CP2E Small Communication Enhanced Controller

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New CP2E

CP1E-N → **Ethernet instead of USB**
Up to 2 Ethernet ports
Pulse output 4 axis → CP2E-N

CP1E-NS1
CP1E-NS → **USB**
+ RS232C and RS485 → CP2E-S

CP1E-E
CP1E-ES → **USB**
+ RS232C 1 port → CP2E-E
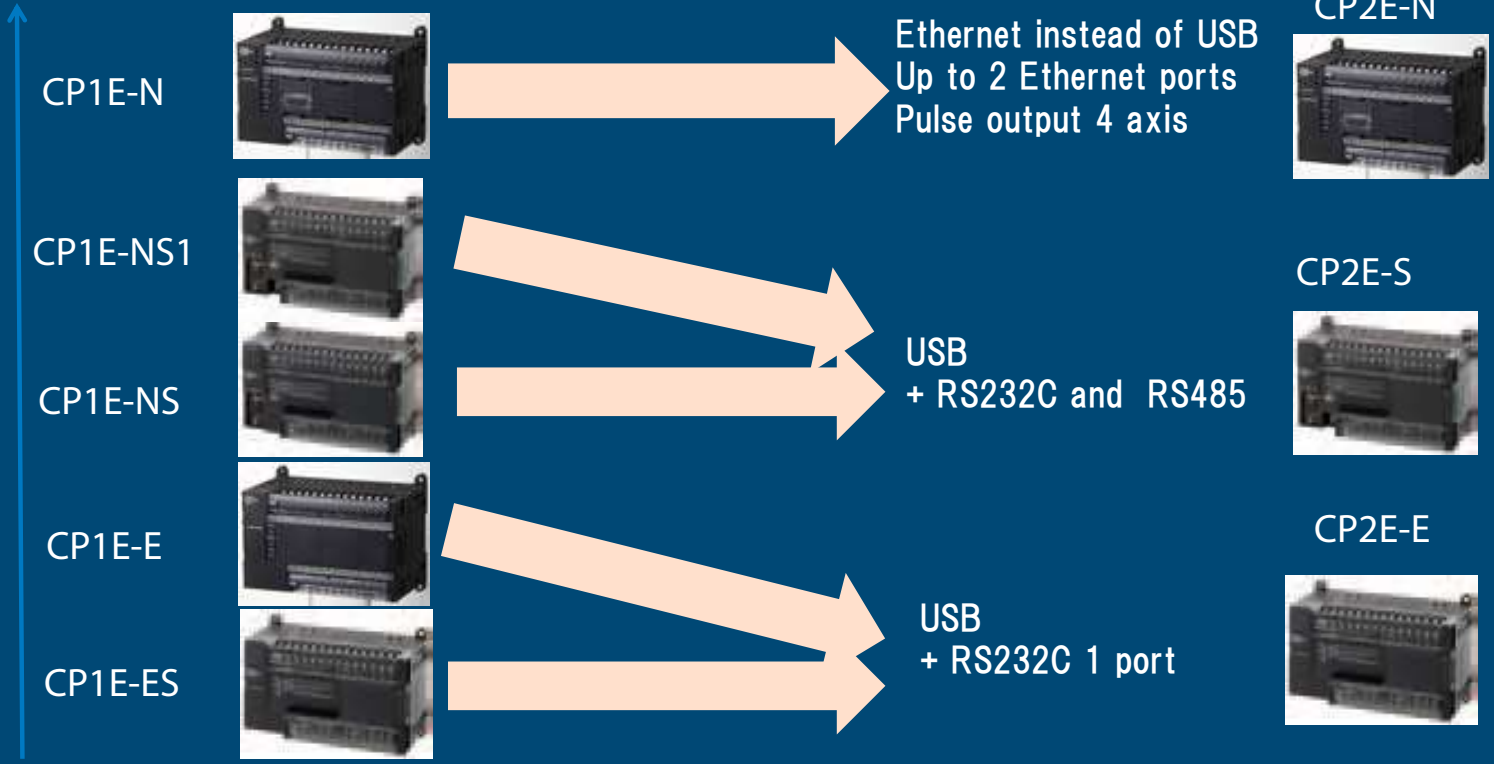
Three types: Essential or "E" type, Standard or "S" type and Network or "N" type

CP2E-E   , CP2E-S type

"S" Type
30,40,60 CPU

14, 20 CPU   30,40,60 CPU

- USB /RS232C
- Memory capacity 4ks
- FB/ST
- Battery-less
- No Expansion

- USB /RS232C
- Memory capacity 4ks
- FB/ST
- Battery-less
- Expansion 3 units

- USB/RS232/RS485
- 4 axis 100KHZ
- Memory Capacity 8ks
- FB/ST
- Battery-less
- RTC (BAT option need)
- Expansion 3 units
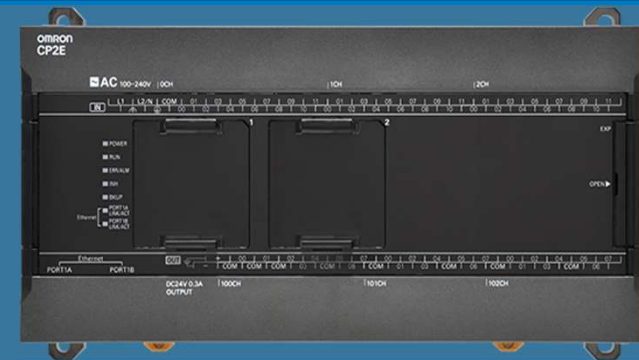
Almost same dimensions-- 5mm taller than the CP1E

Three types: "E" type, "S" type and "N" type

CP2E-N type

14, 20 CPU	30,40,60 CPU

- 1 Ethernet Port
- 2 axis 100KHZ
- 1 Option
- Memory capacity 10ks
- Battery-less
- RTC (BAT option need)
- No Expansion units

- 2 Ethernet Ports
- 4 axis 100KHZ
- 2 Option
- Memory capacity 10ks
- Battery-less
- RTC (BAT option need)
- Expansion 3 units

Almost same dimensions-- 5mm taller than the CP1E

CP2E Micro PLC Options and Expansions
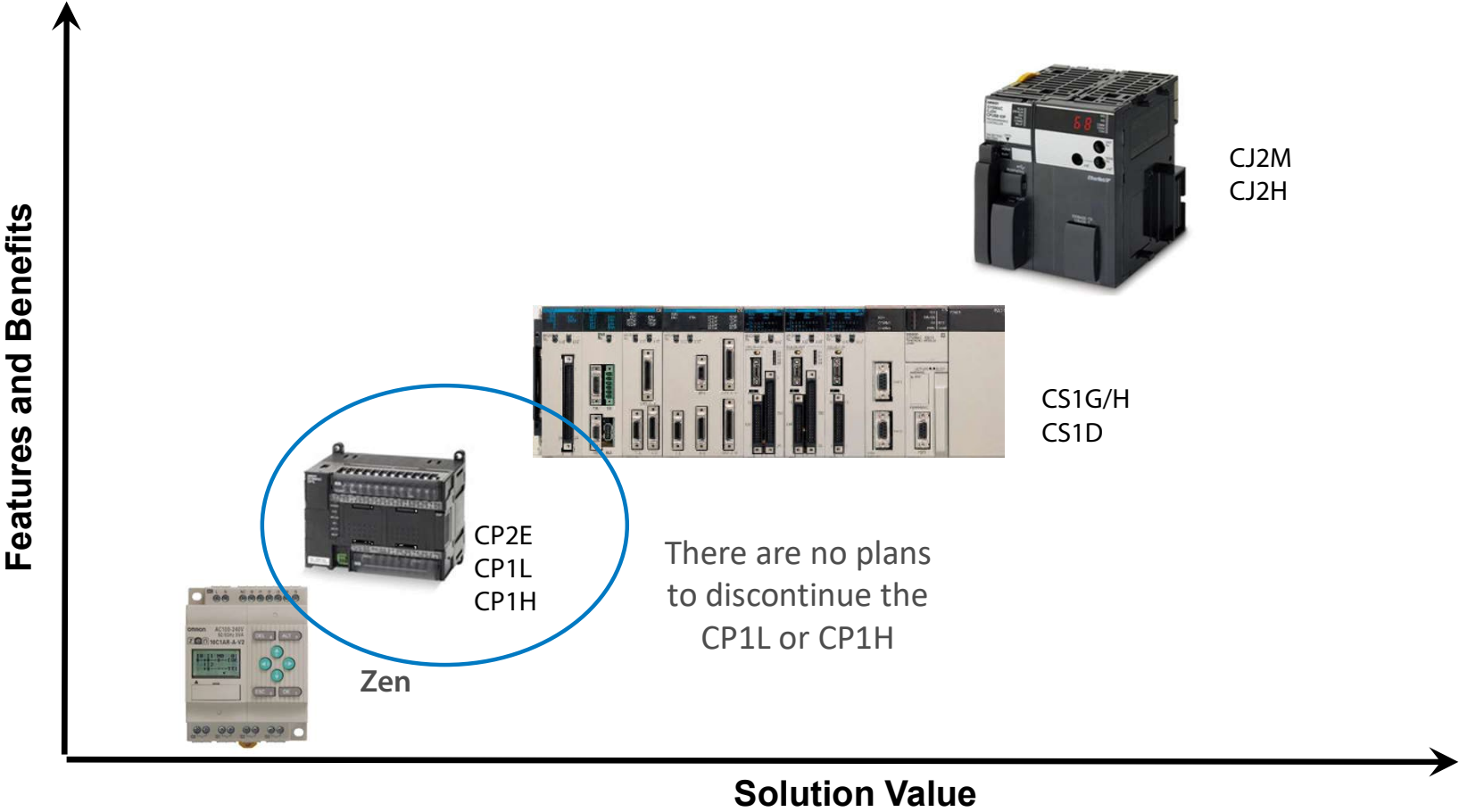
CP2E- Series

Expansion Modules

Re use the CP1W expansion units

Option Boards

For the "N" Type: Can use re-use some of the CP1W option boards

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Product Positioning

Features and Benefits (vertical axis)

Solution Value (horizontal axis)

CJ2M
CJ2H

CS1G/H
CS1D

CP2E
CP1L
CP1H

Zen

There are no plans to discontinue the CP1L or CP1H

CP2E/CP1E Comparison

Comparison of specifications of CP2E and CP1E

Specifications	CP2E			CP1E			
	CP2E-N□□	CP2E-S□□	CP2E-E□□	CP1E-N□□	CP1E-N□□S□	CP1E-E□□ / CP1E-E□□S	CP1E-NA20
Number of built-in I/O points	14/20/30/40/60	30/40/60	14/20/30/40/60	14/20/30/40/60	30/40/60	10/14/20/30/40/60	20
Total number of Expansion units	14/20 points None 30/40/60 points 3 units			14/20 points None 30/40/60 points 3 units			
Lineup Output/power supply type	• Relay/AC • Relay/DC • Transistor (sinking)/AC • Transistor (sinking)/DC • Transistor (sourcing)/DC	• Relay/AC • Transistor (sinking)/DC • Transistor (sourcing)/DC	• Relay/AC	• Relay/AC • Relay/DC • Transistor (sinking)/AC • Transistor (sourcing)/AC • Transistor (sinking)/DC • Transistor (sourcing)/DC	• Relay/AC • Transistor (sinking)/DC • Transistor (sourcing)/DC	• Relay/AC Only 10 points • Relay/DC • Transistor (sinking)/AC • Transistor (sourcing)/AC • Transistor (sinking)/DC • Transistor (sourcing)/DC	• Relay/AC • Transistor (sinking)/DC • Transistor (sourcing)/DC
Program capacity	10K steps	8K steps	4K steps	8K steps	8K steps	2K steps	8K steps
FB capacity	10K steps	8K steps	4K steps	None			
Function block steps	Yes Languages usable in function block definitions: Ladder diagrams, structured text (ST)			None			
Overhead processing time	0.2 ms	0.15 ms	0.1 ms	0.4 ms			
Instruction execution times	LD 0.23 μs MOV 1.76 μs			LD 1.19 μs MOV 7.9 μs			
Data memory capacity	16K words	8K words	4K words	8K words	8K words	2K words	8K words
Ethernet port	Included N14/20: 1 port N30/40/60: 2 port	None	None	None N30/40/60 only: 1 port (CP1W-CIF41 use)	None	None	1 port (CP1W-CIF41 use)
Corresponding battery	CP2W-BAT02 (for clock function)		None	CP1W-BAT01 (for clock function, IO memory backup)		None	CP1W-BAT01
Built-in analog	None			None			Analog input 2channels Analog output 1channel
Analog adjusters	None	None	None	Yes	None	E□□: Yes E□□S: None	Yes
Ambient operating temperature	-20 to 60 °C			0 to 55 °C			

Features and Benefits "E", "S" and "N" Type

Same CXONELITE Programming Software

- Battery only needed if RTC being used-ladder and parameters are saved in flash memory

- Added function blocks and structured text.
  - Including PID and Modbus RTU FB. FB library is being built

- -20 to 60 $^{\circ}C$ operating range

- Pricing to be the same as the equivalent CP1E
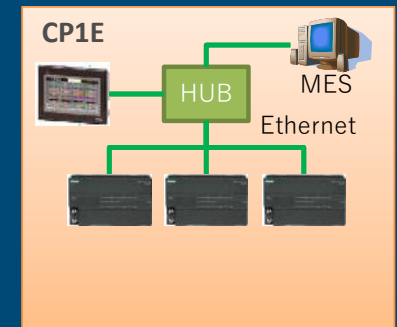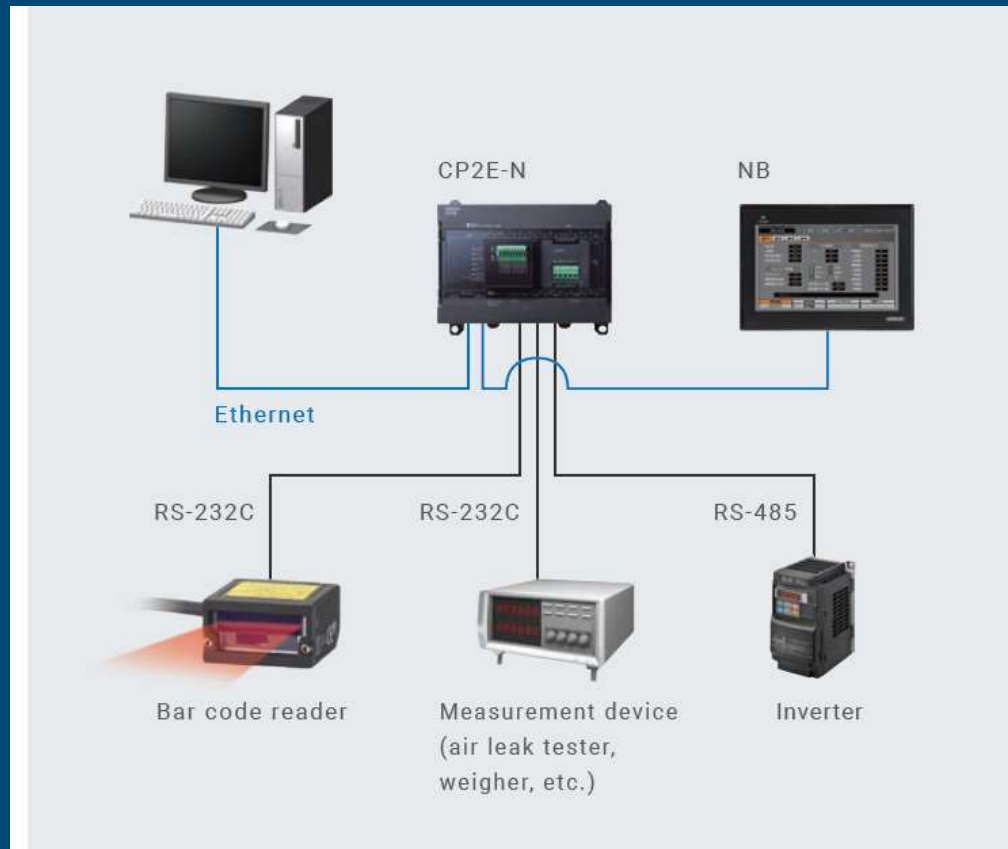
- Faster ladder scan speed

Additional "N" Type Features -Enhanced for Communications

- 2 Ethernet ports (switch)

- Up to 3 serial ports

- Four axis positioning with linear interpolation

Enhanced comms for the IIoT world (2 Ethernet Ports, RS232/485) N-type

CP2E-N NB

Ethernet

RS-232C   RS-232C   RS-485

Bar code reader   Measurement device (air leak tester, weigher, etc.)   Inverter

CP1E

HUB   MES   Ethernet

Ethernet switch/HUB needed
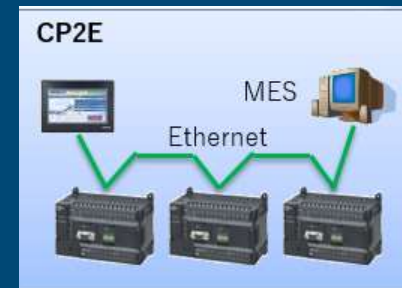
CP2E

MES   Ethernet

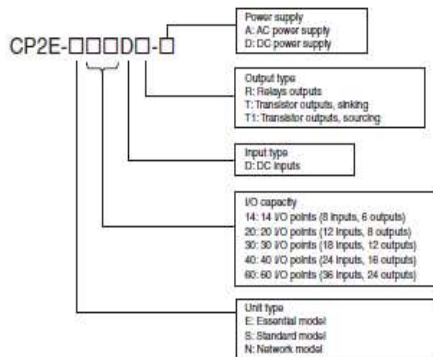**Ethernet switch/HUB not needed**

Target Applications

- Small to medium machines

- Perfect for stand alone single purpose machines

- Packaging, gluing, wrapping, sealing, filling, small part assembly.

- ….. Or any application for a small controller

CP2E
Model Number Structure

CP2E-□□□D□-□

Power supply
A: AC power supply
D: DC power supply

Output type
R: Relays outputs
T: Transistor outputs, sinking
T1: Transistor outputs, sourcing

Input type
D: DC inputs

I/O capacity
14: 14 I/O points (8 inputs, 6 outputs)
20: 20 I/O points (12 inputs, 8 outputs)
30: 30 I/O points (18 inputs, 12 outputs)
40: 40 I/O points (24 inputs, 16 outputs)
60: 60 I/O points (36 inputs, 24 outputs)

Unit type
E: Essential model
S: Standard model
N: Network model

Ordering

- Currently registered in JDE

- Use Onset to configure the part numbers

- Part numbers in spec sheet P145-E1

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Compatibility

- The CP2E will replace the CP1E and be sold as the lower end of the small controllers along with the CP1L and the CP1H

- Most CJ1W option boards are compatible with the CP2E

- Compatible with the NS, NB, NV HMI.

Collateral

Description	Media	Publication Number
CX-Programmer Software User Manual	PDF	W446-E1-☐
CX-Programmer Operation Manual Function Blocks	PDF	W447-E1-☐
CX-ONE FA Integrated Tool Package Setup Manual	PDF	W463-E1-☐
Sysmac CX-ONE CX-Integrator Operation Manual	PDF	W464-E1-☐
Sysmac CS/CJ/CP/NJ Series Communications Manual	PDF	W342-E1-☐
CP1E/CP2E Instruction Reference Manual	PDF	W483-E1-☐
CP2E CPU Unit Hardware User Manual	PDF	W613-E1-☐
CP2E CPU Unit Software Manual	PDF	W614-E1-☐
CP2E Specification Sheet	PDF	CP2E-P145-E1-☐
CP2E Brochure	PDF	P144-E1-☐
CP1E to CP2E Replacement Guide	PDF	P150-E1-☐

Key Takeaways

The CP2E offers more communications options than competitors at up to 2 Ethernet ports

New function blocks in the CP2E can allow machine builders to add features and save programming time.

Impressive operating temperature, shock and vibration specifications for industrial use.

Questions

Answers

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