



» Easy to use **» Economical**

» Efficient

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Cost-Effective, Easy Application, Application to Many Systems



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Economical

Exceptional Cost

Responding to Global Competition with More Device Control Possibilities

The CP1E provide high cost performance to further reduce costs by allowing you to select the optimal CPU Unit from the EDDS-type Basic Models or N/DDS(1)-type Application Models.

Economical



Exceptional Cost.

Optimal cost with a selection of two types of CP1E CPU Units.

Simple and User Friendly

Easy to use input editor with smart input function

When you begin typing an instruction from the keyboard in Ladder Editor Mode, suggested instructions are displayed and the addresses are automatically entered. Connecting lines are added automatically based on the cursor position, enabling intuitive ladder programming. **All Models**

Easy Input Editor

Instruction and Address Input Assist Functions

When you begin typing an instruction from the keyboard while in the Ladder Editor Window, suggested instructions are displayed. All you have to do is select the instruction from the list for easy input even if you do not remember the entire mnemonic.



Address Incrementing

The address of the next operand, including input bits and output bits, is incremented by one and displayed as the default. This enables easily inputting consecutive addresses.



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.

Easy to reuse ladder programming

Copying with Address Incrementing

To create the same group of ladder instructions more than once with the address addition copy function, the instructions can be reused simply by inputting an address offset.



Offset set to 5 bits …

0.00 	100.00
0.05	100.05

Intuitive Menu Structure

Intuitive Menu Display

An intuitively designed menu structure makes it easy to see the overall system simply by looking at the menu for smooth operation without referring to a manual.

		Program	PLC	Simulation	Tools	Window
En Di Ann Juni	Tionen FLG Smithen Josh Broke Elli Cimple (H FLC Fragmen FT Elli Fragma (Deck Curren) CertFT	Proe	pile <u>A</u> ll ram <u>C</u> he	PLC Program eck(Current) eck Options	rs Ctr	F7 I+F7
	Program Direct; Options. BB Cross-Redeeance Report AlterX Mignum; View	首 Cros	s-Re <u>f</u> er	ence Report	ŕ	Alt+X
	Agtonatic Alboaton.	Men	ory Vie	44		
e functio	on required for grouping.	Auto	matic A ion/Run	llocation g Manager		

Only commercially available USB cables required

All CP1E CPU Units use high-speed USB for the peripheral port. Support software (computers) can be connected using commercially available USB cables. Without the need for USB conversion cables or special cables, connection is easier and cable cost is low.

All Models

Renewaltype



The depth of CPU Units with RS-232C connectors is reduced by 20 mm

6 mm slimmer than the normal type.



Efficient and Effective

More Applications with AdvancedControl Capabilities and Functionality

Application Models

The Application Models (CP1E-N \Box /N \Box S(1)) are equipped with high-speed counters, pulse outputs, and a built-in serial port(s).

In addition, using the Expansion Unit and Option Board, you can control a wide range of devices.



^{*} Use a built-in RS-485 port of the NooS1-type CPU Unit or mount an RS-422A/485 Option Board to the Noo-type CPU Unit.

Pulse Outputs

Models with transistor Output

Two 100kHz pulse outputs for high-precision position control.



High-speed Counters*

Control multiple axes with one PLC using the two 100kHz and four 10kHz, single-phase high-speed counters. * The Basic Models are equipped with six 10kHz, single-phase high-speed counters.



Modbus-RTU easy master

High-speed counter Retary encoder Retary encoder Retary encoder Neverer General-purpose motor

Specify Inverter speeds via RS-485

Efficient and Effective

Analog I/O Control

High-accuracy analog I/O control with a resolution 1/12,000. You can add up to 4 analog I/O by mounting an Analog Option Board and up to 24 analog I/O by connecting Expansion Units.



Temperature Control

The combination of the Temperature Input Unit with the PID instructions enables temperature control. Up to 12 thermocouple inputs per Unit for CP1W-TS004.



The CP1W-TS003 has two inputs that can be used for temperature sensor or analog inputs. Both temperature sensor and analog inputs can be achieved with only one Unit.



Serial PLC Links

Link data with up to 10 words between up to nine CP1E-N CPU Units when controlling a device with multiple CP1E-N PLCs.



sion 1.2 or later)

Ethernet Communications

Mount a CP1W-CIF41 Ethernet Option Board to an option board slot on the CP1E-N/NA type CPU Unit. Perform monitoring and programming with CX-Programmer, or communicate with a host computer via Ethernet.(server function only)



Optional units for more flexibility

An option board for an additional Serial or Ethernet communication port can be added to the N30/40/60 and NA20 CPU Unit. Three expansion units are available. * The Option Board cannot be mounted to the CP1E-N=S/N=S1.



Line up/Variation

Selecting the best CPU Unit for your system helps minimize and optimize costs.

Line up



Basic Models

		I	Enn Cf	PU Uni	t	Ess CPU Unit					
		Relay	outputs	Trans out (sinking/	sistor puts ^{sourcing)}	Relay	outputs	Transistor outputs (sinking/sourcing)			
	Power supply	AC	DC	AC	DC	AC	DC	AC	DC		
1	0 I/O points					-	_	_	_		
1	4 I/O points		-	_	_		-	_	_		
2	20 I/O points		-	_	_		-	_	_		
3	1/0 00 ints		_	_	_		_	_	_		
4	0 I/O points		_	_	_		_	_	_		
6	i0 I/O points	_	_	_	_		_	_	_		
_		I	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	1			

Application Models

	1	Non Cl RS-2 optior	PU Uni 32C+1 1 slot*	t	N B	N□□S CPU Unit Built-in RS-232C				N⊡⊡S1 CPU Unit Built-in RS-232C+RS-485			
	Relay (Relay outputs (sinking/sourcing)		Relay	Relay outputs (sinking/sourcing		sistor puts ^{sourcing)}	Relay outputs		Transistor outputs (sinking/sourcing)			
Power supply	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC	
10 I/O points	_	_	-	_	-	-	-	_	_	_	_	-	
14 I/O points					_	-	_	_	_	_	_	-	
20 I/O points					_	_	_	_	_	_	_	-	
30 I/O points						-	-			_	_		
40 I/O points						-	-			-	-		
60 I/O points						_	_			_	_		
20 I/O points (Built-in Analog)		_	_	•	_	_	_	_	_	_	_	-	
* Only N3	0/40/60	has op	tion slot										

Variation

	Basic I	Models	Application Models						
	Renewal type	Normal type	Renew	al type	Normal type	Normal type (Built-in Analog)			
	EDDS	Eoo	N□□S	N□□S1	Noo	NA20			
Model									
Program capacity	2K steps	2K steps	8K steps	8K steps	8K steps	8K steps			
DM Area capacity	2K words	2K words	8K words	8K words	8K words	8K words			
USB port	USB	USB	USB	USB	USB	USB			
Built-in Serial port	—	—	RS- 232C	RS- 232C 485	RS- 232C	RS- 232C			
Option Board *1	_	_	-	_	RS- 232C RS-422A RS-485 Ether net Analog	RS- 232C RS-422A RS-485 Ether net Analog			
Battery *2 (Optional)	—	—	Battery	Battery	Battery	Battery			
Clock	—	—	Clock	Clock	Clock	Clock			
High-speed counters (Single-phase)	10kHz ×6	10kHz ×6	100kHz ×2	100kHz ×2	100kHz x2 10kHz x4	100kHz x2			
High-speed counters (Differential Phase)	5kHz ×2	5kHz ×2	50kHz ×1 5kHz ×1	50kHz ×1 5kHz ×1	50kHz ×1 5kHz ×1	50kHz ×1 5kHz ×1			
Pulse outputs (transistor output type)	—		100kHz ×2	100kHz ×2	100kHz ×2	100kHz ×2			
Analog adjusters	—	Analog adjusters	—	—	Analog adjusters	Analog adjusters			
Built-in analog	—		_	—	_	AD 2 DA 1			

*1. For CP1E N30/40/60 or NA20 CPU Units only.

*2. The CP1W-BAT01 Battery (sold separately) can be mounted

Ordering information

International Standards

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, KC: KC Registration, and CE: EU Directives.
 Contact your OMRON representative for further details and applicable conditions for these standards.

Application models

■Renewal type (N□□S1-type) CP1E CPU Units: Built-in 3 ports

Draduat nama				Specifications			Madal	Standarda								
Product name	Power Supply	Inputs	Outputs	Output type	Program capacity	Data memory capacity	Model	Standarus								
N==S1 type	100 to 240 VAC			Relay			CP1E-N30S1DR-A									
with 20 I/O Deinte	241/00	18	12	Transistor (sinking)			CP1E-N30S1DT-D									
with 30 1/O Points	24000			Transistor (sourcing)			CP1E-N30S1DT1-D									
N. Of huma	100 to 240 VAC			Relay		CP1E-N40S1DR-A]									
NUUST-type	24VDC	24	24	24	24	24	24	24	24	24	16	Transistor (sinking)	8K steps	8K words	CP1E-N40S1DT-D	CE, KC
with 40 1/O Points				Transistor (sourcing)			CP1E-N40S1DT1-D									
N□□S1-type with 60 I/O Points	100 to 240 VAC			Relay			CP1E-N60S1DR-A]								
	241/00	36	24	Transistor (sinking)	_		CP1E-N60S1DT-D]								
	24000			Transistor (sourcing)			CP1E-N60S1DT1-D									

■Renewal type (N□□S-type) CP1E CPU Units: Built-in 2 ports

Product name				Specifications			Model	Standarda				
Troduct name	Power Supply	Inputs	Outputs	Output type	Program capacity	Data memory capacity	Widdei	Stanuarus				
N=-C turns	100 to 240 VAC			Relay			CP1E-N30SDR-A					
with 20 I/O Points	241/00	18	12	Transistor (sinking)			CP1E-N30SDT-D]				
WITI 30 I/O FOILIS	24000			Transistor (sourcing)			CP1E-N30SDT1-D					
N. O huma	100 to 240 VAC		24	24	24	24		Relay			CP1E-N40SDR-A	
with 40 I/O Points	241/00	24					24	24	16	Transistor (sinking)	8K steps	8K words
WITH 40 I/O FOILIS	24000			Transistor (sourcing)			CP1E-N40SDT1-D					
N□□S-type with 60 I/O Points	100 to 240 VAC			Relay			CP1E-N60SDR-A					
	0.01/00	36	24	Transistor (sinking)			CP1E-N60SDT-D]				
	24700			Transistor (sourcing)	1		CP1E-N60SDT1-D					

■Normal type (N/NA□□-type) CP1E CPU Units

Product name				Specifications			Model	Standarda									
FIGUUCI Hallie	Power Supply	Inputs	Outputs	Output type	Program capacity	Data memory capacity	Woder	Stanuarus									
				Relay			CP1E-N14DR-A										
	100 to 240 VAC			Transistor (sinking)			CP1E-N14DT-A										
N□□-type			6	Transistor (sourcing)	9K atopa	9K wordo	CP1E-N14DT1-A										
with 14 I/O Points		0		Relay	on steps	or words	CP1E-N14DR-D										
	24VDC			Transistor (sinking)			CP1E-N14DT-D										
				Transistor (sourcing)			CP1E-N14DT1-D										
				Relay			CP1E-N20DR-A										
	100 to 240 VAC			Transistor (sinking)			CP1E-N20DT-A										
N□□-type		10		Transistor (sourcing)		OKauda	CP1E-N20DT1-A										
with 20 I/O Points		12	0	Relay	or steps	or words	CP1E-N20DR-D										
	24VDC			Transistor (sinking)			CP1E-N20DT-D										
				Transistor (sourcing)			CP1E-N20DT1-D										
				Relay			CP1E-N30DR-A]									
	100 to 240 VAC			Transistor (sinking)		017 warda	CP1E-N30DT-A										
N□□-type		10	10	Transistor (sourcing)	9K stops		CP1E-N30DT1-A										
with 30 I/O Points		10	12	Relay	ak steps	8K WORDS	CP1E-N30DR-D	UC1,									
	24VDC			Transistor (sinking)			CP1E-N30DT-D	N, L,									
				Transistor (sourcing)			CP1E-N30DT1-D	CE, KC									
						Relay			CP1E-N40DR-A	1							
	100 to 240 VAC			Transistor (sinking)			CP1E-N40DT-A										
N□□-type		0.4	10	Transistor (sourcing)	01/ - 1		CP1E-N40DT1-A	-									
with 40 I/O Points		24	10	Relay	8K steps	8K words	CP1E-N40DR-D										
	24VDC			Transistor (sinking)			CP1E-N40DT-D										
				Transistor (sourcing)			CP1E-N40DT1-D										
				Relay			CP1E-N60DR-A	1									
	100 to 240 VAC			Transistor (sinking)			CP1E-N60DT-A	1									
N□□-type				Transistor (sourcing)	014		CP1E-N60DT1-A	1									
with 60 I/O Points		36	24	Relay	8K steps	8K words	CP1E-N60DR-D	1									
	24VDC			Transistor (sinking)			CP1E-N60DT-D	1									
				Transistor (sourcing)			CP1E-N60DT1-D	_									
NA-type	100 to 240 VAC	12	8	Relay			CP1E-NA20DR-A										
with 20 I/O Points	0.41/12-0	(Built-in	(Built-in	Transistor (sinking)	8K steps	8K words	CP1E-NA20DT-D	1									
(Billt-in analog)	24VDC	24VDC	illt-in analog) 24VDC	analog) 24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC analog inputs : 2)	outputs : 1)	Transistor (sourcing)			CP1E-NA20DT1-D	1

Basic models

■Renewal type (E□□S-type) CP1E CPU Units

Draduat nama				Madal	Ctandarda			
FIGUUCI Halle	Power Supply	Inputs	Outputs	Output type	Program capacity	Data memory capacity	iviodei	Standards
Ens-type with 14 I/O Points		8	6	Relay		2K words	CP1E-E14SDR-A	
Ens-type with 20 I/O Points		12	8	Relay			CP1E-E20SDR-A	
Ens-type with 30 I/O Points	100 to 240 VAC	18	12	Relay	2K steps		CP1E-E30SDR-A	CE, KC
Ens-type with 40 I/O Points		24	16	Relay			CP1E-E40SDR-A	
Ens-type with 60 I/O Points		36	24	Relay			CP1E-E60SDR-A	

■Normal type (E□□-type) CP1E CPU Units

Product name				Specifications			Model	Standarda	
i iouuci name	Power Supply	Inputs	Outputs	Output type	Program capacity	Data memory capacity	Widdei	Standards	
				Relay			CP1E-E10DR-A		
	100 to 240 VAC			Transistor (sinking)			CP1E-E10DT-A		
Eoo-type		6	4	Transistor (sourcing)			CP1E-E10DT1-A		
with 10 I/O Points		0	4	Relay			CP1E-E10DR-D		
	24VDC			Transistor (sinking)			CP1E-E10DT-D]	
				Transistor (sourcing)			CP1E-E10DT1-D	1101	
Ene-type with 14 I/O Points	- 100 to 240 VAC -	100 to 240 VAC 8 12 12 18 24	8	6	6 Relay 2K steps	2K words	CP1E-E14DR-A	N, L,	
End-type with 20 I/O Points			8	Relay			CP1E-E20DR-A	UE, KU	
End-type with 30 I/O Points			18	12	Relay			CP1E-E30DR-A	
End-type with 40 I/O Points			24	16	Relay			CP1E-E40DR-A	

Optional Products

■Battery Set

Product name	Specifications	Model	Standards
	For N□□/NA-type CP1E CPU Units		
Battery Set	Note: Mount a Battery to an N□□/NA-type CP1E CPU Unit if the data in the following areas must be backed up for power interruptions.	CP1W-BAT01	_
	DM Area (D) (except backed up words in the DM Area), Holding Area (H), Counter Completion Flags (C), Counter Present Values (C), Auxiliary Area (A), and Clock Function.(Use batteries within two years of manufacture.)		

■Option Boards (for CP1E N30/40/60 or NA20 CPU Units)

Product name	Specifications	Model	Standards
RS-232C Option Board	One RS-232C Option Board can be mounted to the Option Board slot. One RS-232C connector is included.	CP1W-CIF01	
RS-422A/485 Option Board	One RS-422A/485 Option Board can be mounted to the Option Board slot.	CP1W-CIF11	
RS-422A/485 Isolated-type Option Board	One RS-422A/485 Option Board can be mounted to the Option Board slot.	CP1W-CIF12	1101
Ethernet Option Board	One Ethernet Option Board can be mounted to the Option Board slot. CP1E CPU Units are supported by CP1W-CIF41 version 2.0 or later. When using CP1W-CIF41, CX-Programmer version 9.12 or higher is required.	CP1W-CIF41	N, L,
Analog Input Option Board	Can be mounted in CPU Unit Option Board slot. 2 analog inputs. 0-10V(Resolution:1/4000), 0-20mA (Resolution:1/2000).	CP1W-ADB21*	UE, KU
Analog Output Option Board	Can be mounted in CPU Unit Option Board slot. 2 analog outputs. 0-10V (Resolution:1/4000).	CP1W-DAB21V*	
Analog I/O Option Board	Can be mounted in CPU Unit Option Board slot. 2 analog inputs. 0-10V(Resolution:1/4000), 0-20mA(Resolution:1/2000). 2 analog outputs. 0-10V (Resolution:1/4000).	CP1W-MAB221*	

Note: It is not possible to use a CP-series Ethernet Option Board version 1.0 (CP1W-CIF41), LCD Option Board (CP1W-DAM01), or Memory Card (CP1W-ME05M) with a CP1E CPU Unit. *. For CP1E CPU Unit version 1.2 or later

Ordering information

Optional Products

Expansion I/O Units and Expansion Units (for CP1E N30/40/60 or NA20 CPU Units)

Unit type	Product name	Inputs	Outputs	Specifications			Model	Standards
CP1W Expansion I/O Units	Input Unit	8	-	DC24V Input		CP1W-8ED	U, C, N, L, CE, KC	
	Output Units	_	8	Relay				CP1W-8ER
				Transistor(sinking)				CP1W-8ET
				Transistor(sourcing)				CP1W-8ET1
		_	16		Relay	CP1W-16ER		
					Transistor(sinking)	CP1W-16ET		
				Transistor(sourcing)			CP1W-16ET1	N, L, CE, KC
		_	32	Relay			CP1W-32ER	
				Transistor(sinking)			CP1W-32ET	
				Transistor(sourcing)			CP1W-32ET1	
	I/O Units	12	8	Relay			CP1W-20EDR1	U, C, N, L, CE, KC
				Transistor(sinking)			CP1W-20EDT	
				Transistor(sourcing)			CP1W-20EDT1	
		24	16	Relay			CP1W-40EDR	N, L, CE, KC
				Transistor(sinking)			CP1W-40EDT	
				Transistor(sourcing)			CP1W-40EDT1	
CP1W Expansion Units	Analog Input Unit	4CH	_	Input range:	0 to 5 V, 1 to 5 V, 0 to 10 V,	Resolution: 1/6000	CP1W-AD041	UC1, N, L, CE, KC
					±10 V, 0 to 20 mA, or 4 to 20 mA.	Resolution: 1/12000	CP1W-AD042	UC1, N, CE, KC
	Analog Output Unit	_	2CH	Output range: 1 to 5 V, 0 to 10 V, ±10 V,	Resolution: 1/6000	CP1W-DA021	UC1, N,	
					Resolution: 1/6000	CP1W-DA041	L, CE, KC	
		-	4CH		0 to 20 mA, 01 4 to 20 mA.	Resolution: 1/12000	CP1W-DA042	UC1, N, CE, KC
	Analog I/O Unit	2CH	1CH	Input range:	0 to 5 V, 1 to 5 V, 0 to 10 V, ±10 V, 0 to 20 mA, or 4 to 20 mA. 1 to 5 V, 0 to 10 V, ±10 V, 0 to 20 mA, or 4 to 20 mA.	Resolution: 1/6000	CP1W-MAD11	UC1, N, L, CE, KC
		4CH	2CH	Output range		Resolution: 1/12000	CP1W-MAD42	UC1, N,
		4CH	4CH	Output range		Resolution: 1/12000	CP1W-MAD44	CE, KC
	Temperature Sensor Unit	2CH	-	Sensor type:	Thermocouple (J or K)	CP1W-TS001	UC1, N,	
		4CH	-	Sensor type:	Thermocouple (J or K)	CP1W-TS002		
		2CH	-	Sensor type:	Platinum resistance thermometer (P	CP1W-TS101		
		4CH	-	Sensor type:	Platinum resistance thermometer (P	CP1W-TS102		
		4CH	_	Sensor type: Thermocouple (J or K) 2 analog inputs* Input range: 1 to 5 V, 0 to 10 V, 4 to 20 mA.			CP1W-TS003	UC1, N, CE, KC
		12CH	-	Sensor type:	Thermocouple (J or K)	CP1W-TS004		
	CompoBus/S I/O Link Unit	8	8	CompoBus/S	slave	CP1W-SRT21	UC1, N, L, CE, KC	
I/O Connecting Cable		80 cm (for CP1W Expansion I/O Units and Expansion Units) Only one I/O Connecting Cable can be used in each PLC.					CP1W-CN811	UC1, N, L, CE

Note: An I/O Connecting Cable (approx. 6 cm) for horizontal connection is provided with CP1W Expansion I/O Units and Expansion Units. * Only last two channels can be used as analog input.

Programming Devices

■Support Software

Product name	Specifications	Number of licenses	Media	Model	Standards
FA Integrated Tool Package CX-One Lite Ver.4.□	 CX-One Lite is a subset of the complete CX-One package that provides only the Support Software required for micro PLC applications. CX-One Lite runs on the following OS. OS: Windows XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version) / CX-One Lite Ver 4 □ includes Micro PLC Edition CXProgrammer Ver 9 □ 	1 license	DVD	CXONE-LT01D-V4	_
FA Integrated Tool Package CX-One Ver.4.□	CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components. CX-One runs on the following OS. OS: Windows XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version) (32-bit/64-bit version) / Windows 7 (32-b	1 license *	DVD	CXONE-AL01D-V4	_

Note: 1.CP1E-E60SDR-A CPU Units are supported by CX-Programmer version 9.42 or higher. When Micro PLC Edition CX-Programmer is used, you need version 9.42 or higher.

The E20/30/40(S), N20/30/40(S $_{\Box}$) CPU Units are supported by CX-Programmer version 8.2 or higher. The E10/14(S), N14/60(S $_{\Box}$), and NA20 CPU Units are supported by CX-Programmer version 9.03 or higher.

When Micro PLC Edition CX-Programmer is used, you need version 9.03 or higher.

2.When using CP1W-CIF41, CX-Programmer version 9. π12 or higher is required. N30/40/60, NA20 only.

3. The CX-One and CX-One Lite cannot be simultaneously installed on the same computer.

* Multi licenses (3, 10, 30, or 50 licenses) and DVD media without licenses are also available for the CX-One.

Terms and Conditions Agreement

Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranties.

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