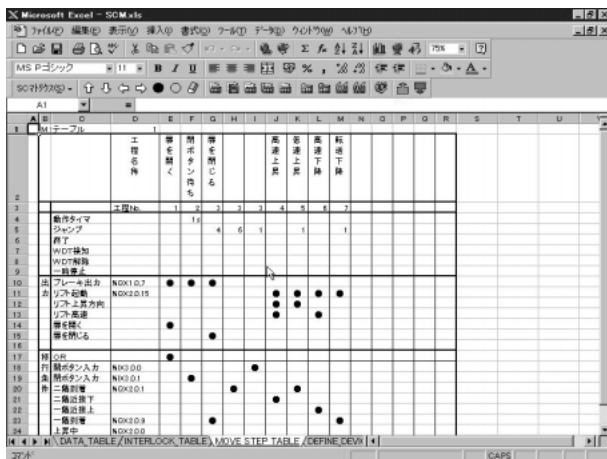
This programming tool is intended to create process step control programs necessary for machine control and line control.

#### ● Matrix programming using Excel

The SC matrix operates on Microsoft Excel. Process step programming is made simply by setting I/O conditions on a matrix basis using Excel worksheets. Program downloading to the PC is performed by means of D300win.

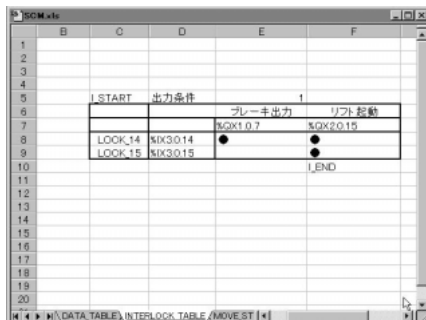
### SC matrix table

This table is used to set the process step condition and output conditions for each process. Up to 98 processes and up to 100 transitional conditions can be described in one table. Up to 64 Excel worksheets can be registered, allowing creation of up to 64 tables.



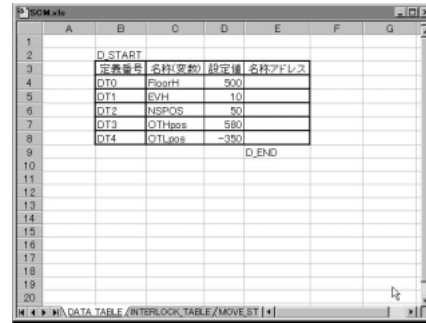
### Output condition table

This table defines the devices to be output to a specific input. It corresponds to the SC matrix table and allows setting of interlock condition for each output. The condition is monitored regardless of the process step and, if a condition is met, the specified device is turned ON.



### Data table

This table defines the data trains to be transferred to the PC using the SC matrix table. It relates the definition number starting with "DT" to the setting and target device. Data trains of up to 4000 points can be set as integers or double-precision integers. Multiple data tables can be registered which can be selected during each operation.



### ● Programming by variable (label)

Like D300win, since variables can be used for the PC address, programming can be made without being aware of the memory address.

### ● Automatic generation programming

PC programs are generated automatically by compiling programs created on Excel. PC programs can be created without the knowledge of programming languages specific to the PC, allowing PC novices to make programs easily.

### ● Monitoring

The PC monitor can also be displayed in the same screen as the Excel worksheet. This makes it easier to grasp the machine process step and perform adjustment and maintenance of machines.

### Overall monitor

This screen monitors the entire SC matrix table. It is suitable for overlooking the entire process operation. Other tables can be monitored easily by switching between worksheets.



# Programmable Controllers

## MICREX-SX series SPH

### Programming Support Tool (SC Matrix)

#### Partial monitor

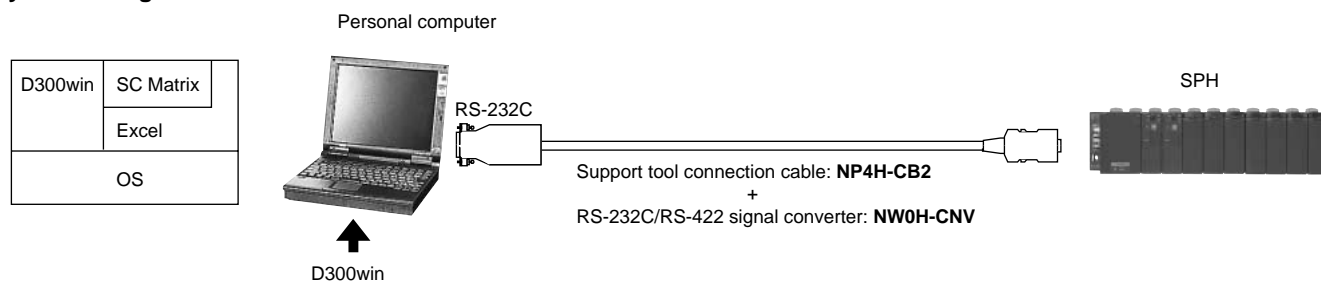
This screen monitors only the current process being executed. It displays the relationship between the operating output signal and the transitional conditions.



#### Operating environment

Item	Specification	
Hardware	IBM-PC/AT compatible	
CPU	Intel Pentium 233MHz or higher	
Hard disk	Free space of 10M bytes or more (with additional disk space for D300win and Excel)	
CD-ROM unit	1 unit (x 4 speed or faster), media: ISO 9660 format	
Memory capacity	32M bytes or more (64M bytes or more recommended)	
Keyboard	101 keyboard	
Mouse	USB mouse, bus mouse, or PS2 mouse	
Indicator	800 x 600-dots resolution or higher (1024 x 768-dots resolution or higher recommended)	
Communication interface	RS-232C	9600bps to 57600kbps
	Ethernet	Possible
	ISDN	Possible (analog port is used)
	USB	Possible with V1.1 (Target CPU: NP1PS-□□R)
OS	Windows95/98/NT4.0/2000	
Excel version	Excel97/2000	
Portability	Depends on commercial mobile personal computer.	
Environmental durability	Depends on environmental conditions of commercial personal computer.	

#### System configuration



# Programmable Controllers MICREX-SX series SPH MC Module Programming Support Tool

## MC Module Programming Support Tool: NP4H-MC1 [Japanese Version]

This tool is used to create and support MC module programs. It allows parameter setup, tabular form programming, monitoring, etc.

### ■ Editing positioning parameters

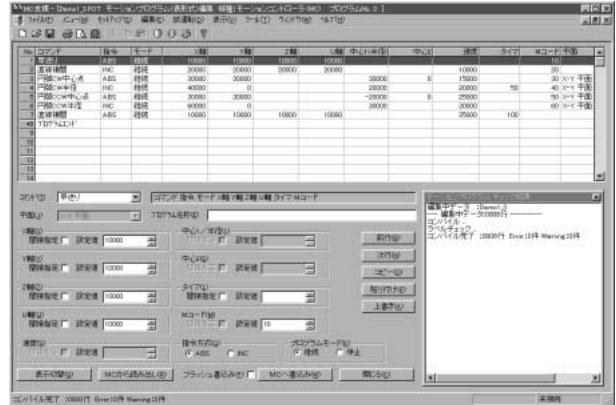
This tool allows diverse parameter setups for performing position control using the MC module.

- I/O selection parameters: I/O area setup, initial value, axis name, etc.
- Interpolation operation parameter: Synthetic high-speed limiter, acceleration/deceleration time, etc.
- Axis control standard parameter: Actuator control information (up to 8 axes)
- Axis control extension parameter: Machine control, correction information (up to 8 axes)



### ■ Editing positioning parameters

This tool allows editing of MC module positioning programs in tabular form. Programming with up to 2500 lines can be performed, allowing execution of a large program.



### ■ Offline operation for parameter setup information check

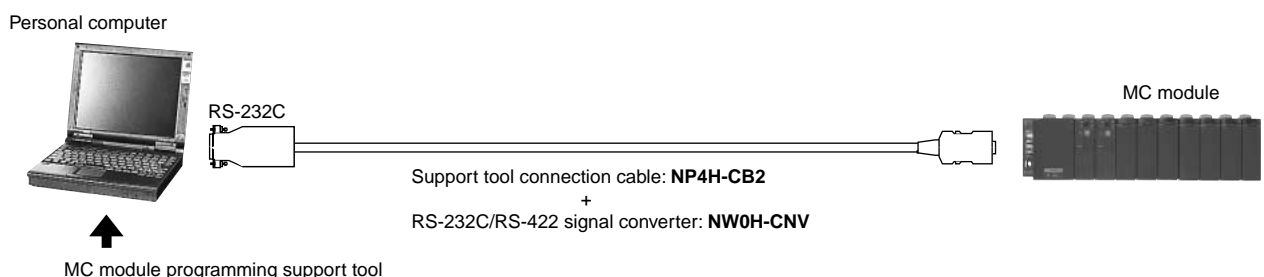
Machines connected to a motor can be operated without intervention of an SPH application, thus preventing machine failure at the time of debugging and maintenance.

The functions include alarm reset, position preset, return-to-origin, manual feed, deviation reset, etc.

### ■ Operating environment

Item	Specification
Hardware	IBM-PC/AT compatible
CPU	Intel Pentium 233MHz or higher
Hard disk	Free space of 10M bytes or more
CD-ROM unit	1 unit (x 4 speed or faster), media: ISO 9660 format
Memory capacity	32M bytes or more (64M bytes or more recommended)
Keyboard	101 keyboard
Mouse	USB mouse, bus mouse, or PS2 mouse
Indicator	800 x 600-dots resolution or higher (1024 x 768-dots resolution or higher recommended)
Communication interface	RS-232C 38400bps
OS	Windows95/98/NT4.0
Portability	Depends on a commercial mobile personal computer.
Environmental durability	Depends on environmental condition of a commercial personal computer.

### ■ System configuration



# Programmable Controllers

## MICREX-SX series SPH

### OPC-Coordinated Library SX Communication Middleware

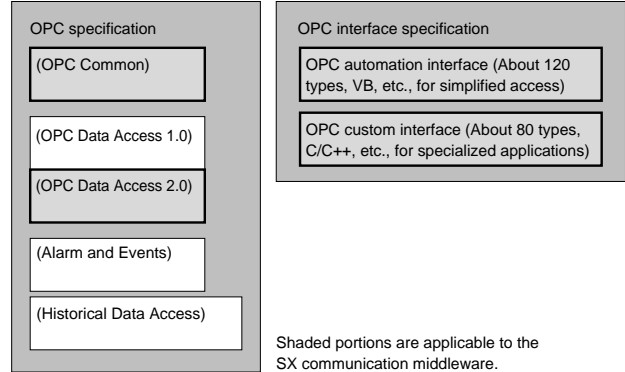
#### OPC-Coordinated Library SX Communication Middleware: NP4N-MDLW [Japanese Version]

##### ■ Features

###### ● OPC-coordinated library

Among various specifications established by OPC Foundation, this library is compatible with the OPC common specification and data access specification. The OPC automation interface and OPC custom interface are prepared as programming interfaces.

- In combination with a commercial SCADA software (RSView32 from ROCKWELL AUTOMATION, Intouch from SUMITOMO METAL SYSTEM SOLUTION, etc.), this library makes it possible to display the SPH-controlled data to the supervisory screen and utilize the data for the SPH setup data from the operation screen.



##### ■ Operating environment

Item	Specification	
Hardware	IBM-PC/AT compatible	
CPU	Intel Pentium 233MHz or higher	
Hard disk	At least 1 unit, free space of 10M bytes or more (with additional disk space for D300win)	
CD-ROM unit	1 unit (x 4 speed or faster), media: ISO 9660 format	
Memory capacity	128M bytes or more	
Keyboard	101 keyboard	
Mouse	USB mouse, bus mouse, or PS2 mouse	
Indicator	1024 x 768-dots resolution or higher	
Communication interface	Ethernet	Commercial Ethernet board
	RS-232C	Commercial personal computer
	Modem	Commercial personal computer
	FL-net	Commercial Ethernet board
	SX bus	NP3L-SX1SASS
Software (OS)	Windows NT4.0/2000	
Environmental durability	Depends on environmental condition of a commercial personal computer.	
Models to be connected	MICREX-SX SPH series	
Language for user application software development	Microsoft Visual Basic	
	Microsoft Visual C++	

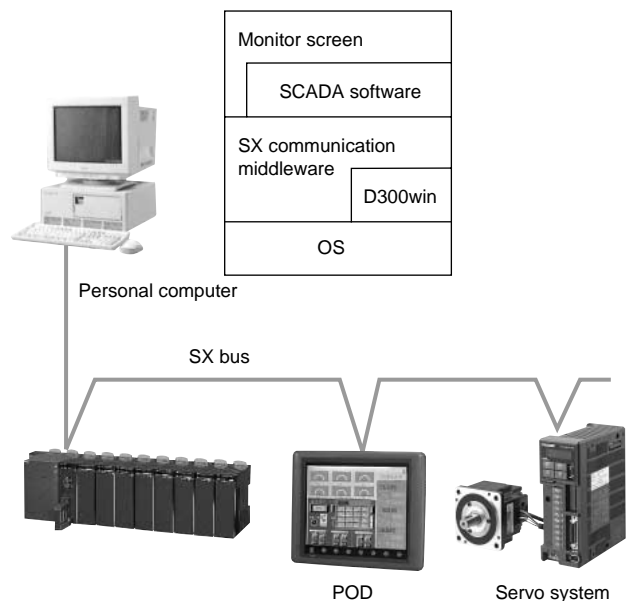
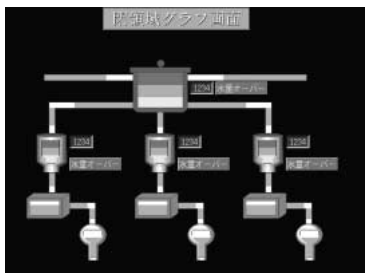
##### ■ Sample application system

The example at right is a centralized monitor system for line equipment configured using SPH as a controller.

- The monitor screen makes status display and data collection of each I/O device.
- The operation screen sets production command data for each line.

##### ■ Sample application monitor screen

The following is a sample application monitor screen using the SCADA software.



The SX communication middleware accommodates system business talks. For details, please contact our sales section.