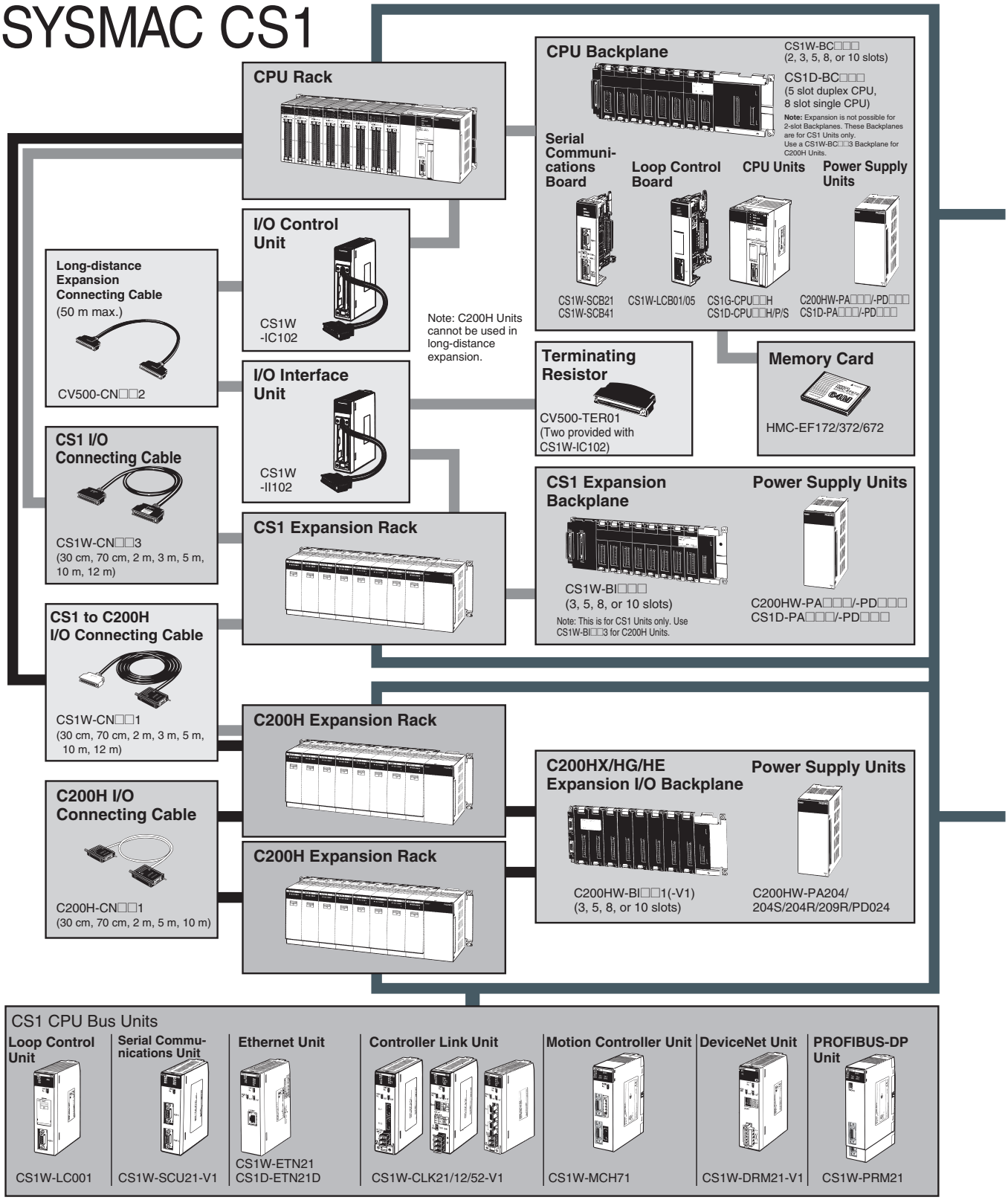
A Complete Lineup of Units for Optimal Control.

SYSMAC CS1



Basic I/O Units

Note: C200H Basic I/O Units and High-density I/O (Group-2) Units can also be used.

C200H Basic I/O Unit P207

16 pts
Input Unit:
CS1W-ID211

32 pts
Input Unit:
CS1W-ID231

64 pts
Input Unit:
CS1W-ID261

96 pts
Input Unit:
CS1W-ID291

16 pts
Output Unit:
CS1W-OD21□

32 pts
Output Unit:
CS1W-OD23□

64 pts
Output Unit:
CS1W-OD26□

96 pts
Output Unit:
CS1W-OD29□

32 inputs/32 outputs
I/O Unit:
CS1W-MD26□

48 inputs/48 outputs
I/O Unit:
CS1W-MD29□/561

16 pts
AC Input Unit:
CS1W-IA111/211

8 pts
Triac Output Unit:
CS1W-OA201

16 pts
Triac Output Unit:
CS1W-OA211

8 pts (independent)
Relay Output Unit:
CS1W-OC201

16 pts
Relay Output Unit:
CS1W-OC211

32 inputs/32 outputs
TTL I/O Unit:
CS1W-MD561
(available soon)

Interrupt Input Unit

Interrupt function supported on CPU Rack only. (Two Units mountable on CPU Rack.)

16 pts
CS1W-INT01

Analog Timer Unit

C200H-TM001

High-speed Input Unit

16 pts
CS1W-IDP01

Safety Relay Unit

CS1W-SF200

Special I/O Units

CS1 Special I/O Unit

Process I/O Unit
CS1W-P□□□(-V1)

Analog Input Unit
CS1W-AD041-V1
/081-V1

Analog Output Unit
CS1W-DA041/
08V/08C

Analog I/O Unit
CS1W-MAD44

ID Sensor Units*
CS1W-V600C11/
-V600C12

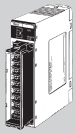
Position Control Unit
CS1W-NC□□□

Motion Control Unit
CS1W-MC221/421

High-speed Counter Unit
CS1W-CT021/041

SSI input unit
CS1W-CTS21

C200H Special I/O Unit



Temperature Sensor Units
C200H-TS□□□

Temperature Control Units
C200H-TC□□□
C200H-TV□□□

PID Control Units
C200H-PID0□

Position Control Units*
C200HW-NC□□□

CAN(open) Unit
C200HW-
CORT21-V1

PROFIBUS-DP Master Unit
C200HW-PRM21

PROFIBUS-DP I/O Link Unit
C200HW-PRT21

High-speed Counter Units*
C200H-CT□□□

2-axis Motion Control Unit*
C200H-MC221

4-axis Motion Control Unit*
C200H-MC402E

ID Sensor Units*
C200H-IDS□□

ASCII Units*
C200H-ASC□□

GP-IB Interface Unit
CS1W-GPI01

DeviceNet I/O Link Unit
C200HW-DRT21

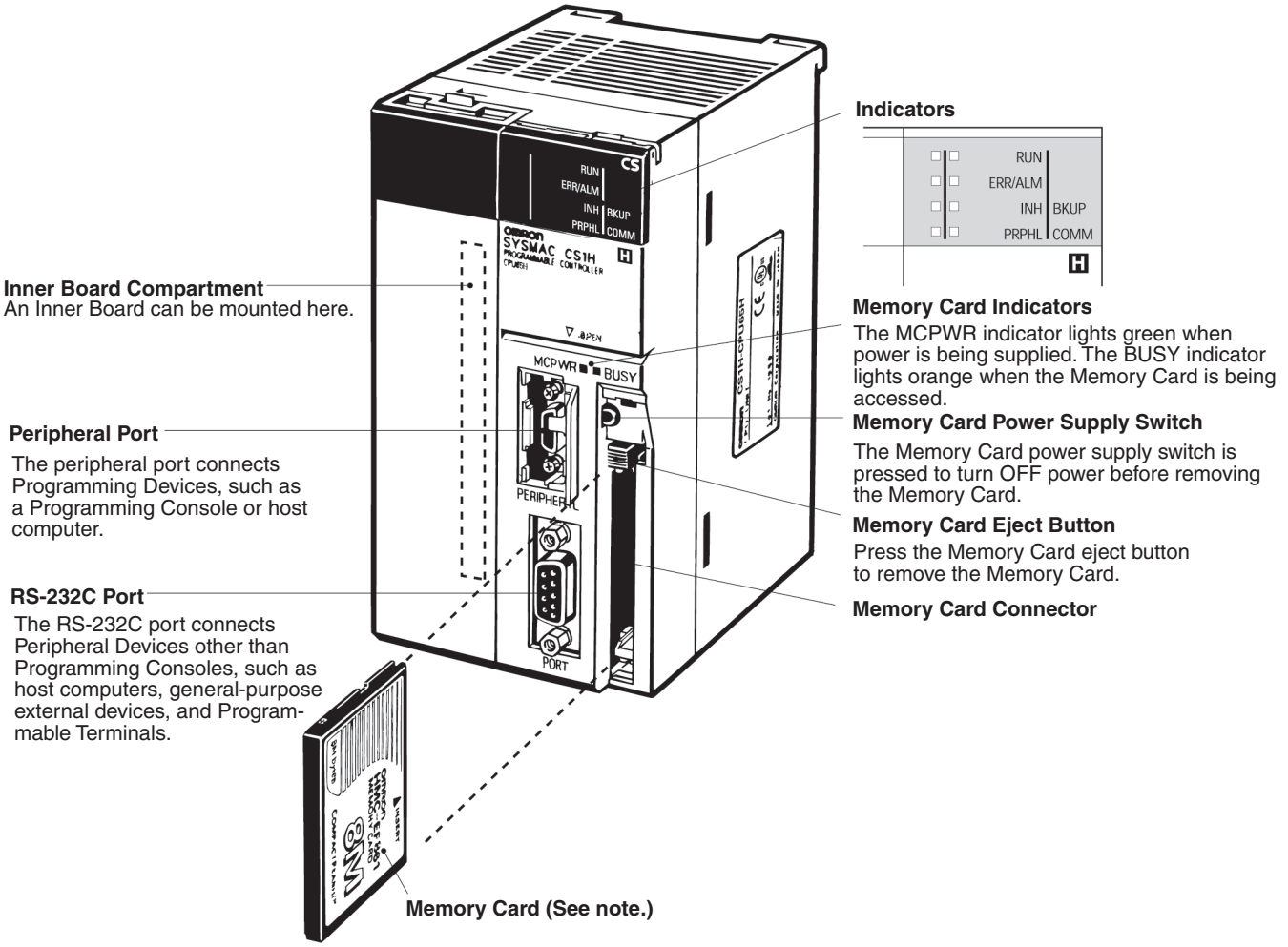
CompoBus/S Master Unit
C200HW-SRM21-V1

Note: HMC-372/672 Memory Cards cannot be used with CS1G-CPU□□H, CS1H-CPU□□H, CJ1G-CPU□□H, or CJ1H-CPU□□H CPU Units prior to Lot No. 02108 (manufactured prior to January 8, 2002, nor with NS-7-series PTs prior to Lot. No. 0852 (manufactured prior to May 8, 2002). Check lot numbers before ordering.

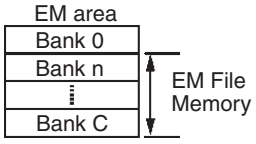
The following restrictions exist in data transfers with the CPU Unit for bit and DM Area specifications for the C200H Special I/O Units marked with asterisks, as well as in data transfers programmed from these Units. Refer to CS-series PLC Operation manuals for details.
- Converting data for the CPU Unit using bit and DM Area specifications (source/destination area type and addresss designation).
- Exchanging data with the CPU Unit using instructions (PC READ, PC WRITE, etc.) in the C200H Special I/O Unit program.

CS1H/G-CPU□□H

CS1-series



With the CS1 PLCs, Memory Cards and specified ranges of the EM Area can be used as file memory. File memory can be used to store the entire user program, I/O memory contents, and/or parameter area contents.

File memory	Memory type	Capacity	Model
Memory Cards 	Flash memory	30 MB	HMC-EF372
		64 MB	HMC-EF672
EM File Memory 	RAM	EM Area capacity of CPU Unit (Max. capacity for CS1H-CPU67: 832 KB).	From the specified bank in the EM area of I/O memory to the last bank (specified in PC Setup).

Note: Memory Card Adapter: HMC-AP001 (The Memory Card Adapter can be used to mount Memory Cards in PC card slots to use the Cards on a personal computer.)

Specifications

CPU Units

Model	I/O bits	Program capacity	Data memory capacity (See Note.)	LD instruction processing speed	Built-in ports	Options
CS1H-CPU67H CS1D-CPU67H CS1D-CPU67S CS1D-CPU67P	5,120 bits (Up to 7 Expansion Racks)	250 kSteps	448 kWords	0.02 μs	Peripheral port and RS-232C port.	Memory Cards Inner Board such as Serial Communications Board, Loop Control Board (See note 1.)
CS1H-CPU66H		120 kSteps	256 kWords			
CS1H-CPU65H CS1D-CPU65H CS1D-CPU65S CS1D-CPU65P		60 kSteps	128 kWords			
CS1H-CPU64H		30 kSteps	64 kWords			
CS1H-CPU63H		20 kSteps				
CS1G-CPU45H	5,120 bits (Up to 7 Expansion Racks)	60 kSteps	128 kWords	0.04 μs		
CS1G-CPU44H CS1D-CPU44S	1,280 bits (Up to 3 Expansion Racks)	30 kSteps	64 kWords			
CS1G-CPU43H	960 bits (Up to 2 Expansion Racks)	20 kSteps				
CS1G-CPU42H CS1D-CPU42S		10 kSteps				

Note: The available data memory capacity is the sum of the Data Memory (DM) and the Extended Data Memory (EM).

Note: 1. A Loop Control Board cannot be mounted in CS1D-CPU□□D, use CS1D-CPU□□P instead.
A Serial communications Board cannot be mounted in CS1D-CPU□□P.

Common Specifications

Item		Specification
Control method		Stored program
I/O control method		Cyclic scan and immediate processing
Programming		Ladder diagram
Instruction length		1 to 7 steps per instruction
Ladder instructions		Approx. 400 (3-digit function codes)
Execution time		Basic instructions: 0.02 μs min., Special instructions: 0.04 μs min.
Function Blocks (CPU Ver. 3.0 or higher)		Languages supported for use in function block programming: Ladder program language and IEC 61131-3 Structured Text.
Number of tasks		288 (256 of which are also used as interrupt tasks) Cyclic tasks are executed each cycle and are controlled with TKON(820) and TKOF(821) instructions. The following 4 types of interrupt tasks are supported: Power OFF tasks:1 max., Scheduled interrupt tasks: 2 max., I/O interrupt tasks: 32 max., External interrupt tasks: 256 max.
Interrupt types (not applicable for CS1D CPUs)		Scheduled Interrupts:Interrupts generated at a time scheduled by CPU Unit's built-in timer. I/O Interrupts:Interrupts from Interrupt Input Units. Power OFF Interrupts:Interrupts executed when CPU Unit's power is turned OFF. External I/O Interrupts:Interrupts from Special I/O Units, CS1 Special Units, or Inner Board.
CIO (Core I/O) Area (The CIO Area can be used as work bits if not used as shown here.)	I/O Area	5,120: CIO 000000 to CIO 031915 (320 words from CIO 0000 to CIO 0319) Setting of first rack words can be changed from default (CIO 0000) so that CIO 0000 to CIO 0999 can be used. I/O bits are allocated to Basic I/O Units, such as CS1 Basic I/O Units, C200H Basic I/O Units, and C200H Group-2 High-density I/O Units.
	Link Area	3,200 (200 words): CIO 10000 to CIO 119915 (words CIO 1000 to CIO 1199) Link bits are used for data links and are allocated to Units in Controller Link Systems and PC Link Systems.
	CS1 CPU Bus Unit Area	6,400 (400 words): CIO 150000 to CIO 189915 (words CIO 1500 to CIO 1899) CS1 CPU Bus Unit bits store operating status of CS1 CPU Bus Units. (25 words per Unit, 16 Units max.)
	Special I/O Unit Area	15,360 (960 words): CIO 200000 to CIO 295915 (words CIO 2000 to CIO 2959) Special I/O Unit bits are allocated to CS1 Special I/O Units and C200H Special I/O Units. (See Note.) (10 words per Unit, 96 Units max.) The maximum number of slots, however, is limited to 80 including expansion slots, so maximum number of Units is actually 80.) **Note:** Some I/O Units are classified as Special I/O Units.
	Inner Board Area	1,600 (100 words): CIO 190000 to CIO 199915 (words CIO 1900 to CIO 1999) Inner Board bits are allocated to Inner Boards. (100 I/O words max.)
	SYSMAC BUS Area	800 (50 words): CIO 300000 to CIO 304915 (words CIO 3000 to CIO 3049) SYSMAC BUS bits are allocated to Slave Racks connected to SYSMAC BUS Remote I/O Master Units. (10 words per Rack, 5 Racks max.)

Note: A max. of 10 or 16 C200H Special I/O Units can be used depending on the CPU Unit. Some I/O Units are Special I/O Units.

Item			Specification
CIO (Core I/O) Area, contd. (The CIO Area can be used as work bits if not used as shown here.)	I/O Terminal Area		512 (32 words): CIO 310000 to CIO 313115 (words CIO 3100 to CIO 3131) I/O Terminal bits are allocated to I/O Terminal Units (but not to Slave Racks) connected to SYSMAC BUS Remote I/O Master Units. (1 word per Terminal, 32 Terminals max.)
	C200H Special I/O Unit Area		8,196 (512 words): CIO 000000 to CIO 051115 (words CIO 0000 to CIO 0511) C200H Special I/O Unit bits are allocated to C200H Special I/O Units and allow access separate from I/O refreshing.
		DeviceNet/ PROFIBUS-DP Area	1,600 (100 words):Outputs: CIO 005000 to CIO 009915 (words CIO 0050 to CIO 0099) Inputs: CIO 035000 to CIO 039915 (words CIO 0350 to CIO 0399) DeviceNet bits are allocated to Slaves according to DeviceNet remote I/O communications.
		PC Link Area	64 bits (4 words): CIO 027400 to CIO 025015 (words CIO 0247 to CIO 0250) When a PC Link Unit is used in a PC Link, use these bits to monitor PC Link errors and operating status of other CPU Units in PC Link.
Internal I/O Area			4,800 (300 words): CIO 120000 to CIO 149915 (words CIO 1200 to CIO 1499) 37,504 (2,344 words): CIO 380000 to CIO 614315 (words CIO 3800 to CIO 6143) These bits in CIO Area are used as work bits in programming to control program execution. They cannot be used for external I/O.
Work Area			8,192 bits (512 words): W00000 to W51115 (words W000 to W511) Control programs only. (I/O from external I/O terminals is not possible.) **Note:** When using work bits in programming, use bits in Work Area first before using bits from other areas.
Holding Area			8,192 bits (512 words): H00000 to H51115 (words H000 to H511) Holding bits are used to control execution of program, and maintain their ON/OFF status when PLC is turned OFF or operating mode is changed. Part of the Holding area is used for allocation of Function Block variables in CPU Ver. 3.0 and higher.
Auxiliary Area			Read only: 7,168 bits (448 words): A00000 to A44715 (words A000 to A447) Read/write: 8,192 bits (512 words): A44800 to A95915 (words A448 to A959) Auxiliary bits are allocated specific functions.
Temporary Area			16 bits (TR00 to TR15) Temporary bits are used to store ON/OFF execution conditions at program branches.
Timer Area			4,096: T0000 to T4095 (used for timers only)
Counter Area			4,096: C0000 to C4095 (used for counters only)
DM Area			32 kWords: D00000 to D32767 Used as a general-purpose data area for reading and writing data in word units (16 bits). Words in DM Area maintain their status when PLC is turned OFF or operating mode is changed. Internal Special I/O Unit DM Area: D20000 to D29599 (100 words × 96 Units). Used to set parameters. CS1 CPU Bus Unit DM Area: D30000 to D31599 (100 words × 16 Units). Used to set parameters. Inner Board DM Area: D32000 to D32099. Used to set parameters for Inner Boards.
EM Area			32 kWords per bank, 13 banks max.: E0_00000 to EC_32767 max. (Not available on some CPU Units.) Used as a general-purpose data area for reading and writing data in word units (16 bits). Words in EM Area maintain their status when PLC is turned OFF or operating mode is changed. The EM Area is divided into banks, and addresses can be set by either of following methods. Changing current bank using EMBC(281) instruction and setting addresses for current bank. Setting bank numbers and addresses directly. EM data can be stored in files by specifying number of first bank. (EM file memory)
Data Registers			DR0 to DR15. Store offset values for indirect addressing. Data registers can be used independently in each task. One register is 16 bits (1 word).
Index Registers			IR0 to IR15. Store PLC memory addresses for indirect addressing. Index registers can be used independently in each task. One register is 32 bits (2 words).
Task Flag Area			32 (TK0000 to TK0031). Task Flags are read-only flags that are ON when corresponding cyclic task is executable and OFF when corresponding task is not executable or in standby status.
Trace Memory			4,000 words (500 data trace samples at the maximum sample size of 31 bits and 6 words)
File Memory			Memory Cards: Compact flash memory cards can be used (MS-DOS format). EM file memory: Part of EM Area can be converted to file memory (MS-DOS format). CompactFlash Memory Cards with 15-MB, 30-MB, or 64-MB capacities can be used.

Function Specifications

Item	Specification
Parallel Processing Mode	The program can be executed simultaneously with peripheral servicing (CS1G/CS1H only).
Battery-free operation	Flash memory is provided as a standard feature and automatically backs up the user program and system parameters.
Constant cycle time	1 to 32,000 ms (Unit: 1 ms)
Cycle time monitoring	Possible (Unit stops operating if cycle is too long): 1 to 40,000 ms (Unit: 10 ms)
I/O refreshing	Cyclic refreshing, immediate refreshing, refreshing by IORF(097).
I/O memory holding when changing operating modes	Possible (Depends on ON/OFF status of IOM Hold Bit in Auxiliary Area.)
Load OFF	All outputs on Output Units can be turned OFF.
Input time constant setting	Time constants can be set for inputs from CS1 Basic I/O Units. The time constant can be increased to reduce influence of noise and chattering or it can be decreased to detect shorter pulses on inputs. (CS1 Basic I/O Units only)
Mode setting at power-up	Possible
Memory Card functions	Automatic reading programs from Memory Card (autoboot).
	Memory Card Storage Data User program: Program file format (binary) PC System Setup: Data file format (binary) I/O Memory: Data file format (binary), text format, CSV format
	Memory Card Read/Write User program instructions, Peripheral Devices (such as Programming Console), Host Link computer.
Filing	Memory Card data and EM (Extended Data Memory) Area can be handled as files.
Debugging	Force-set/reset, differential monitoring, data tracing (scheduled, each cycle, or when instruction is executed), instruction error tracing.
Online editing	One or more program blocks in user programs can be overwritten when CPU Unit is in PROGRAM or MONITOR mode. This function is not available for block programming areas.
Program protection	Overwrite protection:Set using DIP switch. Copy protection: Password set using Peripheral Device.
Error check	User-defined errors (i.e., user can define fatal errors and non-fatal errors) The FPD(269) instruction can be used to check execution time and logic of each programming block.
Error log	Up to 20 errors are stored in error log. Information includes error code, error details, and time error occurred.
Serial communications	Built-in peripheral port: Peripheral Device (including Programming Console), Host Links, NT Links Built-in RS-232C port: Peripheral Device (excluding Programming Console), Host Links, no-protocol communications, NT Links
	Communications Board (sold separately): Protocol macros, Host Links, NT Links
Clock	Provided on all models. **Note:** Used to store time when power is turned ON and when errors occur.
Power OFF detection time	10 to 25 ms (not fixed)
Power OFF detection delay time	0 to 10 ms (user-defined, default: 0 ms)
Memory protection	Held Areas: Holding bits, contents of Data Memory and Extended Data Memory, and status of counter Completion Flags and present values. **Note:** If IOM Hold Bit in Auxiliary Area is turned ON, and PC Setup is set to maintain IOM Hold Bit status when power to PLC is turnedl ON, contents of CIO Area, Work Area, part of Auxiliary Area, timer Completion Flag and PVs, Index Registers, and Data Registers will be saved.
Sending commands to a Host Link computer	FINS commands can be sent to a computer connected via Host Link System by executing Network Communications Instructions from PLC.
Remote programming and monitoring	Host Link communications can be used for remote programming and remote monitoring through a Controller Link System or Ethernet network.
Eight-level communications (CPU Ver. 3.0 and higher)	Host Link communications can be used for remote programming and remote monitoring from devices on networks up to seven levels away (Controller Link Network, Ethernet Network, or other network).
Storing comments in CPU Unit	I/O comments can be stored in CPU Unit in Memory Cards, EM file memory, or the built-in Comment memory (CPU Ver. 3.0 and higher)
Program check	Program checks are performed at beginning of operation for items such as no END instruction and instruction errors. A Peripheral Device (excluding Programming Console) can also be used to check programs.
Control output signals	RUN output: The contacts will turn ON (close) while CPU Unit is operating. These terminals are provided only on C200HW-PA204R and C200HW-PA209R Power Supply Units.
Battery life	5 years at 25°C (Depending on the ambient operating temperature and communications conditions, 1.1 years min. Battery Set: CS1W-BAT01) **Note:** Use a replacement battery that is no more than 2 years old from the date of manufacture.
Self-diagnostics	CPU errors (watchdog timer), I/O verification errors, I/O bus errors, memory errors, and battery errors.
Other functions	Storage of number of times power has been interrupted, the times of the interrupts, and system operation time (in Auxiliary Area).

Specifications - Power Supply Units

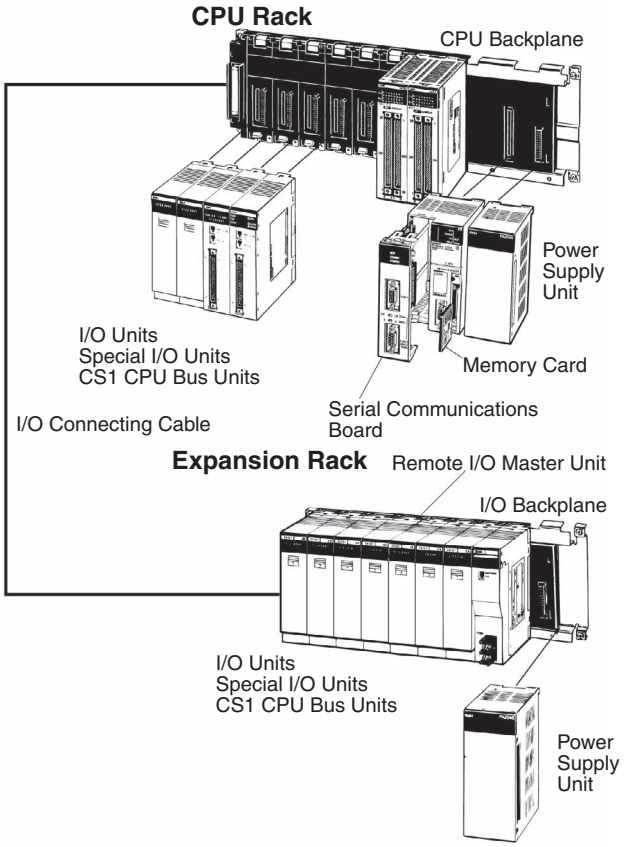
Item	Specifications					
Power Supply Unit	C200HW-PA204	C200HW-PA204S	C200HW-PA204R	C200HW-PA209R	C200HW-PD024	C200HW-PD106R
Supply voltage	100 to 120 V AC or 200 to 240 V AC, 50/60 Hz				24 V DC	100 V DC
Operating voltage range	85 to 132 V AC or 170 to 264 V AC				19.2 to 28.8 V DC	85 to 143 V DC
Power consumption	120 VA max.			180 VA max.	40 W max.	50 W max.
Inrush current	30 A max.			30 A max./100 to 120 V AC 40 A max./200 to 240 V AC	30 A max.	
Output capacity	4.6 A, 5 V DC (including CPU Unit power)			9 A, 5 V DC (including CPU Unit power)	4.6 A, 5 V DC (including CPU Unit power)	6 A, 5 V DC (including CPU Unit power)
	0.625 A, 26 V DC Total: 30 W	0.625 A, 26 V DC or 0.8 A, 24 V DC Total: 30 W	0.625 A, 24 V DC Total: 30 W	1.3 A, 26 V DC Total: 45 W	0.625 A, 26 V DC Total: 30 W	1 A, 26 V DC Total: 30 W
Output terminal	Not provided	24 V DC load current consumption Less than 0.3 A: +17%/–11% 0.3 A or greater: +10%/–11% (Lot No. 0197 or higher)	Not provided		Not provided	
RUN output (See Note 2.)	Not provided		Contact configuration: SPST-NO Switch capacity: 250 V AC, 2 A (resistive load) 250 V AC, 0.5 A (induction load), 24 V DC, 2 A	Contact configuration: SPST-NO Switch capacity: 240 V AC, 2 A (resistive load) 120 V AC, 0.5 A (inductive load) 24 V DC, 2 A (resistive load) 24 V DC, 2 A (inductive load)	Not provided	Contact configuration: SPST-NO Switch capacity: 250 V AC, 2 A (resistive load) 250 V AC, 0.5 A (induction load), 24 V DC, 2 A
Insulation resistance	20 MΩ min. (at 500 V DC) between AC external and GR terminals (See Note 1.)				20 MΩ min. (at 500 V DC) between DC external and GR terminals (See Note 1.)	
Dielectric strength	2,300 V AC 50/60 Hz for 1 min between AC external and GR terminals (See Note 1.) Leakage current: 10 mA max.				1,000 V AC 50/60 Hz for 1 min between DC external and GR terminals, leakage current: 10 mA max. (See Note 1.)	2,300 V AC 50/60 Hz for 1 min between AC external and GR terminals (See Note 1.) Leakage current: 10 mA max.
	1,000 V AC 50/60 Hz for 1 min between AC external and GR terminals (See Note 1.) Leakage current: 10 mA max.					
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)					
Vibration resistance	10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8 m/s^2 in X, Y, and Z directions for 80 minutes (Sweep time 8 min × 10 = total time 80 min.) CPU Unit mounted to a DIN rail: 2 to 55 Hz, 2.9 m/s^2 in X, Y, and Z directions for 20 minutes. According to JIS C0040 / IEC 60068-2-6					
Shock resistance	147 m/s^2, 3 times each in X, Y, and Z directions According to JIS C0041 / IEC 60068-2-27					
Ambient operating temperature	0 to 55°C					
Ambient operating humidity	10% to 90% (with no condensation)					
Atmosphere	Must be free from corrosive gases.					
Ambient storage temperature	–20 to 75°C (excluding battery)					
Grounding	Less than 100 Ω					
Enclosure	IP20, intended for panel mounting.					
Weight	All models are each 6 kg max.					
CPU Rack Dimensions (mm) (See note 3.)	2 slots:198.5 × 157 × 123 (W x H x D) 8 slots: 435 × 130 × 123 (W x H x D) 3 slots: 260 × 130 × 123 (W x H x D) 10 slots:505 × 130 × 123 (W x H x D) 5 slots: 330 × 130 × 123 (W x H x D)					
Product standards	Conforms to UL, CSA, cULus, cUL, NK, Lloyd's, and EC directives.					cULus

Note: 1. Disconnect the Power Supply Unit's LG terminal from the GR terminal when testing insulation and dielectric strength.
2. Only when mounted to a Backplane.
3. Depth is 153 mm for C200HW-PA209R.
4. Enquire separately for general specifications of Process I/O Units.

Specifications - Duplex Power Supply Units

Item	Specifications	
Power Supply Unit	CS1D-PA207R	CS1D-PD024
Supply voltage	100 to 120 V AC or 200 to 240 V AC, 50/60 Hz	24 V DC
Operating voltage range	85 to 132 V AC or 170 to 264 V AC	19.2 to 28.8 V DC
Power consumption	150 VA max.	40 W max.
Inrush current	30 A max./100 to 120 V AC 40 A max./200 to 240 V AC	30 A max.
Output capacity	7 A, 5 V DC (including CPU Unit power)	4.3 A, 5 V DC (including CPU Unit power)
	1.3 A, 26 V DC Total: 35 W	0.56 A, 26 V DC Total: 28 W
Output terminal	Not provided	Not provided
RUN output (See Note 2.)	Contact configuration: SPST-NO Switch capacity: 240 V AC, 2 A (resistive load) 120 V AC, 0.5 A (inductive load) 24 V DC, 2 A (resistive load) 24 V DC, 2 A (inductive load)	Not provided
Insulation resistance	20 MΩ min. (at 500 V DC) between AC external and GR terminals (See Note 2.)	20 MΩ min. (at 500 V DC) between DC external and GR terminals (See Note 2.)
Dielectric strength	2,300 V AC 50/60 Hz for 1 min between AC external and GR terminals (See Note 2.) Leakage current: 10 mA max.	1,000 V AC 50/60 Hz for 1 min between DC external and GR terminals, leakage current: 10 mA max. (See Note 2.)
	1,000 V AC 50/60 Hz for 1 min between AC external and GR terminals (See Note 1.) Leakage current: 10 mA max.	
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)	
Vibration resistance	10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8 m/s^2 in X, Y, and Z directions for 80 minutes (Sweep time 8 min × 10 = total time 80 min.) CPU Unit mounted to a DIN rail: 2 to 55 Hz, 2.9 m/s^2 in X, Y, and Z directions for 20 minutes. According to JIS C0040 / IEC 60068-2-6	
Shock resistance	147 m/s^2, 3 times each in X, Y, and Z directions According to JIS C0041 / IEC 60068-2-27	
Ambient operating temperature	0 to 55°C	
Ambient operating humidity	10% to 90% (with no condensation)	
Atmosphere	Must be free from corrosive gases.	
Ambient storage temperature	–20 to 75°C (excluding battery)	
Grounding	Less than 100 Ω	
Enclosure	Mounted in a panel.	
Weight	All models are each 6 kg max.	

Basic System Configuration



CPU Rack

A CPU Rack consists of a CPU Unit, Power Supply Unit, CPU Backplane, Basic I/O Units, Special I/O Units, and CPU Bus Units. The Serial Communications Board and Memory Cards are optional.

Note: The Backplane depends on the type of CPU Rack, Expansion I/O Racks, and Slave Racks that are used.

Expansion Racks

Both C200H and CS1 Expansion Racks can be used.

- C200H Expansion I/O Racks can be connected to CPU Racks, CS1 Expansion Racks, or other C200H Expansion I/O Racks.
- CS1 Expansion Racks can be connected to CPU Racks or other CS1 Expansion Racks.

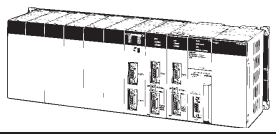
An Expansion Rack consists of a Power Supply Unit, a CS1 or C200H Expansion I/O Backplane, Basic I/O Units, Special I/O Units, and a CS1 CPU Bus Units.

Long-distance Expansion Racks

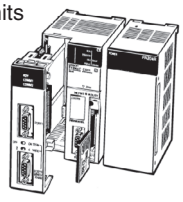
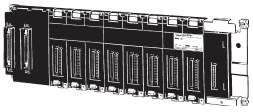
An I/O Control Unit and I/O Interface Units can be used to extend the normal limit of 12 m to 50 m for each of two series of CS1 Expansion Racks. The following Units can be mounted to Long-distance Expansion Racks: CS1 Basic I/O Units, CS1 Special I/O Units, and CS1 CPU Bus Units. (C200H Units cannot be mounted to Long-distance Expansion Racks.)

CPU Rack

Configuration

Name	Configuration	Remarks
CPU Rack 	CPU Backplane	One of each Unit required for every CPU Rack. Refer to the following table for model number.
	CPU Unit	
	Power Supply Unit	
	Memory Card	Install as required. Refer to the following table for model number.
	Serial Communications Board	

Products Used in CPU Racks

Name	Model	Specifications	
CPU Units 	CS1H-CPU67H	I/O bits: 5,120, Program capacity: 250 kSteps Data Memory: 448 kWords (DM: 32 kWords, EM: 32 kWords x 13 banks)	
	CS1H-CPU66H	I/O bits: 5,120, Program capacity: 120 kSteps Data Memory: 256 kWords (DM: 32 kWords, EM: 32 kWords x 7 banks)	
	CS1H-CPU65H	I/O bits: 5,120, Program capacity: 60 kSteps Data Memory: 128 kWords (DM: 32 kWords, EM: 32 kWords x 3 banks)	
	CS1H-CPU64H	I/O bits: 5,120, Program capacity: 30 kSteps Data Memory: 64 kWords (DM: 32 kWords, EM: 32 kWords x 1 bank)	
	CS1H-CPU63H	I/O bits: 5,120, Program capacity: 20 kSteps Data Memory: 32 kWords (DM: 32 kWords, EM: 32 kWords x 1 bank)	
	CS1G-CPU45H	I/O bits: 5,120, Program capacity: 60 kSteps Data Memory: 128 kWords (DM: 32 kWords, EM: 32 kWords x 3 banks)	
	CS1G-CPU44H	I/O bits: 1,280, Program capacity: 30 kSteps Data Memory: 64 kWords (DM: 32 kWords, EM: 32 kWords x 1 banks)	
	CS1G-CPU43H	I/O bits: 960, Program capacity: 20 kSteps Data Memory: 64 kWords (DM: 32 kWords, EM: 32 kWords x 1 bank)	
	CS1G-CPU42H	I/O bits: 960, Program capacity: 10 kSteps Data Memory: 64 kWords (DM: 32 kWords, EM: 32 kWords x 1 bank)	
CPU Backplanes 	CS1W-BC022	2 slots (Connection to Expansion Backplane is not possible.)	These Backplanes are for CS1 Units only. Use CS1W-BC□□3 Backplanes if C200H Units are to be installed.
	CS1W-BC032	3 slots	
	CS1W-BC052	5 slots	
	CS1W-BC082	8 slots	
	CS1W-BC102	10 slots	

Name	Model	Specifications
Power Supply Units 	C200HW-PA204	100 to 120 V AC or 200 to 240 V AC, Output capacity: 4.6 A, 5 V DC
	C200HW-PA204S	100 to 120 V AC or 200 to 240 V AC (0.8 A 24 V DC service power) Output capacity: 4.6 A, 5 V DC
	C200HW-PA204R	100 to 120 V AC or 200 to 240 V AC (with RUN output) Output capacity: 4.6 A, 5 V DC
	C200HW-PD024	24 V DC, Output capacity: 4.6 A, 5 V DC
	C200HW-PA209R	100 to 120 V AC or 200 to 240 V AC (with RUN output) Output capacity: 9 A, 5 V DC
I/O Control Unit	CS1W-IC102	Connects to CS1 Expansion Racks (two Terminating Resistors included). Must be used together with I/O Interface Units to connect Long-distance Expansion Racks (50 m max.). Not required to connect CS1 Expansion Racks within 12 m.
Memory Cards 	HMC-EF372	Flash memory, 30 MB
	HMC-EF672	Flash memory, 64 MB
	HMC-AP001	Memory Card adapter
Serial Communications Boards	CS1W-SCB21-V1	2 x RS-232C ports, protocol macro function
	CS1W-SCB41-V1	1 x RS-232C port + 1 x RS-422/485 port, protocol macro function
Programming Consoles	CQM1-PRO01-E	An English Keyboard Sheet (CS1W-KS001-E) is required.
	C200H-PRO27-E	
Programming Console Connection Cables	CS1W-CN114	Connects the CQM1-PRO01-E Programming Console. (Length: 0.05 m)
	CS1W-CN224	Connects the C200H-PRO27-E Programming Console. (Length: 2.0 m)
	CS1W-CN624	Connects the C200H-PRO27-E Programming Console. (Length: 6.0 m)
CX-One	CX-ONE-AL##C-E*1	Omron's integrated software for programming and configuration of all control system components, including PLCs, HMI, drives, temperature controllers and advanced sensors.
Programming Device Connecting Cables (for peripheral port)	CS1W-CN118	Connects DOS computer, D-Sub 9-pin receptacle (Length: 0.1 m)
	CS1W-CN226	Connects DOS computer, D-Sub 9-pin (Length: 2.0 m)
	CS1W-CN626	Connects DOS computer, D-Sub 9-pin (Length: 6.0 m)
	XW2Z-200S-CV	Connects DOS computer, D-Sub 9-pin (Length: 2.0 m)
	XW2Z-500S-CV	Connects DOS computer, D-Sub 9-pin (Length: 5.0 m)
Programming Device Connecting Cable (for RS-232C port)	XW2Z-200S-V	Connects DOS computer, D-Sub 9-pin (Length: 2.0 m) (For Host Link connection)
	XW2Z-500S-V	Connects DOS computer, D-Sub 9-pin (Length: 5.0 m) (For Host Link connection)
Battery Set	CS1W-BAT01	For CS1 Series only. Note: Use a replacement battery that is no more than 2 years old from the date of manufacture.

*1 ## = Number of licences; 01, 03, 10

Expansion Racks

Expansion Rack Configuration

Rack	Configuration	Remarks
CS1 Expansion Rack	CS1 Expansion I/O Backplane	One of each Unit is required.
	Power Supply Unit	
	For connection to a CPU Backplane or CS1 Expansion I/O Backplane: CS1 I/O Connecting Cable	
	For connection to a C200H Expansion I/O Backplane: CS1 to C200H I/O Connecting Cable	
C200H Expansion I/O Rack	C200H Expansion I/O Backplane	One of each Unit is required. A CS1 Expansion Rack cannot be connected after a C200H Expansion I/O Rack.
	Power Supply Unit	
	For connection to a CPU Backplane or CS1 Expansion I/O Backplane: CS1 to C200H I/O Connecting Cable	
	For connection to a C200H Expansion I/O Backplane: C200H I/O Connecting Cable	

Products Used in Expansion Racks

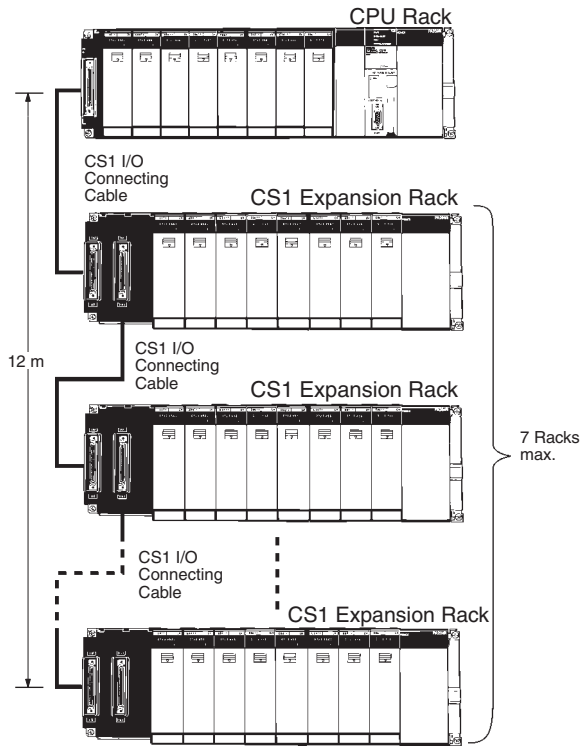
Name	Model	Specifications		Cable Length
CS1 Expansion I/O Backplanes	CS1W-BI032	3 slots	These Backplanes are for CS1 Units only. Use CS1W-BI□□3 Backplanes if C200H Units are to be installed.	---
	CS1W-BI052	5 slots		
	CS1W-BI082	8 slots		
	CS1W-BI102	10 slots		
C200H Expansion I/O Backplanes	C200HW-BI031	3 slots		
	C200HW-BI051	5 slots		
	C200HW-BI081-V1	8 slots		
	C200HW-BI101-V1	10 slots		
Power Supply Units	C200HW-PA204	100 to 120 V AC or 200 to 240 V AC Output capacity: 4.6 A, 5 V DC		
	C200HW-PA204S	100 to 120 V AC or 200 to 240 V AC (with power output terminal: 0.8 A, 24 V DC) Output capacity: 4.6 A, 5 V DC		
	C200HW-PA204R	100 to 120 V AC or 200 to 240 V AC (with RUN output) Output capacity: 4.6 A, 5 V DC		
	C200HW-PA209R	100 to 120 V AC or 200 to 240 V AC (with RUN output) Output capacity: 9 A, 5 V DC		
	C200HW-PD024	24 V DC		

Name	Model	Specifications	Cable Length
I/O Interface Unit	CS1W-II102	Connects CS1 Expansion Racks. Must be used together with I/O Control Unit to connect Long-distance Expansion Racks (50 m max.). Not required to connect CS1 Expansion Racks within 12 m.	---
CS1 I/O Connecting Cables	CS1W-CN313	Connects CS1 Expansion I/O Backplanes to CPU Backplanes or other CS1 Expansion I/O Backplanes. When using a CS1W-CN313 or CS1W-CN713 I/O Connecting Cable with a CS1□-CPU□□H CPU Unit, use only Cables produced on or after September 20, 2001 (production number 2091). Cables with no production number, a 6-digit production number, or produced before September 20, 2001, cannot be used. **Reading the production number** □□□□ Year (e.g., 1997=7) Month (1 to 9, X (10), Y (11), Z (12)) Day (01 to 31)	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
Long-distance Connecting Cables	CV500-CN312	For Long-distance Expansion Racks Connects the I/O Control Unit to I/O Interface Units or connects one I/O Interface Unit to the next I/O Interface Unit.	0.3 m
	CV500-CN612		0.6 m
	CV500-CN122		1 m
	CV500-CN222		2 m
	CV500-CN322		3 m
	CV500-CN522		5 m
	CV500-CN132		10 m
	CV500-CN232		20 m
	CV500-CN332		30 m
	CV500-CN432		40 m
	CV500-CN532		50 m
CS1-C200H I/O Connecting Cables	CS1W-CN311	Connects C200H Expansion I/O Backplanes to CPU Backplanes or CS1 Expansion I/O Backplanes.	0.3 m
	CS1W-CN711		0.7 m
	CS1W-CN221		2 m
	CS1W-CN321		3 m
	CS1W-CN521		5 m
	CS1W-CN131		10 m
	CS1W-CN131-B2		12 m
C200H I/O Connecting Cables	C200H-CN311	Connects C200H Expansion I/O Backplanes to other C200H Expansion I/O Backplanes.	0.3 m
	C200H-CN711		0.7 m
	C200H-CN221		2 m
	C200H-CN521		5 m
	C200H-CN131		10 m

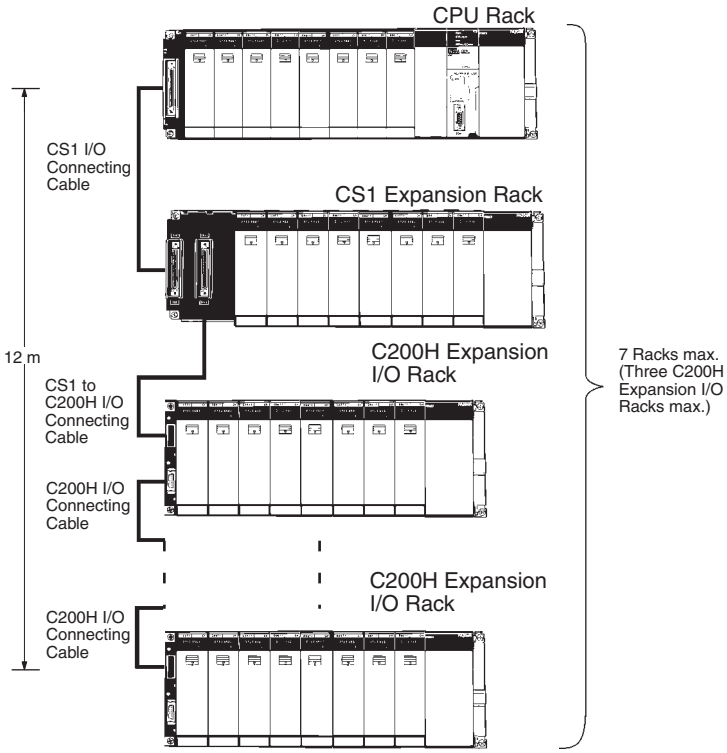
Expansion Rack Patterns

The following diagrams show the 5 possible patterns of Expansion Racks.

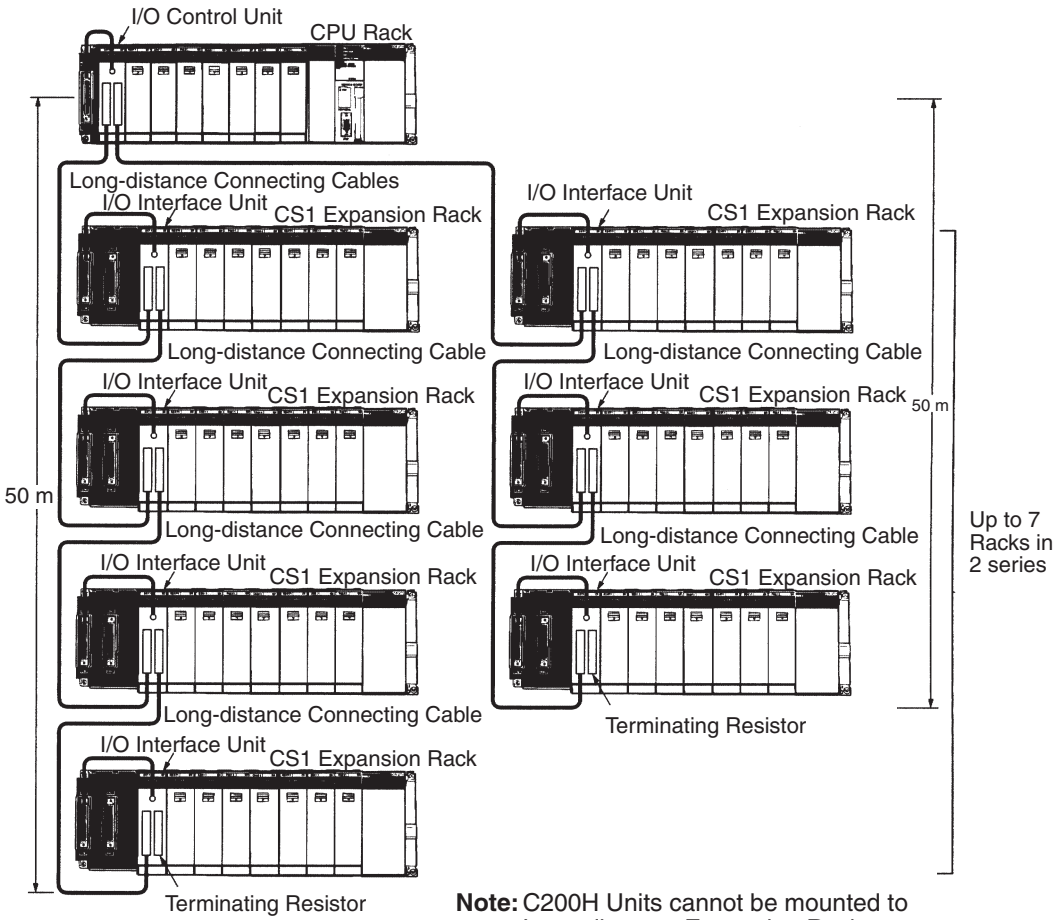
CPU Rack with CS1 Expansion Racks



CPU Rack with CS1 Expansion Racks and C200H Expansion I/O Racks

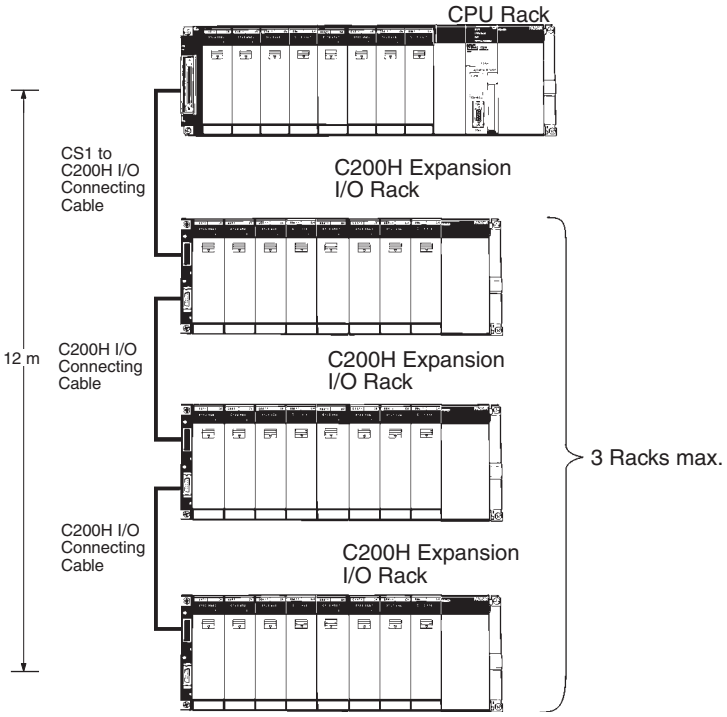


CPU Rack with CS1 Long-Distance Expansion Racks

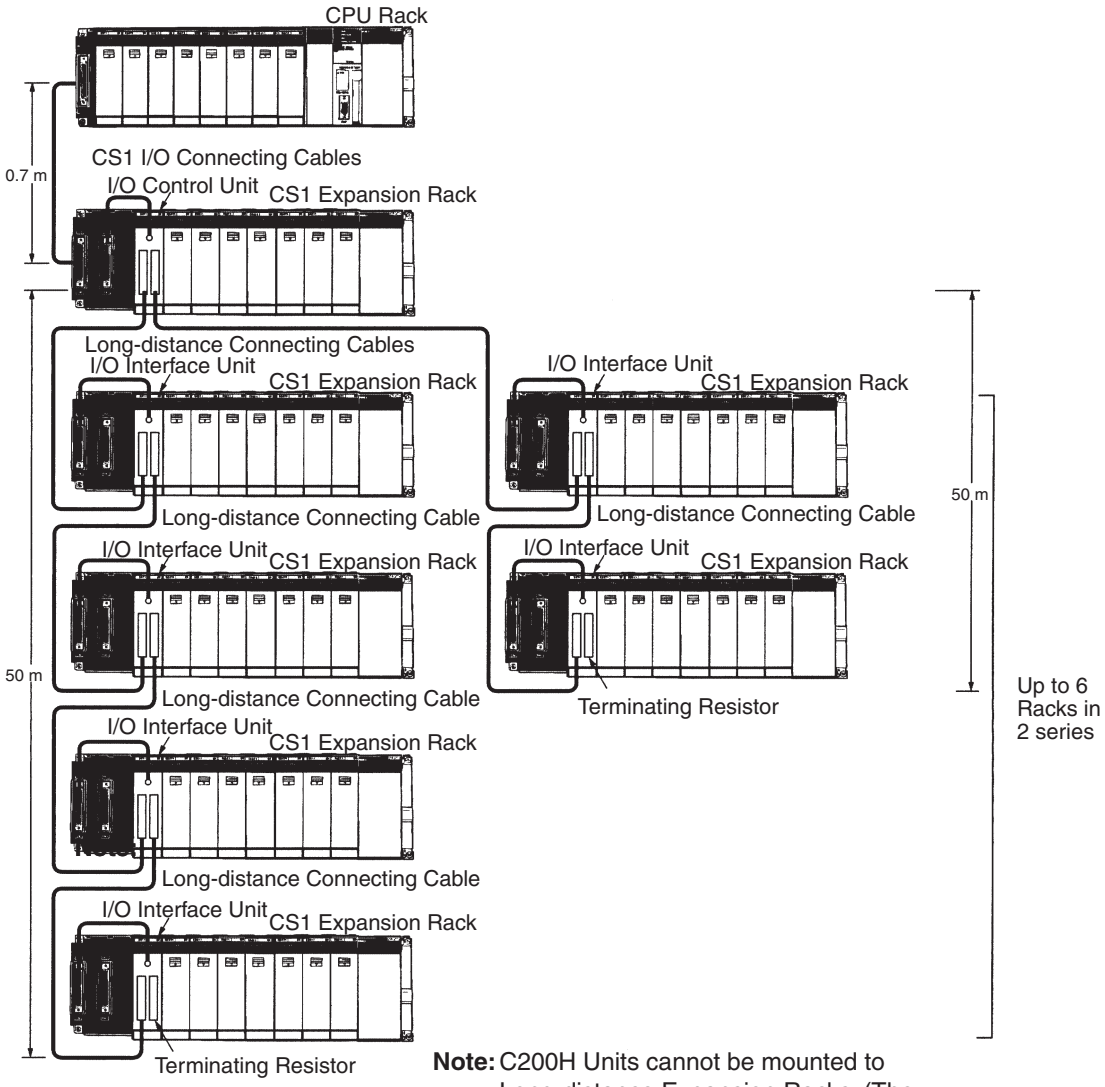


Note: C200H Units cannot be mounted to Long-distance Expansion Racks.

CPU Rack with C200H Expansion I/O Racks



CPU Rack with CS1 Expansion Rack and CS1 Long-Distance Expansion Racks



Note: C200H Units cannot be mounted to Long-distance Expansion Racks. (They can be mounted to the CS1 Expansion Rack with the I/O Control Unit mounted.)