The economic machine controller

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Control Systems
• Programmable logic controllers  • Human-machine interfaces  • Remote I/O

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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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.

N-type
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

E-type
Program capacity : 2 Ksteps
DM Area capacity : 2 Kwords
Timers/Counters : 256 each
High-speed counters : 10 kHz × 6 inputs

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 to use input editor with smart input function

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

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.

Automatic column insertion when inserting instructions
The column is automatically inserted when an instruction is added even if the cursor is above another 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

CPIE 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

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.

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.

Pulse outputs

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

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.

HMI connection

Built-in RS-232C
Built-in USB

Pulse outputs

RS-232C

Serial option port RS-485

High-speed counters

Modbus-RTU master

Modbus-RTU easy Master

Fast inverter control via RS-485.

Servo motor / driver

General-purpose motor

Rotary encoder

Polling unit

Polled node No. 0

Polled node No. 7

CJ1M CPU units can also be connected.

High-speed counter

Inverter

Expansion units and expansion I/O Units

Expansion I/O Units

Analog I/O Units

Temperature Sensor Units

Fieldbus slaves

CPM1A expansion units can be used under the same conditions as for the CP1W.

E-type CP1E CPU Units (Basic Models)

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Specifications</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-type with 20 I/O Points</td>
<td>Power supply inputs outputs output type Program Capacity Data memory capacity</td>
<td>100 to 240 VAC 12 8 Relay 2K steps 2K words</td>
</tr>
<tr>
<td>E-type with 30 I/O Points</td>
<td>POWER supply inputs outputs output type Program Capacity Data memory capacity</td>
<td>18 12 Relay</td>
</tr>
<tr>
<td>E-type with 40 I/O Points</td>
<td>POWER supply inputs outputs output type Program Capacity Data memory capacity</td>
<td>24 16 Relay</td>
</tr>
</tbody>
</table>

N-type CP1E CPU Units (Application Models)

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>N-type with 20 I/O Points</td>
<td>Power supply inputs outputs output type Program Capacity Data memory capacity</td>
<td>12 Digital + 2 Analog* 8 Digital + 1 Analog* 8K steps 8K words</td>
</tr>
<tr>
<td>N-type with 20 I/O Points</td>
<td>Power supply inputs outputs output type Program Capacity Data memory capacity</td>
<td>12 Digital + 2 Analog* 8 Digital + 1 Analog* Transistor (sinking)</td>
</tr>
<tr>
<td>N-type with 20 I/O Points</td>
<td>Power supply inputs outputs output type Program Capacity Data memory capacity</td>
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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.)

Note: There are no accessories included. RS-232C connectors for the built-in RS-232C port and the battery (CP1W-BAT01) are not included.

Note: CP1E-NA model available early 2010