



Programmable Controller C200HX/HG/HE

# Replace Guide From C200HX/HG/HE to CJ2

C200HE-CPU11/32/42

C200HG-CPU33/43/53/63

C200HX-CPU34/44/54/64/65/85

CJ2H-CPU6□

CJ2M-CPU1□

CJ2M-CPU3□

Replace  
Guide

## About this document

This document provides the reference information for replacing C200H PLC systems with CS1 series PLC.

This document does not include precautions and reminders ;please read and understand the important precautions and reminders described on the manuals of PLCs (both of PLC used in the existing system and PLC you will use to replace the existing PLC) before attempting to start operation.

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

## Related Manuals

### CPU Units

| Man.No. | Model   | Manual   |
|---------|---|--|
| W472    | CJ2H-CPU6□-EIP<br>CJ2H-CPU6□<br>CJ2-CPU□□   | CJ2 CPU Unit Hardware USER'S MANUAL                          |
| W473    | CJ2H-CPU6□-EIP<br>CJ2H-CPU6□<br>CJ2M-CPU□□  | CJ2 CPU Unit Software USER'S MANUAL                          |
| W486    | CJ2M-CPU□□+CH2M-MD21□   | CJ2M Pulse I/O Module USER'S MANUAL                          |
| W474    | CS1G/H-CPU□□H<br>CS1G/H-CPU□□-V1<br>CS1D-CPU□□H<br>CS1D-CPU□□S<br>CJ1H-CPU□□H-R<br>CJ1G/H-CPU□□H<br>CJ1G-CPU□□P<br>CJ1M/G-CPU□□<br>NSJ□-□□□□(B)-□□□   | CS/CJ/NSJ Series INSTRUCTIONS REFERENCE MANUAL               |
| W342    | CS1G/H-CPU□□H<br>CS1G/H-CPU□□-V1<br>CS1D-CPU□□H<br>CS1D-CPU□□S<br>CS1W-SCU□□-V1<br>CS1W-SCB□□-V1<br>CJ1H-CPU□□H-R<br>CJ1G/H-CPU□□H<br>CJ1G-CPU□□P<br>CJ1M/G-CPU□□<br>CJ1W-SCU□□-V1<br>CP1H-X□□□□-□<br>CP1H-XA□□□□-□<br>CP1H-Y□□□□-□<br>NSJ□-□□□□(B)-□□□ | CS/CJ/CP/NSJ Series Communications Commands REFERENCE MANUAL |
| W341    | CQM1H-PRO01<br>CQM1-PRO01<br>C200H-PRO27<br>CS1W-KS001  | CS/CJ Series Programming Consoles OPERATION MANUAL           |
| W302    | C200HX/HG/HE<br>-CPU□□/CPU□□-Z  | SYSMAC α INSTALLATION GUIDE                                  |
| W303    | C200HX/HG/HE  | SYSMAC α OPERATION MANUAL                                    |
| W322    | C200HX-CPU□□-ZE<br>C200HG-CPU□□-ZE<br>C200HE-CPU□□-ZE   | SYSMAC α OPERATION MANUAL                                    |

## Special I/O Units

| Man.No. | Model  | Manual   |
|---------|--|--|
| W368    | CS1W-PTS□□<br>CS1W-PTW□□<br>CS1W-PDC□□<br>CS1W-PTR□□<br>CS1W-PPS□□<br>CS1W-PMV□□<br>CJ1W-PTS□□<br>CJ1W-PDC□□<br>CJ1W-PH41U | CS/CJ Series Analog I/O Units OPERATION MANUAL   |
| W345    | CS1W-AD0□□-V1/-AD161<br>CS1W-DA0□□<br>CS1W-MAD44<br>CJ1W-AD0□□-V1/-AD042<br>CJ1W-DA0□□/-DA042V<br>CJ1W-MAD42               | CS/CJ Series Analog I/O Units OPERATION MANUAL   |
| W396    | CJ1W-TC□□□   | CJ Series Temperature Control Units OPERATION MANUAL                                   |
| W401    | CJ1W-CT021   | CJ Series High-speed Counter Units OPERATION MANUAL                                    |
| W397    | CJ1W-NC□□3   | CJ Series Position Control Units OPERATION MANUAL                                      |
| W477    | CJ1W-NC□□4   | CJ Series Position Control Units OPERATION MANUAL                                      |
| W426    | CS1W-NC□71<br>CJ1W-NC□71(-MA)  | CS/CJ Series Position Control Units OPERATION MANUAL                                   |
| W435    | CS1W-MCH71<br>CJ1W-MCH71   | CS/CJ series Motion Control Units OPERATION MANUAL                                     |
| W336    | CS1W-SCB□□-V1<br>CS1W-SCU□□-V1<br>CJ1W-SCU□□-V1  | CS/CJ Series Serial Communications Boards Serial Communications Units OPERATION MANUAL |
| W440    | CS1W-FLN22<br>CJ1W-FLN22(100BASE-TX)   | CS/CJ Series FL-net Units OPERATION MANUAL   |
| V236    | CS1W-SPU01<br>CS1W-SPU02-V2<br>CJ1W-SPU01-V2   | CS/CJ Series SPU Units OPERATION MANUAL  |
| V237    | WS02-SPTC1-V2  | SPU-Console OPERATION MANUAL   |
| W124    | C200H-TS001/002/101/102  | C200H Temperature Sensor Units OPERATION MANUAL  |
| W127    | C200H-AD001/DA001  | C200H Analog I/O Units OPERATION GUIDE   |
| W325    | C200H-AD003<br>C200H-DA003/DA004<br>C200H-MAD01  | C200H Analog I/O Units OPERATION MANUAL  |
| W225    | C200H-TC001/002/003<br>C200H-TC101/102/103   | C200H Temperature Control Units OPERATION MANUAL                                       |
| W240    | C200H-TV001/002/003<br>C200H-TV101/102/103   | C200H Heat/Cool Temperature Control Units OPERATION MANUAL                             |
| W241    | C200H-PID01/02/03  | C200H PID Control Unit OPERATION MANUAL  |
| W141    | C200H-CT001-V1/CT002   | C200H High-speed Counter Units OPERATION MANUAL  |
| W311    | C200H-CT021  | C200H High-speed Counter Units OPERATION MANUAL  |
| W224    | C200H-CP114  | C200H Cam Positioner Units OPERATION MANUAL  |
| W334    | C200HW-NC113/213/413   | C200HW Position Control Units OPERATION MANUAL   |
| W137    | C200H-NC111  | C200H Position Control Units OPERATION MANUAL  |
| W128    | C200H-NC112  | C200H Position Control Units OPERATION MANUAL  |
| W166    | C200H-NC211  | C200H Position Control Units OPERATION MANUAL  |
| W314    | C200H-MC221  | C200H Motion Control Units OPERATION MANUAL:INTRODUCTION                               |
| W315    | C200H-MC221  | C200H Motion Control Units OPERATION MANUAL:DETAILS                                    |
| W165    | C200H-ASC02  | C200H ASCII Units OPERATION MANUAL   |
| W306    | C200H-ASC11/21/31  | C200H ASCII Units OPERATION MANUAL   |
| W257    | CVM1-PRS71   | CVM1-PRS71 Teaching Box OPERATION MANUAL   |
| W304    | C200HW-COM01<br>C200HW-COM02-V1 to<br>C200HW-COM06-EV1   | C200HW Communication Boards OPERATION MANUAL   |

## Network Communications Units

| Man.No. | Model   | Manual  |
|---------|---|---|
| W309    | CS1W-CLK23<br>CS1W-CLK21-V1<br>CJ1W-CLK23<br>CJ1W-CLK21-V1<br>C200HW-CLK21<br>CVM1-CLK21<br>CQM1H-CLK21<br>CS1W-RPT0□                   | Controller Link Units OPERATION MANUAL                                    |
| W370    | CS1W-CLK13<br>CS1W-CLK12-V1<br>CVM1-CLK12(H-PCF Cable)<br>CS1W-CLK53<br>CS1W-CLK52-V1<br>CVM1-CLK52(GI Cable)                           | Optical Ring Controller Link Units OPERATION MANUAL                       |
| W465    | CS1W-EIP21<br>CJ1W-EIP21<br>CJ2H-CPU6□-EIP<br>CJ2M-CPU3□  | CS/CJ Series EtherNet/IP Units OPERATION MANUAL                           |
| W420    | CS1W-ETN21<br>CJ1W-ETN21 (100Base-TX)   | CS/CJ Series Ethernet Units OPERATION MANUAL Construction of Networks     |
| W421    | CS1W-ETN21<br>CJ1W-ETN21(100Base-TX)  | CS/CJ Series Ethernet Units OPERATION MANUAL Construction of Applications |
| W456    | CS1W-CRM21<br>CJ1W-CRM21  | CS/CJ Series CompoNet Master Units OPERATION MANUAL                       |
| W457    | CRT1  | CRT1 Series CompoNet Slave Units and Repeater Unit OPERATION MANUAL       |
| W380    | CS1W-DRM21-V1<br>CJ1W-DRM21   | CS/CJ Series DeviceNet Units OPERATION MANUAL                             |
| W267    | CS1W/CJ1W/C200HW<br>DRT1/DRT2<br>GT1<br>CVM1  | DeviceNet OPERATION MANUAL  |
| W266    | C200HW-SRM21-V1<br>CS1W-SRM21<br>CJ1W-SRM21<br>CQM1-SRM21-V1<br>SRT1/SRT2   | CompoBus/S OPERATION MANUAL   |
| W136    | C500-RM001-(P)V1<br>C120-RM001-(P)<br>C500-RT001/RT002-(P)V1<br>C500/C120-LK010(-P)<br>C200H-RM001-PV1<br>C200H-RT001/002-P<br>B500-I/O | C series Rack PCs Optical Remote I/O SYSTEM MANUAL                        |
| W308    | C200HW-ZW3DV2/ZW3PC2<br>3G8F5-CLK11/21<br>3G8F6-CLK21   | Controller Link Support Software OPERATION MANUAL                         |
| W120    | C500-RM201/RT201<br>C200H-RM201/RT201/202<br>G71-IC16/OD16<br>G72C-ID16/OD16<br>S32-RS1   | C series Rack PCs Wired Remote I/O SYSTEM MANUAL                          |
| W379    | CVM1-DRM21-V1<br>C200HW-DRM21-V1  | DeviceNet Master Units OPERATION MANUAL                                   |
| W347    | C200HW-DRT21<br>CQM1-DRT21<br>DRT1  | DeviceNet Slaves OPERATION MANUAL   |
| W135    | C200H-LK401<br>C500-LK009-V1  | C Series PC Link SYSTEM MANUAL  |

## Support Software

| Man.No. | Model                            | Manual   |
|---------|----------------------------------|--|
| W463    | CXONE-AL□□C-V4<br>CXONE-AL□□D-V4 | CX-One FA Integrated Tool Package SETUP MANUAL                   |
| W446    |                                  | CX-Programmer OPERATION MANUAL                                   |
| W447    |                                  | CX-Programmer OPERATION MANUAL : Function Blocks/Structured Text |
| W366    |                                  | CX-Simulator OPERATION MANUAL                                    |
| W464    |                                  | CX-Integrator OPERATION MANUAL                                   |
| W344    |                                  | CX-Protocol OPERATION MANUAL                                     |
| W433    |                                  | CX-Position OPERATION MANUAL                                     |
| W436    |                                  | CX-Motion-NCF OPERATION MANUAL                                   |
| W448    |                                  | CX-Motion-MCH OPERATION MANUAL                                   |

## MEMO

## Terms and Conditions Agreement

### Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right.

(c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

### Limitation on Liability; Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

#### **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 ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

**NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.**

#### **Programmable Products.**

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

#### **Performance Data.**

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

#### **Change in Specifications.**

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

#### **Errors and Omissions.**

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

# C200HX/HG/HE Replacement Guide

## From C200HX/HG/HE to CJ2

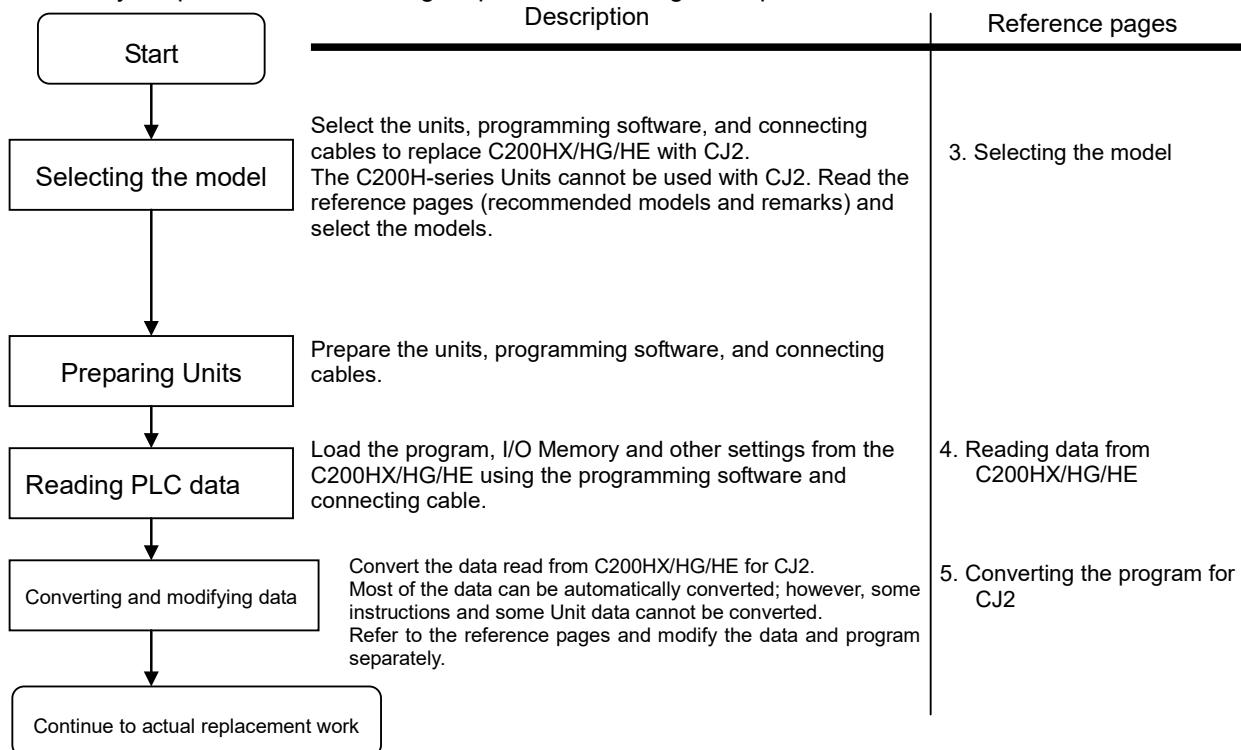
### Table of Contents

|  |    |
|--|----|
| 1. Work flow.....  | 2  |
| 2. Selecting the replacement method.....                                 | 3  |
| 3. Selecting the model.....  | 6  |
| 4. Reading data from C200HX/HG/HE.....                                   | 11 |
| 5. Converting the program for CJ2.....                                   | 13 |
| 6. Writing data to CJ2.....  | 15 |
| 7. Appendix.....   | 17 |
| Appendix A. Instructions converted by Change Model on CX-Programmer..... | 17 |
| Appendix B. Change of unit area allocation.....                          | 20 |
| Appendix C. Change in PLC Settings.....                                  | 20 |
| Appendix D. Change of execution timing etc. ....                         | 20 |
| Appendix E. Table of Input/Output Units .....                            | 21 |

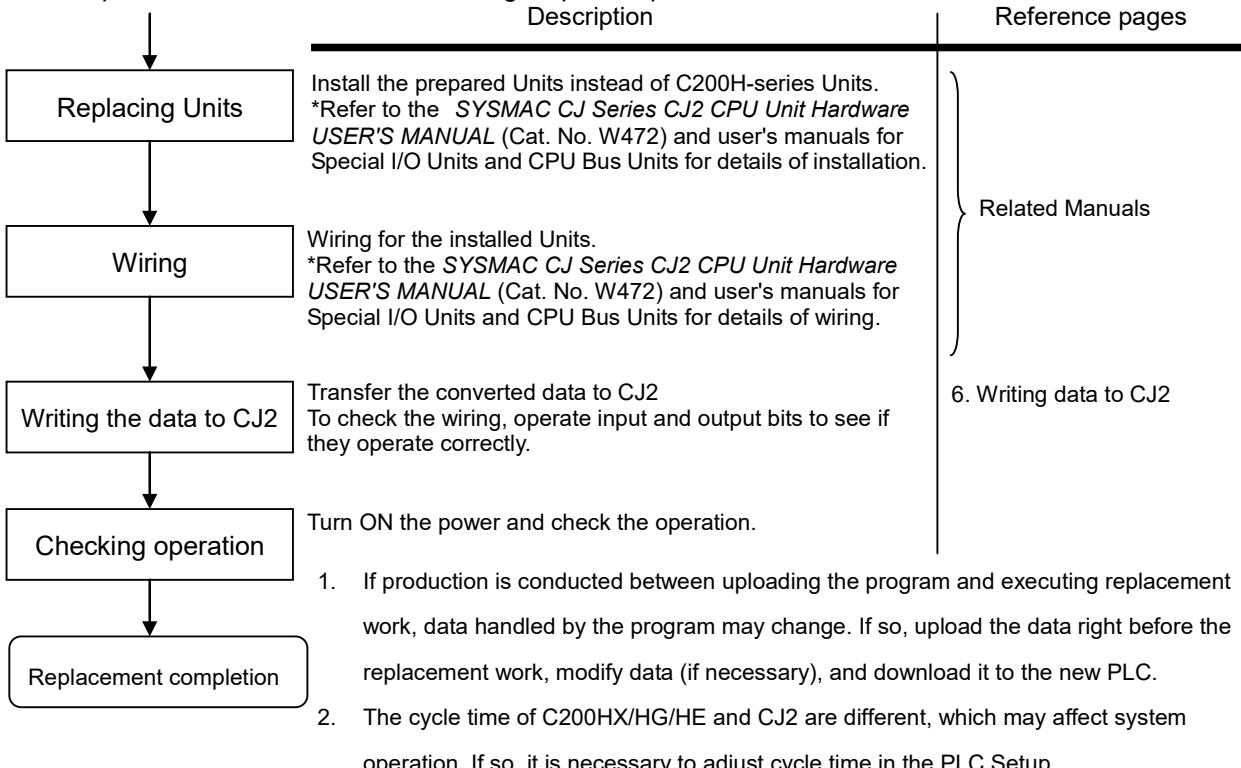
Follow the below work flow to replace C200HX/HG/HE with CJ2. Refer to the reference pages for details.

## 1. Work flow

### 1) Preliminary Steps: Take the following steps before starting the replacement work.

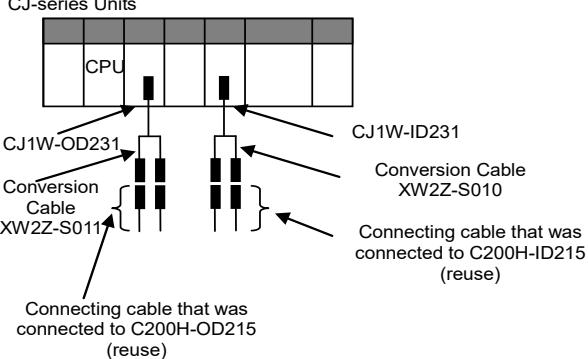


### 2) Actual replacement work: Take the following steps to replace C200HX/HG/HE with CJ2.



## 2. Selecting the replacement method

When C200H-series Basic I/O Units are replaced with CJ-series Basic I/O Units, rewiring is required. When C200H-ID215 and C200H-OD215 C200H High-density I/O Units are replaced with CJ-series I/O Units, the same connecting cables that were connected to C200H High-density I/O Units can be used.

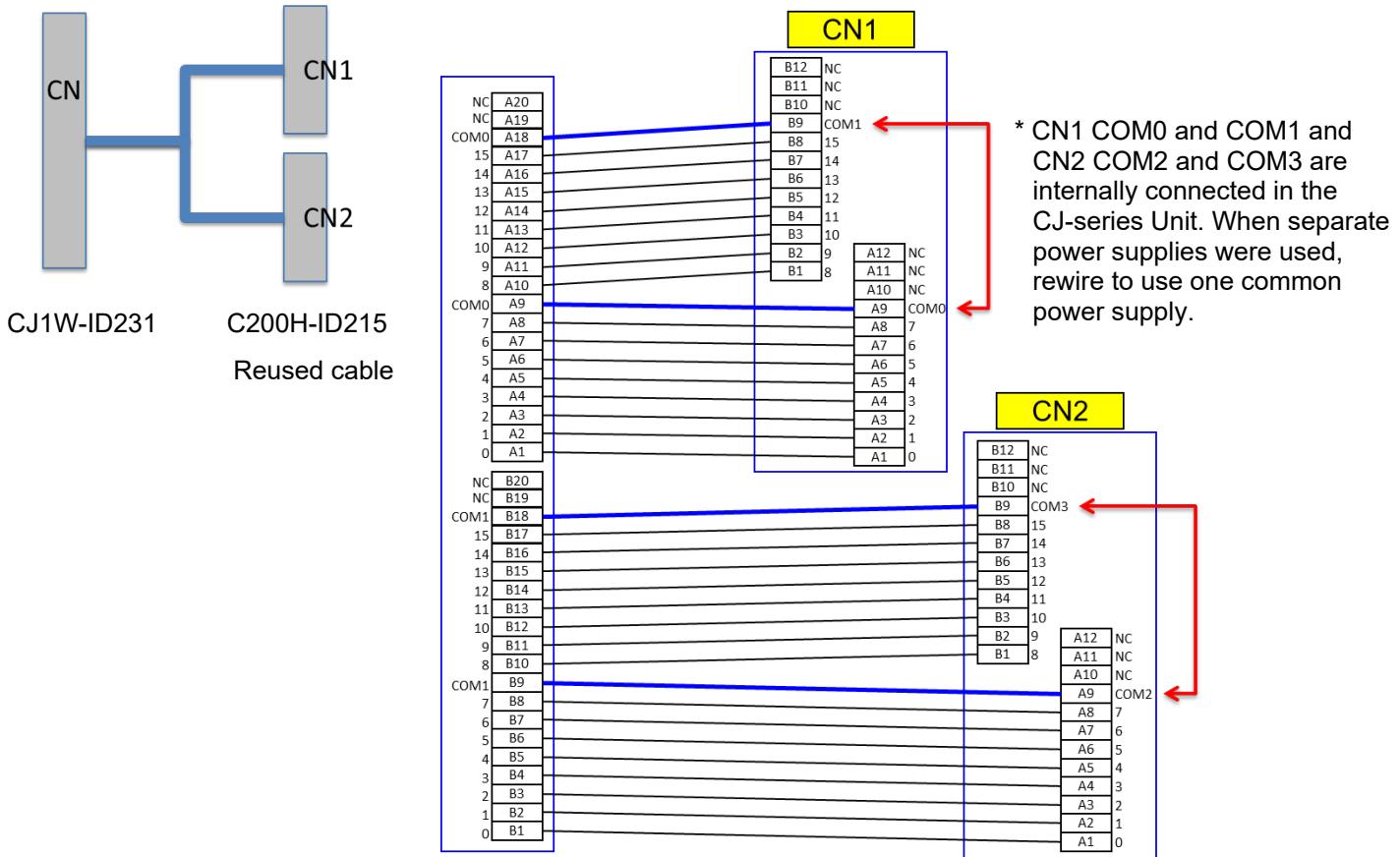
| Replacement method                                       | Description   |   |
|--|---|---|
| Using Conversion Cables for C200H High-density I/O Units | <p>Replace C200H-ID215 with CJ1W-ID231, and connect CJ1W-ID231 using the same connecting cables used for C200H-ID215. In the same way, replace C200H-OD215 with CJ1W-OD231, and connect CJ1W-OD231 using the same cable used for C200H-OD215.</p> <p>Pros: Rewiring of I/O Units is not required, which reduces replacement time.</p> |  <p>CJ-series Units</p> <p>CJ1W-ID231</p> <p>Conversion Cable XW2Z-S010</p> <p>Connecting cable that was connected to C200H-ID215 (reuse)</p> <p>Connecting cable that was connected to C200H-OD215 (reuse)</p> |

- Replacement of C200H-ID215 and C200H-OD215 using Conversion Cables

The same connecting cables that were connected to C200H-ID215 and C200H-OD215 can be used to replace them with CJ1W-ID231 and CJ1W-OD231.

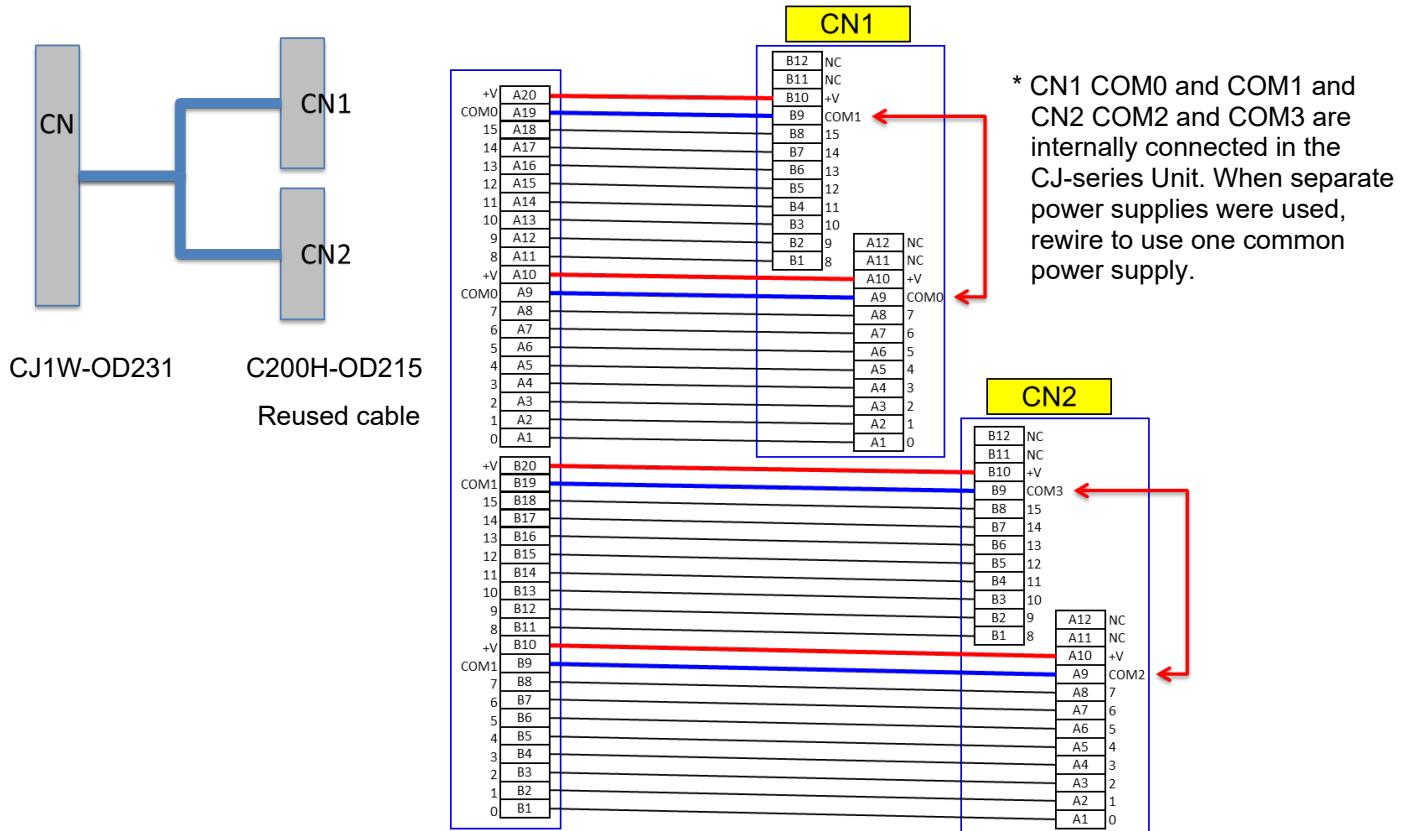
| C200H-series Unit | CJ-series Unit | Conversion Cable |
|-------------------|----------------|------------------|
| C200H-ID215       | CJ1W-ID231     | XW2Z-S010        |
| C200H-OD215       | CJ1W-OD231     | XW2Z-S011        |

### XW2Z-S010



|                         | C200H-ID215                                   | CJ1W-ID231                                | Remarks   |
|-------------------------|---|---|---|
| Rated input voltage     | 24 VDC  | 24 VDC                                    |   |
| Operating input voltage | 20.4 to 26.4 VDC                              | 20.4 to 26.4 VDC                          |   |
| Input impedance         | 5.6 kΩ  | 5.6 kΩ                                    | Make sure that the connected device operates correctly.                                   |
| Input current           | 4.1 mA typical (at 24 VDC)                    | 4.1 mA typical (at 24 VDC)                | Make sure that the connected device operates correctly.                                   |
| ON voltage              | 14.4 VDC min.                                 | 19 VDC min.                               | Make sure that the connected device operates correctly.                                   |
| OFF voltage             | 5 VDC max.                                    | 5 VDC max.                                |   |
| ON response time        | 2.5 ms max./15 ms max. (switchable)           | 8 ms max. (switchable)                    | Can be set to between 0 and 32 ms in the PLC Setup.                                       |
| OFF response time       | 2.5 ms max./15 ms max. (switchable)           | 8 ms max. (switchable)                    | Can be set to between 0 and 32 ms in the PLC Setup.                                       |
| No. of circuits         | 8 points/common x 4 circuits (32 inputs)      | 16 points/common x 2 circuits (32 inputs) | The number of circuits decreased from 4 to 2. Rewire if separate power supplies are used. |
| High-speed inputs       | 8 points (when pin 2 of the DIP switch is ON) | Not supported                             | Use CJ1W-IDP01 for high-speed inputs.   |

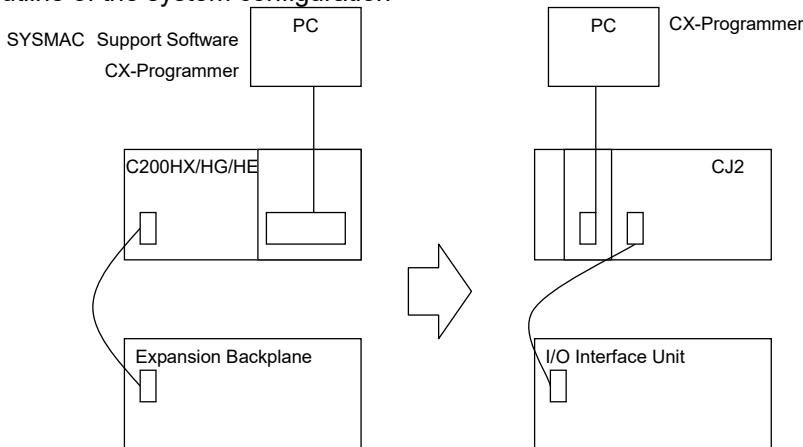
## XW2Z-S011



|                         | C200H-OD215  | CJ1W-OD231                                 | Remarks   |
|-------------------------|--|--|---|
| Rated voltage           | 5 to 24 VDC  | 12 to 24 VDC                               | We recommend you to use 24 VDC instead if 5 VDC is used.                                  |
| Max. switching capacity | 16 mA/4.5 VDC to 100 mA/26.4 VDC<br>0.8 A/common, 3.2 A/Unit | 0.5 A/point, 2 A/common, 4 A/Unit          |   |
| Leakage current         | 0.1 mA max.  | 0.1 mA max.                                |   |
| Residual voltage        | 0.7 V max.   | 1.5 V max.                                 | Make sure that the connected device operates correctly.                                   |
| ON response time        | 0.2 ms max.  | 0.1 ms max.                                | Make sure that the connected device operates correctly.                                   |
| OFF response time       | 0.6 ms max.  | 0.8 ms max.                                | Make sure that the connected device operates correctly.                                   |
| No. of circuits         | 8 points/common x 4 circuits (32 outputs)                    | 16 points/common x 2 circuits (32 outputs) | The number of circuits decreased from 4 to 2. Rewire if separate power supplies are used. |
| Fuses                   | 4 (1 fuse/common)  | None                                       | When protection is required, connect a protective device externally.                      |
| External power supply   | 5 to 24 VDC±10%, 90 mA min.<br>2.8 mA x no. of ON outputs    | 10.2 to 26.4 VDC, 30 mA min.               |   |
| Dynamic outputs         | 30 mA min.   | Not supported                              | Dynamic outputs are not supported.  |

### 3. Selecting the model

#### Outline of the system configuration



The table below lists the C200H-series Units and each corresponding CJ-series Unit. Select the CJ-series Unit which is compatible with the C200H-series Unit or which has similar specifications to the C200H-series Unit.

Refer to the following manuals for details of the Units:

CJ2: *CJ2H-CPU6□-EIP/CJ2H-CPU6□/CJ2M-CPU□□ SYSMAC CJ Series CJ2 CPU Unit Hardware USER'S MANUAL* (Cat. No. W472)

C200HX/HG/HE: *C200HX/C200HG/C200HE-CPU□□E-ZE INSTALLATION GUIDE* (Cat. No. W302)

#### < CPU Rack >

| Unit name         | C200H-series Unit  | CJ-series Unit  | Description  |
|-------------------|--|---|--|
| CPU Unit (*)      | C200HE-CPU11(-Z)<br>C200HE-CPU32(-Z)<br>C200HE-CPU42(-Z)<br>C200HG-CPU33(-Z)<br>C200HG-CPU43(-Z)<br>C200HG-CPU53(-Z)<br>C200HG-CPU63(-Z)<br>C200HX-CPU34(-Z)<br>C200HX-CPU44(-Z)<br>C200HX-CPU54(-Z)<br>C200HX-CPU64(-Z)<br>C200HX-CPU65-Z<br>C200HX-CPU85-Z | [CJ2H]<br>CJ2H-CPU64(-EIP)<br>CJ2H-CPU65(-EIP)<br>CJ2H-CPU66(-EIP)<br>CJ2H-CPU67(-EIP)<br>CJ2H-CPU68(-EIP)<br><br>[CJ2M]<br>CJ2M-CPU11/CPU31<br>CJ2M-CPU12/CPU32<br>CJ2M-CPU13/CPU33<br>CJ2M-CPU14/CPU34<br>CJ2M-CPU15/CPU35                  | UM 50K steps<br>UM 100K steps<br>UM 150K steps<br>UM 250K steps<br>UM 400K steps<br>*The EIP models have one built-in EtherNet/IP port.<br><br>UM 5K steps<br>UM 10K steps<br>UM 20K steps<br>UM 30K steps<br>UM 60K steps<br>*The CPU3□ models have one built-in EtherNet/IP port |
| Memory Cassette   | C200HW-ME□□K<br>C200HS-MP16K   | HMC-EF□□□   |  |
| Power Supply Unit | C200HW-PA□□□<br><br>C200HW-PD□□□   | CJ1W-PA202<br>(AC Power Supply Unit)<br><br>CJ1W-PA205C<br>(AC Power Supply Unit)<br><br>CJ1W-PA205R<br>(AC Power Supply Unit)<br><br>CJ1W-PD022<br>(DC Power Supply Unit,<br>non-insulated type)<br><br>CJ1W-PD025<br>(DC Power Supply Unit) | To use RUN output, prepare an Output Unit separately.<br><br>With replacement notification function.<br><br>With RUN output.<br><br>To use RUN output, prepare an Output Unit separately.<br><br>To use RUN output, prepare an Output Unit separately.                             |
| CPU Backplane     | C200HW-BC031<br>C200HW-BC051<br>C200HW-BC081-V1<br>C200HW-BC101-V1   | Unnecessary<br><br>[DIN Track]<br>PFP-50N<br>PFP-100N<br>PFP-100N2  | CJ-series Units are installed on the DIN Track. The CPU Backplane is not required.   |

(\*) The built-in serial port of the CJ2-series CPU Unit has the same functionality as that of C200HX/HG/HE-series CPU Unit. Refer to the related manuals for details because specifications differ between the two series. Use the communications board/unit if required for the application where the built-in port is used.

< CPU Rack >

| Unit name                          | C200H-series Unit  | CJ-series Unit | Description   |
|------------------------------------|--|----------------|---|
| Communications Board               | C200HW-COM01   | Unnecessary    | It is not necessary to mount the communication unit for networks such as <b>SYSMAC LINK</b> and <b>SYSMAC NET</b> .                                       |
|                                    | C200HW-COM02(-V1)  | CJ1W-SCU21-V1  | The CJ Series does not have an inner-board type communications unit. Use the unit type.   |
|                                    | C200HW-COM03(-V1)  | CJ1W-SCU41-V1  |   |
|                                    | C200HW-COM04(-V1)  | CJ1W-SCU21-V1  |   |
|                                    | C200HW-COM05(-V1)  | CJ1W-SCU21-V1  |   |
|                                    | C200HW-COM06(-V1)  | CJ1W-SCU41-V1  |   |
| Insulation Plate for CPU Backplane | C200H-ATT31<br>C200H-ATT51<br>C200H-ATT81<br>C200H-ATTA1 | Unnecessary    | The CJ-series CPU Backplane has an installation structure to be insulated from the control panel. The Insulation Plate for CPU Backplane is not required. |
| I/O Control Unit                   | Unnecessary  | CJ1W-IC101     | Required to connect a CJ-series Expansion Rack to a CJ-series CPU Rack.   |

< Expansion Rack >

| Unit name                          | C200H-series Unit  | CJ-series Unit  | Description  |
|------------------------------------|--|---|--|
| Power Supply Unit                  | C200HW-PA□□□   | CJ1W-PA202<br>(AC Power Supply Unit)  |  |
|                                    |  | CJ1W-PA205C<br>(AC Power Supply Unit)   | With replacement notification function.  |
|                                    |  | CJ1W-PA205R<br>(AC Power Supply Unit)   | The RUN output does not operate.   |
|                                    | C200HW-PD□□□   | CJ1W-PD022<br>(DC Power Supply Unit,<br>non-insulated type)   |  |
|                                    |  | CJ1W-PD025<br>(DC Power Supply Unit)  |  |
| Backplane<br>(Expansion Backplane) | C200HW-BI031<br>C200HW-BI051<br>C200HW-BI081-V1<br>C200HW-BI101-V1   | Unnecessary<br><br>[DIN Track]<br>PFP-50N<br>PFP-100N<br>PFP-100N2  | CJ-series Units are installed on the DIN Track. The Backplane is not required.   |
| I/O Interface Unit                 | Unnecessary  | CJ1W-II101  | Required for each CJ-series Expansion Rack.  |
| I/O Connecting Cable               | C200H-CN311 (0.3 m)<br>C200H-CN711 (0.7 m)<br>C200H-CN221 (2 m)<br>C200H-CN521 (5 m)<br>C200H-CN131 (10 m) | CS1W-CN313 (0.3 m)<br>CS1W-CN713 (0.7 m)<br>CS1W-CN223 (2 m)<br>CS1W-CN323 (3 m)<br>CS1W-CN523 (5 m)<br>CS1W-CN133 (10 m)<br>CS1W-CN133-B2 (12 m) | Connects an I/O Control Unit to an I/O Interface Unit or connects an I/O Interface Unit to another I/O Interface Unit.                             |
| Backplane Insulation Plate         | C200HW-ATT32<br>C200HW-ATT52<br>C200HW-ATT82<br>C200HW-ATTA2   | Unnecessary   | *The CJ-series Backplane has an installation structure to be insulated from the control panel. The Insulation Plate for Backplane is not required. |

< I/O Units and CPU Bus Units>

| Unit name          | C200H-series Unit  | CJ-series Unit   | Description   |
|--------------------|--|--|---|
| Basic I/O Unit     | C200H-I <sub>□□□</sub><br>C200H-O <sub>□□□</sub><br>C200H-M <sub>□□□</sub> | CJ1W-I <sub>□□□</sub><br>CJ1W-O <sub>□□□</sub><br>CJ1W-M <sub>□□□</sub>  | Refer to <i>Appendix E. Table of Input/Output Units</i> for CJ-series Basic I/O Units corresponding to C200H-series Basic I/O Units.  |
| Special I/O Unit   | C200H-□□□□□  | CJ1W-□□□□□   | Select a required model to replace the C200H-series Unit. Refer to the manuals of Special I/O Units for specifications. When there is no CJ-series Special I/O Unit which has the same functions and specifications as the C200H-series Unit, we recommend you to use another CJ-series Special I/O Unit instead. |
| Communication Unit | [SYSMAC LINK]<br>Coaxial: C200HW-SLK23/24<br>Optical: C200HW-SLK13/14      | [SYSMAC LINK]<br>None<br>[Controller Link]<br>Wired: CJ1W-CLK23<br>Optical: None                                   | SYSMAC LINK cannot be used with the CJ2-series CPU Unit.<br>We recommend you to use Controller Link instead.<br>Refer to the <i>Controller Link Units Operation Manual</i> (Cat. No. W309) for details.   |
|                    | [SYSMAC NET]<br>C200HS-SNT32   | [SYSMAC NET]<br>None<br>[Controller Link]<br>Wired: CJ1W-CLK23.<br>Optical: None                                   | SYSMAC NET cannot be used with the CJ2-series CPU Unit.<br>We recommend you to use Controller Link instead.<br>Refer to the <i>Controller Link Units Operation Manual</i> (Cat. No. W309) for details.  |
|                    | [Controller Link]<br>Wired: C200HW-CLK21                                   | [Controller Link]<br>Wired: CS1W-CLK23   | To replace with the CJ-series Unit, change the related areas including the Status Area. Refer to the <i>Controller Link Units Operation Manual</i> (Cat. No. W309) for details.   |
|                    | [Host Link]  | [Serial Communications]  | C200H-series Host Link Units cannot be used with the CJ2-series CPU Unit.<br>Refer to the <i>SYSMAC CS/CJ Series Serial Communications Boards/Units OPERATION MANUAL</i> (Cat. No. W336) for details.   |
|                    | C200H-LK101-PV1  | None<br><br>CJ1W-SCU21-V1<br>(+ optical link module)   | The CJ Series does not have an Optical-type Serial Communications Board/Unit. Use the wired type instead or use an external optical link module.  |
|                    | C200H-LK201-V1   | CJ1W-SCU21-V1<br>CJ1W-SCU41-V1<br>Host Link port built in the CPU Unit<br>*For CJ2M-CPU3□, CP1W-CIF01 is required. | Use one of the left CJ-series Units/Boards..<br><br>*CJ2M-CPU3□ does not have a built-in Host Link port. Purchase the CP1W-CIF01 RS-232C Option Board.  |
|                    | C200H-LK202-V1   | CJ1W-SCU31-V1<br>CJ1W-SCU41-V1   | Use one of the left CJ-series Units/Boards.   |
|                    | [PC Link]<br>C200H-LK401   | [PC Link]<br>None<br><br>[Controller Link]<br>Wired: CJ1W-CLK23.<br>Optical: None                                  | PC Link cannot be used with the CJ2-series CPU Unit.<br>We recommend you to use Controller Link instead.<br>Refer to the <i>Controller Link Units Operation Manual</i> (Cat. No. W309) for details.   |

< I/O Units and CPU Bus Units>

| Unit name          | C200H-series Unit  | CJ-series Unit  | Description   |
|--------------------|--|---|---|
| Communication Unit | [CompoBus/S]<br>C200HW-SRM21(-V1)                              | [CompoBus/S]<br>CJ1W-SRM21  | There are some remarks to be followed when CS1W-SRM21 is used.<br>Refer to the <i>C200HW/CS1W/CJ1W/CQM1/SRT1/SRT2 CompoBus/S OPERATION MANUAL</i> (Cat. No. W266) for details.  |
|                    | [DeviceNet]<br>C200HW-DRM21(-V1)                               | [DeviceNet]<br>CJ1W-DRM21   | There are also some remarks to be followed when CS1W-DRM21 is used.<br>Refer to the <i>CS1W-DRM21(-V1), CJ1W-DRM21 CS/CJ SERIES DeviceNet UNITS OPERATION MANUAL</i> (Cat. No. W380) for details.   |
|                    | [SYSMAC BUS]<br>Wired: C200H-RM201<br>Optical: C200H-RM001-PV1 | [SYSMAC BUS]<br>None<br><br>[CompoNet]<br>CJ1W-CRM21<br>[DeviceNet]<br>CJ1W-DRM21<br>[CompoBus/S]<br>CJ1W-SRM21 | SYSMAC BUS cannot be used with the CJ2-series CPU Unit.<br>We recommend you to use left networks instead.<br>Refer to the <i>CS/CJ series CompoNet Master Units OPERATION MANUAL</i> (Cat. No. W456) and <i>CompoNet Slave Units and Repeater Unit OPERATION MANUAL</i> (Cat. No. W457) for details of CompoNet.<br>Refer to the <i>CS1W-DRM21(-V1), CJ1W-DRM21 CS/CJ SERIES DeviceNet UNITS OPERATION MANUAL</i> (Cat. No. W380) for details of DeviceNet.<br>Refer to the <i>C200HW/CS1W/CJ1W/CQM1/SRT1/SRT2 CompoBus/S OPERATION MANUAL</i> (Cat. No. W266) for details of CompoBus/S. |
|                    | [PC Card Unit]<br>C200HW-PCU01<br>C200HW-PCS01-V1              | [PC Card Unit]<br>None<br>[Memory card]<br>HMC-EF□□□<br>[Ethernet]<br>CS1W-ETN21<br>[EtherNet/IP]<br>CS1W-EIP21 | The PC Card Unit cannot be used with the CJ2-series CPU Unit.<br>Insert the memory card into the CJ2-series CPU Unit to transfer data in PLC memory between the CPU Unit and memory card.<br>Moreover, communications can be made with the Ethernet Unit or EtherNet/IP Unit.   |

< Support Software and Peripheral Devices >

| Name  | C200H-series Unit                           | CJ-series Unit   | Description   |
|---|---|--|---|
| Support Software                            | SYSMAC Support Software<br>CX-Programmer    | CX-One<br>CXONE-AL□□C-V□/<br>AL□□D-V□<br>(CX-Programmer) | SYSMAC Support Software cannot be used with the CJ2-series CPU Unit.                          |
| Peripheral Interface Unit, Connecting Cable | CQM1-CIF02                                  | Commercially available<br>USB cable                      | USB 2.0 (or 1.1) cable<br>(A connector – B connector) 5.0 m max..                             |
| Programming Console                         | C200H-PRO27<br>(+C200H-CN□□2)<br>CQM1-PRO01 | None   | Use the CX-Programmer or Programming Console function of the NS-series Programmable Terminal. |

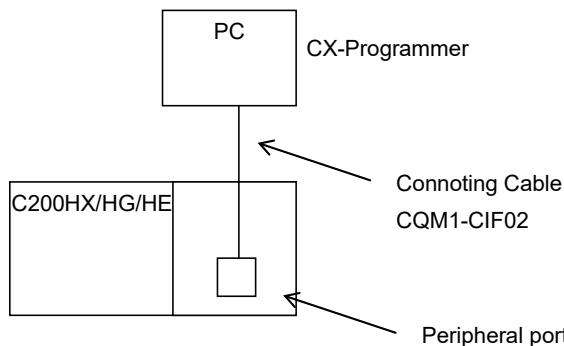
Other remarks

- (1) The PFP-50N/100N/100N2 DIN Track and C200H-DIN01 Mounting Bracket can be used to install the CJ-series Units on the DIN Track.
- (2) The CJ-series Unit has an installation structure to be insulated from the control panel (DIN Track). The C200H-ATT31/51/81/A1 Insulation Plate for CPU Backplane is not required.

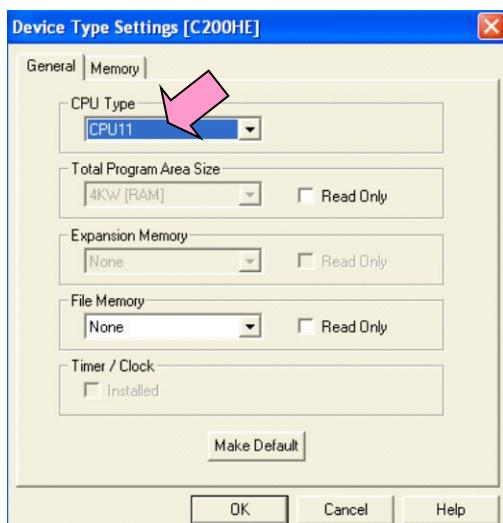
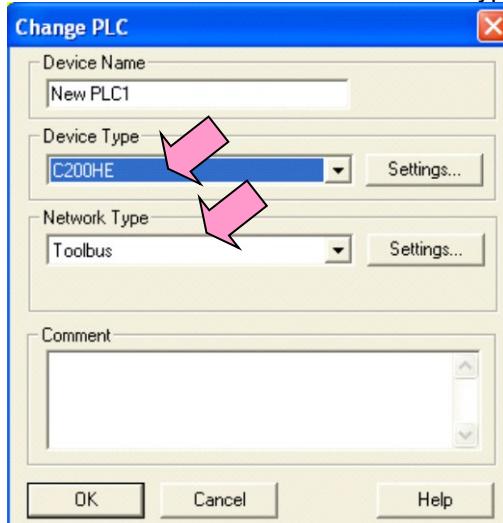
#### 4. Reading data from C200HX/HG/HE

Load the ladder program, PLC settings, and Data Memory from C200HX/HG/HE using the CX-Programmer.

|                |                       |   |
|----------------|-----------------------|---|
| Required items | Support software (PC) | CX-One (CXONE-AL□□C-V□□, CXONE-AL□□D-V□) or CX-Programmer (WS02-CXPC□-V□) |
|                | Connecting Cable      | CQM1-CIF02  |

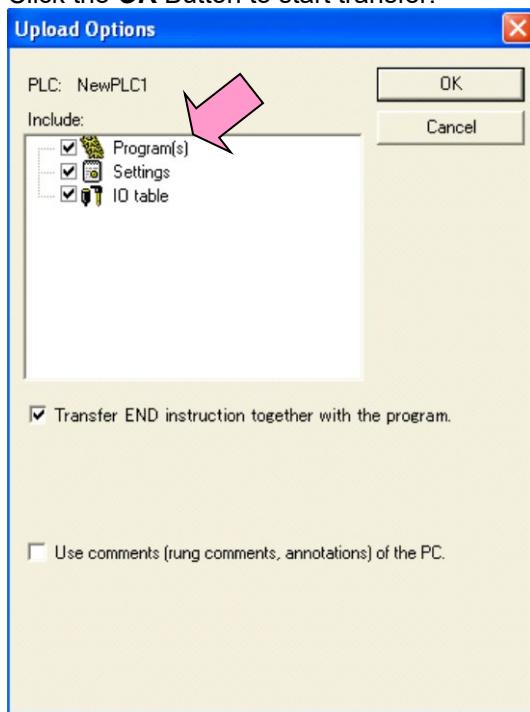


- (1) Connect C200HX/HG/HE and a PC using a connecting cable.
- (2) Start up the CX-Programmer. (Select **All Program - OMRON - CX-One - CX-Programmer - CX-Programmer** from the Windows Start Menu.)
- (3) Select C200HX/HG/HE for the Device Type. (Select **File - New.**)

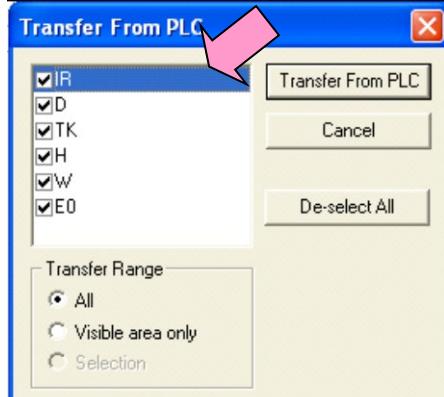


- (4) Select **Work Online** from the PLC Menu to go online.
- (5) Transfer the ladder program, PLC settings, and I/O table. (Select **Transfer - From PLC** from the PLC Menu.)

Click the **OK** Button to start transfer.



- (6) Transfer the PLC memory data (Data Memory). (Select **Edit - Memory** from the PLC Menu.)



Scroll and select all the areas. Click the **Transfer from PLC** Button to start transfer.

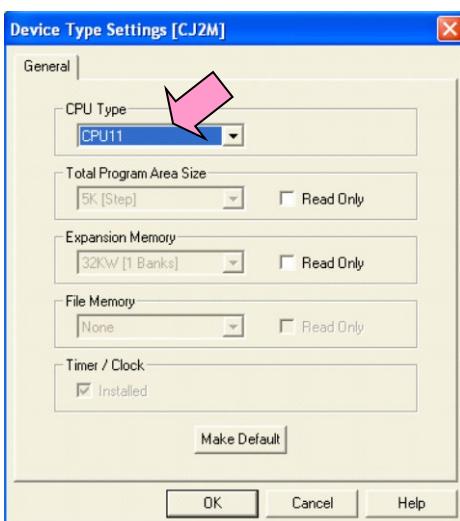
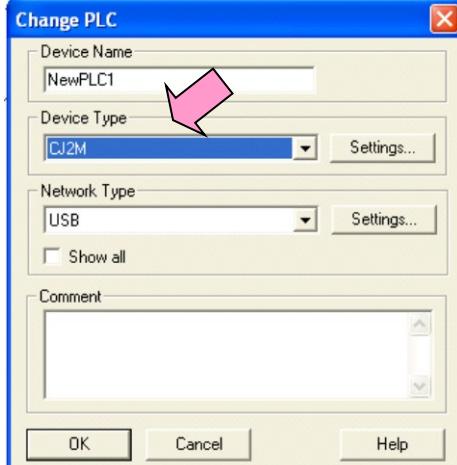


- (7) Select **Work Online** from the PLC Menu to go offline.
- (8) Save the program with a new project name. (Select **Save As** from the File Menu.)

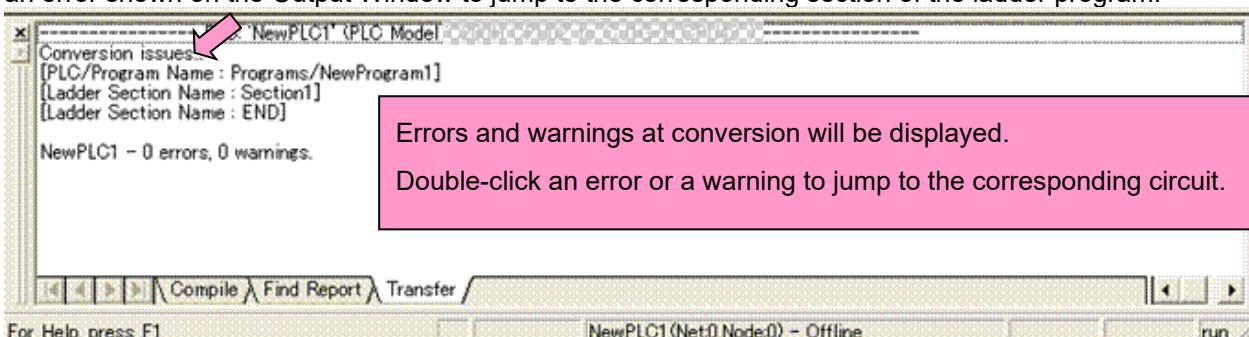
## 5. Converting the program for CJ2

On the CX-Programmer, convert the program for CJ2.

- (1) Start the CX-Programmer and open the saved program file for C200HX/HG/HE. (Select **Open** from the File Menu.)
- (2) Change the Device Type from C200HX/HG/HE to CJ2M or CJ2H. (Select **Change Model** from the PLC Menu to display the below dialog box.)



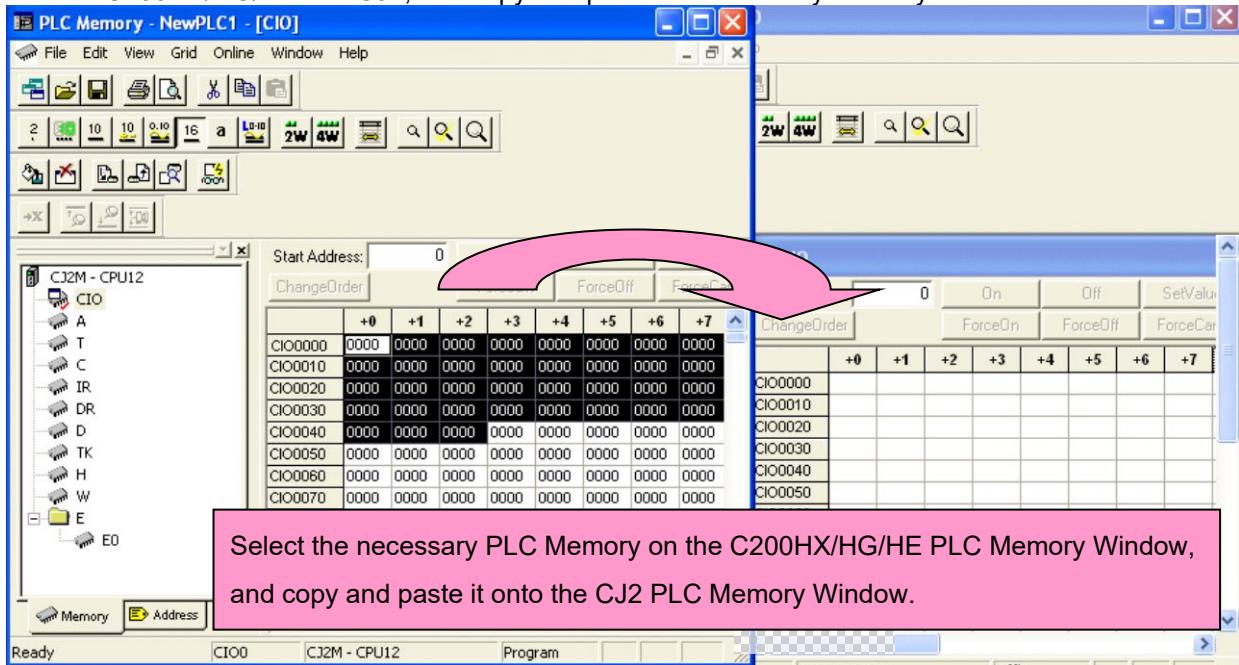
- (3) The instructions are automatically converted. The Output Window shows the conversion results. Double-click an error shown on the Output Window to jump to the corresponding section of the ladder program.



Some instructions cannot be converted. Modify the ladder program by referring to *Appendix A. Instructions converted by Change Model on CX-Programmer*.

You can check the program by selecting **Compile** from the Program Menu. The Output Window shows the checking results.

(4) The PLC memory data cannot be maintained when the PLC model is changed. Open the PLC Memory Window for both C200HX/HG/HE and CJ2, and copy and paste the necessary memory data.



(5) The I/O allocation of C200HX/HG/HE is partly different from that of CJ2. Refer to *Appendix B. Change of unit area allocation* and modify the ladder program.

(6) The PLC settings of C200HX/HG/HE are partly different from those of CJ2. Refer to *Appendix C. Change in PLC settings* and change the PLC settings.

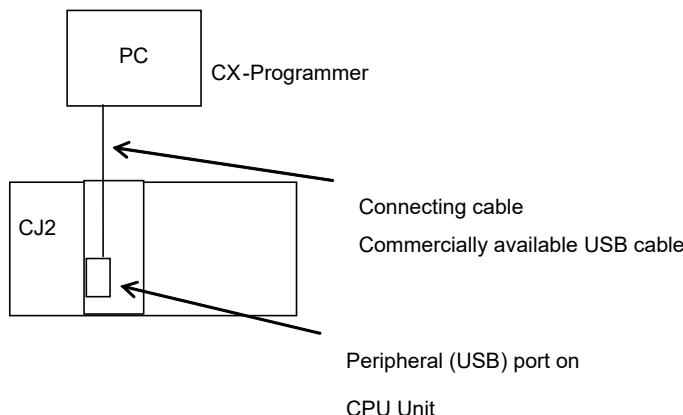
(7) Select **Compile** from the Program Menu to check the program. If an error is detected, correct it.

(8) Save the program with a new project name. (Select **Save As** from the File Menu.)

## 6. Writing data to CJ2

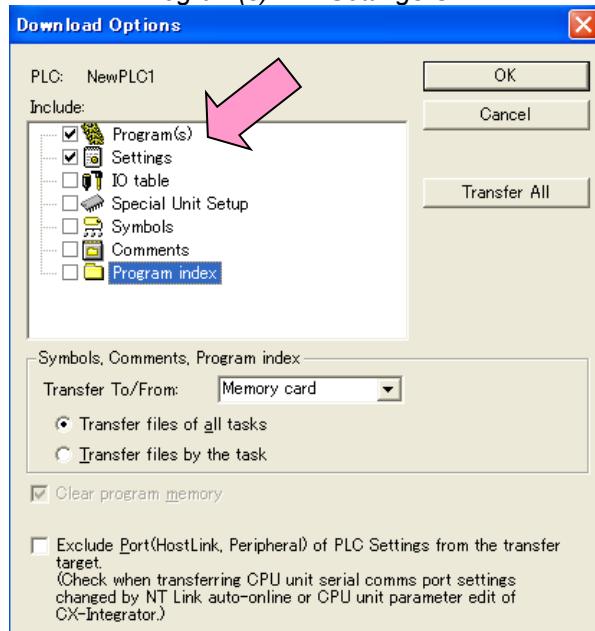
Transfer the converted and modified program, PLC settings, and Data Memory to CJ2.

|                |                       |  |
|----------------|-----------------------|--|
| Required items | Support Software (PC) | CX-One<br>CXONE-AL□□C-V□/ AL□□D-V□ (CX-Programmer)   |
|                | Connecting cable      | Commercially available USB cable<br>USB 2.0 (or 1.1) cable<br>(A connector – B connector) 5.0 m max. |

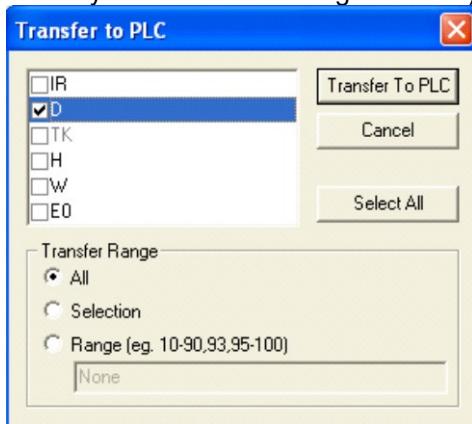


- (1) Connect CJ2 with a PC.
- (2) Start the CX-Programmer and open the converted program file for CJ2.
- (3) Go online with CJ2.
- (4) Transfer the ladder program and PLC settings to CJ2. (Select **Transfer - To PLC** from the PLC Menu.)

Select the *Program(s)* and *Settings* Check Boxes. Click the **OK** Button to start transfer.



(5) Select **Edit - Memory** from the PLC Menu to display the below dialog box. Select the PLC memory (Data Memory Area: D and Holding Area: HR) and click the **Transfer to PLC** Button to start transfer.



(6) Select **Work Online** from the PLC Menu to go offline

## 7. Appendix

### Appendix A. Instructions converted by Change Model on CX-Programmer

- (1) The data type of operand is changed from BCD to binary for some instructions.
- (2) The number of operands is changed for some instructions.
- (3) Interrupt control instructions must be changed. (Use MSKS, MSKR, CLI, DI, and EI).

Refer to the list below for details. The table lists the instructions which differ between before and after conversion. The other instructions remain unchanged after conversion.

| Instruction for C200HX/HG/HE | Instruction for CJ2   | Operand  | Number of operands                     |
|------------------------------|-----------------------|--|--|
| JMP(04)                      | JMP(004) or JMP0(515) | When #0 is set to the operand, JMP is converted to JMP0 and the operand is deleted.<br>If a value other than #0 is set, the operand is the same.   | #0: Changed from 1 to 0<br><> #0: Same |
| JME(05)                      | JME(005) or JME0(516) | When #0 is set to the operand, JME is converted to JME0 and the operand is deleted.<br>If a value other than #0 is set, the operand is the same.   | #0: Changed from 1 to 0<br><> #0: Same |
| FAL(06)                      | FAL(006)              | #0 is added to the second operand.<br>FAL N → FAL N #0   | Changed from 1 to 2.                   |
| FALS(07)                     | FALS(007)             | #0 is added to the second operand.<br>FALS N → FALS N #0   | Changed from 1 to 2.                   |
| STEP(08)                     | STEP(008)             | The Work Area (WR) or Index Register (indirect) can be used to specify the operand.<br>Change the operand.   | Same                                   |
| SNXT(09)                     | SNXT(009)             | The Work Area (WR) or Index Register (indirect) can be used to specify the operand.<br>Change the operand.   | Same                                   |
| SCAN(18)                     | Not supported         | Set a minimum cycle time in the PLC Setup.   |  |
| ADD(30)                      | +BC(406)              | Same as C200HX/HG/HE   | Same                                   |
| SUB(31)                      | -BC(416)              | Same as C200HX/HG/HE   | Same                                   |
| MUL(32)                      | *B(424)               | Same as C200HX/HG/HE   | Same                                   |
| DIV(33)                      | /B(434)               | Same as C200HX/HG/HE   | Same                                   |
| INC(38)                      | ++B(452)              | Same as C200HX/HG/HE   | Same                                   |
| DEC(39)                      | --B(454)              | Same as C200HX/HG/HE   | Same                                   |
| MSG(46)                      | MSG(046)              | #0 is added to the first operand.<br>MSG FM → MSG #0 M<br>The number of characters (words) to be registered from the first message word is changed from 16 characters (8 words) to 32 characters (16 words).                         | Changed from 1 to 2.                   |
| LMSG(47)                     | Not supported         | Use MSG (046) instead.   |  |
| TERM(48)                     | Not supported         | To execute the keyboard mapping function, use the function on the touch panel.   |  |
| ADB(50)                      | +C(402)               | Same as C200HX/HG/HE   | Same                                   |
| SBB(51)                      | -C(412)               | Same as C200HX/HG/HE   | Same                                   |
| MLB(52)                      | *U(422)               | Same as C200HX/HG/HE   | Same                                   |
| DVB(53)                      | /U(432)               | Same as C200HX/HG/HE   | Same                                   |
| ADDL(54)                     | +BCL(407)             | Same as C200HX/HG/HE   | Same                                   |
| SUBL(55)                     | -BCL(417)             | Same as C200HX/HG/HE   | Same                                   |
| MULL(56)                     | *BL(425)              | Same as C200HX/HG/HE   | Same                                   |
| DIVL(57)                     | /BL(435)              | Same as C200HX/HG/HE   | Same                                   |
| MPRF(61)                     | Not supported         | Use IORF (097) instead.  |  |
| LINE(63)                     | LINE(063)             | The data type of the second operand is changed from BCD to binary.<br>When a constant is specified, "#" is automatically converted to "&".<br>When a word address is specified, change the data type of the word from BCD to binary. | Same                                   |
| COLM(64)                     | COLM(064)             | The data type of the third operand is changed from BCD to binary.<br>When a constant is specified, "#" is automatically converted to "&".<br>When a word address is specified, change the data type of the word from BCD to binary.  | Same                                   |

| Instruction for C200HX/HG/HE | Instruction for CJ2 | Operand   | Number of operands   |
|------------------------------|---------------------|---|----------------------|
| BCNT(67)                     | BCNTC(621)          | Same as C200HX/HG/HE  | Same                 |
| XFER(70)                     | XFERC(565)          | Same as C200HX/HG/HE  | Same                 |
| DIST(80)                     | DISTC(566)          | Same as C200HX/HG/HE  | Same                 |
| COLL(81)                     | COLLC(567)          | Same as C200HX/HG/HE  | Same                 |
| MOVB(82)                     | MOVBC(568)          | Same as C200HX/HG/HE  | Same                 |
| TTIM(87)                     | TTIM(087)           | <p>The third operand (reset bit) is deleted. Add the reset input. (See the figure below).</p>   | Changed from 3 to 2. |
| INT(89)                      | Not supported       | <p>Use the following instructions for each function:</p> <p>SET INTERRUPT MASK: MSKS(690)<br/> CLEAR INTERRUPT: CLI(691)<br/> READ INTERRUPT MASK: MSKR(692)<br/> DISABLE INTERRUPTS: DI(693)<br/> ENABLE INTERRUPTS : EI(694)</p> <p>Scheduled Interrupt Interval: Set in the PLC Setup</p>  |                      |
| SEND(90)                     | SEND(090)           | The specification of the first control word (third operand) is changed. Refer to the manual to change the settings.   | Same                 |
| WDT(94)                      | WDT(094)            | The specification of the operand is changed. Refer to the manual to change the settings.  | Same                 |
| RECV(98)                     | RECV(098)           | The specification of the first control word (third operand) is changed. Refer to the manual to change the settings.   | Same                 |
| BXFR(125)                    | Not supported       | Use XFER(070) or XFERC(565) instead.  |                      |
| FCS(180)                     | FCS(180)            | The specification of the first control word (first operand) is changed. Refer to the manual to change the settings.   | Same                 |
| SRCH(181)                    | SRCH(181)           | The specification of the first control word (first operand) is changed. Refer to the manual to change the settings.   | Same                 |
| MAX(182)                     | MAX(182)            | The specification of the first control word (first operand) is changed. Refer to the manual to change the settings.   | Same                 |
| MIN(183)                     | MIN(183)            | The specification of the first control word (first operand) is changed. Refer to the manual to change the settings.   | Same                 |
| SUM(184)                     | SUM(184)            | The specification of the first control word (first operand) is changed. Refer to the manual to change the settings.   | Same                 |
| PID(190)                     | PID(190)            | The specification of the first parameter word (second operand) is changed. Refer to the manual to change the settings.  | Same                 |
| AVG(195)                     | AVG(195)            | <p>The data type of the second operand is changed from BCD to binary.</p> <p>When a constant is specified, "#" is automatically converted to "&amp;".</p> <p>When a word address is specified, change the data type of the word from BCD to binary.</p>   | Same                 |
| DSW(210)                     | DSW(210)            | <p>The fourth and fifth operands are added.</p> <p>The fourth operand specifies the number of digits that will be read. Check if the number of digits after conversion is the same as the number specified by this operand.</p> <p>The fifth operand specifies a work word used by this instruction. As this word cannot be used for any other purpose, change to another area when the area assigned by conversion is the area used for another purpose.</p> | Changed from 3 to 5. |
| HKY(212)                     | HKY(212)            | <p>The fourth operand is added.</p> <p>The fourth operand specifies a work word used by this instruction. As this word cannot be used for any other purpose, change to another area when the area assigned by conversion is the area used for another purpose.</p>  | Changed from 3 to 4. |

| Instruction for | Instruction for CJ2 | Operand | Number of operands |
|-----------------|---------------------|---------|--------------------|
|-----------------|---------------------|---------|--------------------|

| C200HX/HG/HE |               |  |                      |
|--------------|---------------|--|----------------------|
| MTR(213)     | MTR(213)      | The fourth operand is added.<br>The fourth operand specifies a work word used by this instruction. As this word cannot be used for any other purpose, change to another area when the area assigned by conversion is the area used for another purpose.  | Changed from 3 to 4. |
| 7SEG(214)    | 7SEG(214)     | The fourth operand is added.<br>The fourth operand specifies a work word used by this instruction. As this word cannot be used for any other purpose, change to another area when the area assigned by conversion is the area used for another purpose.  | Changed from 3 to 4. |
| IORD(222)    | IORD(222)     | The specifications of the operands are changed. Refer to the <i>CS1/CJ1/CJ2/NSJ SYSMAC CS/CJ SERIES SYSMAC ONE NSJ SERIES PROGRAMMABLE CONTROLLERS INSTRUCTIONS REFERENCE MANUAL</i> (Cat. No.W474), and change the settings.  | Same                 |
| IOWR(223)    | IOWR(223)     | The specifications of the operands are changed. Refer to the <i>CS1/CJ1/CJ2/NSJ SYSMAC CS/CJ SERIES SYSMAC ONE NSJ SERIES PROGRAMMABLE CONTROLLERS INSTRUCTIONS REFERENCE MANUAL</i> (Cat. No.W474), and change the settings.  | Same                 |
| RXD(235)     | RXD(235)      | This instruction cannot specify the peripheral port.<br>The data type of the number of bytes to store (third operand) is changed from BCD to binary.<br>When a constant is specified, "#" is automatically converted to "&".<br>When a word address is specified, change the data type of the word from BCD to binary. | Same                 |
| TXD(236)     | TXD(236)      | This instruction cannot specify the peripheral port.<br>The data type of the number of bytes (third operand) is changed from BCD to binary.<br>When a constant is specified, "#" is automatically converted to "&".<br>When a word address is specified, change the data type of the word from BCD to binary.          | Same                 |
| STUP(237)    | STUP(237)     | The specification of the control word (port) (first operand) is changed. Refer to the manual to change the settings.   | Same                 |
| PMCR(260)    | PMCR(260)     | The specification of the control word 1 (first operand) is changed. Refer to the manual to change the settings.  | Changed from 3 to 4. |
| CMCR(261)    | Not supported | Insert the memory card into the CPU Unit and use FREAD(700) or FWRIT(701) instead.   |                      |
| FPD(269)     | FPD(269)      | The data types of the FAL number of the control word (first operand) and monitoring time (second operand) are changed from BCD to binary.  | Same                 |
| XDMR(280)    | Not supported | Use XFER(070) or XFERC(565) instead.   |                      |
| EMBC(281)    | EMBC(281)     | The data type of the operand is changed from BCD to binary.<br>When a constant is specified, "#" is automatically converted to "&".<br>When a word address is specified, change the data type of the word from BCD to binary.  | Same                 |
| TST(350)     | TST(350)      | The data type of the second operand is changed from BCD to binary.<br>When a constant is specified, "#" is automatically converted to "&".<br>When a word address is specified, change the data type of the word from BCD to binary.   | Same                 |
| TSTN(351)    | TSTN(351)     | The data type of the second operand is changed from BCD to binary.<br>When a constant is specified, "#" is automatically converted to "&".<br>When a word address is specified, change the data type of the word from BCD to binary.   | Same                 |
| ADBL(480)    | +CL(403)      | Same as C200HX/HG/HE   | Same                 |
| SBBL(481)    | -CL(413)      | Same as C200HX/HG/HE   | Same                 |
| MBSL(482)    | *L(421)       | Same as C200HX/HG/HE   | Same                 |
| DBSL(483)    | /L(431)       | Same as C200HX/HG/HE   | Same                 |
| MBS(484)     | *(420)        | Same as C200HX/HG/HE   | Same                 |
| DBS(485)     | /(430)        | Same as C200HX/HG/HE   | Same                 |
| BXF2         | Not supported | Use XFER(070) or XFERC(565) instead.   |                      |
| XFR2         | Not supported | Use XFER(070) or XFERC(565) instead.   |                      |
| IEMS         | Not supported | Specify another address by using an Index Register.  |                      |
| NEG(--)      | NEG(160)      | Same as C200HX/HG/HE<br>However, if NEG Flag UF (25405) is used, change the Condition flags to P_N (Negative Flag).  | Same                 |
| NEGL(--)     | NEGL(161)     | Same as C200HX/HG/HE<br>However, if NEGL Flag UF (25405) is used, change the Condition flags to P_N (Negative Flag).   | Same                 |

## Appendix B. Change of unit area allocation

This section describes the differences in unit area allocation between C200HX/HG/HE and CJ2.

Refer to related manuals for details.

| Item  | C200HX/HG/HE  | CJ2  | Description  |
|---|---|--|--|
| I/O allocation<br>Basic I/O                   | "Free location and fixed word allocation"   | "Free location and free word allocation"<br>Change the word and bit addresses used in the program.   |  |
| I/O allocation<br>Special I/O                 | IR 100 to IR 199<br>IR 400 to IR 459<br>(10 words allocated for each Unit No.)<br>DM 1000 to DM 2599<br>(100 words allocated for each Unit No.) | CIO 2000 to CIO 2199<br>(10 words allocated for each Unit No.)<br>D20000 to D21999<br>(100 words allocated for each Unit No.)<br>Change the word and bit addresses used in the program.    | Refer to the<br><i>CJ2H-CPU6□-EIP/CJ2H-CPU6□/CJ2M-CPU□</i><br><i>SYSMAC CJ SERIES CJ2 CPU UNIT SOFTWARE USER'S MANUAL</i> (Cat. No. W473) for details on I/O allocation. |
| I/O allocation<br>Group-2<br>High-density I/O | IR 030 to IR 049<br>IR 330 to IR 341<br>(2 or 4 words allocated for each I/O word)  | The allocation is decided in the same way as Basic I/O Units depending on the installed position (rack and slot).<br>Change the word and bit addresses used in the program.                |  |
| Link Relay Area (LR)                          | LR 00 to LR 63  | None   | PC Link cannot be used with CJ2.   |
| Special Relay Area (SR)                       | SR 236 to SR 255<br>SR 256 to SR 299  | (1) Auxiliary Area and bits<br>Change the word and bit addresses used in the program.  | In CJ2, operation flags and condition flags are specified by labels.   |
| Auxiliary Relay Area (AR)                     | AR 00 to AR 27  | (2) Condition flags and clock pulses<br>Change the arithmetic flags in the program to the condition flags. Clock pulses are specified using global symbols, such as "P_0.1ms" and "P_1ms". |  |
| PLC Link Words                                | SR 247 to SR 250<br>(In SR Area)  | None   | PC Link cannot be used with CJ2.   |
| Optical I/O Unit and I/Terminal Area          | IR 200 to IR 231  | None   | The Optical I/O Unit cannot be used with CJ2.  |
| DeviceNet Area and SYSMAC BUS Area            | IR 050 to IR 099<br>IR 350 to IR 399  | [DeviceNet Area]<br>CIO 3200 to CIO 3799<br>[SYSMAC BUS Area]<br>None  | SYSMAC BUS cannot be used with CJ2.  |
| Work/Internal I/O Area                        | IR 310 to IR 329<br>IR 342 to IR 349<br>IR 460 to IR 511  | CIO 1200 to CIO 1499<br>CIO 3800 to CIO 6143<br>W000 to W511   |  |
| Temporary Relay Area (TR)                     | TR 00 to TR 07  | TR 00 to TR 15   |  |
| Holding Relay Area (HR)                       | HR 00 to HR 99  | HR 000 to HR 959   |  |
| Error Log Area                                | DM 6000 to DM 6030  | A100 to A199   | Change the program if the Error Log Area is read in the program.   |

## Appendix C. Change in PLC Settings

| Item      | C200HX/HG/HE                                 | CJ2  | Description                           |
|-----------|--|--|---------------------------------------|
| PLC Setup | Always uses the DM Area (DM 6600 to DM 6655) | Uses dedicated area for PLC settings (there is no address for setting by users). | Refer to related manuals for details. |

## Appendix D. Change of execution timing etc.

| Item  | C200HX/HG/HE                             | CJ2  | Description  |
|---|--|--|--|
| Interrupt execution method and execution timing | Write interrupt programs in subroutines. | Write interrupt programs in interrupt tasks.   | In CJ2, interrupt tasks are executed even when an instruction is being executed or I/O is being refreshed. |
| I/O table registration                          | Not required                             | Required<br>I/O tables must be created with the CX-Programmer or other programming device.                                     |  |
| Cycle time                                      | -  | The cycle time is shortened with CS1. If the system operation is affected by cycle time, check the operation after conversion. | To keep the same cycle time as C200HX/HG/HE, set Minimum Cycle Time in the PLC Setup.                      |

## Appendix E. Table of Input/Output Units

### ■ Input Unit

- (1) The terminal block of the CJ-series Unit differs from that of the C200H-series Unit. Change the wiring.
- (2) If a different type of connector is used, change the wiring.
- (3) If the input specifications differ, make sure that the system operates correctly.
- (4) If the number of circuits increases, rewire the terminals to each common terminal.
- (5) If internal current consumption is different, make sure the power supply capacity is large enough.
- (6) Refer to the related manuals for details. Although CJ-series Units have basic functions of C200H-series Units, some specifications may differ.

#### < DC Input Units >

| C200H -series Unit   | Corresponding CJ-series Unit                                 | Description   | Difference  |
|--|--|---|---|
| <b>C200H-ID211</b><br>12 to 24 VDC, 10 mA, Terminal block, 8 inputs      | <b>CJ1W-ID211</b><br>24 VDC, 7 mA, Terminal block, 16 inputs | DC Input Unit with terminal block for 8 inputs.<br>Replace this unit with a DC Input Unit with 16 inputs. | 1) Terminal block<br>2) Input points (8 points → 16 points)<br>3) Input circuit specifications<br>Input impedance (2 kΩ → 3.3 kΩ)<br>ON voltage (10.2 VDC → 14.4 VDC)<br>OFF voltage (3 VDC → 5 VDC)<br>4) Internal current consumption<br>(5 VDC: 10 mA → 80 mA)   |
| <b>C200H-ID212</b><br>24 VDC, 7 mA, Terminal block, 16 inputs            | <b>CJ1W-ID211</b><br>24 VDC, 7 mA, Terminal block, 16 inputs | DC Input Unit with terminal block for 16 inputs.  | 1) Terminal block<br>2) Input circuit specification<br>Input impedance (3 kΩ → 3.3 kΩ)<br>3) Internal current consumption<br>(5 VDC: 10 mA → 80 mA)   |
| <b>C200H-ID215</b><br>24 VDC, 4.1 mA, Connector, 32 inputs (Special I/O) | <b>CJ1W-ID231</b><br>24 VDC, 4.1 mA, Connector, 32 inputs    | DC Input Unit with connector for 32 inputs.   | 1) Connector<br>Use the XW2Z-S010 Conversion Cable to reuse the connecting cable.<br>2) No. of circuits (8 points/common x 4 circuits → 16 points/common x 2 circuits)<br>3) Input circuit specification<br>ON voltage (14.4 VDC → 19 VDC)<br>4) Internal current consumption<br>(5 VDC: 130 mA → 90 mA)                  |
| <b>C200H-ID216</b><br>24 VDC, 4.1 mA, Connector, 32 inputs (Group-2)     | <b>CJ1W-ID231</b><br>24 VDC, 4.1 mA, Connector, 32 inputs    | DC Input Unit with connector for 32 inputs.   | 1) No. of circuits (32 points/common x 1 circuit → 16 points/common x 2 circuits)<br>2) Input circuit specification<br>ON voltage (14.4 VDC → 15.4 VDC)<br>3) Internal current consumption<br>(5 VDC: 100 mA → 90 mA)   |
| <b>C200H-ID218</b><br>24 VDC, 6 mA, Connector, 32 inputs (Group-2)       | <b>CJ1W-ID231</b><br>24 VDC, 4.1 mA, Connector, 32 inputs    | DC Input Unit with connector for 32 inputs.   | 1) No. of circuits (32 points/common x 1 circuit → 16 points/common x 2 circuits)<br>2) Internal current consumption<br>(5 VDC: 100 mA → 90 mA)   |
| <b>C200H-ID111</b><br>12 VDC, 4.1 mA, Connector, 64 inputs (Group-2)     | <b>CJ1W-ID261</b><br>24 VDC, 4.1 mA, Connector, 64 inputs    | DC Input Unit with connector for 64 inputs.   | 1) No. of circuits (32 points/common x 2 circuits → 16 points/common x 4 circuits)<br>2) Input circuit specifications<br>Input voltage (12 VDC → 24 VDC)<br>Input impedance (2.7 kΩ → 5.6 kΩ)<br>ON voltage (8 VDC → 19 VDC)<br>OFF voltage (3 VDC → 5 VDC)<br>3) Internal current consumption<br>(5 VDC: 120 mA → 90 mA) |
| <b>C200H-ID217</b><br>24 VDC, 4.1 mA, Connector, 64 inputs (Group-2)     | <b>CJ1W-ID261</b><br>24 VDC, 4.1 mA, Connector, 64 inputs    | DC Input Unit with connector for 64 inputs.   | 1) No. of circuits (32 points/common x 2 circuits → 16 points/common x 4 circuits)<br>2) Input circuit specification<br>ON voltage (14.4 VDC → 19 VDC)<br>3) Internal current consumption<br>(5 VDC: 120 mA → 90 mA)  |
| <b>C200H-ID219</b><br>24 VDC, 6 mA, Connector, 64 inputs (Group-2)       | <b>CJ1W-ID261</b><br>24 VDC, 4.1 mA, Connector, 64 inputs    | DC Input Unit with connector for 64 inputs.   | 1) No. of circuits (32 points/common x 2 circuits → 16 points/common x 4 circuits)<br>2) Input circuit specifications<br>Input impedance (3.9 kΩ → 5.6 kΩ)<br>ON voltage (15.4 VDC → 19 VDC)<br>3) Internal current consumption<br>(5 VDC: 120 mA → 90 mA)  |

< TTL Input Unit >

| C200H-series Unit   | Corresponding CJ-series Unit | Description   | Difference |
|---|------------------------------|---|------------|
| <b>C200H-ID501</b><br>5 VDC, 3.5 mA, Connector, 32 inputs (Special I/O) | No replacement model         | TTL Input Unit with connector for 32 inputs. The CJ Series does not have the same type of Unit.<br>Use the CJ1W-ID231 24-VDC Input Unit or CJ1W-MD563 TTL I/O Unit instead. |            |

< AC Input Units >

| C200H-series Unit  | Corresponding CJ-series Unit | Description   | Difference  |
|--|------------------------------|---|---|
| <b>C200H-IA121</b><br>100 to 120 VAC, 10 mA, Terminal block, 8 inputs  | <b>CJ1W-IA111</b>            | 100 VAC Input Unit with terminal block for 8 inputs. Replace this unit with a 100 VAC Input Unit with 16 inputs.    | 1) Terminal block<br>2) Input points (8 points → 16 points)<br>3) Input circuit specifications<br>Input impedance (9.7 kΩ → 14.5 kΩ)<br>ON voltage (60 VAC → 70 VAC)<br>4) Internal current consumption<br>(5 VDC: 10 mA → 90 mA) |
| <b>C200H-IA221</b><br>200 to 240 VAC, 10 mA, Terminal block, 8 inputs  | <b>CJ1W-IA201</b>            | 200 VAC Input Unit with terminal block for 8 inputs.<br>.   | 1) Terminal block<br>2) Input points (8 points → 8 points*)<br>*16 I/O bits (1 word) are allocated.<br>3) Internal current consumption<br>(5 VDC: 10 mA → 80 mA)  |
| <b>C200H-IA122/IA122V</b><br>100 to 120 VAC, 10 mA, Terminal block, 16 inputs, IA122V: Complying with EC Directive | <b>CJ1W-IA111</b>            | 100 VAC Input Unit with terminal block for 16 inputs.   | 1) Terminal block<br>2) Input circuit specifications<br>Input impedance (9.7 kΩ → 14.5 kΩ)<br>ON voltage (60 VAC → 70 VAC)<br>3) Internal current consumption<br>(5 VDC: 10 mA → 90 mA)   |
| <b>C200H-IA222/IA222V</b><br>200 to 240 VAC, 10 mA, Terminal block, 16 inputs, IA222V: Complying with EC Directive | <b>CJ1W-IA201</b>            | 200 VAC Input Unit with terminal block for 16 inputs. Replace this unit with two 200 VAC Input Units with 8 inputs. | 1) Terminal block<br>2) No. of circuits (16 points/common x 1 circuit → 8 points/common x 1 circuit x 2)<br>3) Internal current consumption<br>(5 VDC: 10 mA → 80 mA x 2)   |

< AC/DC Input Units >

| C200H-series Unit  | Corresponding CJ-series Unit | Description   | Difference   |
|--|------------------------------|---|--|
| <b>C200H-IM211</b><br>12 to 24 VAC/VDC, Terminal block, 8 inputs | <b>CJ1W-ID211</b>            | AC/DC Input Unit with terminal block for 8 inputs. Replace this unit with a DC Input Unit with 16 inputs.<br>*The CJ Series does not have an AC/DC Input Unit. If this Unit is used with AC inputs, change the wiring for DC inputs.  | 1) Terminal block<br>2) Input points (8 points → 16 points)<br>3) Input circuit specifications<br>Input voltage range (12 to 24 VAC/VDC → 24 VDC)<br>Input impedance (2 kΩ → 3.3 kΩ)<br>ON voltage (10.2 VDC → 14.4 VDC)<br>OFF voltage (3 VDC → 5 VDC)<br>4) Internal current consumption<br>(5 VDC: 10 mA → 80 mA) |
| <b>C200H-IM212</b><br>24 VAC/VDC, Terminal block, 16 inputs      | <b>CJ1W-ID211</b>            | AC/DC Input Unit with terminal block for 16 inputs. Replace this unit with a DC Input Unit with 16 inputs.<br>*The CJ Series does not have an AC/DC Input Unit. If this Unit is used with AC inputs, change the wiring for DC inputs. | 1) Terminal block<br>2) No. of circuits (16 points/common x 1 circuit → 8 points/common x 2 circuits)<br>3) Input circuit specifications<br>Input voltage range (24 VAC/VDC → 24 VDC)<br>Input impedance (3 kΩ → 3.3 kΩ)<br>4) Internal power consumption<br>(5 VDC: 10 mA → 80 mA)                                  |

## ■ Output Unit

- (1) The terminal block of the CJ-series Unit differs from that of the C200H-series Unit. Change the wiring.
- (2) If a different type of connector is used, change the wiring.
- (3) If the number of circuits increases, rewire the terminals to each common terminal.
- (4) If the output specifications differ, make sure that the system operates correctly.
- (5) The relay lifetime may vary depending on usage when a different relay is used. Refer to *A-1-3 Precautions on Contact Output Unit of the CJ2H-CPU6□-EIP/CJ2H-CPU6□/CJ2M-CPU□□ SYSMAC CJ Series CJ2 CPU Unit Hardware USER'S MANUAL* (Cat. No. W472) for details.
- (6) If internal current consumption is different, make sure the power supply capacity is large enough.
- (7) If the voltage and current consumption of the external power supply differ, make sure the power supply capacity is large enough.
- (8) Refer to the related manuals for details. Although CJ-series Units have basic functions of C200H-series Units, some specifications may differ.

### < Relay Output Units >

| C200H-series Unit  | Corresponding CJ-series Unit | Description   | Difference   |
|--|------------------------------|---|--|
| <b>C200H-OC223</b><br>250 VAC/24 VDC, 2 A, Terminal block, 5 outputs (independent contacts)          | <b>CJ1W-OC201</b>            | Relay Output Unit with terminal block for 5 outputs (independent contacts). Replace this unit with a Relay Output Unit with 8 outputs (independent contacts). | 1) Terminal block<br>2) Output points (independent contacts 5 points → 8 points)<br>3) Output circuit specifications<br>ON/OFF response time (10 ms → 15 ms)<br>Used relay<br>4) Internal current consumption<br>(5 VDC: 10 mA → 90 mA, 26 VDC: 46 mA → 24 VDC: 48 mA)   |
| <b>C200H-OC224</b><br>250 VAC/24 VDC, 2 A, Terminal block, 8 outputs (independent contacts)          | <b>CJ1W-OC201</b>            | Relay Output Unit with terminal block for 8 outputs (independent contacts).   | 1) Terminal block<br>2) Output circuit specifications<br>ON/OFF response time (10 ms → 15 ms)<br>Used relay<br>3) Internal current consumption<br>(5 VDC: 10 mA → 90 mA, 26 VDC: 75 mA → 24 VDC: 48 mA)  |
| <b>C200H-OC224V, OC224N</b><br>250 VAC/24 VDC, 2 A, Terminal block, 8 outputs (independent contacts) | <b>CJ1W-OC201</b>            | Relay Output Unit with terminal block for 8 outputs (independent contacts).   | 1) Terminal block<br>2) Output circuit specification<br>Used relay<br>3) Internal current consumption<br>(5 VDC: 10 mA → 90 mA, 26 VDC: 90 mA → 24 VDC: 48 mA)   |
| <b>C200H-OC221</b><br>250 VAC/24 VDC, 2 A, Terminal block, 8 outputs                                 | <b>CJ1W-OC211</b>            | Relay Output Unit with terminal block for 8 outputs. Replace this unit with a Relay Output Unit with 16 outputs.  | 1) Terminal block<br>2) Output points (8 points → 16 points)<br>3) Output circuit specifications<br>ON/OFF response time (10 ms → 15 ms)<br>Used relay<br>4) Internal current consumption<br>(5 VDC: 10 mA → 110 mA, 26 VDC: 75 mA → 24 VDC: 96 mA)  |
| <b>C200H-OC222</b><br>250 VAC/24 VDC, 2 A, Terminal block, 12 outputs                                | <b>CJ1W-OC211</b>            | Relay Output Unit with terminal block for 12 outputs. Replace this unit with a Relay Output Unit with 16 outputs.   | 1) Terminal block<br>2) Output points (12 points → 16 points)<br>3) No. of circuits (12 points/common x 1 circuit → 8 points/common x 2 circuits)<br>4) Output circuit specifications<br>ON/OFF response time (10 ms → 15 ms)<br>Used relay<br>5) Internal current consumption<br>(5 VDC: 10 mA → 110 mA, 26 VDC: 75 mA → 24 VDC: 96 mA) |
| <b>C200H-OC222V, OC222N</b><br>250 VAC/24 VDC, 2 A, Terminal block, 12 outputs                       | <b>CJ1W-OC211</b>            | Relay Output Unit with terminal block for 12 outputs. Replace this unit with a Relay Output Unit with 16 outputs.   | 1) Terminal block<br>2) Output points (12 points → 16 points)<br>3) No. of circuits (12 points/common x 1 circuit → 8 points/common x 2 circuits)<br>4) Output circuit specification<br>Used relay<br>5) Internal current consumption<br>(5 VDC: 10 mA → 110 mA, 26 VDC: 90 mA → 24 VDC: 96 mA)  |

< Relay Output Units >

| C200H-series Unit   | Corresponding CJ-series Unit   | Description   | Difference   |
|---|--|---|--|
| <b>C200H-OC225</b><br>250 VAC/24 VDC, 2 A, Terminal block, 16 outputs         | <b>CJ1W-OC211</b><br>250 VAC/24 VDC, 2 A, Terminal block, 16 outputs | Relay Output Unit with terminal block for 16 outputs. | 1) Terminal block<br>2) No. of circuits (16 points/common x 1 circuit → 8 points/common x 2 circuits)<br>3) Output circuit specifications<br>ON/OFF response time (10 ms → 15 ms)<br>Used relay<br>4) Internal current consumption<br>(5 VDC: 10 mA → 110 mA, 26 VDC: 75 mA → 24 VDC: 96 mA) |
| <b>C200H-OC226, OC226N</b><br>250 VAC/24 VDC, 2 A, Terminal block, 16 outputs | <b>CJ1W-OC211</b><br>250 VAC/24 VDC, 2 A, Terminal block, 16 outputs | Relay Output Unit with terminal block for 16 outputs. | 1) Terminal block<br>2) No. of circuits (16 points/common x 1 circuit → 8 points/common x 2 circuits)<br>3) Output circuit specification<br>Used relay<br>4) Internal current consumption<br>(5 VDC: 10 mA → 110 mA, 26 VDC: 90 mA → 24 VDC: 96 mA)  |

< Transistor Output Units >

| C200H-series Unit   | Corresponding CJ-series Unit  | Description   | Difference   |
|---|---|---|--|
| <b>C200H-OD411</b><br>12 to 48 VDC, 1 A, Sinking, Terminal block, 8 outputs                             | <b>CJ1W-OD201</b><br>12 to 24 VDC, 2 A, Sinking, Terminal block, 8 outputs                              | Transistor Output Unit with terminal block for 8 outputs.   | 1) Terminal block<br>2) Output circuit specifications<br>Voltage range (12 to 48 VDC → 12 to 24VDC)<br>Output capacity<br>(1 A/point, 3 A/Unit → 2 A/point, 8 A/Unit)<br>Residual voltage (1.4 V → 1.5 V)<br>ON response time (0.2 ms → 0.5 ms)<br>OFF response time (0.3 ms → 1.0 ms)<br>3) Internal current consumption<br>(5 VDC: 140 mA → 90 mA)                   |
| <b>C200H-OD213</b><br>24 VDC, 2.1 A, Sinking, Terminal block, 8 outputs                                 | <b>CJ1W-OD211</b><br>12 to 24 VDC, 0.5 A, Sinking, Terminal block, 16 outputs                           | Transistor Output Unit with terminal block for 8 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.  | 1) Terminal block<br>2) Output points (8 points → 16 points)<br>3) Output circuit specifications<br>Output capacity<br>(2.1 A/point, 5.2 A/Unit → 0.5 A/point, 5 A/Unit)<br>Residual voltage (1.4 V → 1.5 V)<br>ON response time (0.2 ms → 0.1 ms)<br>OFF response time (0.3 ms → 0.8 ms)<br>4) Internal current consumption<br>(5 VDC: 140 mA → 100 mA)               |
| <b>C200H-OD214</b><br>24 VDC, 0.8 A, Sourcing, Terminal block, Load short circuit protection, 8 outputs | <b>CJ1W-OD212</b><br>24 VDC, 0.5 A, Sourcing, Terminal block, Load short circuit protection, 16 outputs | Transistor Output Unit with terminal block for 8 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.  | 1) Terminal block<br>2) Output points (8 points → 16 points)<br>3) Output circuit specifications<br>Output capacity<br>(0.8A/point, 2.4 A/Unit → 0.5 A/point, 5 A/Unit)<br>ON response time (1 ms → 0.5 ms)<br>4) Internal current consumption<br>(5 VDC: 140 mA → 100 mA)   |
| <b>C200H-OD216</b><br>5 to 24 VDC, 0.3 A, Sourcing, Terminal block, 8 outputs                           | <b>CJ1W-OD212</b><br>24 VDC, 0.5 A, Sourcing, Terminal block, Load short circuit protection, 16 outputs | Transistor Output Unit with terminal block for 8 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.  | 1) Terminal block<br>2) Output points (8 points → 16 points)<br>3) Output circuit specifications<br>Output voltage range (5 to 24 VDC → 24 VDC)<br>ON response time (1.5 ms → 0.5 ms)<br>OFF response time (2 ms → 1 ms)<br>4) Internal current consumption (5 VDC: 10 mA → 100 mA, 26 VDC: 75 mA → 0 mA)<br>5) External power supply<br>(Not required → 24 VDC/40 mA) |
| <b>C200H-OD211</b><br>24 VDC, 0.3 A, Sinking, Terminal block, 12 outputs                                | <b>CJ1W-OD211</b><br>12 to 24 VDC, 0.5 A, Sinking, Terminal block, 16 outputs                           | Transistor Output Unit with terminal block for 12 outputs. Replace this unit with a Transistor Output Unit with 16 outputs. | 1) Terminal block<br>2) Output points (12 points → 16 points)<br>3) Output circuit specifications<br>Residual voltage (1.4 V → 1.5 V)<br>ON response time (0.2 ms → 0.1 ms)<br>OFF response time (0.3 ms → 0.8 ms)<br>4) Internal current consumption<br>(5 VDC: 160 mA → 100 mA)  |

< Transistor Output Units >

| C200H-series Unit   | Corresponding CJ-series Unit  | Description  | Difference   |
|---|---|--|--|
| <b>C200H-OD217</b><br>5 to 24 VDC, 0.3 A, Sourcing, Terminal block, 12 outputs                                | <b>CJ1W-OD212</b><br>24 VDC, 0.5 A, Sourcing, Terminal block, Load short circuit protection, 16 outputs | Transistor Output Unit with terminal block for 12 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.                          | 1) Terminal block<br>2) Output points (12 points → 16 points)<br>3) Output circuit specifications<br>Output voltage range (5 to 24 VDC → 24 VDC)<br>ON response time (1.5 ms → 0.5 ms)<br>OFF response time (0.5 ms → 1.0 ms)<br>4) Internal current consumption<br>(5 VDC: 10 mA → 100 mA,<br>26 VDC: 75 mA → 0 mA)<br>5) External power supply<br>(Not required → 24 VDC: 40 mA)   |
| <b>C200H-OD212</b><br>24 VDC, 0.3 A, Sinking, Terminal block, 16 outputs                                      | <b>CJ1W-OD211</b><br>12 to 24 VDC, 0.5 A, Sinking, Terminal block, 16 outputs                           | Transistor Output Unit with terminal block for 16 outputs.   | 1) Terminal block<br>2) Output circuit specifications<br>Residual voltage (1.4 V → 1.5 V)<br>ON response time (0.2 ms → 0.1 ms)<br>OFF response time (0.3 ms → 0.8 ms)<br>4) Internal current consumption<br>(5 VDC: 180 mA → 100 mA,)   |
| <b>C200H-OD21A</b><br>24 VDC, 1.0 A, Sourcing, Terminal block, Load short circuit protection, 16 outputs      | <b>CJ1W-OD212</b><br>24 VDC, 0.5 A, Sourcing, Terminal block, Load short circuit protection, 16 outputs | Transistor Output Unit with terminal block for 16 outputs.   | 1) Terminal block<br>2) Output circuit specifications<br>Output capacity<br>(1 A/point, 4 A/Unit → 0.5 A/point, 5 A/Unit)<br>Residual voltage (0.8 V → 1.5 V)<br>ON response time (0.1 ms → 0.5 ms)<br>OFF response time (0.3 ms → 1.0 ms)<br>4) Internal current consumption<br>(5 VDC: 160 mA → 100 mA)<br>5) Alarm output (Supported → Not supported)   |
| <b>C200H-OD218</b><br>4.5 to 26.3 VDC, 0.1A, Sinking, Connector, 32 outputs (Group-2)                         | <b>CJ1W-OD231</b><br>12 to 24 VDC, 0.5A, Sinking, Connector, 32 outputs                                 | Transistor Output Unit with connector for 32 outputs.  | 1) No. of circuits (32 points/common x 1 circuit → 16 points/common x 2 circuits)<br>2) Output circuit specifications<br>Output voltage range<br>(5 to 24 VDC → 12 to 24 VDC)<br>Residual voltage (0.8 V → 1.5 V)<br>OFF response time (0.4 ms → 0.8 ms)<br>3) Internal current consumption<br>(5 VDC: 180 mA → 140 mA)  |
| <b>C200H-OD215</b><br>4.5 to 26.3 VDC, 0.1 A, Sinking, Connector, 32 outputs (Special I/O)                    | <b>CJ1W-OD231</b><br>12 to 24 VDC, 0.5A, Sinking, Connector, 32 outputs                                 | Transistor Output Unit with connector for 32 outputs.<br>*The CJ-series Unit does not support dynamic outputs. Change the wiring for static outputs. | 1) Connector<br>Use the XW2Z-S011 Conversion Cable to reuse the connecting cable.<br>2) Output method<br>(Dynamic or static mode → Static mode only)<br>Based on specifications in static output mode<br>3) No. of circuits (8 points/common x 4 circuits → 16 points/common x 2 circuits)<br>4) Output circuit specifications<br>Output voltage range<br>(5 to 24 VDC → 12 to 24 VDC)<br>Residual voltage (0.7 V → 1.5 V)<br>ON response time (0.2 ms → 0.1 ms)<br>OFF response time (0.6 ms → 0.8 ms)<br>5) Internal current consumption<br>(5 VDC: 220 mA → 140 mA) |
| <b>C200H-OD21B</b><br>24 VDC, 0.5 A, Sourcing, Connector, Load short circuit protection, 32 outputs (Group-2) | <b>CJ1W-OD232</b><br>24 VDC, 0.5 A, Sourcing, Connector, Load short circuit protection, 32 outputs      | Transistor Output Unit with connector for 32 outputs.  | 1) No. of circuits (32 points/common x 1 circuit → 16 points/common x 2 circuits)<br>2) Output circuit specifications<br>Output capacity (0.5 A/point, 5 A/Unit → 0.5 A/point, 2.5 A/common, 4 A/Unit)<br>Residual voltage (0.8 V → 1.5 V)<br>ON response time (0.1 ms → 0.5 ms)<br>OFF response time (0.3 ms → 1 ms)<br>3) Internal current consumption<br>(5 VDC: 180 mA → 150 mA)   |
| <b>C200H-OD219</b><br>4.5 to 26.3 VDC, 0.1 A, Sinking, Connector, 64 outputs (Group-2)                        | <b>CJ1W-OD261</b><br>12 to 24 VDC, 0.3 A, Sinking, Connector, 64 outputs                                | Transistor Output Unit with connector for 64 outputs..   | 1) No. of circuits (32 points/common x 2 circuits → 16 points/common x 4 circuits)<br>2) Output circuit specifications<br>Output voltage range<br>(5 to 24 VDC → 12 to 24 VDC)<br>Residual voltage (0.8 V → 1.5 V)<br>ON response time (0.1 ms → 0.5 ms)<br>OFF response time (0.4 ms → 1.0 ms)<br>3) Internal current consumption<br>(5 VDC: 270 mA → 170 mA)   |

< TTL Output Unit >

| C200H-series Unit   | Corresponding CJ-series Unit | Description  | Difference |
|---|------------------------------|--|------------|
| <b>C200H-OD501</b><br>5 VDC, 35 mA, Connector, 32 outputs (Special I/O) | No replacement model         | TTL Output Unit with connector for 32 outputs. The CJ Series does not have the same type of Unit.<br>Use C200H-OD501 with CJ2 or use the CJ1W-OD231 Transistor Output Unit or CJ1W-MD563 TTL I/O Unit instead. |            |

< Triac Output Units >

| C200H-series Unit   | Corresponding CJ-series Unit                                   | Description  | Difference  |
|---|--|--|---|
| <b>C200H-OA223</b><br>250 VAC, 1.2 A, Terminal block, 8 outputs               | <b>CJ1W-OA201</b><br>250 VAC, 0.6 A, Terminal block, 8 outputs | Triac Output Unit with terminal block for 8 outputs.   | <ol style="list-style-type: none"> <li>1) Terminal block</li> <li>2) Output circuit specifications<br/>Output capacity (1.2 A/point, 4 A/unit → 0.6 A/point, 2.4 A/Unit)<br/>Max. inrush current (15 A/10 ms, 30 A/10 ms → 15 A/10 ms)<br/>Residual voltage (50 to 1200 mA: 1.5 VAC, 10 to 50 mA: 5 VAC → 1.6 VAC).</li> <li>3) Internal current consumption<br/>(5 VDC: 180 mA → 220 mA)</li> </ol>  |
| <b>C200H-OA221</b><br>250 VAC, 1.2 A, Terminal block, 8 outputs               | <b>CJ1W-OA201</b><br>250 VAC, 0.6 A, Terminal block, 8 outputs | Triac Output Unit with terminal block for 8 outputs.   | <ol style="list-style-type: none"> <li>1) Terminal block</li> <li>2) Output circuit specifications<br/>Output capacity (1 A/point, 4 A/unit → 0.6 A/point, 2.4 A/Unit)<br/>Max. inrush current (No regulation → 15 A/10 ms)<br/>Residual voltage (1.2 VAC → 1.6 VAC)<br/>OFF response time (1/2 of load frequency or less → 1/2 of load frequency + 1 ms or less)</li> <li>3) Internal current consumption<br/>(5 VDC: 140 mA → 220 mA)</li> </ol>  |
| <b>C200H-OA224</b><br>250 VAC, 0.5 A, Terminal block, 12 outputs              | <b>CJ1W-OA201</b><br>250 VAC, 0.6 A, Terminal block, 8 outputs | Triac Output Unit with terminal block for 12 outputs.<br>Replace this unit with two Triac Output Units with 8 outputs. | <ol style="list-style-type: none"> <li>1) Terminal block</li> <li>2) Output points (12 points → 8 points x 2)</li> <li>3) No. of circuits (12 points/common x 1 circuit → 8 points/common x 1 circuit x 2)</li> <li>4) Output circuit specifications<br/>Output capacity (250 VAC 0.5 A/point, 2 A/unit → 0.6 A/point, 2.4 A/Unit x 2)<br/>Max. inrush current (10 A/100 ms, 20 A/10 ms → 15 A/10 ms)<br/>Residual voltage (50 to 500 mA: 1.5 VAC, 10 to 50 mA: 5 VAC → 1.6 VAC).</li> <li>5) Internal current consumption<br/>(5 VDC: 270 mA → 220 mA x 2)</li> </ol>                                    |
| <b>C200H-OA222V</b><br>250 VAC, 0.3 A, Terminal block, 12 outputs (CE marked) | <b>CJ1W-OA201</b><br>250 VAC, 0.6 A, Terminal block, 8 outputs | Triac Output Unit with terminal block for 12 outputs.<br>Replace this unit with two Triac Output Units with 8 outputs. | <ol style="list-style-type: none"> <li>1) Terminal block</li> <li>2) Output points (12 points → 8 points x 2)</li> <li>3) No. of circuits (12 points/common x 1 circuit → 8 points/common x 1 circuit x 2)</li> <li>4) Output circuit specifications<br/>Max. inrush current (No regulation → 15 A/10 ms)<br/>Residual voltage (1.2 VAC → 1.6 VAC)<br/>ON response time (1/2 of load frequency or less → 1 ms or less)<br/>OFF response time (1/2 of load frequency or less → 1/2 of load frequency + 1 ms or less).</li> <li>5) Internal current consumption<br/>(5 VDC: 200 mA → 220 mA x 2)</li> </ol> |

## ◆ Input/Output Units

- (1) The CJ Series has following I/O Units: CJ1W-MD23□, CJ1W-MD26□, and CJ1W-MD563.
- (2) Refer to the related manuals for details. Although CJ-series Units have basic functions of C200H-series Units, some specifications may differ.

### < DC Input/Transistor Output Units >

| C200H-series Unit  | Corresponding CJ-series Unit | Description   | Difference   |
|--|------------------------------|---|--|
| <b>C200H-MD115</b><br>12 VDC/16 inputs (4.1 mA),<br>12 VDC/16 outputs (0.1A,<br>Sinking), Connector<br>(Special I/O)       | <b>CJ1W-MD231</b>            | I/O Unit with connector for 16 inputs and 16 outputs.<br>*The CJ-series Unit does not support dynamic outputs.<br>Change the wiring for static outputs. | <ol style="list-style-type: none"> <li>1) Connector</li> <li>2) Output method<br/>(Dynamic or static mode → Static mode only)</li> <li>3) Internal current consumption<br/>(5 VDC: 180 mA → 130 mA)<br/>Based on specifications in static output mode</li> <li>&lt; Output circuit &gt;</li> <li>4) No. of circuits (8 points/common x 2 circuits<br/>→ 16 points/common x 1 circuit)</li> <li>5) Output circuit specifications<br/>Output voltage range<br/>(5 to 24 VDC → 12 to 24 VDC)<br/>Residual voltage (0.7 V → 1.5 V)<br/>ON response time (0.2 ms → 0.1 ms)<br/>OFF response time (0.6 ms → 0.8 ms)</li> <li>&lt; Input circuit &gt;</li> <li>6) No. of circuits (8 points/common x 2 circuits<br/>→ 16 points/common x 1 circuit)</li> <li>7) Input circuit specifications<br/>Input voltage (12 VDC → 24 VDC)<br/>Input impedance (2.7 kΩ → 3.3 kΩ)<br/>ON voltage (8 VDC → 14.4 VDC)<br/>OFF voltage (3 VDC → 5 VDC)</li> </ol> |
| <b>C200H-MD215</b><br>24 VDC/16 inputs (4.1 mA),<br>5 to 24 VDC/16 outputs (0.1 A,<br>Sinking), Connector<br>(Special I/O) | <b>CJ1W-MD231</b>            | I/O Unit with connector for 16 inputs and 16 outputs.<br>*The CJ-series Unit does not support dynamic outputs.<br>Change the wiring for static outputs. | <ol style="list-style-type: none"> <li>1) Connector</li> <li>2) Output method<br/>(Dynamic or static mode → Static mode only)</li> <li>3) Internal current consumption<br/>(5 VDC: 180 mA → 130 mA)<br/>Based on specifications in static output mode</li> <li>&lt; Output circuit &gt;</li> <li>4) No. of circuits (8 points/common x 2 circuits<br/>→ 16 points/common x 1 circuit)</li> <li>5) Output circuit specifications<br/>Output voltage range<br/>(5 to 24 VDC → 12 to 24 VDC)<br/>Residual voltage (0.7 V → 1.5 V)<br/>ON response time (0.2 ms → 0.1 ms)<br/>OFF response time (0.6 ms → 0.8 ms)</li> <li>&lt; Input circuit &gt;</li> <li>6) No. of circuits (8 points/common x 2 circuits<br/>→ 16 points/common x 1 circuit)</li> <li>7) Input circuit specification<br/>Input impedance (5.6 kΩ → 3.3 kΩ)</li> </ol>  |

< TTL I/O Unit >

| C200H-series Unit   | Corresponding CJ-series Unit   | Description   | Difference  |
|---|--|---|---|
| <b>C200H-MD501</b><br>5 VDC/16 inputs (3.5 mA),<br>5 VDC/16 outputs (35 mA,<br>Sinking), Connector<br>(Special I/O) | <b>CJ1W-MD231</b><br>24 VDC/16 inputs (7 mA),<br>12 to 24VDC/16 outputs<br>(0.5 A, Sinking), Connector | <p>I/O Unit with connector for 16 inputs and 16 outputs.</p> <p>*The CJ-series Unit does not support dynamic outputs. Change the wiring for static outputs.</p> <p>*We recommend you to replace this Unit with CJ1W-MD563 (32 inputs/32 outputs) for TTL I/O.</p> | <p>1) Connector</p> <p>2) Output method<br/>(Dynamic or static mode → Static mode only)</p> <p>3) Internal current consumption<br/>(5 VDC: 180 mA → 130 mA)</p> <p>Based on specifications in static output mode</p> <p>&lt; Output circuit &gt;</p> <p>4) No. of circuits (8 points/common x 2 circuits → 16 points/common x 1 circuit)</p> <p>5) Output circuit specifications<br/>Output voltage range<br/>(5 VDC → 12 to 24 VDC)<br/>Residual voltage (0.4 V → 1.5 V)<br/>ON response time (0.2 ms → 0.1 ms)<br/>OFF response time (0.3 ms → 0.8 ms)</p> <p>&lt; Input circuit &gt;</p> <p>6) No. of circuits (8 points/common x 2 circuits → 16 points/common x 1 circuit)</p> <p>7) Input circuit specifications<br/>Input voltage (5 VDC → 24 VDC)<br/>Input impedance (1.1 kΩ → 3.3 kΩ)<br/>ON voltage (3 VDC → 14.4 VDC)<br/>OFF voltage (1 VDC → 5 VDC)</p> |

**Note: Do not use this document to operate the Unit.**

**OMRON Corporation Industrial Automation Company**

**Kyoto, JAPAN**

**Contact : [www.ia.omron.com](http://www.ia.omron.com)**

**Regional Headquarters**

**OMRON EUROPE B.V.**  
Wegalaan 67-69, 2132 JD Hoofddorp  
The Netherlands  
Tel: (31) 2356-81-300 Fax: (31) 2356-81-388

**OMRON ASIA PACIFIC PTE. LTD.**  
438B Alexandra Road, #08-01/02 Alexandra  
Technopark, Singapore 119968  
Tel: (65) 6835-3011 Fax: (65) 6835-3011

**OMRON ELECTRONICS LLC**  
2895 Greenspoint Parkway, Suite 200  
Hoffman Estates, IL 60169 U.S.A.  
Tel: (1) 847-843-7900 Fax: (1) 847-843-7787

**OMRON (CHINA) CO., LTD.**  
Room 2211, Bank of China Tower,  
200 Yin Cheng Zhong Road,  
PuDong New Area, Shanghai, 200120, China  
Tel: (86) 21-6023-0333 Fax: (86) 21-5037-2388

**Authorized Distributor:**

©OMRON Corporation 2011-2025 All Rights Reserved.  
In the interest of product improvement,  
specifications are subject to change without notice.

**Cat. No. P075-E1-05 1225 (0511)**