NB-series
NB3Q-TW01B
NB5Q-TW01B
NB7W-TW01B
NB10W-TW01B

Programmable Terminals

Web Interface
Operating Instruction

OMRON
NB-series
NB3Q-TW01B
NB5Q-TW01B
NB7W-TW01B
NB10W-TW01B
Programmable Terminals
Web Interface Operating Instruction Manual

September 2013
Introduction

This instruction describes only the configuration and settings required to use NB Web Interface. Please be sure to read and fully understand related manuals including NB-series manual before using the NB series Programmable Terminal, and read this instruction when using NB Web Interface.

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- Notation and Terminology
  Indicate the additional information on operation, descriptions or settings.
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1 Overview

This section describes an overview of the functions of NB Web Interface. This also describes the Operating Environments for NB Web Interface.

1-1 What is NB Web Interface?

NB Web Interface is a function that monitors a screen that an NB-series HMI displays using a web browser on a personal computer connected via Ethernet to an NB-series HMI (Programmable Terminal called “the PT”). NB 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.
1-2 What NB Web Interface Can Do

This section contains the usage examples of NB Web Interface.

- **Remote Monitoring**
  NB 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. Also when users instruct an operator, users can check work done by the operator using a web browser.

- **Remote Operation**
  User can access the PT using a web browser. From a web browser, it is possible to remote control the PT.
1-3 Operating Environments

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

1-3-1 Necessary NB Series Configuration

- NB-series PT Models

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

<table>
<thead>
<tr>
<th>NB Model</th>
<th>Lot No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NB3Q-TW01B</td>
<td>09X13M or above</td>
</tr>
<tr>
<td>NB5Q-TW01B</td>
<td></td>
</tr>
<tr>
<td>NB7W-TW01B</td>
<td></td>
</tr>
<tr>
<td>NB10W-TW01B</td>
<td></td>
</tr>
</tbody>
</table>

When the NB model above do not have web server function, please use NB-Manager version 1.30 or above to update the kernel and file system, for operation detail, please refer to [4-4 System Operate] of NB series NB-Designer Operation Manual.

- NB Designer Version

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

| NB Designer Version (including NB Manager) | Version 1.30 or later* |

In the NB-Manager, if there is “Web Interface Operation” option on the left side, it means this NB-Manager supports web server function.

*For download the application programs, please access your local Omron website, If local site cannot be found, please access Omron IA global site "http://www.ia.omron.com/" at first and select the area where you are.

1-3-2 Necessary Network Environments

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

<table>
<thead>
<tr>
<th>Web browser</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Internet Explorer Ver.8</td>
<td></td>
</tr>
<tr>
<td>Microsoft Internet Explorer Ver.9</td>
<td></td>
</tr>
<tr>
<td>Safari (IOS.6x)</td>
<td></td>
</tr>
</tbody>
</table>
2 Using NB Web Interface

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

2-1 Connection Method

This section explains a PT how to connect to a web browser on a computer using NB Web Interface. This document uses Windows 8 and Microsoft Internet Explorer Ver.9 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 NB Web Interface, the following settings must be made in the project of NB.

1. Use NB-Designer, open the project which will be download to the PT, add bit button component in the frame, set type to “Alternate” in the bit button property, and set the address to LB9175.
2. Compile and download the project to PT.
3. Click the bit button on the PT to switch ON of address LB9175.

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)/

For example, when the PT IP Address is “192.168.0.1”:

<table>
<thead>
<tr>
<th>Screen</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor Screen</td>
<td>http://(PT IP Address)/monitor.html</td>
</tr>
<tr>
<td>Operation Screen</td>
<td>http://(PT IP Address)/operation.html</td>
</tr>
<tr>
<td>Configuration Screen</td>
<td>http://(PT IP Address)/config.html</td>
</tr>
<tr>
<td>Menu Screen</td>
<td>http://(PT IP Address)/menu.html</td>
</tr>
</tbody>
</table>

3. The login screen will be displayed.

4. Enter the user name and password.

5. Click the login button to access the web interface.
Reference
The NB 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 NB 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.

<table>
<thead>
<tr>
<th>User name</th>
<th>default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Password</td>
<td>default</td>
</tr>
</tbody>
</table>

Reference
- The user name and password can be changed by NB-Manager, for details please refer to 5 Authentication settings.

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

![NB Web Interface Menu](http://192.168.0.1/)

### NB Web Interface Menu

- **Monitor**
- **Operation**
- **Configuration**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor</td>
<td>Monitors the screen currently displayed on the PT.</td>
</tr>
<tr>
<td>Operation</td>
<td>Monitors the screen currently displayed on the PT.</td>
</tr>
<tr>
<td></td>
<td>Operates the PT screen by mouse clicking the web browser.</td>
</tr>
<tr>
<td>Configuration</td>
<td>Make settings related to NB Web Interface.</td>
</tr>
</tbody>
</table>

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

Reference
- The initial screen can be changed by setting. For details on the setting, refer to 4 NB Web Interface Settings.
3 The Functions of NB Web Interface

This section explains the functions of NB Web Interface.

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

NB Web Interface has the following functions (screens).

<table>
<thead>
<tr>
<th>Detail</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu screen</td>
<td>The menu screen of NB Web Interface.</td>
</tr>
<tr>
<td>Monitor screen</td>
<td>Monitors the screen currently displayed on the PT.</td>
</tr>
<tr>
<td>Operation screen</td>
<td>Monitors the screen currently displayed on the PT. Also operates the PT screen by mouse clicking the web browser.</td>
</tr>
<tr>
<td>Configuration screen</td>
<td>Make settings related to NB Web Interface.</td>
</tr>
</tbody>
</table>

Reference

- For Configuration screen, refer to 4 NB Web Interface Settings.
3-2 Menu Screen

The Menu screen displays the following screen.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu screen</td>
<td>Displays a list of the NB Web Interface screens. Clicking will jump to each screen.</td>
</tr>
</tbody>
</table>
3-3 Monitor Screen

3-3-1 Monitor Screen
The Monitor screen is used to display a PT screen.
It displays the screen as follow. (e.g.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Monitor Screen</td>
<td>Displays a PT screen.</td>
</tr>
<tr>
<td>2</td>
<td>Latest Captured</td>
<td>Displays the date and time when a PT screen was read.</td>
</tr>
</tbody>
</table>

Reference
- A PT screen cannot be operated with the Monitor screen.
- To operate a screen, please enter into the Operation screen.
- To hide the Latest Captured time, should be set in configuration page. For details on the setting, refer to 4 NB 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 NB Web Interface Settings.
3-3-3 Specifying the Display Image Format of the Monitor Screen
NB Web Interface displays a Windows BMP, JPEG 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.

Reference
- The display picture format settings in the Configuration screen will also be used for the Operation screen.

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 NB Web Interface settings.
3-4 Operation Screen

3-4-1 Operation Screen
The Operation screen is used to display the PT screen and operate the screen.
The Operation screen displays the following screen. (e.g.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation</td>
<td>Displays the PT screen. Allows the user to operate the PT screen by clicking</td>
</tr>
<tr>
<td>screen</td>
<td>the web browser.</td>
</tr>
</tbody>
</table>

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 NB Web Interface Settings.
3-4-2 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 NB 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.
4 NB Web Interface Settings
This section explains the NB Web Interface settings.

4-1 NB Web Interface Settings

4-1-1 Configuration Screen
The Configuration Screen is used to make settings for NB Web Interface.

1. Display the Configuration screen.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Setting Items</td>
<td>Settings for NB Web Interface. For details on the settings, refer to 4-1-2 NB Web Interface Settings.</td>
</tr>
<tr>
<td>2</td>
<td>apply</td>
<td>Reflects the setting changes in NB Web Interface.</td>
</tr>
<tr>
<td>3</td>
<td>save</td>
<td>Reflects the setting changes in NB Web Interface. Also saves those changes in the PT.</td>
</tr>
<tr>
<td>4</td>
<td>default</td>
<td>Returns all settings to the default settings.</td>
</tr>
<tr>
<td>5</td>
<td>reset</td>
<td>Cancels the setting changes currently being input, and returns to the settings before change.(return to the last valid settings)</td>
</tr>
</tbody>
</table>
2. Set each item, then click **apply** or **save** button.

3. A window stating of 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**.

### 4-1-2 NB Web Interface Settings

Setting items in the Configuration screen are explained here.

#### Monitor Setting

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Corresponding screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reload Interval</td>
<td>Set the time from when the Monitor screen reads a PT screen until when it next reads the NB screen. Between 2 and 99 seconds can be set. (Default: 15 seconds)</td>
<td>Monitor screen</td>
</tr>
</tbody>
</table>
| Display Pic Format | Set which images format used when a PT screen is transferred. There are three formats can be select: BMP, JPEG and PNG. (Default: BMP)  
                      - Checked: Use  
                      - Unchecked: Not use  
                      When PNG images are used, user can set the compression level for PNG formats in the option “Compression Level”. | Monitor screen, Operation screen |
| PNG Compression Level | Set the compression level for creating PNG data. Between 0 (Compression non destructive) and 8 (Highest compression rate) can be set. (Default: 3)  
                         Only enable when selected PNG format in “Display Pic Format”. | 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                |
| 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                |
### Operation Setting

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Corresponding screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reload Interval</td>
<td>Set the time from when Monitor screen reads an NB screen to when it reads the next NB screen. Between 2 and 99 seconds can be set. (Default: 3 seconds)</td>
<td>Operation screen</td>
</tr>
<tr>
<td>Delay After Click</td>
<td>Set the time from when mouse is clicked to when an NB screen is read. Between 0 and 99 seconds can be set. (Default: 1 second)</td>
<td>Operation screen</td>
</tr>
<tr>
<td>Disable Touch Panel</td>
<td>Set whether or not to accept inputs at the PT while the Operation screen is being shown. (Default: Unchecked)</td>
<td>Operation screen</td>
</tr>
<tr>
<td></td>
<td>- Checked: Not accept touch inputs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Unchecked: Accept touch inputs</td>
<td></td>
</tr>
</tbody>
</table>

**note1:** If user checked “Disable Touch Panel” option and entered the operation screen in browser then disconnect Ethernet cable, NB will waiting 5min for touch control restoration.

### Server Setting

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Corresponding screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Title</td>
<td>Set the web page title of up to 64 characters. (Default: NB Web Interface name and its version) Only support ASCII.</td>
<td>All screens</td>
</tr>
<tr>
<td>Initial Page</td>
<td>Set a screen shown when “http://(PT IP address)” is specified as a URL and when the Configuration screen is closed. (Default: Menu)</td>
<td>-</td>
</tr>
<tr>
<td>TCP Port</td>
<td>Specify the TCP port number that NB Web Interface uses. Port numbers 80, 8080, and between 49152 and 65535 can be input. (Default: 80) When this setting is changed, NB Web Interface will cut the connection, and wait to connect using the specified port number. Note: Safari browser cannot use 65535 for port number.</td>
<td>All screens</td>
</tr>
<tr>
<td>User JavaScript</td>
<td>Set whether to use JavaScript for screen reloading and screen operation. (Default: Checked)</td>
<td>Monitor screen, Operation screen</td>
</tr>
<tr>
<td></td>
<td>- Checked: Use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Unchecked: Not use</td>
<td></td>
</tr>
</tbody>
</table>

### Reference

- If an invalid value such as a value out of the range is inputted in any fields in the Configuration screen and the **“apply”** or **“save”** button is clicked, the value before change will be set in the corresponding fields. If the TCP Port setting is changed, NB 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. The URL should be input in browser is: http://192.168.0.1:8080/ (Input “:port number” after the IP address). If 80(default) is set as the port number, it don’t needs to be specified.
5 Authentication settings

5-1 Change user name and password

1. Connect NB terminal to PC then open NB-Manager.
2. In NB-Manager select “Web Interface Operation” on the left side, the setting page will be displayed on the right side.
3. Input new user name, password, confirm password and click “Save Set”, the new login data has been registered in NB.

Note: 1. Maximum length of user name and password is 32 char.
    2. User name and password only support English letters and Arabic numerals.

Reference

- For connecting NB with PC, please refer to chapter 2-3 Connecting of NB-series with PC of NB series Setup Manual.

5-2 Default user name and password Restoration

If user wants to restore the default user name and password just click “Default” button then click “Save Set” button.

Default login data:

<table>
<thead>
<tr>
<th>User Name</th>
<th>Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>default</td>
</tr>
</tbody>
</table>
6 Troubleshooting

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

6-1 Error Messages

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

<table>
<thead>
<tr>
<th>Message</th>
<th>Cause</th>
<th>Countermeasure</th>
</tr>
</thead>
<tbody>
<tr>
<td>401 Authorization Required</td>
<td>In the user authentication screen, an incorrect user name or password is entered.</td>
<td>Enter the correct user name and password.</td>
</tr>
<tr>
<td>404 Not Found</td>
<td>The specified URL is incorrect.</td>
<td>Specify the correct URL.</td>
</tr>
<tr>
<td>NB Image</td>
<td>Cannot properly transfer image data from the PT to a web browser. This occurs due to an excessive network load or with some browsers.</td>
<td>Click Refresh Button on the web browser.</td>
</tr>
<tr>
<td>Cannot find server or DNS error</td>
<td>An attempt was made to connect to a PT model that does not support the NB Web Interface.</td>
<td>Cannot connect to a model that does not support the NB Web Interface. For information on models that support the NB Web Interface, refer to 1-3-1 Necessary NB Series Configuration.</td>
</tr>
<tr>
<td></td>
<td>Not set bit register LB9175 to ON.</td>
<td>Set bit register LB9175 to ON.</td>
</tr>
<tr>
<td></td>
<td>The specified IP address in a URL is incorrect.</td>
<td>Check the PT IP address. Then specify the correct IP address.</td>
</tr>
<tr>
<td>Other error messages</td>
<td>An excessive load is applied to the network or PT.</td>
<td>Wait a while and try again.</td>
</tr>
</tbody>
</table>
## Revision History List

<table>
<thead>
<tr>
<th>Rev</th>
<th>Date</th>
<th>Revision contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>2013-09-3</td>
<td>Original Production</td>
</tr>
</tbody>
</table>
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   (b) Limitations
   (c) Amendments

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14. Property; Confidentiality. Any intellectual property in the Products is the exclusive property of Omron, and Buyer must agree to these Terms to ensure Omron’s compliance with local laws and regulations. Omron reserves the right to alter or cancel any contracts or orders at any time, for any reason, without liability.

15. Miscellaneous
    (a) Waiver
    (b) Severability
    (c) Amendment
    (d) Assignment
    (e) Entire Agreement
    (f) Governing Law
    (g) Entering into this agreement, Buyer agrees to the following:

16. Software
    Buyer will take full responsibility in all cases but the following is a summary of the Product in combination with the end product, machine, system or other application (hereinafter “includes”, “involves”, “is to be used”, “shall” or similar words) mean Omron Corporation and any direct or indirect subsidiary or affiliates thereof.

Certain Precautions on Specifications and Use

1. Suitability of Use. Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer’s application or use of the Product. At Buyer’s request, Omron will provide applicable third party certification documents identifying relevant applicable standards or codes. Any failure by Buyer to comply with these Terms or any other provision shall not affect or preclude Omron’s rights or remedies hereunder.

2. Programmed Products. Omron Companies shall not be responsible for the use or programming of any Product by Buyer. This includes, but is not limited to, the use or programming of any Product for use on a computer network or other computerized system.

3. Performance Data. Data presented in Omron Company websites, catalogs and other materials is provided as a guide to the user in determining suitability and does not constitute a warranty. It may represent the results of Omron’s own tests, and the user must correlate it to actual application requirements. Actual performance may vary for a variety of reasons, including the environment in which the product is used.

4. Change in Specifications. Product specifications and accessories may be changed at any time based on improvements and other reasons. It is the responsibility of Buyer to confirm actual specifications of purchased Product.

5. Errors and Omissions. Information contained in this document may have been obtained from sources believed to be reliable and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

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