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CP1E PLC

The economic machine controller



» Easy to use
» Economical
» Efficient



www.d3e.fr

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Control Systems

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Motion & Drives

• Motion controllers • Servo systems • Inverters

Control Components

• Temperature controllers • Power supplies • Timers • Counters • Programmable relays
• Digital panel indicators • Electromechanical relays • Monitoring products • Solid-state relays
• Limit switches • Pushbutton switches • Low voltage switch gear

Sensing & Safety

• Photoelectric sensors • Inductive sensors • Capacitive & pressure sensors
• Cable connectors • Displacement & width-measuring sensors • Vision systems
• Safety networks • Safety sensors • Safety units/relay units • Safety door/guard lock switches

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CD_EN_01+CP1E+Brochure

Compact & cost-effective

The CP1E delivers an exceptional solution for automating small and compact machines, and is part of Omron's Lean Automation concept. Lean Automation fits into stand-alone machines or modules within a larger machine. Its merit lies in its simplicity, compactness and economically attractive solutions.

Know one ... know them all

Since the CP1E series shares the same architecture as all Omron's PLCs -but with a smaller yet powerful instruction set- programs are compatible across platforms and allow for easy upward migration.

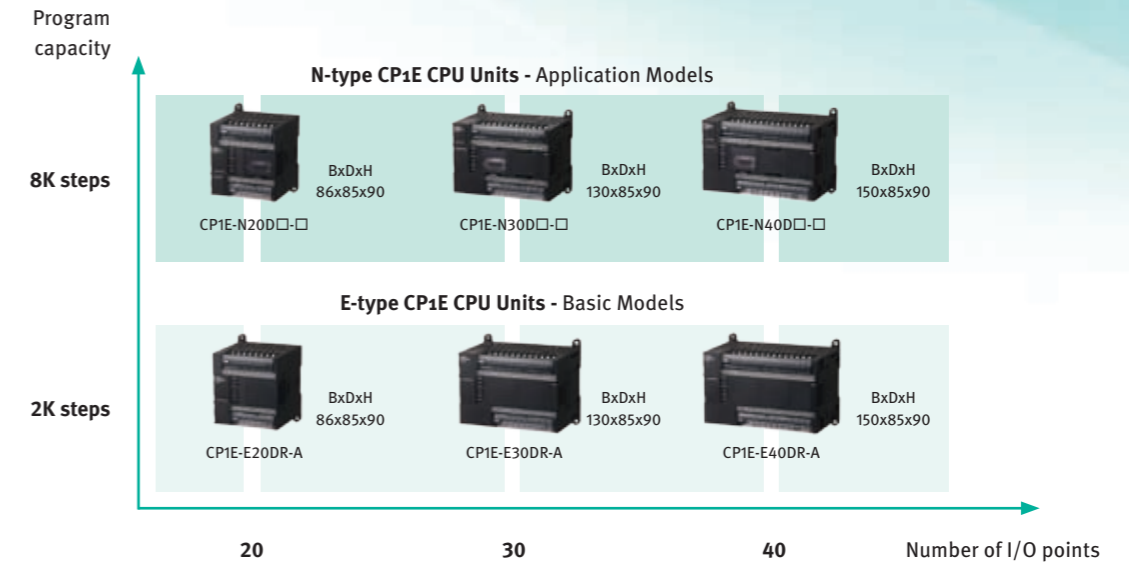
E-type

Program capacity : 2 Ksteps
 DM Area capacity : 2 Kwords
 Timers/Counters : 256 each
 High-speed counters : 10 kHz × 6 inputs
 Peripheral USB port
 Analog adjusters : 2 adjusters

N-type

Option Battery
 Program capacity : 8 Ksteps
 DM Area capacity : 8 Kwords
 Timers/Counters : 256 each
 High-speed counters : 100 kHz × 2 inputs and 10 kHz × 4 inputs
 Peripheral USB port
 Serial Option port : 1 port*
 Pulse outputs : 100kHz x 2 outputs*²
 Serial communications port : RS-232C
 *¹ : Models with 30 or 40 I/O points.
 *² : Models with transistor outputs.
 Analog adjusters : 2 adjusters

Fitting your needs...exactly



All CPUs offer high-speed USB connection for easy connection and "Easy Input Editor" for faster programming by using an intuitive predictive ladder editor. Standard USB cables can be used for that purpose. Two different families are available: CP1E-E is the economical yet

powerful model, while the CP1E-N has a built-in real time clock, motion control capabilities, and an intelligent RS-232 port for connection to an HMI, bar code reader, robot or other serial device. Several option units are available to increase the functionality.



Simple and user friendly

EASY

Easy to use input editor with smart input function

When you begin typing an instruction in ladder editor mode, suggested instructions are displayed.

Smart Input Function

M When you begin typing an instruction in ladder editor mode, suggested instructions are displayed.

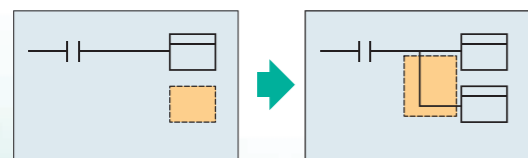
enter Select the desired instruction and the addresses will be set to one higher than the addresses M that were previously entered.

enter Enter the operands. I/O comments can also be entered at the same time.

User-friendly ladder program input

Automatic connecting line insertions

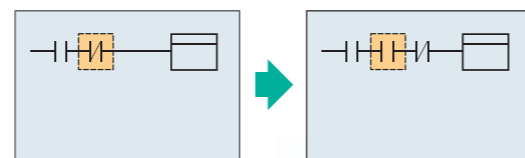
With the Automatic connecting line insertions function the necessary connection is added automatically based on the cursor position.



When an instruction is input at the cursor, 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 cursor is above another instruction.

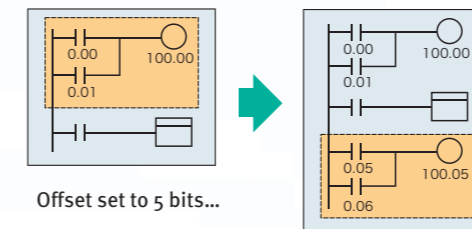


When an instruction is input at the cursor, a column is automatically inserted for the instruction.

Easy to reuse ladder programming

Copying with address incrementing

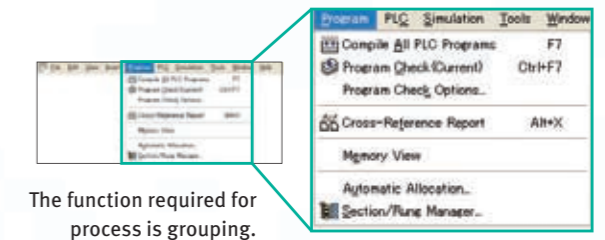
To create the same group of ladder instructions more than once with the address addition copy function, the instructions can be reused simply by inputting an address offset.



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.



Only commercially available USB cables required

CP1E CPU Units use USB for the peripheral port. 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.



I/O status at a glance

The terminal layout display features I/O indicators. The indicators are in the same position as the terminals to let you see the I/O status at a glance. You can easily identify I/O status or perform status checks at startup or during operation.

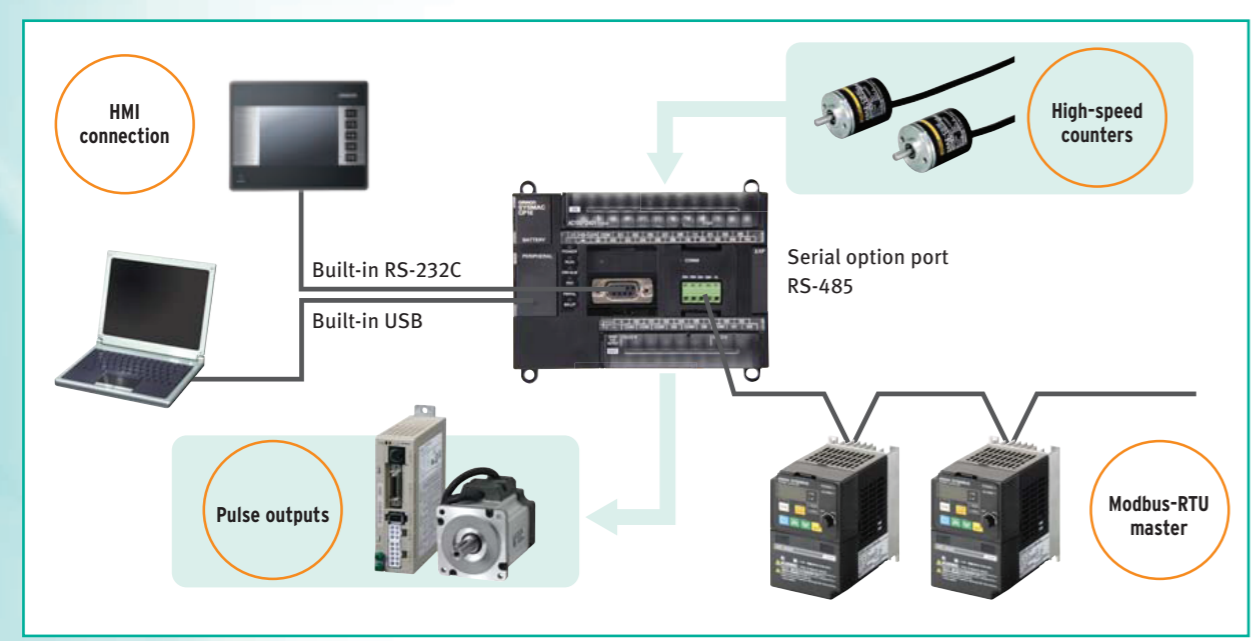


Efficient and effective

N-type only

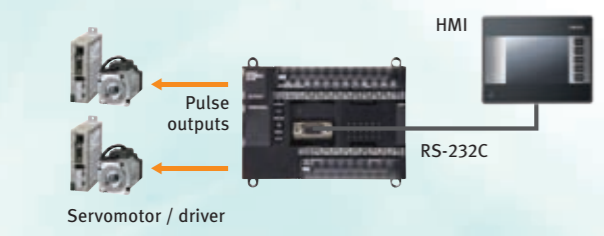
The machine controller for Lean Automation solutions

The CP1E N-type CPU units are equipped with high-speed counters, pulse outputs, and a built-in serial port. These features enable control of a wide range of devices.



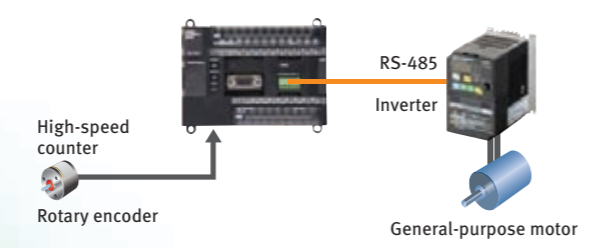
Pulse outputs

Two 100kHz pulse outputs for high-precision position control. Note : models with transistor outputs.



Modbus-RTU easy Master

Fast inverter control via RS-485.



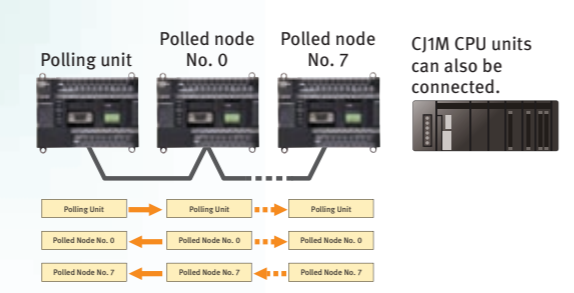
High-speed counters

Control multiple axes with one PLC using the two 100kHz and four 10kHz, single-phase high-speed counters.



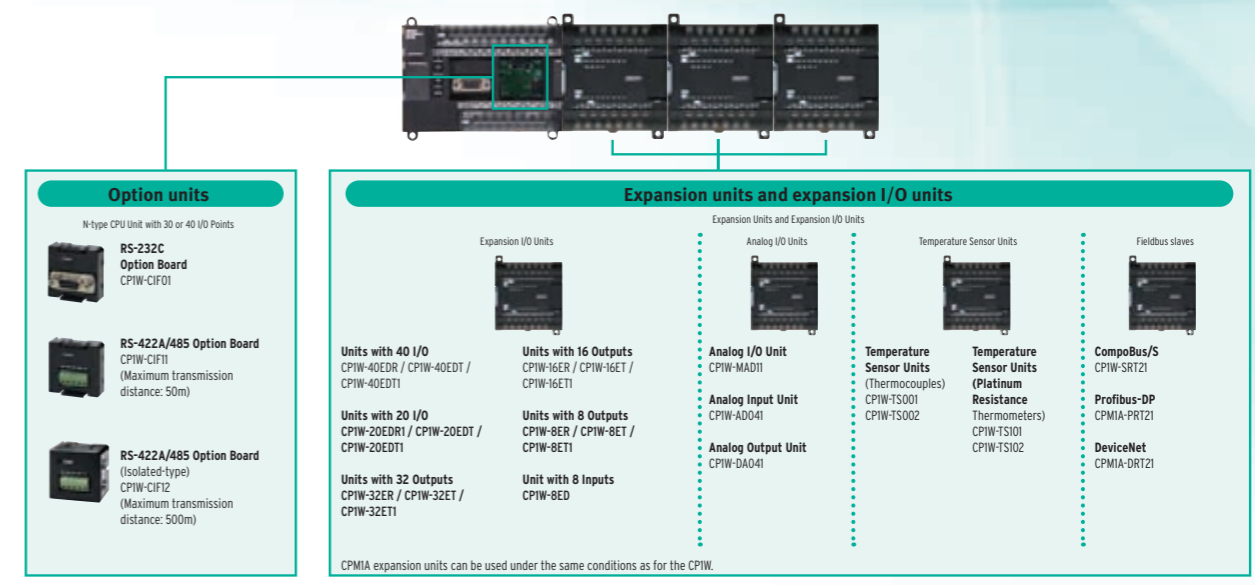
Serial PLC links

Link data with up to 10 words between up to nine CP1E-N CPU units.



Optional units for more flexibility

Three expansion units are available. An option board for an additional serial communication port can be added to N-type CPU unit.



E-type CP1E CPU Units (Basic Models)

| Product Name | Specifications | | | | | | Model |
|---------------------------|----------------|--------|---------|-------------|------------------|----------------------|--------------|
| | Power supply | Inputs | Outputs | Output type | Program Capacity | Data memory capacity | |
| E-type with 20 I/O Points | 100 to 240 VAC | 12 | 8 | Relay | 2K steps | 2K words | CP1E-E20DR-A |
| E-type with 30 I/O Points | | 18 | 12 | Relay | | | CP1E-E30DR-A |
| E-type with 40 I/O Points | | 24 | 16 | Relay | | | CP1E-E40DR-A |

N-type CP1E CPU Units (Application Models)

| Product Name | Specifications | | | | | | Model | | |
|---------------------------|--|--------|-----------------------|------------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------|
| | Power supply | Inputs | Outputs | Output type | Program Capacity | Data memory capacity | | | |
| N-type with 20 I/O Points | 100 to 240 VAC | 12 | 8 Digital + 2 Analog* | 8 Digital + 1 Analog* | Relay | 8K steps | 8K words | CP1E-N20DR-A | |
| | | | | Transistor (sinking) | | | | CP1E-N20DR-A* | |
| | 24 VDC | 12 | 8 | Transistor (sourcing) | CP1E-N20DT-A | | | | |
| | | | | Relay | CP1E-N20DTI-A | | | | |
| | | | | Transistor (sinking) | CP1E-N20DR-D | | | | |
| | | | | Transistor (sourcing) | CP1E-N20DT-D | | | | |
| | | | | Transistor (sinking) | CP1E-N20DT-D* | | | | |
| | | | | Transistor (sourcing) | CP1E-N20DTI-D* | | | | |
| | | | | 12 Digital + 2 Analog* | 8 Digital + 1 Analog* | | | Transistor (sinking) | CP1E-N20DT-D* |
| | | | | | | | | Transistor (sourcing) | CP1E-N20DTI-D* |
| N-type with 30 I/O Points | 100 to 240 VAC | 18 | 12 | Relay | 8K steps | 8K words | CP1E-N30DR-A | | |
| | | | | Transistor (sinking) | | | CP1E-N30DT-A | | |
| | 24 VDC | 12 | 12 | Transistor (sourcing) | | | CP1E-N30DTI-A | | |
| | | | | Relay | | | CP1E-N30DR-D | | |
| | | | | Transistor (sinking) | | | CP1E-N30DT-D | | |
| | | | | Transistor (sourcing) | | | CP1E-N30DT-D | | |
| | | | | Transistor (sinking) | | | CP1E-N30DTI-D | | |
| | | | | Transistor (sourcing) | | | CP1E-N30DTI-D | | |
| | | | | 12 Digital + 2 Analog* | | | 8 Digital + 1 Analog* | Transistor (sinking) | CP1E-N30DT-D* |
| | | | | | | | | Transistor (sourcing) | CP1E-N30DTI-D* |
| N-type with 40 I/O Points | 100 to 240 VAC | 24 | 16 | Relay | 8K steps | 8K words | CP1E-N40DR-A | | |
| | | | | Transistor (sinking) | | | CP1E-N40DT-A | | |
| | 24 VDC | 12 | 16 | Transistor (sourcing) | | | CP1E-N40DTI-A | | |
| | | | | Relay | | | CP1E-N40DR-D | | |
| | | | | Transistor (sinking) | | | CP1E-N40DT-D | | |
| | | | | Transistor (sourcing) | | | CP1E-N40DT-D | | |
| | | | | Transistor (sinking) | | | CP1E-N40DTI-D | | |
| | | | | Transistor (sourcing) | | | CP1E-N40DTI-D | | |
| | | | | 12 Digital + 2 Analog* | | | 8 Digital + 1 Analog* | Transistor (sinking) | CP1E-N40DT-D* |
| | | | | | | | | Transistor (sourcing) | CP1E-N40DTI-D* |
| Battery Set | For N-type CP1E CPU Units Note: Mount a Battery to an N-type CP1E CPU Unit if the data in the following areas must be backed up for power interruptions. 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.) | | | | | | CP1E-BAT01 | | |

*Note: There are no accessories included with N-type CP1E CPU units. RS-232C connectors for the built-in RS-232C port and the battery (CP1E-BAT01) are not included.
*Note: CP1E-NA model available early 2010