

OMRON

*Sophisticated personal computer boards combining **SYSMAC α** with various remote I/O master functions. This new board also comes with a reinforced power system.*

SYSMAC Board

**Programmable
via ISA bus**
CX-Programmer
(Ver2.0 or later)

Model C200PC-ISA03-E/ISA03-DRM-E/ISA03-SRM-E

Model C200PC-ISA13-DRM-E/ISA13-SRM-E

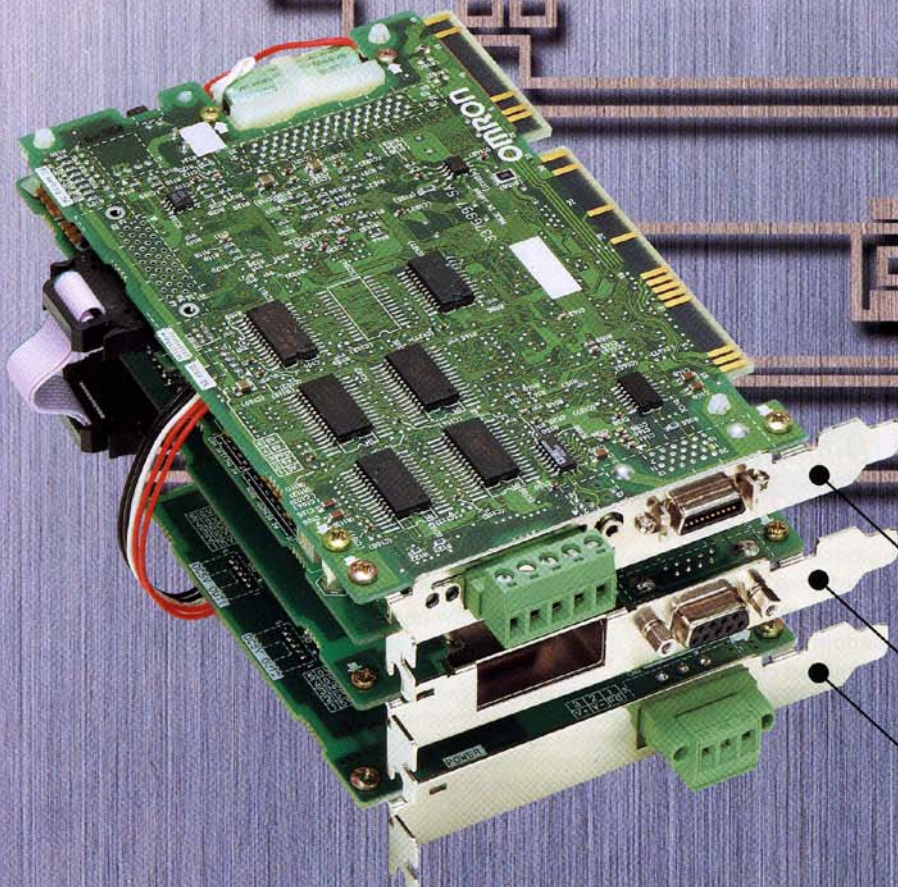
Model C200PC-EXP01

Model C200PC-PD024

For ISA Bus

CE

Conforms to
EC Directive



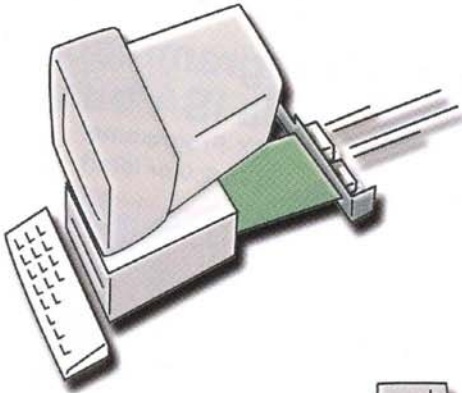
SYSMAC Board

Expansion Option Board

Backup Power Supply Board

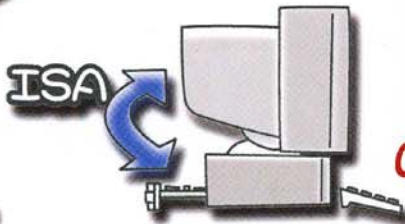
The SYSMAC Board integrates SYSMAC α sequence program functions with various remote I/O master functions all on one personal computer board.

The SYSMAC Board provides solutions for many production site problems.



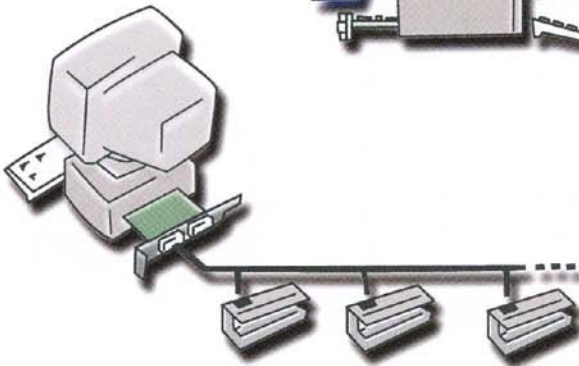
For Solution
Miniaturization

The SYSMAC Board is a personal computer board with OMRON PLC functions that can be installed into a standard ISA bus compatible with PC/AT devices. Therefore, SYSMAC Board can greatly contribute to the miniaturization of systems and devices using personal computers.



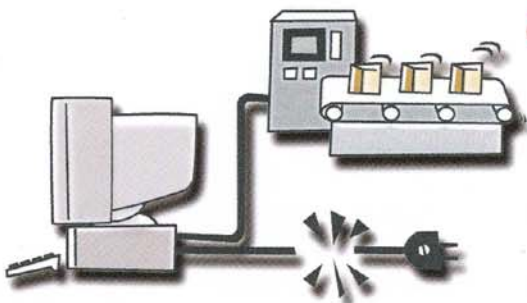
For Solution
High-Speed Communication

Communication between a SYSMAC Board and personal computer is performed via the ISA bus to provide high-speed communication comparable to RS232C communication. SYSMAC Board can help to greatly enhance the speed of systems and devices using a personal computer.



For Solution
Simplified Wiring

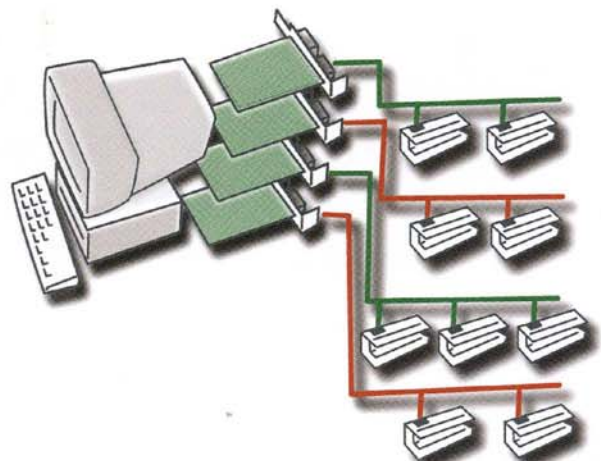
DeviceNet (CompoBus/D) or CompoBus/S communication functions are built into the SYSMAC Board. Decentralized control of remote I/O units is possible by simply connecting the DeviceNet or CompoBus/S slave.



For Solution
Continued Operations during Power Interruption

External power can be supplied when using the SYSMAC Board in combination with the specially prepared Backup Power Supply Board. Therefore, control is not halted and operations can continue even when power to the personal computer is interrupted.

For Solution
Decentralized Control

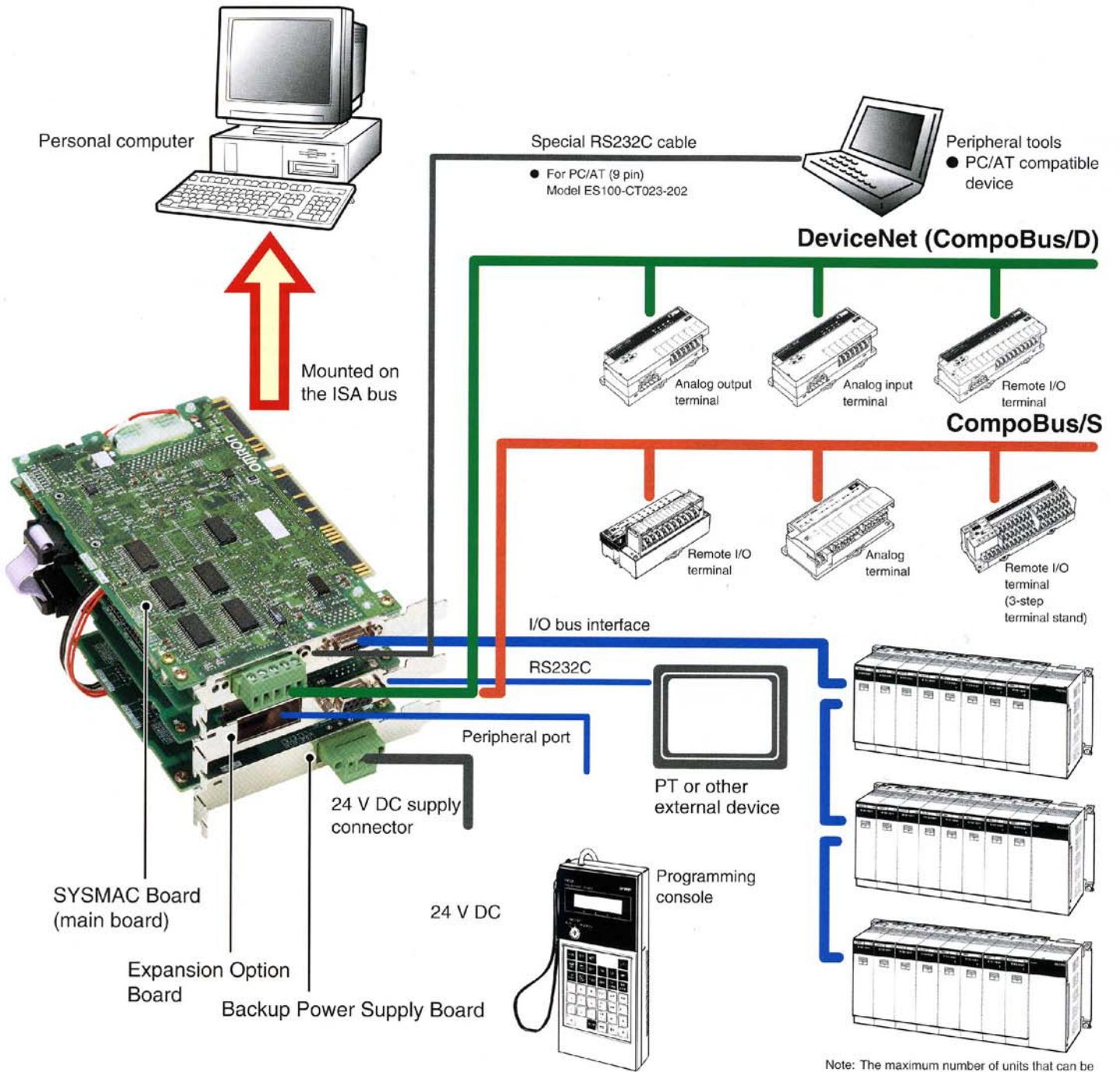


Up to four SYSMAC Boards can be installed into one personal computer, and each one of these boards can perform independently to support simple decentralized control.

Note: Multiple SYSMAC Boards can be inserted into the SYSMAC Board Driver. WindowsNT4.0 is the only compatible operating system. Contact OMRON for further details.

System Configuration using the SYSMAC Board

System Configuration



SYSMAC Board

Model	Equivalent PLC	Max. No. of Expansion Racks	Program Capacity	DeviceNet Communication Function	CompoBus/S Communication Function	Additional I/O Units	Expansion Option Board	Backup Power Supply Board
Model C200PC-ISA03-E	Model C200HG-CPU43-E	2	15.2K words	×	×	○	×	○
Model C200PC-ISA03-DRM-E				○	×	○	○	○
Model C200PC-ISA03-SRM-E				×	○	○	○	○
Model C200PC-ISA13-DRM-E	Model C200HX-CPU64-E	3	31.2K words	○	×	○	○	○
Model C200PC-ISA13-SRM-E				×	○	○	○	○

Optional Boards

Model	Type	Specifications
Model C200PC-EXP01	Expansion Option Board	Peripheral port/RS-232C port (D-SUB9 pin, female)
Model C200PC-PD024	Backup Power Supply Board	24 V DC power supply, can provide sub-power for up to two SYSMAC Boards

Note: C200PC-PD024 can not be connected to main board models C200PC-ISA01/02/12(-DRM-E/-SRM-E).

Specifications

Specifications

Item	Specifications
Power supply voltage	4.875 to 5.25V DC
Power consumption	0.5A or less*
Vibration resistance	Complying with JIS C0911 10 to 57Hz amplitude 0.075mm 57 to 150Hz acceleration 9.8m/S ² 80 minuts in each direction (X, Y, Z)
Shock resistance	Complying with JIS C0912 147m/S ² three times in each direction (X, Y, Z)
Operating ambient temperature	0 to 55°C
Operating ambient humidity	10 to 90%RH (without condensation)
Storage ambient temperature	-20 to +75°C (excluding the battery)
Atmosphere	Must be free of corrosive gases
Weight	SYSMAC Board : 350g or less Expansion Option Board : 250g or less Backup Power Supply Board : 250g or less
Outer dimensions	SYSMAC Board 106.7(H) x 163.0(L) x 16.3 (battery section) mm Expansion Option Board 106.7(H) x 128.7(L) x 13.5 (connector guide section) mm Backup Power Supply Board 106.7(H) x 105.9(L) x 18.6 (part section) mm

* 0.8A or less when a programming counsel is connected to the Expansion Option Board.

Conditions

Item	Condition
Personal Computer	IBM PC/AT compatible unit (including panel computers)
Operating System	<ul style="list-style-type: none"> ● Operated by Microsoft C/C++ Ver. 7.0 (when using the C language library for the main board) ● Windows95/98/NT4.0 can be used with the SYSMAC Board Driver.
Hard Disk	Available space of 2 megabytes or greater (when using the C language library for the main board)
Floppy Disk Drive	Can read a 1.44 megabytes 3.5-inch floppy disk (when using the C language library for the main board)

DeviceNet (CompoBus/D) Communication Specifications

DeviceNet communications specifications conform to the DeviceNet specification.

Item	Specifications																
Baud rate	500Kbps, 250Kbps, or 125Kbps (switchable)																
Communication distance	<table border="1"> <thead> <tr> <th>Communication Speed</th> <th>Max. Network Distance</th> <th>Branch Line Length</th> <th>Total Line Length</th> </tr> </thead> <tbody> <tr> <td>500K bits/s</td> <td>100m or less</td> <td>6m or less</td> <td>39m or less</td> </tr> <tr> <td>250K bits/s</td> <td>250m or less **</td> <td>6m or less</td> <td>78m or less</td> </tr> <tr> <td>125K bits/s</td> <td>500m or less **</td> <td>6m or less</td> <td>156m or less</td> </tr> </tbody> </table>	Communication Speed	Max. Network Distance	Branch Line Length	Total Line Length	500K bits/s	100m or less	6m or less	39m or less	250K bits/s	250m or less **	6m or less	78m or less	125K bits/s	500m or less **	6m or less	156m or less
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Max. number of Slaves	When not using a DeviceNet (CompoBus/D) configurator : 50 Slaves When using a DeviceNet (CompoBus/D) configurator : 63 Slaves																
Max. I/O capacity	When not using a DeviceNet (CompoBus/D) configurator : 1,600 pts (50 input/50 output words) When using a DeviceNet (CompoBus/D) configurator : 4,800 pts (Without messages) 1,600 pts (With messages)																
Error control checks	CRC error check, node address duplications, scan list verification																
Cables	5-wire cable; (2 signal lines, 2 power supply lines, 1 shield line)																

**1: Indicates the length when Thick Cables are used. Reduce the network length to 100 m max. when using Thin Cables.

CompoBus/S Communication Specifications

Item	Specifications																								
Communication	CompoBus/S protocol																								
Baud rate	High-speed communication mode : 750Kbits/s Long-distance communication mode : 93.75Kbits/s																								
Modulation	Base band																								
Code	Manchester code																								
Error control checks	Manchester code check, frame length check, parity check																								
Cables	VCTF Cable : 2-core nominal cross section area 0.75mm ² (2 signal wires) 4-core nominal cross section area 0.75mm ² (4 signal wires) Flat cable : 0.75mm ² x4 (2 signal wires and 2 power lines)																								
Communication distance **	<p>VCTF cable</p> <table border="1"> <thead> <tr> <th>Communication Mode</th> <th>Trunk Line</th> <th>Branch Line</th> <th>Branch Line Total</th> </tr> </thead> <tbody> <tr> <td>High-speed</td> <td>100m or less</td> <td>3m or less</td> <td>50m or less</td> </tr> <tr> <td>Long-distance</td> <td>500m or less</td> <td>6m or less</td> <td>120m or less</td> </tr> </tbody> </table> <p>Flat cable</p> <table border="1"> <thead> <tr> <th>Communication Mode</th> <th>Trunk Line</th> <th>Branch Line</th> <th>Branch Line Total</th> </tr> </thead> <tbody> <tr> <td>High-speed</td> <td>30m or less</td> <td>3m or less</td> <td>30m or less</td> </tr> <tr> <td>Long-distance</td> <td colspan="3">Free branch line (total cable length 200m or less)</td> </tr> </tbody> </table>	Communication Mode	Trunk Line	Branch Line	Branch Line Total	High-speed	100m or less	3m or less	50m or less	Long-distance	500m or less	6m or less	120m or less	Communication Mode	Trunk Line	Branch Line	Branch Line Total	High-speed	30m or less	3m or less	30m or less	Long-distance	Free branch line (total cable length 200m or less)		
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Input/Output Points, Node Addresses and Communication Cycles	<table border="1"> <thead> <tr> <th rowspan="2">Maximum I/O Points</th> <th rowspan="2">No. of connectable Node Addresses</th> <th colspan="2">Communication Cycle</th> </tr> <tr> <th>High-speed Communication Mode</th> <th>Long-distance Communication Mode</th> </tr> </thead> <tbody> <tr> <td>IN 64 points / OUT 64 points</td> <td>IN 0 to 7 / OUT 0 to 7</td> <td>0.5 ms</td> <td>4.0 ms</td> </tr> <tr> <td>IN 128 points / OUT 128 points</td> <td>IN 0 to 15 / OUT 0 to 15</td> <td>0.8 ms</td> <td>6.0 ms</td> </tr> </tbody> </table>	Maximum I/O Points	No. of connectable Node Addresses	Communication Cycle		High-speed Communication Mode	Long-distance Communication Mode	IN 64 points / OUT 64 points	IN 0 to 7 / OUT 0 to 7	0.5 ms	4.0 ms	IN 128 points / OUT 128 points	IN 0 to 15 / OUT 0 to 15	0.8 ms	6.0 ms										
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**1: If Flat Cables are used when a maximum of 16 Slaves are connected, the maximum main line length will be 100 m, and a maximum total branch line length will be 50 m.

The SYSMAC Board provides solutions for various needs.

Q Functions of the SYSMAC Board are equivalent to what type of PLC? Are any special peripheral tools required?

A The SYSMAC Board has functions equivalent to those found in the SYSMAC α (models C200HX-CPU64-E/C200HG-CPU43-E). Peripheral tools for C200HX/HG/HE that can connect to the RS232C port can be used without any modifications. And connection to CX-Programmer (Ver2.0 or later) via ISA bus is possible.

Q Can units used with SYSMAC α be used with the SYSMAC Board?

A A maximum of three I/O units can be connected to a SYSMAC Board. Currently used I/O units and advanced units can be used with the SYSMAC Board without any special modifications.
* The following special unit can not be used.
SYSNET LINK unit, SYSMAC Link unit, PC card unit, Controller Link unit, or other units that must be mounted onto the CPU base.

Q When used with a personal computer, how does the SYSMAC Board handle a sudden power interruption?

A The SYSMAC Board can detect a drop in the personal computer's power source voltage, and then perform power interruption processing in the same manner as SYSMAC α .

Q When used with a personal computer, is there a method by which control can be maintained even if power is interrupted?

A In this case, be sure to use the Backup Power Supply Board. By using the Backup Power Supply Board with the SYSMAC Board, control will be maintained even if there is a sudden power interruption.

Q Can the SYSMAC Board be connected to a programming console, PT or other external devices?

A By connecting the Expansion Option Board to the SYSMAC Board, a peripheral port and RS232C port can be added to facilitate connections with a programming console, PT and other external devices.

Q Can a personal computer application be used to read and write areas on the SYSMAC Board?

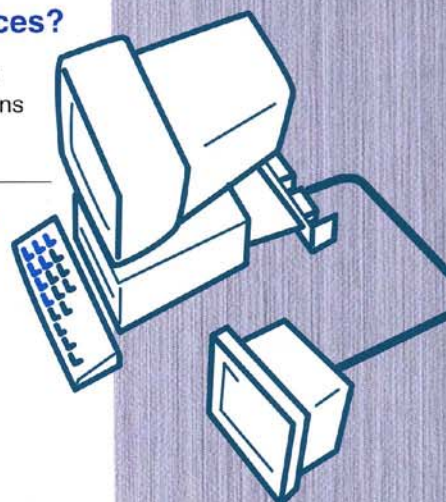
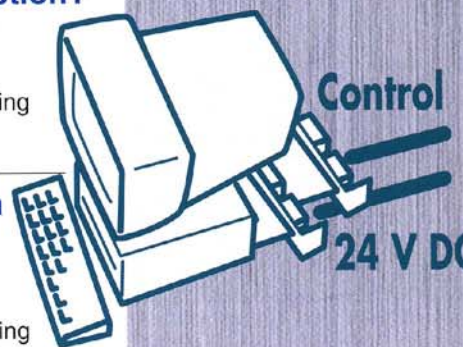
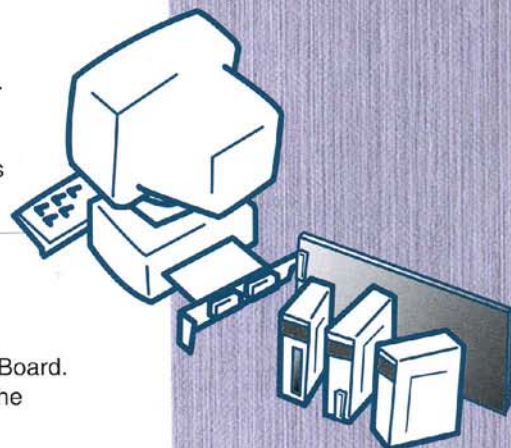
A A special C language library is included as a standard feature. This library can be used to read and write areas on the SYSMAC Board, as well as perform and read control operations for various conditions.

* The C language library is for Microsoft C/C++Ver.7.0(DOS/V).

* The C language library can not be used for multiple SYSMAC Boards.

A SYSMAC Board Driver for Windows is also available (sold separately).

By using this SYSMAC Board Driver with Active X of its ValueAidPack97, communications programs can be easily created using VB or other Windows applications.



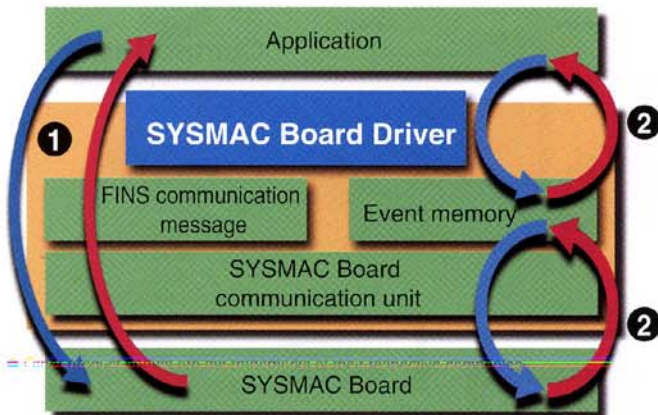
■ Models and Standard Prices

Name	Model	Specifications	Standard Price (¥)	Overseas Standard
SYSMAC Board	Model C200PC-ISA03-E	—	Open price	CE
	Model C200PC-ISA03-DRM-E			
	Model C200PC-ISA03-SRM-E			
	Model C200PC-ISA13-DRM-E			
	Model C200PC-ISA13-SRM-E			
Option Board	Model C200PC-EXP01	Expansion Option Board		
	Model C200PC-PD024	Backup Power Supply Board		
RS2322C cable (for connection with the main board)	Model ES100-CT023-202	For connection with a DOS/V compatible personal computer	3,000	—
I/O expansion cable	Model C200PC-CN221	—	9,600	
SYSMAC Board Driver	Model SDRV-CPC-E	Windows95/98/NT4.0 compatible	Open price	

SYSMAC Board Driver

Model SDRV-CPC

■ SYSMAC Board Driver Configuration



The SYSMAC Board Driver provides functions for communicating with various networks supported by FinsGateway. With the SYSMAC Board Driver, a personal computer Windows application can be used to easily access the SYSMAC Board through the ISA bus. This feature makes FINS communication and data link functions possible.

① FINS Message Communication

The application can send FINS commands to the SYSMAC Board. These commands can be used to read and write data, change the operating mode and perform other functions.

② Data Link Function

Contents of the SYSMAC Board memory area and the event memory can be cyclically linked. SYSMAC Board data can be read and written by using an application to read and write the event memory.

* ActiveX for communication applications is included with the product.

Communication programs can be easily created using the user's VB or other applications along with Active X of the ValueAidPack97 included with the product.

*SYSMAC Board Driver is capable of supporting multiple SYSMAC Boards. Windows NT4.0 is the only compatible operating system. Contact OMRON for further details.

- Windows is a registered trademark of Microsoft Corporation.
- DeviceNet is a registered trademark of ODVA (Open Device Vendor Association).
- S-S Technologies Inc. holds the copyrights to the software installed in the DeviceNet section of the SYSMAC Board.
- Other product names are the trademarks of their respective companies.

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