OMRON

Programmable Controller C200H-series

Replacement Guide
From C200H to CJ2

C200H-CPU0□

C200H-CPU2□

CJ2H-CPU6□

CJ2M-CPU1□

CJ2M-CPU3□

Replace
Guide

P073-E1-03

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.

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	CX-One FA Integrated Tool Package SETUP MANUAL
W446	CXONE-AL□□D-V4	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

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C200H Replacement Guide
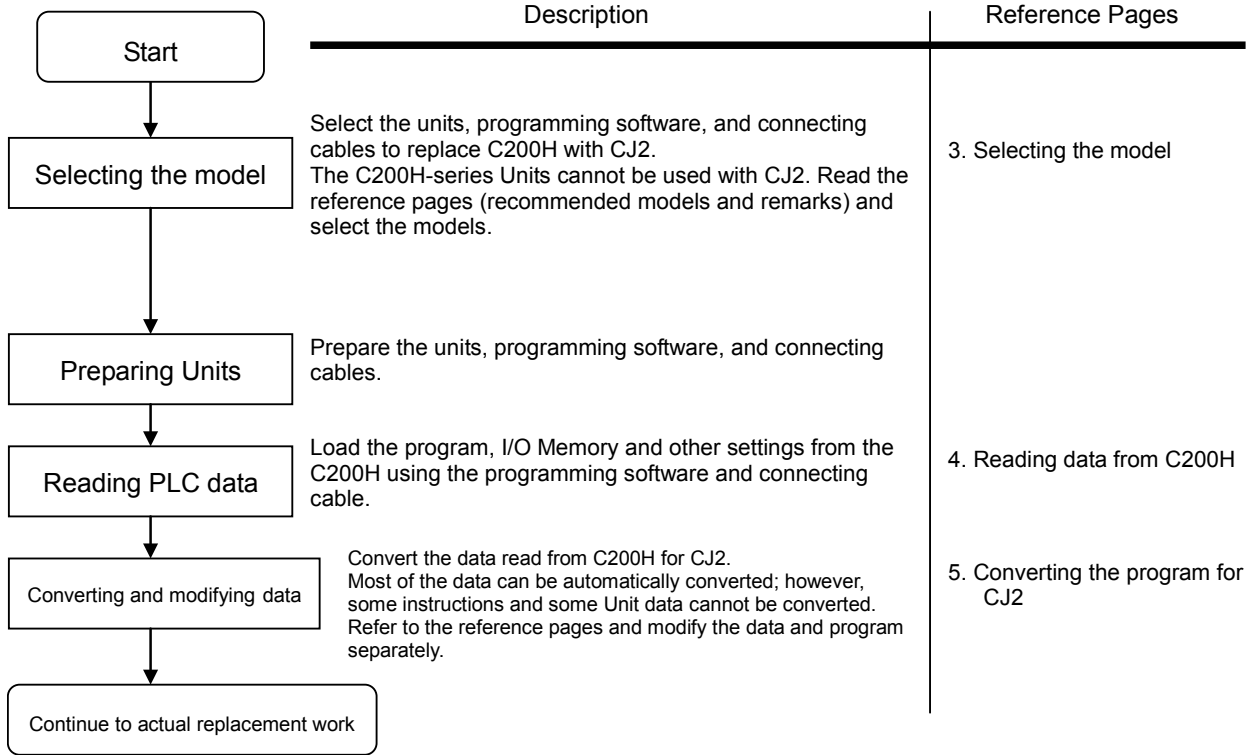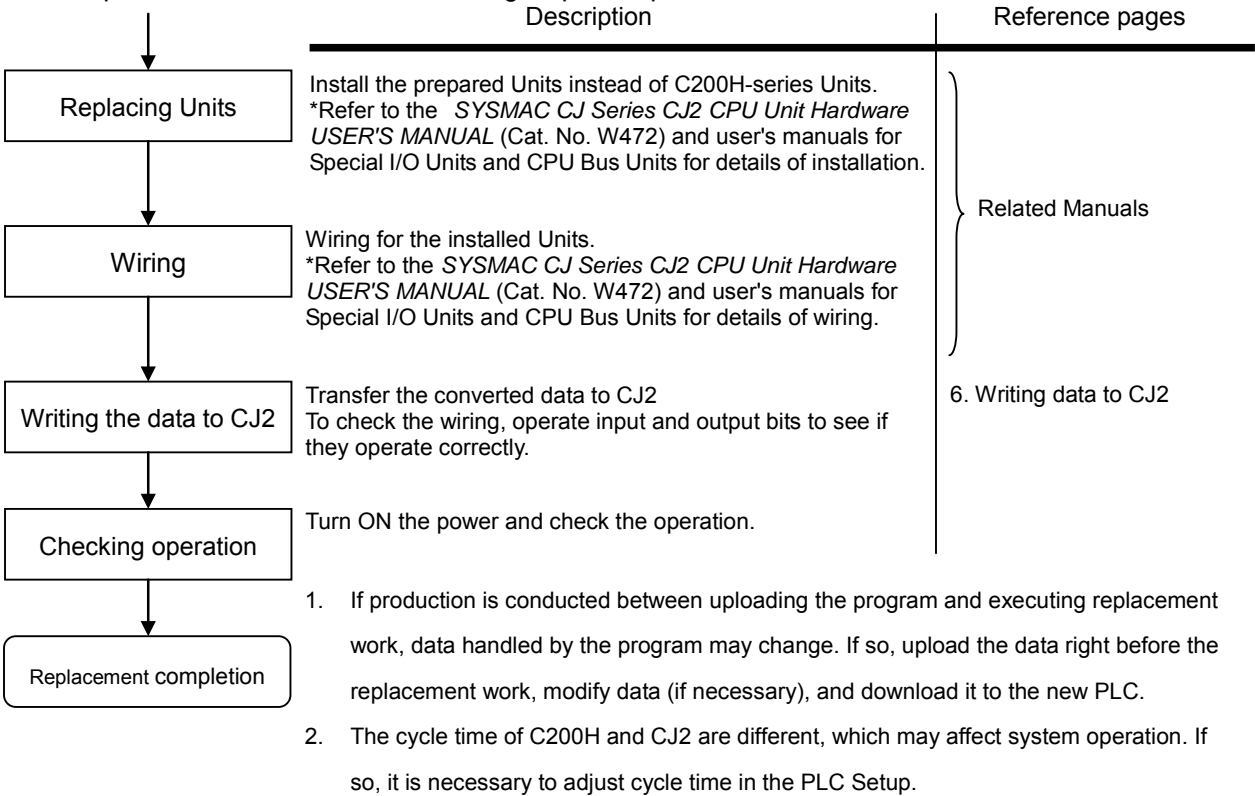## From C200H to CJ2

Table of Contents

Follow the below work flow to replace C200H with CJ2. Refer to the reference pages for details.

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1. Work flow

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

	Description	Reference Pages
Start		
Selecting the model	Select the units, programming software, and connecting cables to replace C200H with CJ2. The C200H-series Units cannot be used with CJ2. Read the reference pages (recommended models and remarks) and select the models.	3. Selecting the model
Preparing Units	Prepare the units, programming software, and connecting cables.	
Reading PLC data	Load the program, I/O Memory and other settings from the C200H using the programming software and connecting cable.	4. 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 cannot be converted. Refer to the reference pages and modify the data and program separately.	5. Converting the program for CJ2
Continue to actual replacement work		

2) Actual replacement work: Take the following steps to replace C200H with CJ2.

	Description	Reference pages
Replacing Units	Install the prepared Units instead of C200H-series Units. *Refer to the *SYSMAC CJ Series 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 of installation.	
Wiring	Wiring for the installed Units. *Refer to the *SYSMAC CJ Series 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 of wiring.	Related Manuals
Writing the data to CJ2	Transfer the converted data to CJ2 To check the wiring, operate input and output bits to see if they operate correctly.	6. Writing data to CJ2
Checking operation	Turn ON the power and check the operation.	
Replacement completion		

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, modify data (if necessary), and download it to the new PLC.

2. The cycle time of C200H and CJ2 are different, which may affect system operation. If so, it is necessary to adjust cycle time in the PLC Setup.

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.
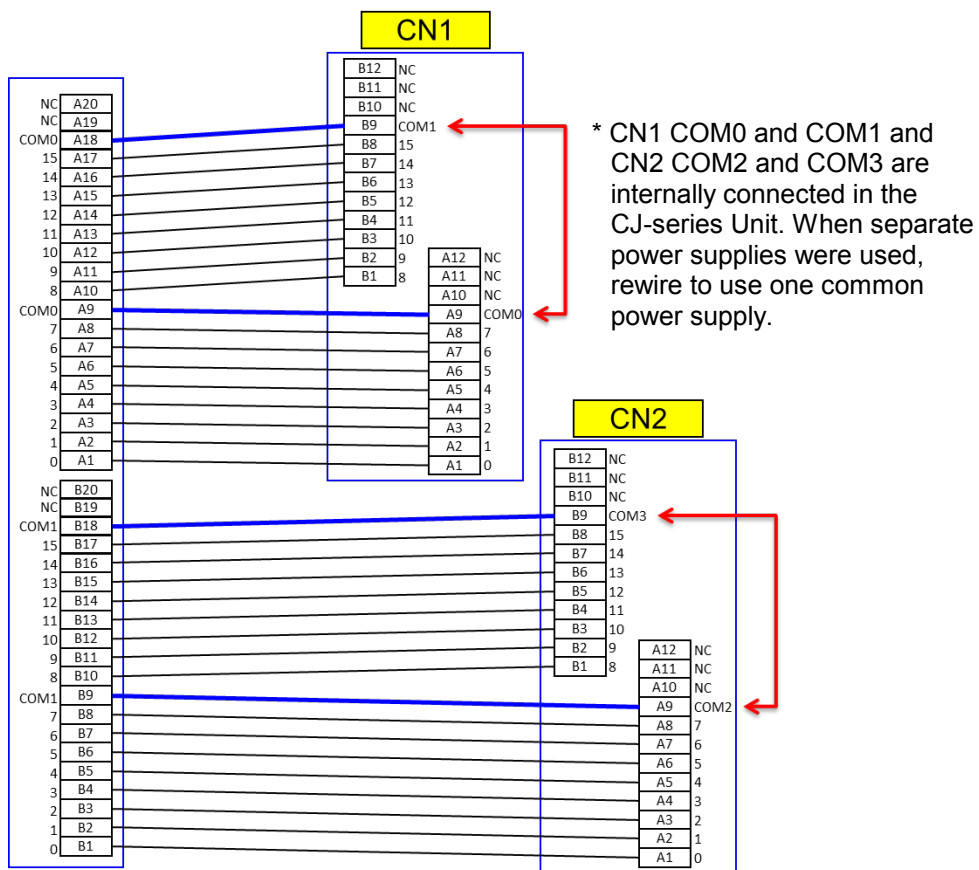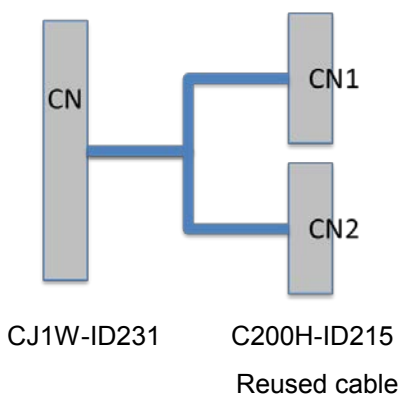
Replacement method	Description	
Using Conversion Cables for C200H High-density I/O Units	Replace C200H-ID215 with CJ1W-ID231, and connect CJ1W-ID231 using the same connecting cables used for C200H-ID215. In the same way, replace C200H-OD215 with CJ1W-OD231, and connect CJ1W-OD231 using the same cable used for C200H-OD215. Pros: Rewiring of I/O Units is not required, which reduces replacement time.	CJ-series Units CPU CJ1W-OD231 Conversion Cable XW2Z-S011 Connecting cable that was connected to C200H-OD215 (reuse) CJ1W-ID231 Conversion Cable XW2Z-S010 Connecting cable that was connected to C200H-ID215 (reuse)

● 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

CJ1W-ID231   C200H-ID215
Reused cable

* CN1 COM0 and COM1 and CN2 COM2 and COM3 are internally connected in the CJ-series Unit. When separate power supplies were used, rewire to use one common power supply.

	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
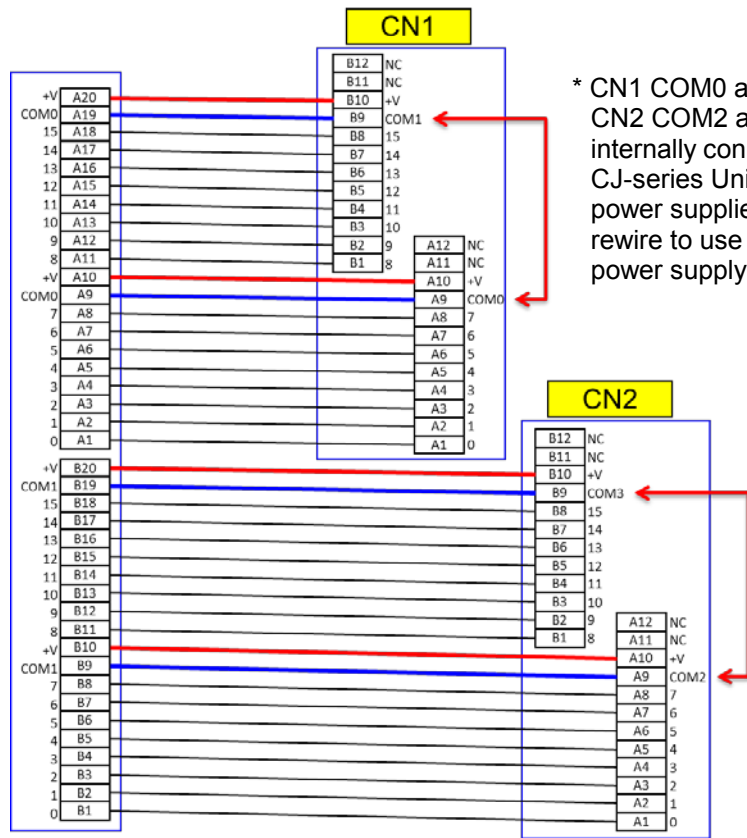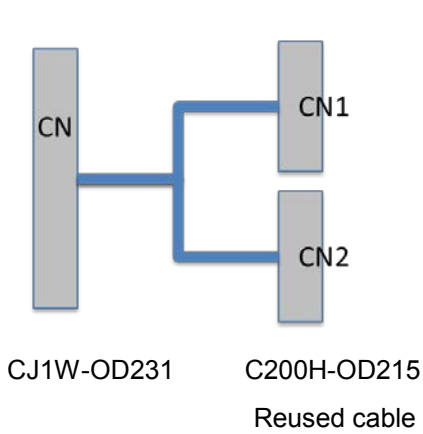
CJ1W-OD231   C200H-OD215

Reused cable

* CN1 COM0 and COM1 and CN2 COM2 and COM3 are internally connected in the CJ-series Unit. When separate power supplies were used, rewire to use one common power supply.

	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 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. 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
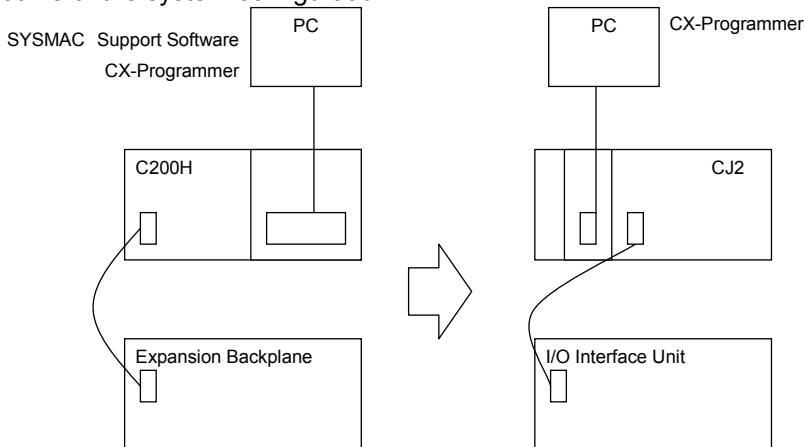
The table below lists the C200H-series Units and each corresponding CJ-series Unit. Select the CJ-series Unit which is compatible with the C200H-series Unit or which has similar specifications to the C200H-series Unit. Refer to the *CJ2H-CPU6□-EIP/CJ2H-CPU6□/CJ2M-CPU□□ SYSMAC CJ Series CJ2 CPU Unit Hardware USER'S MANUAL* (Cat. No. W472) for details of the Units.

< CPU Rack >

Unit name	C200H-series Unit	CJ-series Unit	Description
CPU Unit	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 Unit	C120-LK201 (RS-232C) C120-LK202 (RS-422)*	Serial port (RS-232C) built in the CPU Unit.	*To replace C120-LK202, use NT-AL001 to convert RS-232C into RS-422.
Power Supply Unit	(For C200H-CPU01/02/21/22)	CJ1W-PA202 (AC Power Supply Unit)	To use RUN output, prepare an Output Unit separately.
		CJ1W-PA205C (AC Power Supply Unit)	With replacement notification function.
		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 separately.
		CJ1W-PD025 (DC Power Supply Unit)	To use RUN output, prepare an Output Unit separately.
CPU Backplane	C200H-BC031(-□□) C200H-BC051(-□□) C200H-BC081(-□□) C200H-BC101(-□□)	Unnecessary [DIN Track] PFP-50N PFP-100N PFP-100N2	CJ-series Units are installed on the DIN Track. The 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.

< Memory Cassettes >

Unit name	C200H-series Unit	CJ-series Unit	Description

Memory Unit	RAM Unit
	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 CJ2-series CPU Unit has a nonvolatile memory for user program in it. The Memory Unit is not required.
			It also has the clock function.

	EEPROM Unit
	C200H-ME431
	C200H-ME432
	  (with clock function)
	C200H-ME831
	C200H-ME832
	  (with clock function)
		None	The CJ2-series CPU Unit has a nonvolatile memory for user program in it. The Memory Unit is not required.
			It also has the clock function.
			The program file and the parameters are stored in the memory card. It is possible to execute operation by reading them when the PLC is turned ON. (Automatic File Transfer at Startup)

	EPROM Unit C200H-MP831	None	The CJ2-series CPU Unit has a nonvolatile memory for user program in it. The Memory Unit is not required. It also has the clock function. The program file and the parameters are stored in the memory card. It is possible to execute operation by reading them when the PLC is turned ON. (Automatic File Transfer at Startup)

< Expansion Rack >

Unit name	C200H-series Unit	CJ-series Unit	Description
Power Supply Unit	C200H-PS221	CJ1W-PA202 (AC Power Supply Unit)	
		CJ1W-PA205C (AC Power Supply Unit)	With replacement notification function.
		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)	
Backplane (Expansion Backplane)	C200H-BC031(-□□) C200H-BC051(-□□) C200H-BC081(-□□) C200H-BC101(-□□)	Unnecessary [DIN Track] PFP-50N PFP-100N 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) C200H-CN711 (0.7 m) C200H-CN221 (2 m) C200H-CN521 (5 m) C200H-CN131 (10 m)	CS1W-CN313 (0.3 m) CS1W-CN713 (0.7 m) CS1W-CN223 (2 m) CS1W-CN323 (3 m) CS1W-CN523 (5 m) CS1W-CN133 (10 m) 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.

< I/O Units and CPU Bus Units>

Unit name	C200H-series Unit	CJ-series Unit	Description
Basic I/O Unit	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 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] Coaxial: C200H-SLK21-V1 C200HS-SLK22 C200HW-SLK23/24 Optical: C200H-SLK11 C200HS-SLK12 C200HW-SLK13/14	[SYSMAC LINK] None [Controller Link] Wired: CJ1W-CLK23 Optical: None	SYSMAC LINK cannot be used with the CJ2-series CPU Unit. We recommend you to use Controller Link instead. Refer to the *Controller Link Units Operation Manual* (Cat. No. W309) for details.
	[SYSMAC NET] C200H-SNT31 C200HS-SNT32	[SYSMAC NET] None [Controller Link] Wired: CJ1W-CLK23. Optical: None	SYSMAC NET cannot be used with the CJ2-series CPU Unit. We recommend you to use Controller Link instead. Refer to the *Controller Link Units Operation Manual* (Cat. No. W309) for details.
	[Host Link]	[Serial Communications]	C200H-series Host Link Units cannot be used with the CJ2-series CPU Unit. Refer to the *SYSMAC CS/CJ Series Serial Communications Boards/Units OPERATION MANUAL* (Cat. No. W336) for details.
	C200H-LK101-PV1	None CJ1W-SCU21-V1 (+ 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 CJ1W-SCU41-V1 Host Link port built in the CPU Unit *For CJ2M-CPU3□, CP1W-CIF01 is required.	Use one of the left CJ-series Units/Boards.. *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 CJ1W-SCU41-V1	Use one of the left CJ-series Units/Boards.
	[PC Link] C200H-LK401	[PC Link] None [Controller Link] Wired: CJ1W-CLK23. Optical: None	PC Link cannot be used with the CJ2-series CPU Unit. We recommend you to use Controller Link instead. Refer to the *Controller Link Units Operation Manual* (Cat. No. W309) for details.
	[SYSMAC BUS] Wired: C200H-RM201 Optical: C200H-RM001-PV1	[SYSMAC BUS] None [CompoNet] CJ1W-CRM21 [DeviceNet] CJ1W-DRM21 [CompoBus/S] CJ1W-SRM21	SYSMAC BUS cannot be used with the CJ2-series CPU Unit. We recommend you to use left networks instead. Refer to the *CS/CJ series CompoNet Master Units OPERATION MANUAL* (Cat. No. W456) and *CompoNet Slave Units and Repeater Unit OPERATION MANUAL* (Cat. No. W457) for details of CompoNet. Refer to the *CS1W-DRM21(-V1),CJ1W-DRM21 CS/CJ SERIES DeviceNet UNITS OPERATION MANUAL* (Cat. No. W380) for details of DeviceNet. Refer to the *C200HW/CS1W/CJ1W/CQM1/SRT1/SRT2 CompoBus/S OPERATION MANUAL* (Cat. No. W266) for details of CompoBus/S.

< Support Software and Peripheral Devices >

Name	C200H-series Unit	CJ-series Unit	Description
Support Software	SYSMAC Support Software CX-Programmer	CX-One CXONE-AL□□C-V□/ AL□□D-V□ (CX-Programmer)	SYSMAC Support Software cannot be used with the CJ2-series CPU Unit.
Peripheral Interface Unit, Connecting Cable	C200H-IP007	Commercially available USB cable	USB 2.0 (or 1.1) cable (A connector – B connector) 5.0 m max..
Programming Console	C120-PRO15 C120-PRO25	None	Use the CX-Programmer or Programming Console function of the NS-series Programmable Terminal.
PROM Writer	C500-PRW06	None	EPROM cannot be used with the CJ2-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 CJ2-series CPU Unit is separated from the Power Supply Unit although the C200H-series CPU Unit is combined with the Power Supply Unit.

(2) 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.

(3) 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 C200H

Load the ladder program and Data Memory from 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

PC   CX-Programmer

Connecting Cable
CQM1-CIF02 (or XW2Z-200P-V)

C200H

Peripheral Interface Unit
C200H-IP007 (or C120-LK201-V1)
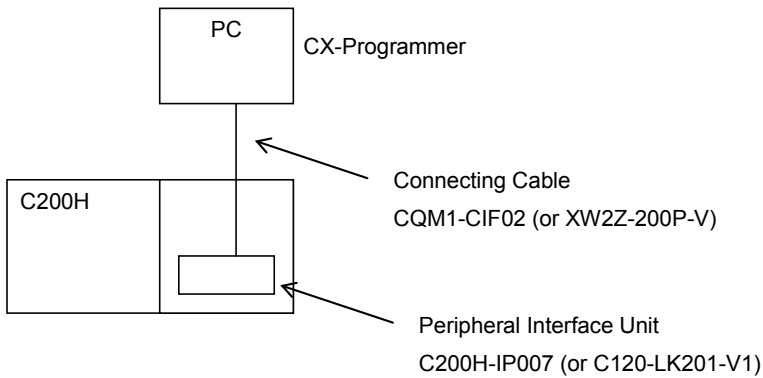
(1) Mount the Peripheral Interface Unit to C200H and connect it with a PC.

(2) Start up the CX-Programmer. (Select *All Program - OMRON - CX-One - CX-Programmer - CX-Programmer* from the Windows Start Menu.)

(3) Select C200H for the Device Type. (Select *New* from the File Menu to display the below dialog box.)
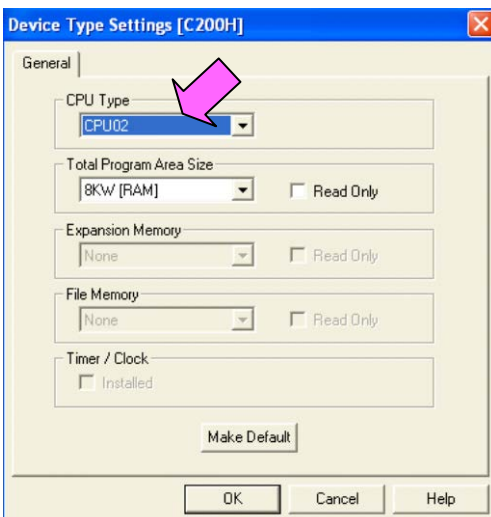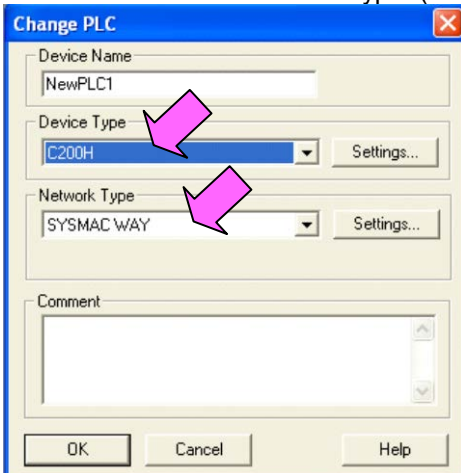
(4) Select **Work Online** from the PLC Menu to go online.

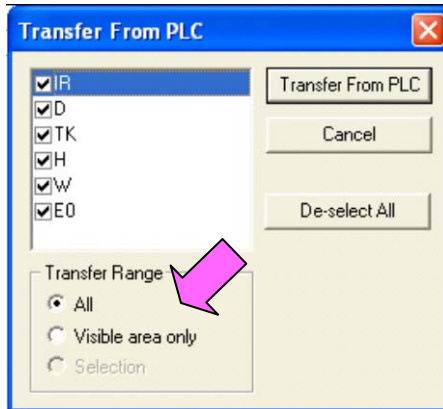(5) Transfer the ladder program and I/O table. (Select **Transfer - From PLC** from the PLC Menu.)

Click the **OK** Button to start transfer.
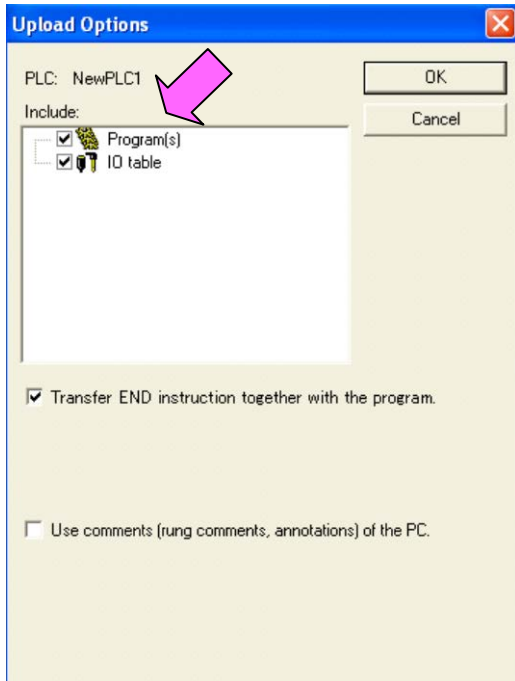
(6) Transfer the PLC memory data (Data Memory). (Select **Edit - Memory** from the PLC Menu.)
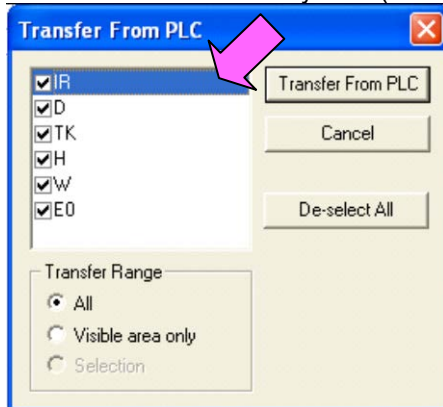
Scroll and select all the areas. Click the **Transfer from PLC** Button to start transfer.

(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 C200H. (Select *Open* from the File Menu.)

(2) Change the Device Type from C200H to CJ2M or CJ2H. (Select *Change Model* from the PLC Menu to display the below dialog box.)
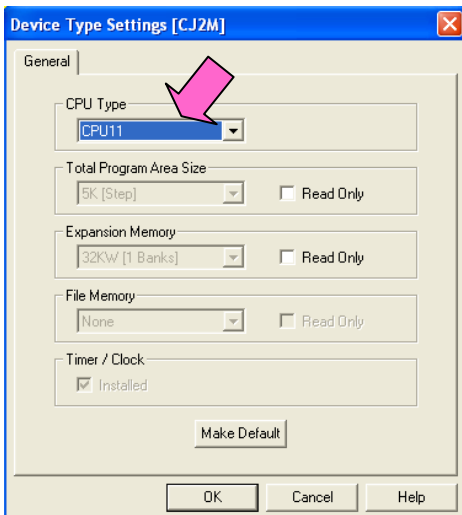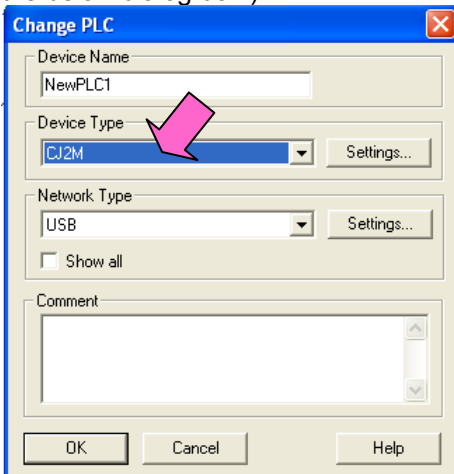

(3) The instructions are automatically converted. The Output Window shows the conversion results. Double-click an error shown on the Output Window to jump to the corresponding section of the ladder program.

Errors and warnings at conversion will be displayed.

Double-click an error or a warning to jump to the corresponding circuit.
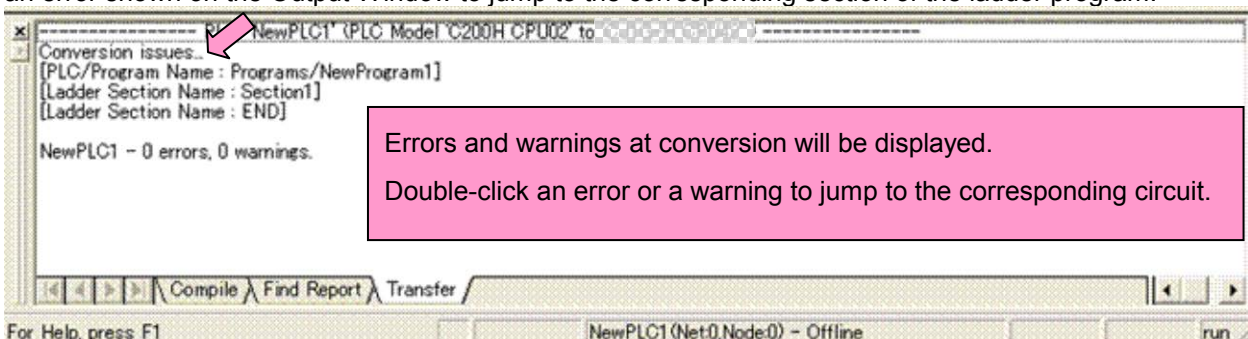
Some instructions cannot be converted. Modify the ladder program by referring to *Appendix A. Instructions converted by Change Model on CX-Programmer.*

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 C200H and CJ2, and copy and paste the necessary memory data.


Select the necessary PLC Memory on the C200H PLC Memory Window, and copy and paste it onto the CJ2 PLC Memory Window.
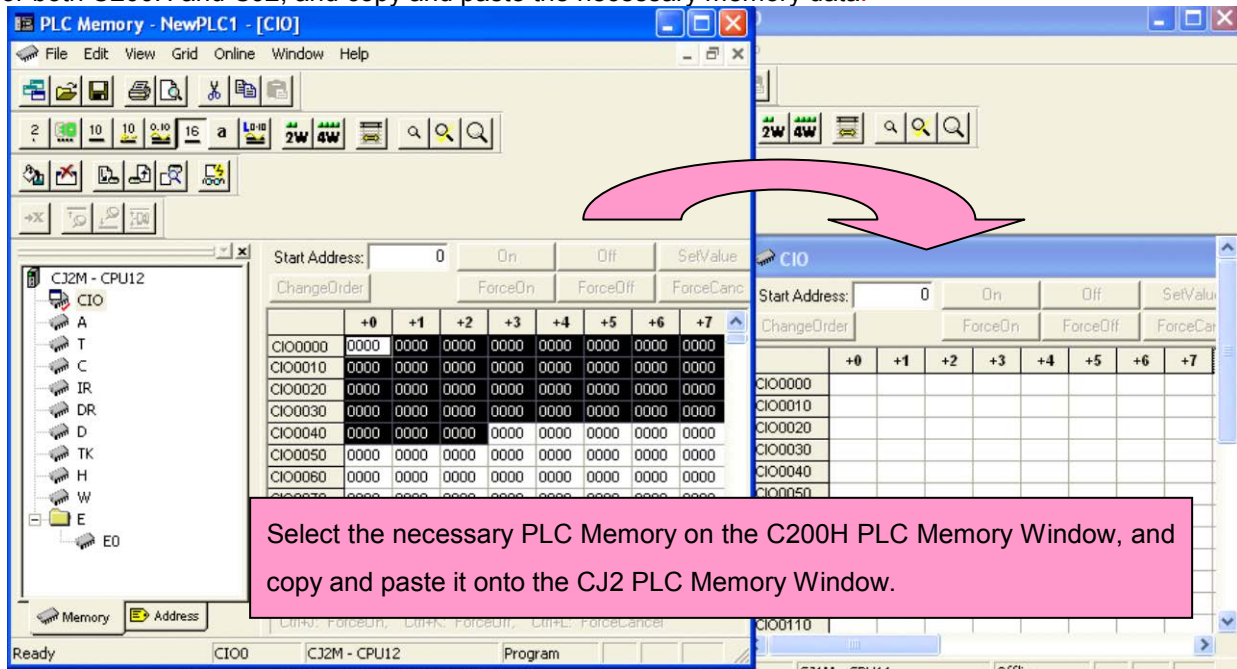
(5) The I/O allocation of C200H is partly different from that of CJ2. Refer to *Appendix B. Change of unit area allocation* and modify the ladder program.

(6) The PLC settings of C200H 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 CXONE-AL□□C-V□/ AL□□D-V□ (CX-Programmer)
	Connecting cable	Commercially available USB cable USB 2.0 (or 1.1) cable (A connector – B connector) 5.0 m max.
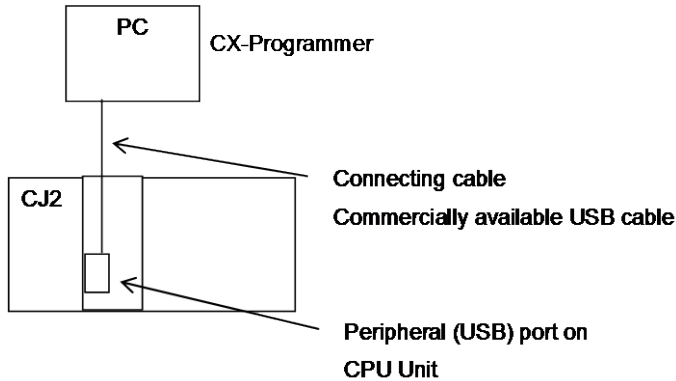
(1) Connect CJ2 with a PC.

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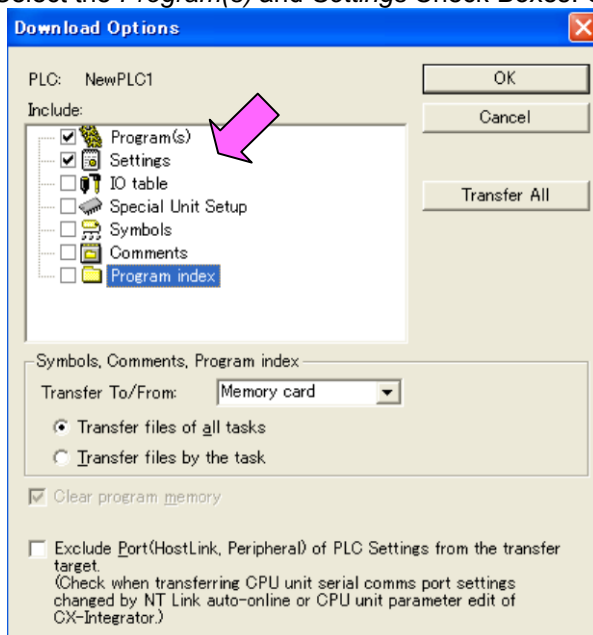
(5) Select **Edit - Memory** from the PLC Menu to display the below dialog box. Select the PLC memory (Data Memory Area: D and Holding Area: HR) and click the **Transfer to PLC** Button to start transfer.
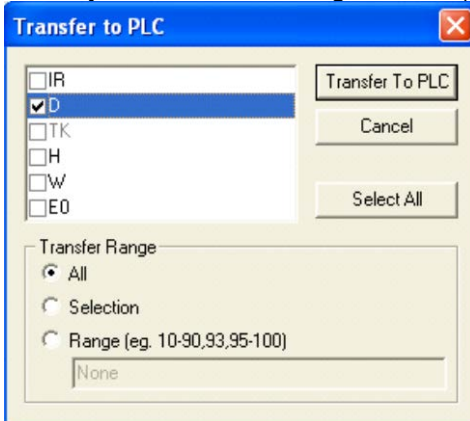
(6) Select **Work Online** from the PLC Menu to go offline.

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 C200H	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. If a value other than #0 is set, the operand is the same.	#0: Changed from 1 to 0 <> #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. If a value other than #0 is set, the operand is the same.	#0: Changed from 1 to 0 <> #0: Same
WSFT(16)	Same as C200H	#0 is added to the first operand. WSFT St E → WSFT #0 St E	**Changed from 2 to 3**
FUN17	**ASFT(017)**	Same as C200H	Same
XFER(70)	**XFERC(565)**	Same as C200H	Same
MOVB(82)	**MOVBC(568)**	Same as C200H	Same
DIST(80)	**DISTC(566)**	Same as C200H	Same
COLL(81)	**COLLC(567)**	Same as C200H	Same
FUN60	**CMPL(060)**	Same as C200H	Same
FUN19	**MCMP(019)**	Same as C200H	Same
FUN63	**LINE(063)**	**Changed from BCD data to binary data.**	Same
FUN64	**COLM(064)**	**Changed from BCD data to binary data.**	Same
FUN65	**SEC(065)**	Same as C200H	Same
FUN66	**HMS(066)**	Same as C200H	Same
INC(38)	**++B(594)**	Same as C200H	Same
DEC(39)	**--B(596)**	Same as C200H	Same
ADD(30)	**+B(404)**	Same as C200H	Same
ADDL(54)	**+BL(405)**	Same as C200H	Same
SUB(31)	**-B(414)**	Same as C200H	Same
SUBL(55)	**-BL(415)**	Same as C200H	Same
MUL(32)	***B(424)**	Same as C200H	Same
MULL(56)	***BL(425)**	Same as C200H	Same
DIV(33)	**/B(434)**	Same as C200H	Same
DIVL(57)	**/BL(435)**	Same as C200H	Same
ADB(50)	**+(400)**	Same as C200H	Same
SBB(51)	**-(410)**	Same as C200H	Same
MLB(52)	***(420)**	Same as C200H	Same
DVB(53)	**/(430)**	Same as C200H	Same
FUN69	**APR(069)**	Same as C200H	Same
FUN89	**Not supported**	**Combine and use the following instructions: MSKS(690), CLI(691), MSKR(692), DI(693), EI(694)**	
STEP(08)	Same as C200H	The CIO, Holding, Work, Auxiliary, Link Areas are all converted into the Work Area.	Same
SNXT(09)	Same as C200H **Use a differentiated execution condition for the SNXT instruction.**	Same as C200H	Same
FAL(06)	Same as C200H	#0 is added to the second operand. FAL N → FAL N #0	**Changed from 1 to 2.**
FALS(07)	Same as C200H	#0 is added to the second operand. FALS N → FALS N #0	**Changed from 1 to 2.**
MSG(46)	**MSG(046)**	#0 is added to the first operand. MSG FM → MSG #0 M 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.**
FUN47	**Not supported**	Use MSG(046) instead.	—
FUN67	**BCNTC(621)**	Same as C200H	Same
WDT(94)	**WDT(094)**	**Control data configuration is changed.**	Same
FUN61	**Not supported**	**Use IORF (097) instead.**	
FUN18	**Enter the settings in the PLC Setup.**		
FUN48	**Not supported**	—	—
FUN49	**Enter the settings in the PLC Setup.**		
FUN90	**SEND(090)**	**Control data configuration is changed.**	Same
FUN98	**RECV(098)**	**Control data configuration is changed.**	Same

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Appendix B. Change of unit area allocation

This section describes the differences in unit area allocation between C200H and CJ2. Refer to related manuals for details.

Item	C200H	CJ2	Description
I/O allocation Basic I/O	"Free location and fixed word allocation"	"Free location and free word allocation" Change the word and bit addresses used in the program.	Refer to the *CJ2H-CPU6□-EIP/CJ2H-CPU 6□/CJ2M-CPU□□ SYSMAC CJ SERIES CJ2 CPU UNIT SOFTWARE USER'S MANUAL* (Cat. No. W473) for details on I/O allocation.
I/O allocation Special I/O	IR 100 to IR 199 (10 words allocated for each Unit No.) DM 1000 to DM 1999 (100 words allocated for each Unit No.)	CIO 2000 to CIO 2199 (10 words allocated for each Unit No.) D20000 to D21999 (100 words allocated for each Unit No.) Change the word and bit addresses used in the program.	
I/O allocation Group-2 High-density I/O	IR 030 to IR 049 (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). Change the word and bit addresses used in the program.	
Special Relay Area (SR)	SR 236 to SR 255	(1) Auxiliary Area and bits Change the word and bit addresses used in the program. (2) Condition flags and clock pulses 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".	In CJ2, operation flags and condition flags are specified by labels.
Link Relay Area (LR)	LR 00 to 63	None	PC Link cannot be used with CJ2.
SYSMAC BUS Area	IR 050 to 099	None	SYSMAC BUS cannot be used with CJ2.
Error Log Area	DM 969 to DM 999	A100 to A199	Change the program if the Error Log Area is read in the program.

Appendix C. Change in PLC Settings

Item	C200H	CJ2	Description
Startup mode	Setting switch on the memory unit	Set Startup Mode in the PLC Setup.	
Constant Cycle Time Function	Constant Cycle Time (FUN18)	Set Cycle Time in the PLC Setup.	Use the DI (DISABLE INTERRUPTS) instruction and EI (ENABLE INTERRUPTS) instruction to maintain concurrency between cyclic tasks and interrupt tasks.

Appendix D. Change of execution timing etc.

Item	C200H	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.
Cycle time	-	The cycle time is shortened with CJ2. If the system operation is affected by cycle time, check the operation after conversion.	To keep the same cycle time as C200H, set Minimum Cycle Time in the PLC Setup.
Read Protection function	FUN49	Use password protection function of the CX-Programmer.	

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

C200H-ID211
12 to 24 VDC, 10 mA, Terminal block, 8 inputs
	CJ1W-ID211
	24 VDC, 7 mA, 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) Input points (8 points → 16 points)
			3) Input circuit specifications
			  Input impedance (2 kΩ → 3.3 kΩ)
			  ON voltage (10.2 VDC → 14.4 VDC)
			  OFF voltage (3 VDC → 5 VDC)
			4) Internal current consumption
			  (5 VDC: 10 mA → 80 mA)

C200H-ID212
24 VDC, 7 mA, Terminal block, 16 inputs
	CJ1W-ID211
	24 VDC, 7 mA, Terminal block, 16 inputs
		DC Input Unit with terminal block for 16 inputs.	1) Terminal block
			2) Input circuit specification
			  Input impedance (3 kΩ → 3.3 kΩ)
			3) Internal current consumption
			  (5 VDC: 10 mA → 80 mA)

C200H-ID215
24 VDC, 4.1 mA, Connector, 32 inputs (Special I/O)
	CJ1W-ID231
	24 VDC, 4.1 mA, Connector, 32 inputs
		DC Input Unit with connector for 32 inputs.	1) Connector
			  Use the XW2Z-S010 Conversion Cable to reuse the connecting cable.
			2) No. of circuits (8 points/common x 4 circuits → 16 points/common x 2 circuits)
			3) Input circuit specification
			  ON voltage(14.4 VDC → 19 VDC)
			4) Internal current consumption
			  (5 VDC: 130 mA → 90 mA)

C200H-ID216
24 VDC, 4.1 mA, Connector, 32 inputs (Group-2)
	CJ1W-ID231
	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)
			2) Input circuit specification
			  ON voltage (14.4 VDC → 15.4 VDC)
			3) Internal current consumption
			  (5 VDC: 100 mA → 90 mA)

C200H-ID218 24 VDC, 6 mA, Connector, 32 inputs (Group-2)	**CJ1W-ID231** 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) 2) Internal current consumption (5 VDC: 100 mA → 90 mA)

C200H-ID111
12 VDC, 4.1 mA, Connector, 64 inputs (Group-2)
	CJ1W-ID261
	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)
			2) Input circuit specifications
			  Input voltage (12 VDC → 24 VDC)
			  Input impedance (2.7 kΩ → 5.6 kΩ)
			  ON voltage (8 VDC → 19 VDC)
			  OFF voltage (3 VDC → 5 VDC)
			3) Internal current consumption
			  (5 VDC: 120 mA → 90 mA)

C200H-ID217
24 VDC, 4.1 mA, Connector, 64 inputs (Group-2)
	CJ1W-ID261
	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)
			2) Input circuit specification
			  ON voltage (14.4 VDC → 19 VDC)
			3) Internal current consumption
			  (5 VDC: 120 mA → 90 mA)

C200H-ID219
24 VDC, 6 mA, Connector, 64 inputs (Group-2)
	CJ1W-ID261
	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)
			2) Input circuit specifications
			  Input impedance (3.9 kΩ → 5.6 kΩ)
			  ON voltage (15.4 VDC → 19 VDC)
			3) Internal current consumption
			  (5 VDC: 120 mA → 90 mA)

< TTL Input Unit >

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-ID501 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. 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
C200H-IA121 100 to 120 VAC, 10 mA, Terminal block, 8 inputs	**CJ1W-IA111** 100 to 120 VAC, 7 mA, Terminal block, 16 inputs	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 2) Input points (8 points → 16 points) 3) Input circuit specifications 　Input impedance (9.7 kΩ → 14.5 kΩ) 　ON voltage (60 VAC → 70 VAC) 4) Internal current consumption 　(5 VDC: 10 mA → 90 mA)
C200H-IA221 200 to 240 VAC, 10 mA, Terminal block, 8 inputs	**CJ1W-IA201** 200 to 240 VAC, 9 mA, Terminal block, 8 inputs	200 VAC Input Unit with terminal block for 8 inputs. .	1) Terminal block 2) Input points (8 points → 8 points*) 　*16 I/O bits (1 word) are allocated. 3) Internal current consumption 　(5 VDC: 10 mA → 80 mA)
C200H-IA122/IA122V 100 to 120 VAC, 10 mA, Terminal block, 16 inputs, IA122V: Complying with EC Directive	**CJ1W-IA111** 100 to 120 VAC, 7 mA, Terminal block, 16 inputs	100 VAC Input Unit with terminal block for 16 inputs.	1) Terminal block 2) Input circuit specifications 　Input impedance (9.7 kΩ → 14.5 kΩ) 　ON voltage (60 VAC → 70 VAC) 3) Internal current consumption 　(5 VDC: 10 mA → 90 mA)
C200H-IA222/IA222V 200 to 240 VAC, 10 mA, Terminal block, 16 inputs, IA222V: Complying with EC Directive	**CJ1W-IA201** 200 to 240 VAC, 9 mA, Terminal block, 8 inputs	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 2) No. of circuits (16 points/common x 1 circuit → 8 points/common x 1 circuit x 2) 3) Internal current consumption 　(5 VDC: 10 mA → 80 mA x 2)

< AC/DC Input Units >

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-IM211 12 to 24 VAC/VDC , Terminal block, 8 inputs	**CJ1W-ID211** 24 VDC, 7 mA, 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 an 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 points → 16 points) 3) Input circuit specifications 　Input voltage range 　(12 to 24 VAC/VDC → 24 VDC) 　Input impedance (2 kΩ → 3.3 kΩ) 　ON voltage (10.2 VDC → 14.4 VDC) 　OFF voltage (3 VDC → 5 VDC) 4) Internal current consumption 　(5 VDC: 10 mA → 80 mA)
C200H-IM212 24 VAC/VDC , Terminal block, 16 inputs	**CJ1W-ID211** 24 VDC, 7 mA, 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 an AC/DC Input Unit. If this Unit is used with AC inputs, change the wiring for DC inputs.	1) Terminal block 2) No. of circuits (16 points/common x 1 circuit → 8 points/common x 2 circuits) 3) Input circuit specifications 　Input voltage range (24 VAC/VDC → 24 VDC) 　Input impedance (3 kΩ → 3.3 kΩ) 4) Internal power consumption 　(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
C200H-OC223 250 VAC/24 VDC, 2 A, Terminal block, 5 outputs (independent contacts)	**CJ1W-OC201** 250 VAC/24 VDC, 2 A, Terminal block, 8 outputs (independent contacts)	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 2) Output points (independent contacts 5 points → 8 points) 3) Output circuit specifications ON/OFF response time (10 ms → 15 ms) Used relay 4) Internal current consumption (5 VDC: 10 mA → 90 mA, 26 VDC: 46 mA → 24 VDC: 48 mA)
C200H-OC224 250 VAC/24 VDC, 2 A, Terminal block, 8 outputs (independent contacts)	**CJ1W-OC201** 250 VAC/24 VDC, 2 A, Terminal block, 8 outputs (independent contacts)	Relay Output Unit with terminal block for 8 outputs (independent contacts).	1) Terminal block 2) Output circuit specifications ON/OFF response time (10 ms → 15 ms) Used relay 3) Internal current consumption (5 VDC: 10 mA → 90 mA, 26 VDC: 75 mA → 24 VDC: 48 mA)
C200H-OC224V, OC224N 250 VAC/24 VDC, 2 A, Terminal block, 8 outputs (independent contacts)	**CJ1W-OC201** 250 VAC/24 VDC, 2 A, Terminal block, 8 outputs (independent contacts)	Relay Output Unit with terminal block for 8 outputs (independent contacts).	1) Terminal block 2) Output circuit specification Used relay 3) Internal current consumption (5 VDC: 10 mA → 90 mA, 26 VDC: 90 mA → 24 VDC: 48 mA)
C200H-OC221 250 VAC/24 VDC, 2 A, Terminal block, 8 outputs	**CJ1W-OC211** 250 VAC/24 VDC, 2 A, Terminal block, 16 outputs	Relay Output Unit with terminal block for 8 outputs. Replace this unit with a Relay Output Unit with 16 outputs.	1) Terminal block 2) Output points (8 points → 16 points) 3) Output circuit specifications ON/OFF response time (10 ms → 15 ms) Used relay 4) Internal current consumption (5 VDC: 10 mA → 110 mA, 26 VDC: 75 mA → 24 VDC: 96 mA)
C200H-OC222 250 VAC/24 VDC, 2 A, Terminal block, 12 outputs	**CJ1W-OC211** 250 VAC/24 VDC, 2 A, Terminal block, 16 outputs	Relay Output Unit with terminal block for 12 outputs. Replace this unit with a Relay Output Unit with 16 outputs.	1) Terminal block 2) Output points (12 points → 16 points) 3) No. of circuits (12 points/common x 1 circuit → 8 points/common x 2 circuits) 4) Output circuit specifications ON/OFF response time (10 ms → 15 ms) Used relay 5) Internal current consumption (5 VDC: 10 mA → 110 mA, 26 VDC: 75 mA → 24 VDC: 96 mA)
C200H-OC222V, OC222N 250 VAC/24 VDC, 2 A, Terminal block, 12 outputs	**CJ1W-OC211** 250 VAC/24 VDC, 2 A, Terminal block, 16 outputs	Relay Output Unit with terminal block for 12 outputs. Replace this unit with a Relay Output Unit with 16 outputs.	1) Terminal block 2) Output points (12 points → 16 points) 3) No. of circuits (12 points/common x 1 circuit → 8 points/common x 2 circuits) 4) Output circuit specification Used relay 5) Internal current consumption (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
C200H-OC225 250 VAC/24 VDC, 2 A, Terminal block, 16 outputs	**CJ1W-OC211** 250 VAC/24 VDC, 2 A, Terminal block, 16 outputs	Relay Output Unit with terminal block for 16 outputs.	1) Terminal block 2) No. of circuits (16 points/common x 1 circuit → 8 points/common x 2 circuits) 3) Output circuit specifications ON/OFF response time (10 ms → 15 ms) Used relay 4) Internal current consumption (5 VDC: 10 mA → 110 mA, 26 VDC: 75 mA → 24 VDC: 96 mA)
C200H-OC226, OC226N 250 VAC/24 VDC, 2 A, Terminal block, 16 outputs	**CJ1W-OC211** 250 VAC/24 VDC, 2 A, Terminal block, 16 outputs	Relay Output Unit with terminal block for 16 outputs.	1) Terminal block 2) No. of circuits (16 points/common x 1 circuit → 8 points/common x 2 circuits) 3) Output circuit specification Used relay 4) Internal current consumption (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
C200H-OD411 12 to 48 VDC, 1 A, Sinking, Terminal block, 8 outputs	**CJ1W-OD211** 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 2) Output points (8 points → 16 points) 3) Output circuit specifications Voltage range (12 to 48 VDC → 12 to 24VDC) Output capacity (1 A/point, 3 A/Unit → 0.5 A/point, 5 A/Unit) Residual voltage (1.4 V → 1.5 V) ON response time (0.2 ms → 0.1 ms) OFF response time (0.3 ms → 0.8 ms) 4) Internal current consumption (5 VDC: 140 mA → 100 mA)
C200H-OD213 24 VDC, 2.1 A, Sinking, Terminal block, 8 outputs	**CJ1W-OD211** 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 2) Output points (8 points → 16 points) 3) Output circuit specifications Output capacity (2.1 A/point, 5.2 A/Unit → 0.5 A/point, 5 A/Unit) Residual voltage (1.4 V → 1.5 V) ON response time (0.2 ms → 0.1 ms) OFF response time (0.3 ms → 0.8 ms) 4) Internal current consumption (5 VDC: 140 mA → 100 mA)
C200H-OD214 24 VDC, 0.8 A, Sourcing, Terminal block, Load short circuit protection, 8 outputs	**CJ1W-OD212** 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 2) Output points (8 points → 16 points) 3) Output circuit specifications Output capacity (0. 8A/point, 2.4 A/Unit → 0.5 A/point, 5 A/Unit) ON response time (1 ms → 0.5 ms) 4) Internal current consumption (5 VDC: 140 mA → 100 mA)
C200H-OD216 5 to 24 VDC, 0.3 A, Sourcing, Terminal block, 8 outputs	**CJ1W-OD212** 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 2) Output points (8 points → 16 points) 3) Output circuit specifications Output voltage range (5 to 24 VDC → 24 VDC) ON response time (1.5 ms → 0.5 ms) OFF response time (2 ms → 1 ms) 4) Internal current consumption (5 VDC: 10 mA → 100 mA, 26 VDC: 75 mA → 0 mA) 5) External power supply (Not required → 24 VDC/40 mA)
C200H-OD211 24 VDC, 0.3 A, Sinking, Terminal block, 12 outputs	**CJ1W-OD211** 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 2) Output points (12 points → 16 points) 3) Output circuit specifications Residual voltage (1.4 V → 1.5 V) ON response time (0.2 ms → 0.1 ms) OFF response time (0.3 ms → 0.8 ms) 4) Internal current consumption (5 VDC: 160 mA → 100 mA)

< Transistor Output Units >

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference

C200H-OD217
5 to 24 VDC, 0.3 A, Sourcing, Terminal block, 12 outputs
	CJ1W-OD212
	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
			2) Output points (12 points → 16 points)
			3) Output circuit specifications
			   Output voltage range (5 to 24 VDC → 24 VDC)
			   ON response time (1.5 ms → 0.5 ms)
			   OFF response time (0.5 ms → 1.0 ms)
			4) Internal current consumption
			   (5 VDC: 10 mA → 100 mA,
			   26 VDC: 75 mA → 0 mA)
			5) External power supply
			   (Not required → 24 VDC: 40 mA)

C200H-OD212
24 VDC, 0.3 A, Sinking, Terminal block, 16 outputs
	CJ1W-OD211
	12 to 24 VDC, 0.5 A, Sinking, Terminal block, 16 outputs
		Transistor Output Unit with terminal block for 16 outputs.	1) Terminal block
			2) Output circuit specifications
			   Residual voltage (1.4 V → 1.5 V)
			   ON response time (0.2 ms → 0.1 ms)
			   OFF response time (0.3 ms → 0.8 ms)
			4) Internal current consumption
			   (5 VDC: 180 mA → 100 mA,)

C200H-OD21A
24 VDC, 1.0 A, Sourcing, Terminal block, Load short circuit protection, 16 outputs
	CJ1W-OD212
	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
			2) Output circuit specifications
			   Output capacity
			   (1 A/point, 4 A/Unit → 0.5 A/point, 5 A/Unit)
			   Residual voltage (0.8 V → 1.5 V)
			   ON response time (0.1 ms → 0.5 ms)
			   OFF response time (0.3 ms → 1.0 ms)
			4) Internal current consumption
			   (5 VDC: 160 mA → 100 mA)
			5) Alarm output (Supported → Not supported)

C200H-OD218
4.5 to 26.3 VDC, 0.1A, Sinking, Connector, 32 outputs (Group-2)
	CJ1W-OD231
	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)
			2) Output circuit specifications
			   Output voltage range
			   (5 to 24 VDC → 12 to 24 VDC)
			   Residual voltage (0.8 V → 1.5 V)
			   OFF response time (0.4 ms → 0.8 ms)
			3) Internal current consumption
			   (5 VDC: 180 mA → 140 mA)

C200H-OD215
4.5 to 26.3 VDC, 0.1 A, Sinking, Connector, 32 outputs (Special I/O)
	CJ1W-OD231
	12 to 24 VDC, 0.5A, Sinking, Connector, 32 outputs
		Transistor Output Unit with connector for 32 outputs.
		*The CJ-series Unit does not support dynamic outputs. Change the wiring for static outputs.
			1) Connector
			   Use the XW2Z-S011 Conversion Cable to reuse the connecting cable.
			2) Output method
			   (Dynamic or static mode → Static mode only)
			Based on specifications in static output mode
			3) No. of circuits (8 points/common x 4 circuits
			   → 16 points/common x 2 circuits)
			4) Output circuit specifications
			   Output voltage range
			   (5 to 24 VDC → 12 to 24 VDC)
			   Residual voltage (0.7 V → 1.5 V)
			   ON response time (0.2 ms → 0.1 ms)
			   OFF response time (0.6 ms → 0.8 ms)
			5) Internal current consumption
			   (5 VDC: 220 mA → 140 mA)

C200H-OD21B
24 VDC, 0.5 A, Sourcing, Connector, Load short circuit protection, 32 outputs (Group-2)
	CJ1W-OD232
	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)
			2) Output circuit specifications
			   Output capacity (0.5 A/point, 5 A/Unit
			   → 0.5 A/point, 2.5 A/common, 4 A/Unit)
			   Residual voltage (0.8 V → 1.5 V)
			   ON response time (0.1 ms → 0.5 ms)
			   OFF response time (0.3 ms → 1 ms)
			3) Internal current consumption
			   (5 VDC: 180 mA → 150 mA)

C200H-OD219
4.5 to 26.3 VDC, 0.1 A, Sinking, Connector, 64 outputs (Group-2)
	CJ1W-OD261
	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)
			2) Output circuit specifications
			   Output voltage range
			   (5 to 24 VDC -> 12 to 24 VDC)
			   Residual voltage (0.8 V → 1.5 V)
			   ON response time (0.1 ms → 0.5 ms)
			   OFF response time (0.4 ms → 1.0 ms)
			3) Internal current consumption
			   (5 VDC: 270 mA → 170 mA)

< TTL Output Unit >

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference
C200H-OD501 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. 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

C200H-OA223
250 VAC, 1.2 A, Terminal block,
8 outputs
	CJ1W-OA201
	250 VAC, 0.6 A, Terminal block,
	8 outputs
		Triac Output Unit with terminal block for 8 outputs.	1) Terminal block
			2) Output circuit specifications
			   Output capacity (1.2 A/point, 4 A/unit
			   → 0.6 A/point, 2.4 A/Unit)
			   Max. inrush current
			   (15 A/100 ms, 30 A/10 ms → 15 A/10 ms)
			   Residual voltage (50 to 1200 mA: 1.5 VAC,
			   10 to 50 mA: 5 VAC → 1.6 VAC).
			3) Internal current consumption
			   (5 VDC: 180 mA → 220 mA)

C200H-OA221
250 VAC, 1.2 A, Terminal block,
8 outputs
	CJ1W-OA201
	250 VAC, 0.6 A, Terminal block,
	8 outputs
		Triac Output Unit with terminal block for 8 outputs.	1) Terminal block
			2) Output circuit specifications
			   Output capacity (1 A/point, 4 A/unit
			   → 0.6 A/point, 2.4 A/Unit)
			   Max. inrush current
			   (No regulation → 15 A/10 ms)
			   Residual voltage (1.2 VAC → 1.6 VAC)
			   OFF response time (1/2 of load frequency or
			   less → 1/2 of load frequency + 1 ms or less)
			3) Internal current consumption
			   (5 VDC: 140 mA → 220 mA)

C200H-OA224
250 VAC, 0.5 A, Terminal block,
12 outputs
	CJ1W-OA201
	250 VAC, 0.6 A, Terminal block,
	8 outputs
		Triac Output Unit 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)
			3) No. of circuits (12 points/common x 1 circuit →
			   8 points/common x 1 circuit x 2)
			4) Output circuit specifications
			   Output capacity (250 VAC 0.5 A/point, 2 A/unit
			   → 0.6 A/point, 2.4 A/Unit x 2)
			   Max. inrush current
			   (10 A/100 ms, 20 A/10 ms → 15 A/10 ms)
			   Residual voltage (50 to 500 mA: 1.5 VAC,
			   10 to 50 mA: 5 VAC → 1.6 VAC).
			5) Internal current consumption
			   (5 VDC: 270 mA → 220 mA x 2)

C200H-OA222V
250 VAC, 0.3 A, Terminal block,
12 outputs (CE marked)
	CJ1W-OA201
	250 VAC, 0.6 A, Terminal block,
	8 outputs
		Triac Output Unit 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)
			3) No. of circuits (12 points/common x 1 circuit
			   → 8 points/common x 1 circuit x 2)
			4) Output circuit specifications
			   Max. inrush current
			   (No regulation → 15 A/10 ms)
			   Residual voltage (1.2 VAC → 1.6 VAC)
			   ON response time
			   (1/2 of load frequency or less → 1 ms or less)
			   OFF response time (1/2 of load frequency or
			   less → 1/2 of load frequency + 1 ms or less).
			5) Internal current consumption
			   (5 VDC: 200 mA → 220 mA x 2)

■ I/O Unit

(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
C200H-MD115 12 VDC/16 inputs (4.1 mA), 12 VDC/16 outputs (0.1A, Sinking), Connector (Special I/O)	**CJ1W-MD231** 24 VDC/16 inputs (7 mA), 12 to 24VDC/16 outputs (0.5 A, Sinking), Connector	I/O Unit with connector for 16 inputs and 16 outputs. *The CJ-series Unit does not support dynamic outputs. Change the wiring for static outputs.	1) Connector 2) Output method 　(Dynamic or static mode → Static mode only) 3) Internal current consumption 　(5 VDC: 180 mA → 130 mA) Based on specifications in static output mode < Output circuit > 4) No. of circuits (8 points/common x 2 circuits 　→ 16 points/common x 1 circuit) 5）Output circuit specifications 　Output voltage range 　(5 to 24 VDC → 12 to 24 VDC) 　Residual voltage (0.7 V → 1.5 V) 　ON response time (0.2 ms → 0.1 ms) 　OFF response time (0.6 ms → 0.8 ms) < Input circuit > 6) No. of circuits (8 points/common x 2 circuits 　→ 16 points/common x 1 circuit) 7) Input circuit specifications 　Input voltage (12 VDC → 24 VDC) 　Input impedance (2.7 kΩ → 3.3 kΩ) 　ON voltage (8 VDC → 14.4 VDC) 　OFF voltage (3 VDC → 5 VDC)
C200H-MD215 24 VDC/16 inputs (4.1 mA), 5 to 24 VDC/16 outputs (0.1 A, Sinking), Connector (Special I/O)	**CJ1W-MD231** 24 VDC/16 inputs (7 mA), 12 to 24VDC/16 outputs (0.5 A, Sinking), Connector	I/O Unit with connector for 16 inputs and 16 outputs. *The CJ-series Unit does not support dynamic outputs. Change the wiring for static outputs.	1) Connector 2) Output method 　(Dynamic or static mode → Static mode only) 3) Internal current consumption 　(5 VDC: 180 mA → 130 mA) Based on specifications in static output mode < Output circuit > 4) No. of circuits (8 points/common x 2 circuits 　→ 16 points/common x 1 circuit) 5）Output circuit specifications 　Output voltage range 　(5 to 24 VDC → 12 to 24 VDC) 　Residual voltage (0.7 V → 1.5 V) 　ON response time (0.2 ms → 0.1 ms) 　OFF response time (0.6 ms → 0.8 ms) < Input circuit > 6) No. of circuits (8 points/common x 2 circuits 　→ 16 points/common x 1 circuit) 7) Input circuit specification 　Input impedance (5.6 kΩ → 3.3 kΩ)

< TTL I/O Unit >

C200H-series Unit	Corresponding CJ-series Unit	Description	Difference

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

MEMO