

**CPM2A Micro Controller****CPU and  
Expansion Modules**

The CPM2A series micro controllers are among some of the most powerful small-scale control solutions in the micro PLC industry today. With 20, 30, 40, or 60 I/O point CPUs to choose from, advanced motion control features, multiple communications ports, and a powerful instruction set, the CPM2A series controller provides an advanced control solution in a micro sized package.



- **20, 30, 40 and 60 point I/O CPUs**
- **Expandable up to 120 I/O points**
- **Peripheral communications port standard**
- **RS-232C port Standard for direct connection to serial devices**
- **Removable Terminals**
- **Analog expansion modules available**
- **Temperature sensor expansion modules available**
- **Synchronized pulse control allows synchronization of input devices to control devices.**
- **Auxiliary 24VDC supply (AC type only)**
- **Relay or Transistor outputs**
- **Real Time Clock**
- **20 kHz High speed counter input**
- **Two -10 kHz pulse outputs**
- **UL/CSA/CE**

# Communication and Expansion

## Serial Communication

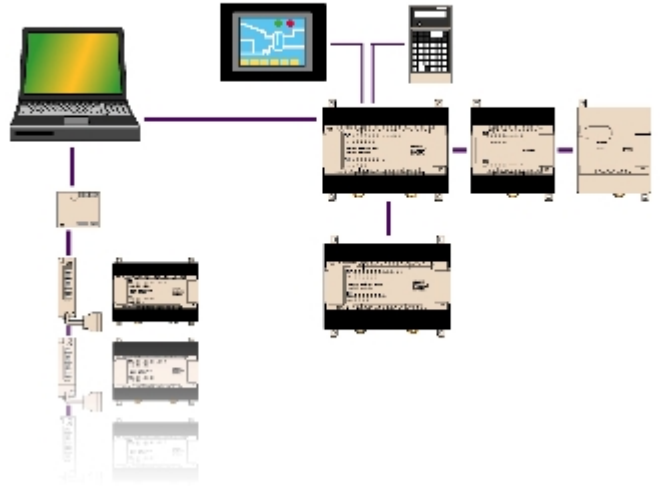
- Built in serial port allows direct connection to CPU
- Connect directly to serial devices such as a printer, modem, or a bar code reader
- Download programs from a PC directly to CPM2A serial port
- 1:1 connection to other Omron PLCs allow CPUs to seamlessly share data
- CPM1A-CIF01 adapter allows use of dual RS-232C ports

## Peripheral Communication

- Connect directly to Omron programming devices
- Connect directly to Omron operator interface terminal
- Connect to additional RS-232C adapter or RS-422 adapter

## Expansion

- Easy “single cable” expansion
- Connect up to 3 expansion modules for up to 120 I/O points
- Modular expansion allows addition of input, output or combination I/O modules.
- 8, 16, or 20 point modules available
- Relay or transistor expansion modules
- Analog I/O module
- RTD and thermocouple temperature sensor modules
- Compobus adapter allows connection to a Compobus/S network as a slave



CPM2A System Configuration Diagram

# SPECIFICATIONS

Item	CPM2A-20	CPM2A-30	CPM2A-40	CPM2A-60
Number of Inputs	12	18	24	36
Number of Outputs	8	12	16	24
Supply voltage	AC Type DC Type	100 to 240 VAC 50/60 Hz 24 VDC		
Operating Voltage Range	AC Type DC Type	85 to 264 VAC 20.4 to 26.4 VDC		
Power Consumption	AC Type DC Type	60VA max 20W max		
Inrush current	AC Type DC Type	60A max 20A max		
External Power Supply (AC Type Only)	Voltage	24VDC		
	Current	300 mA		
Control method	Stored program method			
I.O control method	Cyclic scan with direct output; Immediate refresh processing			
Programming language	Ladder diagram			
Instruction length	1 step per instruction, 1 to 5 words per instruction			
Types of instructions	Basic instructions: 14 Special instructions: 105 instructions, 185 variations			
Execution time	Basic instructions: .64 µsec Special instructions: 7.8 µsec			
Program capacity	4,096 words			
Timers/Counters	256 timers/counters (TIM/CNT 000 to TIM/CNT 255) Types: 1ms, 10ms, 100ms, 1s, 10s, decrementing and reversible counters			
Interrupt processing	4 External interrupts (Shared by external interrupt inputs (counter mode) and the quick response inputs)			
High-speed counters (5 total)	Pulse plus direction mode (20kHz) Differential phase mode (5Khz) Up/down pulse mode (20kHz) Increment mode (20kHz) Interrupt inputs: increment or decrement mode (2kHz)			
Pulse output (2 total)	2-Single phase pulse outputs 10 Hz to 10 kHz (transistor output models only)			
Clock Function	Shows year, month, day of the week, day, hour, minute, and second			
Memory Backup	Flash Memory Program, read-only DM area, and PC setup Battery Backup: Read/write DM, HR, AR, and counter values			
Certification	UL/CSA/CE			

# Dimensions

	CPM2A-20	CPM2A-30	CPM2A-40	CPM2A-60
<b>Width</b>	130 mm (5.12 in)	130 mm (5.12 in)	150 mm (5.91 in)	195mm (7.68 in)
<b>Depth</b>	AC	90 mm (3.54 in)	90 mm (3.54 in)	90 mm (3.54 in)
	DC	55 mm (2.17 in)	55 mm (2.17 in)	55 mm (2.17 in)
<b>Height</b>	90 mm (3.54 in)	90 mm (3.54 in)	90 mm (3.54 in)	90 mm (3.54 in)

**CPM2A Ordering Guide**

Description	# Of I/O		Input Type	Output Type	Power Supply	Part Number
	Input	Output				
20 I/O Points	12	8	DC	Relay	AC	CPM2A-20CDR-A
				Relay	DC	CPM2A-20CDR-D
				Transistor (NPN)		CPM2A-20CDT-D
				Transistor (PNP)		CPM2A-20CDT1-D
30 I/O Points	18	12	DC	Relay	AC	CPM2A-30CDR-A
				Relay	DC	CPM2A-30CDR-D
				Transistor (NPN)		CPM2A-30CDT-D
				Transistor (PNP)		CPM2A-30CDT1-D
40 I/O Points	24	16	DC	Relay	AC	CPM2A-40CDR-A
				Relay	DC	CPM2A-40CDR-D
				Transistor (NPN)		CPM2A-40CDT-D
				Transistor (PNP)		CPM2A-40CDT1-D
60 I/O Points	36	24	DC	Relay	AC	CPM2A-60CDR-A
				Relay	DC	CPM2A-60CDR-D
				Transistor (NPN)		CPM2A-60CDT-D
				Transistor (PNP)		CPM2A-60CDT1-D

**CPM2A Expansion Modules**

Description	# Of I/O		Input Type	Output Type	Power Supply	Part Number
	Input	Output				
8 Input Point	8	0	DC	N/A	N/A	CPM1A-8ED
8 Output Point	0	8	N/A	Relay		CPM1A-8ER
				Transistor (NPN)		CPM1A-8ET
				Transistor (PNP)		CPM1A-8ET1
20 I/O Point	12	8	DC	Relay		CPM1A-20EDR
				Transistor (NPN)		CPM1A-20EDT
				Transistor (PNP)		CPM1A-20EDT1

**Analog I/O and Temperature Sensor Modules**

Description	# Of I/O		Input Type	Output Type	Power Supply	Part Number
Analog I/O	2	1	0 to 10V 1 to 5V 4 to 20mA	0-10V -10 to +10V 4 to 20mA		CPM1A-MAD01
Temperature Sensor Module	2	1	RTD Pt 100 -40 to 250C	0-10V -10 to +10V 4 to 20mA		CPM1A-TS101-DA
				N/A		CPM1A-TS101
						CPM1A-TS102
	2	-	Thermocouple J,K -40 to 250C			CPM1A-TS201
	4	-				CPM2A-TS202

**Compobus/S Adapter**

Item	Description	Part Number
Compobus/S Adapter	Operates as a Compobus /S slave and provides 8 inputs and 8 outputs to the CPM1A or CPM2A PC	CPM1A-SRT21

## Adapters

Item	Description	Part Number
RS232C Adapter	Converts peripheral port to RS232C level / Cable 3.3m	CQM-CIF02
RS232C Adapter	Converts peripheral port to RS232C level / DIN mount	CPM1-CIF01
RS422 Adapter	Converts RS232C port to RS422A (Requires 5VDC power supply)	NT-AL001
Link Adapter	Converts RS422 to RS232C	3G2A9-AL004-E
RS422 Adapter	Converts peripheral port to RS422A / DIN mount	CPM1-CIF11

## Connecting Cables

Item	Description	Part Number
RS232C Cable	RS232C to RS232C / PLC communication (2m)	C200H-CN320-EU
RS232C Cable	RS232C to RS232C / PC connection for program download (2m)	C200HS-CN220-EU

## Peripheral devices

Item	Description	Part Number
Programming console	Handheld programming console with 2m cable attached	CQM1-PRO01-E
Programming console	Handheld programming console with back light (Cable not included)	C200H-PRO27-E
Connecting cable	Connects C200H programming console to peripheral port (2m)	C200H-CN222
Connecting cable	Connects C200H programming console to peripheral port (4m)	C200H-CN422
Backup Battery	Back up battery for CPM2A	CPM2A-BAT01

## Software

Item	Description	Part Number
SYSWIN	SYSWIN V3.3 CD ROM	SYSWIN-CPM1-V3.3

\*CX-programmer, V1.2 available spring 2000, will support Series 2 Micros (CPM2A/CPM2C)

## Literature

Item	Description	Part Number
Operation Manual	CPM2A Operation Manual	W352-E1-1
Programming Manual	CPM2A Programming Manual	W353-E1-1