

## CPM2C Micro Controller

## CPU and Expansion Modules

Omron's powerful CPM2C micro controller redefines the traditional micro PLC category by placing the speed power and communications of a larger PLC into a micro-sized housing with a small price. The CPM2C's 33mm width allows it to fit into small spaces, offers 119 instructions, and has processing speeds rivaling many 'small' PLCs. Multiple communication options along with advanced motion control features enable the CPM2C to provide a powerful solution to virtually any small scale control application.



- Ultra compact design with 33mm width
- Built in combination RS-232C/Peripheral port
- Connector output for relay or terminal blocks provides ease of wiring, choice of I/O style, and easy troubleshooting
- Expandable to 140 I/O (CPU + 5 Modules)
- Screw terminal connection (10 I/O only)
- 12 Bit analog expansion module
- 4K Program memory
- Synchronized pulse control allows synchronization of input devices to control devices.
- Relay or transistor outputs
- Optional Real Time Clock
- Multiple High speed counter inputs
- 10 kHz pulse outputs
- UL/CSA/CE

# I/O Terminal Connections

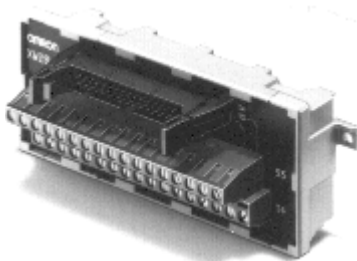
## Screw terminal Models

Screw Terminal Connections  
Allow the user to connect devices directly to the PLC input or output via phoenix style terminals

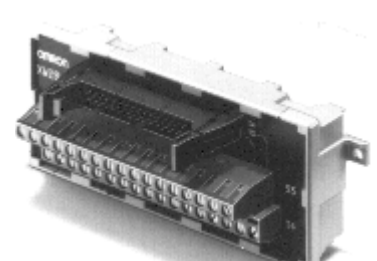


**Input**      **Output**

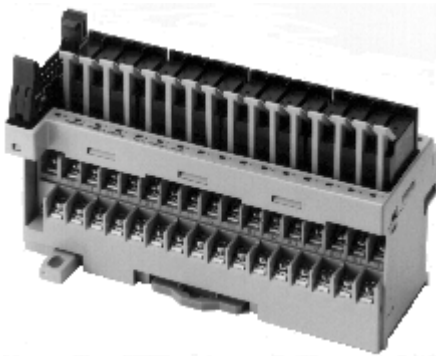
## Connector Terminal Models



Connection to 8 or 16 point, input terminal blocks allow connection to virtually any external device



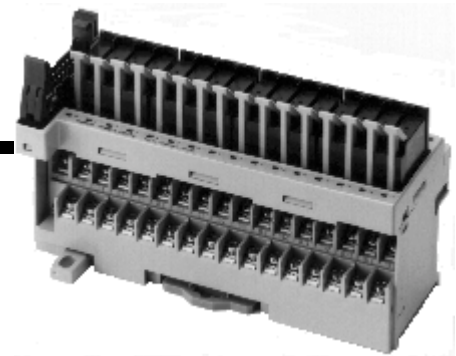
Connection to 8 or 16 point, output terminal blocks allow connection to virtually any external device



Solid State input modules blocks can be connected to convert high level AC or DC signals into levels acceptable to the PLC and provide external isolation.



**Input**      **Output**



Omron relay output blocks can be configured in 8 or 16 point blocks. There are various options including:  
Electromechanical Relays  
Triac output  
MOSFET output

# Communication and Expansion

## Serial Communication

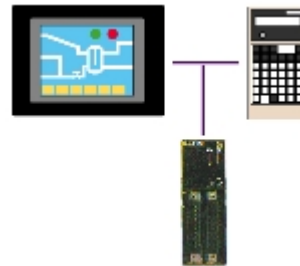
- Built in serial port allows direct connection to CPU
- Combination cable provides 2 simultaneous ports (Peripheral / RS-232C) from one location
- Connect directly to serial devices such as a printer, modem, or a bar code reader.
- Download programs from a PC directly to CPM2C serial port
- 1:1 connection to other Omron PLCs allow CPUs to seamlessly share data
- CPM2C-CIF01 adapter allows use of dual RS-232C ports



Direct Connection to a PC

## Peripheral Communication

- Combination cable provides 2 simultaneous ports (Peripheral / RS-232C) from one location
- Connect directly to Omron programming devices
- Connect directly to Omron operator interface terminal
- Connect to additional RS-232C adapter or RS-422 adapter



Operator Interface and Programming console

## Expansion

- Easy “snap on” expansion
- Connect up to 5 expansion modules For up to 140 I/O points
- Modular expansion allows addition of input, output or combination I/O modules.
- 8, 10, 16, or 24 point modules available
- Relay or transistor expansion modules
- 12 bit Analog I/O module
- RTD or Thermocouple temperature sensor modules
- Compobus/S adapter allows CPM2C to act as a slave on a Compobus/S network



Relay and transistor Expansion modules

# SPECIFICATIONS

Item	CPM2C-10	CPM2C-20
Number of Inputs	6	12
Number of Outputs	4	8
Supply voltage	24 VDC	
Operating Voltage Range	20.4 to 26.4 VDC	
Power Consumption	20W max	
Inrush current	20A max	
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 $\mu$ sec Special instructions: 7.8 $\mu$ sec	
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	2 Interrupts	4 Interrupts
	(Shared by external interrupt inputs (counter mode) and the quick response inputs)	
High-speed counters	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

	CPM2C-10	CPM2C-20
<b>Width</b>	33 mm (1.30 in)	33 mm (1.30 in)
<b>Depth</b>	65 mm (2.56 in)	65 mm (2.56 in)
<b>Height</b>	90 mm (3.54 in)	90 mm (3.54 in)

# ORDERING INFORMATION

# CPU and Expansion

## CPM2C Ordering Guide

Description	# Of I/O		Input Type	Output Type	Connector Type	Clock	Part Number
	Input	Output					
10 I/O Point	6	4	DC	Relay	Screw Terminal	No	CPM2C-10CDR-D
						Yes	CPM2C-10C1DR-D
						No	CPM2C-10CDTC-D
				Transistor (NPN)	I/O Connector	No	CPM2C-10CDT1C-D
						Yes	CPM2C-10C1DT1C-D
						Yes	CPM2C-10C1DT1C-D
20 I/O point	12	8	DC	Transistor (NPN)	I/O Connector	No	CPM2C-20CDTC-D
						Yes	CPM2C-20C1DTC-D
						No	CPM2C-20CDT1C-D
				Transistor (PNP)	I/O Connector	No	CPM2C-20CDT1C-D
						Yes	CPM2C-20C1DT1C-D
						Yes	CPM2C-20C1DT1C-D

## CPM2C Expansion Modules

Description	# Of I/O		Input Type	Output Type	Connector Type	Part Number
	Input	Output				
8 Point Input	8	-	DC	N/A	I/O Connector	CPM2C-8EDC
16 Point Input	16	-		N/A		CPM2C-16EDC
8 Point Output	-	8	N/A	Relay	Screw Terminal	CPM2C-8ER
8 Point Output	-	8		Transistor (NPN)	I/O Connector	CPM2C-8ETC
8 Point Output	-	8		Transistor (PNP)		CPM2C-8ET1C
16 Point Output	-	16		Transistor (NPN)		CPM2C-16ETC
16 Point Output	-	16		Transistor (PNP)		CPM2C-16ET1C
10 I/O Point	6	4		DC		Relay
24 I/O Point	16	8	Transistor (NPN)		I/O Connector	CPM2C-24EDTC
			Transistor (PNP)			CPM2C-24EDT1C

## 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		CPM2C-MAD11
Temperature Sensor Modules	2	-	RTD Pt 100 -40 to 250C	N/A		CPM2C-TS101
	2	-	Thermocouple J,K -40 to 250C			CPM2C-TS001

## 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	CPM2C-SRT21

## ORDERING INFORMATION

## Accessories

### Accessories

Item	Description	Part Number
Combination cable	Converts CPM2C port to both Peripheral and RS232C (.1m)	CPM2C-CN111
Peripheral port cable	Converts CPM2C port to Peripheral port (.05m)	CS1W-CN114
Peripheral port cable	Converts CPM2C port to RS232C port (.1m)	CS1W-CN118
RS232C adapter	RS232C Port (Din mount)	CPM2C-CIF01
RS422 adapter	RS422/RS232C adapter (Din mount)	CPM2C-CIF11
AC power supply	100-240VAC input /24 VDC output (Din mount)	CPM2C-PA201

### 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	CPM2C operation manual	W356-E1-1
Programming manual	CPM2C programming manual	W353-E1-1

# I/O Accessories Ordering Guide

## Input

Description	Block	Connecting Cable
20 Point Terminal Block	XW2B-20G4 (M3 Screw)	XW2Z-050A (.5 m)
	XW2B-20G5 (M3.5 Screw)	XW2Z-100A (1 m)
		XW2Z-150A (1.5 m)
		XW2Z-200A (2 m)
		XW2Z-300A (3 m)
		XW2Z-500A (. m)
G7TC – 16 Point Relay Block (Relays included)	G7TC-ID16 (DC input)	G79-100C (1 m)
	G7TC-IA16 (AC input)	G79-150C (1.5 m)
G2R – 16 Point Relay Block (Relays not included)	G70A-ZIM16 (Relay or Solid State)	G79-200C (2 m)
		G79-300C (3 m)
		G79-500C (5 m)

## Output

Description	Block	Connecting Cable
20 Point Terminal Block	XW2B-20G4 (M3 Screw)	XW2Z-050A (.5 m)
	XW2B-20G5 (M3.5 Screw)	XW2Z-100A (1 m)
		XW2Z-150A (1.5 m)
		XW2Z-200A (2 m)
		XW2Z-300A (3 m)
		XW2Z-500A (. m)
G7TC – 8 Point Relay Block (Relays Included)	G7TC-OC08 (Relay)	G79-100C (1 m)
		G79-150C (1.5 m)
		G79-200C (2 m)
G6D – 16 Point Relay Block (Relays not included)	G70D-SOC16-DC24V (Relay)	G79-300C (3 m)
	G70D-FOC16-DC24V (Solid State)	G79-500C (5 m)
G3R – 16 Point Relay Block (Relays not included)	G70A-ZOC16-DC24V (NPN)	
	G70A-ZOC16-DC24V (PNP)	
	(Relay or Solid State)	

**\*Note:** See I/O Block data sheets for detailed information regarding relay type and load information

**Data Sheet:** G7TC: J104-E3-1  
G70A: J87-E3-1  
G70D: J99-E3-1

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