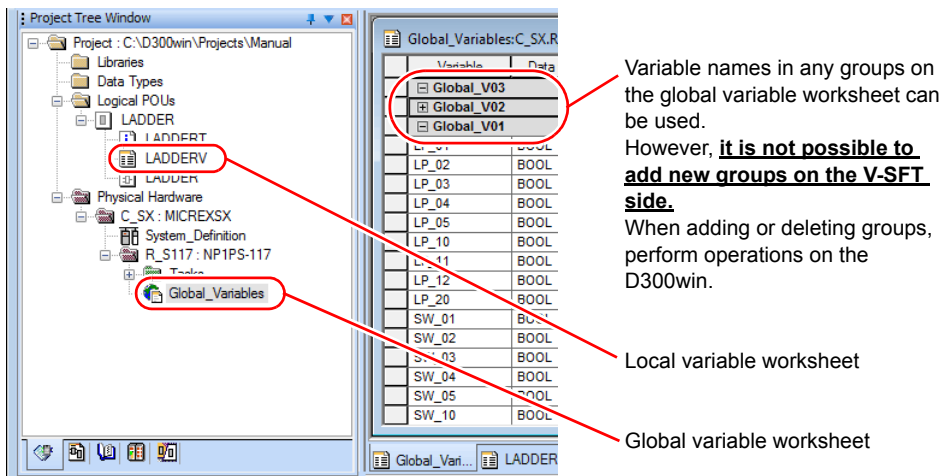# 3. Variables Usable for Variable Name Cooperation

3-1 Variable Types

The device memory to have access to/from MONITOUCH (device memory to operate under variable name cooperation) must be defined as global variables on the D300win. Local variables cannot be used for variable name cooperation with the V-SFT.

[D300win Project Tree]

Variable names in any groups on the global variable worksheet can be used.
However, **it is not possible to add new groups on the V-SFT side.**
When adding or deleting groups, perform operations on the D300win.

Local variable worksheet

Global variable worksheet

* The characters used for variable names are limited.
  For details, refer to the next section and the MICREX-SX User's Manual <Instructions> (FEH200).

3-2 Limitations on Variable Names and Variable Group Names

The following limitations apply to variable names and variable group names when using the variable name cooperation function.

<Limitations on variable names>
1. The symbol that can be used for variable names is one-byte "_" (underscore) only.
   However, "_" (underscore) cannot be used in the following cases:
     • Variable names ended with a "_" character (example: aaa_)
     • Variable names with a series of "_" characters (example: a__1)

2. One-byte numeric characters cannot be used at the top of variable names. (Example: 1_aaa)
3. Each variable name must not exceed 30 one-byte characters (15 two-byte characters).
4. One-byte and two-byte space characters cannot be used for variable names.
5. System reserved words (data type names, command words, etc.) cannot be used. For details, refer to the MICREX-SX User's Manual <Instructions> (FEH200).

<Limitations on variable group names>
1. The following nine one-byte symbol characters cannot be used for variable group names.
   ", \, /, <, >, |, ?, *, :

2. One-byte and two-byte space characters cannot be used for variable group names.
3. Each variable group name must not exceed 24 one-byte characters (12 two-byte characters).

3-3   AT Designation

The device memory only with a variable name with no AT designation cannot be used without setting for variable name cooperation.

Furthermore, the contents of device memory with no AT designation will change when compiled on the D300win side. Consequently, when the PLC selection is changed, the screen programs must be transferred again even if the MONITOUCH screen programs are not changed.

Therefore, **the device memory to have access from MONITOUCH must have an AT designation.**

The device memory type that can be accessed by MONITOUCH differs depending on the PLC to connect and its settings.

| Name	Symbol	Bit/Word	TYPE	Remarks
Input memory (I) [*1]	%IX [*2]	Bit	-	
	%IW	Word		Double-word: %ID
Output memory (Q) [*1]	%QX [*2]	Bit	-	
	%QW	Word		Double-word: %QD
Standard memory (M)	%MX □ .1 [*2]	Bit	02H	
	%MW □ .1	Word		Double-word: %MD □ .1 [*3]
Retain memory (RM)	%MX □ .3 [*2]	Bit	04H	
	%MW □ .3	Word		Double-word: %MD □ .3 [*3]
System memory (SM)	%MX □ .10 [*2]	Bit	08H	
	%MW □ .10	Word		Double-word: %MD □ .10 [*3]

(□ : CPU No.)

*1   The input/output memory will not operate correctly unless variable name cooperation is set for PLC1. In addition, it is not possible to designate input/output memory indirectly.
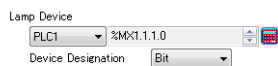
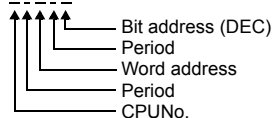*2   Device memory symbols are expressed as shown below.

- In the case of %IX and %QX:

Example: %IX1 . 1 . 0
- Bit address (DEC)
- Period
- Word address
- Period
- SX station number
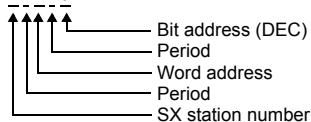
- In the case of %MX1., %MX3. or %MX10.:

Example: %MX1 . 1 . 1 . 0
- Bit address (DEC)
- Period
- Word address
- Period
- CPUNo.

*3   Double-word addresses (%MD1., %MD3. or %MD10.) can be set for PLC1 only.
To enable access to these addresses from PLC2 to PLC8, use a word address (%MW1., %MW3. or %MW10.) and set two words for data length.
Example: To access the %MD1.100 address, use %MW1.100, and set two words for data length.