

Compact PLC series

# CPM2A

An extensive line-up lets you easily configure machines and production lines to meet your needs

## SYSMAC CPM2A



Every CPM2A CPU comes equipped with an RS-232C interface as standard, e.g. to provide easy connection with a Programmable Terminal for fast and easy machine monitoring, temperature setting, etc. Simple positioning with the pulse I/O function is another example of the many advanced functions and high added value that the CPM2A brings to compact machines. Removable terminal blocks ensure easy maintenance, and the CPM2A uses the same Expansion I/O Units as the CPM1A for easy and economical sharing of system components.

CPU Units with AC Power Supply Depth: 90 mm		CPU Units with DC Power Supply Depth: 55 mm	
<p>■ Relay Output CPU Unit CPM2A-20CDR-A</p> <ul style="list-style-type: none"> <li>● Input points: 12, DC input</li> <li>● Output points: 8</li> </ul>	<p>■ Relay Output CPU Unit CPM2A-40CDR-A</p> <ul style="list-style-type: none"> <li>● Input points: 24, DC input</li> <li>● Output points: 16</li> </ul>	<p>■ Relay Output CPU Unit CPM2A-20CDR-D</p>	<p>■ Relay Output CPU Unit CPM2A-40CDR-D</p>
<p>■ Relay Output CPU Unit CPM2A-30CDR-A</p> <ul style="list-style-type: none"> <li>● Input points: 18, DC input</li> <li>● Output points: 12</li> </ul>	<p>■ Relay Output CPU Unit CPM2A-60CDR-A</p> <ul style="list-style-type: none"> <li>● Input points: 36, DC input</li> <li>● Output points: 24</li> </ul>	<p>■ Transistor Output CPU Units CPM2A-20CDT-D (Sink) CPM2A-20CDT1-D (Source)</p> <ul style="list-style-type: none"> <li>● Input points: 12, DC input</li> <li>● Output points: 8</li> </ul>	<p>■ Transistor Output CPU Units CPM2A-40CDT-D (Sink) CPM2A-40CDT1-D (Source)</p> <ul style="list-style-type: none"> <li>● Input points: 24, DC input</li> <li>● Output points: 16</li> </ul>
		<p>■ Relay Output CPU Unit CPM2A-30CDR-D</p>	<p>■ Relay Output CPU Unit CPM2A-60CDR-D</p>
		<p>■ Transistor Output CPU Units CPM2A-30CDT-D (Sink) CPM2A-30CDT1-D (Source)</p> <ul style="list-style-type: none"> <li>● Input points: 18, DC input</li> <li>● Output points: 12</li> </ul>	<p>■ Transistor Output CPU Units CPM2A-60CDT-D (Sink) CPM2A-60CDT1-D (Source)</p> <ul style="list-style-type: none"> <li>● Input points: 36, DC input</li> <li>● Output points: 24</li> </ul>

### Expansion I/O Units

<p>CPM1A-8ED</p> <ul style="list-style-type: none"> <li>● Input points: 8, DC input</li> </ul>	<p>CPM1A-20EDR1</p> <ul style="list-style-type: none"> <li>● Input points: 12, DC input</li> <li>● Output points: 8, RY output</li> </ul>
<p>CPM1A-8ER</p> <ul style="list-style-type: none"> <li>● Output points: 8, RY output</li> </ul>	<p>CPM1A-20EDT</p> <ul style="list-style-type: none"> <li>● Input points: 12, DC input</li> <li>● Output points: 8, TR output (Sink)</li> </ul>
<p>CPM1A-8ET</p> <ul style="list-style-type: none"> <li>● Output points: 8, TR output (Sink)</li> </ul>	<p>CPM1A-20EDT1</p> <ul style="list-style-type: none"> <li>● Input points: 12, DC input</li> <li>● Output points: 8, TR output (Source)</li> </ul>
<p>CPM1A-8ET1</p> <ul style="list-style-type: none"> <li>● Output points: 8, TR output (Source)</li> </ul>	

### Temperature Sensor Units

CPM1A-TS001

- Thermocouple inputs: 2

CPM1A-TS002

- Thermocouple inputs: 4

CPM1A-TS101

- Pt100 inputs: 2

CPM1A-TS-101-DA

- Pt100 inputs: 2, Analog inputs: 1

CPM1A-TS102

- Pt100 inputs: 4

### Analog I/O Units

CPM1A-MAD01 (Resolution: 256)

CPM1A-MAD11 (Resolution: 6,000)

2 inputs + 1 output

CPM1A-AD041 (4 inputs)

CPM1A-DA041 (4 outputs)

### DeviceNet

CPM1A-DRT21

- I/O Link inputs: 32
- I/O Link outputs: 32

### PROFIBUS-DP

CPM1A-PRT21

- I/O Link inputs: 16
- I/O Link outputs: 16

### CompoBus/S

CompoBus/S I/O Unit

CPM1A-SRT21

- I/O Link inputs: 8
- I/O Link outputs: 8

**Specifications**

**General**

Item		CPU Units with 20 I/O points	CPU Units with 30 I/O points	CPU Units with 40 I/O points	CPU Units with 60 I/O points
Supply voltage	AC power	100 to 240 V AC, 50/60 Hz			
	DC power	24 V DC			
Operating voltage range	AC power	85 to 264 V AC			
	DC power	20.4 to 26.4 V DC			
Power consumption	AC power	60 VA max.			
	DC power	20 W max. (See separate table following this one for details.)			
Inrush current	AC power	60 A max.			
	DC power	20 A max.			
External power supply (AC power supplies only)	Supply voltage	24 V DC			
	Output capacity	300 mA (See note)			
Insulation resistance	20 MΩ min. (at 500 V DC) between the external AC terminals and protective earth terminals				
Dielectric strength	2,300 V AC 50/60 Hz for 1 min between the external AC and protective earth terminals, leakage current: 10 mA max.				
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)				
Vibration resistance	10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8 m/s <sup>2</sup> in X, Y, and Z directions for 80 minutes each (Time coefficient; 8 minutes × coefficient factor 10 = total time 80 minutes)				
Shock resistance	147 m/s <sup>2</sup> three times each in X, Y, and Z directions				
Ambient temperature	Operating: 0° to 55° C Storage: -20° to 75° C				
Humidity	10% to 90% (with no condensation)				
Atmosphere	Must be free from corrosive gas				
Terminal screw size	M3				
Power interrupt time	AC power supply: 10 ms min. DC power supply: 2 ms min.				
CPU Unit weight	AC power	650 g max.	700 g max.	800 g max.	1,000 g max.
	DC power	550 g max.	600 g max.	700 g max.	900 g max.
Expansion Unit weight	Units with 20 I/O Points: 300 g max. Units with 8 Output Points: 250 g max. Units with 8 Input Points: 200 g max. MAD01 Analog I/O Unit: 150 g max. MAD11 Analog I/O Unit: 250 g max. AD041/DA041 Analog I/O units: 200 g max. Temperature Sensor Units: 250 g max. CompoBus/S I/O Link Units: 200 g max. DeviceNet I/O Link Unit: 200 g max. PROFIBUS-DP I/O Link Unit: 150 g max.				

**Note:** Use the external power supply as the power supply for input devices only. (It cannot be used as to drive output devices.) If the external power supply current exceeds the rated current, or there is a short-circuit, the external power supply voltage will drop and PC operation will stop. If there are 3 CPM1A-MAD11 Units mounted to a CPM2A-60CDR-A, the current for the external power supply must not exceed 200 mA.

**Power Consumption for CPM2A CPU Units with DC Power Supplies**

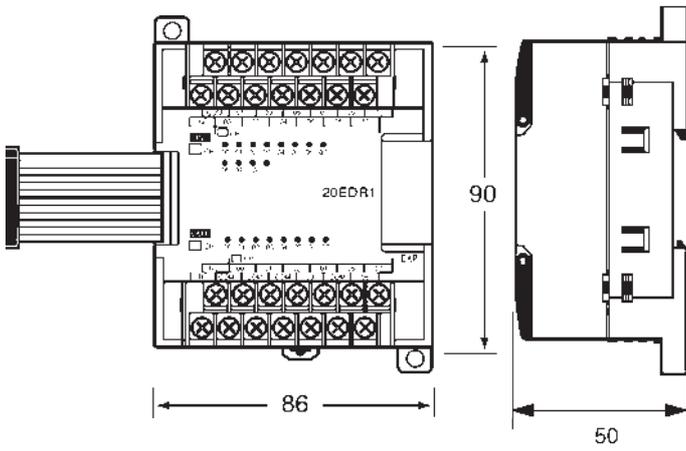
Use the following information when computing CPM2A power capacities.

CPM2A CPU Unit	Power consumption (W)
CPM2A-20CDR-D	4
CPM2A-30CDR-D	4.5
CPM2A-40CDR-D	6
CPM2A-60CDR-D	7.5
CPM2A-20CDT/T1-D	3.5
CPM2A-30CDT/T1-D	4
CPM2A-40CDT/T1-D	4.5
CPM2A-60CDT/T1-D	5

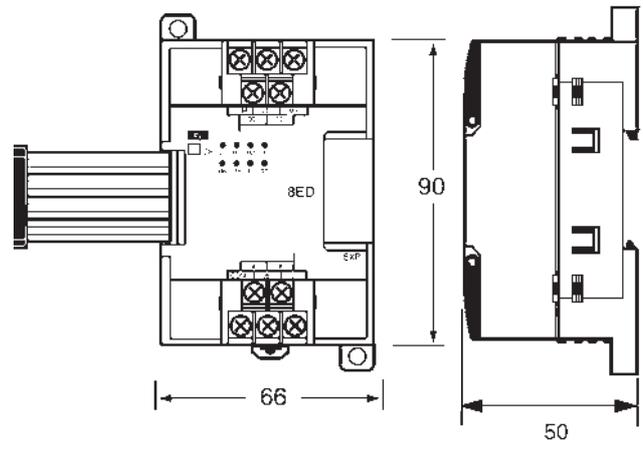
CPM1A Expansion I/O Unit or Expansion Unit	Power consumption (W)
CPM1A-20EDR1	2.5
CPM1A-20EDT/T1	1.5
CPM1A-8ED	1
CPM1A-8ER	2
CPM1A-8ET/T1	1
CPM1A-DRT21	1
CPM1A-SRT21	1
CPM1A-MAD01/MAD11	3.5
CPM1A-TS001/TS101	3
CPM1A-TS002/TS102	3
CPM1A-PRT21	1
CPM1A-TS101-DA	1.5
CPM1A-AD041	3
CPM1A-DA041	3.3

**Note:** When calculating the total power consumption, it is also necessary to include the power consumption of Programming Consoles, RS-232C Adapter Units, and other devices.

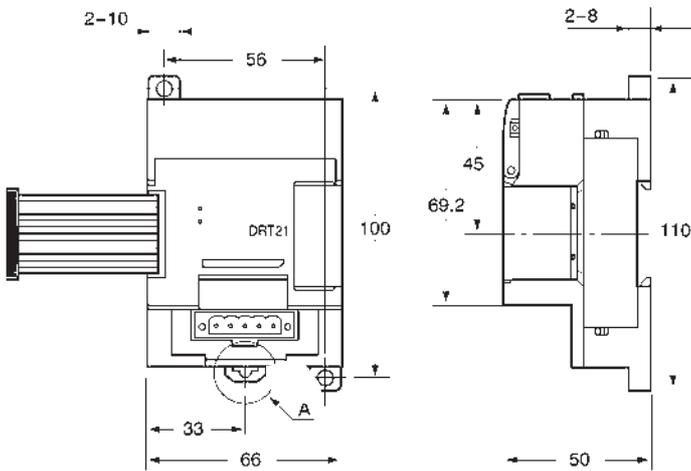
CPM1A-20ED Expansion I/O Units



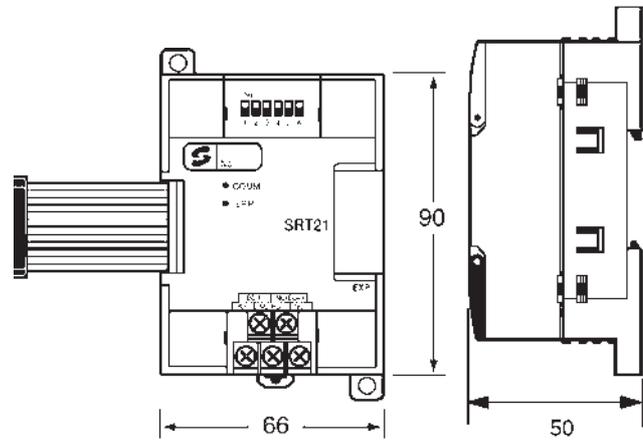
CPM1A-8 Expansion I/O Units



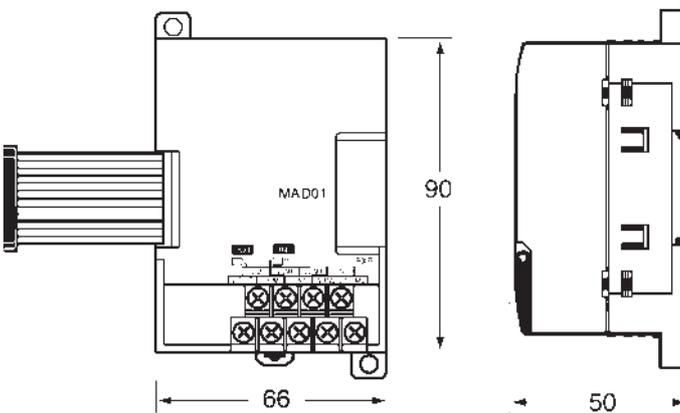
CPM1A-DRT21 DeviceNet I/O Link Unit  
CPM1A-PRT21 PROFIBUS-DP I/O Link Unit



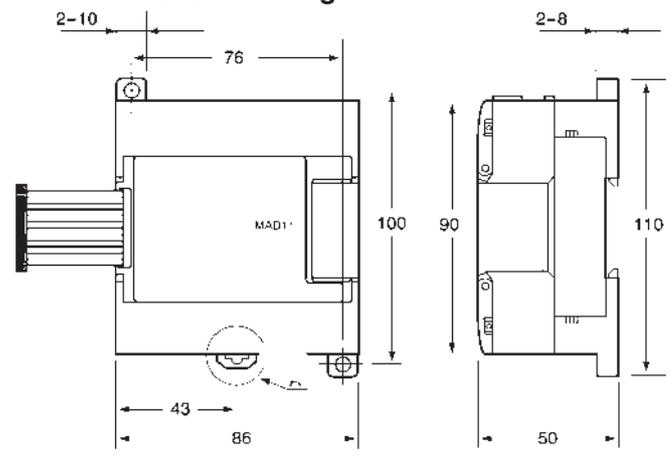
CPM1A-SRT21 CompoBus/S I/O Link Unit



CPM1A-MAD01 Analog I/O Unit



CPM1A-MAD11 Analog I/O Unit



Note: All dimensions are in mm.

# CPM2A Ordering Information

## International Standards

The products shown in the attached tables are those that conform to the UL, CSA, cULus, cUL, NK, Lloyd's Register, and EC Directives as of September 2003.

(U: UL, C: CSA, UC: cULus, CU: cUL, N: NK, L: Lloyd, CE: EC Directives)

Please contact OMRON representative for application conditions.

## CPM2A CPU Units

CPU Unit	Power supply	Output type	Inputs	Outputs	Model	Standards
20 I/O points	AC	Relay	12	8	CPM2A-20CDR-A	U, C, CE, N, L
	DC	Relay			CPM2A-20CDR-D	U, C, CE, N, L
		Transistor (sinking)			CPM2A-20CDT-D	U, C, CE, N, L
		Transistor (sourcing)			CPM2A-20CDT1-D	U, C, CE, N, L
30 I/O points	AC	Relay	18	12	CPM2A-30CDR-A	U, C, CE, N, L
	DC	Relay			CPM2A-30CDR-D	U, C, CE, N, L
		Transistor (sinking)			CPM2A-30CDT-D	U, C, CE, N, L
		Transistor (sourcing)			CPM2A-30CDT1-D	U, C, CE, N, L
40 I/O points	AC	Relay	24	16	CPM2A-40CDR-A	U, C, CE, N, L
	DC	Relay			CPM2A-40CDR-D	U, C, CE, N, L
		Transistor (sinking)			CPM2A-40CDT-D	U, C, CE, N, L
		Transistor (sourcing)			CPM2A-40CDT1-D	U, C, CE, N, L
60 I/O points	AC	Relay	36	24	CPM2A-60CDR-A	U, C, CE, N, L
	DC	Relay			CPM2A-60CDR-D	U, C, CE, N, L
		Transistor (sinking)			CPM2A-60CDT-D	U, C, CE, N, L
		Transistor (sourcing)			CPM2A-60CDT1-D	U, C, CE, N, L

## Expansion Units and Expansion I/O Units

Unit	Input/Output type	Inputs	Outputs	Model	Standards	
Expansion I/O Units	Relay	24	16	CPM1A-40EDR	CE, N	
	Transistor (sinking)			CPM1A-40EDT	CE, N	
	Transistor (sourcing)			CPM1A-40EDT1	CE, N	
	Relay	12	8	CPM1A-20EDR1	U, C, CE, N, L	
				Transistor (sinking)	CPM1A-20EDT	U, C, CE, N, L
				Transistor (sourcing)	CPM1A-20EDT1	U, C, CE, N, L
	---	8	---	CPM1A-8ED	U, C, CE, N, L	
	Relay	---	8	CPM1A-8ER	U, C, CE, N, L	
	Transistor (sinking)	---	8	CPM1A-8ET	U, C, CE, N, L	
				CPM1A-8ET1	U, C, CE, N, L	
Analog I/O Unit	Analog (resolution: 1/256)	2	1	CPM1A-MAD01	U, C, CE	
	Analog (resolution: 1/6,000)	2	1	CPM1A-MAD11	U, C, CE	
	Analog (resolution 1/6000)	4	---	CPM1A-AD041	U, C, CE	
	Analog (resolution 1/6000)	---	4	CPM1A-DA041	U, C, CE	
DeviceNet I/O Link Unit	---	I/O Link of 32 input bits and 32 output bits		CPM1A-DRT21	U, C, CE	
PROFIBUS-DP I/O Link Unit	---	I/O Link of 16 input bits and 16 output bits		CPM1A-PRT21	CE	
CompoBus/S I/O Link Unit	---	I/O Link of 8 input bits and 8 output bits		CPM1A-SRT21	U, C, CE, N, L	
Temperature Sensor Units	2 thermocouple inputs			CPM1A-TS001	U, C, CE, N, L	
	4 thermocouple inputs			CPM1A-TS002	U, C, CE, N, L	
	2 platinum resistance thermometer inputs			CPM1A-TS101	U, C, CE, N, L	
	4 platinum resistance thermometer inputs			CPM1A-TS102	U, C, CE, N, L	
	2 Platinum resistance thermometer inputs (-40 to 250 °C) and one output (-10 to 10V, 4 to 20 mA)			CPM1A-TS101-DA	U, C, CE, N, L	