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SECTION 2	Controller Connections
SECTION 3	Vision Composer Net Operating Method
SECTION 4	Setup/Adjustment
SECTION 5	Operation/Management
SECTION 6	Maintenance
SECTION 7	Appendix

Operation Manual

Vision Composer Net
F500-CD3

INTRODUCTION

What is Vision Composer Net? 3

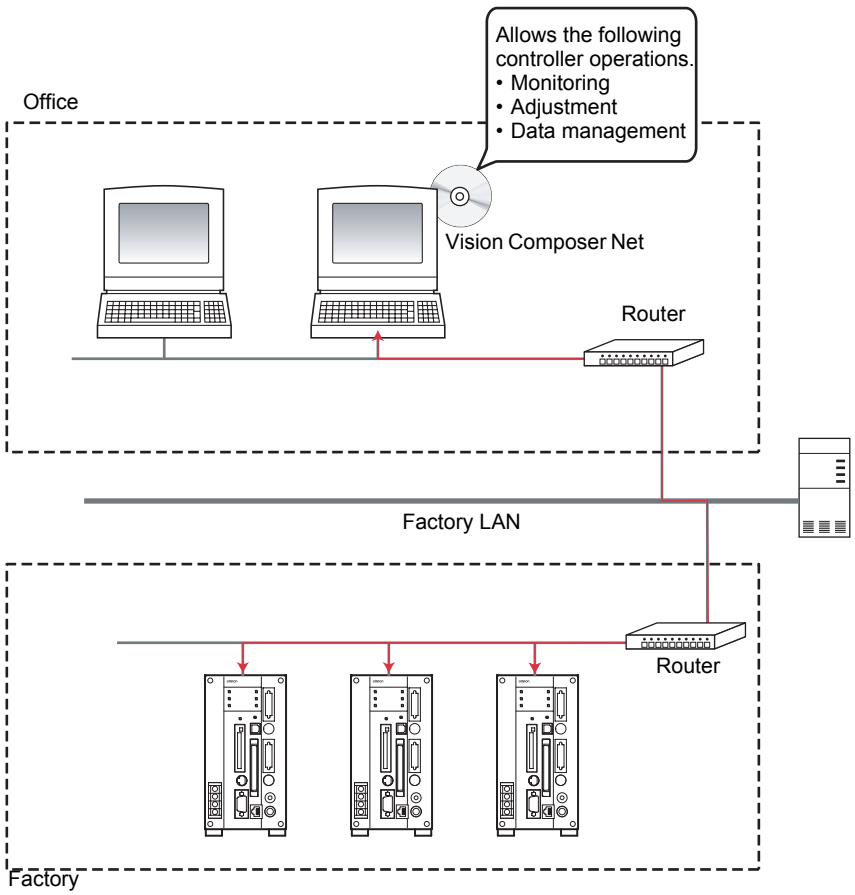
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What is Vision Composer Net?

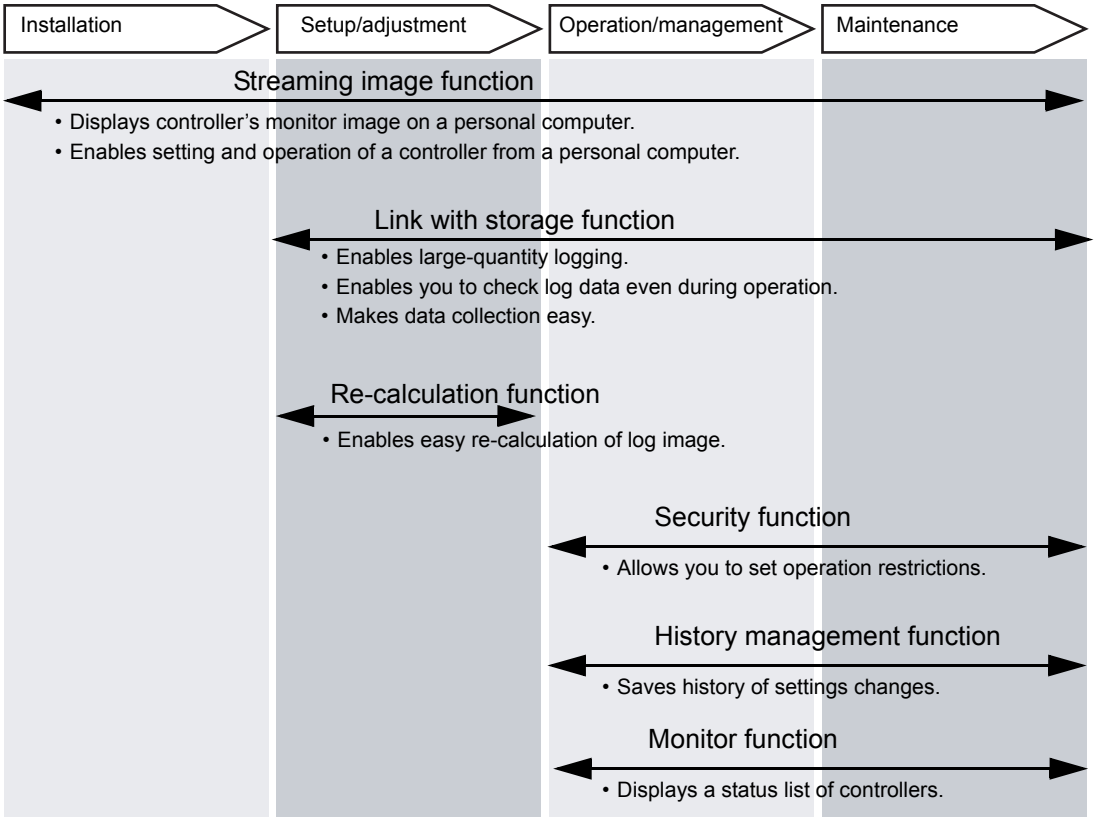
Vision Composer Net is a software program designed to let you monitor/operate Omron's vision sensor controllers(*) (hereafter called controller) and make controller settings from a personal computer by connecting it to them.

In addition, connecting the software to controllers installed at a factory via network enables you to monitor and adjust them from an office.



*: This feature is available only for Ethernet-compatible controllers (i.e. controllers whose model name contains "ETN").

Vision Composer Net Features



■ Displays controller's monitor image on a personal computer

Since monitor image of a controller is displayed on the personal computer in real time(*1), the state of the controller can be checked immediately even if it is located at a distance.

It is also possible to display monitor image of two or more controllers simultaneously(*2).

■ Enables setting and operation of a controller from a personal computer

This feature is useful when you want to adjust a controller located at a distance or when you want to change measurement conditions of two or more controllers effectively, since controllers can be operated directly via network.

■ Enables large-quantity logging

Use of the controller's storage function enables logging of large-quantity measured images and data.

*1: If network is busy, real-time display may not be possible.

*2: When connecting Vision Composer Net to two or more controllers, make sure that the personal computer has the recommended or higher specifications.

Operating environment p.101

■ Enables you to check log data even during operation

Log images and data stored in the controller's storage can be transferred to the personal computer even if the controller is currently performing measurement. This allows you to check the data even during operation.

■ Makes data collection easy

All the data stored in the controller's storage can be transferred in a batch to the personal computer.

It is also possible to transfer data at a fixed time or at fixed intervals, enabling automated data collection.

■ Enables easy re-calculation of log image

Re-calculation can be performed by just selecting an image, dragging & dropping it.

This feature is useful when you want to change settings and then check them using two or more OK images.

■ Allows you to set operation restrictions

Operations can be restricted in three levels for each user.

This prevents problems that may arise from mis-operations carried out by users who are not familiar with vision sensors.

■ Saves history of settings changes

History of changes made to controller settings can be saved.

This enables you to find the conditions that have been used for product inspections.

■ Displays a status list of controllers

The status of controllers connected to the network can be displayed in list format using Vision Composer Watcher(*3). This enables you to take quick action when problems occur on the production line.

*3: Vision Composer Watcher is installed automatically when Vision Composer Net is installed.

Software License Agreement

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SECTION 1
Overview of the Manual

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Editor's Note 9

Operation Procedure and Reference Manual

The following shows main contents of operation steps and manuals. Select the manual suitable for your purpose and read it before starting operation.

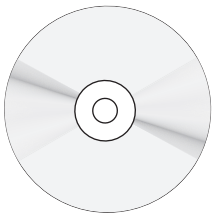
Connecting
Wiring
Installing
Setting Inspection Conditions
Checking Settings and Starting Measurement
Outputting Data to External Device



Setup Manual

(Supplied with the Controller)

The Setup Manual provides:
- Information for safety use of controller
- Procedures from package content check and installation up to connection of controller
- Information such as functions and specifications of controller and peripheral devices.



Vision Mate Series Software (CD-ROM)

Vision Composer Net Operation Manual

The Operation Manual provides:
- Method of operating the controller from Vision Composer Net
- Explanation of functions of Vision Composer Net

Tutorial Manual

The Tutorial Manual provides:
Exercises for basic operations of Vision Composer Net (※)
※ Two courses are available: Basic Course to learn how to perform measurement and adjustment, and Advanced Course to learn about a series of operations, starting from creation of Flow up to measurement and adjustment.
It is recommended that users begin with the Basic Course.

Application Software Operation Manual

The Operation Manual provides:
- Installation method of application software
- Basic operating procedures
- Setting method of each processing item
- Communication method with external devices

Reverse Manual

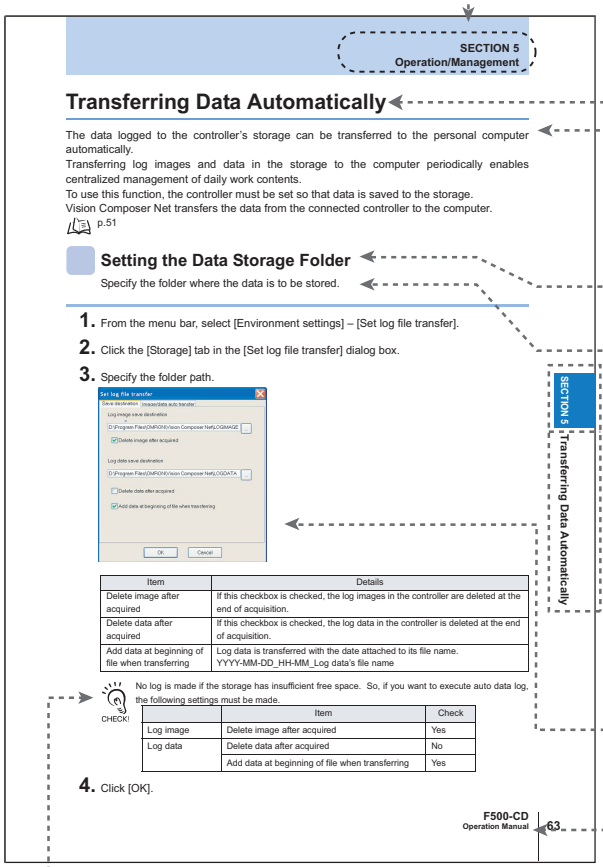
The Reverse Manual provides:
Examples of vision sensor use
Useful methods for vision sensor use

Customize Manual

The Customize Manual provides the information necessary for customization and explains the macro function.

Editor's Note

Page Format



■Title of each section

■Header

Indicates the contents of the page.

■Overview

Describes the overview and operation flow of the section.

■Sub-header

■Operation procedure

■Index Label

Indicates to which section the current page belongs and the contents of the page.

■Screen display

Indicates the status of the screen displayed on the left side.

■Section title/Processing Item

Describes the processing items in "SECTION 2 Processing Items Setting Procedures".

■Supplementary explanation

Indicates operation procedures and functions of operation keys. Helpful information regarding operation and reference pages is introduced here using symbols.



* This page does not exist.

Full-Text Search Method

The catalogue function of Acrobat is used to enable full-text search in the entire Application Software Operation Manual and Vision Composer Net Operating Manual.
Select [Edit] - [Search] to display the search panel.
Enter “In the index named f500-cd.pdx” in [Where would you like to search?] and start search.



When displaying a manual using Adobe Reader, this function cannot be used unless Adobe Reader (full version) has been installed.

Notational Conventions

■ Key

Key operations are performed from the console panel.

Example: Select [SET].
This statement indicates to move the cursor to [Setting] in the console panel and press the ENT Key.

■ Menu

In this manual, menu items displayed on the screen are enclosed with [ ].
Submenus are separated using “/”.

Example: Move to [System/Camera Settings]. This statement indicates to select the [Camera Settings] from [System] to move to the Camera Settings screen.

■ Operation procedure

Operation steps are numbered to indicate their order.
A supplementary explanation of the behavior, display or operation of the controller after the execution of a step is given in the lines following the step.

■ Visual Aids



Indicates points that are important to achieve the full product performance, such as operational precautions and application procedures.



Indicates where to find related information.



Indicates information helpful in operation, such as the definition of terms.

SECTION 2
Controller Connections

- Flow of Setting Operations 12
- Setting Up F500-UM via Vision Composer Net 14
- Setting Up F500-UM by the Controller and Vision Composer Net 24
- Exiting/Re-connecting 25
  - Exiting after Saving the Connection Settings 25
  - Re-connecting 26

Flow of Setting Operations

The following shows the flow of operations to be carried out to connect the controller and Vision Composer Net for the first time.
Connecting for the second and subsequent times, refer to “Re-connecting”.

Setup

Install “F500-UM” to the controller, build a network and connect the controller to Vision Composer Net.
Setup can be performed by the following methods.
Select the appropriate setup method according to the operating environment and the equipment you have.

- Setup p.13
  Setting Up F500-UM via Vision Composer Net
  Setting Up F500-UM by the Controller and Vision Composer Net

▼

Setting

Make the settings that are required to perform measurement.

- Setup/adjustment
- Operation/management
- Maintenance

▼

Exiting

Exit Vision Composer Net.

- Exiting after Saving the Connection Settings p.25

▼

Re-connection

Start the controller and re-connect it to Vision Composer Net.

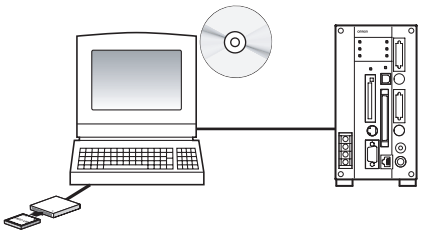
- Connecting to the Controller using the Shortcut p.26

■ Setup Method

Setting Up F500-UM via Vision Composer Net p.14

For connecting the personal computer and the controller first, and then installing/setting up F500-UM via Vision Composer Net.

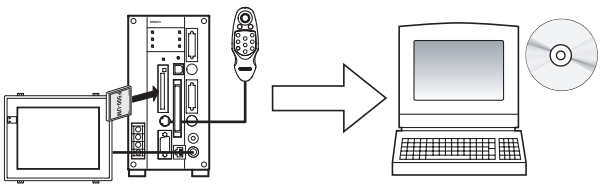
Equipment required for installation
- Personal computer
- Ethernet cable
- Memory card reader (to read the F500-UM's memory card)
- F500-UM's memory card



Setting Up F500-UM by the Controller and Vision Composer Net p.24

For installing and setting up F500-UM using the controller's setup menu.

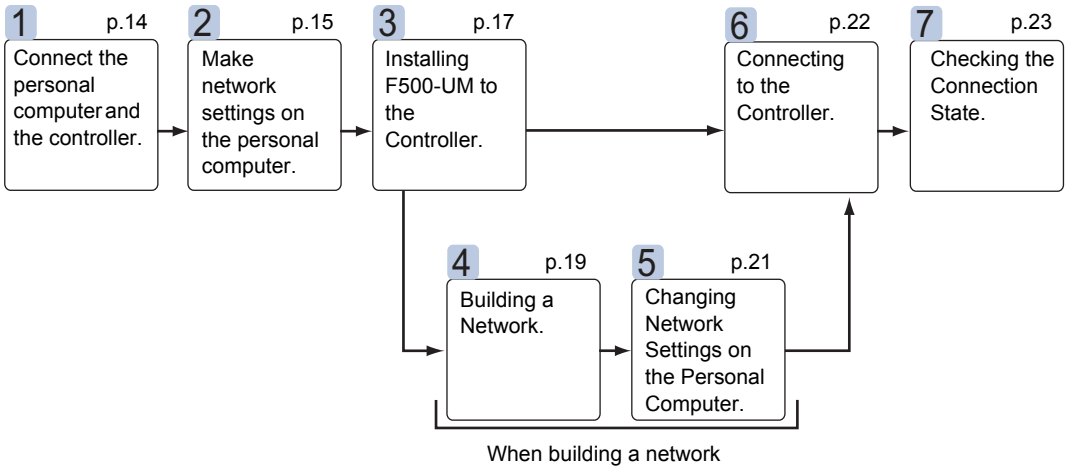
Equipment required for installation
- Monitor/monitor cable
- Console
- F500-UM's memory card
- Ethernet cable



Setting Up F500-UM via Vision Composer Net

For connecting the personal computer and the controller first, and then installing/setting up F500-UM via Vision Composer Net.

■ Operational Flow

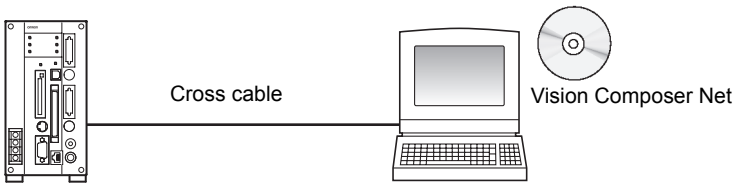


1 Connecting the Personal Computer and the Controller

When installing F500-UM via Vision Composer Net, the controller and personal computer must be connected.
They can be connected by the following methods.

■ 1-to-1 Connection

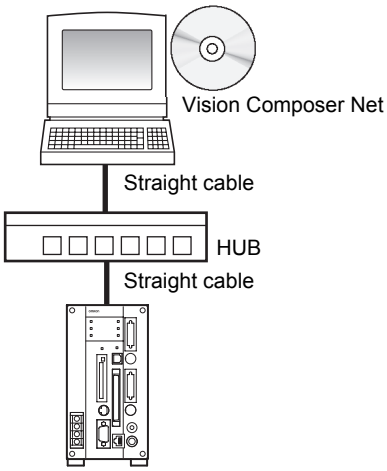
Connect the personal computer and the controller using a cross cable.
Example:



■ Connecting via Hub

Connect the personal computer and the controller via a hub.

Example:



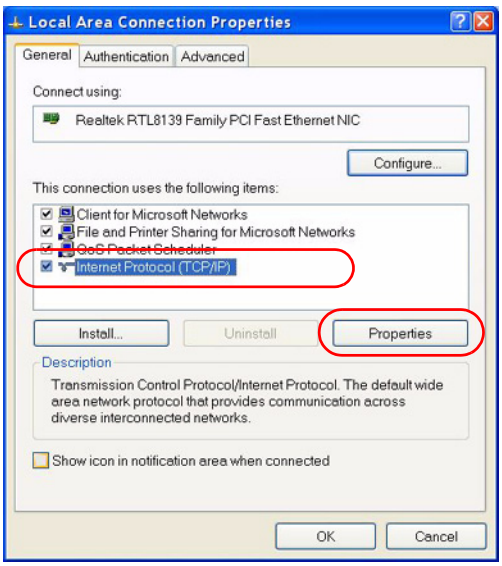
2 Making Network Settings on the Personal Computer

To use Vision Composer Net, make necessary Windows network settings.

This section describes how to make network settings in the case of Windows XP Professional.

1. Right-click on [Network connection/Local area connection] in the Control Panel and select [Properties].

2. Select [Internet Protocol (TCP/IP)] and click [Properties].

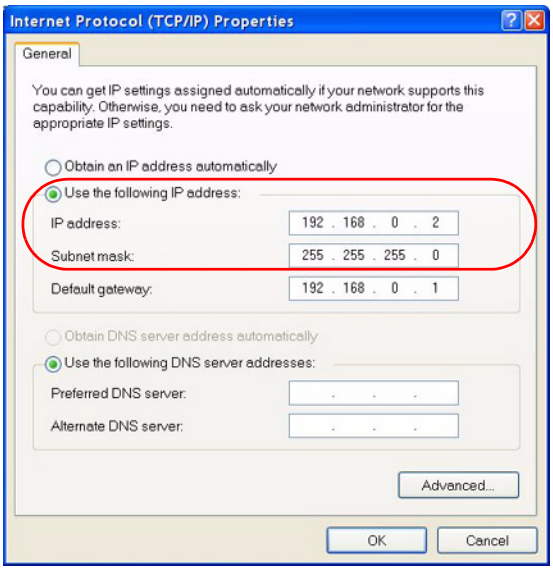


CHECK! If [Internet Protocol (TCP/IP)] is not displayed, refer to Windows help to install TCP/IP.

3. Check the [Use next IP address] checkbox and set the following properties.

IP address:	Specify an available IP address between 192.168.0.2 and 192.168.0.249 (*1).
Subnet mask:	255.255.255.0

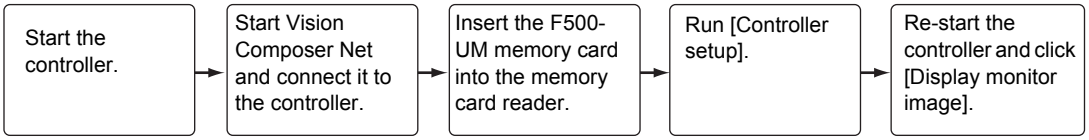
*1: An IP address that is not assigned to any other network devices must be specified. For available IP addresses, contact the network administrator.



CHECK! When these settings are made, it is occasionally no longer possible to connect to the network to which a connection has been established or use certain parts of the network functions. Due to this possibility a note of the current settings must be taken before changing them.

3 Installing F500-UM to the Controller

■ Operational Flow



CHECK!

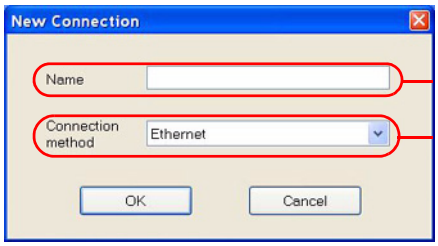
F500-UM can also be re-installed.
Before re-installing, select [Instruction/Save data] from the menu bar to save the current IP address.

1. Check that basic components such as camera are connected to the controller, and then turn ON the power.

For the basic components, refer to the Setup Manual.

2. Select [Start/Programs/OMRON/Vision Composer Net/Vision Composer Net], and specify the new connection name and connection method.
Click [OK].

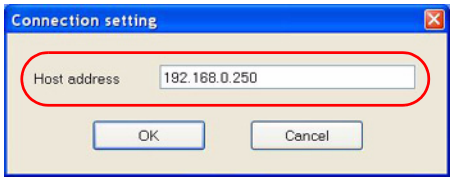
The name specified here will be used as the name for the shortcut.



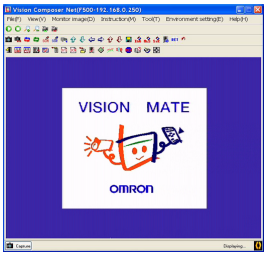
Enter the desired name (e.g. line name, machine number).

Select [Ethernet].

3. Enter “192.168.0.250” as the IP address, and click [OK] to connect to the controller.



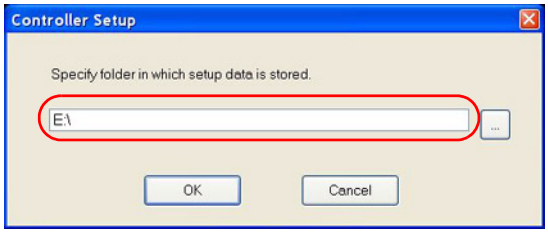
Vision Composer Net will start up.



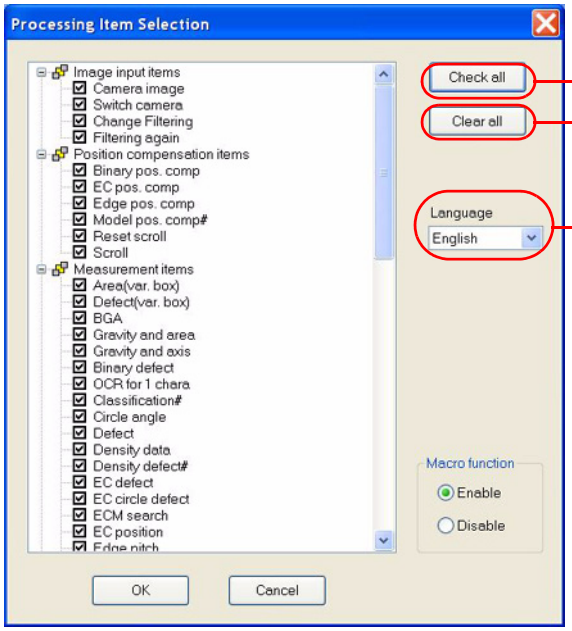
4. Insert the F500-UM memory card into the memory card reader on the personal computer.

5. From the menu bar, select [Tools/Controller setup] or [Controller setup] ( ).

6. Specify the name of the drive to which the memory card of F500-UM has been inserted, and click [OK].



7. In the [Setup items] window, select the items to be installed (make sure that a check appears for the selected items).



Selects all the items.

Unselects all the items.

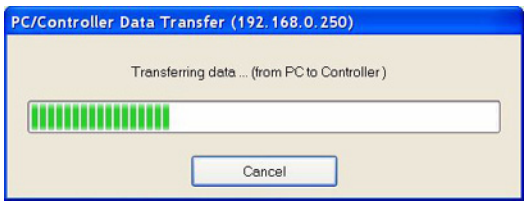
Allows you to select the system language. (*)

Application Software Operation Manual

*: For re-installation, priority is given to the start mode saved in the controller.

8. Click [OK].

Installation will start.



When installation is complete, the controller will re-start automatically.

9. After the controller has re-started, select [Monitor image/View] from the menu bar or click [Display monitor image] ( ) on the [Monitor image] tool bar.

4 Building a Network

When monitoring or operating two or more controllers using one personal computer or when connecting them to LAN, it is necessary to change the controller's IP address. The following network methods are available.

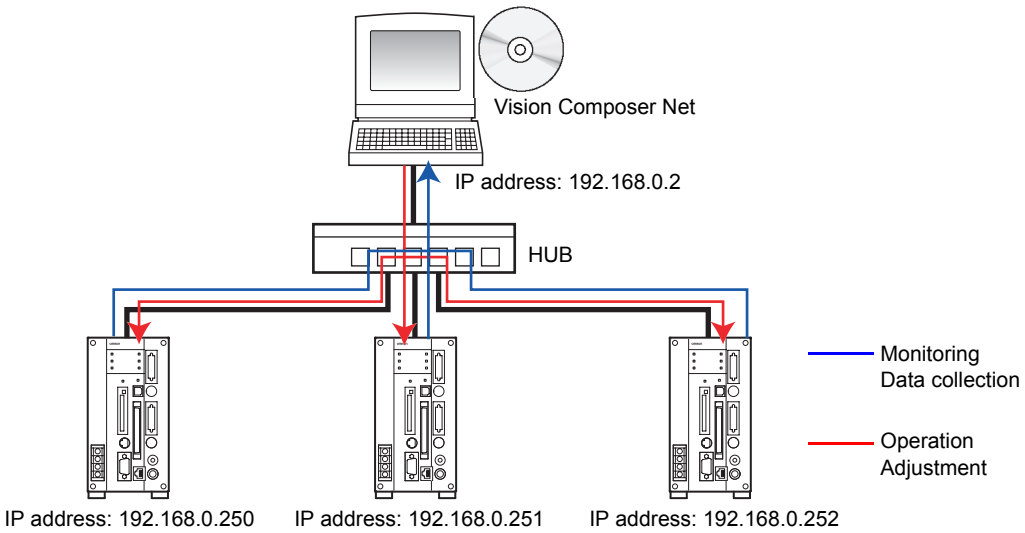
- 1-to-N connection
- Connection to LAN

■ 1-to-N connection

This method is suitable for the following cases.

- When you want to monitor/operate two or more controllers using one personal computer
- When you want to build a small-sized network

Example:

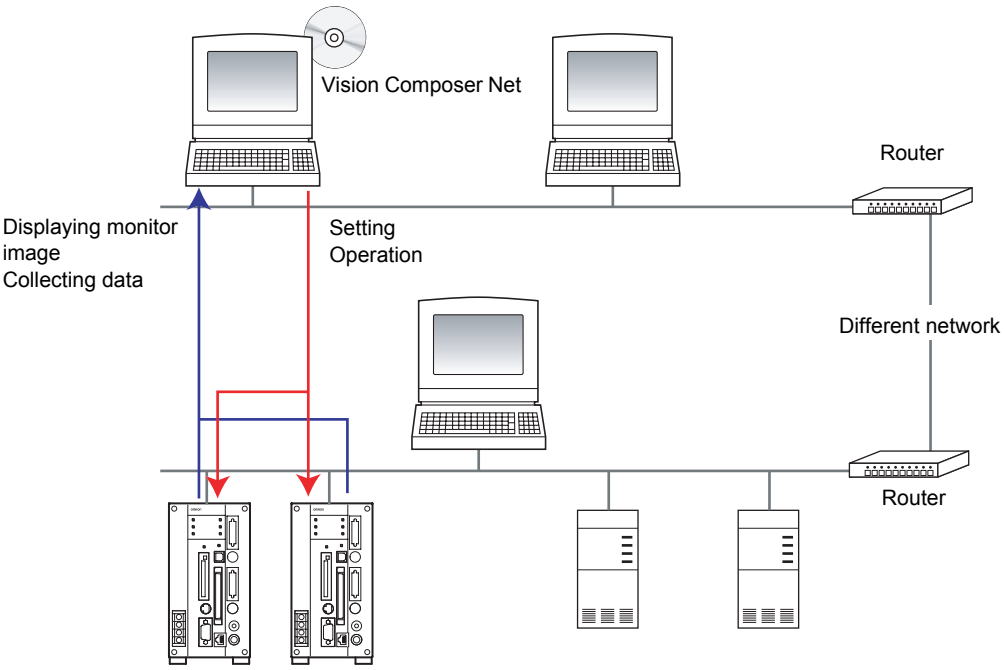


■ Connection to LAN

This method is suitable for the following cases.

• When you want to connect controllers to LAN and monitor them from an office

Example:



■ Changing the Controller's IP Address

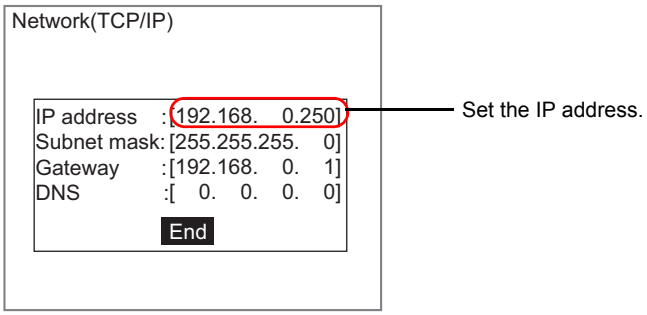
The Controller's IP address is changed using the [System/Network function/TCP/IP].

1. Click [Tool/Console panel] in the menu or [Console panel] ( ) on the [Function] toolbar.

The console panel will appear.

2. Use the console panel to change the controller's IP address.

About Console Panel p.32
Changing the IP Address
Application Software Operation Manual



CHECK!

If the total number of network devices (e.g. controller, personal computer) used in the network is 254 or smaller, a private address between 192.168.0.1 and 192.168.0.254 and subnet mask 255.255.255.0 can be used.
For details, contact the network administrator.

3. Terminate the Vision Composer Net by force, and then connect the controller using a new IP address.
Save the settings to the controller and exit Vision Composer Net.

5 Changing Network Settings on the Personal Computer

Windows network settings may need to be changed depending on the network environment in which Vision Composer Net is used.

CHECK!

Make necessary changes, for instance by restoring the settings that have been saved as explained in “2. Making Network Settings on the Personal Computer”.
For details, contact the network administrator.

Making Network Settings on the Personal Computer p.15

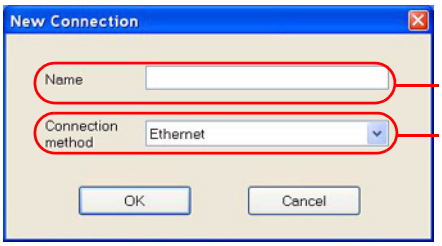
6 Connecting to the Controller

Use the newly set IP address to connect to the controller.

1. Select [Start/Programs/OMRON/Vision Composer Net/Vision Composer Net].

2. Enter the connection name and method, and then click [OK].

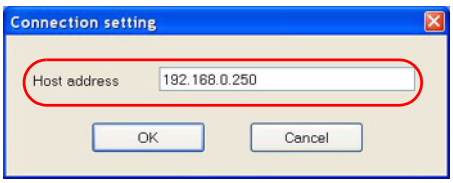
The name specified here will be used as the name for the shortcut.



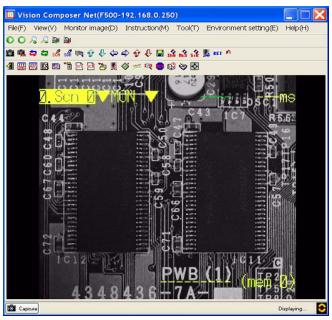
Enter the desired name (e.g. line name, machine number).

Select [Ethernet].

3. Enter the IP address of the controller to be connected, and click [OK] to connect to the controller.



Vision Composer Netwill start up.



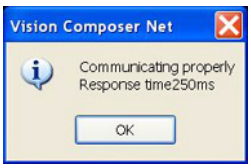
7 Checking the Connection State

Check the current connection state using Vision Composer Net.

1. Click [Check connection] ( )on the [Instruction] toolbar.
   A connection confirmation message appears.

2. Click [OK].

3. The current connection state is displayed.

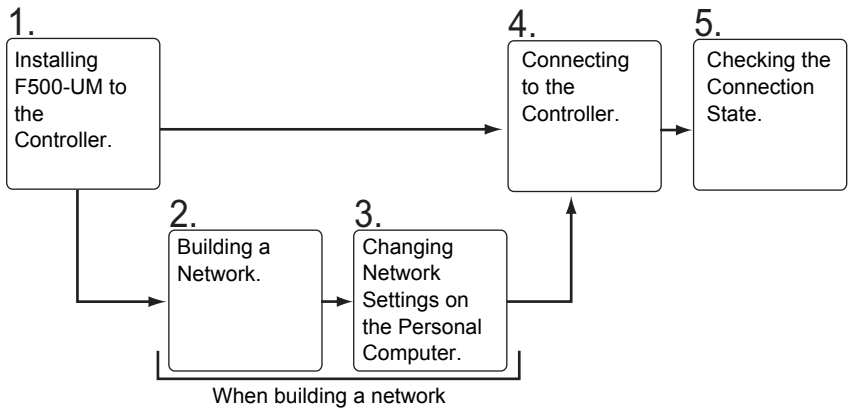


4. Click [OK].

Setting Up F500-UM by the Controller and Vision Composer Net

For installing and setting up F500-UM using the controller's setup menu.
This method requires a monitor and a console to be connected to the controller.

■ Operational Flow



1. Install F500-UM to the controller.

For the basic components, refer to the Setup Manual.
For the setup menu, refer to the Application Software Operation Manual.

2. Build a network.

Network configuration p.19

3. Change network settings on the personal computer.

Changing Network Settings on the Personal Computer p.21

4. Connect F500 to the controller.

Connecting to the Controller p.22

5. Check the current connection state.

Checking the Connection State p.23

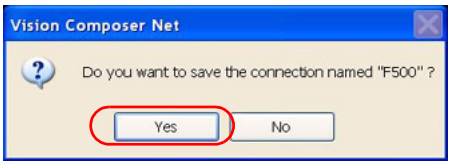
Exiting/Re-connecting

Exiting after Saving the Connection Settings

When you save the connection settings and exit Vision Composer Net, a controller connection shortcut will be created enabling connection to the controller next time just by selecting the shortcut.

1. From the menu bar, select [File/Exit].

The following connection settings save window will appear.



2. Click [Yes].

3. Vision Composer Net will be disconnected from the controller and then exited.

A controller connection shortcut will be created.

Connecting to the controller using the shortcut p.26

Re-connecting

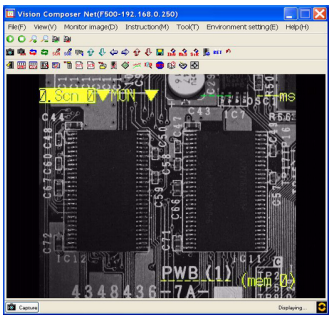
It is possible to re-connect to the controller using a shortcut.

1. From [Start], select the [Vision Composer Net] shortcut.

Shortcut image



Connection to the controller will be established and Vision Composer Net will start.



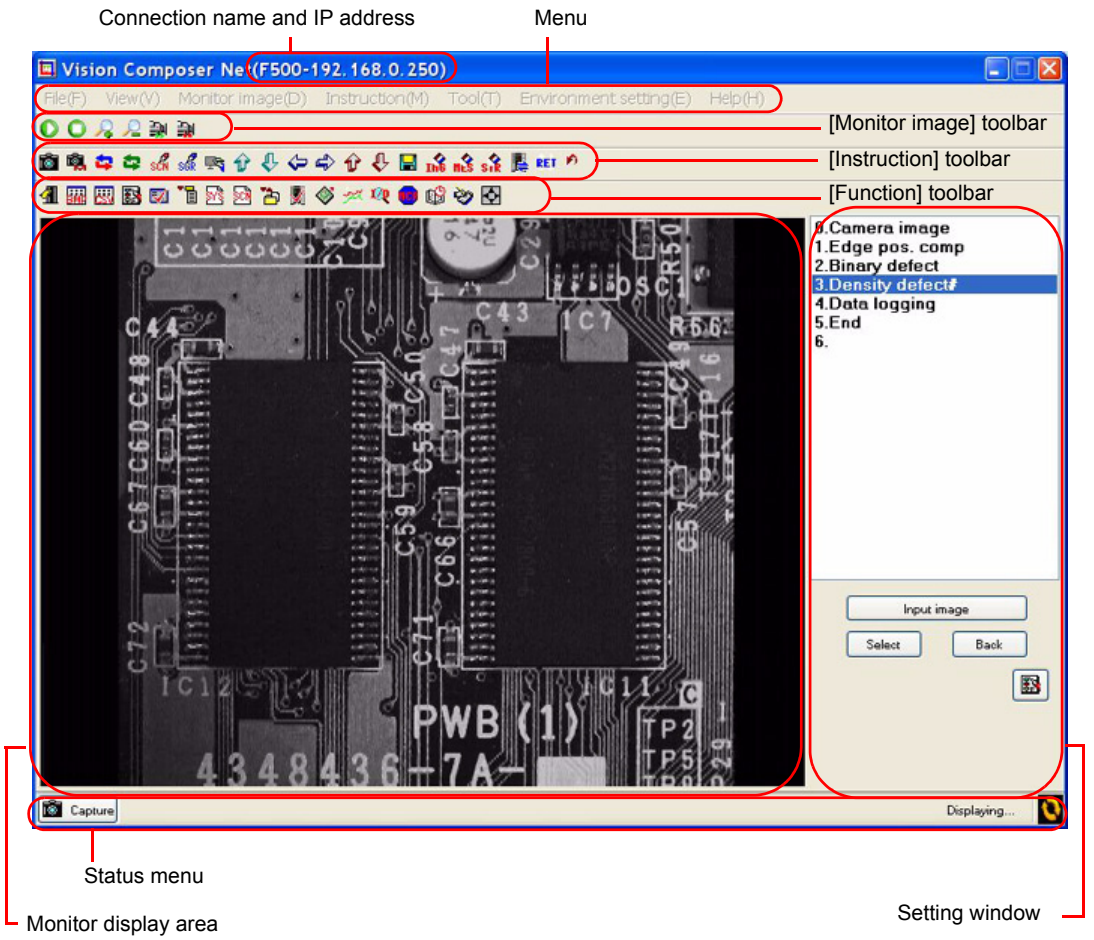
SECTION 3
Vision Composer Net Operating Method

Window Structure (Vision Composer Net) 28

Basic Operation 31

Window Structure (Vision Composer Net)

This section describes the window structure of Vision Composer Net.



[Monitor image] toolbar		
	Start monitor display	Starts streaming (displays monitor image).
	Stop monitor display	Stops streaming
	Enlarge monitor image size	Changes monitor image display size. The size can be changed by 100%, 75%, 50% and 25%.
	Reduce monitor image size	
	Record monitor display	Starts recording of streaming. Storage format p.94
	Stop monitor display recording	Stops recording of streaming.
[Instruction] toolbar		
	Measurement	Starts measurement.
	Measure saved image	Measures the currently displayed memory image.
	Switch Monitor/Run mode	Switches the mode between Monitor and Run.

	Switch scene/ scene group	Scene	Switches the scene to be checked or measured from one to another.
		Scene group	Switches to a scene group that contains the scene to be checked or measured.
	Scene function		Displays a list of scenes. Right-click on the desired scene, and use the menu that appears to copy/clear the scene or edit the comment.
	Scene group function		Displays a list of scene groups. Right-click on the desired scene, and use the menu that appears to copy/clear the scene group or edit the comment.
	Display setting	Image status	Switches the display image status (Through/Freeze (before scroll)/Freeze (after scroll)/NG image (before scroll)/NG image (after scroll)).
		Display image	Switches the display image. (Image memory 0/Image memory 1)
		Image size	Switches the display image size. (Full screen/Reduce/Enlarge)
		Display results	Switches the result display pattern. (None/Position list/Result list/Detail)
	Display pre-processing unit		When results display is set to [Detail], the display will switch to the previous unit.
	Display post-processing unit		When results display is set to [Detail], the display will switch to the next unit.
	Display previous sub screen		When results display is set to [Detail], the display will switch to the previous Details Screen for the displayed unit. The unit number will be switched when set to Results.
	Display next sub screen		When results display is set to [Detail], the display will switch to the next Details Screen for the displayed unit. The unit number will be switched when set to Results.
	Display saved image (previous)		Displays the previous memory image.
	Display saved image (next)		Displays the next memory image.
	Save data		Saves the set data to the flash memory.
	Clear image		Clears all the images saved in the controller.
	Clear measurements		Clears all measurement values for the current scene.
	Clear storage		Clears all the data from storage.
	Check connection		Checks for connection to controller.
	Return		Closes the message box displayed on the controller and recovers from error state.
	Function key assignment operation		Function keys can be used as shortcut keys by assigning an operation or function to them using the "key assignment" function. Application Software Operation Manual System Settings
	Reset controller		Resets the controller. No set data will be saved.

[Function] toolbar		
	Transfer log files collectively	Transfers log images/data saved in the controller to the personal computer.
	Open log image folder	Displays the folder where log image data is stored.
	Open log data folder	Displays the folder where log measured data is stored.
	Flow edit	Exits the operation flow.
	Scene setting	Sets a scene.
	Controller setup	Sets up F500-UM.
	System data setting list	Creates a list of system data settings.
	Scene data setting list	Creates a list of scene data settings.
	Transfer PC/controller data	Sends/receives files.
	System setting	Makes system settings.
	Memory card	Operates the memory card.
	Line brightness	Displays line brightness.
	I/O monitor	Displays the I/O monitor.
	Macro program	Loads/clears a macro program.
	Setting change history	Displays the setting change history.
	User registration	Performs user registration.
	Console panel	Displays the console panel.
Status menu		
 Capture	Capture	Captures the current monitor image and saves it to the personal computer.
Setting window		
	Advanced function	Performs advanced functions. Normally not used.

Basic Operation

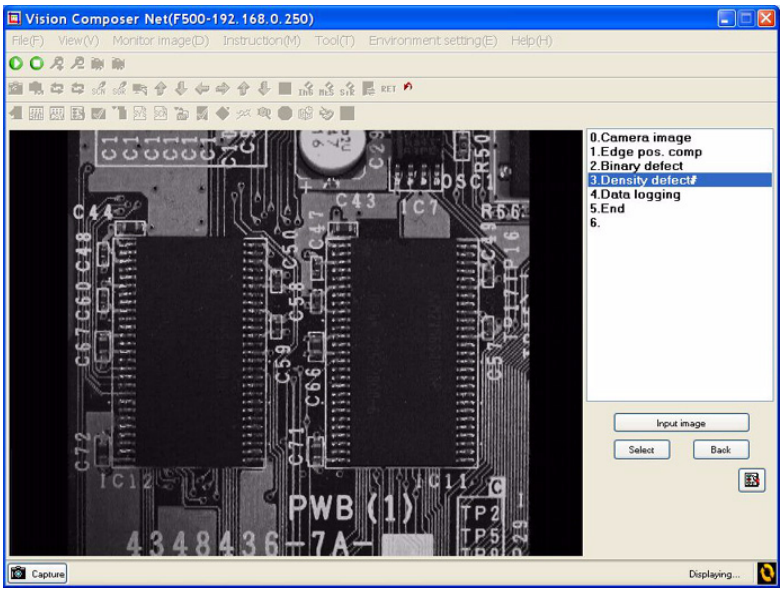
Making Settings using the Setting window

System data and scene measurement conditions can be changed using the Setting window. To display the Setting window, click [System setting] ( ) or [Scene setting] ( ) on the [Function] toolbar.
Make changes according to the menus and explanations displayed in the Setting window. For the setting items, refer to the Application Software Operation Manual.

In the following procedure example, [Scene setting] ( )on the [Function] toolbar is clicked.

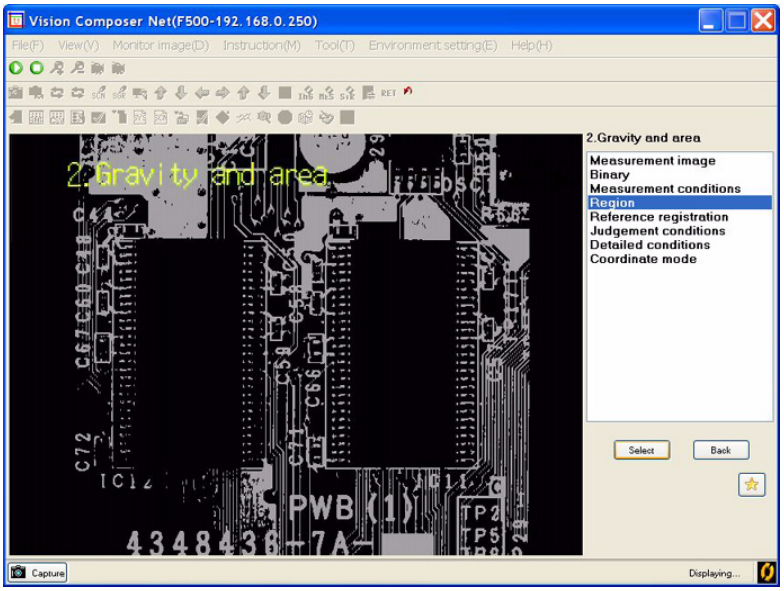
1. Click [Scene setting] ( ) on the [Function] toolbar.
A scene flow will be displayed in the Setting window.

2. Select the target processing items from the setting window and click [Select].



Details for the selected processing items will be displayed in the Setting window.

3. Select the detailed items for the displayed processing items and click [Select].



Measurement conditions for the detailed items are displayed in the Setting window.

4. Make the desired changes to the measurement conditions and click [OK].

Changes must be made according to the menus and explanations displayed in the window.

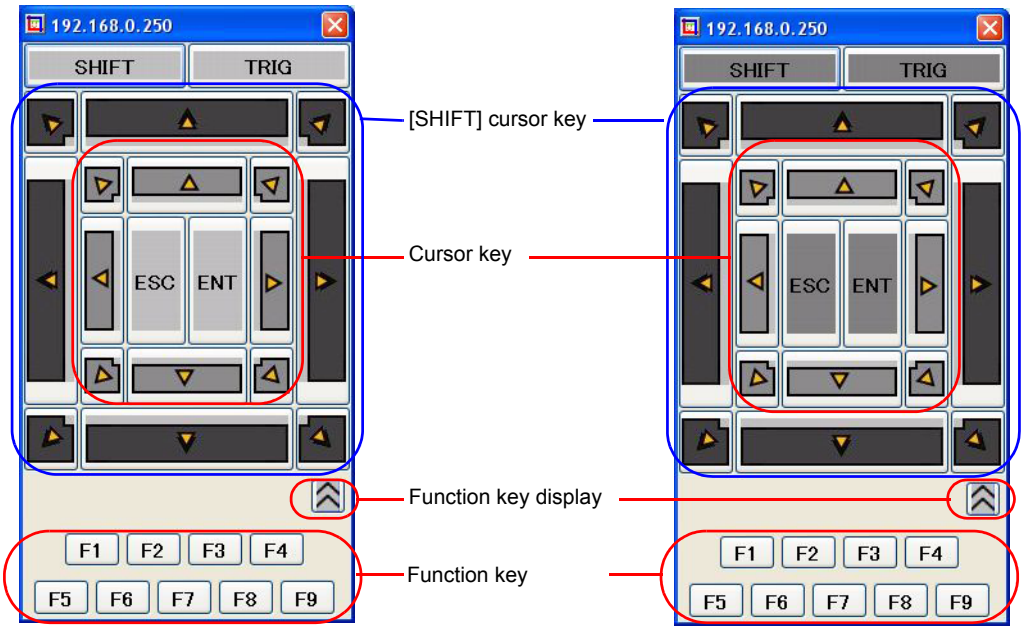
Making Settings using the Console Panel

System data and scene measurement conditions can also be changed using the console panel.

This section explains operation of the console panel. For details of the setting method, refer to the Application Software Operation Manual.

■ Console panel window structure

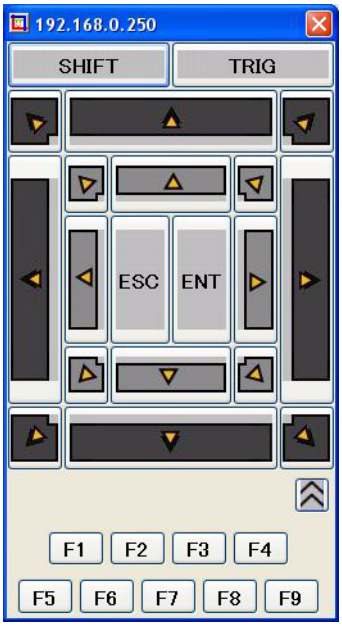
- When [SHIFT] is not locked
- When [SHIFT] is locked



Key	Function
SHIFT	Allows you to lock or unlock the [SHIFT] key.
TRIG	Starts measurement.
ENT	Confirms the selected function or value.
ESC	Returns the cursor to the previous menu or operation.
Cursor key	Used to move the cursor or set a value. * The [SHIFT] cursor keys have the same effects whether SHIFT is locked or not.
[SHIFT] cursor key	Have the same effects as when the cursor keys are pressed with [SHIFT] locked. * The [SHIFT] cursor keys have the same effects whether SHIFT is locked or not.
Function key	Function keys can be used as shortcut keys by assigning an operation or function to them using the “key assignment” function. Application Software Operation Manual System Settings
Function key display	Shows/hides function keys.

1. Click [Console panel] ( )on the [Function] toolbar.

The console panel will appear.



CHECK! Menu and toolbar operations cannot be performed while the console panel is displayed.

2. Make settings using the console panel.

3. When all the necessary settings are made, click [X].

The console panel will close.

SECTION 4
Setup/Adjustment

- Editing a Flow Chart 36
  - Registering Processing Items to Units 37
  - Copying from Other Units 37
  - Deleting a Unit 37
  - Changing Processing Item Names 38
  - Checking the Branch Units 38
- Setting Measurement Conditions for Processing Units 39
- Checking the Setting Contents 44
- Saving the Changes to the Controller and Exiting Edit 45
- Saving/Loading Data to a Personal Computer 46
- Adjusting the Settings (Logging Function) 49
  - Operational Flow 50
  - Setting the Data Output Conditions 51
  - Setting the Storage Folder on the Computer 52
  - Performing Measurements 52
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  - Verifying and Analyzing the File 53
  - Changing the Threshold and Measurement Conditions 58
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- Memory Card Operation 60
- Macro Program 64

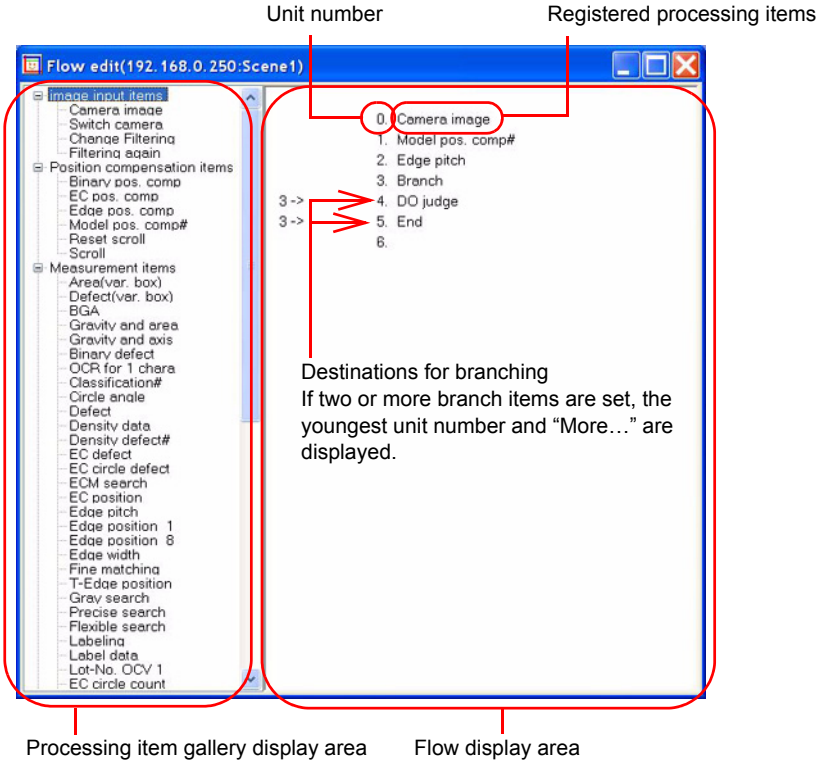
Editing a Flow Chart

This section explains how to edit the flow chart of a scene set to the controller.
Only the flow charts set to the target controller can be edited.

1. Click [Switch scene/scene group] ( ) on the [Instruction] toolbar to display the scene to be edited.

2. Click [Flow edit] ( ) on the [Function] toolbar.

The following flow edit window will appear.



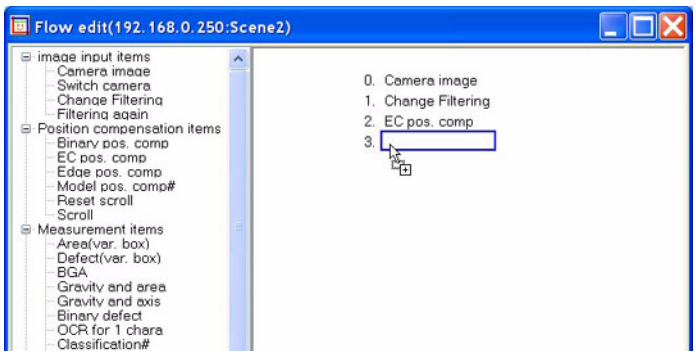
Display area	Function
Processing item gallery display area	Displays a list of processing items installed on the controller.
Flow display area	Displays the flow chart of the currently displayed scene.

3. When all the necessary settings are made, click [X].

The flow edit window will close.

Registering Processing Items to Units

1. From the processing item gallery display area, select the processing item to be registered.
2. Drag & drop the processing item to the desired unit number in the flow display area.



Copying from Other Units

1. Select the copy destination unit and right-click.
2. Select [Copy].
3. Select the copy source unit.



Select the copy source unit from the drop-down list box.

4. Click [OK].

Deleting a Unit

1. Select the unit to be deleted and right-click.
2. Select [Delete].

Changing Processing Item Names

1. Select the unit to be changed and right-click.
2. Select [Comment].
3. Edit the comment displayed in the [Processing Unit Comment] dialog box.



Enter the comment to be displayed after the processing item is renamed.

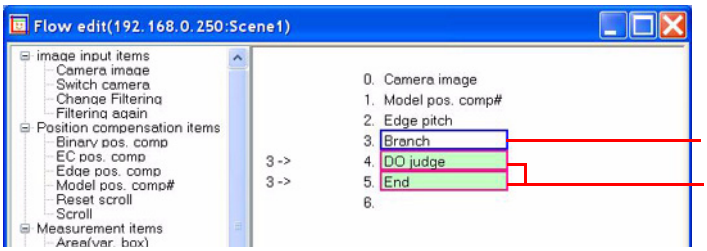
4. Click [OK].

Checking the Branch Units

If a branch processing item has been registered to the scene, the branch destination and source can be checked (displayed).

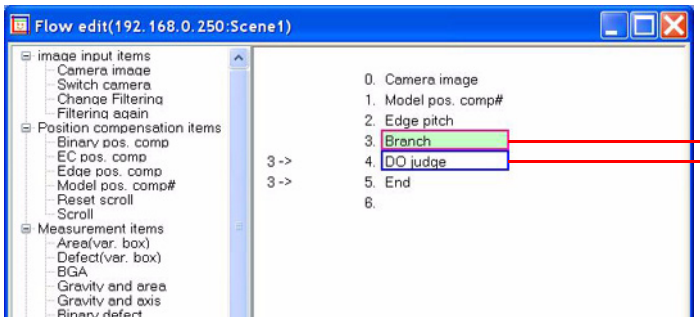
■ Checking the branch destination

Select the branch processing unit.



■ Checking the branch source

Select the processing unit for the branch destination.

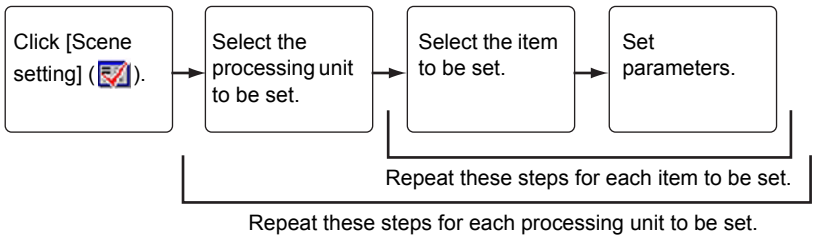


Setting Measurement Conditions for Processing Units

Measurement conditions for processing units can be changed using the Setting window.
To display the Setting window, click [Scene setting] ( ) on the [Function] toolbar.

Setting window
p.31

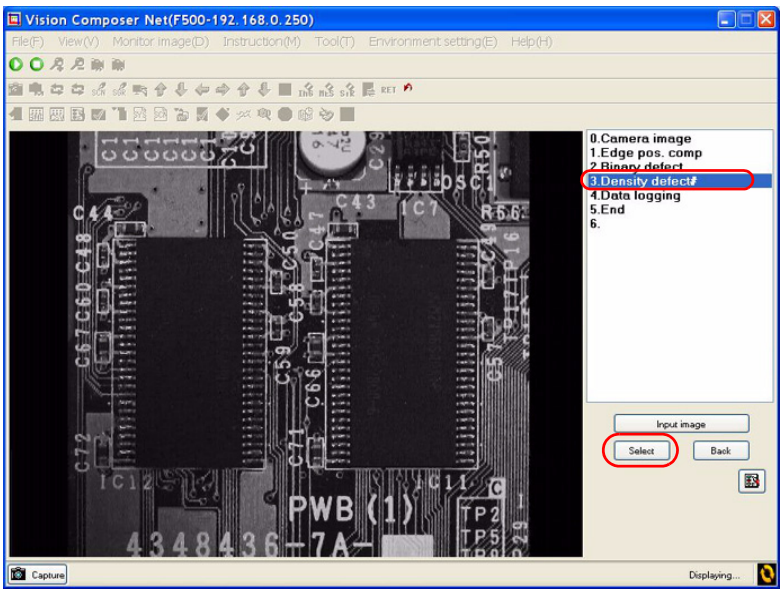
■ Operational Flow



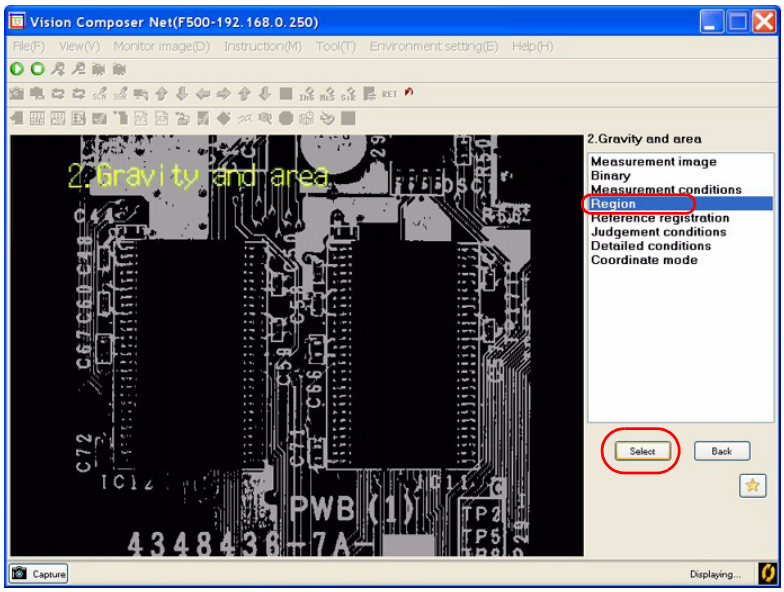
In this section, [Gravity and area/Region] is used to explain the setting procedure.
For details regarding each parameter, refer to the Application Software Operation Manual.

1. Click [Scene setting] ( ) on the [Function] toolbar.
The setting window will appear.

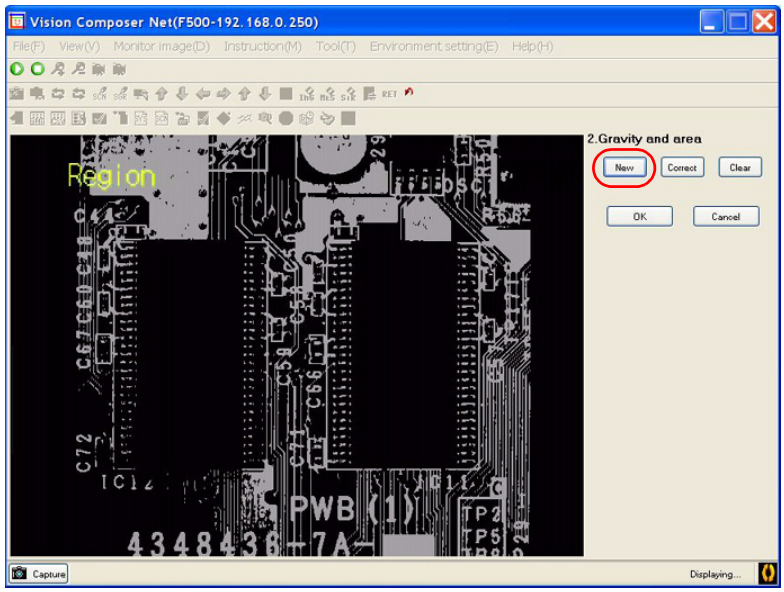
2. Select [Gravity and area] and click [Select].



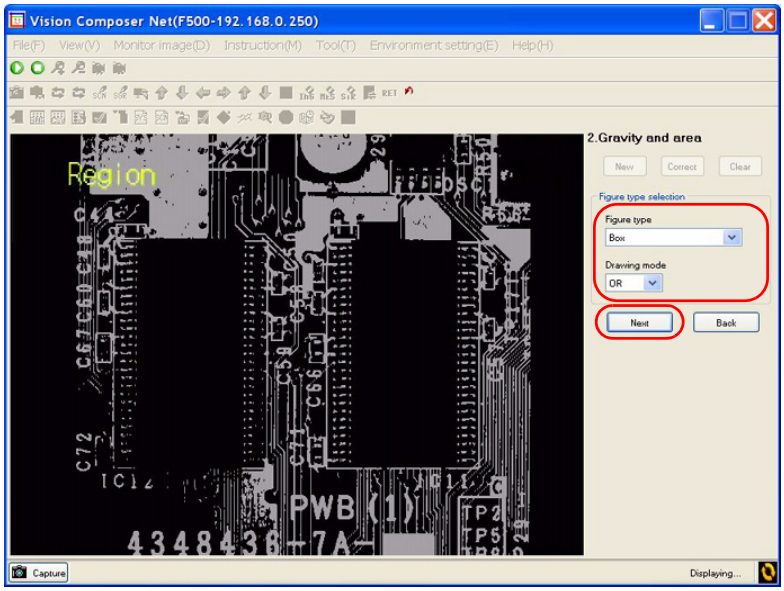
3. Select [Region] and click [Select].



4. Click [New].



5. Select the desired drawing type and mode, and click [Next].

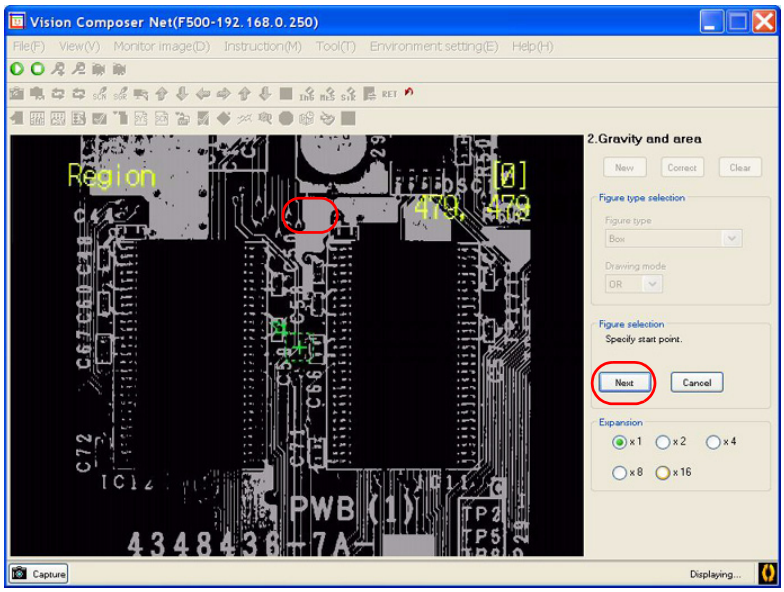


6. In the monitor display area, click on the start point.

The start point will be displayed in the monitor image.
Click [Next] to confirm the start point.

CHECK!

The start point will not be set until [Next] is clicked, so you can re-set it any number of times.
The monitor image can be enlarged by selecting a larger magnification ratio in [Zoom-in].

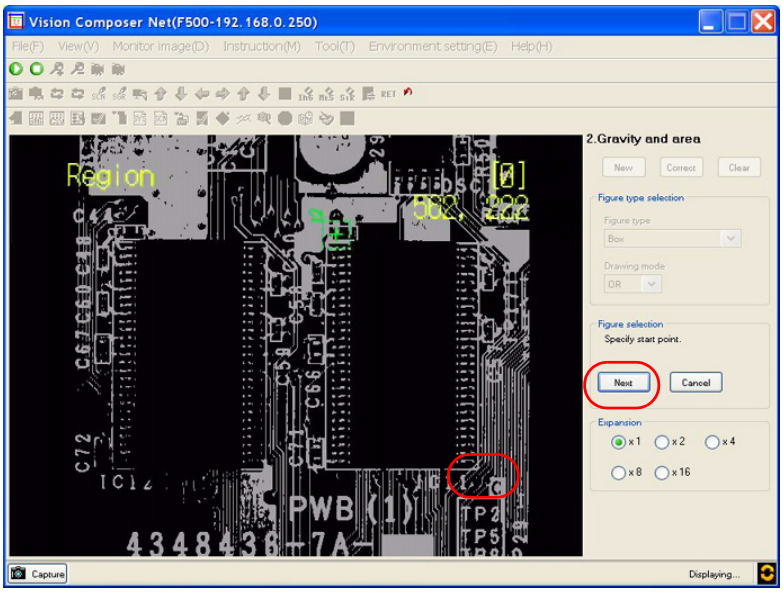


7. In the monitor display area, click on the end point.

Click [Next] to confirm the end point.

CHECK!

The end point can be re-set any number of times until [End] is clicked.

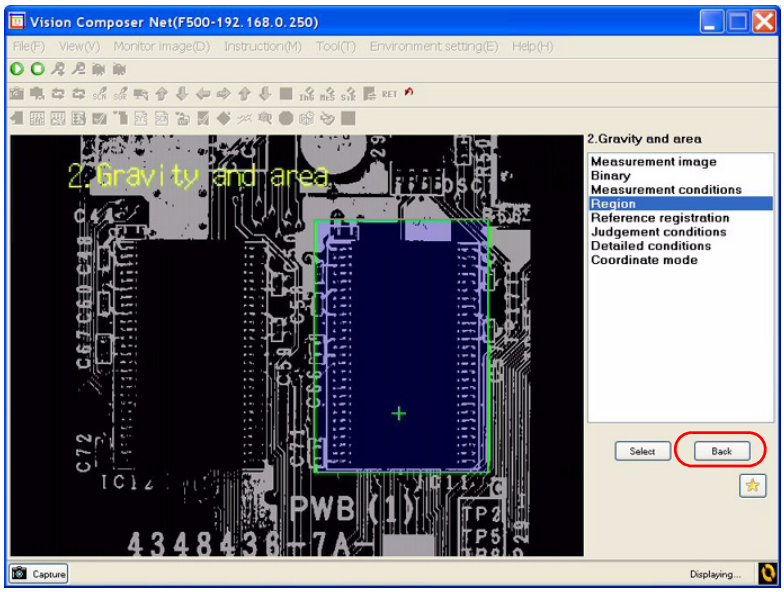


8. Click [OK].

9. Click [Back].

The menu one higher in the hierarchy level will reappear.

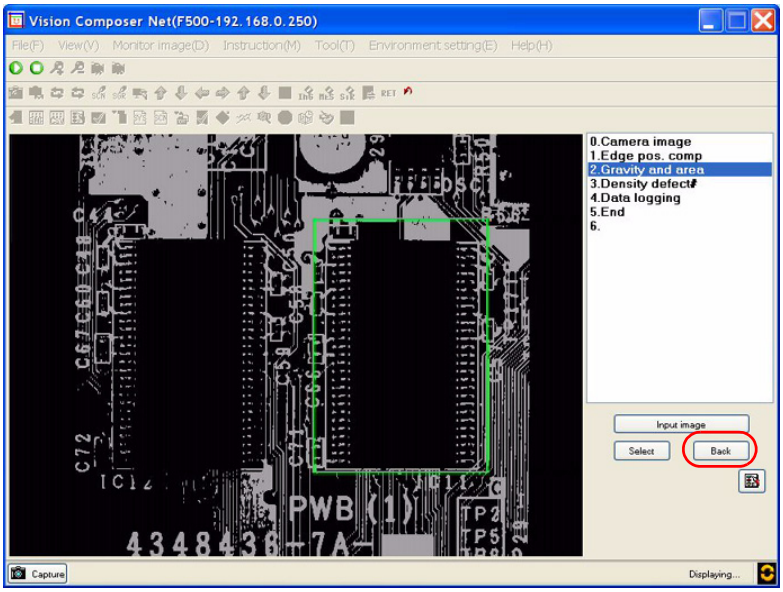
If you want to continue to set for another item, select that item.



10. Click [Return].

Setting will be complete and the setting window will close.

If you want to continue to set measurement conditions for another processing unit, select that unit.



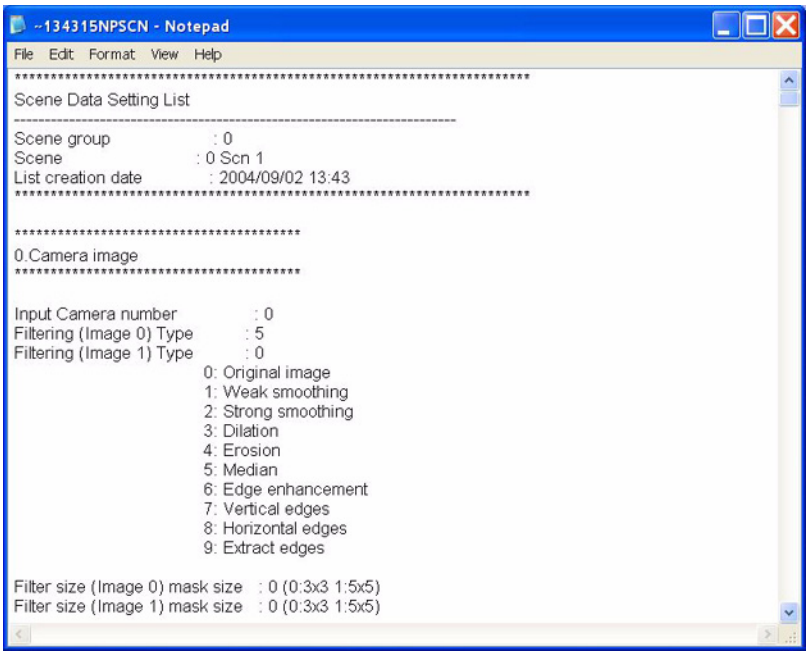
Checking the Setting Contents

The contents of scene data or system data can be displayed in list form.
Since the list can be printed or saved in TXT format (*.txt) to the personal computer, it is possible to compare the original setting contents to those that have been changed, or to save history of changes for the purpose of scene management.

Setting change history p.78

1. Click [System data setting list] (SYS) or [Scene data setting list] (SCN) on the [Function] toolbar.

The selected list will be displayed.



Saving the Changes to the Controller and Exiting Edit

Save the settings to the flash memory of the controller.
If edit is exited without saving the setting changes, all the setting changes will be lost, since the controller loads the data from the flash memory each time it starts up.
Backing up the data to a personal computer in case data is lost or the controller malfunctions is recommended.

Saving Data to a Personal Computer p.46

CHECK!
If the security function is enabled, the data will be saved automatically at the end of setting.

1. Click [Save data] ( ) on the [Instruction] toolbar.
The data will be saved to the controller's flash memory.

Saving/Loading Data to a Personal Computer

It is possible to save the data stored in the controller to a personal computer and load the data from the personal computer.
Backing up the data to a personal computer in case data is lost or the controller malfunctions is recommended.
This function is also useful when you want to set the same data to another controller.

CHECK!
Saving/loading of user information is not possible.
User registration must be made by [User setting] ( ) for each controller.

Data	Description
System data	The settings performed under [System] are backed up. Macro programs are contained in the system data.
Scene group data	Scene data (scenes 0 to 31) for specified scene group is backed up.
Scene data	The settings performed under [Setting] are backed up for each scene.
System data + Scene group data	Both the system data and scene group data (for the scene group currently displayed) are backed up together. In the case of scene group, the data for the currently displayed scene group is saved.
Image data	Saved measured images are backed up in bitmap format (*.BMP). The bitmap format is often used with Windows, so images backed up in this format can be displayed on a computer. CHECK! When backing up images saved when [Frame] was selected for the Frame/Field mode, save those images while displaying frame images. When backing up images saved when [Field] was selected for the Frame/Field mode, save those images while displaying field images.
Backup data	The data saved in the controller's flash memory is backed up (the data includes [installed processing items] and [setting data] (system data + scene data of scene group 0). This item must be used when you want to back up [installed processing items].

CHECK!
To load only macro programs to the controller, click [Macro program] ( ) on the [Function] toolbar.
p.68

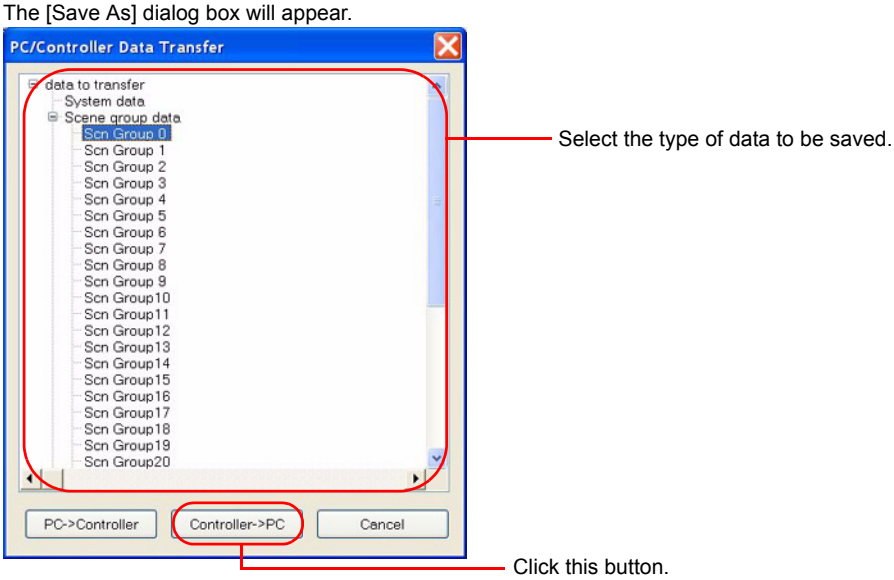
Saving Data to a Personal Computer

This section describes how to save the data stored in the controller to a personal computer.

1. Click [Transfer PC/controller data] ( ) on the [Function] toolbar.

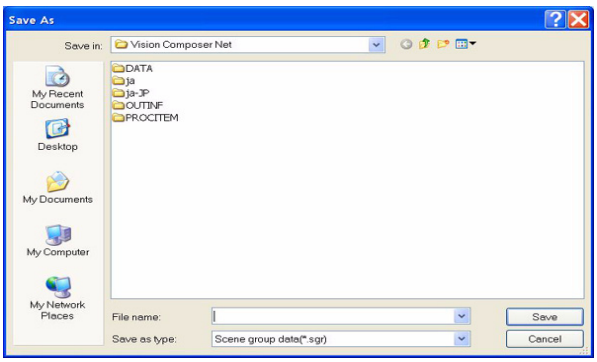
2. Select the type of data to be saved, and click [Controller → PC].

The [Save As] dialog box will appear.



3. Specify the file name and the folder to which the data is to be saved, and click [Save].

The data will be transferred from the controller to the computer.



Loading Data from a Personal Computer

This section describes how to load the data stored in the personal computer to the controller.

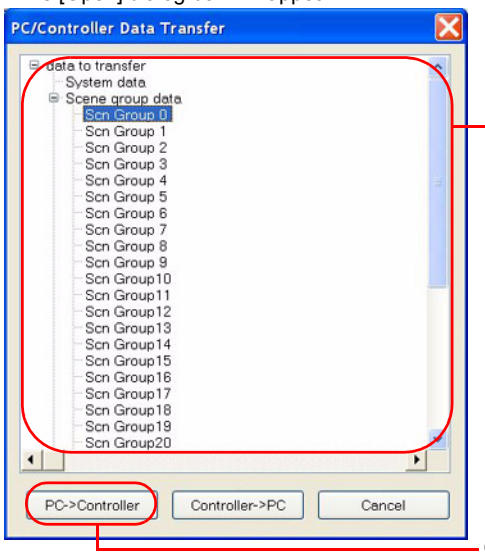
CHECK!

When loading data including the system data to the controller, the IP address will also be copied. So attention must be paid when loading such data.

1. Click [Transfer PC/controller data] ( ) on the [Function] toolbar.

2. Select the type of data to be loaded, and click [PC → Controller].

The [Open] dialog box will appear.

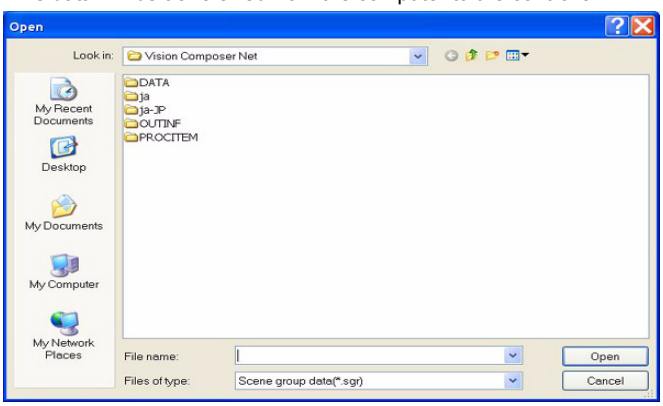


Select the type of data to be loaded.

Click this button.

3. Select the file to be loaded, and click [Open].

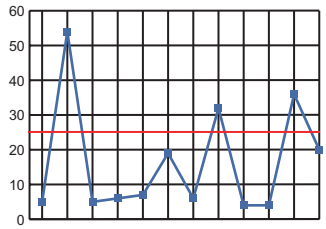
The data will be transferred from the computer to the controller.



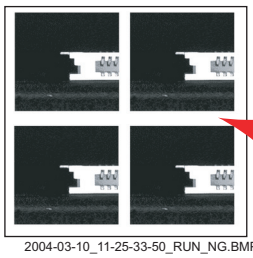
Adjusting the Settings (Logging Function)

Measured results (hereafter called measured data) such as images and processing items can be logged to the storage(*), and compared to the NG image to analyze the NG cause or analyze the threshold level. This enables extraction of appropriate values and statistical analysis of measured data, helping in start-up adjustments.
This section describes the log setting method and gives an example of using the method.

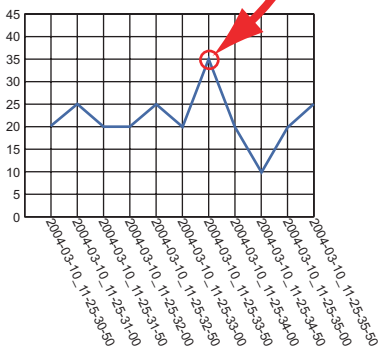
*: This feature is available only for Ethernet-compatible controllers (i.e. controllers whose model name contains "ETN").



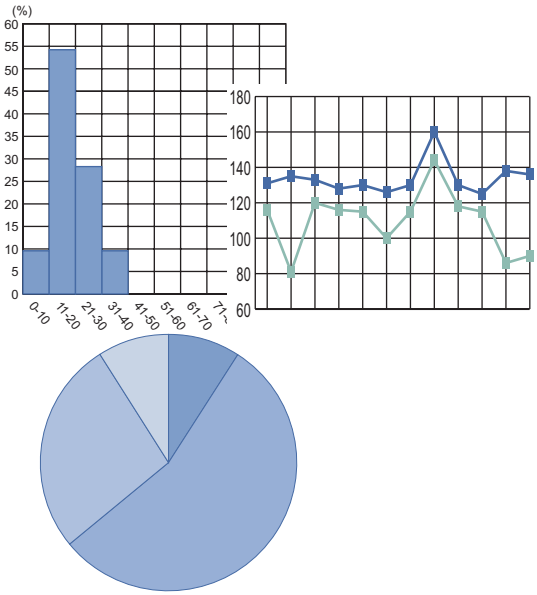
Optimizing the threshold level



Comparing measured data and NG images



Analyzing using Excel's statistical processing



Operational Flow

Setting the Data Output Conditions

Set the conditions for the data to be logged to the storage.

p.51



To log measured data, make “Data log” setting in the flow chart.

▼

Setting the Storage Folder on the Computer

Specify the folder where the log data is stored.

p.52

▼

Performing Measurements

Perform measurement and log the measured data to the storage.

p.52

▼

Transferring the Measured Data to the Personal Computer

Transfer the log data to a personal computer.

p.52

▼

Verifying and Analyzing the File

Verify or process the obtained data to analyze the settings.

- Verifying the Log Images p.53
- Checking the Log Data p.55
- Analyzing the Log Data p.56
- Verifying the Log Data Against Log Images p.57

▼

Changing the Threshold and Measurement Conditions

Change the threshold and measurement conditions.

p.58

This section uses the following scene to explain the method for optimizing the [Defects/ Defect level] threshold.

Scene 0

0. Inputting camera images
1. Model position compensation#
2. Defects
3. Data logging

Setting conditions

Output file name	: [logdata.csv]
Measure ID	: Yes
Digits of integer	: [8]
Digits of decimal	: [3]
Minus	: -
Field separator	: Comma
Record separator	: CR+LF
0 Suppress	: None

Calculation contents

Calculation 0. TJG (Cumulative judgment result)
Calculation 1. U2.F (Defect level)
Calculation 2. U2.GA (Maximum density)
Calculation 3. U2.GI (Minimum density)

Setting the Data Output Conditions

Set the conditions for the data to be logged to the storage.
Two types of data (image and measured data) can be logged.

1. Click [System setting] ( ) on the [Function] toolbar.

2. Select [Network function/Logging].

Set the logging conditions.



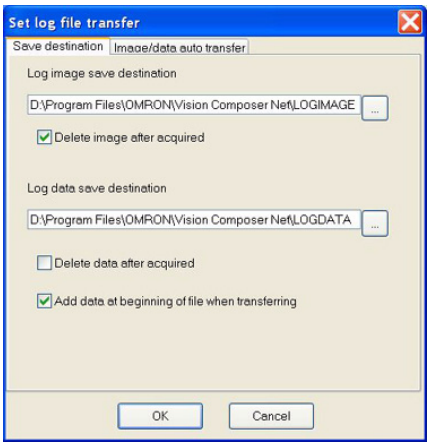
Logging conditions

Application Software Operation Manual

Setting the Storage Folder on the Computer

Specify the folder on the computer to which the measured data is to be saved.

1. From the menu bar, select [Environment settings/Set log file transfer].
2. Click the [Storage] tab in the [Set log file transfer] dialog box.
3. Specify the folder path.



4. Click [OK].

Performing Measurements

Perform measurement using the controller and log the measured data to the storage.

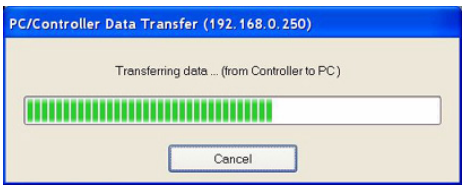
Transferring the Measured Data to the Personal Computer

Transfer the data logged to the controller's storage to the personal computer.
The transferred data is stored in the specified folder as shown below.

\Controller's IPaddress\SXXX_YYY\
(XXX: Scene group number YYY: Scene number)

1. Click [Transfer log files collectively] ( ) on the [Function] toolbar.

The data stored in the controller's storage is saved to the specified folder.



Verifying and Analyzing the File

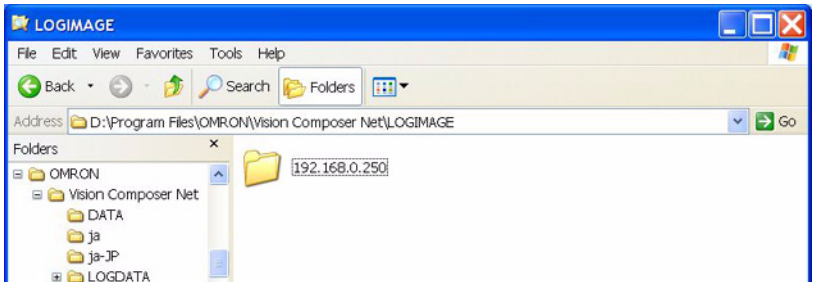
Verify or process the obtained data to analyze the settings.

■ Verifying the Log Images

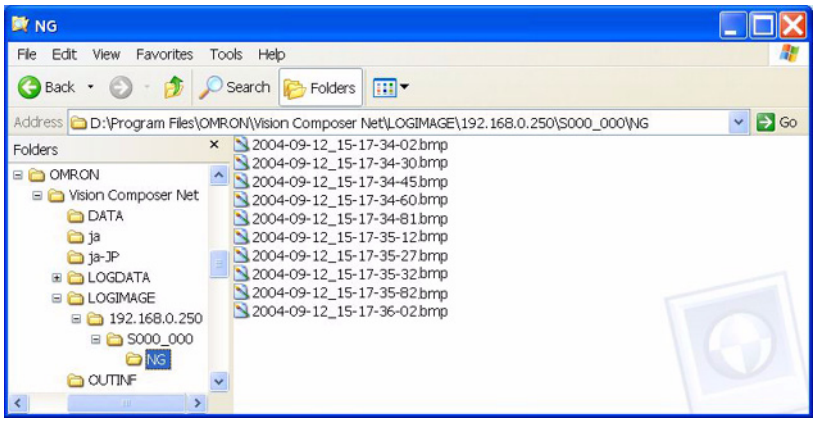
Verify the NG images in detail and compare the OK and NG images.
Images are sorted out into the OK or NG folder according to the overall judgment result obtained during measurement.

1. Click [Open log image folder] () on the [Function] toolbar.

Explorer will start and the folders selected for storing the file will open.



2. Open the folder for the measured scene group/scene.



File names are given as follows.

2004-03-10_11-25-30-50.BMP
YYYY-MM-DD_HH-MM-SS-SS.BMP

Measure ID(*)

Measure ID: YYYY-MM-DD_HH-MM-SS-SS of measured date/time

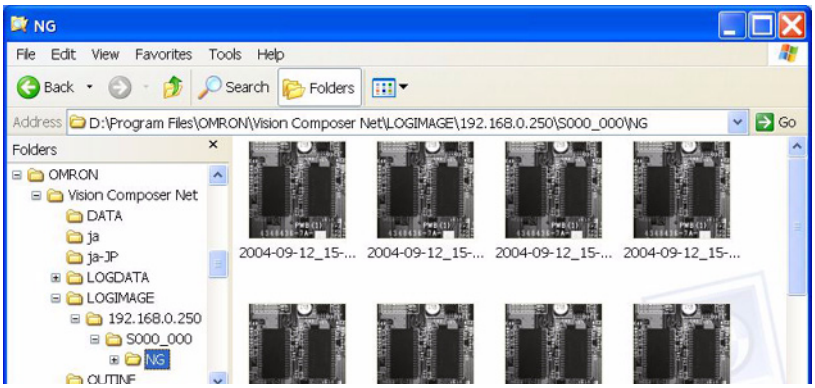
Example)

When the measured time is Mar. 10, 2004, 11:25:30.500

The measure ID will be “2004-03-10_11-25-30-50”.

In addition, if two or more camera images are input, up to four measured images will be saved in one bitmap file.

If you want to display images in thumbnail mode, select [Thumbnails] from the [View] menu of Explorer.



3. Open the viewer to display and check the image data.

■ Checking the Log Data

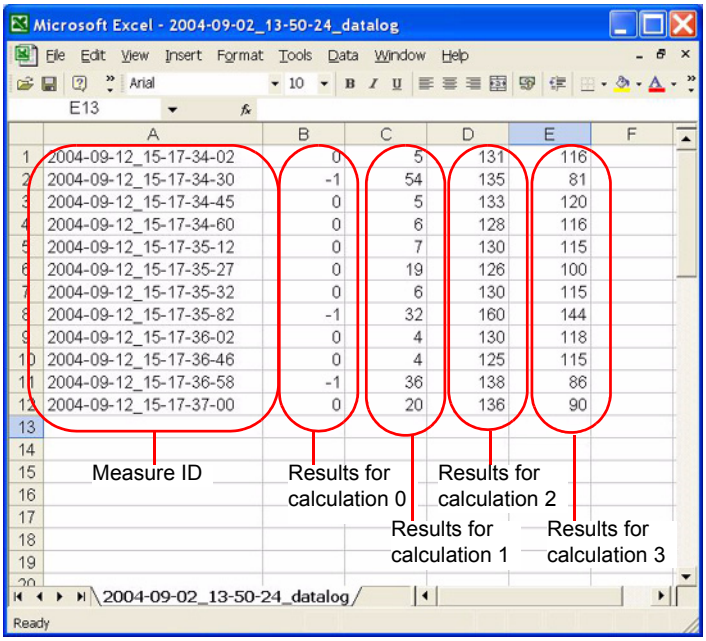
1. Click [Open log data folder] (CSV) on the [Function] toolbar.

Explorer will start and the folder selected for storing the file will open.

2. Open the folder for the measured scene group/scene.

3. Open the log data using an application program assigned for the file extension of that data.

In this example, a CSV file is displayed using Excel.



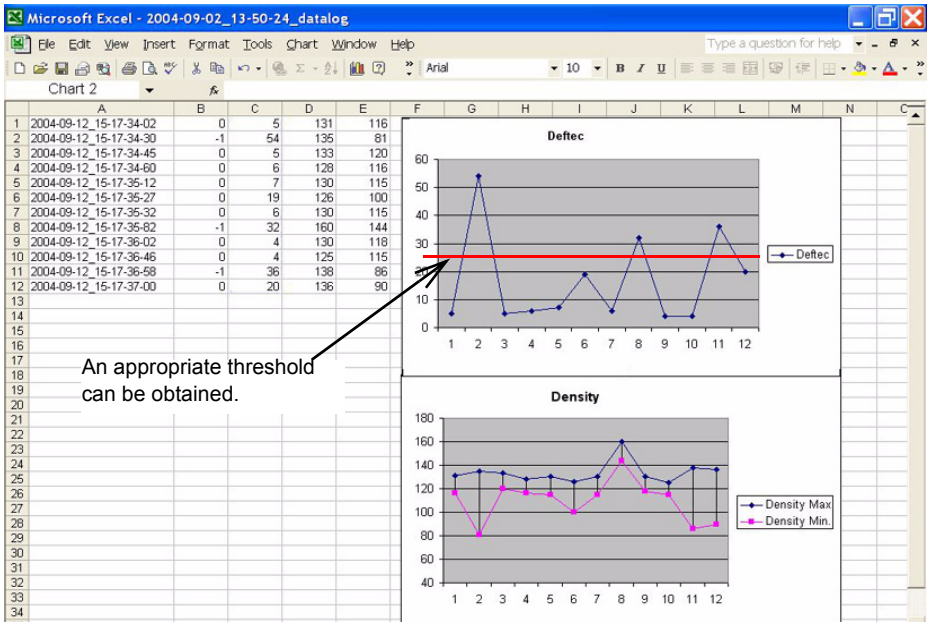
	A	B	C	D	E
1	2004-09-12_15-17-34-02	0	5	131	116
2	2004-09-12_15-17-34-30	-1	54	135	81
3	2004-09-12_15-17-34-45	0	5	133	120
4	2004-09-12_15-17-34-60	0	6	128	116
5	2004-09-12_15-17-35-12	0	7	130	115
6	2004-09-12_15-17-35-27	0	19	126	100
7	2004-09-12_15-17-35-32	0	6	130	115
8	2004-09-12_15-17-35-82	-1	32	160	144
9	2004-09-12_15-17-36-02	0	4	130	118
10	2004-09-12_15-17-36-46	0	4	125	115
11	2004-09-12_15-17-36-58	-1	36	138	86
12	2004-09-12_15-17-37-00	0	20	136	90

■ Analyzing the Log Data

Use Excel's graph and mathematical functions to analyze the log data to obtain an appropriate threshold.

1. Display the log data as explained in "Checking the Log Data".

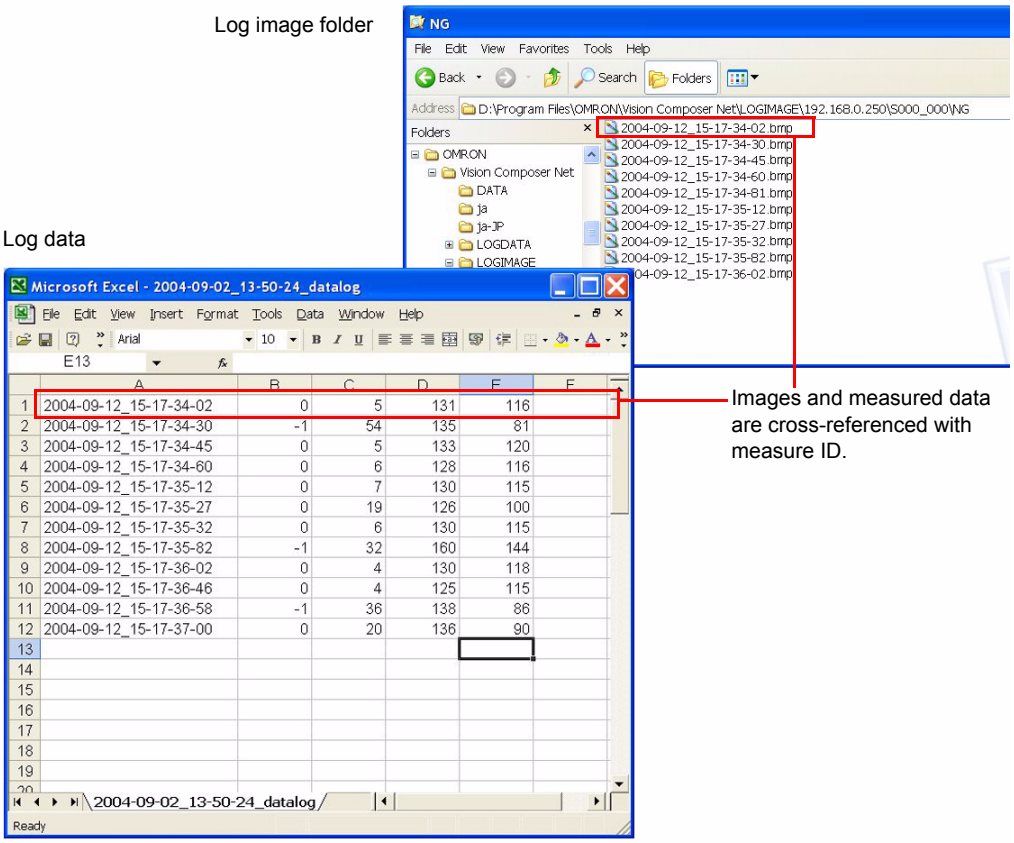
2. Use Excel's graph function to process/analyze the data to obtain an appropriate threshold.



■ Verifying the Log Data Against Log Images

Verifying the images against the measured data facilitates analysis of the trend for NG judgment.

The data must be verified using the measure ID.



CHECK!

Procedures and Excel macros for effective use of Excel and Vision Composer Net are available.

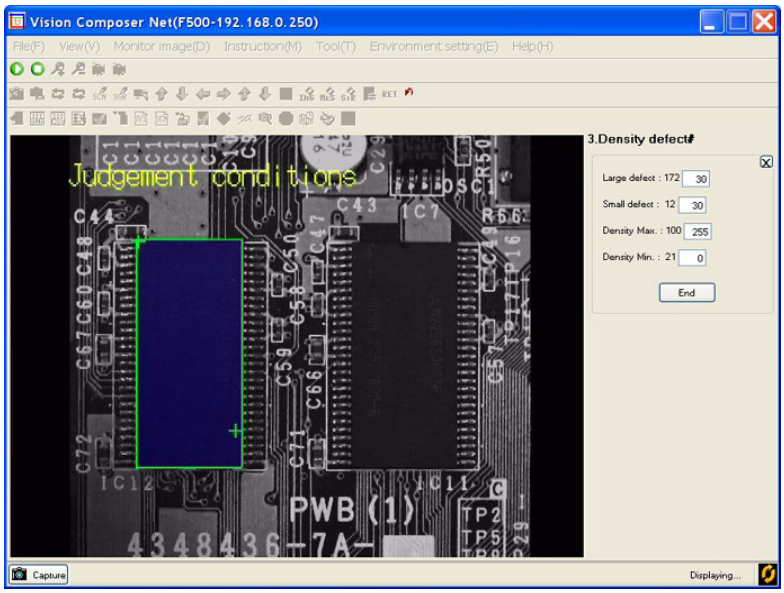
Reverse Look Up Manual

Changing the Threshold and Measurement Conditions

If necessary, the threshold and measurement conditions can be changed.
The following explains how to change the judgment value for density defect inspection.

1. Click [Scene setting] ( ) on the [Function] toolbar.
The Setting window will appear.

2. Change the judgment value for density defect inspection.
Setting window operating method
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3. The Setting window will close.

Checking the Setting Contents

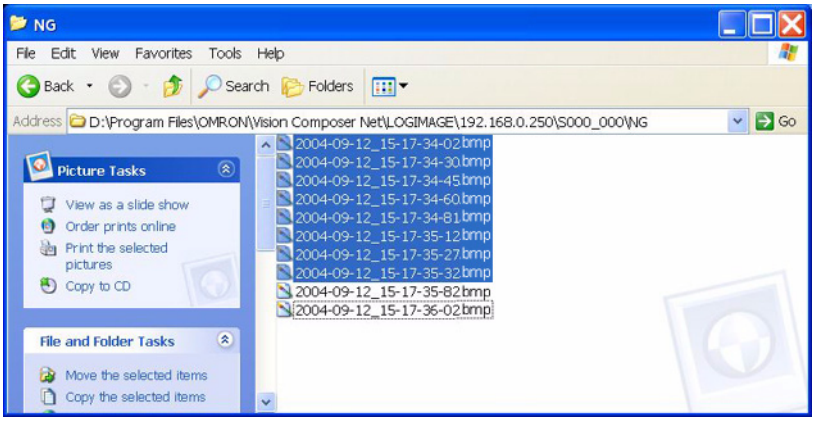
■ Re-calculation using Log Images

Perform re-calculation with the changed measurement conditions using log images.
For re-calculation, a scene that has the same image input-related settings as those for the measured scene must be used. Correct measurement is not possible if those settings differ.
The measurement results can be checked by the monitor image.

CHECK!
In the case of log images, up to four camera images are saved in one file. (Depending on the contents of the measured scene)

1. Select a log image(s).

More than one log image can be selected.



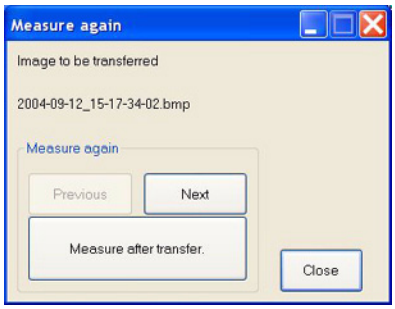
Make sure that the monitor image is currently displayed in the monitor window.

2. Drag the selected image and drop it in the monitor window area.

The [Re-calculation] dialog box will appear.

3. Click [Measure after transfer].

The current image will be transferred to the controller, where it is then measured.



4. Check the measured results by viewing the monitor image.

5. Click [Close] to end re-calculation.

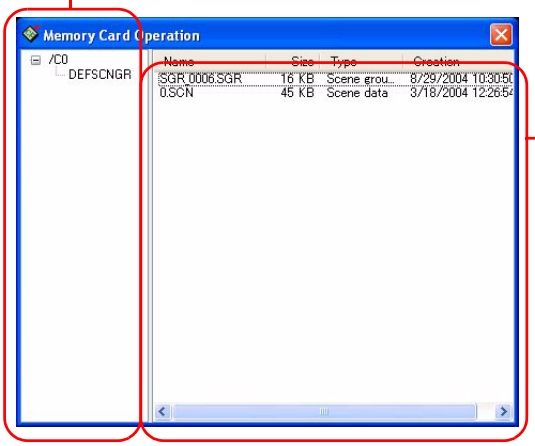
Memory Card Operation

This section describes operation of data stored in the memory card inserted into the controller. It is possible to create/delete a directory in the memory card, as well as to copy and rename a file.

Before starting operations, make sure that the memory card is inserted into the memory card drive on the controller.

CHECK!

This function does not allow you to copy data from the memory card to a personal computer and vice versa. To copy data from the memory card to a personal computer or vice versa, make sure that the memory card is inserted into the memory card reader connected to the personal computer.



Directory view
Displays the drive name to which the memory card is inserted as well as directories present on the memory card.

File view
Displays the files that are present in the drive or directory selected in the directory view.

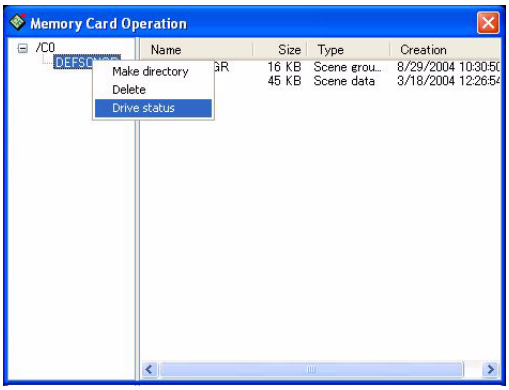
Creating/Deleting a Directory

A directory can be created or deleted by using the shortcut menu that appears when you right-click in the directory view.

1. Select the desired directory or drive.

2. Right-click on the selected directory or drive.

A shortcut menu will appear.



Item	Description
Make directory	Creates a new directory under the selected drive or directory. The directory name must consist of up to 256 characters (including the file extension). CHECK! Periods (.) cannot be used in directory names.
Delete	Deletes the selected directory.

3. Select the desired menu and click [OK].

The selected menu will be executed.

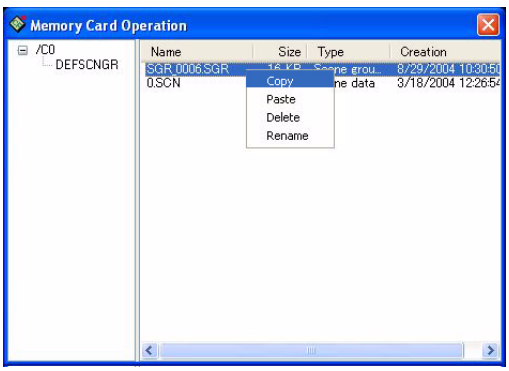
Copying/Deleting a File

A file can be created or deleted by using the shortcut menu that appears when you right-click in the file view.

1. Select the desired file.

2. Right-click on the selected file.

A shortcut menu will appear.



Item	Description
Copy	Copies the selected file. This item must be used together with [Paste].
Paste	Pastes the copied file. CHECK! The file will be pasted under the same name as the copy source file name. The file must be pasted in a directory different from the one in which the copy source file exists.
Delete	Deletes the selected file.
Rename	Renames the selected file. The file name must consist of up to 256 characters (including the file extension). CHECK! Periods (.) cannot be used in file names.

Operating the Drive

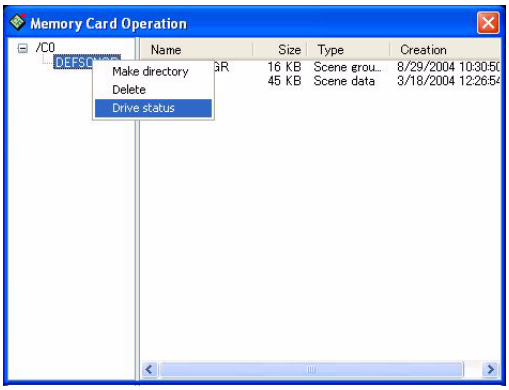
This section describes how to operate the status of the drive to which the memory card is installed.

The remaining capacity on the memory card inserted into the drive can be checked by using the shortcut menu that appears when you right-click in the directory view.

1. Select the desired directory or drive.

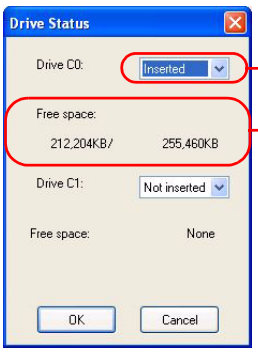
2. Right-click on the selected directory or drive.

A shortcut menu will appear.



3. Select [Drive status].

The status of the selected drive is displayed.



Displays the status of the selected drive.

Displays the remaining capacity/full capacity of the memory card.
If no memory card is inserted, “None” will be displayed.

Item	Description
Inserted	Displays whether a memory card is currently present in the drive.
Not inserted	
Stop	Turns OFF the power supply to the memory card. Before removing the memory card, make sure that the power to the memory card is turned OFF.

4. To remove the memory card, select [Stop] from [Drive status] and then click [OK].

If you want to check the remaining capacity on the memory card, click [Cancel].

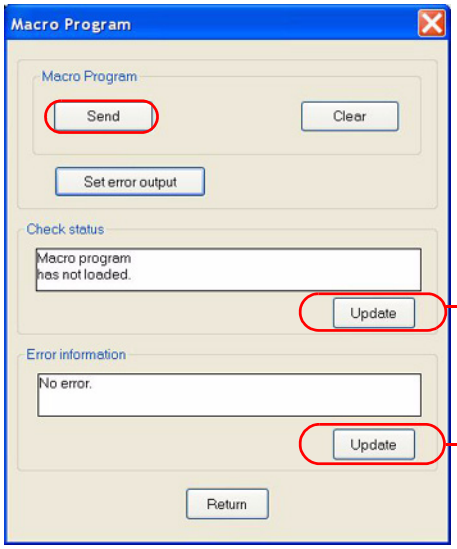
Macro Program

Macro programs created using a personal computer can be loaded to the controller and executed.
It is also possible to check the loaded macro programs for errors.

1. Click [Macro program] ( ) on the [Function] toolbar.

2. The following [Macro program] dialog box will appear.

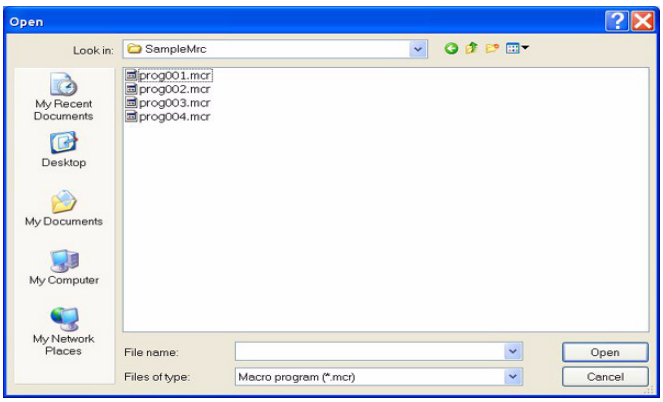
3. Click [Send].



Click this button to display the latest status.
Updated automatically when a macro program is loaded or cleared.

4. Specify the macro program to be loaded, and click [Open].

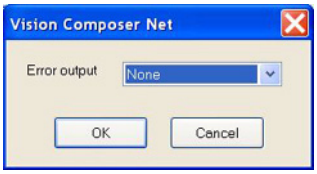
The loaded macro will be executed.



Setting Error Output

The loaded macro program is checked for errors, and if found, information regarding the errors is output.
Correct the macro program by referring to the error information.

1. Click [Set error output] in the [Macro program] dialog box.
2. Set [Error output] and click [OK].



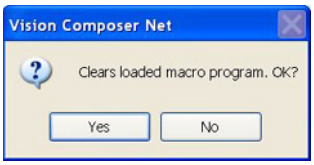
For the detail of settings
Application Software Operation Manual

Clearing a Macro Program

The macro program loaded to the controller can be cleared as explained below.

1. Click [Clear] in the [Macro program] dialog box.
2. Click [Yes].

The macro program loaded to the controller will be cleared.



SECTION 5
Operation/Management

Transferring Data Automatically 67

Setting the Data Storage Folder 67

Setting the Data Transfer Timing 68

Recording the Monitor Image 69

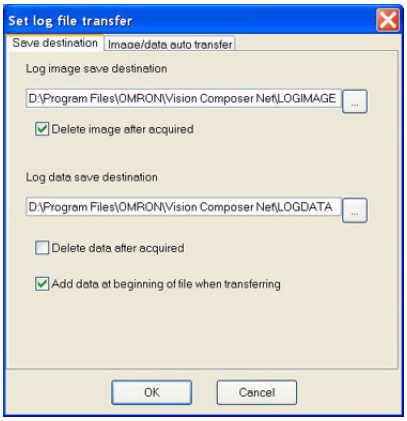
Transferring Data Automatically

The data logged to the controller's storage can be transferred to the personal computer automatically.
Transferring log images and data in the storage to the computer periodically enables centralized management of daily work contents.
To use this function, the controller must be set so that data is saved to the storage.
Vision Composer Net transfers the data from the connected controller to the personal computer.
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Setting the Data Storage Folder

Specify the folder where the data is to be stored.

1. From the menu bar, select [Environment settings/Set log file transfer].
2. Click the [Save destination] tab in the [Set log file transfer] dialog box.
3. Specify the folder path.



Item	Details
Delete image after acquired	If this checkbox is checked, the log images in the controller are deleted at the end of acquisition.
Delete data after acquired	If this checkbox is checked, the log data in the controller is deleted at the end of acquisition.
Add data at beginning of file when transferring	Log data is transferred with the date attached to its file name. YYYY-MM-DD_HH-MM_Log data's file name

CHECK!

No log is made if the storage has insufficient free space. So, if you want to execute auto data log, the following settings must be made.

	Item	Check
Log image	Delete image after acquired	Yes
Log data	Delete data after acquired	No
	Add data at beginning of file when transferring	Yes

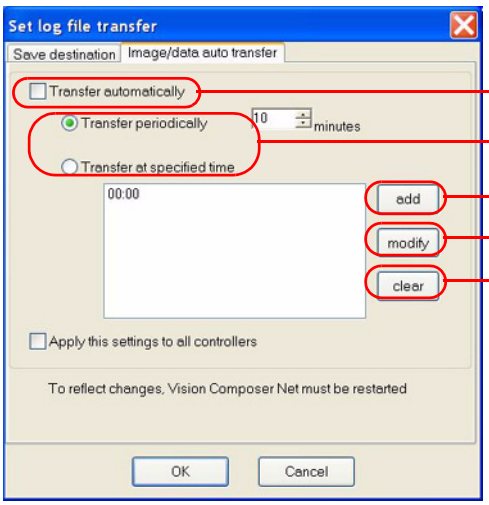
4. Click [OK].

Setting the Data Transfer Timing

Set the timing at which the data in the storage is to be transferred to the personal computer.

1. Click the [Image/data auto transfer] tab in the [Set log file transfer] dialog box.

2. Check the [Transfer automatically] checkbox and set the transfer conditions.



Check the [Transfer automatically] checkbox.

Select the desired timing and set the transfer conditions.

Click this button to add the transfer time to the list.

Click this button to change the transfer time for the selected data.

Click this button to delete the transfer time for the selected data.

CHECK! There are some cases where data cannot be transferred depending on log and communication load.

Item	Selection	Details
Transfer periodically	1 to 60 minutes	Data is transferred periodically at the specified intervals. This item is used, for example, when the production line is operated 24 hours a day or the daily log amount is larger than the storage capacity.
Transfer at specified time	00:00 to 23:59	Data is transferred at the specified time every day. This item is used, for example, when the production line stops measurement at a fixed time or the daily log amount is within the storage capacity. Up to 8 time points can be specified.
The specified conditions are applied for every connections.	-	The specified transfer conditions are applied for every Vision Composer Net. This item is useful when collecting data from multiple controllers. (*) To reflect the changes made to the transfer conditions, every Vision Composer Net must be re-started. *1: Connect Vision Composer Net for each controller.

CHECK! To reflect the changes made to the auto transfer settings, Vision Composer Net must be re-started.

3. Click [OK].

Recording the Monitor Image

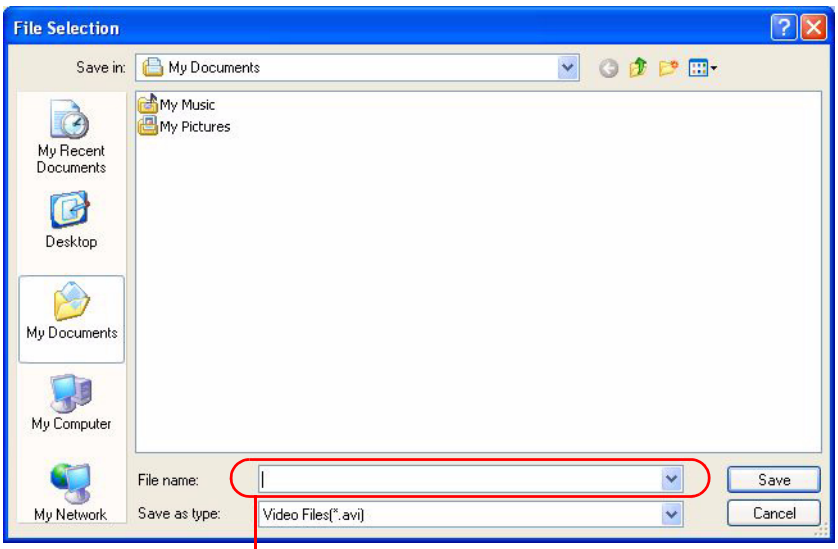
This section describes how to record the monitor image and save it as a video file (in AVI format). The saved file can be played using Windows Media Player etc.

CHECK!

If the monitor image is recorded for a long period of time, the file size will be heavy, so attention should be paid to the remaining hard disk capacity on the personal computer.

1. Click [Record dynamic image] ( ) on the [Monitor image] toolbar.
The window for selecting files will be displayed.

2. Specify the file name and the folder to which the data is to be saved, and click [Save].
Recording will start.



Enter the desired file name.

3. Click [Stop monitor display recording] ( ) on the [Monitor image] toolbar.
Recording will stop.

Recording the Monitor Image (Compression Mode)

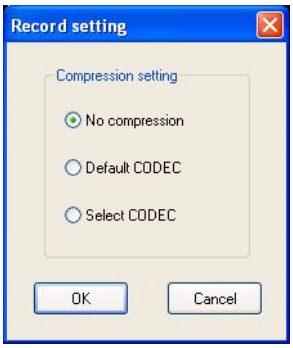
This section describes how to compress the monitor image by the specified method and record it. If the image is compressed, the file size will be reduced, enabling long-term recording. For compression, an appropriate codec installed on the personal computer will be used.

What is a Codec?
A codec is a device or software designed to compress moving images/voices or to decompress them. For the types and features of major codecs, refer to the Windows help.

CHECK!
To play a compressed file, the codec used to compress the file is required. The types of codecs installed on the personal computer may vary with the personal computer. Before playing a file, check the codec types installed on your personal computer.

1. Select [Environment setting/Record setting] from the menu bar.
The following record setting window will appear.

2. Select the desired compression setting.



Item	Description
No compression	Records the monitor image without compression.
Default CODEC	Compresses the monitor image and records it. The default Windows codec will be used.
Select CODEC	Compresses the monitor image and records it. When recording the monitor image each time, the codec to be used needs to be selected.

3. Click [OK].
The record image will be compressed from the next time when recording the monitor image.

SECTION 6
Maintenance

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Setting the Security Level

Access authority can be set in three levels for each user. When the security function is in use, operations are restricted according to the given access authority.
If an attempt is made to operate a restricted menu, the [Login] window will appear requesting you to enter the password.

Registering a User p.74

User information is registered to controllers. The controller to which user registration is made can be operated from another computer by making a login to the computer.

Access authority	Restrictions on operations
Administrator	Has full access authority for controller.
Supervisor	Subjected to some restrictions on access to controller.
Operator	Subjected to restrictions on most controller functions (e.g. setting change).

CHECK!

By default, the user name “Administrator” is registered.
When enabling the security function for the first time or when making user registration for the first time, make a login with “Administrator”. The default password is “omron”.
The user name and password are case-sensitive. So, make sure that they are entered correctly, taking into account both upper- and lower-case letters.
The user name “Administrator” cannot be deleted. However, the password can be changed.

Enabling the Security Function

To enable the security function, check the [Enable security] checkbox.
When the security function is enabled, the background color will turn yellow.

CHECK!

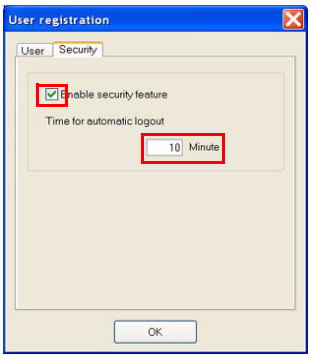
Operations cannot be performed using the console and console panel while the security function is in use.

1. Click [User registration] ( ) on the [Function] toolbar.

2. Enter the user name and password, and then click [OK].

3. Select the [Security] tab in the [User registration] window.

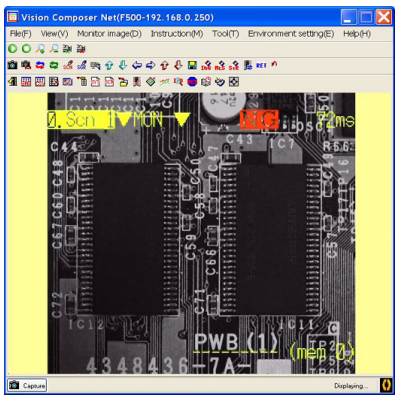
4. Check the [Enable security] checkbox and enter the auto logout timeout time.



Item	Selection	Details
Enable security feature	-	Checking the [Enable security] checkbox enables the security function. If you want to disable the security function, uncheck the checkbox (the check mark disappears).
Time for automatic logout	0 to 9999 minutes	A logout occurs automatically if no operations are performed for the specified period of time after login.

5. Click [OK].

The security function will be enabled and the background color will turn yellow.



Operation Restriction Table

While the security function is in use, operations for the menus given in the table below will be restricted.
If an attempt is made to operate a restricted menu, the [Login] window will appear.

OK: Operation possible No: Operation not possible

Menu		Availability of operation by access authority		
		Administrator	Supervisor	Operator
Operation instruction	Scene function	OK	OK	No
	Scene group function	OK	OK	No
	Display setting	OK	OK	No
	Set key operation	No	No	No
Tool	Flow edit	OK	OK	No
	Scene setting	OK	OK	No (partially) (*1)
	Controller setup	OK	No	No
	PC/controller data transfer	OK	OK	No
	System setting	OK	OK	No
	Memory card	OK	OK	No
	Macro program	OK	OK	No
	User registration	OK	No	No
	Console panel	No	No	No

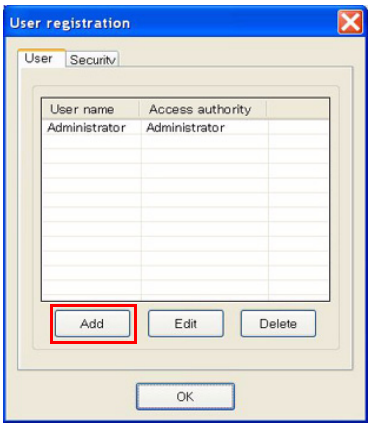
*1: Flow edit is not possible.

Registering a User

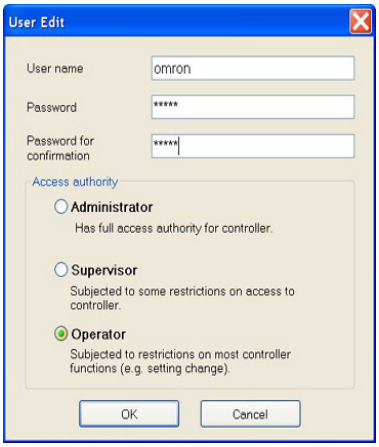
For user registration, the “Administrator” access authority is required.

1. Click [User registration] () on the [Function] toolbar.
2. Enter the user name and password, and then click [OK].

3. In the [User] tab page of the [User registration] window, click [Add].



4. In the [User edit] window, enter the user name and password, and then select the desired access authority.



CHECK!

- The user name and password can consist of alphanumeric characters and symbols. (Up to 16 characters)
- The user name and password are case-sensitive.

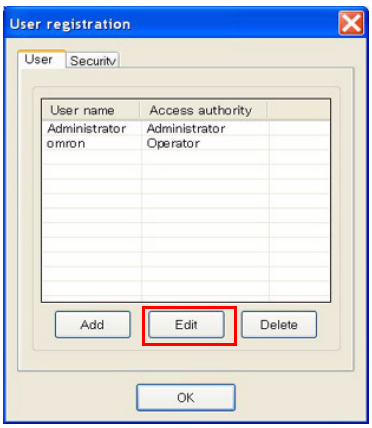
Characters that cannot be used for the user name
p.87

5. Click [OK].

■ Editing User Information

Registered user information can be changed.

1. Click [Edit] in the [User registration] window.



2. In the [User edit] window, change the password and access authority.

3. Click [OK].

■ Deleting a User

Unnecessary users can be deleted.

1. Select the user to be deleted in the [User registration] window.

2. Click [Delete].

3. The selected user will be deleted.

Making a Login

When an attempt is made to perform a restricted operation when the security function is in use, the [Login] window will appear.

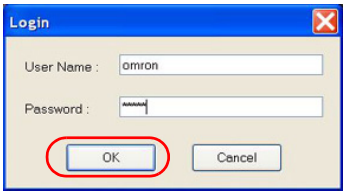
CHECK!

- The user name and password are case-sensitive.
- With the following menus, a logout will be made automatically when the operation is complete, and the set data will be saved.
  - Flow edit
  - Scene setting
  - System setting

[Scene setting] ( ) is used here as an example.

1. Click [Scene setting] ( ) on the [Function] toolbar.

2. Enter the user name and password, and then click [OK].

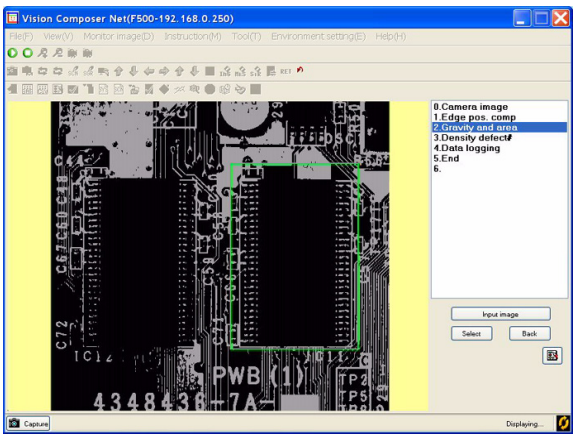


CHECK!

If the user has no access authority, an error message will appear.



3. Setting windowThe following window will appear.



Managing Setting Change History

If changes are made to scene data or system data when the security function is in use, the setting change history will be saved to Vision Composer Net.
It is also possible to set either to save the scene data setting list file or system data setting list file together with the history.

1. From the menu bar, select [Environment] – [Setting change history].

2. Check the [Save list information too when saving history data] checkbox.



Item	Details
Save list information too when saving history data.	If this checkbox is checked, the scene data setting list file or system data setting list file will also be saved to the personal computer together with the setting change history.

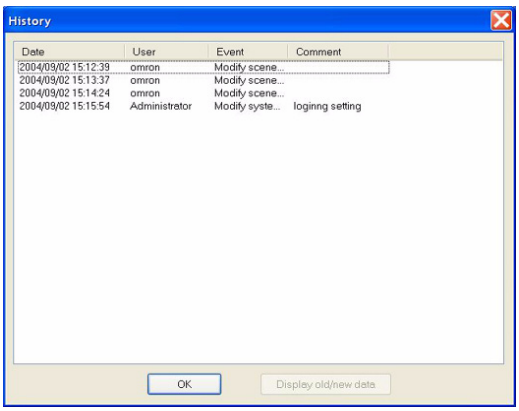
Checking the Setting Change History

The setting change history can be displayed for checking.

1. Click [Setting change history] ( ) on the [Function] toolbar.

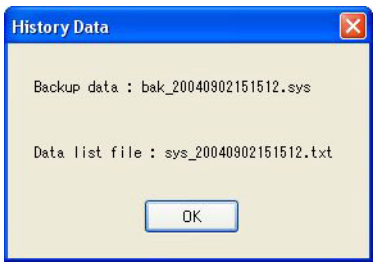
2. The setting change history will be displayed in list form.

Select the history whose contents you want to check.



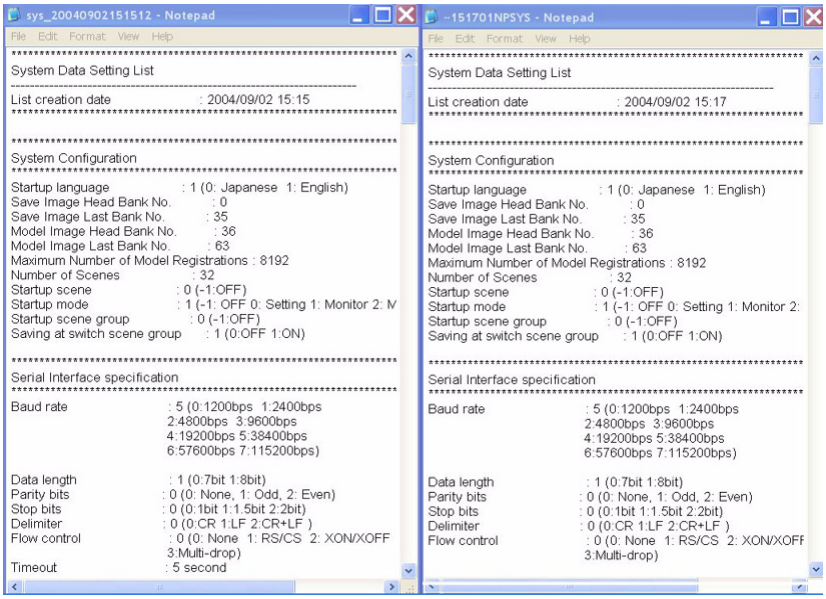
CHECK!

Right-clicking on the [History] window displays the file names for both backup data and data list file.



3. Click [Display old/new data].

4. A text editor will start and display the backup data and the latest data list.



CHECK!

Changes in the data and list can be highlighted if you use a text editor that is capable of showing differences between the files.

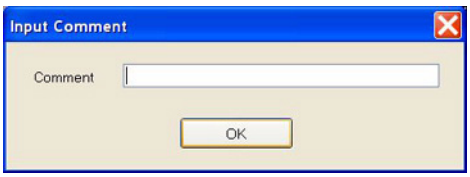
Adding a Comment

A comment can be added to the history.
Entering changes and reasons as a comment helps in controller management.
The comment can be viewed in the [History] window.

1. Make the desired changes to the system data or scene data.
2. Click [Yes].

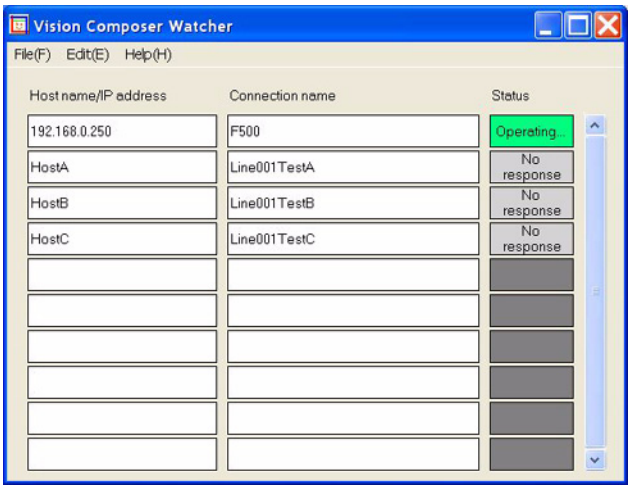


3. Enter a comment and click [OK].



Managing Controllers

Vision Composer Watcher enables you to display the status of each controller connected to the network.



Controller status

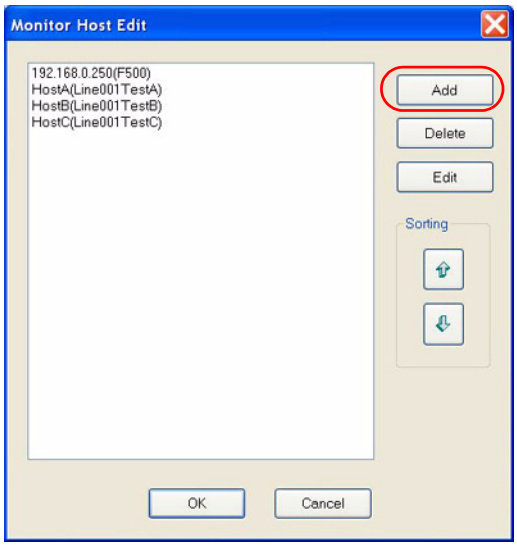
Status	Details
Operating…	Measuring or waiting for measurement.
Setting…	Settings are being made to the controller.
Error	An error message is currently displayed on the controller. Start Vision Composer Net and check the error in the monitor display area. CHECK! To start Vision Composer Net, double-click [Host name/IP address].
Not responding	No response from the controller. Troubleshooting p.92

CHECK!
Vision Composer Watcher is installed automatically when Vision Composer Net is installed.
Vision Composer Watcher, a license for Vision Composer Net must be registered in advance.

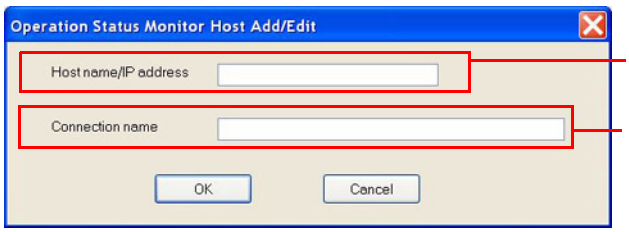
Registering the Controllers to be Monitored

Register the controllers to be monitored using Vision Composer Watcher.

1. Select [Start/Programs/OMRON/Vision Composer Net/Vision Composer Watcher].
2. From the menu bar, select [Edit/Edit].
3. Click [Add].



4. Enter the [Host name/IP address] and [Connection name].



Enter the controller's IP address.

Enter the desired connection name (e.g. line name, machine number).

CHECK!

When entering the host name instead of the IP address, DNS server settings need to be made. For details, contact the network administrator.

5. Click [OK].

■ Editing a Registered Controller

Change the settings for the controller to be monitored.

1. From the menu bar, select [Edit/Edit].
2. Select the controller whose settings are to be changed, and click [Edit].
3. Make the desired changes to the registration and click [OK].

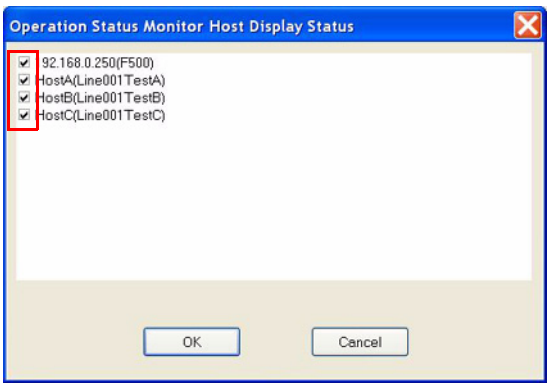
■ Deregistering a Controller

1. From the menu bar, select [Edit/Edit].
2. Select the controller to be deregistered, and click [Delete].

■ Hiding a Registered Controller(s)

A registered controller(s) can be hidden temporarily.

1. From the menu bar, select [Edit/Display setting].
2. In the [Main] window, uncheck the controller(s) you do not want to display (the check mark disappears).



CHECK! To re-display it, check it (the check mark appears).

3. Click [OK].

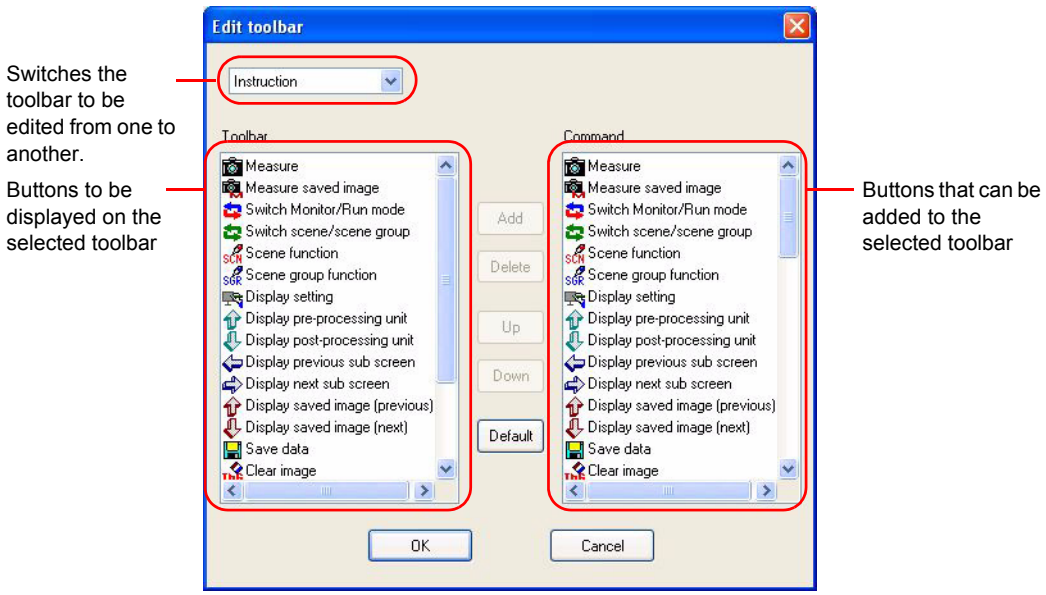
Editing a Toolbar

This section describes how to edit the [Instruction] and [Function] toolbars.
Buttons that are not often used can be hidden, or buttons can be relocated in such an order that they are easy to use.
Displaying only the necessary buttons improves operationality. It also prevents operation errors.

CHECK!

The toolbar edit status is saved per created connection shortcut.

1. Select [Environment setting] - [Edit toolbar] from the menu bar.
The following [Edit toolbar] dialog box will appear.



Item	Description
Add	Adds the buttons selected in the toolbar window (right-side window) to the toolbar.
Delete	Removes the buttons selected in the command window (left-side window) from the toolbar.
↑	Moves the buttons selected in the toolbar window (left-side window) up/down in the list. This will cause the order of the buttons displayed on the toolbar to be changed accordingly.
↓	
Default	Returns the buttons on the toolbar to the default settings.

2. Edit the toolbar.

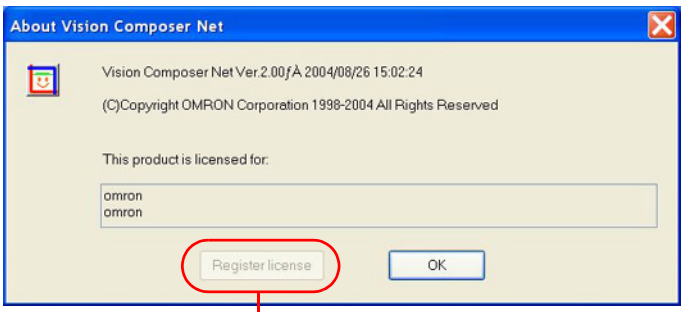
3. Click [OK].

SECTION 7
Appendix

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License Registration Method

Click the [License Registration] button and register the license key affixed on the “F500-CD” CD-ROM.



Click this button to register the license key.

CHECK!

The license key can also be registered by selecting [Start/Programs/OMRON/Vision Composer Net/Vision Composer Net License].

Troubleshooting

This section lists the errors that may be displayed on the screen, along with their probable causes and remedies.

Error Message	Action
Communication error (XXXXXX)	• Check that TCP/IP protocol settings made for the connected computer are correct. • Check that no personal firewall program is running on the computer. Connection is not possible if port restrictions are made, since Vision Composer Net communicates with the controller using HTTP protocol. • Check that the network function for the controller is set correctly. • Check that the [Use LAN proxy server] for Internet Explorer is not checked. To use a proxy server, check the [Do not use proxy server for local address] checkbox and select [Exception] for the controller's address in [Detail setting]. • Check that the IP address is unique.
Failed to execute specified processing properly.	• Check if there is sufficient free space in the controller's work memory. • Check if the set item can be handled with the controller.
Failed to save file.	Check that the hard disk on the computer has sufficient free space. Also check that the specified file is not read-only. Specify another disk drive as the storage destination. Or, specify another file name.
Name contains illegal characters.	The following characters cannot be used for the user name, file name and directory name. Other characters must be used. \/[ ] : < > | + = ; , ? *
No authority to perform	This operation cannot be executed by the current user. Make a login again as a user having higher access authority. Access authority p.72
Protocol error (HTTP protocol abnormal end)	• Check if the sufficient free space in the controller's storage. • If there is insufficient free space, transfer of files including scene data and image, and installation from Vision Composer Net are not possible. • Use the Storage Clear (CLR) to delete the data saved in the storage and re-start the operation.
Specified operation is not possible at this time.	Check the following points and then perform again. • The product is in the RUN or MON mode. • BUSY signal is OFF. • The operation is not performed during measurement. • Check that no any other users are operating the product. It is not possible for two or more users to operate at the same time. • Power to the controller was not turned OFF during operation of Vision Composer Net. If the power supply to the controller was turned OFF, Vision Composer Net must be re-started. • Check if the message box is displayed on the monitor screen. • Execute the specified operation again after closing the message box with a (RET).

Error Message	Action
Timeout	Check that controller is connected using [Connection check] (). If not, check the following points and then perform again. ■ When the controller's ETHERNET LINK LEDis not lit: • Check that the power to controller is ON. • Ethernet cable is correctly wired. • No wire-breakage in the Ethernet cable. • Neither controller's Ethernet connector nor computer's Ethernet port are faulty. ■ When the controller's ETHERNET LINK LEDis lit: • Check that the communications load is not too heavy. • The computer's processing load is not too heavy. (Only one program that requires a lot of processing capacity is being run.) • Check that F500-UM (latest version) is used. ■1-to-1 Connection • A cross cable (Ethernet cable) is used. ■1-to-N Connection or LAN • Power to the hub and router on the network is ON. • A straight cable (Ethernet cable) is used. • Cable is connected to the correct port on the hub. If the controller is not connected, check the following and then perform again. • The operation is not performed during measurement. • No large-size files are transferred. Timeout may sometimes occur if large-size files are transferred. Select [Environment] – [Communication] from the menu bar and change the timeout time, and then perform again.

Troubleshooting

Connecting to the Controller

Problem	Probable cause	Reference
The monitor display area is blank.	• Check that the power to controller is ON. • Check that Vision Composer Net is connected to the controller correctly. • Check that TCP/IP protocol settings made for the connected computer are correct. • Check that no personal firewall program is running on the computer. Connection is not possible if port restrictions are made, since Vision Composer Net communicates with the controller using HTTP protocol. • Check that monitor is displaying a monitor image. • Check that the communications load is not too heavy. • Check that the Ethernet cable is not bent. • Click [Check connection] ( ) on the [Instruction] toolbar to check the connection state.	Setup Manual p.15 p.28 p.87
The monitor image is unclear.	• Check that there are no noise sources (such as power lines) near the controller and cables. • Check that the communications load is not too heavy. • Check that the Ethernet cable used to connect the controller is 30m or shorter. CHECK! The image displayed in the Vision Composer Net monitor display area may sometimes differ from the actually measured image, since it is based on compressed data.	- Setup Manual
Monitor display stops.	• Check that the network adapter's communication speed and mode are appropriate. Display the network adapter's properties by clicking the [Configure] button in [Control pane/Network connection/Local area connection/ Properties]. In [Detail setting], set the properties for communication speed and mode to "Auto". Property names vary with the manufacturer of the network adapter. Major property names are as follows: • Media Type • Speed & Mode • Connection Type For details, refer to the network adapter manual. • Check that no wireless LAN is used. Monitor display may stop if communication becomes unstable. In this case, click [Display monitor image] to re-display the monitor image.	-
Displayed messages are garbled.	• Check that controller's display language is not Japanese. If Japanese is selected, messages may be garbled if the controller runs on non-Japanese Windows. When running on English Windows, make sure that English is selected as the controller's display language.	p.30 Application Software Operation Manual

Installing F500-UM

Problem	Probable cause	Reference
Cannot install F500-UM from Vision Composer Net.	• If installation is interrupted due to power failure etc. while installing F500-UM from Vision Composer Net, installation from the memory card reader may not be possible. • In this case, perform installation using the monitor and console. If there is insufficient free space, F500-UM may not be installed. Clear the storage and then install F500-UM from Vision Composer Net.	Application Software Operation Manual

Operating a Controller

Problem	Probable cause	Reference
Cannot operate the controller from Vision Composer Net.	• Check that the power to controller is ON. • Check that Vision Composer Net is connected to the controller correctly. • Check that no any other users are operating the product. It is not possible for two or more users to operate at the same time. • Power to the controller was not turned OFF during operation of Vision Composer Net. If the power supply to the controller was turned OFF, Vision Composer Net must be re-started.	Setup Manual
The response from the controller is slow.	• Check that there are no noise sources (such as power lines) near the controller and cables. • Check that the communications load is not too heavy. • Check that the computer's processing load is not too heavy. (Check that only one program that requires a lot of processing capacity is being run.) • Check that the IP address is unique. • Check that the computer is not connected to two or more controllers (one computer must be connected to one controller only). When connecting Vision Composer Net to two or more controllers, make sure that the personal computer has the recommended or higher specifications.	- p.101
Not possible to draw in the monitor display area.	• Check that the selected item allows drawing in the monitor display area. Some items do not allow drawing in the monitor display area. Refer to the messages displayed in the setting window.	p.31

Logging

Problem	Probable cause	Reference
Cannot log images and data.	• Check that all the image log and data log settings in [System/Network function/Storage] are set to “All” or “NG only”. • Check that there is some free space in the storage. • Check that the storage’s writing-life is not exceeded. If the storage’s writing-life has been exceeded, “STORAGE ERROR” will appear at start-up. • Check that the memory card is inserted to the storage correctly (when replacing the card with a new one). • Check that a memory card of the specified type is used.	p.51 Setup Manual
Cannot transfer images and data to computer.	• Check that the storage folder is allowed to write data. • Check that no any other users are operating the product. It is not possible for two or more users to operate at the same time.	-

Re-calculation a Log Image

Problem	Probable cause	Reference
Cannot display the re-calculation results.	• Check that monitor is displaying a monitor image.	p.28

Security Function

Problem	Probable cause	Reference
Cannot remember the user name and password.	• Re-register as a user having “Administrator” access authority or request re-issue of the password. If you cannot remember the password for “Administrator”, perform [Setup menu/Clear memory] on the controller. For this operation, “F500-UM” memory card, console and monitor are required. CHECK! Performing [Clear memory] will initialize the controller. Before performing [Clear memory], the setting data must be backed up.	p.74 Application Software Operation Manual p.46

Vision Composer Watcher

Problem	Probable cause	Reference
Registered controller is not displayed.	• Check that Vision Composer Watcher is not set to hide the controller. In [Display setting], make sure that the corresponding controller checkbox is checked (i.e. a check mark is displayed).	p.83
"Not responding" is displayed as the controller status.	• Check that the controller is connected correctly. Click [Check connection()] in the Vision Composer Netwindow to check the connection status. If the controller is connected correctly, check whether the controller is registered properly. • F500-UMCheck that F500-UM (latest version) is used.	p.88 p.82 p.94

Q&A

Controller

Questions	Answers
Is it possible to connect to Vision Composer Net using Ethernet of F250 and F270?	Not possible. The Ethernet communication method differs between F250/F270 and Ethernet models (i.e. models whose model name contains “ETN”).
Is it possible to communicate with controllers located at overseas factories?	Possible if there is no firewall in the network passage to the controller to be connected. For details, contact the network administrator.
Please give an example of setting conditions for each data log processing item.	Two examples are given below. • CSV file (comma separated text format) Used to display data using Excel and convert it to a graph and perform statistical analysis, or to import it to SCV-compatible RDB. File name: xxxxx.csv Measure ID: Must be selected. Field separator: Comma Record separator: CR+LF (Windows OS) Minus: “-” • TXT file Useful when using Excel’s query function etc. Use of the Excel’s query function and Vision Composer Net’s data auto update function allows you to display data graphically in real time. The setting method is given in the Customize Manual. File name: xxxxx.txt Measure ID: Must be selected. Field separator: Same separator as that used for query function must be used. Record separator: CR+LF (Windows OS) Minus: “-”

Compatibility with Previous Versions

Questions	Answers			
Is it possible to use Vision Composer Net with old-version F500-UM?	Whether it is possible or not is given below for each combination.			
		F500-UM Ver.2.0(*1)	F500-UM Ver.2.1(*1)	F500-UM Ver.3.0
	Vision Composer Net Ver.1.0	All the functions of Vision Composer Net Ver. 1.0 can be used.	All the functions of Vision Composer Net Ver. 1.0 can be used.(*2)	All the functions of Vision Composer Net Ver. 1.0 can be used.(*2 *3)
	Vision Composer Net Ver.2.0	Not allowed to use.	All the functions of Vision Composer Net Ver. 2.0 can be used.	All the functions of Vision Composer Net Ver. 2.0 can be used.(*3)
	Vision Composer Net Ver.3.0	Not allowed to use.	Not allowed to use.	All the functions of Vision Composer Net Ver. 3.0 can be used.

*1: The software should not be installed on F210-C10-ETN/F210-C15-ETN.

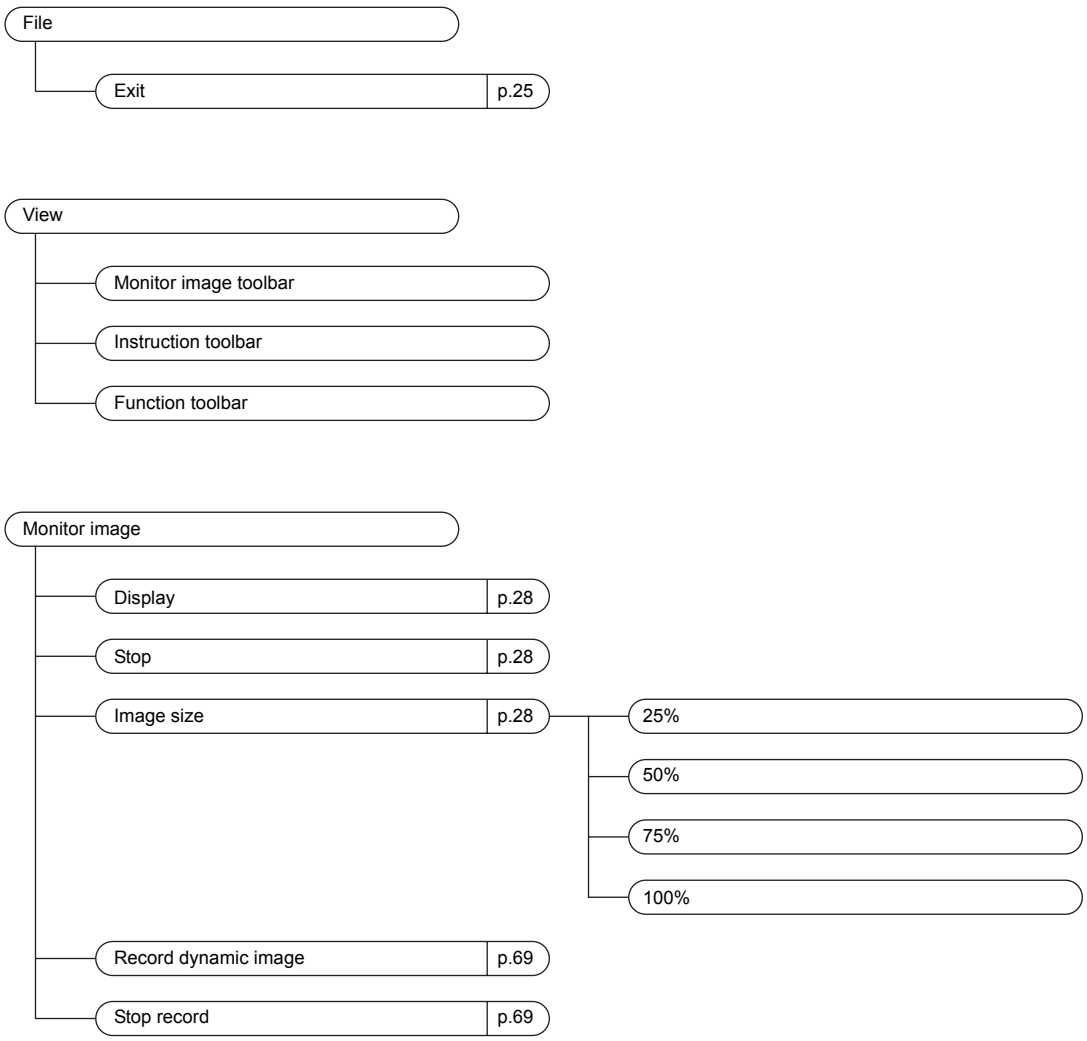
*2: If user registration has been made to the controller, the controller cannot be operated from Vision Composer Net Ver. 1.0.

*3: The software should not be used in the case of F210-C10-ETN/F210-C15-ETN.

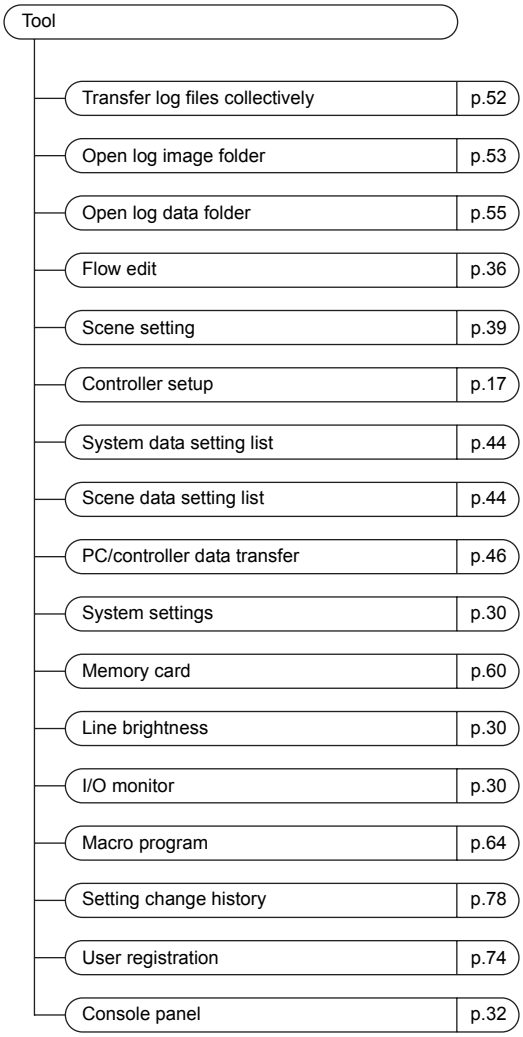
Monitor Display Recording

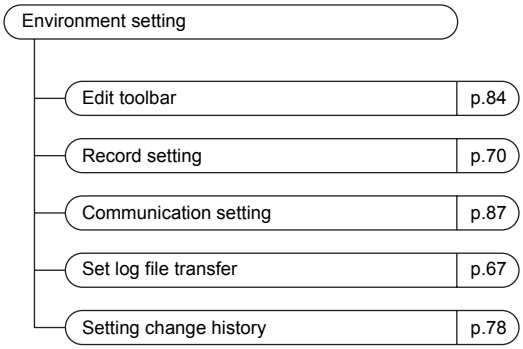
Questions	Answers
Please explain the file format used for monitor image recording and how to play the recorded file.	Recorded data is saved in AVI format. The data is saved by x1 magnification ratio (image size: 636 x 480) even if the monitor image is zoomed out. Audio is not recorded. The saved file can be played using Windows Media Player. CHECK! Frames streamed to the computer can be recorded. Some frames are not recorded if the network speed is low or the computer's specifications are not sufficient.
Pease explain the file size required for monitor image recording.	If F500 controller is used, approximately 20M bytes are required per second (in non-compression mode). Long-time recording results in a larger file size. Pay attention to the free space in the hard disk of the personal computer.

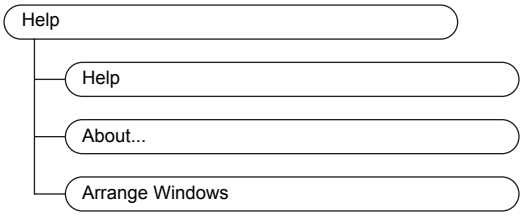
Menu Hierarchy



- Instruction
  - Measure p.28
  - Measure saved image p.28
  - Switch Monitor/Run mode p.28
  - Switch scene/scene group p.29
  - Scene function p.29
  - Scene group function p.29
  - Display setting p.29
  - Display pre-processing unit p.29
  - Display post-processing unit p.29
  - Display previous sub screen p.29
  - Display next sub screen p.29
  - Display saved image (previous) p.29
  - Display saved image (next) p.29
  - Save data p.29
  - Clear image p.29
  - Clear measurements p.29
  - Clear storage p.29
  - Check connection p.29
  - Return p.29
  - ENT p.29
  - ESC p.29
  - TRG p.29
  - SHIFT+ENT p.29
  - SHIFT+ESC p.29
  - SHIFT+TRG p.29
  - UP p.29
  - DOWN p.29
  - LEFT p.29
  - RIGHT p.29
  - SHIFT+UP p.29
  - SHIFT+DOWN p.29
  - SHIFT+LEFT p.29
  - SHIFT+RIGHT p.29
  - UP+LEFT p.29
  - UP+RIGHT p.29
  - DOWN+LEFT p.29
  - DOWN+RIGHT p.29
  - SHIFT+UP+LEFT p.29
  - SHIFT+UP+RIGHT p.29
  - SHIFT+DOWN+LEFT p.29
  - SHIFT+DOWN+RIGHT p.29
  - F1 p.29
  - F2 p.29
  - F3 p.29
  - F4 p.29
  - F5 p.29
  - F6 p.29
  - F7 p.29
  - F8 p.29
  - F9 p.29
  - Reset controller p.29

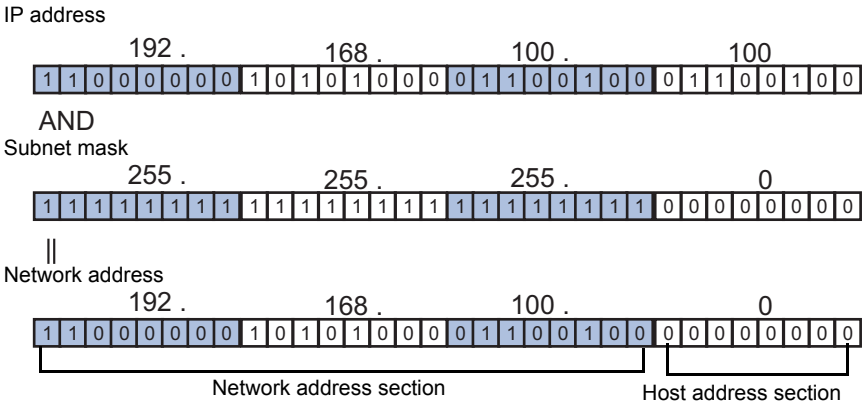
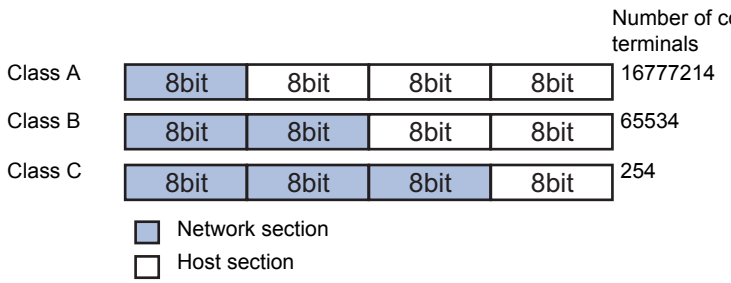

Tool
Transfer log files collectively
p.52
Open log image folder
p.53
Open log data folder
p.55
Flow edit
p.36
Scene setting
p.39
Controller setup
p.17
System data setting list
p.44
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Terminology

Network Configuration

Terms	Explanation
IP address and subnet mask	IP address (Ipv4) is expressed by a 32-bit integer, and normally, consists of four 8-bit decimal numbers, separated from each other by a dot. The upper section indicates the network address, and the lower indicates the host address. The value that separates the network section from the host section is called the subnet mask. The network address is obtained by performing “AND” of “1” bits of the subnet mask and the IP address. Example) IP address and subnet mask (for class C)  Network devices used in the same network have the same network address, and a unique host address is given to each of these devices.
Network class and class range	Network addresses are classified by network class decided by the “class full address” method. There are five network classes (A to E), and classes A, B or C are selected according to the number of terminals (e.g. computer, network devices) connected to the network.  *1: CIDR method is also available.

Terms	Explanation
Private address and class range	Normally, private addresses are used for small-size networks and LAN that is not directly connected to Internet. Private addresses are IP addresses provided for non-direct network connection. Private addresses given for each class range are shown below: Class A: 10.0.0.0 to 10.255.255.255 (10.0.0.0/8) Class B: 172.16.0.0 to 172.31.255.255 (172.16.0.0/12) Class C: 192.168.0.0 to 192.168.255.255 (192.168.0.0/16)
Default gateway	Gateway is used to relay data among different networks. When transferring data between terminals that are not connected to the same network, the data will be sent to the default gateway. The default gateway then dispatches the data to an appropriate network based on the data's receiver information.
HUB	HUB is a device designed to branch/relay cables on network (e.g. LAN). It allows more devices to be connected to the network. Various kinds of HUB are available (e.g. 4-, 8-, 12-, 16-, 24-port). If more ports are required, HUBs can be cascaded (i.e. two or more HUBs are connected in tree form) to increase the number of ports easily. However, if too many HUBs are connected, the signal will attenuate, hindering correct communications among terminals. So, make sure that the number of nodes at the ends of the network is 4 or less.
Straight cable and cross cable	Straight cables are used to connect computers to non-computer devices (e.g. modem, HUB). Cross cables are used to connect two computers directly (1-to-1 connection). Input and output wires in cross cables are crossed so that correct connections are made at the sender and receiver sides.

Operating Environment

The following are the system requirements for using Vision Composer Net.

CPU		Pentium III 600MHz or higher (Pentium III 1GHz or higher recommended)
OS		Windows 2000 Professional Service Pack 4 or higher Windows XP Home Edition Service Pack 2 or higher Windows XP Professional Service Pack 2 or higher
Memory		192MB or larger (256MB or larger recommended)
Hard disk		Free space: 300MB or larger
Display monitor		Resolution: 1024 × 768 or higher Display colors: High Color (16 bits) or higher (True Color (32 bits) or higher recommended)
Network		10BASE-T compatible network (100BASE-TX recommended)
Vision sensor		
	Controller	F500-C10-ETN/F500-C15-ETN F210-C10-ETN/F210-C15-ETN
	Application software	F500-UM (Ver. 3.00 or higher)

Version-up Information (Ver.2 to Ver.3)

Contents of version-up from F500-CD2 to F500-CD3 are shown below.

Changes	Details	Reference
The toolbar edit function has been added.	This function allows you to remove the buttons that are not often used and change the button display order. Displaying only the necessary buttons prevents operation mistakes and improves ease of operation.	p.84
Ease of the key assign function has been improved.	Functions assigned to console keys can be executed from the menu bar and [Instruction] toolbar.	p.28 p.84
The compression function has been added for monitor image recording.	Use of the compression function enables recording of the monitor image in a shorter file size.	p.70
Monitor image display speed has been improved.	Compared to the F500-CD2, monitor image delay is smaller and its display speed is faster.	–
Manuals have been added.	The Tutorial Manual and Reverse Look Up Manual have been added. They contain such useful information as application examples.	p.8
The software can be connected to more controllers.	The software can be connected to the F210-C10-ETN/F210-C15-ETN.	–

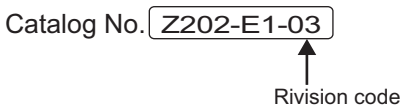
Version-up Information (Ver.1 to Ver.2)

Contents of version-up from F500-CD1 to F500-CD2 are shown below.

Changes	Details	Reference
Security function was added.	Access authority can be set in three levels for each user.	p.72
Modified to enable saving of the history of settings changes.	History of changes to the scene data and system settings can be saved to Vision Composer Net. It is also possible to set either to save the original scene data setting list file or system data setting list file together with the history.	p.78
Modified to display a list of the status of each controller.	Use of Vision Composer Watcher enables you to display the status of each controller connected to the network.	p.81
Modified to facilitate setting of inspection conditions and system settings.	Inspection conditions and system settings can be set in the Setting window.	p.31 p.39
Modified to capture and record the monitor images.	Monitor images can be captured and recorded to the personal computer. Captured images are saved in BMP format and recorded images in AVI format.	p.28

Revision History

The manual revision code is provided at the end of the catalog number on the CD-ROM.



Revision code	Date	Details
03	Jan. 2005	Original production of English Version.

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