

CP1E-E / -N / -NA

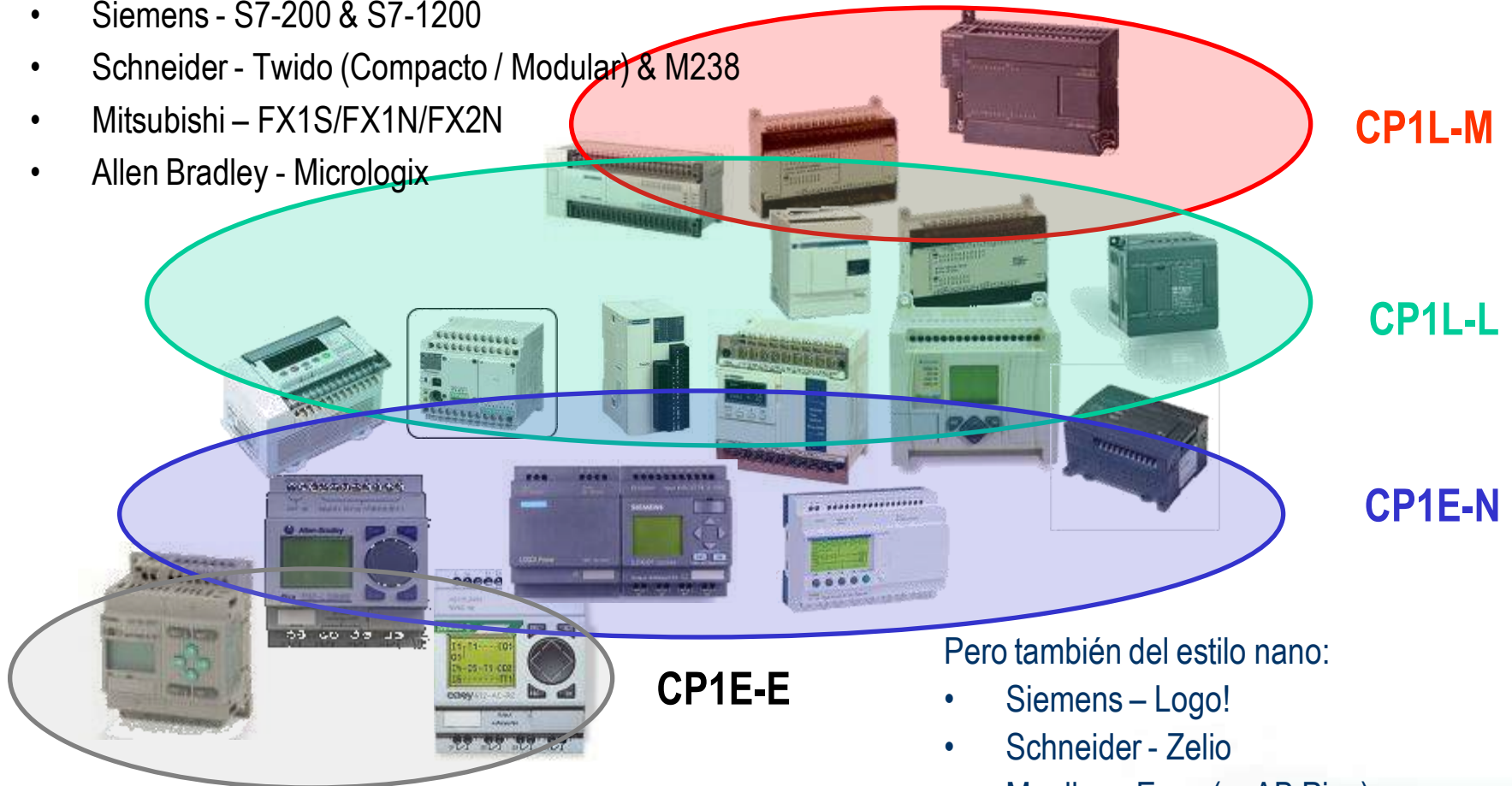


Integrated Automation
Actualización_Abril 2010

Posicionamiento en el mercado:

- Principales Competidores de PLC Compacto:

- Siemens - S7-200 & S7-1200
- Schneider - Twido (Compacto / Modular) & M238
- Mitsubishi – FX1S/FX1N/FX2N
- Allen Bradley - Micrologix



CP1L-M

CP1L-L

CP1E-N

CP1E-E

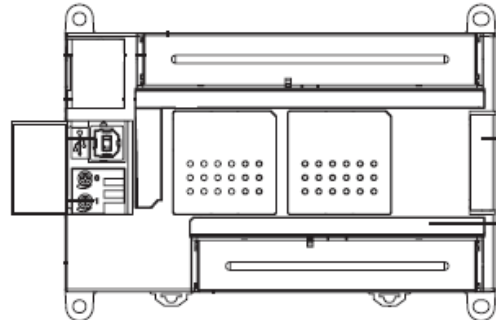
Pero también del estilo nano:

- Siemens – Logo!
- Schneider - Zelio
- Moeller – Easy (or AB Pico)

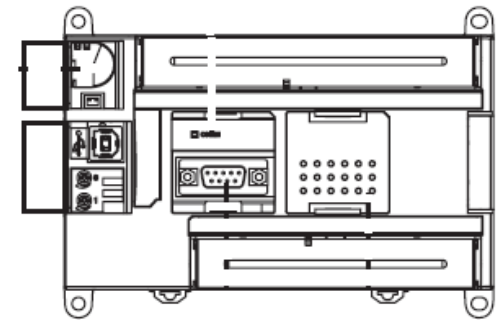
Nota: CP1L-J se reemplaza por CP1E-N

Sustituto de la Familia CPM1A

E-type CPU Unit
CP1E-E40DR-A



N-type CPU Unit
CP1E-N40D□-□



Dos tipos:

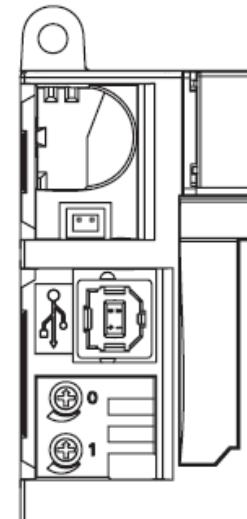
- CP1E-E□D□-A
(Modelo Básico)
- CP1E-N□D□-□
(Modelo de Aplicación)

Características Estándar:




- Conexión Directa y Sencilla de PC utilizando un Cable USB Estándar.
- LEDs de visualización para todas las E/S y así ver el estado ON/OFF de las mismas de un solo vistazo.
- Posibilidad de mejorar y ampliar el número de E/S mediante las unidades de expansión CP1W*.
 - Sólo para las CPUs de E30/40, N30/40/60 ó NA20.
- Entradas de respuesta rápida, entradas de interrupción, funcionalidad completa de contadores de alta velocidad.
- Control de pulsos y salidas PWM en CPUs N14/20/30/40/60 ó NA, con salidas transistor.
- Puerto serie RS-232C incorporado en CPUs N/NA.
- Módulos opcionales en CPUs N30/40/60 ó NA.

Hardware,...más de cerca



- En los modelos E-E la tapa de los módulos opcionales del frontal es fija al no soportarlos.
- No soporta cassette de memoria.
- RS-232 incluido en modelos E-N.
- No Dip-Switches.
- 2 potenciómetros analógicos.
- No Entrada Analógica incorporada.
- No batería en E-E (pero +40 horas de condensador de backup!).
- Bloques de Terminal Fijos.
- Modelos E-E sólo disponibles con alimentación AC.



Gama de Producto. Modelos básicos CP1E-E



Product name	Specifications						External power supply (24 VDC) (A)	Current consumption (A)		Model	Standards
	Power Supply	Inputs	Outputs	Output type	Program capacity	Data memory capacity		5 V	24 V		
E-type CPU Units with 10 I/O Points 	100 to 240 VAC	6	4	Relay	2K steps	2K words	--	0.08	0.04	CP1E-E10DR-A <u>NEW</u>	CE
				Transistor (sinking)			--	0.11	--	CP1E-E10DT-A <u>NEW</u>	
				Transistor (sourcing)			--	0.11	--	CP1E-E10DT1-A <u>NEW</u>	
	24 VDC			Relay			--	0.08	0.04	CP1E-E10DR-D <u>NEW</u>	
				Transistor (sinking)			--	0.11	--	CP1E-E10DT-D <u>NEW</u>	
				Transistor (sourcing)			--	0.11	--	CP1E-E10DT1-D <u>NEW</u>	
E-type CPU Units with 14 I/O Points 	100 to 240 VAC	8	6	Relay	2K steps	2K words	--	0.16	0.07	CP1E-E14DR-A <u>NEW</u>	CE
E-type CPU Units with 20 I/O Points 	100 to 240 VAC	12	8	Relay	2K steps	2K words	--	0.17	0.08	CP1E-E20DR-A	

Gama de Producto. Modelos básicos CP1E-E




E-type CPU Units with 30 I/O Points 	100 to 240 VAC	18	12	Relay	2K steps	2K words	0.30	0.17	0.07	CP1E-E30DR-A	N, L, CE
E-type CPU Units with 40 I/O Points 	100 to 240 VAC	24	16	Relay	2K steps	2K words	0.30	0.17	0.09	CP1E-E40DR-A	

Note: There are no accessories included with E-type CP1E CPU Units. A Battery (CP1W-BAT01) cannot be used.



Gama de Producto. Modelos de aplicación CP1E-N/NA

Product name	Specifications						External power supply (24 VDC) (A)	Current consumption (A)		Model	Standards
	Power Supply	Inputs	Outputs	Output type	Program capacity	Data memory capacity		5 V	24 V		
N-type CPU Units with 14 I/O Points 	100 to 240 VAC	8	6	Relay	8K steps	8K words	--	0.17	0.07	CP1E-N14DR-A <u>NEW</u>	CE
				Transistor (sinking)			--	0.22	0.02	CP1E-N14DT-A <u>NEW</u>	
				Transistor (sourcing)			--	0.22	0.02	CP1E-N14DT1-A <u>NEW</u>	
	24 VDC			Relay			--	0.17	0.07	CP1E-N14DR-D <u>NEW</u>	
				Transistor (sinking)			--	0.22	0.02	CP1E-N14DT-D <u>NEW</u>	
				Transistor (sourcing)			--	0.22	0.02	CP1E-N14DT1-D <u>NEW</u>	
N-type CPU Units with 20 I/O Points 	100 to 240 VAC	12	8	Relay	8K steps	8K words	--	0.18	0.08	CP1E-N20DR-A	
				Transistor (sinking)			--	0.23	0.02	CP1E-N20DT-A	
				Transistor (sourcing)			--	0.23	0.02	CP1E-N20DT1-A	
	24 VDC			Relay			--	0.18	0.08	CP1E-N20DR-D	
				Transistor (sinking)			--	0.23	0.02	CP1E-N20DT-D	
				Transistor (sourcing)			--	0.23	0.02	CP1E-N20DT1-D	

Gama de Producto. Modelos de aplicación CP1E-N/NA

N-type CPU Units with 30 I/O Points 	100 to 240 VAC	18	12	Relay	8K steps	8K words	0.30	0.21	0.07	CP1E-N30DR-A	N, L, CE
				Transistor (sinking)			0.30	0.27	0.02	CP1E-N30DT-A	
				Transistor (sourcing)			0.30	0.27	0.02	CP1E-N30DT1-A	
	24 VDC			Relay			--	0.21	0.07	CP1E-N30DR-D	
				Transistor (sinking)			--	0.27	0.02	CP1E-N30DT-D	
				Transistor (sourcing)			--	0.27	0.02	CP1E-N30DT1-D	
N-type CPU Units with 40 I/O Points 	100 to 240 VAC	24	16	Relay	8K steps	8K words	0.30	0.21	0.09	CP1E-N40DR-A	
				Transistor (sinking)			0.30	0.31	0.02	CP1E-N40DT-A	
				Transistor (sourcing)			0.30	0.31	0.02	CP1E-N40DT1-A	
	24 VDC			Relay			--	0.21	0.09	CP1E-N40DR-D	
				Transistor (sinking)			--	0.31	0.02	CP1E-N40DT-D	
				Transistor (sourcing)			--	0.31	0.02	CP1E-N40DT1-D	
N-type CPU Units with 60 I/O Points 	100 to 240 VAC	36	24	Relay	8K steps	8K words	0.30	0.21	0.13	CP1E-N60DR-A <i><u>NEW</u></i>	CE
				Transistor (sinking)			0.30	0.31	0.02	CP1E-N60DT-A <i><u>NEW</u></i>	
				Transistor (sourcing)			0.30	0.31	0.02	CP1E-N60DT1-A <i><u>NEW</u></i>	
	24 VDC			Relay			--	0.21	0.13	CP1E-N60DR-D <i><u>NEW</u></i>	
				Transistor (sinking)			--	0.31	0.02	CP1E-N60DT-D <i><u>NEW</u></i>	
				Transistor (sourcing)			--	0.31	0.02	CP1E-N60DT1-D <i><u>NEW</u></i>	

Gama de Producto. Modelos de aplicación CP1E-N/NA

Product name	Specifications						External power supply (24 VDC) (A)	Current consumption (A)		Model	Standards
	Power Supply	Inputs	Outputs	Output type	Program capacity	Data memory capacity		5 V	24 V		
NA-type CPU Units with 20 I/O Points (Built-in analog) 	100 to 240 VAC	12 (Built-in analog inputs: 2)	8 (Built-in analog outputs: 1)	Relay	8K steps	8K words	0.30	0.18	0.11	CP1E-NA20DR-A <i><u>NEW</u></i>	CE
	24 VDC			Transistor (sinking)			--	0.23	0.09	CP1E-NA20DT-D <i><u>NEW</u></i>	
				Transistor (sourcing)			--	0.23	0.09	CP1E-NA20DT1-D <i><u>NEW</u></i>	
Battery Set 	For N/NA-type CP1E CPU Units Note: Mount a Battery to an N/NA-type 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.)									CP1W-BAT01	CE

Note: There are no accessories included with N/NA-type CP1E CPU Units. RS-232C connectors for the built-in RS-232C port and the Battery (CP1W-BAT01) are not included.

Limitaciones que hay que conocer en Comunicaciones

- No comunicaciones externas para E-E!
 - No Toolbus!
 - Esto significa que no soporta ni el CIF41 de Ethernet ni el Módulo Display DAM01
 - Opciones limitadas en los puertos serie también...
 - NT link 1:N sólo permite 1 conexión HMI, sólo 1 nodo (1:1?)
 - Serial PLC Link no se puede utilizar en dos puertos al mismo tiempo
 - No 1:1 Link
 - No se puede ir online vía puertos serie*, sólo USB – sin necesidad de configurar el DIP-Switch
 - Después de cualquier cambio de protocolo hay que reiniciar el PLC
 - No SAP, Ladder Monitor, Consola de Programación
- * Soporta Conexión de Programación a través del NS (limitado)

Limitaciones que hay que conocer en Programación

- No FB's
- No ST
- No SFC
- Menor capacidad de memoria en casi todas las áreas
- Sólo soporte de ~200 instrucciones (vs. ~500 en CP1L)
- Tiempo de ejecución de instrucción ~2X más lento que CP1L (7.9 μ s vs. 4.1 μ s para MOV)
- No transferencia automática desde cassette de memoria
- No reloj en modelos E-E
- Sólo 1 Tarea Cíclica (vs. 32 en CP1L)
- Sólo 16 Tareas de Interrupción (vs. 256 en CP1L)
- Algunas limitaciones FINS

*documentado en manual, pero no funciona en CX-P 8.2...

Limitaciones que hay que conocer en las E/S

- Rango de Capacidad de 10-160 E/S
- Diferencias en las Entradas de Contador de Alta Velocidad (ver manual, más lentas/menos)
- No Salidas de Pulsos CW/CCW, sólo pulso y dirección
- No soporta Curva-S de acel/decel (sólo en E-N)

Comparativa de CP1

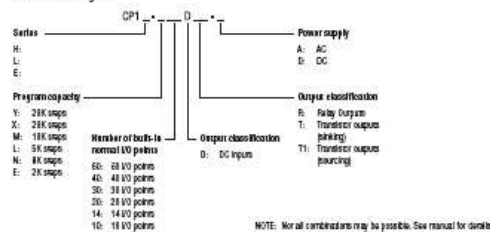
Maximize efficiency by selecting the optimum CPU unit for your applications



	CP1H			CP1L			
	CP1H-Y200T-D	CP1H-DA400-...	CP1H-DA800-...	CP1L-N600-...	CP1L-N600-...	CP1L-N1300-...	CP1L-L1300-...
12 Inputs 8 Outputs	24 Inputs 16 Outputs	24 Inputs 16 Outputs	24 Inputs 16 Outputs	24 Inputs 24 Outputs	24 Inputs 16 Outputs	18 Inputs 12 Outputs	12 Inputs 8 Outputs
AC Power Supply	No	Yes	Yes	Yes	Yes	Yes	Yes
DC Power Supply	Yes	Yes	Yes	Yes	Yes	Yes	No
Relay Outputs	No	Yes (AC model only)	Yes (AC model only)	Yes	Yes	Yes	Yes
Transistor Outputs	Yes (NPN/Sinking only)	Yes (DC model only)	Yes (DC model only)	Yes	Yes	Yes	No
I/O Capacity	384	320	384	180	160	150	80
High Speed Inputs	4 1 MHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾
Pulse Outputs	4 axes 1 MHz maximum ¹⁾	4 axes 100 kHz maximum ¹⁾	4 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾
Serial Communications	Two serial ports can be added			Two serial ports can be added			One serial port can be added
LCD Option Board	Yes	No	No	Yes	No	No	No
Built-in Analog I/O	No	4 inputs, 2 outputs	No	No	No	No	No
Analog Adjuster	Yes (2)	No	No	Yes (2)	No	No	Yes (2)
Essential Analog Settings Input (256 Resolutions)	Yes	No	No	Yes	No	No	Yes (2)
Memory Cassette	Yes	No	No	Yes	No	No	No
Function Blocks (adder, integrator, etc.)	Yes	No	No	Yes	No	No	No
Inverter Forwarding	No	No	No	Yes	No	No	No
7-Segment Display	Yes	No	No	No	No	No	No
Program Capacity	28K Steps	28K Steps	28K Steps	19K Steps	19K Steps	5K Steps	5K Steps
Data Memory Capacity	32K Words	32K Words	32K Words	22K Words	22K Words	10K Words	10K Words
Processing Speed	0.1 μs/LD instruction, 0.3 μs/MOV instruction	0.1 μs/LD instruction, 0.3 μs/MOV instruction	0.1 μs/LD instruction, 0.3 μs/MOV instruction	0.55 μs/LD instruction, 1.04 μs/MOV instruction	0.55 μs/LD instruction, 1.04 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction
Real-Time Clock	Yes	No	No	Yes	No	No	No
Removable Terminal	Yes	No	No	Yes	No	No	No
CP1W/CP1M Expansion Unit	Yes (maximum 7 or 15 inputs/words) (5 outputs only)	No	No	Yes (maximum 3)	No	No	Yes (maximum 3)
ISA Serial Special I/O and CPU Bus Units	Yes (maximum 2)	No	No	No	No	No	No

¹⁾ This table is a general overview only. See specifications for more information.

Part number diagram



CPU units



	CP1E			CP1E			CP1E		
	CP1E-L140-...	CP1E-L100-...	CP1E-N600-...	CP1E-N1300-...	CP1E-N200-...	CP1E-EM00A	CP1E-EM00A	CP1E-EM00A	
12 Inputs 8 Outputs	6 Inputs 4 Outputs	24 Inputs 16 Outputs	24 Inputs 16 Outputs	18 Inputs 12 Outputs	12 Inputs 8 Outputs	24 Inputs 16 Outputs	18 Inputs 12 Outputs	12 Inputs 8 Outputs	
AC Power Supply	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
DC Power Supply	No	No	No	No	No	No	No	No	
Relay Outputs	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
Transistor Outputs	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
I/O Capacity	54	10	160	150	20	168	150	20	
High Speed Inputs	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	4 100 kHz maximum ¹⁾	
Pulse Outputs	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	2 axes 100 kHz maximum ¹⁾	
Serial Communications	No	No	Built-in RS-232C port. One serial port can be added (CP1W-GP01, CP1W-GP11, CP1W-GP12)	Built-in RS-232C port. One serial port can be added (CP1W-GP01, CP1W-GP11, CP1W-GP12)	Built-in RS-232C port. One serial port can be added (CP1W-GP01, CP1W-GP11, CP1W-GP12)	Built-in RS-232C port. One serial port can be added (CP1W-GP01, CP1W-GP11, CP1W-GP12)	Built-in RS-232C port. One serial port can be added (CP1W-GP01, CP1W-GP11, CP1W-GP12)	Built-in RS-232C port. One serial port can be added (CP1W-GP01, CP1W-GP11, CP1W-GP12)	
LCD Option Board	No	No	No	No	No	No	No	No	
Built-in Analog I/O	No	No	No	No	No	No	No	No	
Analog Adjuster	No	No	Yes (2)	Yes (2)	Yes (2)	Yes (2)	Yes (2)	Yes (2)	
Essential Analog Settings Input (256 Resolutions)	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
Memory Cassette	No	No	No	No	No	No	No	No	
Function Blocks (adder, integrator, etc.)	No	No	No	No	No	No	No	No	
Inverter Forwarding	No	No	No	No	No	No	No	No	
7-Segment Display	No	No	No	No	No	No	No	No	
Program Capacity	8K steps	8K steps	8K steps	8K steps	8K steps	8K steps	8K steps	8K steps	
Data Memory Capacity	8K words	8K words	8K words	8K words	8K words	8K words	8K words	8K words	
Processing Speed	1.10 μs/LD instruction, 7.0 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction	1.10 μs/LD instruction, 7.0 μs/MOV instruction	
Real-Time Clock	No	No	Yes (with optional battery)	Yes (with optional battery)	Yes (with optional battery)	Yes (with optional battery)	Yes (with optional battery)	Yes (with optional battery)	
Removable Terminal	No	No	No	No	No	No	No	No	
CP1W/CP1M Expansion Unit	No	No	Yes (maximum 3)	Yes (maximum 3)	Yes (maximum 3)	Yes (maximum 3)	Yes (maximum 3)	Yes (maximum 3)	
ISA Serial Special I/O and CPU Bus Units	No	No	No	No	No	No	No	No	

Gracias!



Jose María Baena
PLCs & Networking Product Marketing Manager
Automation Systems
OMRON Electronics Iberia, S.A.U.

..., para cualquier consulta de producto