Programmable Terminal NB Series

Practice Guide
Sysmac Studio Variable Table Import

NB3Q-TW01B
NB5Q-TW01B
NB7W-TW01B
NB10W-TW01B
Introduction

This guide provides reference information when designing NB screens. It does not provide safety information. Be sure to obtain the NB series Programmable Terminal User's Manuals, read and understand the safety points and other information required for use, and test sufficiently before actually using the equipment.

(1) All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form, or by any means, mechanical, electronic, photocopying, recording, or otherwise, without the prior written permission of Omron.

(2) The information contained in this guide is subject to change without notice due to improvements of our products.

(3) Copyrights and Trademarks
- Sysmac and SYSMAC are trademarks or registered trademarks of Omron Corporation in Japan and other countries for Omron factory automation products.
- Windows Excel is the trademarks or registered trademarks of Microsoft Corporation in the USA, Japan and other countries.
- Company names and product names in this document are the trademarks or registered trademarks of their respective companies.
- Screenshots are used with permission from Microsoft Corporation.
- The pictures and graphics of products used in this guide contain image graphics, which may differ from the actual products.
Terms and Conditions Agreements

Thank you for your usage of products of Omron Corporation (Omron). Without any special agreements, these terms and conditions shall apply to all transactions regardless of who sells.

● Definitions of Terms
- Omron product(s): Omron’s factory automation system devices, general control devices, sensing devices, and electronic/mechanical components.
- Catalogues: Any and all catalogues (including “Best Components” and other catalogues), specifications, instructions and manuals relating to Omron products, including electronically provided data.
- Conditions: Use conditions, rating, performance, operating environment, handling procedure, precautions and/or prohibited use of Omron products described in the catalogues.
- User application(s): Application of Omron products by a customer, including but not limited to embedding/using Omron products into customer’s components, electronic circuit boards, devices, equipment or systems.
- Conformity: (a) conformity, (b) performance, (c) no infringement of intellectual property of third party, (d) compliance with laws and regulations, and (e) conformity to various standards of Omron products in user applications.

● Note about Descriptions
Understand the followings as to contents of the catalogues.
- Rating and performance is tested separately. Combined conditions are not warranted.
- Reference data is intended to be used just for reference. Omron does NOT guarantee that the Omron Product can work properly in the range of reference data.
- Examples are intended for reference. Omron does not warrant the conformity in usage of the examples.
- Omron may discontinue Omron products or change specifications of them because of improvements or other reasons.

● Note about Use
Adopt and use Omron products considering the following cautions.
- Use the product in conformance to the conditions, including rating and performance.
- Check the conformity and decide whether or not Omron products are able to be adopted. Omron makes no guarantees about the conformity.
- Make sure in advance that electricity is properly supplied to Omron products and they are set up rightly in your system for intended use.
- When you use Omron products, ensure the followings: (i) allowance in aspect of rating and performance, (ii) safety design which can minimize danger of the application when the product does not work properly, (iii) systematic safety measures to notify danger to users, and (iv) periodical maintenance of Omron products and the user application.
- Omron assumes no responsibility for any direct or indirect loss, damage and expense resulting from infection of our products, installed software, any computer devices,
computer programs, network, and databases with the followings:

- DDoS attack (distributed DoS attack),
- Computer virus and other technically harmful program, and
- Unauthorized access.

Please conduct the followings by yourself: (i) antivirus software, (ii) data input/output, (iii) lost data recovery, (iv) protections against computer virus that contaminate Omron products or the installed software, and (v) measures to protect Omron products from unauthorized access.

- Omron products are designed and manufactured as commodity for general industrial products. For this reason, the usages (a) to (d) are to be unintended. Omron makes no guarantees on Omron products, if you use Omron products for those purposes. However, special applications that Omron expects or usages with especial agreement are excluded.

(a) Applications requiring high-level safety (e.g. nuclear control facilities, combustion facilities, aerospace and aviation facilities, railroad facilities, elevating facilities, amusement facilities, medical facilities, safety devices or other applications which has possibility to influence lives or bodies)

(b) Applications requiring high reliability (e.g. gas/water/electricity supply system, 24-hour operating system, applications handling with rights/property, such as payment system)

(c) Applications in a harsh condition or environment (e.g. outdoor facilities, facilities with potential of chemical contamination or electromagnetic interference, facilities with vibration or impact, facilities on continual operation for a long period)

(d) Applications under conditions or environment which are not described in the catalogues

- Omron products in the catalogues are not intended to be used in automotive applications (including two-wheel vehicles). Please DO NOT use Omron products in automotive applications. Contact our sales personnel for automotive products.

● Warranty

Warranty of Omron products is subject to followings.

- Warranty Period: One year after your purchase. However, except when there is a separate statement in the catalogues.

- Coverage: Omron will provide one of the services listed below, on the basis of Omron’s decision.

(a) Free repairing of the malfunctioning Omron products (except electronic/mechanical components) at Omron maintenance service sites.

(b) Free replacement of the malfunctioning Omron products with the same number of substitutes.

- Exceptions: This warranty does not cover malfunctions caused by any of the followings.

(a) Usage in the manner other than its original purpose

(b) Usage out of the conditions

(c) Usage out of Note about Use in these conditions

(d) Remodeling/repairing by anyone except Omron

(e) Software program by anyone except Omron

(f) Causes which could not be foreseen by the level of science and technology at the time of shipment of the products.

(g) Causes outside Omron or Omron products, including force majeure such as disasters
Limitation of Liability
The warranty described in this Terms and Conditions Agreement is a whole and sole liability for Omron products. There are no other warranties, expressed or implied. Omron and its distributors are not liable for any damages arisen from or relating to Omron products.

Export Control
Customers of Omron products shall comply with all applicable laws and regulations of other relevant countries with regard to security export control, in exporting Omron products and/or technical documents or in providing such products and/or documents to a non-resident.

Omron products and/or technical documents may not be provided to customers if they violate the laws and regulations.
Contents

Terms and Conditions Agreements ................................................................. 3

1 Related Manuals ....................................................................................... 7

2 Precautions ............................................................................................... 8

3 Variable Table Import .............................................................................. 9
   3-1 Variable Table of NB ........................................................................... 9
   3-1-1 Variable Table Settings .................................................................... 9
   3-2 Setting the Variable Table Import Function ...................................... 11
   3-2-1 Import Specification ........................................................................ 11
   3-2-2 Import Procedure ............................................................................ 12
   3-2-3 Dialog box for variables not qualified to be imported ................. 13

Revision History .......................................................................................... 14
### Related Manuals

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Model</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>V106</td>
<td>NB-Q-TW01B</td>
<td>NB series Programmable Terminals NB-Designer</td>
</tr>
<tr>
<td></td>
<td>NB-W-TW01B</td>
<td>Operation Manual</td>
</tr>
<tr>
<td>V107</td>
<td>NB-Q-TW01B</td>
<td>NB series Programmable Terminals Setup Manual</td>
</tr>
<tr>
<td></td>
<td>NB-W-TW01B</td>
<td></td>
</tr>
<tr>
<td>V108</td>
<td>NB-Q-TW01B</td>
<td>NB series Programmable Terminals Host Connection</td>
</tr>
<tr>
<td></td>
<td>NB-W-TW01B</td>
<td>Manual</td>
</tr>
<tr>
<td>V109</td>
<td>NB-Q-TW01B</td>
<td>NB series Programmable Terminals Startup Guide</td>
</tr>
<tr>
<td></td>
<td>NB-W-TW01B</td>
<td>Manual</td>
</tr>
</tbody>
</table>
2 Precautions

(1) When building an actual system, check the specifications of the component devices of the system, use within the ratings and specified performance, and implement safety measures such as safety circuits to minimize the possibility of an accident.

(2) For safe use of the system, obtain the manuals of the component devices of the system and check the information in each manual, including safety precautions, precautions for safe use.

(3) It is the responsibility of the customer to check all laws, regulations, and standards that the system must comply with.

(4) All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form, or by any means, mechanical, electronic, photocopying, recording, or otherwise, without the prior written permission of OMRON.

(5) The information in this guide is current as of June 2018. It is subject to change without notice because of product’s update.

Special information in this document is classified as follows:

- **Precautions for Safe Use**
  Describes precautions on what to do and what not to do to ensure safe usage of the product.

- **Precautions for Correct Use**
  Describes precautions on what to do and what not to do to ensure proper operation and performance.

- **Additional Information**
  Additional information to read as required.
  This information is provided to increase understanding or make operation easier.

**Copyrights and Trademarks**

Sysmac is the trademark or registered trademark of Omron Corporation in Japan and other countries for Omron factory automation products.

Screenshots are used in accordance with Microsoft Corporation guidelines.

Windows is a registered trademark of Microsoft Corporation in the USA and other countries.

Company names and product names in this document are the trademarks or registered trademarks of their respective companies.
3 Variable Table Import

NB-Designer V1.471 adds the function to import a Sysmac Studio variable table into a NB-Designer variable table.

3-1 Variable Table of NB

This function gives the variable name that used in NB-Designer to a PLC address. If you are using a variable on the PLC side, you can use the variable table function to assign the same variable name on the NB side as on the PLC side. It enables to create a screen without having to check the address and variable name. However, unlike the NS variable table, it does not support tag communication.

3-1-1 Variable Table Settings

1. Click [Project Database]-[Variable Table].

2. The variable table dialog box is displayed. Register the variable table here. Click [Add] at the bottom left.

3. Variable Setting dialog box is displayed. Set a variable name, an address corresponding to the variable, memory type, and data format.
4. You can also import or export variables in CSV format.

5. To use variables that are registered in the variable table, check [Use Variable] in the properties of components (e.g. numeric values, buttons).

6. A list of variables registered in the pull-down menu in Area/Variable field appears. Choose any variable from the list.
3-2 Setting the Variable Table Import Function

3-2-1 Import Specification

(1) Variables to be imported are memory for CJ-series Units, such as DM and WR, when you create them in Sysmac Studio.

(2) Variables that are set to any of Input/Output/Publish Only in Network Publish setting for Sysmac Studio variable tables can be imported.

(3) This function can be used only when OMRON CJ /CS/ NJ Series Ethernet (UDP Slave) or OMRON NX1 Series Ethernet (UDP Slave) is set as a destination PLC. It is not available in serial connection or for connection only with PLC from other companies.

(4) Data types that can be imported are limited.
The data types and storage formats which to be imported are listed in the table below.

<table>
<thead>
<tr>
<th>Sysmac Studio Data Type</th>
<th>NB-Designer Storage Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOL</td>
<td>Bit</td>
</tr>
<tr>
<td>INT/UINT/WORD</td>
<td>Word</td>
</tr>
<tr>
<td>DINT/UDINT/DWORD/REAL</td>
<td>Dword</td>
</tr>
<tr>
<td>Others (including arrays, structures and unions)</td>
<td>Not imported</td>
</tr>
</tbody>
</table>

Precautions for Correct Use

Dword is not available as a new storage format with The NB-Designer variable table. If you open Variable Setting dialog box of the variable table and press [OK] for a variable whose storage format is imported as Dword, the storage format is changed to Bit or Word even if it is not edited. Be careful when you edit the data.

Only Bit or Word can be selected. Dword should be changed. Select OK to confirm the edit.
3-2-2 Import Procedure

1. Create variables by Sysmac Studio.

2. Click [Tools]-[Export Global Variables]-[CX-Designer] to export variable information. The exported data is not saved as a file such as CSV. It is just pasted on a clipboard.

3. Select [Import Variable] from a right-click menu on the NB-Designer variable table.

4. The Sysmac Studio variable information is imported into NB-Designer.
3-2-3 Dialog box for variables not qualified to be imported

If you import a variable that is not qualified to be imported, the following three dialog boxes are displayed for confirmation. You can choose whether to continue or suspend importing.

1. If there are unsupported data type variables, the following dialog box is displayed.
See 3-2-1 Import Specification for available data types.

   ![Dialog box for unsupported data type variables]

2. If there have already been variables with the same name and different settings, such as area and address, the following dialog box will be displayed.

   ![Dialog box for duplicated variable names]

3. When there is a variable that is not assigned to Sysmac Studio variables, the following dialogue box is displayed.

   ![Dialog box for unassigned variables]

If you select [Yes] in the three dialog boxes above, only the variables that satisfy the import condition will be imported, ignoring the unqualified variables.
If you select [Cancel], all variables will not be imported and the procedure will be cancelled.
Each dialog box is displayed once in a single import operation.
E.g.: The same dialog box does not appear more than once even if there are several variables with an unsupported data type.
## Revision History

<table>
<thead>
<tr>
<th>Revision Code</th>
<th>Date</th>
<th>Revision Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>December 2018</td>
<td>Original production</td>
</tr>
</tbody>
</table>