OMRON

CP1 Series

Micro Programmable Controllers

» Ethernet communication options for better machine connectivity

» Integrated sequential and motion control

» Improved productivity in a compact controller

All-in-one Package PLCs with Condensed Multi-functionality

A wide variety of built-in functions expand application capabilities and shorten the design time required for the growing number and increasing complexity of ladder programs.

The Ultimate High-performance Package-type PLC

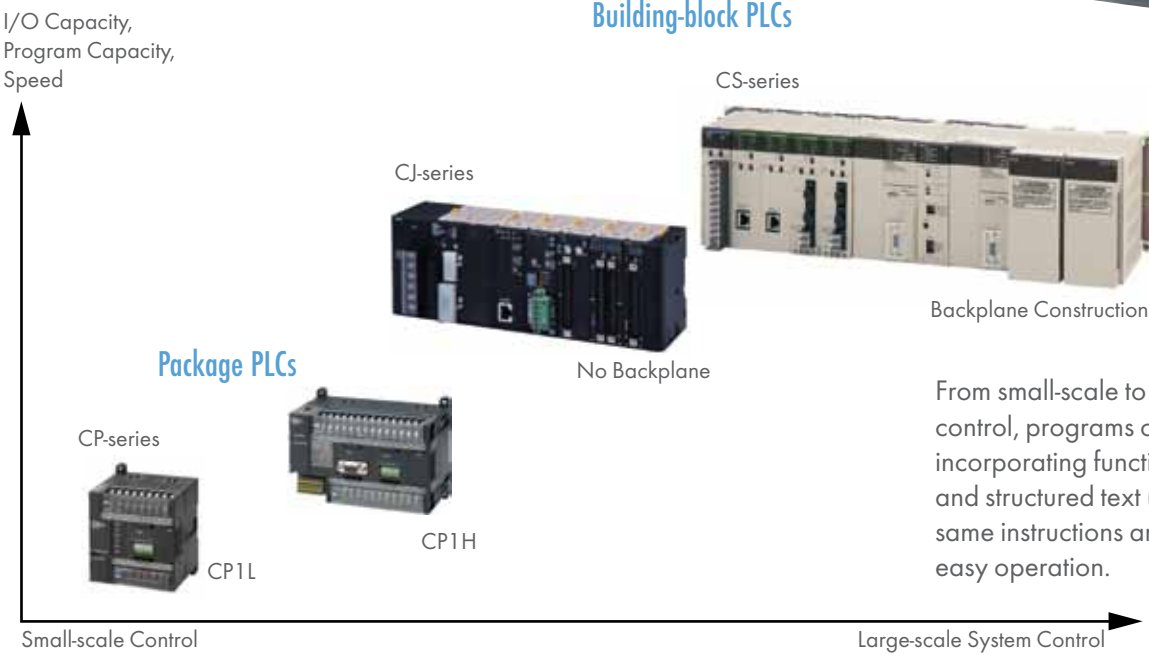
CP1H

Three types of CPU units are available to meet applications requiring advanced functionality:
- The CP1H-X with pulse outputs for 4 axes
- The CP1H-Y with 1-MHz pulse I/O
- The CP1H-XA with built-in analog I/O

A Standard Package-type PLC

CP1L

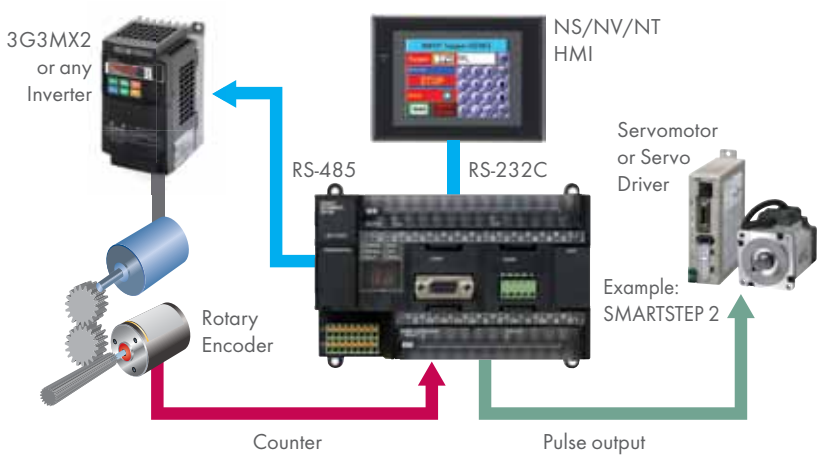
Complete with a standard-feature USB port, CP1L CPU Units are available for applications with as few as 10 I/O points. Whether you need simple sequence control or pulse I/O and a serial port, the CP1L PLCs give you an economical choice from among 10-, 14-, 20-, 30-, 40-, and 60-point CPU Units.



From small-scale to large-scale control, programs can be created incorporating function blocks (FB) and structured text (ST) using the same instructions and with the same easy operation.

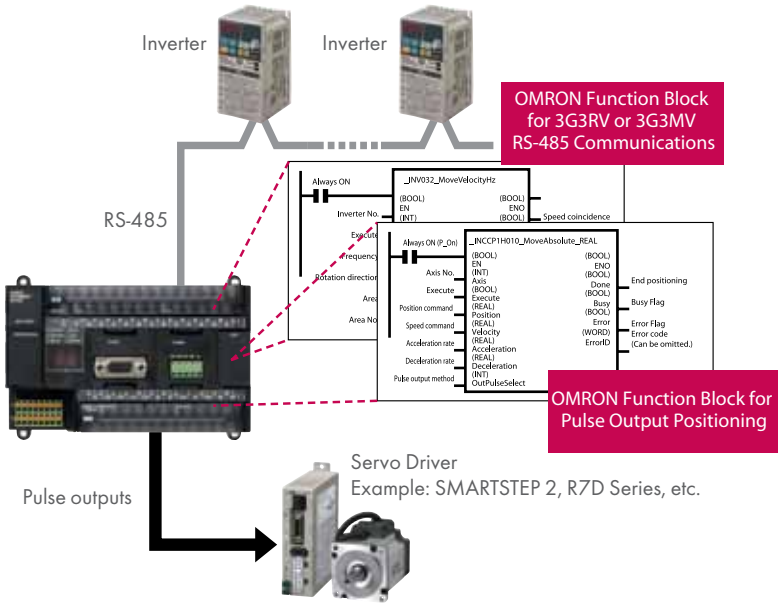
Complete Pulse and Serial Functions

Complete pulse and serial functions for Servo and Inverter applications and applications using programmable terminals.



Function Block Library

For positioning or communications, simply enter the set values for the instructions. Even complicated functions can be easily programmed using the OMRON Function Block (FB) Library.



LCD Displays and Settings

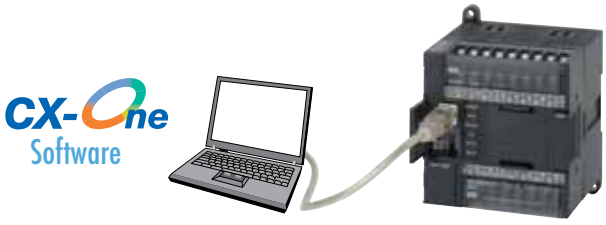
Easy maintenance and startup adjustments with LCD displays and settings. Attach an LCD Option Board to the CPU Unit to easily monitor or change data values in the PLC to visually check error status.

CP1W-DAM01
LCD Option Board
The Board can be used only in the option board slot 1.

CP1H/CP1L
Cannot be used for the CP1L-L10.

USB Port Standard

Built-in high-speed USB provides ultra-fast on-line edits and large program uploads/downloads in seconds. A general-purpose USB cable keeps costs low and can be purchased anywhere.



Wide Range of CPU Units Allows You to Select the Ideal Model

· Program capacity 20K steps
· Processing speed 0.1 µs (basic instructions)

A program capacity of 20K steps and 0.1 µs high-speed processing provide multi-axis, high-speed positioning control or analog control. CJ-series Special I/O Units and CPU Bus Units can also be used.

CP1H-series

A Choice of Three Types of CP1H CPU Unit Lets You Select the Functions You Need.

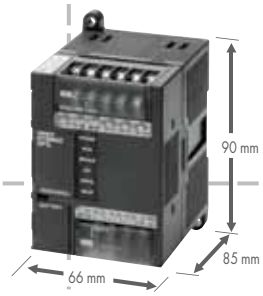
	High-speed Positioning	Built-in Analog I/O	Standard Type
	CP1H-Y CPU Units	CP1H-XA CPU Units	CP1H-X CPU Units
			
Pulse Outputs for 4 Axes	Two axes at 1 MHz and two axes at 100 kHz	Four axes at 100 kHz	
High-speed Counters for 4 Axes	Two axes at 1 MHz for single-phase (500 kHz for differential phases) and two axes at 100 kHz for single-phase (50 kHz for differential phases)	Four axes at 100 kHz for single-phase (50 kHz for differential phases)	
Built-in Analog I/O		Four analog inputs and two analog outputs	
Serial Communications	 RS-232C Option Board  RS-422A/485 Option Board	Up to two Option Boards can be mounted.	
LCD Display Settings	 LCD Option Board	One LCD Option Board can be mounted in option board slot 1.	
Ethernet Option Boards	 CP1W-ETN01-US CP1W-EIP01-US CP1W-MODTCP01-US Ethernet Option Board  CP1W-CIF41 Ethernet Option Board	Up to two option boards can be mounted depending on CPU type and option board type.	

· Program capacity 10K steps
· Processing speed 0.55 µs (basic instructions)

Basic package PLCs with serious functions from simple sequence control to 2-axis positioning control.

CP1L-series

· Program capacity 5K steps
· Processing speed 0.55 µs (basic instructions)



CP1L-L10D□-□

CP1L-L14D□-□

CP1L-L20D□-□

10 points | 14 points | 20 points

CP1H-□□40D□-□

Pulse Outputs
Four-axis control is a standard feature.

Counters: Four-axis differential-phase control is a standard feature.

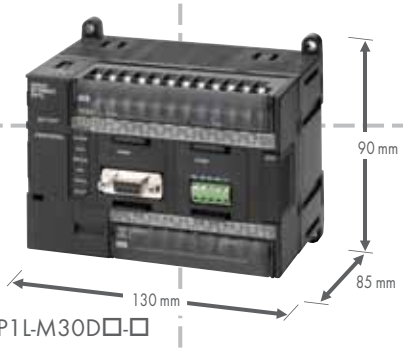
USB Peripheral Port: Another standard feature.

Serial Communications: Two Ports
Select Option Boards for either RS-232C or RS-485 communications.

Ethernet Communications
Up to two option boards can be mounted depending on CPU type.

LCD Displays and Settings
Enabled using Option Board.

Built-in Analog I/O
XA CPU Units provide 4 input words and 2 output words.



CP1L-M30D□-□

CP1L-M40D□-□

CP1L-M60D□-□

Pulse Outputs: Two-axis control at 100 kHz is a standard feature.

Counters with 2-axis differential-phase control are standard features. Single-phase: 4 axes at 100 kHz

USB Peripheral Port: Another standard feature.

Serial Communications: Two Ports (See note.)
Select Option Boards for either RS-232C or RS-485 communications.

Note: CP1L-L CPU Units with 14 and 20 points support only one port.

Ethernet Communications
Up to two option boards can be mounted depending on CPU type.

LCD Displays and Settings
Enabled using Option Board. (See note.)

Note: Cannot be used for the CP1L-L10.

30 points | 40 points | 60 points

Choose the CPU for the Features You Want

	CP1H			CP1L
	Y CPU Units	XA CPU Units	X CPU Units	M Type 60 Points
				
	CP1H-Y20DT-D 24 VDC, 12 DC inputs, 8 transistor (sinking) outputs Two line-driver inputs Two line-driver outputs	**CP1H-XA40DR-A** 100-240 VAC, 24 DC inputs, 16 relay outputs, 4 analog inputs, 2 analog outputs **CP1H-XA40DT-D** 24 VDC, 24 DC inputs, 16 transistor (sinking) outputs, 4 analog inputs, 2 analog outputs **CP1H-XA40DT1-D** 24 VDC, 24 DC inputs, 16 transistor (sourcing) outputs, 4 analog inputs, 2 analog outputs	**CP1H-X40DR-A** 100-240 VAC, 24 DC inputs, 16 relay outputs **CP1H-X40DT-D** 24 VDC, 24 DC inputs, 16 transistor (sinking) outputs **CP1H-X40DT1-D** 24 VDC, 24 DC inputs, 16 transistor (sourcing) outputs	**CP1L-M60DR-A** 100-240 VAC, 36 DC inputs, 24 relay outputs **CP1L-M60DR-D** 24 VDC, 36 DC inputs, 24 relay outputs **CP1L-M60DT-D** 24 VDC, 36 DC inputs, 24 transistor (sinking) outputs **CP1L-M60DT1-D** 24 VDC, 36 DC inputs, 24 transistor (sourcing) outputs
Pulse outputs (only for transistor outputs)	1 MHz for two axes (line driver outputs), 100 kHz for two axes (four axes total)	100 kHz for four axes		
Counters	1 MHz (single-phase), 500 kHz (differential phases) for two axes (line driver outputs), 100 kHz (single-phase), 50 kHz (differential phases) for two axes (four axes total)	100 kHz (single-phase), 50 kHz (differential phases)		
Serial communications	Two serial ports can be added as options (either RS-232C or RS-422A/485 Option Boards).			
USB peripheral port	Yes	Yes	Yes	Yes
Built-in analog I/O	–	4 analog inputs and 2 analog outputs (resolution: 6,000 or 12,000)		–
Memory Cassette		Yes	Yes	Yes
LCD display settings	An LCD Option Board can be added as an option to option board slot 1			
Function blocks (ladder diagrams or ST language)	Yes	Yes	Yes	Yes
Inverter positioning	–	–	–	Yes
7-segment display	Yes	Yes	Yes	–
Program capacity	20K steps			
Data memory capacity	32K words			
High-speed processing	0.1 µs/LD instruction, 0.3 µs/MOV instruction			
Ethernet communications	Maximum two boards can be added depending on PLC and Ethernet option board type. (Omron FINS, Ethernet/IP, Modbus/TCP)			

M Type 40 Points	M Type 30 Points	L Type 20 Points	L Type 14 Points	L Type 10 Points
				
CP1L-M40DR-A 100-240 VAC, 24 DC inputs, 16 relay outputs	**CP1L-M30DR-A** 100-240 VAC, 18 DC inputs, 12 relay outputs	**CP1L-L20DR-A** 100-240 VAC, 12 DC inputs, 8 relay outputs	**CP1L-L14DR-A** 100-240 VAC, 8 DC inputs, 6 relay outputs	**CP1L-L10DR-A** 100-240 VAC, 6 DC inputs, 4 relay outputs
CP1L-M40DR-D 24 VDC, 24 DC inputs, 16 relay outputs	**CP1L-M30DR-D** 24 VDC, 18 DC inputs, 12 relay outputs	**CP1L-L20DR-D** 24 VDC, 12 DC inputs, 8 relay outputs	**CP1L-L14DR-D** 24 VDC, 8 DC inputs, 6 relay outputs	**CP1L-L10DR-D** 24 VDC, 6 DC inputs, 4 relay outputs
CP1L-M40DT-D 24 VDC, 24 DC inputs, 16 transistor (sinking) outputs	**CP1L-M30DT-D** 24 VDC, 18 DC inputs, 12 transistor (sinking) outputs	**CP1L-L20DT-D** 24 VDC, 12 DC inputs, 8 transistor (sinking) outputs	**CP1L-L14DT-D** 24 VDC, 8 DC inputs, 6 transistor (sinking) outputs	**CP1L-L10DT-D** 24 VDC, 6 DC inputs, 4 transistor (sinking) outputs
CP1L-M40DT1-D 24 VDC, 24 DC inputs, 16 transistor (sourcing) outputs	**CP1L-M30DT1-D** 24 VDC, 18 DC inputs, 12 transistor (sourcing) outputs	**CP1L-L20DT1-D** 24 VDC, 12 DC inputs, 8 transistor (sourcing) outputs	**CP1L-L14DT1-D** 24 VDC, 8 DC inputs, 6 transistor (sourcing) outputs	**CP1L-L10DT1-D** 24 VDC, 6 DC inputs, 4 transistor (sourcing) outputs
100 kHz for two axes				
100 kHz (single-phase) for four axes, or 50 kHZ (differential phases) for two axes				
Two optional serial ports can be added (either RS-232C or RS-422A/485 Option Boards).		One optional serial port can be added (either an RS-232C or RS-422A/485 Option Board).		–
Yes	Yes	Yes	Yes	Yes
–	–	–	–	–
	Yes	Yes	Yes	Yes
An LCD Option Board can be added as an option to option board slot 1		An LCD Option Board can be added as an option to option board slot 1		–
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
–	–	–	–	–
10K steps		5K steps		
32K words		10K words		
0.55 µs/LD instruction, 1.84 µs/MOV instruction				
Maximum two boards can be added depending on PLC and Ethernet option board type. (Omron FINS, Ethernet/IP, Modbus/TCP)		One Ethernet option board can be added depending on PLC type. (Omron FINS, Ethernet/IP, Modbus/TCP)		

CP1W-series and CJ-series Units Can Be Used for Maximum Expandability

Option Boards

Options

Economical Ethernet Option Board
CP1W-ETN01-US

Advanced Ethernet Option Board
CP1W-CIF41

Ethernet/IP Option Board
CP1W-EIP01-US

Modbus/TCP Master/Slave Ethernet Board
CP1W-MODTCP01-US

RS-232C Option Board
CP1W-CIF01

RS-422A/485 Option Board
CP1W-CIF11

LCD Option Board
CP1W-DAM01

Memory Cassette
CP1W-ME05M

CP1H and CP1L

Expansion I/O Units

CP1W-8ED
- 8 DC inputs

CP1W-8ER
- 8 relay outputs

CP1W-8ET
- 8 transistor outputs (sinking)

CP1W-8ET1
- 8 transistor outputs (sourcing)

CP1W-16ER
- 16 relay outputs

CP1W-16ET
- 16 transistor outputs (sinking)

CP1W-16ET1
- 16 transistor outputs (sourcing)

CP1W-20EDR1
- 12 DC inputs
- 8 relay outputs

CP1W-20EDT
- 12 DC inputs
- 8 transistor outputs (sinking)

CP1W-20EDT1
- 12 DC inputs
- 8 transistor outputs (sourcing)

CP1W-40EDR
- 24 DC inputs
- 16 relay outputs

CP1W-40EDT
- 24 DC inputs
- 16 transistor outputs (sinking)

CP1W-40EDT1
- 24 DC inputs
- 16 transistor outputs (sourcing)

Analog Units

Analog Input Unit
CP1W-AD041
- Analog inputs: 4 (resolution: 6,000)

Analog Output Unit
CP1W-DA041
- Analog outputs: 4 (resolution: 6,000)

Analog I/O Unit
CP1W-MAD11
- Analog inputs: 2 (resolution: 6,000)
- Analog outputs: 1 (resolution: 6,000)

Temperature Sensor Unit

Temperature Sensor Unit

CP1W-TS001

· Thermocouple inputs: 2

CP1W-TS002

· Thermocouple inputs: 4

Temperature Sensor Unit

CP1W-TS101

· Platinum-resistance thermometer inputs: 2

CP1W-TS102

· Platinum-resistance thermometer inputs: 4

CompoBus/S I/O Link Unit

CompoBus/S I/O Link Unit

CP1W-SRT21

· Inputs: 8

· Outputs: 8

I/O Connecting Cable

CP1W-CN811

I/O Connecting Cable: 80 cm

Note: CP1W/CPM1A Expansion Units include I/O Connection Cables (in lengths of approx. 6 cm) for side-by-side connection.

DeviceNet I/O Link Unit

DeviceNet I/O Link Unit

CPM1A-DRT21

· Inputs: 32 bits

· Outputs: 32 bits

CP1H Only

CJ-series Special I/O Units and CPU Bus Units

Up to two CJ-series Special I/O Units or CPU Bus Units can be connected by using a CJ Unit Adaptor.
(Refer to page 25 for the Units that can be used. For details on CJ-series Units, refer to the CJ Series Catalog (Cat. No. P052).

CJ Unit Adaptor

CP1W-EXT01
(with End Cover)

Special I/O Units

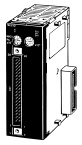
Analog Input Units
CJ1W-AD041-V1
CJ1W-AD081-V1
(4 or 8 points)

Analog Output Units
CJ1W-DA021/041
CJ1W-DA08V/08C
(2, 4, or 8 points)

Analog I/O Unit
CJ1W-MAD42
(4 analog inputs,
2 analog outputs)

Process Input Units
CJ1W-PH41U, CJ1W-AD04U
CJ1W-PTS51/52
CJ1W-PTS15/16, CJ1W-PDC15

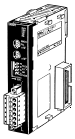
Temperature Control Units
CJ1W-TC□□□
(4 or 2 loops)



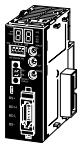
Position Control Units
CJ1W-NC□□□
(1 to 4 axes)

High-speed Counter Unit
CJ1W-CT021
(2 axes)

ID Sensor Units
CJ1W-V680C1□
CJ1W-V600C1□
(1 or 2 Heads)



CompoBus/S
Master Unit
CJ1W-SRM21

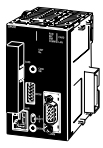


CompoNet Master Unit
CJ1W-CRM21

CPU Bus Units

Position Control Unit with
MECHATROLINK-II
Communications
CJ1W-NCF71

Motion Control Unit with
MECHATROLINK-II
Communications
CJ1W-MCH71



SYSMAC SPU
High-speed Data
Collection Unit
CJ1W-SPU01-V2

Serial Communications Units
CJ1W-SCU41-V1 (RS-232C and RS-422/485 ports)
CJ1W-SCU21-V1 (Two RS-232C ports)
CJ1W-SCU31-V1 (Two RS-422/485 ports)

Controller Link Unit
CJ1W-CLK23

FL-Net Unit
CJ1W-FLN22
(100Base-TX)

DeviceNet Unit
CJ1W-DRM21

Ethernet Unit
CJ1W-ETN21
CJ1W-EIP21

Pulse Outputs

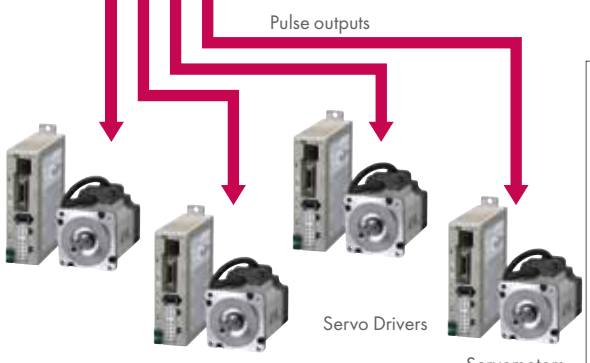
Up to Four Axes Are Standard. Advanced Power for High-precision Positioning Control.

- Positioning for Electronic Component Manufacturing Equipment
- Sheet Feeding for Vertical Pillow Packer

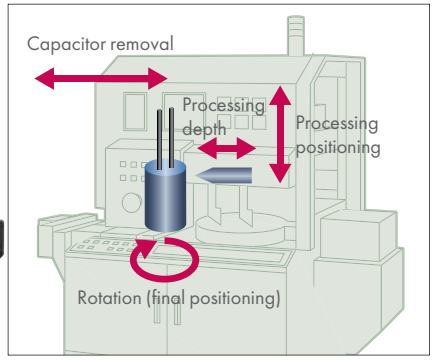
CP1H

Pulse Output Function for Up to Four Axes.

Along with greater precision and more flexibility in multi-product manufacturing, high-speed multi-axis pulse output control responds to the increase in servo applications.



Example: Four-axis Control in Electronic Component Manufacturing Equipment

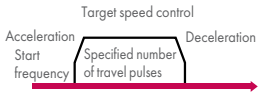


A Full Range of Functions

- **Origin Search Function (ORG Instruction)**
  Origin searches are possible with a single ORG instruction.

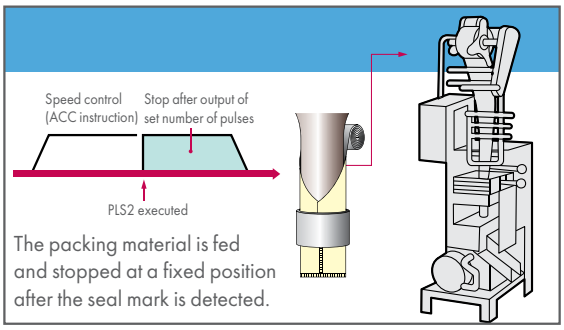
- **Positioning with Trapezoidal Acceleration and Deceleration (PLS2 Instruction)**

Easily achieved with special positioning instruction (PLS2).



S-curve acceleration/deceleration can be used to reduce vibration in high-speed positioning.

- **Interrupt Feeding (ACC and PLS2 Instructions)**



The packing material is fed and stopped at a fixed position after the seal mark is detected.

Applicable CPU Units and Functions

CP1H-Y CPU Unit

1 MHz for 2 axes and 100 kHz for 2 axes, for a total of 4 axes

CP1H-□ CPU Unit

100 kHz for 4 axes

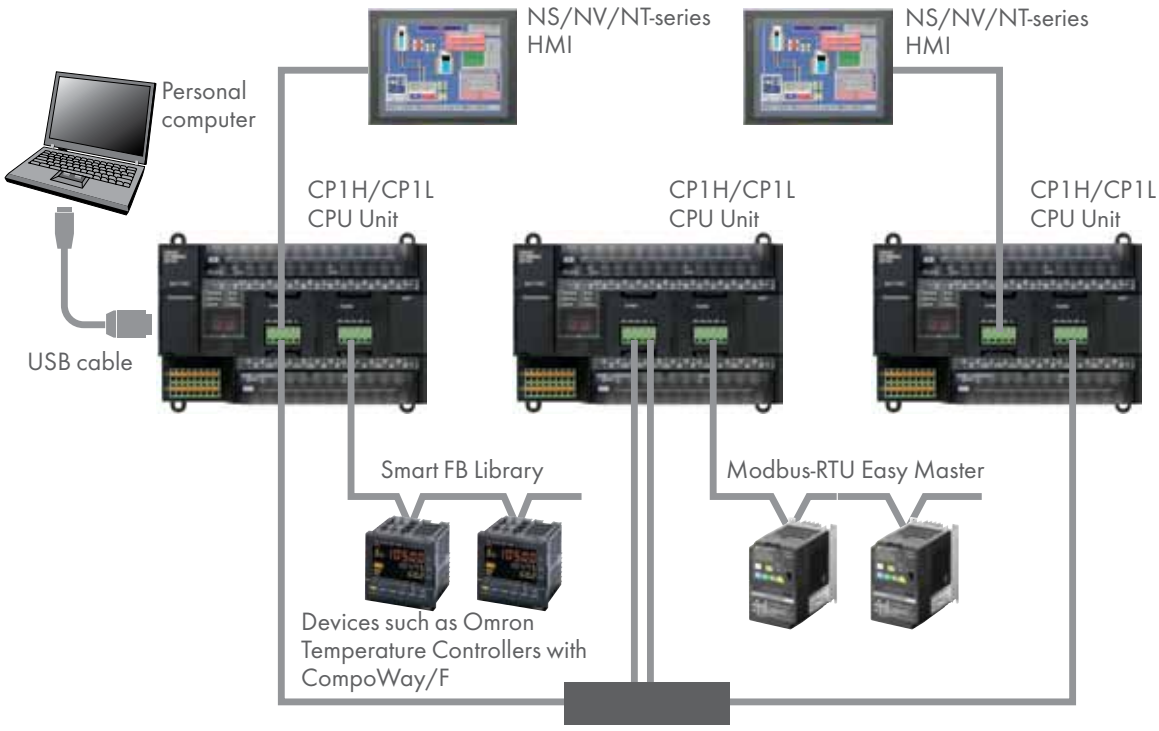
CP1L CPU Unit

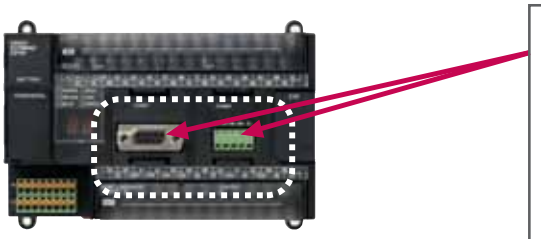
100 kHz for 2 axes

Serial Communications

A Standard USB Port and Two Serial Ports Enable Connections and Communications with a Wide Range of Components.

Up to two Option Boards can be mounted for RS-232C or RS-422A/485 communications. A peripheral USB port has been added to connect to a personal computer for a total of three communications ports, making it easy to simultaneously connect to an HMI, various components (such as Inverters, Temperature Controllers, and Smart Sensors), Serial PLC Link for linking to other PLCs, and a personal computer.





CP1H/CP1L CPU Unit (except CP1L-L10)

Two option board slots can be used for either an RS-232C or RS-422A/485 interface.

RS-232C Option Board CP1W-CIF01

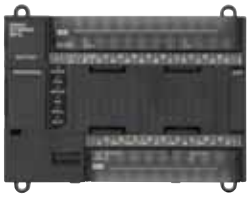
RS-422A/485 Option Board CP1W-CIF11

Applicable CPU Units and Functions

CP1H CPU Unit

Serial Option Boards for two ports *1

CP1L CPU Unit (60, 40, or 30 Points)



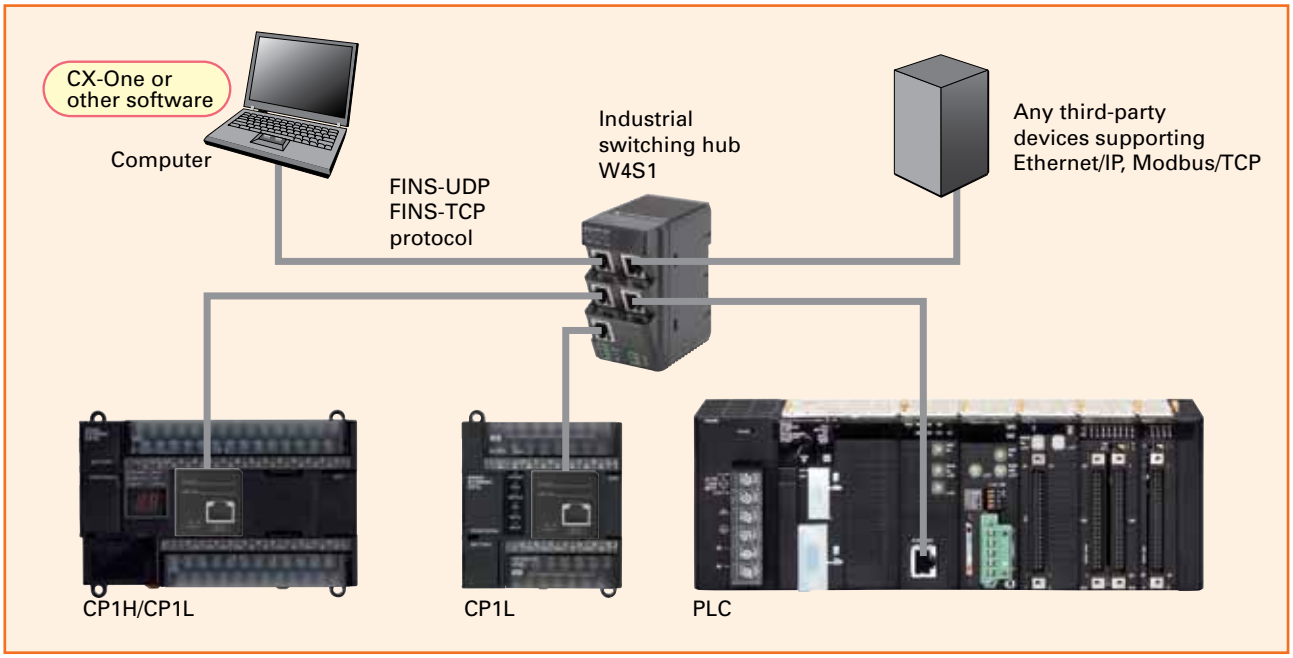
Serial Option Boards for two ports *1

CP1L CPU Unit (20 or 14 Points)

Serial Option Board for one port *2

*1: Only one port can be used if the LCD Option Board is used.
*2: Cannot be used if the LCD Option Board is used.

Ethernet Communications



CP1 Adaptor Ethernet Comparison Chart

Item	CP1W-ETN01-US	CP1W-CIF41	CP1W-EIP01-US
Adapter Description	CP1 Ethernet Adapter	CP1 Ethernet Adapter	CP1 Ethernet/IP Slave Adapter
Type	10/100 Base-TX	10 /100 Base-TX (Auto-MDIX)*	10/100 Base-TX
Applicable PLCs	CP1L or CP1H with an available open Option Port	CP1L or CP1H with an available Option Port	CP1L or CP1H with an available Option Port
Transmission Distance	100 m (distance between hub and node)	100 m (distance between hub and node)	100 m (distance between hub and node)
Number of units mounted	Two (both option ports can be used) (One for CP1L-L14,CP1L-L20)	One (only one unit can be used at a time)	One (only one unit can be used at a time)
Supports Default Gateway	No	Yes	No
Maximum connections per device	Two connections (ie: CX-Programmer and NS HMI)	Two connections (ie: CX-Programmer and NS HMI)	One (Must be connected to an Omron CJ/CS Ethernet/IP Master or Rockwell ControlLogix/CompactLogix Ethernet/IP Master)
Number of nodes on network	254	254	128 Connections
Default IP Address	192.168.250.11	192.168.250.1	192.168.250.11
Web Page IP Address Set-up	http://192.168.250.11 (Default)	http://192.168.250.1/E00.htm	http://192.168.250.11 (Default)
Port Number	9600 (fixed)	9600 (can be changed)	2222 (fixed)

* Automatically detects the required cable connection type (straight-through or crossover) and configures the connection appropriately.

CP1 Modbus TCP Adapter

Item	Description
CP1W-MODTCP01-US	CP1L or CP1H - Modbus TCP Slave or Modbus TCP Master (Not both simultaneously)
Type / Max# of Modbus Slave nodes	100 Base-TX (Can be used as 10 Base-T) / 254 Max Slave Nodes
Applicable PLCs	CP1L-L14, CP1L-L20, CP1L-M30, CP1L-M40, CP1L-M60, CP1H
Transmission Distance	100 m (distance between hub and node)
Number of units mounted in PLC	2 (1 Modbus TCP Master, 1 Modbus TCP Slave) (CP1L 30 I/O or more or CP1H)
Communication Method	Modbus TCP/IP protocol
Maximum connections per adapter - Slave mode	3 - (2 Modbus TCP connections & 1 FINS) or (1 Modbus TCP connection & 2 FINS)
Maximum connections per adapter - Master mode	1 connection
Current IP Address (Slave mode)	D1200, D1201 (D1200=1st & 2nd Octets in Hex, D1201 = 3rd & 4th Octets in Hex)
Default IP Address / Web Page Set-up	192.168.250.11 / Web Page Set-up: http://192.168.250.11

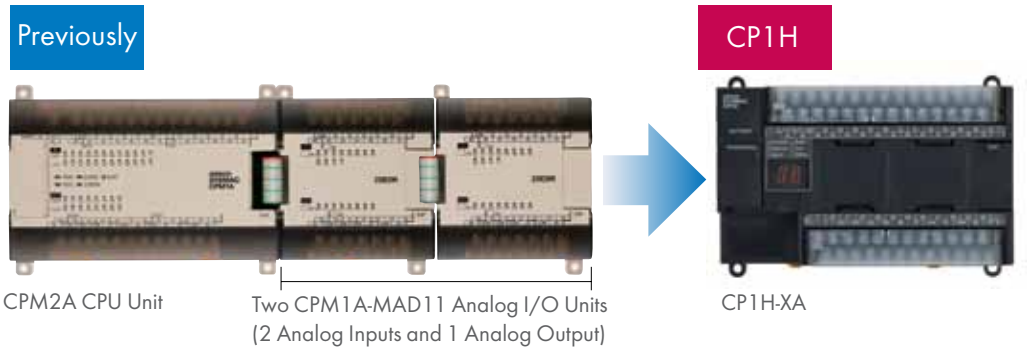
Analog I/O

Four Input Words and Two Output Words for XA CPU Units. Analog Control and Monitoring with Only a Single CPU Unit.

- Surface Inspections Using Inspection Devices
- Mechanisms to Prevent Careless Mistakes in Cell Production (Such as Forgetting to Tighten Screws)
- Oil Pressure Control in Forming Machines

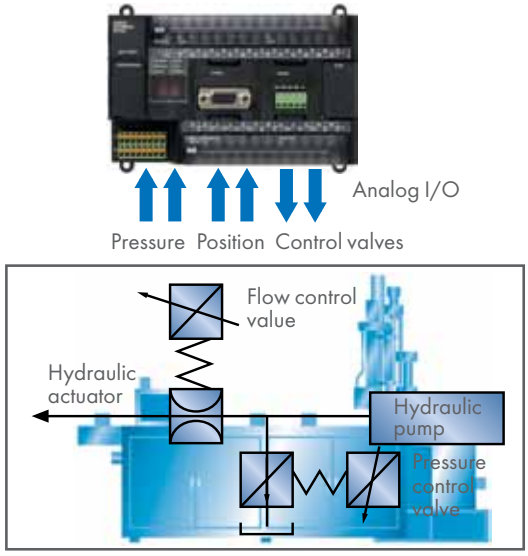
Analog Control without Using Expansion Units

Four analog inputs and two analog outputs are built in. CP1H-XA CPU Units handle a wide range of applications with a single PLC.



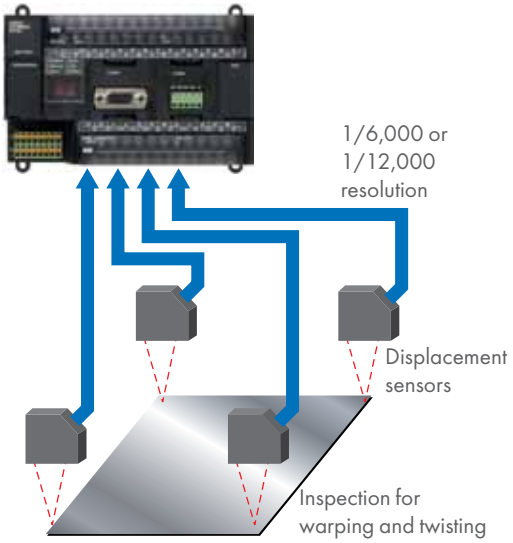
Oil Pressure Control

Oil pressure control can also be handled by this CPU Unit.



Inspection devices

Inspection devices are required more and more to enhance quality.



Applicable CPU Units and Functions

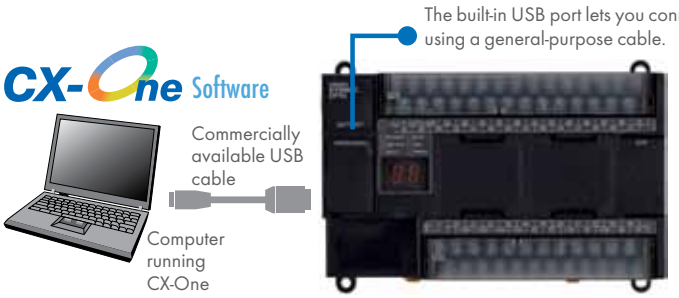
Four analog input words
Two analog output words

Complete with CP1W/CPM1A Analog Units.

- Unit with 4 Analog Inputs
- Units with 4 Analog Outputs
- Units with 2 Analog Inputs and 1 Analog Output

USB Peripheral Port

All CP-series CPU Units Provide a USB Port as a Standard Feature.



Commercially available USB cable (A-type male connector to B-type female connector) can be used, helping to keep costs down.

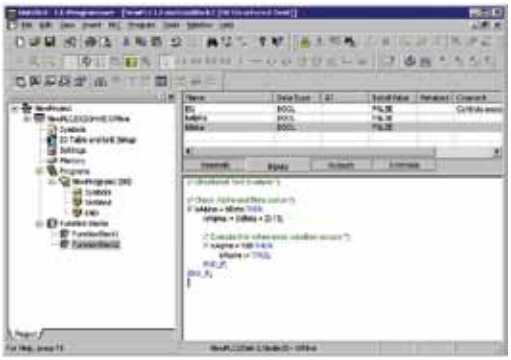
(The CP1H/CP1L USB port is used only for connecting to a Programming Device.)

Note: Programming Consoles (CQM1H-PRO01, C200H-PRO027, etc.) cannot be used with CP1H and CP1L CPU Units.

The Structured Text (ST) Language

Makes Math Operations Even Easier.

OMRON Function Blocks are provided for operations such as run/stop, frequency settings, and monitoring when connected to Inverters by serial communications, and for setting SPs and reading PVs for Temperature Controllers.



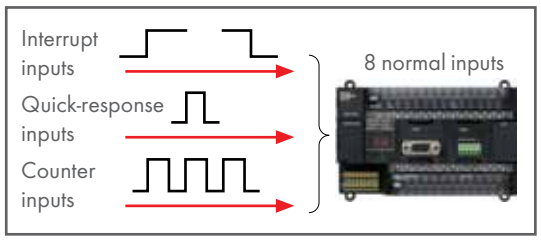
- Structured Text Commands (Keywords)
  TRUE, FALSE.
  IF, THEN, ELSE, ELSIF, END_IF.
  DO, WHILE, END_WHILE.
  REPEAT, UNTIL, END_REPEAT.
  FOR, TO, BY, DO, END_FOR.
  CASE, OF, END_CASE.
  EXIT, RETURN.
- Operators
  Addition (+), Subtraction (-), Multiplication (*), Division (/)
  Parenthesis (brackets), Array Indexing (square brackets [ ])
  Assignment Operator (:=), Less Than Comparison Operator (<),
  Less Than or Equal To Comparison Operator (<=),
  Greater Than Comparison Operator (>),
  Greater Than or Equal To Comparison Operator (>=),
  Equals Comparison Operator (=),
  Is Not Equal To Comparison Operator (<>),
  Bitwise AND (AND or &), Bitwise OR (OR), Exclusive OR (XOR),
  NOT (NOT), Exponentiation (**)
- Numerical Functions
  ABS, SQRT, SQRT, LN, LOG, EXP, SIN, COS, TAN, ASIN, ACOS,
  ATAN, EXPT
- Arithmetic Functions
  Exponentiation (EXPT)

Note: The CP1H/CP1L CPU Units support the same function blocks and ST language as CS/CJ-series CPU Units with unit version 3.0.

High-speed Processing

Up to Eight Interrupt Inputs Can Be Used.

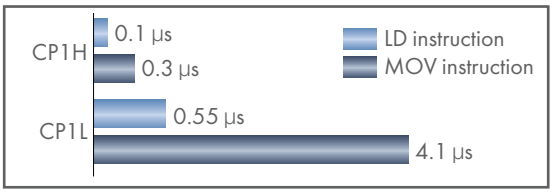
Eight interrupt inputs are built in. Quick-response inputs for pulse widths of 50 µs. The interrupt inputs can also be used as counters. (Response frequency: 5 kHz total for 8 interrupt inputs)



The normal inputs can be set in the PLC Setup as interrupt, quick-response, or counter inputs. (There are 8 normal inputs for the CP1H-X/XA, 6 for the CP1H-Y, 6 for the CP1L with 20, 30, or 40 points, and 4 for the CP1L with 14 points.)

Compared with the CPM2A, Basic Instructions Are at Least Six Times Faster and MOV Instructions Are 26 Times Faster.

Processing speed has been increased not only for basic instructions but also for special instructions as well. Faster processing of approximately 500 instructions speeds up the entire system.



Shortened System Design and Startup Increased Program Reusability

Integrated OMRON PLCs and Component Support Software

CX-One Software

The CX-One is an FA Integrated Tool Package for connecting, setting, and programming OMRON components, including PLCs. CP1H/CP1L programming and settings can be done with just the CX-Programmer, but the CX-One provides Support Software for setting and programming NS-series PTs, Temperature Controllers, and many other components. Using the CX-One makes programming and setup easy, shortening the total lead time required for starting up machines and equipment.

1. Network	CX-Integrator ・ CX-FLnet ・ CX-Protocol
2. PLC	CX-Programmer ・ CX-Simulator ・ SwitchBox Utility
3. HMI	CX-Designer ・ Ladder Monitor software included.*
4. Motion Controller	CX-Drive ・ CX-Motion ・ CX-Motion-MCH CX-Motion-NCF ・ CX-Position
5. Process	CX-Process Tool ・ NS-series Face Plate Auto-Builder
6. Component (for Temperature Controllers)	CX-Thermo

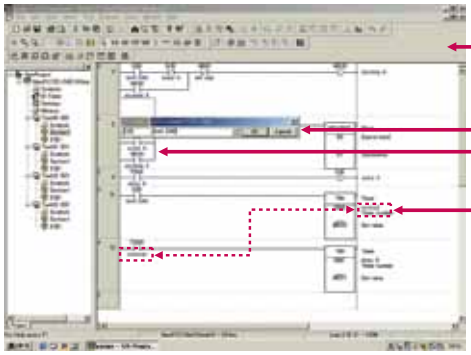
*Note: The Ladder Monitor is required to monitor ladder programs running on CS/CJ-series PLCs from an NS-series PT.

Easy-to-use Programming Software.
Programming with Function Blocks (Ladder Diagrams/ST Language) Is Also Standard.

CX-Programmer

CP1L except for CPU Units with 60 points: Version 7.2 (CX-One version 2.1) or later CP1L CPU Units with 10 or 60 points: Version 7.3 (CX-One version 2.13) or later CP1H: Version 6.2 (CX-One version 1.1) or later

Easy Operation Simplifies Programming and Debugging.



Shortcut keys can be easily checked using the ladder key guide. Programming is simplified by key inputs, such as the C Key for an NC input (contact), the O Key for an OUT instruction, and the I Key for special instructions.

C Key, address, ↵ Key, comment, ↵ Key. The CX-Programmer automatically goes into character input mode when it is time to enter a comment. Special instructions can be input as follows:

Simple key inputs are also available to connect lines.

Ctrl + ← ↑ → ↓

Comments can be added for timer and counter instructions through timer and counter input bits.

The Password Function Enables Protecting Important Programs.

Password setting: Up to 8 alphanumeric characters (A-Z, a-z, 0-9)

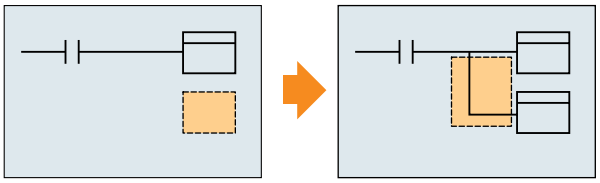
Eight-character Password Protection

Important programs can be protected by setting a password from the CX-Programmer (with the PLC online).

User-friendly Ladder Program Input

Automatic Connecting Line Insertion

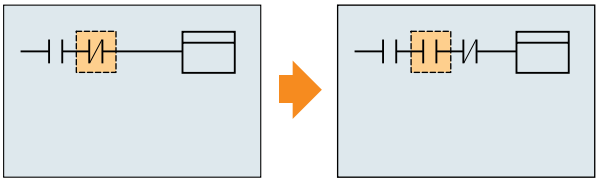
With the automatic connecting line insertion function the necessary connection is added automatically based on the curser position.



When an instruction is input at the curser, a connecting line is automatically inserted.

Automatic Column Insertion When Inserting Instructions

The column is automatically inserted when an instruction is added even if the curser is above another instruction.



When an instruction is input at the curser, a column is automatically inserted for the instruction.

CPU Unit Overview and Built-in Functions

Memory Cassette

- Data, such as programs and initial memory values, can be stored on a Memory Cassette (optional) and copied to other systems.
- The Memory Cassette can also be used when installing new versions of application programs.

CP1W-ME05M
Memory Cassette

Status Displayed on 7-segment Display (CP1H only)

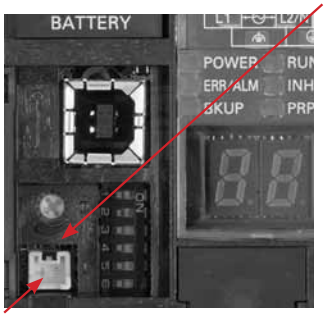
- The 7-segment display provides two display digits.
- In addition to displaying error codes for errors detected by the PLC, codes can be displayed on the display from the ladder program.

Example display: A memory error occurs in the UM (error code 80F1, error details 0001).

- The 7-segment display is useful for maintenance as well, allowing problems that arise during system operation to be grasped without using any Support Software.

Analog Inputs Are Made Simple

An analog adjustment and an external analog setting input connector are provided.



Analog Adjustment
The analog adjustment has a resolution of 256. Values are entered in A642 and can be used in the ladder program. When the value is changed, it is displayed (0 to FF) for three seconds on the 7-segment display.

(Only CP1H CPU Units provide a 7-segment display.)

This connector is used for an 0 to 10-V analog input with a 256 resolution. Each CP1H/CP1L CPU Unit has one of these connectors built in. A device, such as a potentiometer, can be connected to enable direct manual operation and control from a control panel. The maximum cable length is 3 meters. A connecting cable (1 m) is included with the CPU Unit.

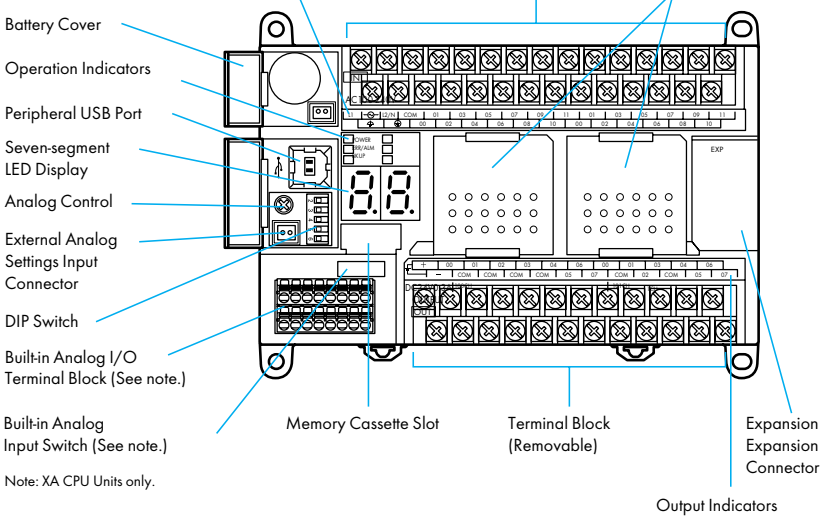
Battery-free Operation

- The values in the DM Area (32K words) are saved in the CPU Unit's built-in flash memory as initial values, and can be read at startup.
- Battery-free operation can be used to enable saving production data and machine parameters in the DM Area, turning OFF the power, and then using then same data again for the next production run. (This is ideal for machinery that is only used seasonally.)

Note:
- A battery is required for the clock function and to retain the status of HR Area bits and counter values.
- A battery is provided as a standard feature with the CPU Unit.
- The user program (ladder program) is stored in built-in flash memory, so no battery is required to back it up.

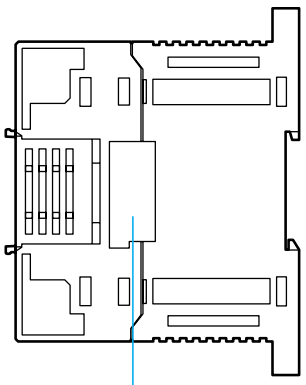
CP1H CPU Unit Nomenclature

Front



Note: XA CPU Units only.

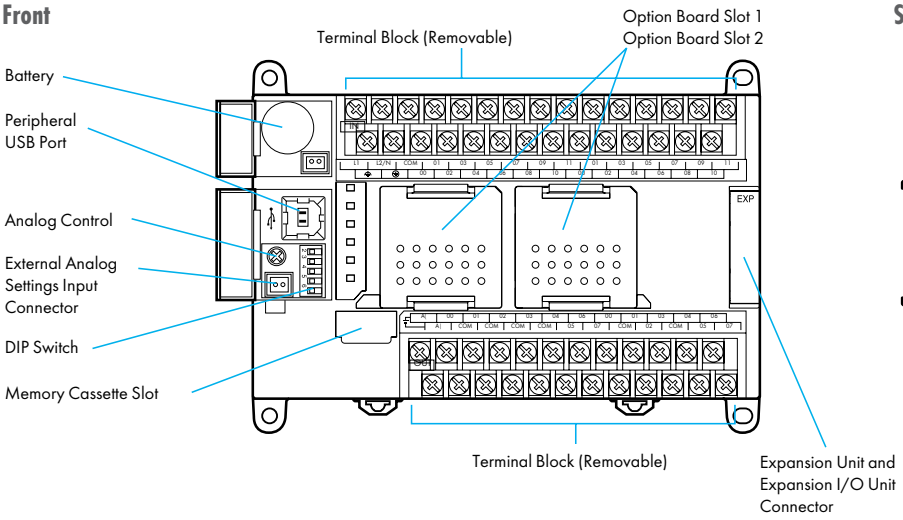
Side



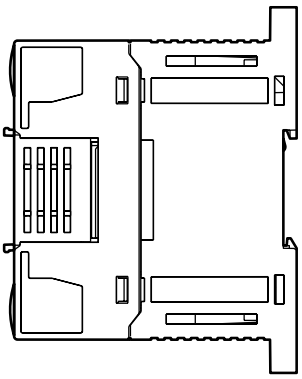
CP1L CPU Unit Nomenclature

CP1L CPU Units (M Type) with 40 Points

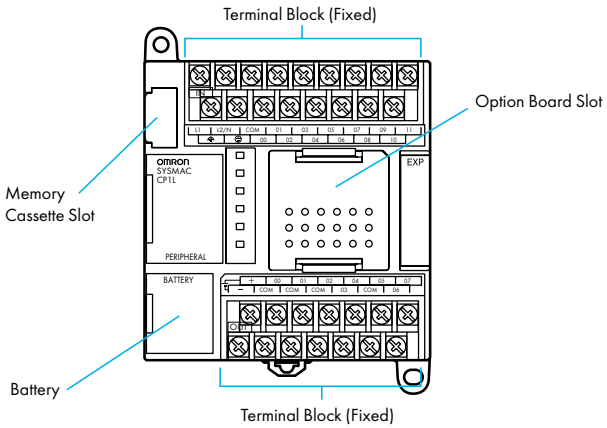
Front



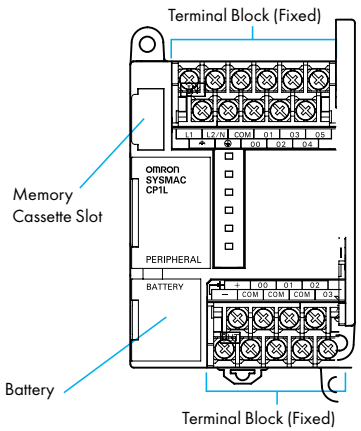
Side



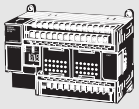
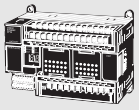
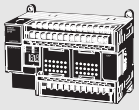
CP1L CPU Units (L Type) with 20 or 14 Points



CP1L CPU Units (L Type) with 10 Points

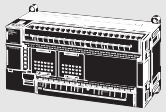
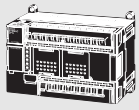
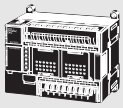
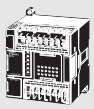


Ordering Information

CPU Unit	Specifications					Model	Standards
	CPU type	Power supply	Output method	Inputs	Outputs		
CP1H-X CPU Units 	**Memory capacity: 20K steps High-speed counters: 100 kHz, 4 axes Pulse outputs: 100 kHz, 4 axes (Models with transistor outputs only)**	100-240 VAC	Relay output	24	16	**CP1H-X40DR-A**	UC1, N, L, CE
		24 VDC	Transistor output (sinking)			**CP1H-X40DT-D**	
			Transistor output (sourcing)			**CP1H-X40DT1-D**	
CP1H-XA CPU Units 	**Memory capacity: 20K steps High-speed counters: 100 kHz, 4 axes Pulse outputs: 100 kHz, 4 axes (Models with transistor outputs only) Analog inputs: 4 Analog outputs: 2**	100-240 VAC	Relay output	24	16	**CP1H-XA40DR-A**	
		24 VDC	Transistor output (sinking)			**CP1H-XA40DT-D**	
			Transistor output (sourcing)			**CP1H-XA40DT1-D**	
CP1H-Y CPU Units 	**Memory capacity: 20K steps High-speed counters: 1 MHz, 2 axes 100 kHz, 2 axes Pulse outputs:1 MHz, 2 axes 100 kHz, 2 axes**	24 VDC	Transistor output (sinking)	12 + line-driver input, 2 axes	8 + line-driver output, 2 axes	**CP1H-Y20DT-D**	

Note 1. CP1H PLCs are supported by CX-Programmer version 6.2 or higher.
2. Purchase a separately sold Option Unit if you will use RS-232C, RS-422A/485, or LCD.

● CP1L CPU Units

CPU Unit	Specifications					Model	Standards
	CPU type	Power supply	Output method	Inputs	Outputs		
CP1L-M CPU Units with 60 Points 	**Memory capacity: 10K steps High-speed counters: 100 kHz, 4 axes Pulse outputs: 100 kHz, 2 axes (Models with transistor outputs only)**	100-240 VAC	Relay output	36	24	**CP1L-M60DR-A**	UC1, N, CE
		24 VDC	Relay output			**CP1L-M60DR-D**	UC1, N, CE
			Transistor output (sinking)			**CP1L-M60DT-D**	
			Transistor output (sourcing)			**CP1L-M60DT1-D**	
CP1L-M CPU Units with 40 Points 	**Memory capacity: 10K steps High-speed counters: 100 kHz, 4 axes Pulse outputs: 100 kHz, 2 axes (Models with transistor outputs only)**	100-240 VAC	Relay output	24	16	**CP1L-M40DR-A**	UC1, N, L, CE
		24 VDC	Relay output			**CP1L-M40DR-D**	UC1, N, L, CE
			Transistor output (sinking)			**CP1L-M40DT-D**	
			Transistor output (sourcing)			**CP1L-M40DT1-D**	
CP1L-M CPU Units with 30 Points 	**Memory capacity: 10K steps High-speed counters: 100 kHz, 4 axes Pulse outputs: 100 kHz, 2 axes (Models with transistor outputs only)**	100-240 VAC	Relay output	18	12	**CP1L-M30DR-A**	UC1, N, L, CE
		24 VDC	Relay output			**CP1L-M30DR-D**	UC1, N, L, CE
			Transistor output (sinking)			**CP1L-M30DT-D**	
			Transistor output (sourcing)			**CP1L-M30DT1-D**	
CP1L-L CPU Units with 20 Points 	**Memory capacity: 5K steps High-speed counters: 100 kHz, 4 axes Pulse outputs: 100 kHz, 2 axes (Models with transistor outputs only)**	100-240 VAC	Relay output	12	8	**CP1L-L20DR-A**	UC1, N, L, CE
		24 VDC	Relay output			**CP1L-L20DR-D**	UC1, N, L, CE
			Transistor output (sinking)			**CP1L-L20DT-D**	
			Transistor output (sourcing)			**CP1L-L20DT1-D**	

Ordering Information

CPU Unit	Specifications					Model	Standards
	CPU type	Power supply	Output method	Inputs	Outputs		
CP1L-L CPU Units with 14 Points 	Memory capacity: 5K steps High-speed counters: 100 kHz, 4 axes Pulse outputs: 100 kHz, 2 axes (Models with transistor outputs only)	100-240 VAC	Relay output	8	6	CP1L-L14DR-A	UC1, N, L, CE
		24 VDC	Relay output			CP1L-L14DR-D	UC1, N, L, CE
			Transistor output (sinking)			CP1L-L14DT-D	
			Transistor output (sourcing)			CP1L-L14DT1-D	
CP1L-L CPU Units with 10 Point 	Memory capacity: 5K steps High-speed counters: 100 kHz, 4 axes Pulse outputs: 100 kHz, 2 axes (Models with transistor outputs only)	100-240 VAC	Relay output	6	4	CP1L-L10DR-A	UC1, N, CE
		24 VDC	Relay output			CP1L-L10DR-D	UC1, N, CE
			Transistor output (sinking)			CP1L-L10DT-D	
			Transistor output (sourcing)			CP1L-L10DT1-D	

Note 1. CP1L PLCs are supported by CX-Programmer version 7.2 or higher, except for 10-point and 60-point CPU Units.
The 10-point and 60-point CPU Units are supported by CX-Programmer version 7.3 or higher.
Update The CX-Programmer version automatically from the website using CX-Programmer version 7.0 (included with CX-One version 2.0).
2. Purchase an Option Unit (sold separately) if you will use RS-232C, RS-422A/485, or LCD.

■ Options for CPU Units

Name	Specifications	Model	Standards
RS-232C Option Board 	Can be mounted in either CPU Unit Option Board slot 1 or 2. Note: Cannot be used for the CP1L-L10.	CP1W-CIF01	UC1, N, L, CE
RS-422A/485 Option Board 	Can be mounted in either CPU Unit Option Board slot 1 or 2. Note: Cannot be used for the CP1L-L10. Maximum transmission distance: 50m	CP1W-CIF11	
RS-422A/485 Isolated-type Option Board 	One RS-422A/485 port (Isolated) Note: Cannot be used for the CP1L-L10. Maximum transmission distance: 500m	CP1W-CIF12	N, L, CE
LCD Option Board 	Can be mounted only in the CPU Unit Option Board slot 1. Note: Cannot be used for the CP1L-L10.	CP1W-DAM01	UC1, N, CE
Memory Cassette 	Can be used for backing up programs or auto-booting.	CP1W-ME05M	UC1, N, L, CE
Economical Ethernet Option Board 	Two can be mounted in either of CPU Unit Option Board slot 1 and 2. Note: Cannot be used for the CP1L-L10.	CP1W-ETN01-US	–
Advanced Ethernet Option Board 	One can be mounted in either CPU Unit Option Board slot 1 or 2. Note: Cannot be used for the CP1L-L10.	CP1W-CIF41	UC1, N, L, CE
Ethernet/IP Slave Option Board 	One can be mounted in either CPU Unit Option Board slot 1 or 2. Note: Cannot be used for the CP1L-L10.	CP1W-EIP01-US	–
Modbus/TCP Master/Slave Option Board 	One can be mounted in either CPU Unit Option Board slot 1 or 2. Note: Cannot be used for the CP1L-L10.	CP1W-MODTCP01-US	–

Ordering Information

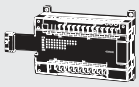
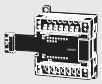
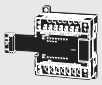
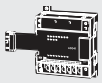
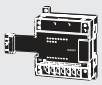
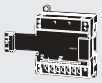
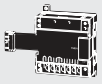
■ Programming Devices

Name	Specifications	Number of licenses	Media	Model	Standards
CX-One FA Integrated Tool Package Ver. 4	CX-One is a package that integrates the Support Software for OMRON. PLCs and components. CX-One runs on the following OS. OS: Windows 98SE, Me, NT 4.0 (Service Pack 6a), 2000 (Service Pack 3 or higher), XP, or Vista CX-One Ver. 4 includes CX-Programmer Ver. 9. For details, refer to the CX-One catalog (Cat. No. R134).	1 license	CD	CX-ONE-AL01C-V4	---
		3 licenses	CD	CX-ONE-AL03C-V4	
		10 licenses	CD	CX-ONE-AL010C-V4	
		30 licenses	CD	CX-ONE-AL30C-V4	
		50 licenses	CD	CX-ONE-AL50C-V4	
CX-One-Lite FA Integrated Tool Package Ver. 4	CXONE Lite is a more compact version targeted to be used with small machine automation that includes the following software tools: CX-Programmer Jr. CX-Integrator, CX-Designer, CX-Thermo, CX-Drive, NV-Designer, CX-Simulator.	1 license	CD	CX-ONE-LT01C-V4	---
		3 licenses	CD	CX-ONE-LT03C-V4	
		10 licenses	CD	CX-ONE-LT10C-V4	
Programming Device Connecting Cable for CP1W-CIF01 RS-232C Option Board (See note 4.)	Connects DOS computers, D-Sub 9-pin (Length: 2.0 m)	For anti-static connectors		C200H-CN229-EV	---
USB-Serial Conversion Cable (See note 4.)	USB-RS-232C Conversion Cable (Length: 0.5 m) and PC driver (on a CD-ROM disc) are included. Complies with USB Specification 1.1 On personal computer side: USB (A plug connector, male) On PLC side: RS-232C (D-sub 9-pin, male) Driver: Supported by Windows 98, Me, 2000, and XP			CS1W-CIF31	N

Note 1. Site licenses are available for users who must run the CX-One on many computers. Ask your OMRON representative for details.
2. CX-Thermo Temperature Controller Support Software runs only on Windows 2000 (Service Pack 3 or higher), XP, or Vista.
3. CX-Programmer of this model is a special tool for CP1□, CPM□□ (CPM1A/CPM2A/CPM2C) series, and SRM1 series PLC. It is not possible to use it with other PLC of the CS/CJ series etc. Please do not make a mistake when you order.
4. Cannot be used with a peripheral USB port.
To connect to a personal computer via a peripheral USB port, use commercially-available USB cable (A or B type, male).

Ordering Information

■ Expansion Units

Name	Output method	Inputs	Outputs	Model	Standards
Expansion I/O Units 	Relay	24	16	CP1W-40EDR	N, L, CE
	Transistor (sinking)			CP1W-40EDT	
	Transistor (sourcing)			CP1W-40EDT1	
	Relay	12	8	CP1W-20EDR1	U, C, L, CE
	Transistor (sinking)			CP1W-20EDT	U, C, N, L, CE
	Transistor (sourcing)			CP1W-20EDT1	
	Relay	---	16	CP1W-16ER	CE
	---	8	---	CP1W-8ED	U, C, N, L, CE
	Relay	---	8	CP1W-8ER	
	Transistor (sinking)		8	CP1W-8ET	
	Transistor (sourcing)			CP1W-8ET1	
Analog Input Unit 	Analog (resolution: 1/6000)	4	---	CP1W-AD041	UC1, N, L, CE
Analog Output Unit 	Analog (resolution: 1/6000)	---	4	CP1W-DA041	
Analog I/O Unit 	Analog (resolution: 1/6000)	2	1	CP1W-MAD11	U, C, N, L, CE
CompoBus/S I/O Link Unit 	---	8 (I/O link input bits)	8 (I/O link output bits)	CP1W-SRT21	U, C, N, L, CE
DeviceNet I/O Link Unit 	---	32 (I/O link input bits)	32 (I/O link output bits)	CM1AW-DRT21	
Temperature Sensor Unit 	2 thermocouple inputs			CP1W-TS001	
	4 thermocouple inputs			CP1W-TS002	
	2 platinum resistance thermometer inputs			CP1W-TS101	
	4 platinum resistance thermometer inputs			CP1W-TS102	

CP1L (L Type) CPU Units with 10 points do not support Expansion Units.

■ I/O Connecting Cable

Name	Specifications	Model	Standards
I/O Connecting Cable	80 cm (for CP1W/CPM1A Expansion Units)	CP1W-CN811	UC1, N, L, CE

Note: An I/O Connecting Cable (approx. 6 cm) for horizontal connection is provided with CP1W/CPM1A Expansion Units.

■ Optional Products, Maintenance Products and DIN Track Accessories

Name	Specifications	Model	Standards
Battery Set	For CP1H CPU Units (Use batteries within two years of manufacture.)	CJ1W-BAT01	CE
DIN Track	Length: 0.5 m; Height: 7.3 mm	PFP-50N	---
	Length: 1 m; Height: 7.3 mm	PFP-100N	
	Length: 1 m; Height: 16 mm	PFP-100N2	
End Plate	There are 2 stoppers provided with CPU Units and I/O Interface Units as standard accessories to secure the Units on the DIN Track.	PFP-M	

Ordering Information

■ CJ-series Special I/O Units and CPU Bus Units

Category	Name	Specifications	Model	Standards
CP1H CPU Unit options	**CJ Unit Adapter**	Adapter for connecting CJ-series Special I/O Units and CPU Bus Units (includes CJ-series End Cover)	**CP1W-EXT01**	UC1, N, L, CE
CJ-series Special I/O Units	**Analog Input Units**	8 inputs (1 to 5 V, 0 to 5 V, 0 to 10 V, –10 to 10 V, 4 to 20 mA) Resolution: 1/8,000, Conversion speed: 250 μs/input max. (Can be set to 1/4,000 resolution and 1 ms/input.)	**CJ1W-AD081-V1**	
		4 inputs (1 to 5 V, 0 to 5 V, 0 to 10 V, –10 to 10 V, 4 to 20 mA) Resolution: 1/8,000, Conversion speed: 250 μs/input max. (Can be set to 1/4,000 resolution and 1 ms/input.)	**CJ1W-AD041-V1**	
	Analog Output Units	8 outputs (1 to 5 V, 0 to 5 V, 0 to 10 V, –10 to 10 V) Resolution: 1/4,000; Conversion speed: 1 ms/output max. (Can be set to 1/8000, 250 μs/output.)	**CJ1W-DA08V**	
		8 outputs (4 to 20 mA) Resolution: 1/4,000; Conversion speed: 1 ms/output max. (Can be set to 1/8,000, 250 μs/ output.)	**CJ1W-DA08C**	UC1, CE
		4 outputs (1 to 5 V, 0 to 5 V, 0 to 10 V, –10 to 10 V, 4 to 20 mA) Resolution: 1/4,000, Conversion speed: 1ms/point max.	**CJ1W-DA041**	UC1, N, L, CE
		2 outputs (1 to 5 V, 0 to 5 V, 0 to 10 V, –10 to 10 V, 4 to 20 mA) Resolution: 1/4,000, Conversion speed: 1ms/point max.	**CJ1W-DA021**	
	Analog I/O Unit	4 inputs, 2 outputs (1 to 5 V, 0 to 5 V, 0 to 10 V, –10 to 10 V, 4 to 20 mA) Resolution: 1/4000; Conversion speed: 1 ms/point max. (Can be set to 1/8,000, 500 μs/point.)	**CJ1W-MAD42**	
	Process Input Units	4 fully universal inputs: Pt100 (3-wire), JPt100 (3-wire), Pt1000 (3-wire), Pt100 (4 wire), K, J, T, E, L, U, N, R, S, B, WRe5-26, PLII, 4 to 20 mA, 0 to 20 mA, 1 to 5 V, 0 to 1.25 V, 0 to 5 V, 0 to 10 V, ±100-mV selectable range, –1.25 to 1.25 V, –5 to 5 V, –10 to 10 V, ±10-V selectable range Potentiometer resolution/conversion speed: 1/256,000 (conversion cycle: 60 ms/4 points), 1/64,000 (conversion cycle: 10 ms/4 points), 1/16,000 (conversion cycle: 5 ms/4 points)	**CJ1W-PH41U (See note 1.)**	UC1, CE
		4 inputs, B, J, K, L, R, S, T; Conversion speed: 250 ms/4 inputs	**CJ1W-PTS51**	UC1, CE
		4 inputs, Pt100 Ω (JIS, IEC), JPt100 Ω, Conversion speed: 250 ms/4 inputs	**CJ1W-PTS52**	
		2 inputs, B, E, J, K, L, N, R, S, T, U, W, Re5-26, PL ±100 mV, Resolution: 1/64,000; Conversion speed: 10 ms/2 inputs	**CJ1W-PTS15**	
		2 inputs, 0 to 1.25 V, –1.25 to 1.25 V, 0 to 5 V, 1 to 5 V, –5 to 5 V, 0 to 10 V, –10 to 10 V, ±10-V selectable range, 0 to 20 mA, 4 to 20 mA	**CJ1W-PDC15**	
	Temperature Control Units	4 loops, thermocouple input, NPN output	**CJ1W-TC001**	
		4 loops, thermocouple input, PNP output	**CJ1W-TC002**	
		2 loops, thermocouple input, NPN output, heater burnout detection function	**CJ1W-TC003**	
		2 loops, thermocouple input, PNP output, heater burnout detection function	**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, heater burnout detection function	**CJ1W-TC103**	
		2 loops, platinum resistance thermometer input, PNP output, heater burnout detection function	**CJ1W-TC104**	
	High-speed Counter Unit	2 inputs, max. input frequency: 500 kpps	**CJ1W-CT021**	UC1, N, L, CE
	Position Control Units	Pulse train, open collector output, 1 axis	**CJ1W-NC113**	UC1, CE
		Pulse train, open collector output, 2 axes	**CJ1W-NC213**	
		Pulse train, open collector output, 4 axes	**CJ1W-NC413**	
		Pulse train, line driver output, 1 axis	**CJ1W-NC133**	
		Pulse train, line driver output, 2 axes	**CJ1W-NC233**	
		Pulse train, line driver output, 4 axes	**CJ1W-NC433**	
	Space Unit	---	**CJ1W-SP001**	
	ID Sensor Units	For V680 Series, 1 R/W Head	**CJ1W-V680C11**	UC pending, CE
		For V680 Series, 2 R/W Heads	**CJ1W-V680C12**	
		For V600 Series, 1 R/W Head	**CJ1W-V600C11**	UC, CE
		For V600 Series, 2 R/W Heads	**CJ1W-V600C12**	
	CompoNet Master Unit	Word slaves: 2,048 points, Bit slaves: 512 points	**CJ1W-CRM21**	U, U1, CE UC, UC1 pending
	CompoBus/S Master Unit	CompoBus/S remote I/O, 256 points max.	**CJ1W-SRM21**	UC1, N, L, CE

Ordering Information

Category	Name	Specifications	Model	Standards
CJ-series CPU Bus Units	Controller Link Units	Wired (shielded twisted-pair cable)	CJ1W-CLK23	UC1, N, L, CE
	Serial Communications Units	1 RS-232C port and 1 RS-422A/485 port	CJ1W-SCU41-V1	UC1, N, L, CE
		2 RS-232C ports	CJ1W-SCU21-V1	
		2 RS-422A/485 ports	CJ1W-SCU31-V1	
	Ethernet Unit	100Base-TX	CJ1W-ETN21	
		Ethernet IP Unit	CJ1W-EIP21	
	DeviceNet Unit	Functions as master and/or slave; allows control of 32,000 points max. per master.	CJ1W-DRM21	
	Position Control Unit	MECHATROLINK-II Position Control Unit	CJ1W-NCF71	UC1, CE
	MECHATROLINK-II Motion Control Unit	Real axes: 30, Virtual axes: 2, Special motion control language	CJ1W-MCH71	
	FI-net Unit	100Base-TX	CJ1W-FLN22	
	SYSMAC SPU	High-speed data collection unit	CJ1W-SPU01-V2	

Note 1. If a CJ1W-PH41U is used, do not use a CP1H CPU Unit with relay contact outputs or Expansion Units with relay contact outputs.
2. Refer to the CJ1 catalog (Cat. No. P052) for information on the CJ1 Special I/O Units and CPU Bus Units.

■ Standards and Directives

● International Standards

- The standards indicated in the “Standards” column are those current for UL, CSA, cULus, NK, and Lloyd standards and EC Directives as of the end of April 2008. The standards are abbreviated as follows: U: UL, U1: UL (Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, and CE: EC Directives
- Ask your OMRON representative for the conditions under which the standards were met.

● EC Directives

The EC Directives applicable to PLCs include the EMC Directives and the Low Voltage Directive. OMRON complies with these directives as described below.

● EMC Directives

Applicable Standards

EMI: EN61000-6-4

EMS: EN61131-2 and EN61000-6-2 (See note.)

PLCs are electrical devices that are incorporated in machines and manufacturing installations. OMRON PLCs conform to the related EMC standards so that the devices and machines into which they are built can more easily conform to EMC standards. The actual PLCs have been checked to ensure conformity to EMC standards. Whether these standards are satisfied for the actual system, however, must be checked by the customer.

EMC-related performance will vary depending on the configuration, wiring, and other conditions of the equipment or control panel in which the PLC is installed. The customer must, therefore, perform final checks to confirm that the overall machine or device conforms to EMC standards.

Note: The applicable EMS standards depend on the product.

● Low Voltage Directive

Applicable Standard: EN61131-2

Devices that operate at voltages from 50 to 1,000 VAC o r 75 to 150 VDC must satisfy the appropriate safety requirements. With PLCs, this applies to Power Supply Units and I/O Units that operate in these voltage ranges.

These Units have been designed to conform to EN61131-2, which is the applicable standard for PLCs.

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