

NO: PC-189  
DATE: October 2007

PRODUCT: CP1L Programmable Controller  
TYPE: Product Release

### CP1L Micro PLC: Start Small...Think Big...Micro PLC has Powerful Capabilities in a Scalable Package

Packed with powerful features and wide-ranging capabilities, Omron's new CP1L Compact Micro PLC seemingly redefines the term Micro PLC. The CP1L family offers scaleable I/O, on-line editing, IEC 61131-3 programming, floating-point math, powerful position control, and communications capabilities. Extensive libraries of Omron controls and function blocks simplify program development and shorten design time.



#### Key Features and Benefits

- **Smart integration** – All-in-one functionality includes high-speed counters, analog, motion and communications.
- **Quick modifications** – PLC programs with online editing allows you to make changes quickly.
- **Save time and money** – CX-Programmer Software with built-in simulation capability allows pre-testing of programs without any hardware.
- **Maximize efficiency** – Select the optimum CPU for your application: 14, 20, 30 or 40 I/O built-in.
- **Easily expandable** – Expand CP1L to 160 I/O points using CJ1W expansion I/O.
- **Save cabinet space** – Compact size measures from just 110 H x 86 W x 85 D mm.
- **Solve complex programming issues** – Built-in floating-point and trigonometric functions.
- **Simplified configuration** – All Omron devices connected to CP1L can be configured, programmed and monitored through a single connection using CX-One Software Suite.

#### Target Markets and Applications

**Two-axis Pulse Outputs**

**Packing Machine**

CP1L

Pulse outputs Sheet feeding control via Servomotors

**Sequence Control**

**Air Cleaner Control**

CP1L

Analog Output Unit

Cleaner fan motor control (Inverter)

**Sequence Control with Clock Function**

**Shopping Mall Fountain Control**

CP1L

## Additional CP1L Applications

### Building Management

- Ventilation and temperature control
- Lighting control
- Energy management
- Elevator/revolving door control

### Electronics Assembly

- Control manufacturing machinery
- Inspection of assembled parts

### Entertainment

- Animated character mechatronics (theme parks and museums)
- Cinema projection at multiplexes

### Food/Beverage

- Pillow/pouch packing machines
- Food processing—washing, sorting, slicing, packaging
- Bakery—mixing, baking

### Glass/Metal/Plastic Forming

- Inspect surface condition to automate quality control
- Control oil pressure

### Horticulture

- Plant/lawn watering systems
- Greenhouse lighting/ vent control
- Plant handling systems
- Saw mill control

### Material Handling

- Main axis control
- Positioning conveyors

### Pharmaceutical/Chemical

- Dosing control
- Packaging
- Pollution management systems
- Cryogenic freezing

### Plastics

- Loading/unloading machines
- Plastic welding systems
- Injection molding machines

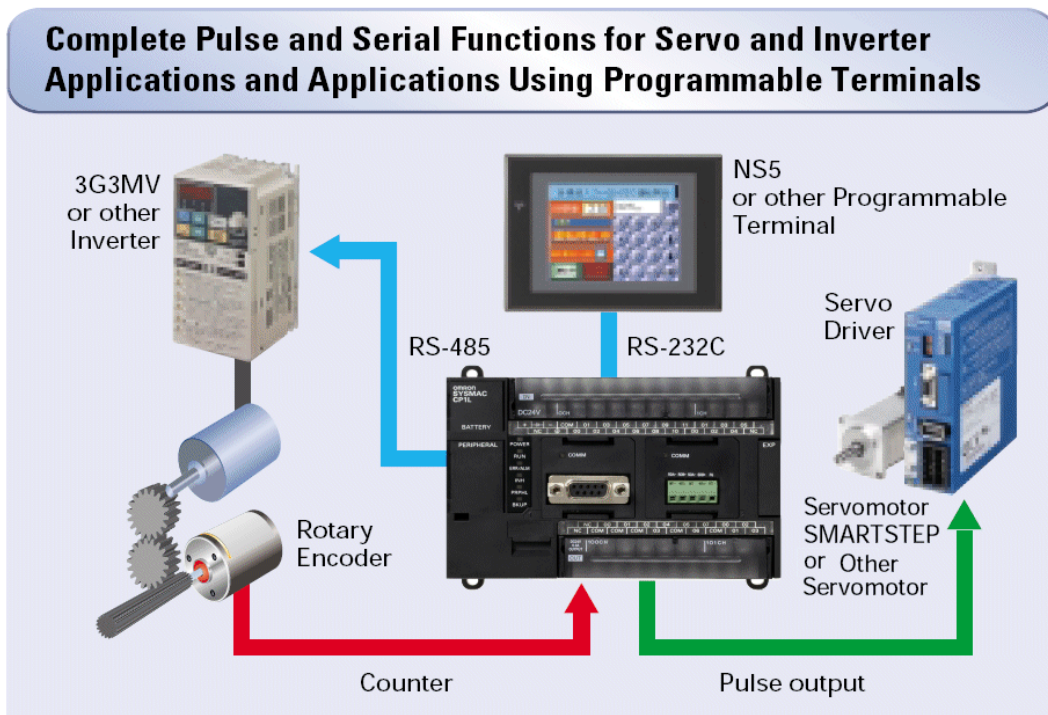
### Printing

- Converting OEM
- Printing/publishing
- Silkscreening

### Transportation

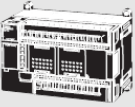
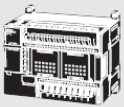
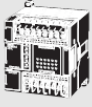

- Garbage truck management
- Sanitation on rail rolling stock and ships

## Capabilities Overview



## CP1L Micro PLCs

### ● CP1L CPU Units

CPU Unit	Specifications				Model
	Power supply	Output method	Inputs	Outputs	
CPU - 24 In, 16 Out - 1 Analog In (0-10V) - Up to 3 Expansion Units - Up to 2 Communication Option Boards 	AC power supply	Relay output	24	16	CP1L-M40DR-A
	DC power supply	Transistor output (sinking)			CP1L-M40DR-D
		Transistor output (sourcing)			CP1L-M40DT-D
					CP1L-M40DT1-D
CPU - 18 In, 12 Out - 1 Analog In (0-10V) - Up to 3 Expansion Units - Up to 2 Communication Option Boards 	AC power supply	Relay output	18	12	CP1L-M30DR-A
	DC power supply	Transistor output (sinking)			CP1L-M30DR-D
		Transistor output (sourcing)			CP1L-M30DT-D
					CP1L-M30DT1-D
CPU - 12 In, 8 Out - 1 Analog In (0-10V) - 1 Expansion Unit Max. - 1 Communication Option Board Max. 	AC power supply	Relay output	12	8	CP1L-L20DR-A
	DC power supply	Transistor output (sinking)			CP1L-L20DR-D
		Transistor output (sourcing)			CP1L-L20DT-D
					CP1L-L20DT1-D
CPU - 8 In, 6 Out - 1 Analog In (0-10V) - 1 Expansion Unit Max. - 1 Communication Option Board Max. 	AC power supply	Relay output	8	6	CP1L-L14DR-A
	DC power supply	Transistor output (sinking)			CP1L-L14DR-D
		Transistor output (sourcing)			CP1L-L14DT-D
					CP1L-L14DT1-D

Note: CP1L PLCs are supported by CX-Programmer version 7.1 or higher.

### ■ Options for CPU Units

Name	Specifications	Model
RS-232C Option Board	For CPU Unit option port.	CP1W-CIF01
RS-422A/485 Option Board	For CPU Unit option port.	CP1W-CIF11
Memory Cassette	Can be used for backing up programs or auto-booting.	CP1W-ME05M

## ■ Expansion Units

Name	Output method	Inputs	Outputs	Model
Expansion I/O Units	Relay	24	16	CP1W-40EDR
	Transistor (sinking)			CP1W-40EDT
	Transistor output (sourcing)			CP1W-40EDT1
	Relay	12	8	CP1W-20EDR1
	Transistor (sinking)			CP1W-20EDT
	Transistor output (sourcing)			CP1W-20EDT1
	Relay	---	16	CP1W-16ER
	---	8	---	CP1W-8ED
	Relay	---	8	CP1W-8ER
	Transistor (sinking)	---	8	CP1W-8ET
Transistor output (sourcing)	CP1W-8ET1			
Analog Input Unit	Analog (resolution: 1/6000)	4	---	CP1W-AD041
Analog Output Unit	Analog (resolution: 1/6000)	---	4	CP1W-DA041
Analog I/O Unit	Analog (resolution: 1/6000)	2	1	CP1W-MAD11
CompoBus/S I/O Link Unit	---	8 (I/O link input bits)	8 (I/O link input bits)	CP1W-SRT21
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

## ■ I/O Connecting Cable

Name	Specifications	Model
I/O Connecting Cable	80 cm (for CPM1A Expansion Units)	CP1W-CN811

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

## Selling Information

### List Pricing

Part Number	Description	Stock Status	Discount Code	List Price
<b>CP1L - CPUs</b>				
CP1L-L14DR-A	CPU 8 In, 6 Relay Out AC PS	S	APA	\$249.00
CP1L-L14DR-D	CPU 8 In, 6 Relay Out DC PS	S	APA	\$249.00
CP1L-L14DT1-D	CPU 8 In, 6 Out PNP DC PS	S	APA	\$249.00
CP1L-L14DT-D	CPU 8 In, 6 Out NPN DC PS	S	APA	\$249.00
CP1L-L20DR-A	CPU 12 In, 8 Relay Out AC PS	S	APA	\$299.00
CP1L-L20DR-D	CPU 12 In, 8 Relay Out DC PS	S	APA	\$299.00
CP1L-L20DT1-D	CPU 12 In, 8 Out PNP DC PS	S	APA	\$299.00
CP1L-L20DT-D	CPU 12 In, 8 Out NPN DC PS	S	APA	\$299.00
CP1L-M30DR-A	CPU 18 In, 12 Relay Out AC PS	S	APA	\$469.00
CP1L-M30DR-D	CPU 18 In, 12 Relay Out DC PS	S	APA	\$469.00
CP1L-M30DT1-D	CPU 18 In, 12 Out PNP DC PS	S	APA	\$469.00
CP1L-M30DT-D	CPU 18 In, 12 Out NPN DC PS	S	APA	\$469.00
CP1L-M40DR-A	CPU 24 In, 16 Relay Out AC PS	S	APA	\$518.00
CP1L-M40DR-D	CPU 24 In, 16 Relay Out DC PS	S	APA	\$518.00
CP1L-M40DT1-D	CPU 24 In, 16 Out PNP DC PS	S	APA	\$518.00
CP1L-M40DTD	CPU 24 In, 16 Out NPN DC PS	S	APA	\$518.00

Part Number	Description	Stock Status	Discount Code	List Price
<b>CP1W Expansion I/O and Options</b>				
CP1W-20EDR1	Expansion 12 In, 8 Relay Out	S	APA	\$229.00
CP1W-20EDT	Expansion 12 In, 8 Out NPN	S	APA	\$229.00
CP1W-20EDT1	Expansion 12 In, 8 Out PNP	S	APA	\$229.00
CP1W-8ED	8 Pt In CP1 Expansion	S	APA	\$129.00
CP1W-8ER	8 Pt Relay CP1 Expansion	S	APA	\$129.00
CP1W-8ET	8 Pt NPN CP1 Expansion	S	APA	\$129.00
CP1W-8ET1	8 Pt PNP CP1 Expansion	S	APA	\$129.00
CP1W-AD041	4 Pt A/D CP1 Expansion	S	APA	\$359.00
CP1W-DA041	4 Pt D/A CP1 Expansion	S	APA	\$359.00
CP1W-MAD11	2 Pt A/D, 1 Pt D/A CP1 Expansion	S	APA	\$389.00
CP1W-TS001	2 Pt J,K Thermocouple Expansion	S	APA	\$279.00
CP1W-TS002	4 Pt J,K Thermocouple Expansion	S	APA	\$389.00
CP1W-TS101	2 Pt100 Expansion	S	APA	\$279.00
CP1W-TS102	4 PT Expansion	S	APA	\$389.00
CP1W-CIF01	RS-232C Serial Option Module	S	APA	\$53.30
CP1W-CIF11	RS-422/485 Serial Option Mod	S	APA	\$53.30
CP1W-CN811	80cm Ext. Cable for CP1W Expand	S	APA	\$63.55
CP1W-ME05M	Memory Cassette	S	APA	\$49.97

### Programming and Diagnostic Software and Tools

Part Number	Software name	Description	Quantity	List Price
WS02-CXPC1-EJ-V□□	CX-Programmer Jr.	Windows®-based programming software; built-in simulator software	1 license	\$325.00
CXONE-AL01C-EV2	CX-One	Programming and configuration management software lets you build, configure and program networks, PLCs, HMIs, motion control systems, temperature controllers and sensor	1 license	\$2,195.00
CXONE-AL03C-EV2			3 licenses	\$4,295.00
CXONE-AL10C-EV2			10 licenses	\$9,995.00

### Literature Support

Product	Description	Cat. Number
Brochure (PDF)	CP1L full explanation of features, specifications	R08I-E-01
Operation manual (PDF)	CP1L programmable controllers operation manual	W462
Programming manual (PDF)	CP1L/CP1H CPU unit programming manual	W451
Introduction Manual (PDF)	CPIL Introduction Manual	W461