

New!
New Product News

OMRON

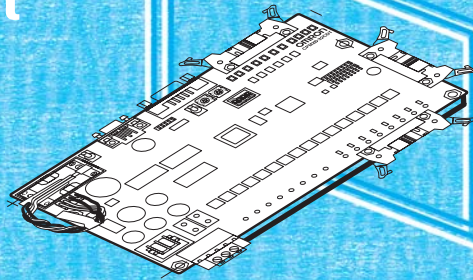
Programmable Controller

SYSMAC CPM2B

Board PLC

Board PLC that fits in a 45-mm high space.
Build into devices requiring slim shape to meet non-brand requirements.

16 or 24 inputs
16 outputs
RS-232C port
Peripheral port
Ladder
programming:
4 Kwords



CPM2B Board PLC

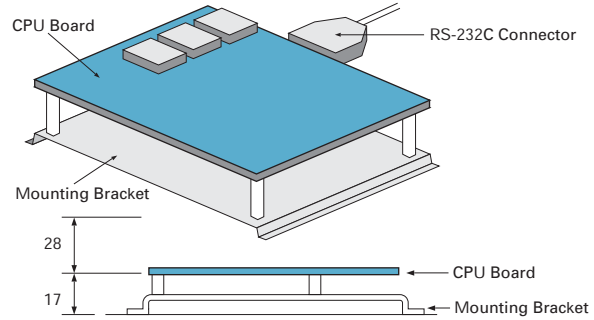
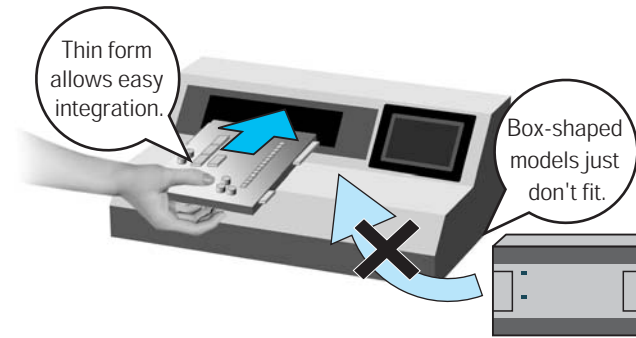
***Innovation
in the Solution Age***

OMRON INDUSTRIAL AUTOMATION

Capabilities Exceeding Earlier PLCs

Use in Devices Requiring Slim Form

Requiring only 45-mm height, the CPM2B easily fits into narrow spaces.



Note: Dimensions using a CPU Board. Horizontal expansion using CPM2B-CN411 Cable with an Expansion Board is possible.

Non-brand Needs

The case-free board format of the CPM2B enables applications like an in-house controller.

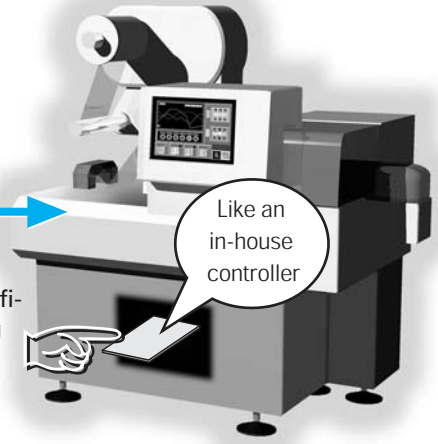
Previous Models

Company A or Company B PLC built in as specified by end user.



CPM2B

The board shape solves problems with end user specifications, eliminating the need to build in PLCs from different companies.



12-V Power Supply

Lineup includes Board PLCs that support a 12-V power supply, allowing battery-powered applications, such as notification of power failures via wireless error-information transmissions.

- 32-point CPU Board (transistor outputs)
- 32-point Expansion I/O Board (transistor outputs)

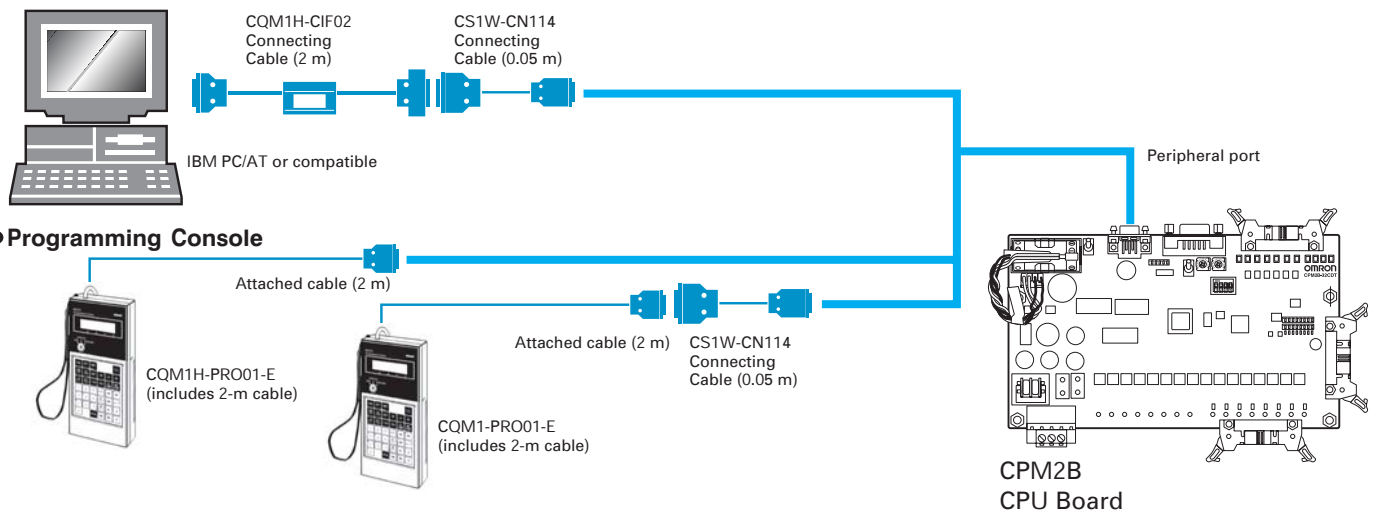
Use with Devices Requiring Analog I/O

- Lineup includes Analog I/O Expansion Boards (Resolution: 6,000).
- Use to set speed and other settings for Pressure Sensors and Inverters.

Device Connections and System Configuration

● CX-Programmer

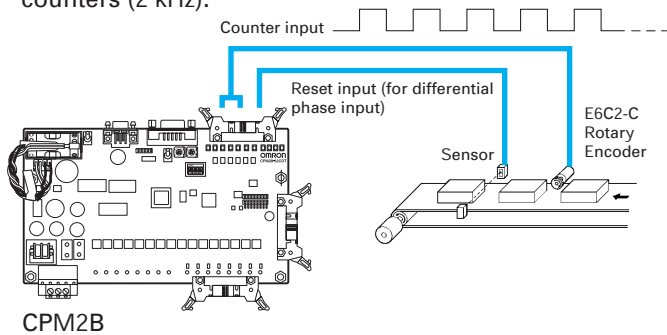
(Compatible with version 1.2 or later.)



Provides Machine Control Functions

Includes Two High-speed Counter Functions

One high-speed counter input can be used in any one of the four input modes: Differential phase pulse mode (5 kHz), pulse plus direction input mode (20 kHz), up/down pulse input mode (20 kHz), and increment mode (20 kHz). The four interrupt inputs in counter mode can be used for incrementing counters or decrementing counters (2 kHz).



Reliably Reads Short Pulses of 50 μs

Quick-response input allows short ON-time pulse input. Four inputs are used for quick-response inputs (shared with interrupt inputs and interrupt inputs in counter mode) that can reliably read inputs with a minimum input signal width as short as 50 μs, regardless of the cycle time.

Analog Settings

Two controls on the CPU Board can be turned to change the analog settings. The rotation angle is stored as BCD data (0 to 200 BCD) in IR 250 and IR 251. These controls can be used to easily change or fine-tune machine settings such as a conveyor belt's pause time or feed rate.

Calendar/ Clock

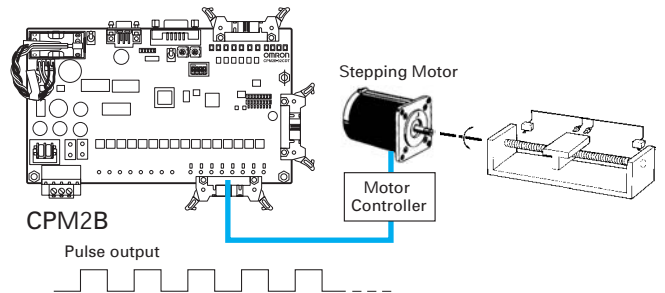
CPU Boards that have a built-in clock (accuracy: 1 minute/month), can read from the program to show the current year, month, day, day of the week, and time (hour, minute, second).

Easy Position Control with Pulse Outputs

(Transistor Outputs Only)

CPM2B PLCs with transistor outputs have two outputs that can produce 10-Hz to 10-kHz pulses (single-phase outputs).

- When used as single-phase pulse outputs, there can be two outputs. When used as pulse plus direction or up/down pulse outputs, there can be just one output. Output of 0.1 to 999.9 Hz with a variable duty ratio (0 to 100% duty ratio) is also possible.

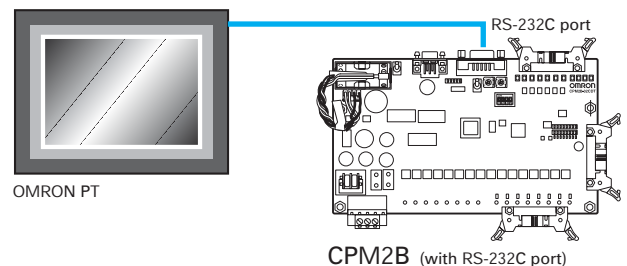


Indispensable Interrupt Functions for Machine Control

When an interrupt input goes ON, the main program is stopped and the interrupt program is executed. The interrupt functions can be used as high-speed counters and for quick response, in addition to timer functions.

High-speed Communications with the PT Using a 1:1 NT Link

With a 1:1 NT Link, an OMRON Programmable Terminal (PT) can be connected directly to the CPM2B.



CPU Boards

Board type		Inputs	Outputs	Battery	Clock	RS-232C port	Model
32 I/O points (16 inputs, 16 outputs)	Terminal block outputs	16 inputs, 24 V DC	16 relay outputs	—	—	—	CPM2B-32C1DR-D
				○	○	○	CPM2B-32C2DR-D
	Connector outputs	16 inputs, 24 V DC	16 sinking transistor outputs	—	—	—	CPM2B-32C1DT-D
				○	○	○	CPM2B-32C2DT-D
40 I/O points (24 inputs, 16 outputs)	Connector outputs	16 inputs, 12 V DC	16 sinking transistor outputs	—	—	—	CPM2B-32C1D1T-D12
				○	○	○	CPM2B-32C2D1T-D12
40 I/O points (24 inputs, 16 outputs)	Terminal block outputs	24 inputs, 24 V DC	16 relay outputs	○	○	○	CPM2B-40C2DR-D

Expansion I/O Boards

Board type		Inputs	Outputs	Model
32 I/O points (16 inputs, 16 outputs)	Terminal block outputs	16 inputs, 24 V DC	16 relay outputs	CPM2B-32EDR
	Connector outputs	16 inputs, 24 V DC	16 sinking transistor outputs	CPM2B-32EDT
		16 inputs, 12 V DC		CPM2B-32ED1T
40 I/O points (24 inputs, 16 outputs)	Terminal block outputs	24 inputs, 24 V DC	16 relay outputs	CPM2B-40EDR
64 I/O points (32 inputs, 32 outputs)	Connector outputs	32 inputs, 24 V DC	32 sinking transistor outputs	CPM2B-64EDT

* A maximum of two CPM2B-64EDT 64-point Expansion I/O Boards can be connected, due to the current consumption. * Only one Expansion I/O Board can be connected if connecting an NT-AL001 to the RS-232C port.

Board type	Inputs	Outputs	Model
Analog I/O Board	2 inputs	1 output	CPM2B-MAD21
	4 inputs	2 outputs	CPM2B-MAD42
	6 inputs	3 outputs	CPM2B-MAD63

* Up to three Analog I/O Boards can be connected to the CPU Board, for 8 analog inputs and 4 analog outputs max.

Cable	Specifications	Model
Board Expansion Cable	Cable length: 400 mm (for horizontal expansion)	CPM2B-CN411

* Expansion I/O Boards are provided with 60-mm expansion cables. The CPM2B-CN411 Board Expansion Cable is not required for vertical expansion.

General Specifications

Item	CPU Board		Expansion Boards	
	32 or 40 I/O points (relay outputs)	32 I/O points (transistor outputs)	32 or 64 I/O points (relay outputs)	32 or 64 I/O points (transistor outputs)
Supply voltage	24 V DC		Supplied from the CPU Board.	
Allowable supply voltage	20.4 to 26.4 V DC			
Power consumption	20 W max.		—	
Inrush current	20 A max.		—	
Insulation resistance	20 MΩ min. (at 500 V DC) between the external DC terminals and non-current carrying metal parts			
Dielectric strength	1,000 V AC for 1 min between the external DC terminals and non-current carrying metal parts			
Noise immunity	Conforms to IEC61000-4-4; 2 kV (power lines)			
Vibration resistance	Conforms to JIS C0040. 10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, 9.8 m/s ² acceleration in X, Y, and Z directions for 80 minutes each (8 minutes of vibration X 10 repetitions = total time 80 minutes)			
Shock resistance	Conforms to JIS C0041. 147 m/s ² three times each in X, Y, and Z directions			
Ambient operating temperature	0 to 55°C			
Ambient operating humidity	10% to 90% (with no condensation)			
Ambient operating atmosphere	Must be free from corrosive gas.			
Ambient storage temperature	-20 to 75°C (excluding the battery)			
Power supply retention time	2 ms min.			

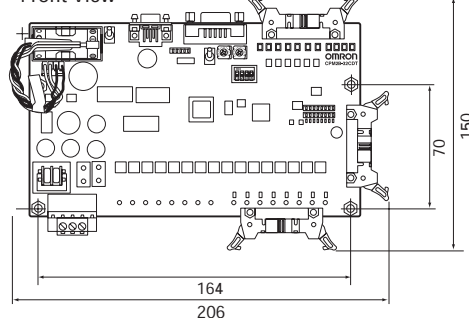
Performance Specifications

Item	CPU Board	
	32 I/O points (relay outputs)	32 I/O points (transistor outputs) 40 I/O points (relay outputs)
Control method	Stored program method	
I/O control method	Cyclic scan (immediate refreshing can be performed with IORF(97).)	
Programming language	Ladder diagram	
Instruction length	1 step per instruction, 1 to 5 words per instruction	
Instructions	Basic instructions	14 instructions
	Special instructions	105 instructions, 185 variations
Execution time	Basic instructions	0.64 μs (LD instruction)
	Special instructions	7.8 μs (MOV instruction)
Program capacity	4,096 words	
Max. I/O capacity	CPU Board only	32 points/40 points
	With Expansion I/O Boards	168 points max.
Input bits	IR 0000 to IR 00915	(Words not used for input bits can be used for work bits.)
Output bits	IR 01000 to IR 01915	
Work bits	928 bits: IR 02000 to IR 04915 (words IR 020 to IR 049) and IR 20000 to IR 22715 (words IR 200 to IR 227)	
Special bits (SR Area)	448 bits: IR 22800 to IR 25515 (words IR 228 to IR 255)	
Temporary bits (TR Area)	8 bits (TR0 to TR7)	
Holding bits (HR Area)	320 bits: HR 0000 to HR 1915 (words HR 00 to HR 19)	
Auxiliary bits (AR Area)	384 bits: AR 0000 to AR 2315 (words AR 00 to AR 23)	
Link bits (LR Area)	256 bits: LR 0000 to LR 1515 (words LR 00 to LR 15)	
Timers/Counters	256 bits: TIM/CNT 000 to TIM/CNT 255	
	1-ms timers: TMHH	10-ms timers: TIMH
	100-ms timers: TIM	1-s/10-s timers: TIML
	Decrementing timers: CNT Reversible counters: CNTR	
Data memory	Read/Write	2,048 words (DM 0000 to DM 2047). The Error Log is contained in DM 2000 to DM 2021.
	Read only	456 words (DM 6144 to DM 6599)
	PLC Setup	56 words (DM 6600 to DM 6655)

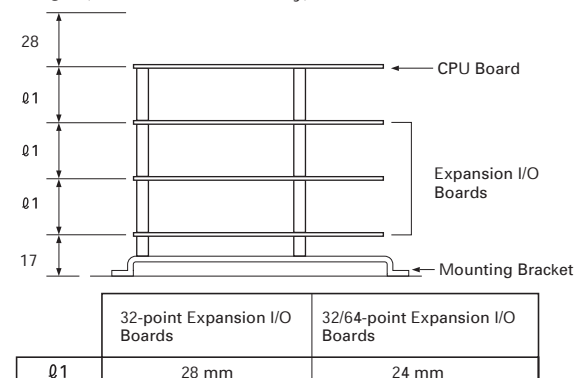
Assembly Dimensions

32 or 64 I/O points

•Front View



•Height (When Stacked Vertically)



Note: Do not use this document to operate the Unit.

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Note: Specifications subject to change without notice.

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