CJ1 Series PLC

Omron, the company that introduced the industry's first mid-sized PLC, is introducing another product that will redefine PLC classifications. The NEW CJ1 series of controllers is designed to deliver "BIG" PLC performance from a product the size of the smallest micro controllers on the market, requiring only 60 to 40% of the panel space of traditional mid-size PLCs. With it's small size and large rack performance the CJ1 can literally fit into any application.

The CJ1 modules are each roughly the size of a deck of playing cards and connect module-to-module using simple locking connectors, eliminating the need for a bulky PLC rack. The lightning quick PC21 bus, designed for Omron's technology-leading mid-sized CS1, provides high-speed communication from the CJ1 CPU to individual modules.

The CJ1 also includes the communication options generally associated with larger PLC platforms, leveraging Omron's FINS protocol to transparently tie Ethernet, Controller Link, serial, and device level networks together for data exchange and programming. Program the CJ1 using Omron's CX-Programmer, which supports the entire Omron PLC product line.

The new, compact CJ1 PLC is now available from stock.

- A mid-size PLC in a micro-sized package
- 40% smaller than typical mid-size PLCs: Free up panel space without sacrificing performance!
- Processor speeds ranging from 40 nanoseconds to as low as 20 nanoseconds per basic instruction
- Ethernet, DeviceNet and Controller Link communications
- Industry leading networking: Omron's FINS protocol routes data across networks
- Control up to 2560 I/O: Typical of the mid-sized PLC category
- Fully compatible with Omron's CX-Programmer Software
- Rackless design eliminates the need for a PLC rack, simplifying configuration and lowering system costs
- Flash Memory Cards up to 48 MB for easy program transfer and data storage

CJ1H Features and Functions

■ Increased Speed for an Overall Faster System

Item		Previous model (CJ1)	CJ1H
Common processing		0.5 ms	0.3 ms
Cycle time (for 128 inputs and outputs)		8 Ks/1 ms	Basic instruction only: 38 Kstep in 1 ms. With application instructions: 22 Ksteps in 1 ms or more.
Peripheral service event response		Taken as "1"	in Parallel processing mode: 0.4
Instruction processing speed	LD instructions	40 ns	20 ns
	Block transfers	633 μs	300 μs
	Block data setting	278 μs	200 μs
	BCD arithmatic operations	14 μs	8.2 μs
	Floating-point decimal operations	10 μs	8 μs
	Subroutines	37 μs	2.1 μs

■ Fast Execution of Some Frequently Used Special Instructions

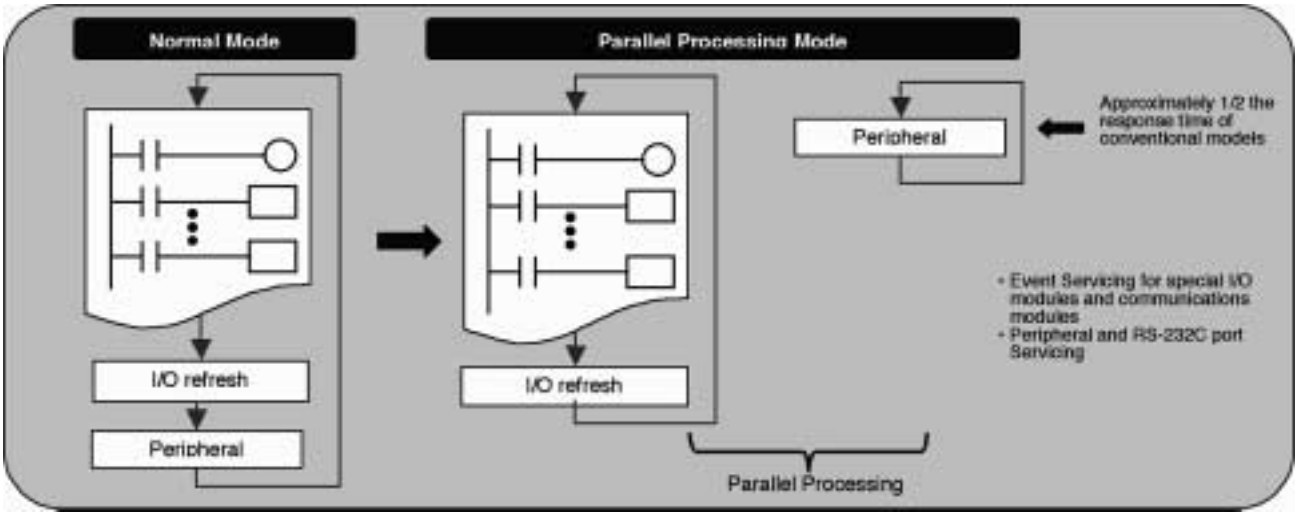
The instruction performance has been improved (by up to 20 times) in approximately 20 frequently used special instructions.

■ System Bus Speed Doubled

The data transfer rate between the CPU and specific modules has been doubled to further improve the total system performance.

■ Highly Responsive Parallel Processing

Parallel processing for program execution and peripheral services. The peripheral servicing is now independent from the cycle time (or instruction execution).



■ Reduced Variation in Cycle Time During Data Processing

Instructions that have long execution times, such as table data processing instructions and character string processing instructions, are processed over multiple cycles to minimize variations in cycle time and maintain stable I/O responses.

■ Improved I/O Refresh Rate

With previous CJ1 CPUs, I/O refresh processing within communications modules only would occur after all instructions were executed. With the new CJ1-H, I/O can be refreshed immediately by using the DLNK instruction.

- Refreshing of words allocated in CIO area
- Refreshing of words allocated in DM area
- Refreshing data specific to Modules

Unit name	Refreshed data
Controller Link module	Data links
DeviceNet module	Remote I/O
Serial communications module	Protocol macros
Ethernet module	Socket service for command bits

■ Powerful Instructions to Improve Application Performance

Special instructions have been implemented for each kind of application. Detailed control can be easily programmed.

■ Convert Between Real Numbers and Character Strings

The new CJ1 can convert floating-point decimal (real numbers) to character strings (ASCII) for display on an operator interface terminal. The character string display on the operator interface terminal can display the data.

The CJ1-H can convert ASCII character strings read from measurement devices by serial communications to floating-point decimal data for use in data processing.

■ Real-time Information Control of Conveyor Systems and Other Operations

The CJ1-H uses tables to perform real time control and process the information regarding the product on the conveyor.

■ PID Autotuning

The CJ1-H can autotune PID constants with a PID control instruction. This is particularly effective for multiple-loop PID control.

■ Highly Accurate Positioning With X-Y Tables

The CJ1-H has double precision floating-point decimal operations for very high accuracy positioning.

■ Error status generation

Executing the diagnostic instructions (FAL/FALS) can simulate a specified error status. The CJ1-H allows you to display messages on an operator interface terminal or other display devices based on the error status of the CPU.

■ Improved Memory Performance for Greater Information Handling Capabilities

User programs and system parameters are automatically saved to the flash memory (non-volatile memory). This allows users the freedom to operate without the fear of losing data. Flash Memory cards and batteries still needed to retain the data memory and other memory areas (example, HR).

All CJ1-H CPUs have expansion memory (EM). The data link area is kept as an independent area, which allows large volumes of data to be stored.

■ Greater Number of Cyclic Tasks

The CJ1-H has increased the number of cyclic tasks from 32 to a maximum of 288. Improve efficiency for large scale programming projects by being able to implement more tasks that have been previously written.

■ High-Speed Switching Between Tasks

The switching speed between tasks has been increased. This means that the cycle time will not be affected, even in highly structured programs.

■ Faster Subroutine Instructions

The execution time for subroutine instructions has been vastly reduced.

■ Enhanced Compatibility With Other Omron Controllers

The programs and other software data of the new CJ1-H are completely compatible with the CJ1G CPUs as well as with other legacy Omron controllers.

Ordering Information

■ Basic Units

Item	Description				Part Number
	I/O Points	Program Capacity (steps)	Data memory capacity		
CJ1 CPU	2560	120 K	256 K words (DM: 32 K words, EM: 32 K words x 7 banks)		**CJ1H-CPU66H**
	2560	60 K	128 K words (DM: 32 K words, EM: 32 K words x 3 banks)		**CJ1H-CPU65H**
	1280	60 K	128 K words (DM: 32 Kwords, EM: 32 K words x 3 banks)		**CJ1G-CPU45H**
	1280	30 K	64 K words (DM: 32 Kwords, EM: 32 K words x 1 banks)		**CJ1G-CPU44H**
	960	20 K	64 K words (DM: 32 Kwords, EM: 32 K words x 1 banks)		**CJ1G-CPU43H**
	960	10 K	64 K words (DM: 32 Kwords, EM: 32 K words x 1 banks)		**CJ1G-CPU42H**
Power Supply Unit	100 to 240 VAC, (with RUN output) output capacity: 5A at 5 VDC, 0.8A at 24 VDC				**CJ1W-PA205R**
	100 to 240 VAC, output capacity: 2.8A at 5 VDC, 0.4A at 24 VDC				**CJ1W-PA202**
	24 VDC, output capacity: 5 A at 5 VDC, 0.8 A at 24 VDC				**CJ1W-PD025**
Memory Card	Flash Memory, 8 Mbytes				**HMC-EF861**
	Flash Memory, 15 Mbytes				**HMC-EF171**
	Flash Memory, 30 Mbytes				**HMC-EF371**
	Flash Memory, 48 Mbytes				**HMC-EF571**
	Memory Card Adapter (for PCMCIA slot in PC)				**HMC-AP001**
I/O Control Module	One per CJ-Series CPU Rack when connecting to CJ-Series expansion rack				**CJ1W-IC101**
	One required for each CJ-Series expansion rack				**CJ1W-II101**
I/O Connecting Cable	For Connecting The CJ-Series CPU Rack and a CJ-Series expansion rack for connecting two CJ-Series expansion racks			Cable Length: 0.3 m	**CS1W-CN313**
				Cable Length: 0.7 m	**CS1W-CN713**
				Cable Length: 2 m	**CS1W-CN223**
				Cable Length: 3 m	**CS1W-CN323**
				Cable Length: 5 m	**CS1W-CN523**
				Cable Length: 10 m	**CS1W-CN133**
				Cable Length: 22 m	**CS1W-CN133-B2**
Programming Console	Programming Console Key Sheet: CS1W-KS001-E required (sold separately)				**CQM1H-PRO01**
					CQM1-PRO01
					C200H-PRO27
Programming Console Connection Cable	For connection with CQM1H-PRO01 (cable length: 0.05 m)				**CS1W-CN114**
	For connection with CQM1-PRO01 (cable length: 2.0 m)				**CS1W-CN224**
	For connection with C200H-PRO27 (cable length: 6.0 m)				**CS1W-CN624**
Programming Software CX-Programmer	1 License	Windows-based programming software OS: Windows 95, 98, NT	Note: Can be connected to peripheral port or RS-232c port on the CPU, or to the RS 232C port on a Serial Communication Module or via Ethernet and Controller Link networks		**WS02-CXPC1-EV2**
PC cables for connecting IBM PC/AT or compatible to programming devices to peripheral port	IBM PC/AT or compatible D-sub-9-pin receptacle (for conversion of RS-232c cable to peripheral), cable length: 0.1 m				**CS1W-CN118**
	IBM PC/AT or compatible D-sub-9-pin receptacle, cable length: 2.0 m				**CS1W-CN226**
	IBM PC/AT or compatible D-sub-9-pin receptacle, cable length: 6.0 m				**CS1W-CN626**
Battery (replacement)	Lithium Battery 3.6 VDC for CJ Series (included with the CPU)				**CPM2A-BAT01**
End Cover (replacement)	For right end of CJ-Series CPU Rack or expansion rack Note: One included with CPU and I/O Interface Module				**CJ1W-TER01**

■ CJ-Series Basic I/O Modules

Item	Description	Part Number
AC Input Modules	16 points, 100 to 120 VAC, 9 mA input, terminal	**CJ1W-IA111**
	8 points, 7 mA 200 to 240 VAC, 7 mA input, terminal block	**CJ1W-IA201**
DC Input Modules	16 points, 24 VDC, terminal block	**CJ1W-ID211**
	32 points, 24 VDC, Fujitsu style connector	**CJ1W-ID231**
	32 points, 24 VDC, MIL style connector	**CJ1W-ID232**
	64 points, 24 VDC, Fujitsu style connector	**CJ1W-ID261**
	64 points, 24 VDC, MIL style connector	**CJ1W-ID262**
Interrupt Input Modules	16 points, 24 VDC, terminal block	**CJ1W-INT01**
Relay Output Modules	8 points, relay outputs, 2A max. at 250 VAC/ 24 VDC, independent contacts terminal block	**CJ1W-OC201**
	16 points, relay outputs, 2A max. at 250 VAC/ 24 VDC, terminal block	**CJ1W-OC211**
Triac Output modules	8 points, triac outputs, 250 V, 2.4 A/point, terminal block	**CJ1W-OA201**
Transistor Output Modules	8 points, 8 A max. at 12 to 24 VDC, 2 A/point, terminal block	**CJ1W-OD201**
	16 points, 12 to 24 VDC, terminal block	**CJ1W-OD211**
Sinking Outputs	32 points, 12 to 24 VDC, Fujitsu style connector	**CJ1W-OD231**
	32 points, 12 to 24 VDC, MIL style connector	**CJ1W-OD233**
	64 points, 12 to 24 VDC, Fujitsu style connector	**CJ1W-OD261**
	64 points, 12 to 24 VDC, MIL style connector	**CJ1W-OD263**
Transistor Output Modules	8 points, 24 VDC, with load short-circuit protection, terminal block	**CJ1W-OD202**
	16 points, 24 VDC, with load short-circuit protection, terminal block	**CJ1W-OD212**
Sourcing Outputs	32 points, 24 VDC, with load short-circuit protection, terminal block	**CJ1W-OD232**

■ CJ-Series Special I/O Modules

Item	Description	Part Number
Analog Input Module	8 input points; 1 to 5 V, 0 to 5 V, 0 to 10 V, -10 to 10 V or 4 to 20 mA, 13 bit res	**CJ1W-AD081-V1**
	4 input points; 1 to 5 V, 0 to 5 V, 0 to 10 V, -10 to 10 V or 4 to 20 mA, 13 bit res	**CJ1W-AD041-V1**
Analog Output Module	4 output points; 1 to 5 V 0 to 5 V, 0 to 10 V, -10 to 10 V or 4 to 20 mA	**CJ1W-DA041**
	2 output points; 1 to 5 V 0 to 5 V, 0 to 10 V, -10 to 10 V or 4 to 20 mA	**CJ1W-DA021**
Temperature Control Modules	4 loops, thermocouple input/ NPN output	**CJ1W-TC001**
	4 loops, thermocouple input/ PNP output	**CJ1W-TC002**
	2 loops, thermocouple input/ NPN output, with heater disconnection alarm	**CJ1W-TC003**
	2 loops, thermocouple input/ PNP output, with heater disconnection alarm	**CJ1W-TC004**
	4 loops, platinum-resistance thermometer input/ NPN output	**CJ1W-TC101**
	4 loops, platinum-resistance thermometer input/ PNP output	**CJ1W-TC102**
	2 loops, platinum-resistance thermometer input/ NPN output, with heater disconnection alarm	**CJ1W-TC103**
	2 loops, platinum-resistance thermometer input/ PNP output, with heater disconnection alarm	**CJ1W-TC104**
Position Control Module Open Collector Output	1 axis position control module	**CJ1W-NC113**
	2 axis position control module, linear interpolation	**CJ1W-NC213**
	4 axis position control module, linear interpolation	**CJ1W-NC413**
Position Control Module Line Driver Output	1 axis position control module	**CJ1W-NC133**
	2 axis position control module, linear interpolation	**CJ1W-NC233**
	4 axis position control module, linear interpolation	**CJ1W-NC433**
High Speed Counter Module	2 channel high-speed counter, 500 kHz	**CJ1W-CT021**

■ CJ-Series Communication I/O Modules

Item	Description	Part Number
Controller Link Module	Wired, data links, message communications	**CJ1W-CLK21**
Serial Communications Module	RS-232C x 1 port, RS-422/485 x 1 port Protocol macros, Host Link, NT Link (1:N)	**CJ1W-SCU41**
DeviceNet Master Module	2,048 fixed allocation I/O points, 125,000 to 500,000 bps baud rate	**CJ1W-DRM21**
Ethernet Module	10 Base-T, FINS communications socket service FTP server, email notification	**CJ1W-ETN11**
CompoBus S Module	CompoBus/S remote I/O Master	**CJ1W-SRM21**

Specifications

■ CPU Specifications

Part number	I/O capacity	Program capacity	Data memory capacity	LD instruction processing speed	Built-in ports	Options
CJ1H-CPU66H	2560 bits (up to 3 expansion racks)	120 K steps	256K words (DM: 32K words EM: 32K words x 7 banks)	0.02 μs	Peripheral port and RS-232C port	Memory cards
CJ1H-CPU65H		60 K steps	128K words (DM: 32K words EM: 32K words x 3 banks)			
CJ1G-CPU45H	1280 bits (up to 3 expansion racks)			0.04 μs		
CJ1G-CPU44H		30 K steps	64K words (DM: 32K words EM: 32K words x 1 banks)			
CJ1G-CPU43H	960 bits (up to 3 expansion racks	20 K steps				
CJ1G-CPU42H		10 K steps				
CJ1G-CPU45	1280 bits (up to 3 expansion racks)	60 K steps	128K words (DM: 32K words EM: 32K words x 3 banks)	0.04 μs		

■ Common Specifications

Item		Specifications
Control method		Stored Program
I/O Control method		Cyclic scan and immediate processing are both possible
Programming		Ladder Logic
Instruction length		1 to 7 steps per instruction
Ladder instructions		Approximately 400 (3-digit function codes)
Execution time		Basic instructions: 0.02 μs min.; Special instructions: 0.04 μs min.
Unit connection method		No backplane: Modules are connected directly to each other using an interlocking connector
Overhead time		CJ1G/HCPU□□H: Both normal and parallel processing mode: 0.3 ms CJ1G-CPU□□: 0.5 ms
Mounting method		DIN Rail (Screw mounting is not possible)
Number of connectable modules		Per CPU or expansion rack: 10 modules including basic I/O modules. Special I/O modules, and CPU Bus modules. Up to three total expansion racks plus the main rack for a total of 40 modules.
Number of expansion racks		4 total racks possible (an I/O control module is required on CPU rack and an I/O interface module is required on each expansion rack.
Number of tasks		288 (cyclic tasks: 32, interrupt tasks: 256) With the CJ1G/H-CPU□□H, interrupt tasks can be defined as cyclic interrupt tasks. Note: 1. Cyclic tasks are executed each cycle and are controlled with TKON(820) and TKOF(821) instructions. 2. The following 4 types of interrupt tasks are supported: Power OFF interrupt task: 1 max Scheduled interrupt tasks: 2 max. I/O interrupt tasks: 32 max. (CJ1G/H-CPU□□H only) External interrupt tasks: 256 max. (CJ1G/H-CPU□□H only)
Interrupt types		Scheduled interrupts: Interrupts generated at a time scheduled by the CPU module's built in timer. I/O interrupt tasks: Interrupts from Interrupt Input modules (CJ1G/H-CPU□□H only) Power OFF interrupts: Interrupts executed when CPU's power is turned OFF External interrupt tasks: Interrupts from special I/O modules and CPU Bus modules (CJ1G/H-CPU□□H only)
Calling subroutines from		CJ1G/HCPU□□H: Supported using global subroutines
Multiple tasks		CJ1G-CPU□□: Not supported
CIO (Core I/O Area)	I/O area	2,560 (160 words) CIO 000000 to CIO 015915 (words CIO 0000 to CIO 0159) 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 modules.
	Link area	3.200 (200 words): CIO 100000 to CIO 189915 (words CIO 1000 to CIO 1199) Link bits are used for data links and are allocated to units on Controller Link Systems
	CPU bus area	6,400 (400 words): CIO 150000 to CIO 295915 (words CIO 1500 to CIO 1899) CPU Bus module bits store operating status of CPU Bus modules (25 words per Unit max.)
	Special I/O module area	15,360 (960 words): CIO 200000 to CIO 295915 (words CIO 2000 to CIO 2959) Special I/O module bits are allocated to Special I/O modules. (10 words per Unit max.)

■ Common Specifications (continued)

Item		Specifications
CIO Continued (See Note.)	DeviceNet area	9,600 (600 words): CIO 320000 to CIO 379915 (words CIO 3200 to CIO 3799) DeviceNet bits are allocated to slaves for DeviceNet Module remote I/O communications when the master function is used with fixed allocations Fixed allocations: Setting 1 - outputs: CIO 3200 to CIO 3263, inputs: CIO 3300 to CIO 3363 Setting 2 - outputs: CIO 3400 to CIO 3463, inputs: CIO 3500 to CIO 3563 Setting 3 - outputs: CIO 3600 to CIO 3663, inputs: CIO 3700 to CIO 3763 The following words are allocated to the master function even when the DeviceNet module is used as a slave. Fixed allocations: Setting 1 - outputs: CIO 3370 (master to slave), inputs: CIO 3270 (slave to master) Setting 2 - outputs: CIO 3570 (master to slave), inputs: CIO 3470 (slave to master) Setting 3 - outputs: CIO 3770 (master to slave), inputs: CIO 3670 (slave to master)
	Internal I/O area	4,800 (300 words): CIO 120000 to CIO 149915 (words CIO 1200 to CIO 1499) 37,504 (2344 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 (See Note.)		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 (See Note.)		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 PC is turned off of operating mode is changed
Auxiliary area (See Note.)		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 for specific functions
Temporary area (See Note.)		16 bits (TR00 to TR15) temporary bits are used to store ON/OFF execution conditions at program branches
Timer area (See Note.)		4,096 T0000 to T4095 (used for timers only)
Counter area (See Note.)		4,096 C0000 to C4095 (used for counters only)
DM area (See Note.)		32 K words: 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 modules DM area: D20000 to D29599 (100 words_96 units). Used to set parameters for special I/O modules CPU Bus module DM area: D 30000 to D31599 (100 words_16 units). Used to set parameters for CPU Bus units
EM area (See Note.)		32 K words per bank, 7 banks max.: E0_00000 to E6_32767 max. (Not available on same CPUs.) 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 that can be set by either of the 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)
Index registers		IR0 to IR15. Store PLC memory addresses for indirect addressing. One register is 32 bits (2 words) CJ1G-CPU□□: Index registers ae independent for each task. CJ1G/H-CPU□□H: Index can be specified as shared or independent for each task.
Task flag area		32 (TK0000 to TK0031). Task Flags are Read Only flags that are ON when corresponding task is not (See Note.) executable or in stand-by status
Trace memory (See Note.)		4000 words (trace data: 31 bits, 6 words)
File memory (See Note.)		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) OMRON Memory Cards with 8-MB, 15-MB, 30-MB, or 48-MB capacities can be used

Note: These bits can be used as work bits when not used for the applications described in the table above.

■ Function Specifications

Item	Specifications	
Constant cycle time	1 to 32,000 ms (Unit: 1ms) Note: With the CJ1G/H-CPU□□H using the Parallel processing mode will create a constant cycle time for program execution	
Cycle time monitoring	Possible (Unit stops operating if cycle is too long): 1 to 40,000 ms (Unit: 10 ms) Note: When the Parallel Processing mode is used for the CJ1G/H-CPU□□H, the program execution cycle is monitored. Also, a fatal error will occur in the CPU if the peripheral servicing time exceeds 2 seconds	
I/O refreshing	Cyclic refreshing, immediate refreshing, refreshing by IORF(097). With the CJ1G/H-CPU□□H, the CPU Bus unit I/O refresh (DLNK) instruction can be used to refresh CPU Bus units (including allocated CIO and DM area words) when required in the program	
Special refreshing for CPU modules	Data links for Control Links Units remote I/O communications fro DeviceNet Units, and other special data for CPU Bus units is refreshed at the following times: CJ1G-CPU□□: During I/O refresh period CJ1G/H-CPU□□H:During I/O refresh period or when CPU Bus unit I/O refresh (DLNK) instruction is executed	
I/O memory holding when changing operating modes	Depends on ON/OFF status of IOM Hold Bit in Auxiliary Area	
Load OFF	All outputs on output units can be turned OFF when CPU is operating in RUN, MONITOR, or PROGRAM mode	
Input time constant setting	Time constants can be set for inputs from CJ1 Basic I/O Modules. The time constant can be increased to reduce influence of noise and chattering or it can be decreased to detect shorter pulses on inputs.	
Mode setting at power-up	Possible (By default, the CPU will start in RUN mode if a programming console is not connected.)	
Memory card	Automatically reading programs (autoboot) from the Memory Card when the power is turned OFF	Possible
	Program Replacement during PLC operation	Possible
	Memory card storage data	User Program: Program file format PLC Setup and other parameters: Data File format I/O Memory: Data file format (binary format, text format, or CSV format) CPU Bus unit data: special format
	Memory card read/write	User-program instructions Programming devices (including CX-programmer and Programming console), Host Link computers AR area control bits, easy backup operation
Filing	Memory Card data and EM area (extended data memory) can be handled as files	
Debugging	Force-set/ reset, differential monitoring, data tracing (scheduled, each cycle, or when instruction is executed)	
Online editing	One or more program blocks in user programs can be overwritten in program-block units when CPU is in MONITOR mode or PROGRAM mode. This function is not available for block programming areas. With CX-Programmer, more than one block can be edited at the same time	
Program protection	Overwrite protection: Set using DIP switch Copy protection: Password set using peripheral device (such as CX-Programmer/ Programming Console)	
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 Note: With the CJ1G/H-CPU□□H, error status can be simulated with the FAL and FALS instructions	
Error log	Up to 20 errors are stored in error log. Information includes error code, error details, and time the error occurred. Note: With the CJ1G/H-CPU□□H, the system can be set so that user-defined FAL errors are not stored in the error log	
Serial communications	Built-in peripheral port: Peripheral Device (including programming Console/CX-Programmer Built-in RS-232C port: Programming device (e.g., CX-Programmer), Host-links., no-protocol communications, NT links	
Clock	Provided on all models. Accuracy ± 1.5 min/month at 25°C (accuracy varies with the temperature) 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)	

■ Function Specifications (continued)

Item	Specifications
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 Auxilliary area is turned on, and PLC setup is set to mainain IOM Hold Bit status when power to PLC is turned ON, contents of CIO area, work area, part of Auxiliary area, timer completion flag and PVs, Index registers and data registers will be saved for up to 20 days
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 PC.
Remote programming and monitoring	Host Link communications can be used for remote programming and remote monitoring through a Controller Link System or Ethernet network.
Three-level communications	Host Link communications can be used remote programming and remote monitoring from devices on networks up to two levels away (Controller Link Network. Ethernet Network, or other network)
Storing comments in the CPU	I/O comments can be stored in the CPU in Memory Cards or EM file memory.
Program check	Program checks are performed at beginning of operation for items such as no END instruction and instruction errors. A Peripheral Device (such as CX-Programmer) can also be used to check programs.
Control output signals	RUN output: The contacts will turn ON (close) while CPU is operating. These terminals are provided only on CJ1W-PA205R Power Supply Module.
Battery life	5 years at 25ºC (the battery life depends on the ambient operating temperature; 0.75 years min.) Battery set: CPM2A-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 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 514 words).

■ General Specifications

Item	Specifications	
Power Supply Unit	CJ1W-PA205R	CJ1W-PA202
Supply voltage	100 to 240 VAC (wide range), 50/60Hz	
Operating voltage range	85 to 264 VAC, 47 to 63 Hz	
Power consumption	100 VAC max.	
Inrush current	15 A / 8 ms :138 VAC max 30 A / 8 ms :276 VAC max	
Output capacity	5.0 A, 5 VDC (including supply to CPU)	2.8 A, 5 VDC (including supply to CPU)
	0.8 A, 24 VDC	0.4 A, 24 VDC
	Total: 25W	Total: 14 W
Output terminal (service supply)	Not provided	
RUN output	Contact configuration: SPST-NO Switch capacity: 250 VAC, 2A (resistive load) 250VAC, 0.5A (induction load), 24VDC, 2A	
Insulation resistance	20M ohm min.,(at 500 VDC) between AC external and GR terminals (See Note1)	
Dielectric strength	2,300 VAC 50/60Hz for 1 min between AC external and GR terminals (See Note1) Leakage current: 10 mA max.	
	1,000 VAC 50/60Hz for 1 min between DC external and GR terminals (See Note1) Leakage current: 10 mA max.	
Noise immunity	Conforms to IEC61000-4-4, 2kV(power lines)	
Vibration resistance	10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8m/s^2 in X,Y, and Z directions for 80minutes (according to JIS C0040) (Time coefficient : 8 minutes % coefficient factor 10 = total time 80 min.)	
Shock resistance	147m/s^2, 3 times each in X,Y, and Z directions (according to JIS C0041) (Relay Output Units: 100m/s^2)	

Note: 1. Disconnect the Power Supply Unit's LG terminal from the GR terminal when testing insulation and dielectric strength.

■ General Specifications (continued)

Item	Specifications
Ambient operating temperature	0 to 55°C (32 to 131°F)
Ambient operating humidity	10% to 90% (with no condensation)
Atmosphere	Must be free from corrosive gases.
Ambient storage temperature	-20 to 75°C (-4 to 167°F) excluding battery
Grounding	Less than 100 ohm
Enclosure	Mounted in a panel.
Weight	All models are each 5 kg max.
CPU Rack Dimensions (mm)	156.7 to 466.7 (W) X 90 (H) X 65 (D) (excluding cable)
Safety measures	Conforms to cULus, Cl. 1. DIV.2 EC directives

Note: 1. Disconnect the Power Supply Module's LG terminal from the GR terminal when testing insulation and dielectric strength.

■ Basic I/O Modules

• AC Input Modules

Model	Number of Inputs	Inputs Voltage	Input Current	External Connection
CJ1W-IA111	16 pts.	100 to 120 VAC	7 mA	Terminal Block
CJ1W-IA201	8 pts.	200 to 240 VAC	9 mA	Terminal Block

• DC Input Modules

Model	Number of Inputs	Inputs Voltage	Input Current	External Connection
CJ1W-ID211	16 pts.	24 VDC +10%,-15%	7 mA (24 VDC)	Terminal Block
CJ1W-ID231	32 pts.	24 VDC +10%,-15%	4.1 mA (24 VDC)	Fujitsu Connector
CJ1W-ID232	32 pts.	24 VDC +10%,-15%	4.1 mA (24 VDC)	MIL Connector
CJ1W-ID261	64 pts.	24 VDC +10%,-15%	4.1 mA (24 VDC)	Fujitsu Connector
CJ1W-ID262	64 pts.	24 VDC +10%,-15%	4.1 mA (24 VDC)	MIL Connector

• Interrupt Input Modules

Model	Number of Inputs	Voltage	Pulse Width	External Connection
CJ1W-INT01	16 pts.	24 VDC	ON: 0.05 ms min. OFF: 0.05 ms min.	Terminal Block MIL Connector

• Relay Output Contact Modules

Model	Number of Outputs	Max. switching capacity	Outputs/common	External Connection
CJ1W-OC201	8 pts.	2A 250 VAC, 2A 24 VDC 16A/unit	Independent common	Terminal Block
CJ1W-OC211	16 pts.	2A 250 VAC, 2A 24 VDC 8A/unit	16	Terminal Block

• Transistor Output Modules (Sinking type)

Model	Number of Outputs	Max. switching capacity	External Connection
CJ1W-OD201	8 pts.	12 to 24 VDC, 2 A/point, 8.0 A/unit	Terminal Block
CJ1W-OD211	16 pts.	12 to 24 VDC, 0.5 A/point, 5.0 A/unit	Terminal Block
CJ1W-OD231	32 pts.	12 to 24 VDC, 0.5 A/point, 2.0 A/common, 4.0A/unit	Fujitsu Connector
CJ1W-OD233	32 pts.	12 to 24 VDC, 0.5 A/point, 2.0 A/common, 4.0A/unit	MIL Connector
CJ1W-OD261	64 pts.	12 to 24 VDC, 0.3 A/point, 1.6 A/common, 6.4 A/unit	Fujitsu Connector
CJ1W-OD263	64 pts.	12 to 24 VDC, 0.3 A/point, 1.6 A/common, 6.4 A/unit	MIL Connector

• Transistor Output Modules (Sourcing Type)

Model	Number of Outputs	Max. switching capacity	External Connection
CJ1W-OD202	8 pts.	24 VDC, 2 A/point, 8.0 A/unit Load short protection, Disconnection detection alarm	Terminal Block
CJ1W-OD212	16 pts.	24 VDC, 0.5 A/point, 5.0 A/unit Load short protection	Terminal Block
CJ1W-OD232	32 pts.	24 VDC, 0.5 A/point, 2.0 A/common 4.0A/unit Load short protection	MIL Connector

Note: Additional information on all basic I/O modules can be found in manual W393-E1-☐

■ Special I/O Modules

• Analog Input Modules

Item			Specifications		
Model Number			CJ1W-AD081	CJ1W-AD081-V1	CJ1W-AD041-V1
Number of Analog outputs			8 points	8 points	4 points
Signal Ranges	Voltages	1 to 5 volts	Yes		
		0 to 10 volts	Yes		
		0 to 5 volts	Yes		
		-10 to 5 volts	Yes		
	Currents	4 to 10 mA	Yes		
Signal Range Settings			8 settings (1 for each point)		4 settings (1 for each point)
Resolution			1/4000	1/8000 (Settable to 1/4000)	
Conversion Speed			1.0 ms/point max.	0.25 ms/point max. (settable to 1.0 ms/point)	
Overall Accuracy (at 91.4°F)			Voltage: ±0.2%, Current: ±0.4%		
Connector Type			18 point detachable terminal block (M3 screws)		
Features	Wire burnout detection		Yes		
	Peak hold function		Yes		
	Averaging		Yes		
Unit No.			0 to 95		

Note:
1. The maximum number of Analog Output Modules that can be mounted to one rack varies depending on the current consumption of the other Units mounted to the rack.
2. Input signal ranges can be set for each input.
3. The accuracy is given for full scale. For example, an accuracy of +/-0.2% means a maximum error of +/-8 (BCD). The default setting is adjusted for voltage input. To use current input, perform the offset and gain adjustments as required.
4. A/D conversion time is the time it takes for an analog signal to be stored in memory as converted data after it has been input. It takes at least one cycle before the converted data is read by the CPU.
5. For additional information refer to catalog W345-E1-☐

• **Analog Output Modules**

Item			Specifications	
Model Number			CJ1W-DA041	CJ1W-DA021
Classification			Special I/O Module	
Number of mountable modules			10 Units max. (See Note 1)	
Isolation			Between I/O and PC signals: Photo-coupler (No isolation between individual I/O signals.)	
Number of Analog Outputs			4 points	2 points
Signal Ranges	Voltages	1 to 5 volts	Yes	
		0 to 10 volts	Yes	
		0 to 5 volts	Yes	
		-10 to 5 volts	Yes	
	Currents	4 to 10 mA	Yes	
Signal Range Settings			4 settings (1 for each point)	2 settings (1 for each point)
Resolution			1/4000	
Conversion speed			1.0 ms/ point max.	
Overall Accuracy			Voltage: ±0.3%, Current: ±0.5%	
Connector type			18 point detachable terminal block (M3 screw)	
Unit No.			0 to 95	
External Power consumption			More than 200 mA at 24 VDC+10%,-15%	

Note:
1. The maximum number of Analog Output Modules that can be mounted to one rack varies depending on the current consumption of the other modules mounted to the rack.
2. Output signal ranges can be set for each output.
3. The accuracy is given for full scale. For example, an accuracy of +/-0.3% means a maximum error of +/-12 (BCD).
4. D/A conversion time is the time required for converting and outputting the PC data. It takes at least one cycle before the data stored in the PC to be read by the Analog Output Module.
5. For additional information refer to catalog W345-E1-□

• **Temperature Control Modules**

Model Number	Temperature Sensor Inputs	Number of Loops	Control Outputs	Unit Numbers
CJ1W-TC001	Thermocouples (R, S, K, J, T, B, or L)	4	Open-collector NPN output (pulse)	0 to 94
CJ1W-TC002			Open-collector PNP output (pulse)	
CJ1W-TC003		2 *	Open-collector NPN output (pulse)	
CJ1W-TC004			Open-collector PNP output (pulse)	
CJ1W-TC101	Platinum resistance thermometers (JPt100 or Pt100)	4	Open-collector NPN output (pulse)	
CJ1W-TC102			Open-collector PNP output (pulse)	
CJ1W-TC103		2 *	Open-collector NPN output (pulse)	
CJ1W-TC104			Open-collector PNP output (pulse)	

Note: For additional information refer to catalog W396-E1-□

• Position Control Modules

Item	Specifications		
Model Number	CJ1W-NC113 CJ1W-NC133	CJ1W-NC213 CJ1W-NC233	CJ1W-NC413 CJ1W-NC433
Unit Name	Position control module		
Classification	Special I/O module		
Unit Numbers	0 to 95		0 to 94
Control Method	Open-loop control by pulse output		
Control Output Interface	CJ1W-NC□13: Open-collector output CJ1W-NC□33: Line-driver output		
Controlled Axes	1	2	4
Operating Modes	Direct operation or memory operation		
Data Format	Binary (hexadecimal)		
Affect on scan time for end refresh	0.29 to 0.41 ms max. per unit		
Affect on scan time for IOWR/IORD	0.29 to 0.41 ms max. per unit		
Startup Time	2 ms max. (refer to operation manual for conditions)		
Position Data	-1,073,741,823 to +1,073,741,823		
No. of Positions	100 per axis		
Speed Data	1 to 500 kps		
No. of Speeds	100 per axis		
Acceleration/Deceleration times	0 to 250 seconds (time to max. speed)		
Acceleratoin/Deceleraton curves	Trapezoidal or S-curve		
Saving Data in CPU	Flash memory		
Windows-based Support software	CX-position (WS02-NCTC1-E)		
Ambient operating Temperature	0 to 55°C (32 to 131°F)		0 to 50°C (32 to 122°F)
External Power Supply	24 VDC ±10%, 5 VDC ±5% (line-driver only)		24 VDC ±5%, 5 VDC ±5% (line-driver only)

Note: For additional information refer to catalog W397-E1-□

■ CPU Bus Units

• Serial Communications Units

Item		Specifications
Model Number		CJ1W-SCU41
Classification		CPU Bus Module
Serial communications ports	Port 1	RS-422A / 485
	Port 2	RS-232C
Protocol	Port 1	Host Link, protocol macro, NT Link, or loopback test can be selected for each port.
	Port 2	
Number of mountable modules		A total of up to 16 Modules, including all other CPU Bus Modules. No restrictions on the mounting location.
Current consumption (See note)		380 mA + x
Weight		110 g max.
General specifications		Conforms to general specifications for SYSMAC CJ Series.

Note: A current consumption of 150 mA must be added for each Link Adapter that is connected. In the above specifications, “x” indicates that 150 mA must be added for each port to which a NT-AL001-E Link Adapter is connected to provide the required 5-V power supply.

■ Protocol Specifications

• Host Link Specifications

Item	Specifications
Communications mode	Half-duplex (Full-duplex for slave-initiated communications)
Synchronous mode	Start-stop synchronization (asynchronous mode)
Baud rate (See Note 1)	RS-232C port and RS-422A/485 ports: 1,200/2,400/4,800/9,600/19,200/38,400/57,600/115,200 bps Default setting: 9,600 bps
Communications distance (See Note 1)	RS-232C port:15 m max.(See Note 2) RS-422A/485 port: 500 m max. (The total combined cable length is 500 m max. T-branch lines must be a maximum of 10 m long.)
Connection configuration	RS-232C port: 1:1 (1:N (N=32 Units max.) is possible using an Converting Link Adapters.) RS-422A/485 port: 1:N (N=32 Units max.)
Number of connected Modules	32 Units max. (unit numbers 0 to 31;unit number 0 is set for 1:1 connection)

Note:
1. Confirm the baud rates and communications distance supported by connected devices.
2. The maximum cable length for RS-232C is 15m. The RS-232C standard, however, does not cover baud rates above 19.2 Kbps. Refer to the manual for the device being connected to confirm support.
3. For additional information refer to catalog W336-E1-□

■ Protocol Macro Function Specifications

Item		Specifications
Number of protocols	20 max.	Can be created and registered with the Protocol Support Tool (CX-Protocol).
Number of sequences	1,000 max	
Per protocol	Number of sequences	60 max.
	Number of messages	300 max.
	Number of reception matrixes	100 max.
Sequence execution condition		Using the CPU's PMCR(260) instruction (specifying the sequence number)
Communications mode		Half-duplex or full-duplex
Synchronous mode		Start-stop synchronization (asynchronous mode)
Baud rate (See Note 1)		RS-232C port and RS-422A/485 ports: 1,200/2,400/4,800/9,600/19,200/38,400 bps Default setting: 9,600 bps
Communications distance (See Note 1)		RS-232C port:15 m max.(See Note 2) RS-422A/485 port: 500 m max. (The total combined cable length is 500 m max. T-branch lines must be a maximum of 10 m long.)
Connection configuration		RS-232C port: 1:1 (1:N (N=32 Units ma.) is possible using an Converting Link Adapters.) RS-422A/485 port: 1:N (N=32 Units max.)
Number of connected Modules		32 Modules max.(unit numbers 0 to 31; unit number 0 is set for 1:1 connection)

Note: 1. Confirm the baud rates and communications distance supported by connected devices.
2. The maximum cable length for RS-232C is 15m. The RS-232C standard, however, does not cover baud rates above 19.2 Kbps. Refer to the manual for the device being connected to confirm support
3. For additional information refer to catalog W345-E1-□ and/or W344-E1-□

■ Controller Link Modules

Item	Specifications
Model Number	CJ1W-CLK21
Classification	CPU Bus Module
Number of mountable modules	A total of up to 4 units. No restrictions on the mounting location.
Communications method	N:N token bus
Code	Manchester code
Modulation	Baseband code
Synchronization	Flag synchronization (conforms to HDLC frames)
Transmission path form	Multi-drop bus
Baud rate and maximum transmission distance	The maximum transmission distance varies with the baud rate as follows: 2 Mbps: 500 m 1 Mbps: 800 m 500 Kbps: 1 km
Media	Specified shielded twisted-pair cable Number of signal lines: 2, shield line: 1
Node connection method	Connected to a terminal block
Maximum number of nodes	32 nodes
Communications functions	Data links and message service
Number of data link words	Transmission area per node: 1,000 words (2,000 bytes) max. Data link area in one C200HX/HG/HE, CVM1, CV-series, or CM1H-series PC (send/receive): 8,000 words (16,000 bytes) max. Data link area in one CS/CJ-series PC (send/receive): 12,000 words (24,000 bytes) max. Date link area in one IBM PC/AT or compatible (transmission/reception): 32,000 words (64,000 bytes) max. Number of data link words in one network (total transmission): 32,000 words (64,000 bytes) max.

Note: For additional information refer to catalog W309-E1-□

■ Controller Link Modules (continued)

Item	Specifications
Data link areas	Bit areas (IR,AR,LR,CIO), data memory (DM), and extended data memory (EM)
Message length	2,012 bytes max. (including the header)
RAS functions	Polling node backup function Self-diagnosis function (hardware checking at startup) Echo-back test and broadcast test (using the FINS command) Watchdog timer Error log function
Error control	Manchester code check CRC check (CCITT $X^{16}+X^{12}+X^{5}+1$)
Current consumption	350 mA
Weight	110 g
General specifications	Conforms to general specifications for SYSMAC CJ Series.

Note: For additional information refer to catalog W309-E1-☐

■ Ethernet Units

Item			Specifications
Model Number			CJ1W-ETN11
Type			10Base-T
Unit classification			CPU Bus Unit
Number of mountable modules			A total of up to 4 modules. No restrictions on the mounting location.
Transfer specifications	Media access method		CSMA/CD
	Modulation		Base-band
	Transmission paths		Star
	Baud rate		10 Mbps
	Transmission media		Unshielded twisted-pair (UTP) cable
	Transmission distance	Segment length	100 m max.
Current consumption			380 mA
Weight			100 g max.
General specifications			Conforms to general specifications for SYSMAC CJ Series.

Note: For additional information refer to catalog W343-E1-☐

■ DeviceNet Modules (DeviceNet Master)

Item		Specifications		
Maximum number of control points		Fixed Allocations	User-set Allocations	
			Using Allocated DM area words	Using Configurator
	When used as a master	Inputs: 1,024 points Outputs: 1,024 points Total: 2,048 points (128 words)	Inputs: 8,000 points Outputs: 8,000 points Total: 16,000 points (1,000 words)	Inputs: 8,000 points x2 blocks Outputs: 8,000 points x2 blocks Total: 32,000 points (2,000 words)
	When used as a slave	Inputs: 16 points Outputs: 16 points Total: 32 points (2 words)	Inputs: 1,600 points x1 block Outputs: 1,600 points x2 blocks Total: 4,800 points (300 words)	Inputs: 1,600 points x1 block Outputs: 1,600 points x2 blocks Total: 4,800 points (300 words)

■ DeviceNet Modules

Item	Specifications
Communication method	Conforms to the DeviceNet protocol
Connection method	Multi-drop method and T-branch method (See note 1)
Communication baud rate	500000, 250000, 125000 bps (switchable)
Communication cable	Special cable: 5-conductor cable (2 signal wires, 2 power supply wires, and 1 shielded wire)
Communication distance	500000 bps: Max. network length (See note 2): 100 m (See note 3) Branch line length: 6 m max. Total branch line length: 39 m max. 250000 bps: Max network length (See note 2): 250 m (See note 3) Branch line length: 6 m max. Total branch line length: 78 m max. 125000 bps: Max network length (See note 2): 100 m (See note 3) Branch line length: 6 m max. Total branch line length: 156 m max.
Max. no. of connecting nodes	64 including one Master Module and 63 slave modules
Error control checks	CRC, node address multiple check, and scan list collation

Note: 1. A terminal must be connected to the point in the system farthest from the Master.
2. The maximum network length is the distance between two nodes that are farthest from each other.
3. The maximum netork length is 100 m if the trunk line uses a dedicated thin cable.
4. For additional information refer to catalog W380-E1-□

■ CompoBus/S Modules

• Master Specifications

Item	Specifications
I/O points	256 (128 inputs and 128 outputs) or 128 (64 inputs and 64 outputs), switch selectable
Allocated words	For 256 I/O: 20 words (8 for inpuits, 8 for outputs and 4 for status), for 128 I/O: 10 words (4 for inputs, 4 for outputs, and 2 for status)
No. of mountable master units	40
Node addresses	8 addresses per node
No, of connectable slaves	32
Status information	Communications Error Flag, Participation Flags

Note: For additional information refer to catalog W380-E1-□

• Communications Specifications

Item		Specifications
Communications method		Special CompoBus/S protocol
Coding		Manchester
Connections		Multi-drop, T-branch (requires termination)
Communications cycle time	High-speed mode	750 kbps
	Long-distance mode	93.75 kbps set via DIP switch. (Set via DM area, default: 750 kbps)
Media		Belden #9409 twisted pair cable, omron special flat cable: SCA1-4F10
Max. No. of nodes		32
Error control checks		Manchester code, frame length and parity checks

Note: 1. For 16 slaves or fewer: Main 100 m, Total branch: 50 m.
2. No restrictions on branching method or individual line lengths. Connect terminating resistance to Slave farthest from Master.
3. For additional information refer to catalog W266-E1-□

Current Consumption

Power Supply Unit	Max. Current Consumption		Max. Total Power Consumption
	5V group	**24V group (supply to Relay Output)**	
CJ1W-PA205R	5.0 A	0.8 A	25 W
CJ1W-PA202	2.8 A	0.4 A	14 W

Note: This table shows the maximum currents and power that can be supplied by Power Supply Modules on CPU Racks and Expansion Racks.

■ Current Consumption Tabe

Name	Model	5V-Consumption
CPU (These values include current consumption by a Programming Console or CX-Programmer)	CJ1H-CPU65H/CJ1G-CPU66H	0.99 A (See note)
	CJ1G-CPU42H/CJ1G-CPU43H CJ1G-CPU44H/CJ1G-CPU45H CJ1G-CPU44/CJ1G-CPU45	0.910 A (See note)
Expansion module	CJ1W-IC101	0.020 A
	CJ1W-II101	0.130 A
End cover	CJ1W-TER01	Included in CPU or Expansion module

Note: Add 0.15 per port when the NT-AL001-E is connected.

• Basic I/O Modules

Category	Name	Model	5V-Consumption
Input Modules	DC Input	CJ1W-ID211 CJ1W-ID231 CJ1W-ID232 CJ1W-ID261 CJ1W-ID262	0.080 A 0.090 A 0.090 A 0.090 A 0.090 A
	AC Input	CJ1W-IA111 CJ1W-IA201	0.090 A 0.080 A
Output Modules	Transistor Output	CJ1W-OD201 CJ1W-OD202 CJ1W-OD211 CJ1W-OD212 CJ1W-OD231 CJ1W-OD232 CJ1W-OD233 CJ1W-OD261 CJ1W-OD263	0.090 A 0.110 A 0.100 A 0.100 A 0.140 A 0.150 A 0.140 A 0.170 A 0.170 A
	Relay Output	CJ1W-OC201 CJ1W-OC211	0.090 A 0.110 A
	Triac Output	CJ1W-OA201	0.220 A
Interrupt Input Module		CJ1W-INT01	0.080 A

• Special I/O Modules

Category	Name	Model	5V-Consumption
Special I/O Modules	Analog Input Module	CJ1W-AD081/CJ1W-AD081-V1 CJ1W-AD041-V1	0.420 A
	Analog Output Module	CJ1W-DA041 CJ1W-DA021	0.120 A
	Temperature Control Module	CJ1W-TC❑❑❑	0.250 A
	Position Control Module	CJ1W-NC1❑3 CJ1W-NC2❑3	0.250 A
		CJ1W-NC4❑3	0.360 A
	High-speed Counter Module	CJ1W-CT021	0.280 A

- **Communication I/O Modules**

Category	Name	Model	5V-Consumption
CPU Bus Modules	Controller Link Module	CJ1W-CLK21	0.350 A
	Serial Communications Module	CJ1W-SCU41	0.380 A (See Note)
	Ethernet Module	CJ1W-ETN11	0.380 A
	DeviceNet Module	CJ1W-DRM21	0.330 A
	CompoBus/S Master Module	CJ1W-SRM21	0.150A

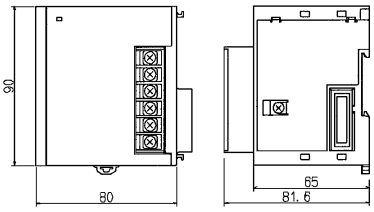
Note: Add 0.15 A per port when the NT-AL001-E is connected.

- **24VDC Voltage Group**

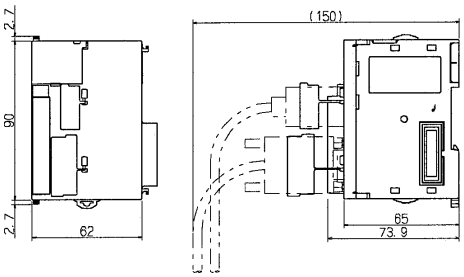
Category	Name	Model	24 V Consumption
Output Modules	Relay Output Modules	CJ1W-OC201	0.048 A (0.006 A X ON bits)
		CJ1W-OC211	0.096 A (0.006 A X ON bits)

Dimensions

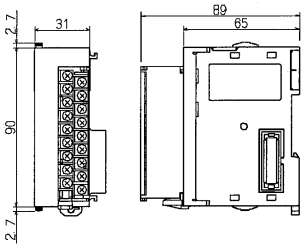
- **Power Supply Unit**
  CJ1W-PA205R



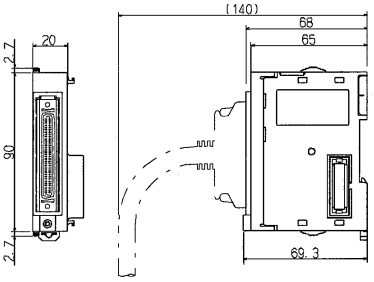
- **CPU Modules**
  CJ1G-CPU44/CPU45



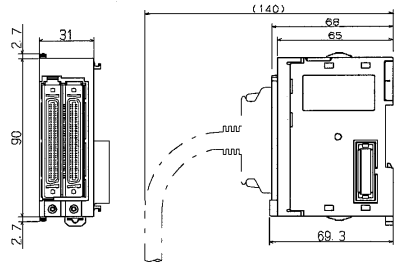
- **8 Points - 16 Points I/O AD/DA and Temperature Control Module**
  CJ1W-ID211/OC201/OC211/
  OD211/OD212
  AD081/DA041/TC □□□



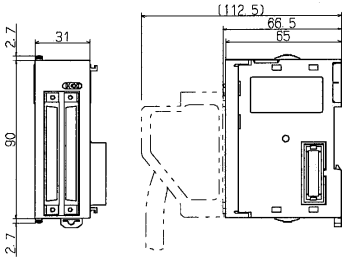
- **I/O Control Module**
  CJ1W-IC101



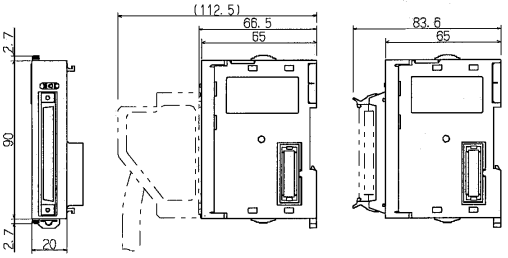
- **I/O Interface Module**
  CJ1W-II 101



- **64 Points I/O Modules**
  CJ1W-1D261/OD261

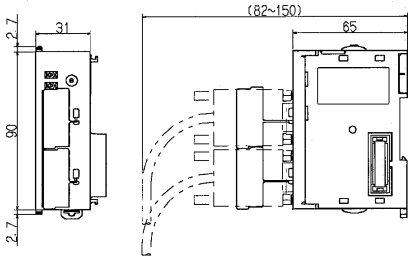


- **32 Points I/O Modules**
  CJ1W-ID231/ID232/OD231/OD232



CJ1W-ID231/OD231 CJ1W-ID232/OD232

- **Serial Communication Controller Link, Ethernet and DeviceNet Modules CJ1W-SCU41/CLK21/ETN11/DRM21**



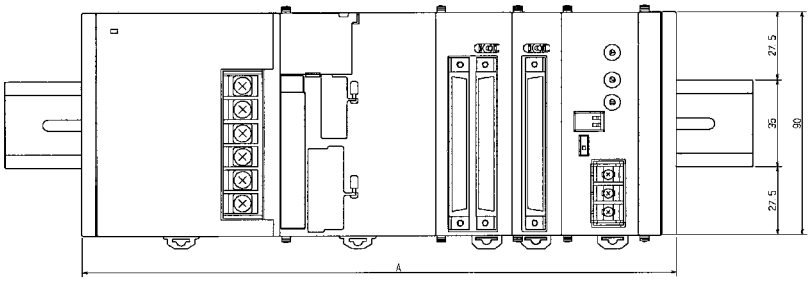
■ Overall CJ1 Dimensions

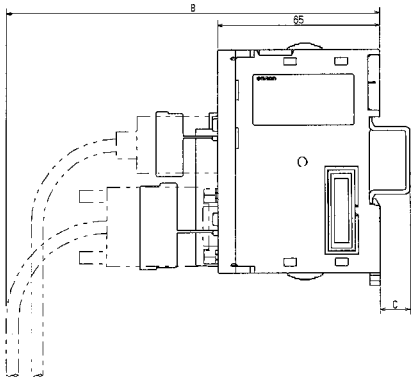
Unit: MM

A=80 (Power Supply Unit) + 62 (CPU) +
20xn + 31Xm + 14.7 (End Cover)

n=Number of I/O Modules (20 mm width)
n=Number of I/O Modules (31 mm width)
B=About 82~150mm

DIN Track	C
PFP-100N2	12 mm
PFP-100N	3.3 mm
PFP-50N	3.3 mm





DIMENSIONS ARE SHOWN IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

OMRON

OMRON ELECTRONICS LLC.
One East Commerce Drive
Schaumburg, IL 60173
1-800-55-OMRON

OMRON ON-LINE
Global - http://www.omron.com
USA - http://www.omron.com/oei
Canada - http://www.omron.com/oci

OMRON CANADA, INC.
885 Milner Avenue
Scarborough, Ontario M1B 5V8
416-286-6465

Cat. No. DS02PI 01/02 Specifications subject to change without notice. Printed in the U.S.A.