

Cat. No. V100-E1-01

NS-Series

**NS12-TS01□-V2, NS10-TV01□-V2,
NS8-TV01□-V2, NS5-SQ11□-V2,
NS5-TQ11□-V2, NS5-MQ11□-V2**

Programmable Terminals

Web Interface Manual

OMRON

Introduction

This manual describes only the configuration and settings required to use NS Web Interface.

Please be sure to read and fully understand related manuals including NS Series Setup Manual, NS Series Programming Manual and CX-Designer Online Help before using the NS series Programmable Terminal, and read this manual when using NS Web Interface.

- Copyright and Trademark

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- Notation and Terminology

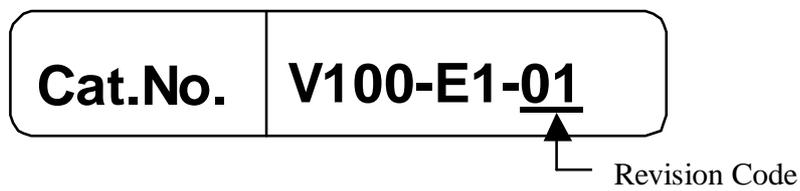
Indicates additional information on operation, descriptions, or settings.

Reference



Revision History

A manual revision code appears as a suffix to the catalog number on the cover of the manual.



Revision Code	Date	Revised content
01	June 2008	Original production

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1 Overview

This section describes an overview of the functions of NS Web Interface. This also describes the operating environment for NS Web Interface.

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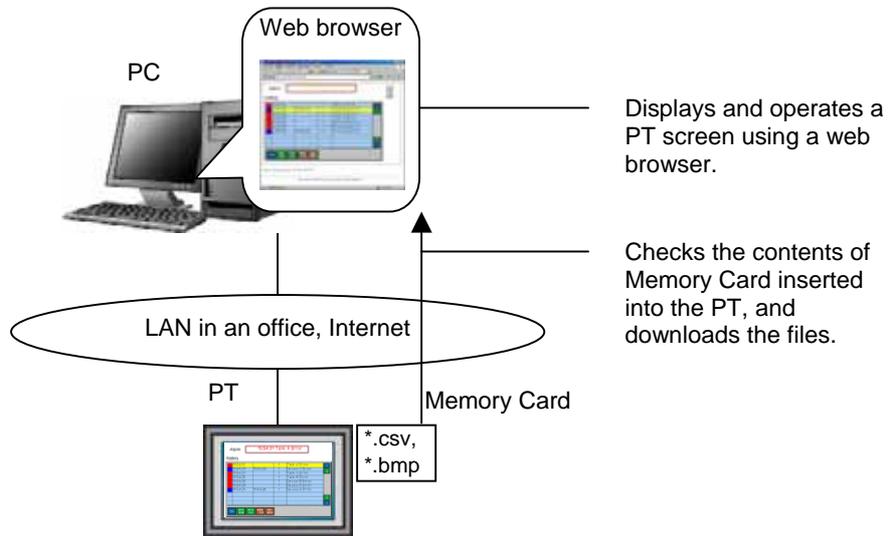
1-1 What is NS Web Interface?

1-1 What is NS Web Interface?

NS Web Interface is a function that monitors a screen that an NS-series PT displays using a web browser on a personal computer connected to an NS-series PT (hereinafter called "the PT") via Ethernet.

NS Web Interface has the following functions.

- Monitors a PT screen at the site using a web browser.
- Operates a PT screen at the site using a web browser.
- Checks the contents of the files in the Memory Card inserted into the PT at the site, and downloads the files.

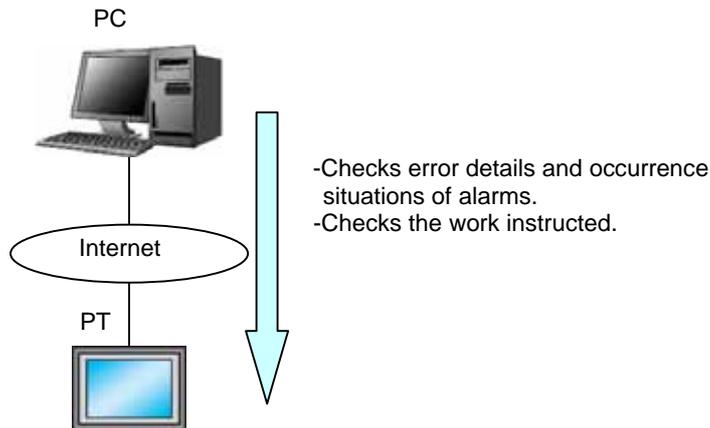


1-2 What NS Web Interface Can Do

This section contains the usage examples of NS Web Interface.

- **Remote Monitoring**

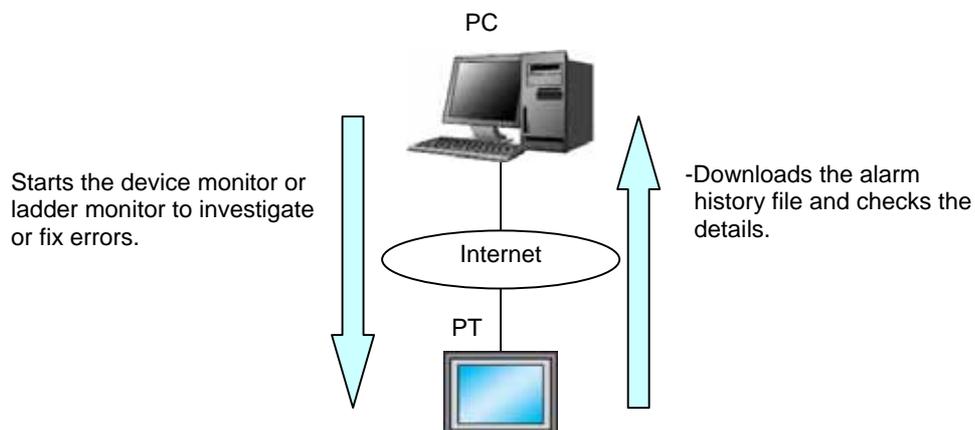
When a problem is reported from the end user of the PT, NS Web Interface allows users to check error and alarm details displayed on the PT by accessing the end user's PT from a web browser on your computer. Also when users instructed an operator, users can check work done by the operator using a web browser.



- **Remote Operation**

When a problem of a device is reported from a factory, a designer accesses the PT using a web browser. From a web browser, it is possible to operate the PT, start a device monitor or ladder monitor, and investigate and fix errors.

It is also possible to download an alarm history file (csv file) stored in the Memory Card inserted into the PT and check the contents.



1-3 Operating Environment

1-3 Operating Environment

The following shows the system configuration for connecting a PT on a network to a personal computer using NS Web Interface.

1-3-1 Necessary NS Series V2 Configuration

- **NS-series PT Models**

Any of the following NS-series V2 is required to use NS Web Interface.

Model
NS12-TS01(B)-V2
NS10-TV01(B)-V2
NS8-TV01(B)-V2
NS5-SQ11(B)-V2
NS5-TQ11(B)-V2
NS5-MQ11(B)-V2

- **PT System Program**

The following version of the system program must be installed in your NS-series V2 in order to use the NS Web Interface.

NS System Version
Version 8 or later

1-3-2 Necessary Network Environments

Your NS-series V2 must be able to be connected to a personal computer via one of the following Ethernet standard in order to use the NS Web Interface.

Standard
10Base-T or 100Base-TX

1-3-3 Necessary Web Browser

The following web browsers can show a PT screen on a personal computer.

Web browser
Microsoft Internet Explorer Ver.6
Microsoft Internet Explorer Ver.7

2 Using NS Web Interface

This section explains how to connect a PT to a web browser on a personal computer using NS Web Interface.

2-1 Connection Method	2-2
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2-1 Connection Method

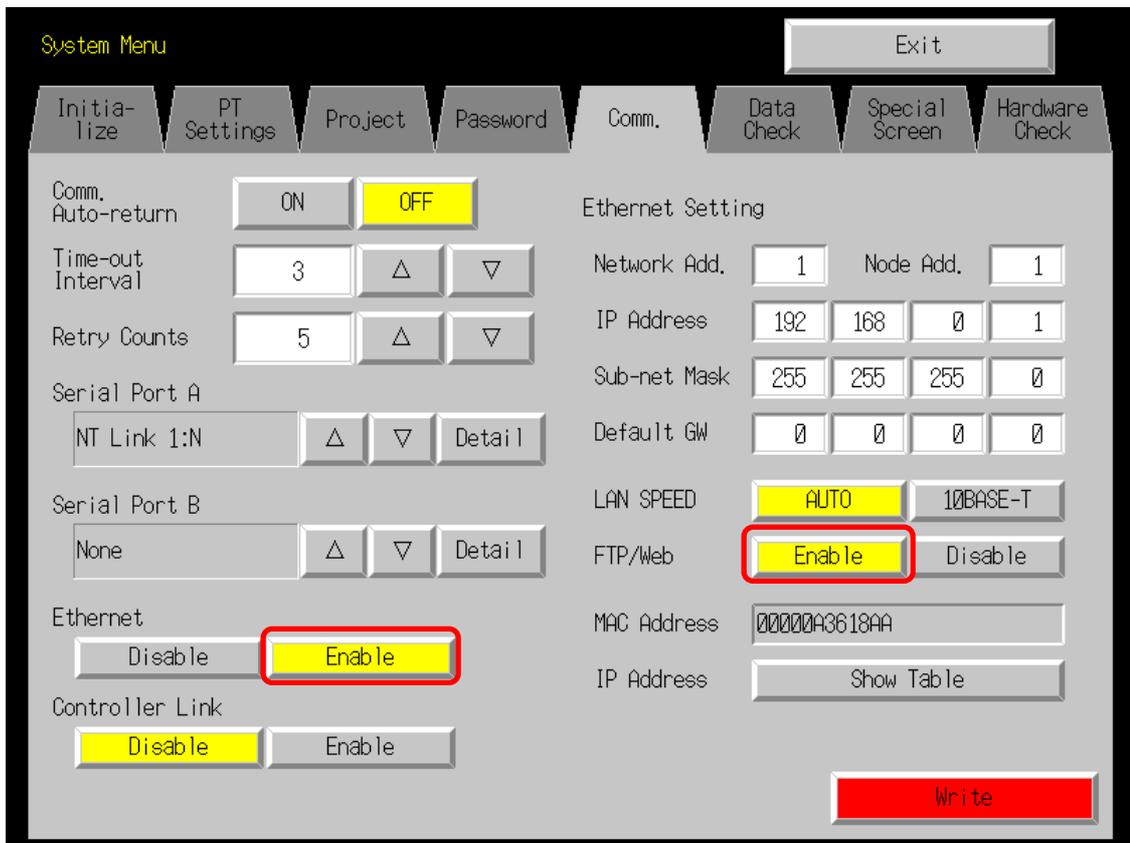
This section explains how to connect a PT to a web browser on a computer using NS Web Interface.

This document uses Windows XP and Microsoft Internet Explorer Ver.6 as an example. For details on the operating system, the setting of the web browser and operation methods, refer to manuals for each product.

2-1-1 PT Settings

To use NS Web Interface, the following settings must be made in the PT System Menu.

1. Turn ON the power to the PT so that the PT is in the RUN mode. Display the System Menu by pressing two of four corners of the touch panel.
2. Select **Comm.** Tab.
3. Set **Ethernet** to **Enable**.
4. Set **FTP/Web** to **Enable**.



5. After settings, press **Write** Button. Changes will be enabled after restarting the PT.

Reference

- ◆ When NS Web Interface is used, a language other than Japanese must be used as the system language.

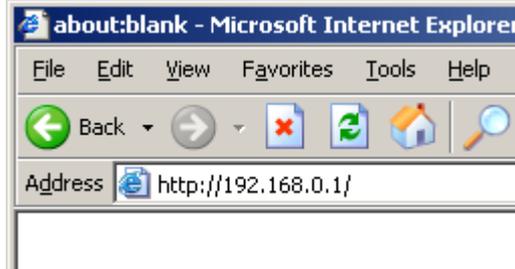
2-1-2 Connecting a Web Browser to a PT

This section explains how to connect a Web Browser to a PT.

- 1. Start a web browser.
- 2. Input the following URL.

http://(PT IP Address)/

When the PT IP Address is "192.168.0.1"



To directly open each screen of NS Web Interface, specify the following URL. For details on each screen, refer to **3 The Functions of NS Web Interface**.

Screen	URL
Monitor Screen	http://(PT IP Address)/monitor.html
Monitor Screen (32768 color display)	http://(PT IP Address)/monitor32k.html
Monitor Screen (256 color display)	http://(PT IP Address)/monitor256.html
Monitor Screen (16 grayscale levels)	http://(PT IP Address)/monitor16.html
Operation Screen	http://(PT IP Address)/operation.html
Files in Memory Card Screen	http://(PT IP Address)/memcard.html
Configuration Screen	http://(PT IP Address)/config.html
Menu Screen	http://(PT IP Address)/menu.html

- 3. The login screen will be displayed.



Reference

- ◆ The NS Web Interface login uses the Basic Authentication defined by the HTTP.
- ◆ It is possible to set whether to use the user authentication login screen or not when displaying Monitor Screen. Refer to **4 NS Web Interface Settings** for the settings.

4. Enter the user name and password.

The factory settings for the user name and password are as follows.

User name	default
Password	default

Reference

- ◆ For information on how to change the user name and password, refer to “FTPFunction.pdf” included in the CX-One or CX-Designer’s utility disk.

5. Click **OK** Button. The menu screen will be displayed.



Item	Description
Monitor	Monitors the screen currently displayed on the PT.
Operation	Monitors the screen currently displayed on the PT. Operates the PT screen by mouse clicking the web browser.
Files in Memory Card	Displays a list of files in the Memory Card inserted into the PT. Displays the contents of the files in the Memory Card, and downloads to the web browser.
Configuration	Make settings related to NS Web Interface.

Details on each screen are explained in **3 The Functions of NS Web Interface**.

Reference

- ◆ The initial screen can be changed by setting. For details on the setting, refer to **4 NS Web Interface Settings**.

3 The Functions of NS Web Interface

This section explains the functions of NS Web Interface.

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3-1 A List of the Functions of NS Web Interface

3-1 A List of the Functions of NS Web Interface

NS Web Interface has the following functions (screens).

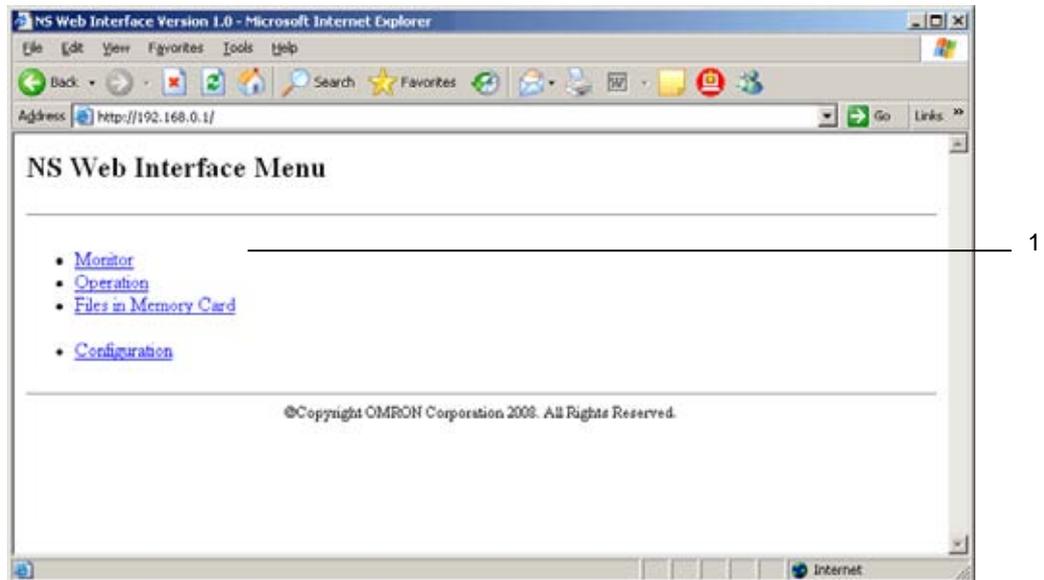
Detail	Content
Menu screen	The menu screen of NS Web Interface.
Monitor screen	Monitors the screen currently displayed on the PT.
Monitor screen (Color Specification)	Specifies the number of colors shown on the web browser, and monitors the screen currently displayed on the PT.
Operation screen	Monitors the screen currently displayed on the PT. Also operates the PT screen by mouse clicking the web browser.
Files in Memory Card screen	Displays a list of files in the Memory Card inserted into the PT. Displays the contents of the files in the Memory Card and downloads to the web browser.
Configuration screen	Make settings related to NS Web Interface.

Reference

- ◆ For Configuration screen, refer to **4 NS Web Interface Settings**.

3-2 Menu Screen

The Menu screen displays the following screen.



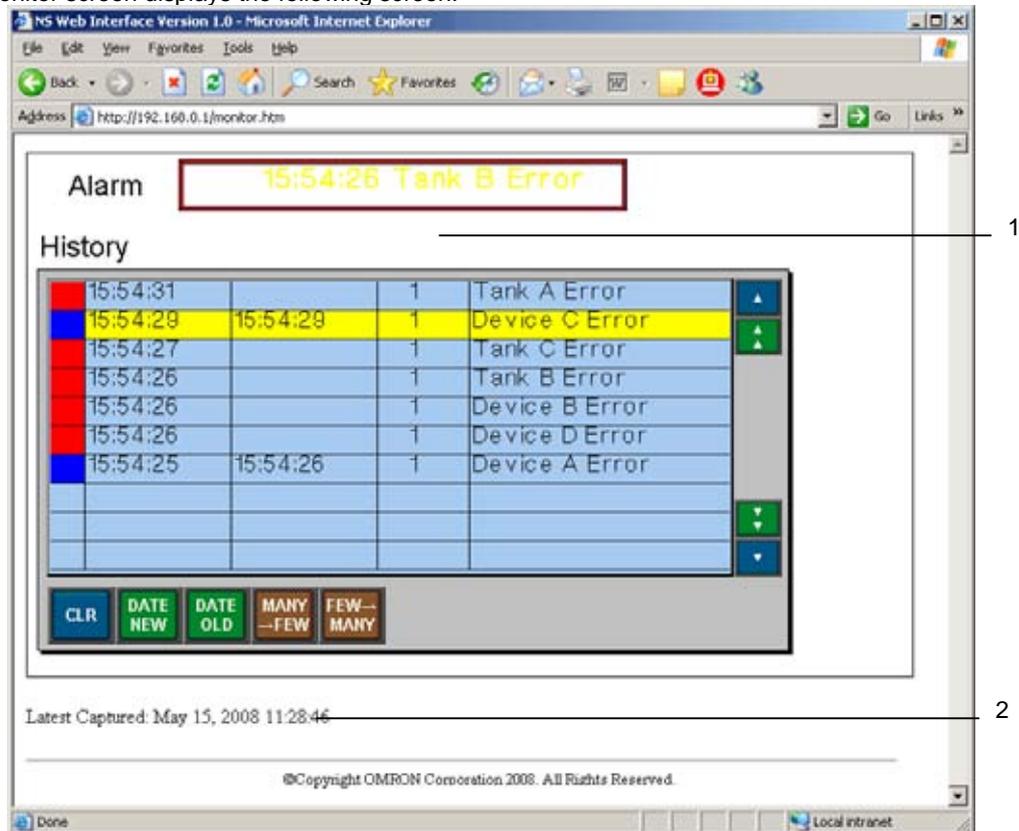
No.	Item	Description
1	Menu	Displays a list of the NS Web Interface screens. Clicking will move to each screen.

3-3 Monitor Screen

3-3 Monitor Screen

3-3-1 Monitor Screen

The Monitor screen is used to display a PT screen.
The Monitor screen displays the following screen.



No.	Item	Description
1	Monitor Screen	Displays a PT screen.
2	Latest Captured	Displays the date and time when a PT screen was read.

Reference

- ◆ A PT screen cannot be operated with the Monitor screen.
To operate a screen, display the Operation screen.
- ◆ To hide the Latest Captured, make a setting. For details on the setting, refer to **4 NS Web Interface Settings**.

3-3-2 Updating a Screen Display

The Monitor Screen periodically reads a screen displayed on the PT and updates the screen in a certain interval set in the Configuration screen. (Default: 15 seconds) For details on the setting, refer to **4 NS Web Interface Settings**.

3-3-3 Specifying the Display Color of the Monitor Screen

NS Web Interface displays a Windows BMP format or PNG format image of a PT screen on a web browser. To select one of the formats, make a setting in the Configuration screen.

When the Windows BMP format is used, the following number of colors can be selected from the Configuration screen.

Item	Description
32768	Displayed in 32768 colors.
256	Displayed in 256 colors.
16	Displayed in 16 grayscale levels.

When the PNG format is used, the screen is displayed in 32768 colors.

Reference

- ◆ A color setting made for the Configuration screen will also be used for the Operation screen.
- ◆ When a screen is displayed in 32768 colors, a web browser display will be equivalent to the PT display. However, the screen file size will be large and it may take some time to transfer the file to a web browser.
When a screen is displayed in 16 grayscale levels, it will not display colors. However, the screen file size to be transferred to a web browser will be small. Therefore, it is suitable to use 16 grayscale levels when a quicker response is required such as when operation is performed in Operation screen.
- ◆ The number of colors for the Monitor screen can be set in the Configuration screen. It can also be set by directly specifying the number of colors with URL. For details, refer to **3-4 Monitor Screen (Color Specification)**.

3-3-4 Not Using The User Authentication

It is possible to set whether or not to use the user authentication (Login screen display) when directly specifying a URL to open the Monitor screen. For details on the setting, refer to **4 NS Web Interface settings**.

3-4 Monitor Screen (Color Specification)

3-4 Monitor Screen (Color Specification)

The number of colors displayed on the Monitor screen can be set in the Configuration screen. They can also be set by directly specifying a URL.

Item	Description
Displaying in 32768 colors	http://(PT IP Address)/monitor32k.html
Displaying in 256 colors	http://(PT IP Address)/monitor256.html
Displaying in 16 grayscale levels	http://(PT IP Address)/monitor16.html

When a screen is displayed in 32768 colors, the web browser display will be equivalent to the PT display. However, the screen file size will be large and it may take some time to transfer the file to a web browser.

When a screen is displayed in 16 grayscale levels, it will not display colors. However, the screen file size to be transferred to a web browser will be small. Therefore, it is suitable to use 16 grayscale levels when a quicker response is required such as when you perform operation in the Operation screen.

Display Screen	Setting
Monitor screen	Specifies monitor32k.html. The screen is displayed in 32768 colors. Thus it is the same as the PT display.
Operation screen	In Configuration screen, specifies 16 grayscale levels for the display. Specifying this makes it possible to perform a high-speed operation.

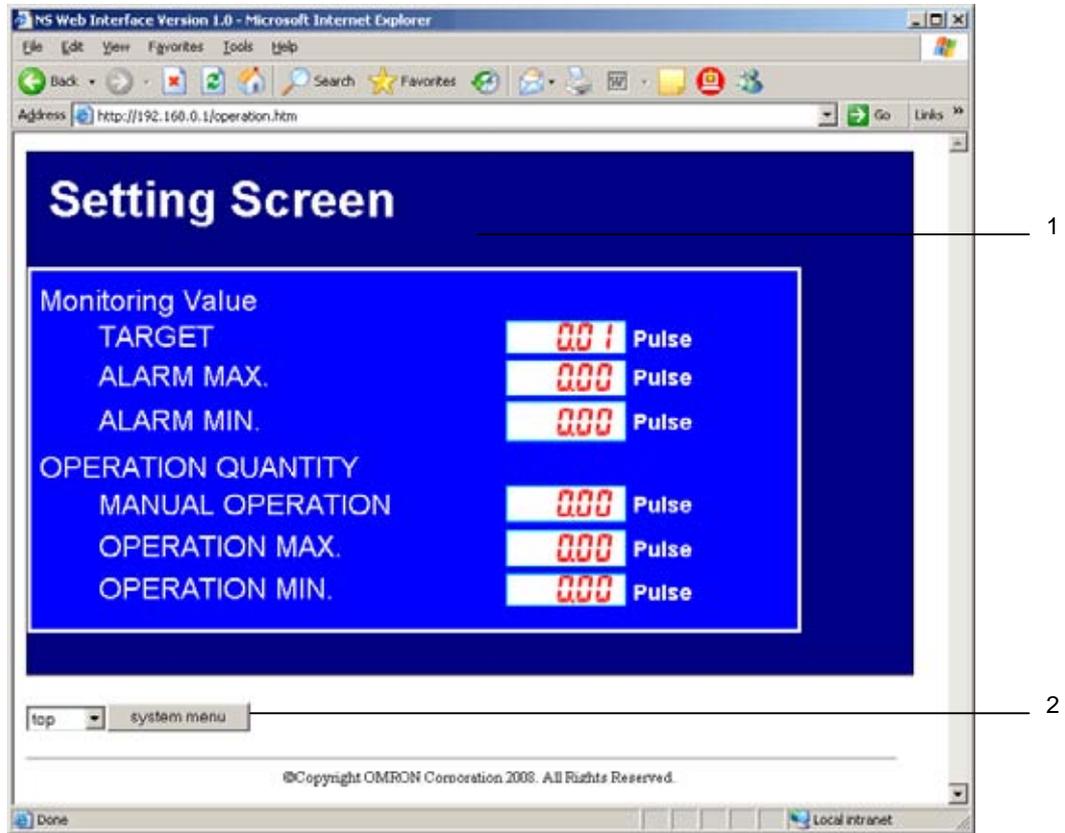
Reference

- ◆ The functionality of Monitor Screen (color specification) is the same as that of Monitor Screen except for the display color function.
- ◆ Monitor Screen (color specification) displays the PT screen in the Windows BMP format. (Monitor screen (color specification) always displays in the Windows BMP format even when the PNG format is set in the Configuration screen.)

3-5 Operation Screen

3-5-1 Operation Screen

The Operation screen is used to display the PT screen and operate the screen. The Operation screen displays the following screen.



No.	Item	Description
1	Operation screen	Displays the PT screen. Allows the user to operate the PT screen by clicking the web browser.
2	system menu	Switches the PT display to the System Menu. For details, refer to 3-5-3 System Menu .

Reference

- ◆ It is possible to prohibit operating the PT screen from the PT while operating the PT screen from the Operation screen. For details, refer to 4 NS Web Interface.

3-5 Operation Screen

3-5-2 Reloading Screen Display

The Operation screen periodically reads a screen displayed on the PT and updates the display. The reload interval can be set in the Configuration screen (Default: 3 seconds).

It is also possible to set the time from when the user mouse clicks until the Operation screen reads a PT screen and updates the display. (Default: 1 second).

For details on the setting, refer to **4 NS Web Interface Settings**.

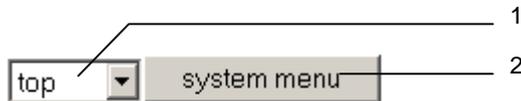
Reference

- ◆ The Reload Interval in the Monitor screen and Reload Interval in the Operation screen are independent from each other. Thus, they must be set separately.
- ◆ When the Operation screen is displayed in 32768 colors, the screen file size to be transferred to a web browser will be large and it may take some time to transfer. In order to achieve faster response, display in 16 grayscale levels.

3-5-3 System Menu

With the PT, the System Menu can be displayed by pressing two of four corners at the same time.

However, In the Operation screen, the system menu button is used to display the System Menu.



No.	Item	Description
1	Positions to be pressed	Specifies two of four corners of the PT screen you want to press. There should not be any object on the specified positions. -top: The top left and top right corner of a screen -bottom: The bottom left and bottom right corner of a screen -left: The top left corner and bottom left corner of a screen -right: Top right corner and bottom right corner of a screen
2	system menu	Clicking the system menu button will press the specified positions of the PT and display the System Menu.

Reference

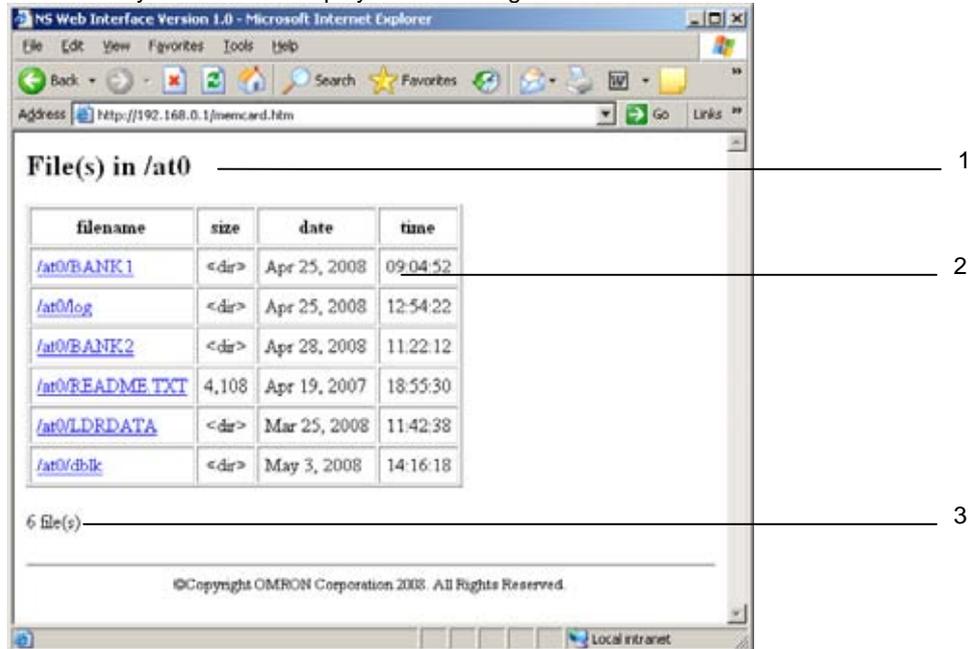
- ◆ Please note that even if there is a functional object on a position that is specified as the position to be pressed, clicking the system menu button will switch the NS screen to the System Menu. However, the functional object will also be pressed.

3-6 Files in Memory Card Screen

3-6-1 Files in Memory Card Screen

The Files in Memory Card screen can display a list of files in Memory Card inserted into the PT. It can also display the contents of the files in the Memory Card and download them to a web browser.

The Files in Memory Card screen displays the following screen.

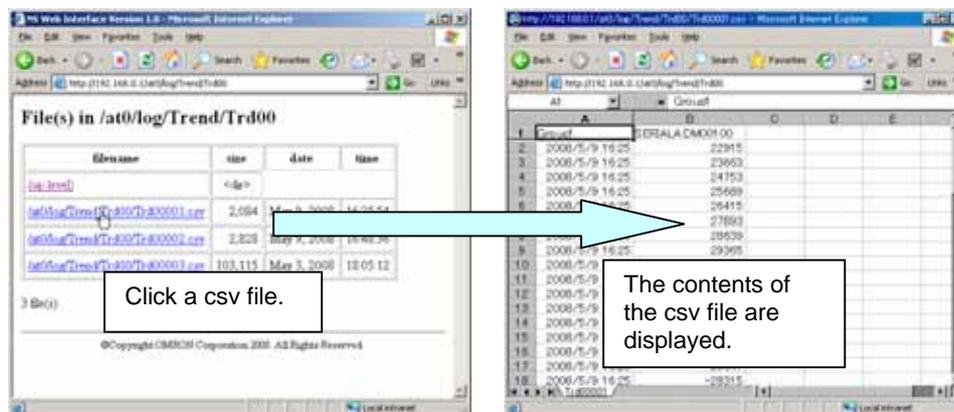


No.	Item	Description
1	Directory	Displays the directory in the Memory Card that is currently displayed. The root directory of the Memory Card is displayed as "/at0".
2	File List	Lists files under the directory that is currently displayed. Displays the contents of the files and downloads the files. For details, refer to 3-6-2 Displaying Contents of Files and Downloading . When <dir> is displayed in size field, the directory name is displayed. To display the directory name, click the directory name. To move up one directory, click the file name when (up level) is displayed in filename field.
3	Total No. of files	Displays the number of files in the directory that is currently displayed.

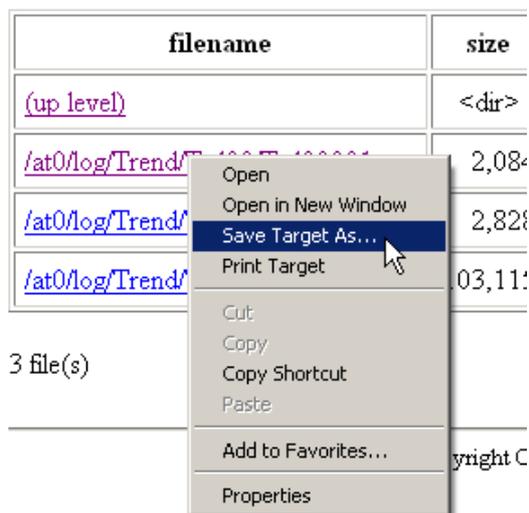
3-6 Files in Memory Card Screen

3-6-2 Displaying Contents of Files and Downloading

The contents of files can be displayed by clicking the file displayed in the file list.



It is possible to download the selected file using the menu that can be displayed by right clicking.



Reference

- ◆ When a file is clicked on the file list, the screen may display a file download confirmation dialog or start an application used to display the file, depending on the web browser, setting and file type.
- ◆ The menu displayed by right mouse clicking varies depending on the Web browser you use.

4 NS Web Interface Settings

This section explains the NS Web Interface settings.

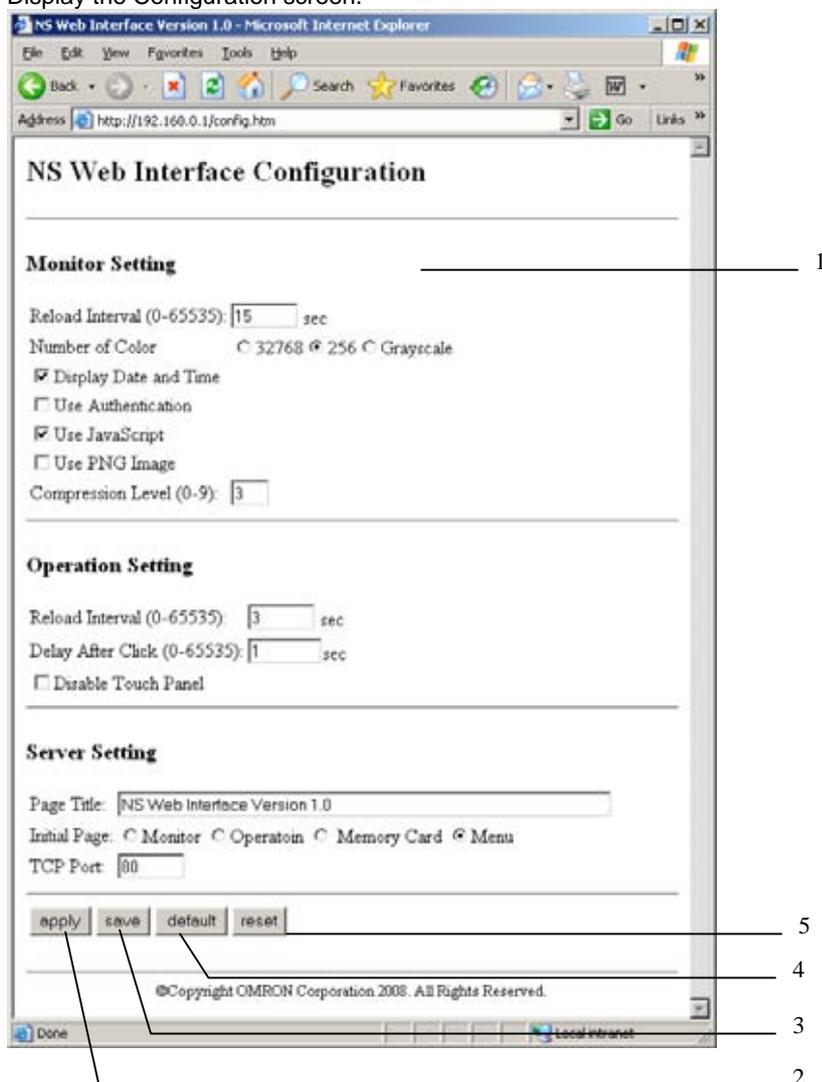
4-1 NS Web Interface Settings	4-2
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4-1 NS Web Interface Settings

4-1-1 Configuration Screen

The Configuration Screen is used to make settings for NS Web Interface.

1. Display the Configuration screen.



No.	Item	Description
1	Setting Items	Settings for NS Web Interface. For details on the settings, refer to 4-1-2 NS Web Interface Settings .
2	apply	Reflects the setting changes in NS Web Interface.
3	save	Reflects the setting changes in NS Web Interface. Also saves those changes in the PT.
4	default	Returns all settings to the default settings.
5	reset	Cancels the setting changes currently being input, and returns to the settings before change.

2. Set each item. Click **apply** or **save** button.
3. A window stating configuration done is displayed.



4. When three seconds elapsed after Configuration Done screen is displayed, the window automatically displays a screen set for **Initial Page**.

Reference

- ◆ When the **apply** button is clicked, changes will be cleared if the PT is reset or the power to the PT is turned OFF. To save setting changes, click the **save** button.

4-1-2 NS Web Interface Settings

Setting items in the Configuration screen are explained here.

Monitor Setting

Item	Description	Corresponding screen
Reload Interval	Set the time from when the Monitor screen reads a PT screen until when it next reads the NS screen. Between 0 and 65535 seconds can be set. (Default: 15 seconds)	Monitor screen (See note 1.)
Number of Color	Select the number of colors used for displaying BMP images from the following. (Default: 256 colors) -32768: 32768 colors -256: 256 colors -16: 16 grayscale levels	Monitor screen, Operation screen
Display Date and Time	Set whether to display the date and time when the PT screen is captured on the bottom of Monitor screen. (Default: Selected) -Checked: Displayed -Unchecked: Not displayed	Monitor screen (See note 1.)
Use Authentication	Set whether to use the user authentication or not when specifying a URL for Monitor screen. (Default: Unchecked) -Checked: User authentication used -Unchecked: User authentication not used	Monitor screen (See note 1.)
User JavaScript	Set whether to use JavaScript for screen reloading and screen operation. (Default: Checked) -Checked: Use -Unchecked: Not use	Monitor screen (See note 1.), Operation screen
Use PNG	Set whether to use PNG images as the format used when a PT screen is transferred. When PNG images are not used BMP images are used. (Default: Unchecked (BMP images)) -Checked: Use -Unchecked: Not use (BMP image) When PNG images are used, 32768 colors are used regardless of the setting for Number of Color .	Monitor screen, Operation screen
Compression Level	Set the compression level for creating PNG data. Between 0 and 9 can be set. (Default: 3)	Monitor screen, Operation screen

Note1: Including Monitor screen (Color specification).

4-1 NS Web Interface Settings

Operation Setting

Item	Description	Corresponding screen
Reload Interval	Set the time from when Monitor screen reads an NS screen to when it reads the next NS screen. Between 0 and 65535 seconds can be set. (Default: 3 seconds)	Operation screen
Delay After Click	Set the time from when mouse is clicked to when an NS screen is read. Between 0 and 65535 seconds can be set. (Default: 1 second)	Operation screen
Disable Touch Panel	Set whether or not to accept inputs at the PT while the Operation screen is being shown. (Default: Unchecked) -Checked: Not accept touch inputs -Unchecked: Accept touch inputs	Operation screen

Server Setting

Item	Description	Corresponding screen
Page Title	Set the web page title of up to 64 characters. (Default: NS Web Interface name and its version)	All screens
Initial Page	Set a screen shown when "http://(PT IP address)/" is specified as a URL and when the Configuration screen is closed. (Default: Menu)	-
TCP Port	Specify the TCP port number that NS Web Interface uses. Port numbers 80, 8080, and between 49152 and 65535 can be input. (Default: 80) When this setting is changed, NS Web Interface will cut the connection, and wait to connect using the specified port number.	All screens

Reference

- ◆ If an invalid value such as a value outside the range is input in any fields in the Configuration screen and the **apply** or **save** button is clicked, the value before change is set in the corresponding fields.
- ◆ If the TCP Port setting is changed, NS Web Interface will cut the connection temporarily. Specify a port number and re-connect from a web browser.
For example, specify a URL as follows, when the PT IP Address is 192.168.0.1 and the set port number is 8080.
`http://192.168.0.1:8080/` (Input "port number" after the IP address)
If 80(default) is set as the port number, no port number needs to be specified.

5 Troubleshooting

This section explains the troubleshooting measures when errors occur in NS Web Interface.

5-1	Error Messages.....	5-2
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5-1 Error Messages

This section describes error messages displayed during using NS Web Interface and their countermeasures.

Message	Cause	Countermeasure
401 Authorization Required	In the user authentication screen, an incorrect user name or password is entered.	Enter the correct user name and password.
403 Forbidden	Cannot access the Memory Card.	Check whether or not the Memory Card is inserted or corrupted.
404 Not Found	The specified URL is incorrect.	Specify the correct URL.
NS Image	Cannot properly transfer image data from the PT to a web browser. This occurs due to an excessive network load or with some browsers.	Click Refresh Button on the web browser.
Cannot find server or DNS error	An attempt was made to connect to a PT model that does not support the NS Web Interface.	Cannot connect to a model that does not support the NS Web Interface. For information on models that support the NS Web Interface, refer to 1-3-1 Necessary NS Series V2 Configuration .
	The system version of the PT you are trying to connect is earlier than 8.0.	NS Web Interface is supported by system version 8.0 or later. To use NS Web Interface, update to version 8.0 or later. For how to update, refer to Using Memory Cards in NS Series Setup Manual .
	FTP/Web is set to Disable in Comm. Tab of the PT System Menu .	To use NS Web Interface, set FTP/Web to Enable . For how to set, refer to 2-1-1 NS-Series PT Settings .
	Japanese is set as the PT system language.	To use NS Web Interface, select a language other than Japanese as the system language.
	The specified IP address in a URL is incorrect.	Check the PT IP address. Then specify the correct IP address.
Other error messages	An excessive load is applied to the network or PT.	Wait a while and try again.