OMRON

C200H Replacement Guide

From C200H to CJ2

About this document

This document provides the reference information for replacing C200H PLC systems with CJ2 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.

Related Manuals

CPU Units

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

Special I/O Units

Man.No.	Model	Manual
W368	CS1W-PTS□□ CS1W-PTW□□ CS1W-PDC□□ CS1W-PTR□□ CS1W-PPS□□ CS1W-PMV□□ CJ1W-PTS□□ CJ1W-PDC□□ CJ1W-PH41U	CS/CJ Series Analog I/O Units OPERATION MANUAL
W345	CS1W-AD0□□-V1/-AD161 CS1W-DA0□□ CS1W-MAD44 CJ1W-AD0□□-V1/-AD042 CJ1W-DA0□□/-DA042V 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 CJ1W-NC□71(-MA)	CS/CJ Series Position Control Units OPERATION MANUAL
W435	CS1W-MCH71 CJ1W-MCH71	CS/CJ series Motion Control Units OPERATION MANUAL
W336	CS1W-SCB□□-V1 CS1W-SCU□□-V1 CJ1W-SCU□□-V1	CS/CJ Series Serial Communications Boards　Serial Communications Units OPERATION MANUAL
W440	CS1W-FLN22 CJ1W-FLN22(100BASE-TX)	CS/CJ Series FL-net Units OPERATION MANUAL
V236	CS1W-SPU01 CS1W-SPU02-V2 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 C200H-DA003/DA004 C200H-MAD01	C200H Analog I/O Units OPERATION MANUAL
W225	C200H-TC001/002/003 C200H-TC101/102/103	C200H Temperature Control Units OPERATION MANUAL
W240	C200H-TV001/002/003 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 C200HW-COM02-V1 to C200HW-COM06-EV1	C200HW Communication Boards OPERATION MANUAL

Network Communications Units

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

Support Software

Man.No.	Model	Manual
W463	CXONE-AL□□C-V4 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

Read and Understand this Document

Please read and understand this document before using the product. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

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

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS 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 OR REPAIR.

Disclaimers

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 model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this manual 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 users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this manual has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this manual.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS 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 PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

MEMO

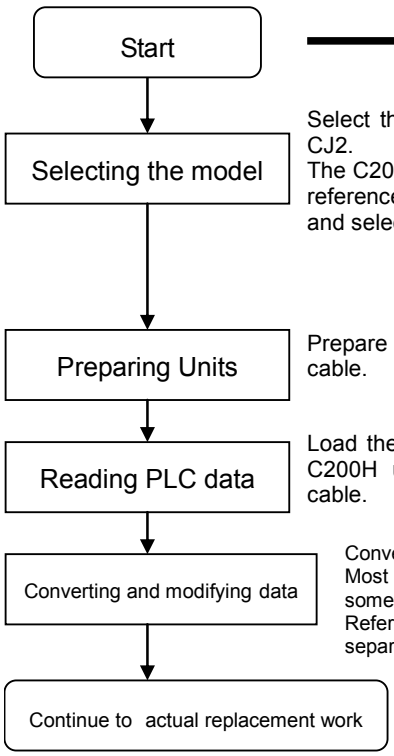
C200H Replacement Guide
From C200H to CJ2

Table of Contents

The work flow to replace the C200H-series PLC to CJ-series PLC is as follows. Read the reference pages for details.

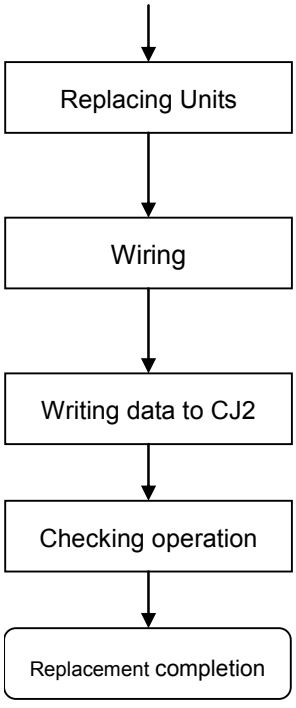
1. Work flow

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



	Description	Reference Pages
Selecting the model	Select the unit, tool, and tool cable to replace C200H with CJ2. The C200H-series Units can not be used with CJ2. Read the reference pages (recommended models and precautions) and select the models.	2. Selecting the model
Preparing Units	Prepare the units, programming software, and connecting cable.	
Reading PLC data	Load the program, I/O Memory and other settings from the C200H using the programming software and connecting cable.	3. Reading data from C200H
Converting and modifying data	Convert the data read from C200H for CJ2. Most of the data can be automatically converted; however, some instructions and some Unit data can not be converted. Refer to the reference pages and modify the data and program separately.	4. Converting the program into a program for CJ-series CPU Unit

2) The actual work flow to replace the C200H-series PLC to CJ-series PLC is as follows.

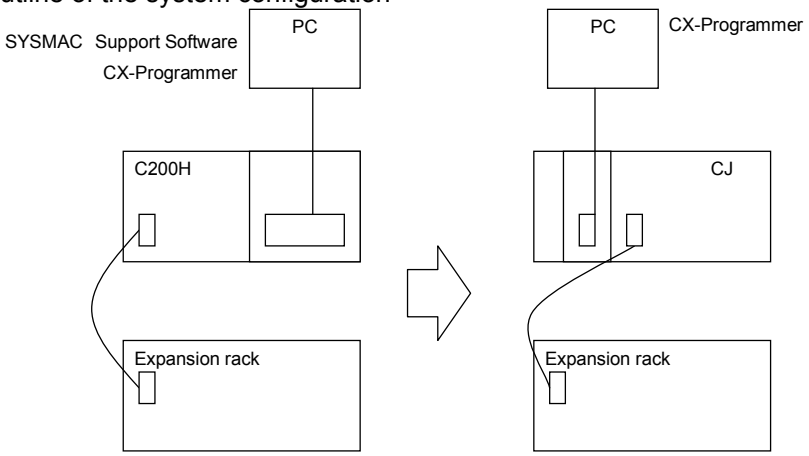


	Description	Reference pages
Replacing Units	Install the prepared Units instead of C200H-series Units. * Refer to the ***CJ2 CPU Unit Hardware USER'S MANUAL*** (Cat. No. W472) and User's manuals for Special I/O Units and CPU Bus Units for details about installation.	Related Manuals
Wiring	Conduct wiring for the installed Units. *Refer to the ***CJ2 CPU Unit Hardware USER'S MANUAL*** (Cat. No. W472) and User's manuals for Special I/O Units and CPU Bus Units for details about wiring.	
Writing data to CJ2	Transfer the converted data to CJ2. To check the wiring, operate Input/Output to see if they operate correctly.	5. Writing the data to CJ-series CPU Unit
Checking operation	Turn ON the power and check the operation.	

1. If production is conducted between uploading the program and executing replacement work, data handled by the program may change. If so, upload the data right before the replacement work and download it to the new PLC.
2. The cycle time of C200H and CJ2 are different, which may effect system operation. If so, it is necessary to adjust cycle time from the PLC settings.

2. Selecting the model

Outline of the system configuration



The table below lists the models of C200H-series and corresponding models of CJ-series.

Select the CJ-series model which has compatible functions with the C200H-series model. Or, select the CJ-series model with similar specification to the C200H-series Unit.

Refer to the *CJ2 CPU Unit Hardware USER'S MANUAL* (Cat. No.W472) for details of the Units.

< CPU Rack >

Unit name	C200H-series	CJ-series	Description
CPU Units	C200H-CPU01 C200H-CPU02 C200H-CPU03 C200H-CPU21 C200H-CPU22 C200H-CPU23	＜CJ2H＞ CJ2H-CPU64(-EIP) CJ2H-CPU65(-EIP) CJ2H-CPU66(-EIP) CJ2H-CPU67(-EIP) CJ2H-CPU68(-EIP) ＜CJ2M＞ CJ2M-CPU11/CPU31 CJ2M-CPU12/CPU32 CJ2M-CPU13/CPU33 CJ2M-CPU14/CPU34 CJ2M-CPU15/CPU35	 UM 50K steps UM 100K steps UM 150K steps UM 250K steps UM 400K steps * The EIP models have one built-in EtherNet/IP port. UM 5K steps UM 10K steps UM 20K steps UM 30K steps UM 60K steps * The CPU3□ models have one built-in EtherNet/IP port.
CPU Unit-mounting Host Link Units	C120-LK201(RS232C) C120-LK202(RS422)(*)	Use the built-in serial port (RS232C) on the CPU Unit.	(*)To replace C120-LK202, use a NT-AL001 to convert RS232C into RS422.
Power Supply Units	(For C200H-CPU01/02/21/22)	CJ1W-PA202 (AC Power Supply Unit)	To use RUN output, prepare an Output Unit.
		CJ1W-PA205C (AC Power Supply Unit)	With maintenance forecast monitor.
		CJ1W-PA205R (AC Power Supply Unit)	With RUN output.
	(For C200H-CPCPU03/23)	CJ1W-PD022 (DC Power Supply Unit, non insulated type)	To use RUN output, prepare an Output Unit.
		CJ1W-PD025 (DC Power Supply Unit)	To use RUN output, prepare an Output Unit.
Backplanes CPU Backplanes	C200H-BC031(-□□) C200H-BC051(-□□) C200H-BC081(-□□) C200H-BC101(-□□)	Unnecessary <DIN track> PFP-50N PFP-100N PFP-100N2	The Backplane is not necessary for the CJ series. Install the CJ series units on the DIN track.
Expansion Unit (I/O Control Unit)	Unnecessary	CJ1W-IC101	To use CJ-series Expansion Rack, the I/O Control Unit is necessary.

Memory Cassettes

Unit name	C200H-series	CJ-series	Description
Memory Unit	Memory Unit (RAM type) C200H-MR431 (Battery type). C200H-MR432 (Capacitor type) C200H-MR831 (Battery type) C200H-MR832 (Capacitor type) C200H-MR433 (Battery type, with clock function) C200H-MR833 (Battery type, with clock function)	None	The CJ Series CPU Units have nonvolatile memory for user program in it. The memory unit is unnecessary. They also have the clock function.
	EEP ROM Unit C200H-ME431 C200H-ME432 (with clock function) C200H-ME831 C200H-ME832 (with clock function)	None	The CJ Series CPU Units have nonvolatile memory for user program in it. The memory unit is unnecessary. They also have the clock function. The program file and the parameters can be stored in the memory card. It is possible to run program by reading them at power ON. (Automatic Transfers at Power ON)
	EP ROM Unit C200H-MP831	None	The CJ Series CPU Units have nonvolatile memory for user program in it. The memory unit is unnecessary. They also have the clock function. The program file and the parameters can be stored in the memory card. It is possible to run program by reading them at power ON. (Automatic Transfers at Power ON)

<I/O Expansion System>

Unit name	C200H Series	CJ series	Description
Power Supply Units	C200H-PS221	CJ1W-PA202 (AC Power Supply Unit)	
		CJ1W-PA205C (AC Power Supply Unit)	With maintenance forecast monitor.
		CJ1W-PA205R (AC Power Supply Unit)	The RUN output does not operate.
	C200H-PS211	CJ1W-PD022 (DC Power Supply Unit, non insulated type)	
		CJ1W-PD025 (DC Power Supply Unit)	
Backplanes (Expansion Backplanes)	C200H-BC031(-□□) C200H-BC051(-□□) C200H-BC081(-□□) C200H-BC101(-□□)	Unnecessary <DIN track> PFP-50N PFP-100N PFP-100N2	The Backplane is not necessary for the CJ series. Install the CJ series units on the DIN track.
Expansion unit (I/O Interface Units)	Unnecessary	CJ1W-II101	To use CJ-series Expansion Rack, the I/O Interface Unit is necessary.
Connecting Cables for Expansion Backplanes	C200H-CN311 (30cm) C200H-CN711 (70cm) C200H-CN221 (2m) C200H-CN521 (5m) C200H-CN131 (100cm)	CS1W-CN313 (30cm) CS1W-CN713 (70cm) CS1W-CN223 (2m) CS1W-CN323 (3m) CS1W-CN523 (5m) CS1W-CN133 (10m) CS1W-CN133-B2 (12m)	Connect the CPU Rack and Expansion Rack using this cable. Or connect the Expansion Rack and Expansion Rack with this cable.

<I/O Units, CPU Bus Units>

Unit name	C200H-series	CJ-series	Description
Basic I/O Units	C200H-I□□□ C200H-O□□□ C200H-M□□□	CJ1W-I□□□ CJ1W-O□□□ CJ1W-M□□□	Refer to ***"Appendix E. Table of Input/Output Units"*** for CJ-series Basic Input/Output Units corresponding to C200H-series Basic Input/Output Units.
Special I/O Units CPU Bus Units	C200H-□□□□	CJ1W-□□□□	Please select a model which can be used instead of C200H-series Unit used. Refer to manuals of Special I/O Units and CPU Bus Units for specifications. Please examine necessary functions and specifications and select suitable replacement unit.
Communications Units	[SYSMAC LINK] Coaxial cable type: C200H-SLK21-V1 C200HS-SLK22 C200HW-SLK23/24 Optical fiber cable type: C200H-SLK11 C200HS-SLK12 C200HW-SLK13/14	[SYSMAC LINK] None [Controller Link] Wire type: CJ1W-CLK23 Optical fiber cable type: None	SYSMAC LINK can not be used with CJ-series CPU Units. We recommend you to renewal the system with Controller Link. Refer to the ***Controller Link Units (Wire type) Operation Manual*** **(Cat. No. W309).**
	[SYSNET] C200H-SNT31 C200HS-SNT32	[SYSNET] None [Controller Link] Wire type: CJ1W-CLK23. Optical fiber cable type: None	SYSNET can not be used with CJ-series CPU Units. We recommend you to renewal the system with Controller Link. Refer to ***Controller Link Units (Wire type) Operation Manual*** **(Cat, No. W309).**
	[Host Link]	[Serial Communication]	The C200H Host Link Unit can not be used with CJ-series. Refer to the ***SYSMACCS/CJ Series Serial Communications Boards/Units OPERATIAN MANUAL*** **(Cat. No. W336)** for details.
	C200H-LK101-PV1	None CJ1W-SCU21-V1 (+ optical link module)	The CJ-series does not have the Optical-type Serial Communications Unit. Use the wire-type instead, or use an external optical link module.
	C200H-LK201-V1	CJ1W-SCU21-V1 CJ1W-SCU41-V1 Host Link port built-in the CPU Unit * For CJ2M-CPU3□, CP1W-CIF01 is necessary.	Use one of the left CJ-series Units instead. * The CJ2M-CPU3□ does not have built-in Host Link port. It is necessary to select and purchase the optional serial board (CP1W-CIF01).
	C200H-LK202-V1	CJ1W-SCU31-V1 CJ1W-SCU41-V1	It is not possible to use this Host Link Unit with CJ-series CPU Unit. Use one of the left CJ-series Units, instead.
	[PC Link] C200H-LK401	[PC Link] None [Controller Link] Wire type: CJ1W-CLK23. Optical Fiber Cable type: None	PC Link Unit can not be used with CJ-series CPU Unit. We recommend you to renewal the system with Controller Link. Refer to ***Controller Link Units (Wire type) Operation Manual*** **(Cat, No. W309).**
Communications Units	[SYSBUS] Wire type: C200H-RM201 Optical Fiber Cable type: C200H-RM001-PV1	[SYSBUS] None [CompoNet] CJ1W-CRM21 [DeviceNet] CJ1W-DRM21 [CompoBus/S] CJ1W-SRM21	SYSBUS can not be used with CJ-series CPU Unit. We recommend you to renewal the system with other network. ·CompoNet **Refer to the *CS/CJ-series CompoNet Master Units Operation Manual (Cat. No. W456)* and *CompoNet Slave Unitsand Repeater Unit OPERATION MANUAL* (Cat. No. W457) for details of CompoNet.** ·DeviceNet **Refer to the *SYSMAC CS/CJ Series DeviceNet Units OPERATIAN MANUAL* (Cat. No. W380) for details of DeviceNet.** ·CompoBus/S **Refer to the *C200HW-SRM21-V1, CS1W-SRM21, CJ1W-SRM21, CQM1-SRM21-V1, SRT1 Series, SRT2 Series CompoBus/S OPERATIAN MANUAL* (Cat. No. W226) for details of CompoBus/S.**

<Support software and peripheral devices>

Name	C200H-series	CJ-series	Description
Support software	SYSMAC Support Software CX-Programmer	CX-One CXONE-AL□□C-V□/ AL□□D-V□ (CX-Programmer)	SYSMAC Support Software can not be used with CJ-series CPU Unit.
Peripheral Interface Unit, connecting cable	C200H-IP007	USB Cable	USB2.0 (or, 1.1) cable (A connector – B connector) 5.0m or shorter.
Programming Console	C120-PRO15 C120-PRO25	None	Use CX-Programmer or Programming Console function of the Programmable Terminal (NS-series).
PROM Writer	C500-PRW06	None	EPROM can not be used with CJ-series CPU Unit. Save the data using a PC (CX-Programmer).
Floppy disk interface	C500-FD103	None	Save the data using a PC (CX-Programmer).
Printer interface unit	C500-PRT01 C2000-MP103-V□	None	Print the data using a PC (CX-Programmer).

Other remarks

(1) The CPU Unit and Power Supply Unit are separated for CJ-series, though they are combined for C200H-series.

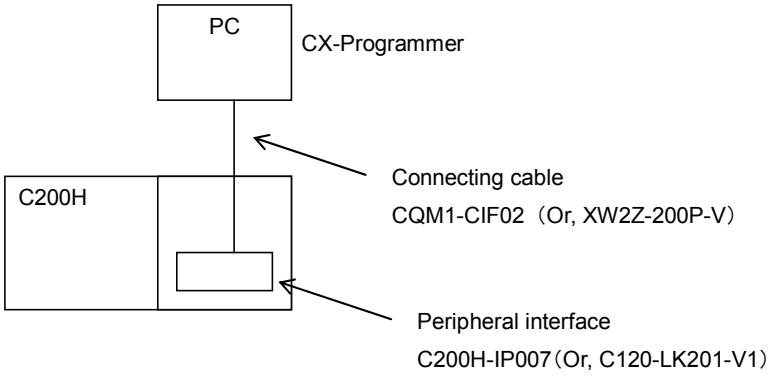
(2) The DIN track (PFP-50N/100N/100N2) and mounting bracket (C200H-DIN01) for C200H-series can be used for the CJ-series CPU Unit, too.

(3) Because the CJ-series has an installation structure to be insulated from the control board (DIN track), Insulation Plates for Backplanes (C200H-ATT31/51/81/A1) is unnecessary.

3. Reading data from C200H

Load the ladder program and Data Memory from the C200H using the CX-Programmer.

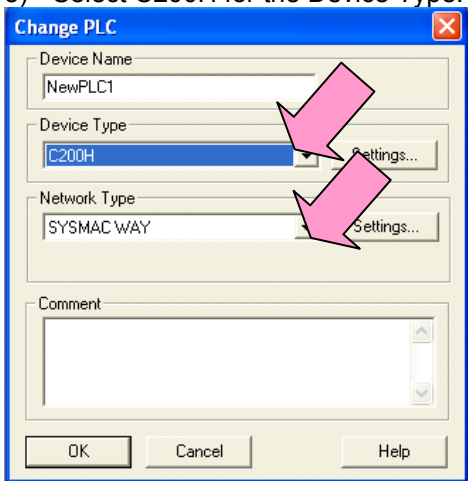
Required items	Support software (PC)	CX-One (CXONE-AL□□C-V□, CXONE-AL□□D-V□) Or, CX-Programmer (WS02-CXPC□-V□)
	Peripheral Interface Unit and connecting cable	C200H-IP007 and CQM1-CIF02 Or, C120-LK201-V1 and XW2Z-200P-V

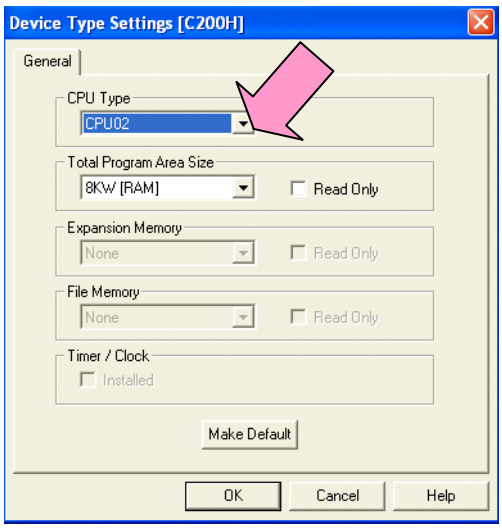


1) Attach the Peripheral Interface Unit onto the C200H and connect it with the PC.

2) Start up the CX-Programmer. (On the Start menu, select ***Program*** - ***OMRON*** - ***CX-One*** - ***CX-Programmer*** - ***CX-Programmer***.)

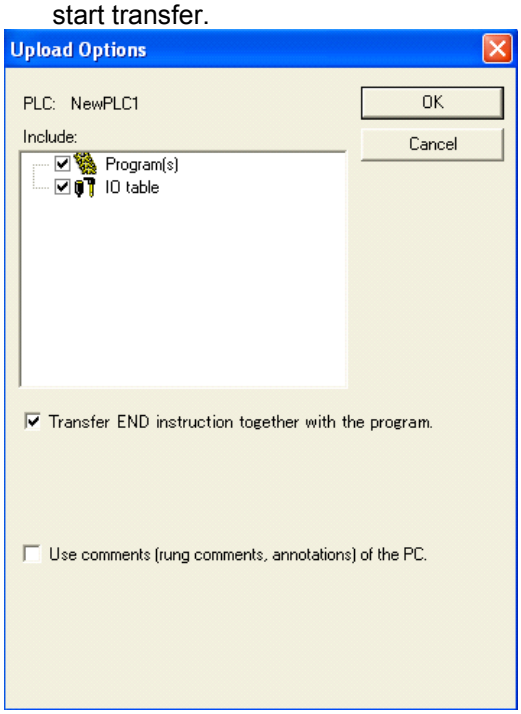
3) Select C200H for the Device Type. (Select ***File*** – ***New***.)



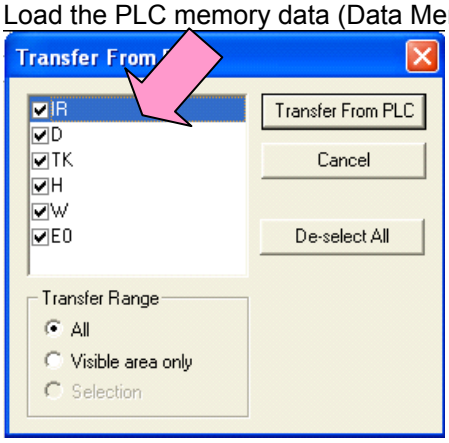


4) Connect the PLC and the PC online. (Select ***PLC*** - ***Work Online***)

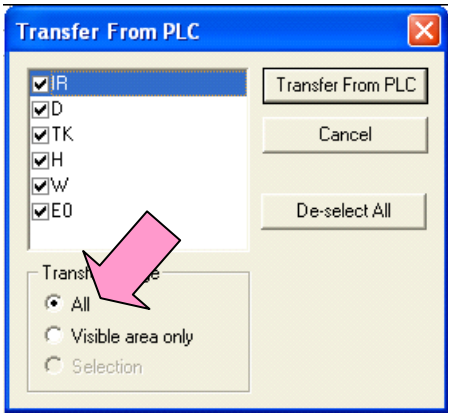
5) Load the ladder program and I/O table. (Select ***PLC*** - ***Transfer*** - ***From PLC to PC***.) Press the "OK" button to start transfer.



6) Load the PLC memory data (Data Memory). (Select ***PLC*** on the menu bar and then click ***Edit*** - ***Memory***.)



Scroll and check all the areas. Press "Transfer From PLC" button to start loading.



7) Make the CX-Programmer offline. (Select ***PLC*** - ***Work Online***.)

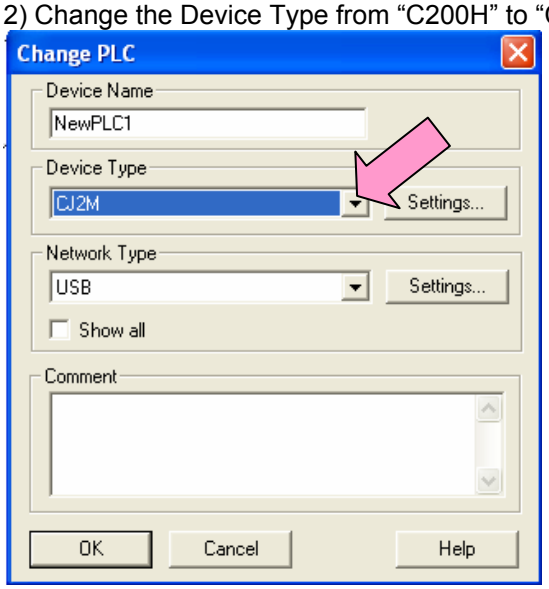
8) Save the program by specifying the project name. (Select ***File*** - ***Save As***.)

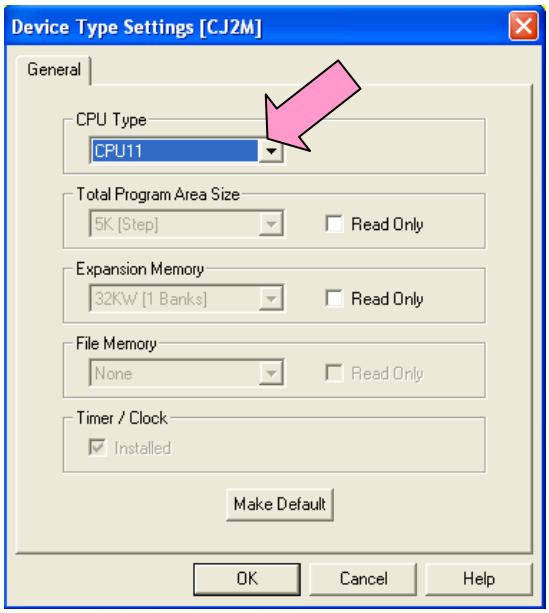
4. Converting the program into a program for CJ-series CPU Unit

On the CX-Programmer, convert the program for CJ-series CPU Unit.

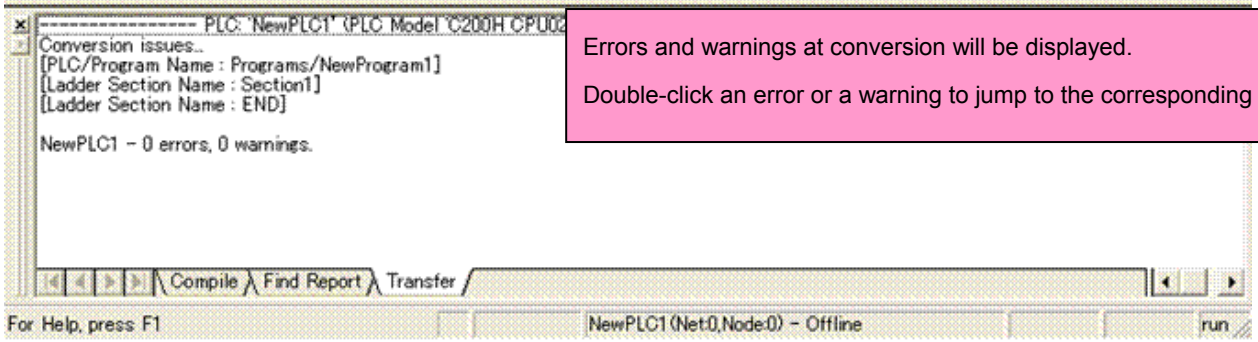
1) Start the CX-Programmer and open the program file for C200H. (Select ***File*** – ***Open***.)

2) Change the Device Type from “C200H” to “CJ2M” or “CJ2H”. (Select ***PLC*** – ***Change Model***.)





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.

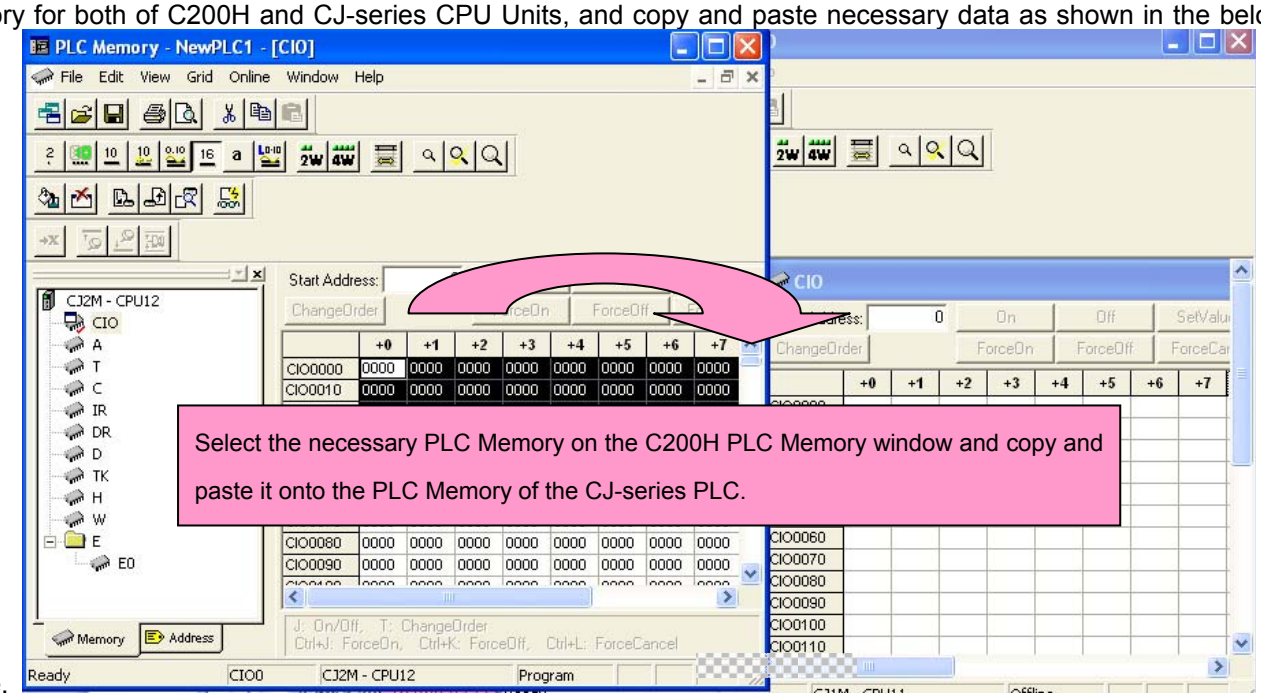


Errors and warnings at conversion will be displayed.

Double-click an error or a warning to jump to the corresponding circuit.

Some instructions can not be converted. Modify the ladder program referring to ***Appendix A. Instructions converted by Change Model on CX-Programmer***. You can check the program by executing Program Check at any time (Select ***Program*** – ***Compile.***) The Output Window will show the checking results.

4) When the model is changed, the data in PLC memory will not be maintained. Open the screen of the PLC memory for both of C200H and CJ-series CPU Units, and copy and paste necessary data as shown in the below image.



5) The Unit area allocation of C200H-series is partly different from that of CJ-series. Modify the ladder program referring to ***Appendix B. Change of unit area allocation***.

6) The PLC settings of C200H-series PLC is partly different from that of CJ-series. Change the PLC settings by referring to ***Appendix C. Change in PLC Settings***.

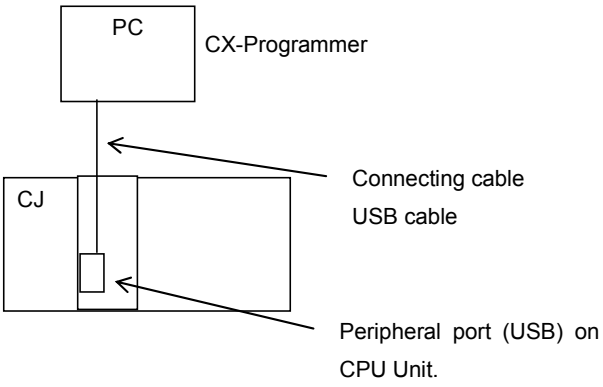
7) Select ***Program*** – ***Compile*** to check the program. If an error is detected, correct it.

8) Save the program by specifying the project name. (Select ***File*** – ***Save As***.)

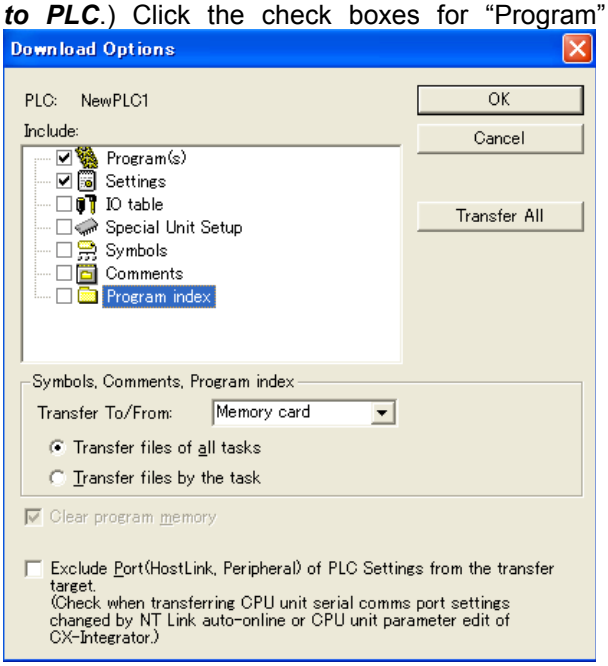
5. Writing the data to CJ-series CPU Unit

Transfer the converted/modified program, PLC settings and Data Memory to the CJ-series CPU Unit.

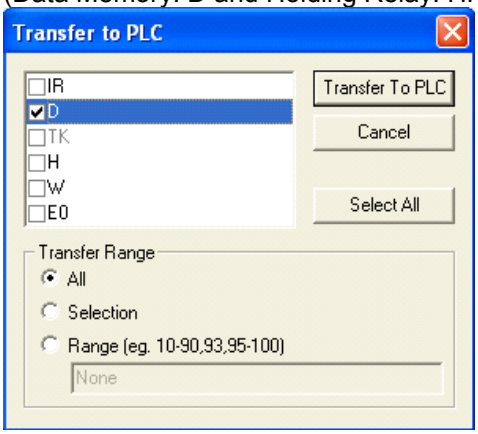
Required items	Support software (PC)	CX-One CXONE-AL□□C-V□/ AL□□D-V□ (CX-Programmer)
	Connecting cable	USB Cable USB2.0 (or, 1.1) cable (A connector – B connector) 5.0m or shorter



1) Connect the CJ-series CPU Unit and the PC.
2) Start the CX-Programmer and open the converted program file.
3) Connect the CJ-series CPU Unit and CX-Programmer online.
4) Transfer the ladder program and PLC settings to the CJ-series CPU Unit. (Select ***PLC*** – ***Transfer*** – ***From PC to PLC***.) Click the check boxes for "Program" and "Settings". Press the ***OK*** button to start transfer.



5) Select ***PLC*** on the menu bar and then click ***Edit*** – ***Memory*** to display below dialog. Transfer the PLC memory (Data Memory: D and Holding Relay: HR) after selecting the transfer data. Click the ***Transfer to PLC*** button.



6) Make the CX-Programmer offline.

6. Appendix

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

(1) The data type of operand is changed from BCD data to BIN data for some instructions.

(2) The number of operand is changed for some instructions.

(3) Interrupt control instructions must be changed. (Use MSKS, MSKR, CLI, DI, and EI.)

Refer to the table below for details. The table lists the instructions which are automatically converted producing some difference between instructions before and after conversion. The other instructions are converted to the instructions for CJ-series CPU Unit without producing difference.

Instruction for C200H-series	Instruction for CJ-series	Operand	Number of Operand
JMP(04)	JMP(4) JMP0(515)	If the operand data is #0, this instruction is automatically converted into JMP0 instruction and the operand data is deleted. The instruction will not be changed if the operand data is not #0.	#0: 1→0. Not #0→Same as C200H.
JME(05)	JME(5) JME0(516)	If the operand data is #0, this instruction is automatically converted into JME0 instruction and the operand data is deleted. The instruction will not be changed if the operand data is not #0.	#0: 1→0. Not #0→Same as C200H.
WSFT(16)	Same as C200H	#0 data is added to the first operand. WSFT D1 D2 → WSFT #0 D1 D2	**Changed from 2 to 3.**
FUN17	**ASFT(017)**	Same as C200H	Same as C200H
XFER(70)	**XFERC(565)**	Same as C200H	Same as C200H
MOVB(82)	**MOVBC(568)**	Same as C200H	Same as C200H
DIST(80)	**DISTC(566)**	Same as C200H	Same as C200H
COLL(81)	**COLLC(567)**	Same as C200H	Same as C200H
FUN60	**CMPL(060)**	Same as C200H	Same as C200H
FUN19	**MCMP(019)**	Same as C200H	Same as C200H
FUN63	**LINE(063)**	**Changed from BCD data to BIN data.**	Same as C200H
FUN64	**COLM(064)**	**Changed from BCD data to BIN data.**	Same as C200H
FUN65	**SEC(065)**	Same as C200H	Same as C200H
FUN66	**HMS(066)**	Same as C200H	Same as C200H
INC(38)	**++B(594)**	Same as C200H	Same as C200H
DEC(39)	**--B(596)**	Same as C200H	Same as C200H
ADD(30)	**+B(404)**	Same as C200H	Same as C200H
ADDL(54)	**+BL(405)**	Same as C200H	Same as C200H
SUB(31)	**-B(414)**	Same as C200H	Same as C200H
SUBL(55)	**-BL(415)**	Same as C200H	Same as C200H
MUL(32)	***B(424)**	Same as C200H	Same as C200H
MULL(56)	***BL(425)**	Same as C200H	Same as C200H
DIV(33)	**/B(434)**	Same as C200H	Same as C200H
DIVL(57)	**/BL(435)**	Same as C200H	Same as C200H
ADB(50)	**+(400)**	Same as C200H	Same as C200H
SBB(51)	**-(410)**	Same as C200H	Same as C200H
MLB(52)	***(420)**	Same as C200H	Same as C200H
DVB(53)	**/(430)**	Same as C200H	Same as C200H
FUN69	**APR(069)**	Same as C200H	Same as C200H
FUN89	**Not supported**	**Combine and use following instructions: MSKS(690), CLI(691), MSKR(692), DI(693), and EI (694).**	
STEP(08)	Same as C200H	The CIO, Holding, Work, Auxiliary, DM, and EM Area are all converted into the WR relay.	Same as C200H
SNXT(09)	Same as C200H Use a differentiated execution condition for SNXT instructions.	Same as C200H	Same as C200H
FAL(06)	Same as C200H	#0 is added to the Operand 2. FAL N → FAL N #0	**Changed from 1 to 2.**
FALS(07)	Same as C200H	#0 is added to the Operand 2. FALS N → FALS N #0	**Changed from 1 to 2.**
MSG(46)	MSG(46)	#0 is added to the Operand 1. MSG S → MSG #0 S The number of characters (words) to be registered from the first message word (S) is changed from 16 characters (8 words) to 32 characters (16 words).	**Changed from 1 to 2.**
FUN47	**Not supported**	Use MSG (46) instead.	**—**
FUN67	**BCNTC(621)**	Same as C200H	Same as C200H
WDT(94)	**WDT(094)**	**Control data configuration is changed**	Same as C200H
FUN61	**Not supported**	**Use IORF (97) instead.**	
FUN18	**Enter the settings from PLC settings.**		
FUN48	**Not supported**	**—**	**—**
FUN49	**Enter the settings from PLC settings.**		
FUN90	**SEND(090)**	**Control data configuration is changed**	Same as C200H
FUN98	**RECV(098)**	**Control data configuration is changed**	Same as C200H

Appendix B. Change of unit area allocation

The table below described the outline of the difference of unit area allocation in C200H and CJ-series. Refer to the manuals below for details.

Item	C200H-series	CJ-series	Description
Unit area allocation Basic I/O Units	"Free location and fixed words allocation"	"Free location and free words allocation" Change the word address and bit address used in the program.	**Refer to the *CJ2 CPU Unit Software USER'S MANUAL (Cat. No. W473)* for details on unit area allocation.**
Unit area allocation Special I/O Units	IR 100 to 199 (10 words allocated for each Unit No.) D1000 to 1999 (100 words allocated for each Unit)	CIO 2000 to 2199 (10 words allocated for each Unit) D 20000 to 21999 (100 words allocated for each Unit) Change the word and bit address used in the program.	
Unit area allocation Group-2	IR 30 to 49 (2 or 4 words allocated for each Unit)	The allocation is determined in the same way as a Basic I/O Units depending on the installed position (rack and slot). Change the word and bit address used in the program.	
Auxiliary Relay Area	SR 236 to 255	(1) AR Area and Bit Change the word and bit address used in the program. (2) Condition Flag and clock pulse Change the operation flags in the program to the condition flags. Use the global symbols such as P_0.1ms and P_1ms instead of the clock pulse.	Operation flags and condition flags of CJ-series can be specified by label.
Link Relay Area (PC Link)	LR 00 to 63	None	PC Link can not be used with CJ-series PLC.
SYSBUS Remote I/O	IR 50 to 99	None	SYSBU can not be used with CJ-series PLC.
Error log storage area	DM 969 to 999	AR100 to 199	Change the program if the error log area is read in the program.

Appendix C. Change in PLC Settings

Item	C200H-series	CJ-series	Description
Mode at Power ON	Setting switch on the memory unit	Select the "Mode" at power ON from PLC settings.	
Constant Cycle Time Function	Constant Cycle Time (FUN18)	Enter the value in the "Constant Cycle Time" from PLC settings.	Use DI (DISABLE INTERRUPTS) instruction and EI (ENABLE INTERRUPTS) instruction when simultaneity of data is required between the Cycle Tasks and Interrupt Tasks.

Appendix D. Change of execution timing etc

Item	C200H-series	CJ-series	Description
Interrupt execution method and execution timing	Write the interrupt program in subroutine.	Write the interrupt program in interrupt task.	For CJ2, an Interrupt Task is executed even when an instruction is being executed or I/O refreshing.
Cycle Time	-	The cycle time is shortened with CJ-series PLC. If the system operation is affected by cycle time, check the operation with the converted program.	To obtain the same cycle time as C200H, set the time from the "Constant Cycle Time" in the PLC settings.
Read-protection function	FUN49 instruction	Use password protection function of CX-Programmer.	

Appendix E. Table of Input/Output Units

♦**Input Units**

(1) Terminal block is different between the Input Units of C200H-series and CJ-series. Please change the wirings.

(2) If connector specifications are different between the Input Unit of C200H-series and CJ-series, please change the wirings.

(3) If input specification is not same, check if there is no problem in operation.

(4) If the number of circuit is different (increased), wire and connect the terminals and each common terminals.

(5) If the current consumption is different, check if enough power supply capacity is provided.

(6) Detailed specifications are different. Refer to the related manuals.

DC Input Units

C200H -series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-ID211 12 - 24VAC/10mA, Terminal block, 8 inputs	**CJ1W-ID211** 24 VDC, 7mA, Terminal block, 16 inputs	DC Input Unit with terminal block for 8 inputs. Replace this unit with a DC Input Unit with 16 inputs.	1) Terminal block 2) Number of inputs (8 -> 16 points) 3) Input circuit specification • Input impedance (2kΩ→3.3kΩ) • ON voltage (10.2VDC→14.4VDC) • OFF voltage (3VDC→5VDC) 4) Internal current consumption (5VDC:10mA→80mA)
C200H-ID212 24 VDC, 7mA, Terminal block, 16 inputs	**CJ1W-ID211** 24 VDC, 7mA, Terminal block, 16 inputs	DC Input Unit with terminal block for 16 inputs.	1) Terminal block 2) Input circuit specification • Input impedance (3kΩ→3.3kΩ) 3) Internal current consumption (5VDC:10mA→80mA)
C200H-ID215 24VDC, 4.1mA, Connector, 32 inputs (Special I/O)	**CJ1W-ID231** 24VDC, 4.1mA, Connector, 32 inputs	DC Input Unit with connector for 32 inputs.	1) Connector 2) Number of circuit (8 points/common x4 circuits →16 points/common x2 circuits) 3) Input circuit specification • ON voltage (14.4VDC→19VDC) 4) Internal current consumption (5VDC:130mA→90mA)
C200H-ID216 24VDC, 4.1mA, Connector, 32 inputs (Group-2)	**CJ1W-ID231** 24VDC, 4.1mA, Connector, 32 inputs	DC Input Unit with connector for 32 inputs.	1) Number of circuit (32 points/common x1 circuit →16 points/common x2 circuits) 2) Input circuit specification • ON voltage (14.4VDC→15.4VDC) 3) Internal current consumption (5VDC:100mA→90mA)
C200H-ID218 24VDC, 6mA, Connector, 32 inputs (Group-2)	**CJ1W-ID231** 24VDC, 4.1mA, Connector, 32 inputs	DC Input Unit with connector for 32 inputs.	1) Number of circuit (32 points/common x 1 circuit →16 points/common x 2 circuits) 2) Internal current consumption (5VDC:100mA→90mA)
C200H-ID111 12 VDC, 4.1mA, Connector, 64 inputs (Group-2)	**CJ1W-ID261** 24VDC, 4.1mA, Connector, 64 inputs	DC Input Unit with connector for 64 inputs.	1) Number of circuit (32 points/common x 2 circuit →16 points/common x 4 circuits) 2)Input circuit specification, • Input voltage (12VDC→24VDC), • Input impedance (2.7kΩ→5.6kΩ) • ON voltage (8VDC→19VDC) • OFF voltage (3VDC→5VDC) 3) Internal current consumption (5VDC:120mA→90mA)
C200H-ID217 24VDC, 4.1mA, Connector, 64 inputs (Group-2)	**CJ1W-ID261** 24VDC, 4.1mA, Connector, 64 inputs	DC Input Unit with connector for 64 inputs.	1) Number of circuit (32 points/common x 2 circuit →16 points/common x 4 circuits) 2) Input circuit specification • ON voltage (14.4VDC→19VDC) 3) Internal current consumption (5VDC:120mA→90mA)
C200H-ID219 24VDC, 6.0mA, Connector, 64 inputs (Group-2)	**CJ1W-ID261** 24VDC, 4.1mA, Connector, 64 inputs	DC Input Unit with connector for 64 inputs.	1) Number of circuit (32 points/common x 2 circuit →16 points/common x 4 circuits) 2) Input circuit specification • Input impedance (3.9kΩ→5.6kΩ) • ON voltage (15.4VDC→19VDC) 3) Internal current consumption (5VDC:120mA→90mA)

<TTL Input Unit>

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-ID501 5 VDC, 3.5mA, Connector, 32 outputs (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. We recommend to use the DC Input Unit CJ1W-ID231 (24VDC input type) or TTL Input/Output Unit CJ1W-MD563 instead.	

<AC Input Unit>

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-IA121 100-120VAC/10mA, Terminal block, 8 inputs	**CJ1W-IA111** 100-120VAC/7mA, Terminal block, 16 inputs	100VAC Input Unit with terminal block for 8 inputs. Replace this unit with a 100VAC Input Unit with 16 inputs.	1) Terminal block 2) Number of inputs (8 -> 16 points) 3) Input circuit specification, • Input impedance (9.7kΩ→14.5kΩ), • ON voltage (60VAC→70VAC) 4) Internal current consumption (5VDC:10mA→90mA)
C200H-IA221 200-240VAC/10mA, Terminal block, 8 inputs	**CJ1W-IA201** 200-240VAC/9mA, Terminal block, 8 inputs	200VAC Input Unit with terminal block for 8 inputs.	1) Terminal block 2) Number of inputs (8 -> 8 points*) * Occupies 1 word (area for 16 points) for Unit area allocation. 3) Internal current consumption (5VDC:10mA→80mA)
C200H-IA122/IA122V 100-120VAC/10mA, Terminal block, 16 inputs IA122V; model conforming to EC Directive	**CJ1W-IA111** 100-120VAC/7mA, Terminal block, 16 inputs	100VAC Input Unit with terminal block for 16 inputs.	1)Terminal block 2)Input circuit specification, • Input impedance (9.7kΩ→14.5kΩ), • ON voltage (60VAC→70VAC) 3)Internal current consumption (5VDC:10mA→90mA)
C200H-IA222/IA222V 200-240VAC/10mA, Terminal block, 16 inputs IA222V: model conforming to EC Directive	**CJ1W-IA201** 200-240VAC/9mA, Terminal block, 8 inputs	200VAC Input Unit with terminal block for 16 inputs. Replace this unit with two 200VAC Input Units with 8 inputs.	1) Terminal block 2) Number of circuit (16 points/common x 1 circuit →8 points/common x 2 circuits) 3) Internal current consumption (5VDC:10mA→80mA × 2units)

<AC/DC Input Unit>

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-IM211 12-24 VAC/VDC , Terminal block, 8 inputs	**CJ1W-ID211** 24 VDC, 7mA, Terminal block, 16 inputs	AC/DC Input Unit with terminal block for 8 inputs. Replace this unit with a DC Input Unit with 16 inputs. The CJ-series does not have the AC/DC Input Unit. If this Unit is used with AC inputs, change the wiring for DC inputs.	1) Terminal block 2) Input points: (8 -> 16 points) 3) Input circuit specification • Input voltage range (12-24VAC/DC→24VDC) • Input impedance (2kΩ→3.3kΩ) • ON voltage (10.2VDC→14.4VDC) • OFF voltage (3VDC→5VDC) 4) Internal current consumption (5VDC:10mA→80mA)
C200H-IM212 24 VAC/VDC , Terminal block, 16 inputs	**CJ1W-ID211** 24 VDC, 7mA, Terminal block, 16 inputs	AC/DC Input Unit with terminal block for 16 inputs. Replace this unit with a DC Input Unit with 16 inputs. The CJ-series does not have the AC/DC Input Unit. If this Unit is used with AC inputs, change the wiring for DC inputs.	1) Terminal block 2) Number of circuit (16 points/common x 1 circuit →8 points/common x 2 circuits) 3) Input circuit specification • Input voltage range (24VAC/DC→24VDC), • Input impedance (3kΩ→3.3kΩ) 4) Internal current consumption (5VDC:10mA→80mA)

♦ **Output Unit**

(1) Terminal block is different between the Output Unit of C200H-series and CJ-series. Please change the wirings.

(2) If connector specifications are different in Units of C200H-series and CJ-series, please change the wirings.

(3) If the number of circuit is different (increased), wire and connect the terminals and each common terminals.

(4) If the output specifications are not same, check if the outputs operate normally.

(5)The service life of built-in relays might change depending on the usage, when the use relay is different. Refer to ***Appendices A-1-3 Precautions on Contact Output Unit of CJ2 CPU Unit Hardware USER'S MANUAL (Cat. No. W472)*** for details.

(6) If the current consumption is different, check if enough power supply capacity is provided.

(7) If the voltage and current consumption of external power supply is different, check if enough power supply capacity is provided.

(8) Detailed specifications are different. Refer to the related manuals.

<Relay Output Units>

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-OC223 250VAC/24VDC, 2A, Terminal block, 5 independent contacts	**CJ1W-OC201** 250VAC/24VDC, 2A, Terminal block, 8 independent contacts	Relay Output Units with terminal block for 5 outputs (independent contacts). Replace this unit with a Relay Output Unit with 8 outputs (independent contacts).	1) Terminal block 2) Output points (independent contacts 5 points -> 8 points) 3) Output circuit specification • ON/OFF response time (10ms→15ms) • Used relays 4)Internal current consumption (5VDC:10mA→90mA, 26VDC:46mA→24VDC 48mA)
C200H-OC224 250VAC/24VDC, 2A, Terminal block, 8 independent contacts	**CJ1W-OC201** 250VAC/24VDC, 2A, Terminal block, 8 independent contacts	Relay Output Units with terminal block for 8 outputs (independent contacts).	1) Terminal block 2) Output circuit specification, • ON/OFF response time (10ms→15ms) • Used relays 3) Internal current consumption (5VDC: 10mA→90mA, 26VDC:75mA→24VDC 48mA)
C200H-OC224V, OC224N 250VAC/24VDC, 2A, Terminal block, 8 independent contacts	**CJ1W-OC201** 250VAC/24VDC, 2A, Terminal block, 8 independent contacts	Relay Output Units with terminal block for 8 outputs (independent contacts).	1) Terminal block 2) Output circuit specification • Used relays 3) Internal current consumption (5VDC:10mA→90mA, 26VDC:90mA→24VDC 48mA)
C200H-OC221 250VAC/24VDC, 2A, Terminal block, 8 outputs	**CJ1W-OC211** 250VAC/24VDC, 2A, Terminal block, 16 outputs	Relay Output Units with terminal block for 8 outputs. Replace this unit with a Relay Output Unit with 16 outputs.	1) Terminal block 2) Output points: (8 -> 16 points) 3) Output circuit specification, • ON/OFF response time (10ms→15ms) • Used relays 4) Internal current consumption (5VDC:10mA→110mA, 26VDC:75mA→24VDC: 96mA)
C200H-OC222 250VAC/24VDC, 2A, Terminal block, 12 outputs	**CJ1W-OC211** 250VAC/24VDC, 2A, Terminal block, 16 outputs	Relay Output Units with terminal block for 12 outputs. Replace this unit with a Relay Output Unit with 16 outputs.	1) Terminal block 2) Output points (12 -> 16 points) 3) Number of circuit (12 points/common x1 circuit →8 points/common x2 circuits) 4)Output circuit specification • ON/OFF response time (10ms→15ms) • Used relays 5)Internal current consumption (DC5V: 10mA→ 110mA, 26VDC:75mA→96mA)
C200H-OC222V, OC222N 250VAC/24VDC, 2A, Terminal block, 12 outputs	**CJ1W-OC211** 250VAC/24VDC, 2A, Terminal block, 16 outputs	Relay Output Units with terminal block for 12 outputs. Replace this unit with a Relay Output Unit with 16 outputs.	1) Terminal block 2) Output points (12 -> 16 points) 3) Number of circuit (12 points/common x1 circuit →8 points/common x2 circuits) 4) Output circuit specification • Used relays 5)Internal current consumption (5VDC: 10mA→110mA, 26VDC: 90mA→24VDC: 96mA)

< Relay Output Units >

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-OC225 250VAC/24VDC, 2A, Terminal block, 16 outputs	**CJ1W-OC211** 250VAC/24VDC, 2A, Terminal block, 16 outputs	Relay Output Units with terminal block for 16 outputs.	1) Terminal block 2) Number of circuit (16 points/common x1 circuit →8 points/common x2 circuits) 3) Output circuit specification • ON/OFF response time (10ms→15ms) • Used relays 4) Internal current consumption (5VDC:10mA→110mA, 26VDC: 75mA→ 24VDC 96mA)
C200H-OC226, OC226N 250VAC/24VDC, 2A, Terminal block, 16 outputs	**CJ1W-OC211** 250VAC/24VDC, 2A, Terminal block, 16 outputs	Relay Output Units with terminal block for 16 outputs.	1) Terminal block 2) Number of circuit (16 points/common x1 circuit →8 points/common x2 circuits) 3) Output circuit specification •Used relay. 4) Internal current consumption (5VDC:10mA→ 110mA, 26VDC:90mA→ 24VDC 96mA)

<Transistor Output Unit >

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-OD411 12-48 VDC, 1A, Sinking, Terminal block, 8 outputs	**CJ1W-OD211** 12-24 VDC, 0.5A, Sinking, Terminal block, 16 outputs	Transistor Output Units with terminal block for 8 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.	1) Terminal block 2) Output points (8 -> 16 points) 3) Output circuit specification • Output voltage range (12-48VDC→12-24VDC), • Output capacity (1A/point, 3A/unit →0.5A/point, 5A/unit), • Residual voltage (1.4V→1.5V), • ON response time (0.2ms→0.1ms) • OFF response time (0.3ms→0.8ms) 4) Internal current consumption (5VDC:140mA→100mA)
C200H-OD213 24 VDC, 2.1A, Sinking, Terminal block, 8 outputs	**CJ1W-OD211** 12-24 VDC, 0.5A, Sinking, Terminal block, 16 outputs	Transistor Output Units with terminal block for 8 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.	1) Terminal block 2) Output points (8 -> 16 points) 3) Output circuit specification • Output capacity (2.1A/point, 5.2A/unit →0.5A/point, 5A/unit), • Residual voltage (1.4V→1.5V), • ON response time (0.2ms→0.1ms) • OFF response time (0.3ms→0.8ms) 4) Internal current consumption (5VDC:140mA→100mA)
C200H-OD214 24 VDC, 0.8A, Sourcing, Terminal block, load short circuit protection, 8 outputs	**CJ1W-OD212** 24 VDC, 0.5A, Sourcing, Terminal block, load short circuit protection, 16 outputs	Transistor Output Units with terminal block for 8 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.	1) Terminal block 2) Output points (8 -> 16 points) 3) Output circuit specification • Output capacity (0.8A/point, 2.4A/unit →0.5A/point, 5A/unit) • ON response time (1ms→0.5ms) 4) Internal current consumption (5VDC:140mA→170mA)
C200H-OD216 5 - 24 VDC, 0.3A, Sourcing, Terminal block, 8 outputs	**CJ1W-OD212** 24 VDC, 0.5A, Sourcing, Terminal block, load short circuit protection, 16 outputs	Transistor Output Units with terminal block for 8 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.	1) Terminal block 2) Output points (8 -> 16 points) 3) Output circuit specification • Voltage range (5-24VDC→24VDC) • ON response time (1.5ms→0.5ms) • OFF response time (2ms→1ms) 4) Internal current consumption (5VDC:10mA→100mA, 26VDC: 75mA → 0mA) 5) External power supply: unnecessary → 24VDC/40mA)
C200H-OD211 24 VDC, 0.3A, Sinking, Terminal block, 12 outputs	**CJ1W-OD211** 12-24 VDC, 0.5A, Sinking, Terminal block, 16 outputs	Transistor Output Units with terminal block for 12 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.	1) Terminal block 2) Output points (12 -> 16 points) 3) Output circuit specification • Residual voltage (1.4V→1.5V), • ON response time (0.2ms→0.1ms) • OFF response time (0.3ms→0.8ms) 4) Internal current consumption (5VDC:160mA→100mA)

<Transistor Output Unit>

C200H Series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-OD217 5-24 VDC, 0.3A, Sourcing, Terminal block, 12 outputs	**CJ1W-OD212** 24 VDC, 0.5A, Sourcing, Terminal block, load short circuit protection, 16 outputs	Transistor Output Units with terminal block for 12 outputs. Replace this unit with a Transistor Output Unit with 16 outputs.	1) Terminal block 2) Output points (12 -> 16 points) 3) Output circuit specification • Output voltage range (5-24VDC→24VDC) • ON response time (1.5ms→0.5ms) • OFF response time (0.5ms→1.0ms) 4) Internal current consumption (5VDC:10mA→100mA, 26VDC: 75mA→0mA) 5) External power supply: (unnecessary → 24VDC/40mA)
C200H-OD212 24 VDC, 0.3A, Sinking, Terminal block, 16 outputs	**CJ1W-OD211** 12-24 VDC, 0.5A, Sinking, Terminal block, 16 outputs	Transistor Output Units with terminal block for 16 outputs.	1)Terminal block 2)Output circuit specification • Residual voltage (1.4V→1.5V) • ON response time (0.1ms→0.5ms) • OFF response time (0.3ms→1ms) 3)Internal current consumption (5VDC:180mA→100mA)
C200H-OD21A 24 VDC, 1.0A, Sourcing, Terminal block, load short circuit protection, 16 outputs	**CJ1W-OD212** 24 VDC, 0.5A, Sourcing, Terminal block, load short circuit protection, 16 outputs	Transistor Output Units with terminal block for 16 outputs.	1)Terminal block 2)Output circuit specification • Output capacity (1A/point, 4A/Unit → 0.5A/point, 5A/Unit) • Residual voltage（0.8V→1.5V） • ON response time（0.1ms→0.5ms） • OFF response time（0.3ms→1ms） 3) Internal current consumption (5VDC:160mA→100mA,) 4) Alarm output (Supported -> Not supported)
C200H-OD218 4.5 to 26.3 VDC, 0.1A, Sinking, Connector, 32 outputs (Group-2)	**CJ1W-OD231** 12-24 VDC, 0.5A, Sinking, Connector, 32 outputs	Transistor Output Units with connector for 32 outputs.	1) Number of circuit (32 points/common x1 circuit →16 points/common x2 circuits) 2）Output circuit specification, • Output voltage range (5-24VDC→12-24VDC) • Residual voltage (0.8V→1.5V) • OFF response time (0.4ms→0.8ms) 3) Internal current consumption (5VDC:180mA→140mA)
C200H-OD215 4.5 to 26.3 VDC, 0.1A, Sinking, Connector, 32 outputs (Special I/O)	**CJ1W-OD231** 12-24 VDC, 0.5A, Sinking, Connector, 32 outputs	Transistor Output Units with connector for 32 outputs. * The CJ-series does not have Unit which supports Dynamic Output. Please change wiring for static.	1)Connector 2)Output method (Dynamic or Static mode → Static only) The specification of static is as follows: 3) Number of circuit (8 points/common x4 circuits →16 points/common x2 circuits) 4） Output circuit specification • Output voltage range (5-24VDC→12-24VDC) • Residual voltage (0.7V→1.5V) • ON response time (0.2ms→0.1ms) • OFF response time (0.6ms→0.8ms) 5) Internal current consumption (5VDC: 220mA→140mA)
C200H-OD21B 24 VDC, 0.5A, Sourcing, Connector, load short circuit protection, 32 outputs (Group-2)	**CJ1W-OD232** 24 VDC, 0.5A, Sourcing, Connector, load short circuit protection, 32 outputs	Transistor Output Units with connector for 32 outputs.	1) Number of circuit (32 points/common x1 circuit →16 points/common x2 circuits) 2） Output circuit specification • Output capacity (0.5A/point, 5A/unit →0.5A/point, 2.5A/common and 5A/unit) • Residual voltage (0.8V→1.5V) • ON response time (0.1ms→0.5ms) • OFF response time (0.3ms→1ms) 3) Internal current consumption (5VDC:180mA→150mA)
C200H-OD219 4.5 to 26.3 VDC, Sinking, 0.1A, Connector, 64 outputs (Group-2)	**CJ1W-OD261** 12-24 VDC, 0.3A, Sinking, Connector, 64 outputs	Transistor Output Units with connector for 64 outputs.	1) Number of circuit (32 points/common x2 circuits →16 points/common x 4 circuits) 2） Output circuit specification • Output voltage range (5-24VDC → 12-24VDC) • Residual voltage (0.8V→1.5V) • ON response time (0.1ms→0.5ms) • OFF response time (0.4ms→1ms) 3)Internal current consumption (5VDC: 270mA→170mA)

<TTL Output Unit>

C200H Series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-OD501 5 VDC, 35mA, 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. Please consider to replace this unit with Transistor Output Unit (CJ1W-OD231) or TTL Input/Output Unit (CJ1W-MD563).	

<Triac Output Unit >

C200H Series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-OA223 250VAC, 1.2A, Terminal block, 8 outputs	**CJ1W-OA201** 250VAC, 0.6A, Terminal block, 8 outputs	Triac Output Units with terminal block for 8 outputs.	1)Terminal block 2)Output circuit specification • Output capacity (1.2A/point, 4A/unit →0.6A/point, 2.4A/unit) • Maximum inrush current (15A/100ms,30A/10ms→15A/10ms) • Residual voltage (50-1200mA: 1.5VAC, 10-50mA: 5VAC→1.6VAC). 3) Internal current consumption (5VDC:180mA→220mA)
C200H-OA221 250VAC, 1.2A, Terminal block, 8 outputs	**CJ1W-OA201** 250VAC, 0.6A, Terminal block, 8 outputs	Triac Output Units with terminal block for 8 outputs.	1) Terminal block 2) Output circuit specification • Output capacity (1A/point, 4A/unit →0.6A/point, 2.4A/unit) • Maximum inrush current: No regulations →15A/10ms • Residual voltage (1.2VAC→1.6VAC) • OFF response time (1/2 of load frequency → 1/2 of load frequency + 1ms) 3) Internal current consumption (5VDC:140mA→220mA)
C200H-OA224 250 VAC, 0.5A, Terminal block, 12 outputs	**CJ1W-OA201** 250VAC, 0.6A, Terminal block, 8 outputs	Triac Output Units with terminal block for 12 outputs. Replace this unit with two Triac Output Units with 8 outputs.	1) Terminal block 2) Output points: 12 points → 8 points x 2units 3) Number of circuit: (12 points/common x1 circuit →8 points/common x 1 circuit x 2 units) 4) Output circuit specification • Output capacity: 250VAC 0.5A/point, 2A/unit →0.6A/unit, 2.4A/unit x 2 units • Maximum inrush current: 10A/100ms, 20A/10ms→15A/10ms • Residual voltage: 50-500mA: 1.5VAC, 10-50mA: 5VAC→1.6VAC 5) Internal current consumption : 5VDC :270mA→220mA x 2 units
C200H-OA222V 250 V AC, 0.3A, Terminal block, 12 outputs (CE-approved)	**CJ1W-OA201** 250VAC, 0.6A, Terminal block, 8 outputs	Triac Output Units with terminal block for 12 outputs. Replace this unit with two Triac Output Units with 8 outputs.	1) Terminal block 2) Output points: 12 points → 8 points x 2 units 3) Number of circuit: (12 points/common x1 circuit →8 points/common x 1 circuits x 2 units) 4) Output circuit specification • Maximum inrush current: No regulations →15A/10ms • Residual voltage: (1.2VAC→1.6VAC) • ON response time: (1/2 of load frequency→1ms) • OFF response time: (1/2 of load frequency → 1/2 of load frequency +1ms) 5) Internal current consumption (5VDC:200mA→220mA x 2 units)

- Input/Output Units

(1) The CJ-series has following Input/Output Units; CJ1W-MD23□, MD26□, and MD563.

(2) Refer to the related manuals for details. Detailed specifications are different in C200H-series and CJ-series Units, though CJ-series Units has basic functions of C200H-series Units.

<DC Input/Transistor Output Unit>

C200H Series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-MD115 12VDC/16 inputs (4.1mA), 5-24VDC/16 outputs (0.1A, Sinking), Connector (Special I/O)	**CJ1W-MD231** 24VDC/16 inputs (7mA), 12-24VDC/16 outputs (0.5A, Sinking), Connector	Input/Output Unit with connector for 16 inputs/16 outputs. * The CJ-series does not have Unit which supports Dynamic Output. Please change wiring for static.	1) Connector 2) Output method: (Dynamic or Static mode -> Static only) 3) Internal current consumption: (5VDC:180mA→130mA) The specification of static is as follows: < Output circuit > 4) Number of circuit: (8 points/common x2 circuits →16 points/common x1 circuits) 5) Output circuit specification • Output voltage range: (5-24VDC→ 12-24VDC) • Residual voltage (0.7V→1.5V) • ON response time (0.2ms→0.1ms) • OFF response time (0.6ms→0.8ms) < Input circuit > 6) Number of circuit: (8 points/common x 2 circuits →16 points/common x 1 circuit) 7) Input circuit specification • Input voltage (12VDC→24VDC) • Input impedance (2.7kΩ→3.3kΩ) • ON voltage (8VDC→14.4VDC) • OFF voltage (3VDC→5VDC)
C200H-MD215 24VDC/16 inputs (4.1mA), 5-24VDC/16 outputs (0.1A, Sinking), Connector (Special I/O)	**CJ1W-MD231** 24VDC/16 inputs (7mA), 12-24VDC/16 outputs (0.5A, Sinking), Connector	Input/Output Unit with connector for 16 inputs/16 outputs. * The CJ-series does not have Unit which supports Dynamic Output. Please change wiring for static.	1) Connector 2) Output method: (Dynamic or Static mode -> Static only) 3) Internal current consumption: (5VDC:180mA→130mA) The specification of static is as follows: < Output circuit > 4) Number of circuit: (8 points/common x2 circuits →16 points/common x1 circuits) 5) Output circuit specification • Output voltage range: (5-24VDC→ 12-24VDC) • Residual voltage (0.7V→1.5V) • ON response time (0.2ms→0.1ms) • OFF response time (0.6ms→0.8ms) < Input circuit > 6) Number of circuit: (8 points/common x 2 circuits →16 points/common x 1 circuit) 7) Input circuit specification • Input impedance (5.6kΩ→3.3kΩ)

<TTL Input/Output Units>

C200H Series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-MD501 5VDC/16 inputs (3.5mA), 5VDC/16 outputs (35mA, Sinking), Connector (Special I/O)	**CJ1W-MD231** 24VDC/16 inputs (7mA), 12-24VDC/16 outputs (0.5A, Sinking), Connector	Input/Output Unit with connector for 16 inputs/16 outputs. * The CJ-series does not have Unit which supports Dynamic Output. Please change wiring for static. * Please consider to replace this Unit with CJ1W-MD563 (32 inputs/32 outputs).	1) Connector 2) Output method: (Dynamic or Static mode -> Static only) 3) Internal current consumption: (5VDC:180mA→130mA) The specification of static is as follows: < Output circuit > 4) Number of circuit: (8 points/common x2 circuits →16 points/common x1 circuits) 5) Output circuit specification • Output voltage range: (5VDC→ 12-24VDC) • Residual voltage (0.4V→1.5V) • ON response time (0.2ms→0.1ms) • OFF response time (0.3ms→0.8ms) < Input circuit > 6) Number of circuit: (8 points/common x 2 circuits →16 points/common x 1 circuit) 7) Input circuit specification • Input voltage (5VDC→24VDC) • Input impedance (1.1kΩ→3.3kΩ) • ON voltage (3VDC→14.4VDC) • OFF voltage (1VDC→5VDC)

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