OMRON

A Controller That Provides Open Development Platform and Maintenance Environment Using PC/AT Architecture

Open PLC

●Model : C200PC-CPU01-R   ●Model : C200PC-CPU15-G

Highly adaptability to standard Operating Systems

and Real-time Operating Systems

with programming language of user preference

The Open PLC provides a development and maintenance environment adopting well established PC/AT architecture -Dramatically increasing

By adopting the PC/AT architecture, OMRON "Open PLC"
greatly changes the development and maintenance
environment for manufacturing systems.
The Open PLC supports a wide range of operating systems and development languages.
By taking advantage of a wide selection of peripheral Windows
devices and existing PLC resources, the efficiency of system development
can be substantially increased. This is a truly Open PLC that can quickly resolve
a range of challenges, such as fast response to market needs or shortening lead times.

Main features of the Open PLC

New generation controller adopting PC/AT architecture

1. The Open PLC adopts a PC/AT-compatible high-performance CPU.
2. It can support a wide range of operating systems including DOS,Windows, and also real-time operating systems.
3. PC/AT-compatible interfaces, including keyboard, mouse, VGA, printer, FDD, and PCMCIA, are all standard (model: C200PC-CPU15-G only). Peripheral devices, functional expansion cards, and other devices you now use with your PC's can be connected directly.

Utilizes the resources of the SYSMAC C200H series

A wide variety of I/O units, expansion base units, special units, and so on for the SYSMAC C200H series can be used as they are (with a few restrictions). The Open PLC promotes computerization and standardization in the field, requiring only a small amount of loss by taking advantage of existing resources. By using ISaGRAF's 'target' function that executes control applications, I/O units for the SYSMAC C200H series on base units and expanded base units can be controlled.

Easily customized using commercially available development tools

User-specific program development is possible using a wide selection of commercially available development tools including C compilers. Using your normal Windows environment development tools, you can customize your system freely.
*For development tools or operating systems other than DOS,purchase and use commercially available packages.

CompoBus/D and other remote I/O's can be used

The multi-vendor network CompoBus/D master unit, which fully complies with DeviceNet, the international standard for remote I/O, and the high-speed ON/OFF bus CompoBus/S master unit, can be used along with other remote I/O's.
*Message communication is not available with the CompoBus/D system.

RAS function support provides greater system reliability

The Open PLC supports the RAS function, which performs as well as OMRON Corporation's highly reliable PLC, the SYSMACα series.

Support for software PLC complying with IEC-1131-3

The Open PLC supports the industrial standard software PLC, ISaGRAF. The ISaGRAF Workbench for developing control applications allows the use of SFC and 4 languages (LD, IL, ST, FBD) complying with IEC-1131-3. You can choose a language best suited to achieving your goals, and achieve dramatic increases in efficiency of development and maintenance work (ISaGRAF Workbench is option).
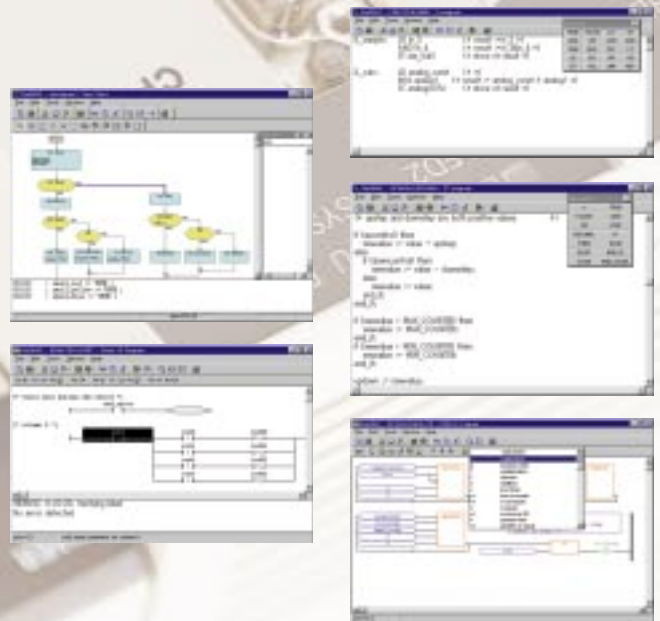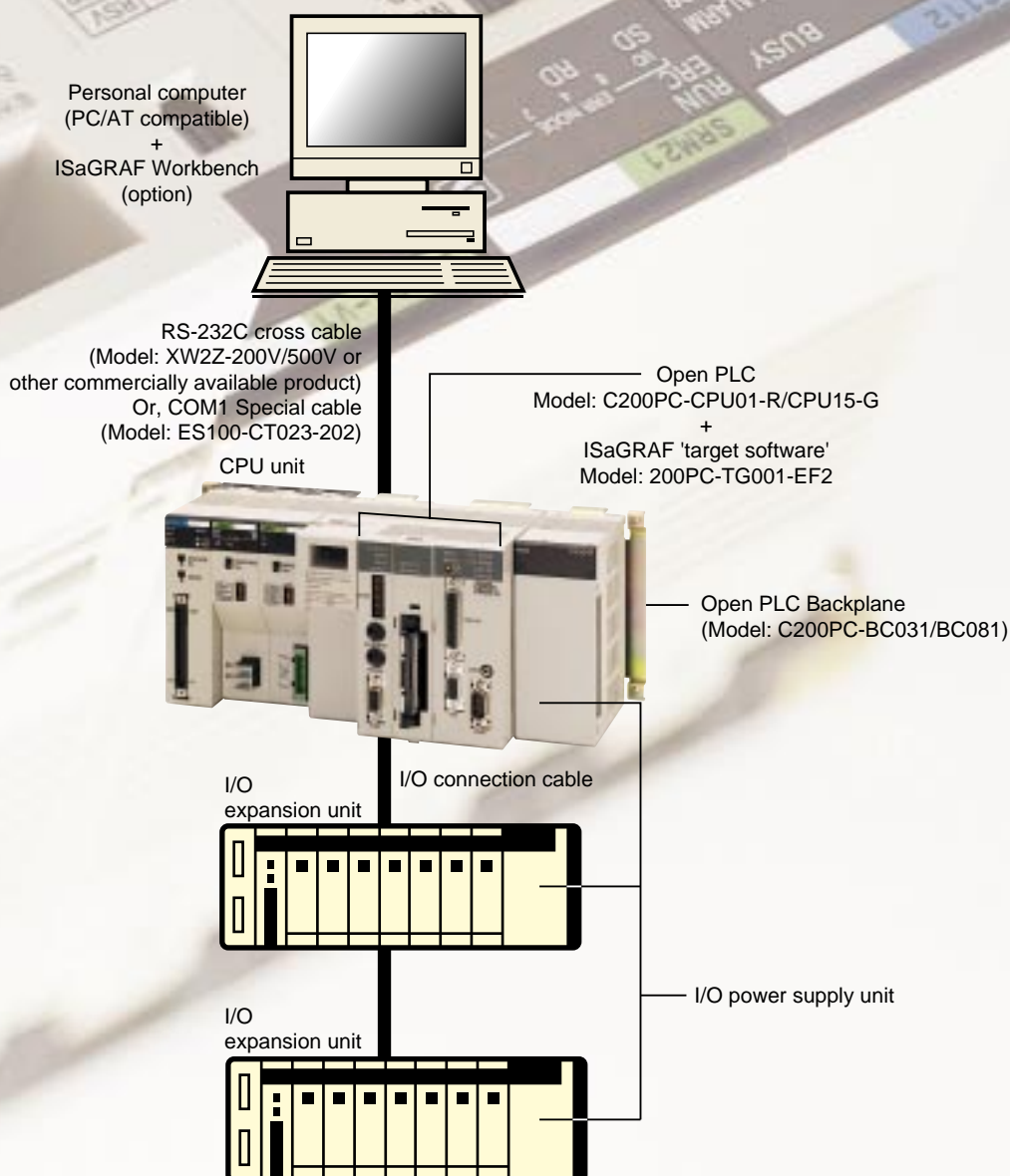
Achieving flexible control of the manufacturing system The Open PLCis a product of OMRON Corporation's expertise in this field
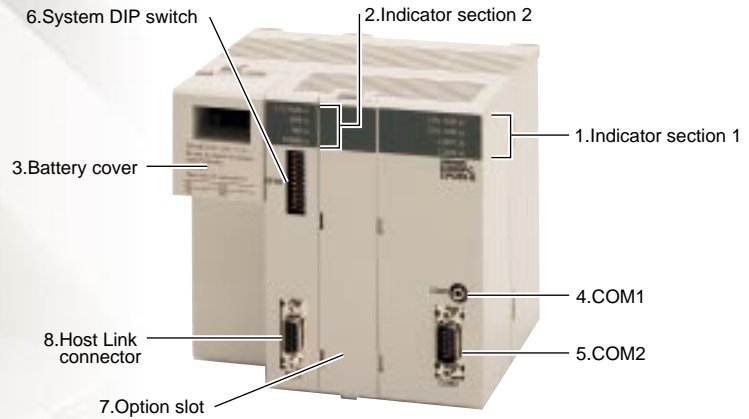
Up to 2 expansion I/O racks can be connected to the

Open PLC via I/O connection cables.

Sufficient capacity for system expansion

Example of the Open PLC system construction

Personal computer
(PC/AT compatible)
+
ISaGRAF Workbench
(option)

RS-232C cross cable
(Model: XW2Z-200V/500V or
other commercially available product)
Or, COM1 Special cable
(Model: ES100-CT023-202)

CPU unit

Open PLC
Model: C200PC-CPU01-R/CPU15-G
+
ISaGRAF 'target software'
Model: 200PC-TG001-EF2

Open PLC Backplane
(Model: C200PC-BC031/BC081)

I/O connection cable

I/O expansion unit

I/O power supply unit

I/O expansion unit

OPEN PLC

Name and function of each part

Model: C200PC-CPU01-R

6.System DIP switch
2.Indicator section 2
1.Indicator section 1
3.Battery cover
4.COM1
5.COM2
8.Host Link connector
7.Option slot

Number	Item	Function
1	Indicator section 1	Displays the status of the Open PLC.
2	Indicator section 2	Displays the status of the Open PLC.
3	Battery cover	Contains the backup battery.
4	COM1	Serial communication port 1. Dedicated 3-pin connector.*
5	COM2	Serial communication port 2. D-SUB 9-pin male connector.
6	System DIP switch	For the system setting of the Open PLC.
7	Option slot	Mounts a PC card board.
8	Host Link connector	Not normally used.

* Exclusive cable/Model : ES100-CTO23-202

Model: C200PC-CPU15-G
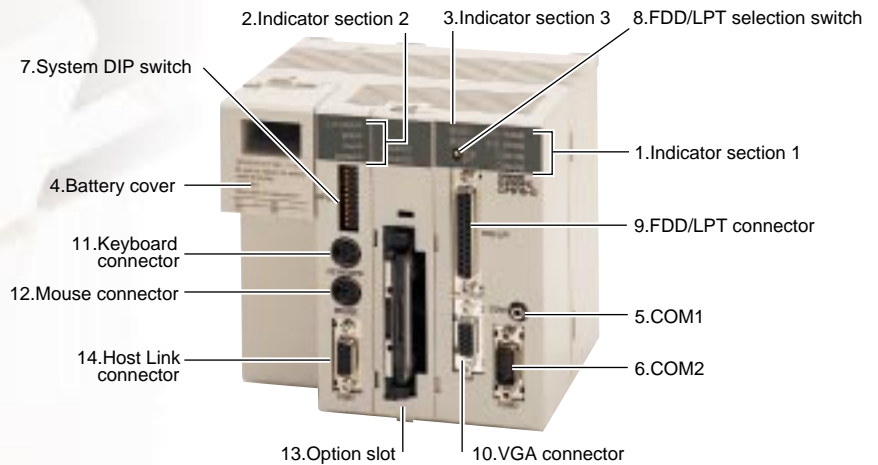
2.Indicator section 2
3.Indicator section 3
8.FDD/LPT selection switch
7.System DIP switch
1.Indicator section 1
4.Battery cover
9.FDD/LPT connector
11.Keyboard connector
12.Mouse connector
5.COM1
14.Host Link connector
6.COM2
13.Option slot
10.VGA connector
* Purchase the PC card separately.

Number	Item	Function
1	Indicator section 1	Displays the status of the Open PLC.
2	Indicator section 2	Displays the status of the Open PLC.
3	Indicator section 3	For user programs.
4	Battery cover	Contains the backup battery.
5	COM1	Serial communication port 1. Dedicated 3-pin connector.
6	COM2	Serial communication port 2. D-SUB 9-pin male connector.
7	System DIP switch	For the system setting of the Open PLC.
8	FDD/LPT selection switch	Switches between the floppy disk drive and the printer.
9	FDD/LPT connector	Connects the floppy disk drive or the printer.*
10	VGA connector	Connects the VGA display.
11	Keyboard connector	Connects the keyboard.
12	Mouse connector	Connects the mouse.
13	Option slot	Mounts a PC card board.
14	Host Link connector	Not normally used.

* To connect the floppy disk drive, a gender changer is required.

General specification

Item	Specification	
	Model: C200PC-CPU01-R	Model: C200PC-CPU15-G
Current consumption	0.75A	1.7A
OS	MS-DOS Ver6.2	
CPU	486DX2-50MHz	486DX4-100MHz
Memory	4MB	36MB
VGA port	Not equipped	Equipped
Printer port	Not equipped	Equipped
Operating ambient temperature	0 - 55{degC} (with fan) 0 - 50{degC} (without fan)	0 to 50{degC} (with fan) Must be used with a fan.
Exterior dimension	W142 x H130 x D125mm	
Weight	0.7 kg or less	0.8 kg or less

*For other specifications not described above comply with those of SYSMAC α.

Maximum number of input/output points

Number of input/output points	Number of I/O expansion units that can be mounted	Number of multi-point input/output units (group 2) that can be mounted	Number of Special I/O Units that can be mounted
848 points	2 units	10 units	10 units

Available units

The following units for the C200H series can be used with the Open PLC:

Power supply unit

Model	Supply Voltage	Remarks
Model: C200HW-PA204	AC100 to AC120V AC200 to AC240V	—
Model: C200HW-PA204S	AC100 to AC120V AC200 to AC240V	With DC 24 V service supply
Model: C200HW-PA204R	AC100 to AC120V AC200 to AC240V	With output bit to indicate "in operation"
Model: C200HW-PD024	DC24V	—

I/O Backplanes

Model	Number of I/O Slots
Model: C200HW-BI031	3
Model: C200HW-BI051	5
Model: C200HW-BI081	8
Model: C200HW-BI101	10

I/O connection cable

Model	Cable length
Model: C200H-CN311	30cm
Model: C200H-CN711	70cm
Model: C200H-CN221	2m
Model: C200H-CN521	5m
Model: C200H-CN131	10m

*The total cable length must be under 12 m.

I/O unit

Name	Model
AC input unit	Model: C200H-IA□□
DC input unit	Model: C200H-ID□□
AC/DC input unit	Model: C200H-IM□□
Relay output unit	Model: C200H-OC□□
Triac output unit	Model: C200H-OA□□
Transistor output unit	Model: C200H-OD□□
Analog timer unit	Model: C200H-TM001

Function specifications

Item	Specification
Input/output relay	640 points (00000 to 02915, 30000 to 30915)
Internal auxiliary relay	6464 points (03000 to 23115, 31000 to 51115)
Special auxiliary relay	1080 points (23200 to 25507, 25600 to 29915)
Temporary storage relay	8 points (TR 0 to 7)
Holding relay	1600 points (HR0000 to 9915)
Auxiliary storage relay	448 points (AR0000 to 2715)
Link relay	1024 points (LR0000 to 6315)
Timer/counter	512 points (TIM/CNT000 to 511)
Data memory	6144 words (DM0000 to 6143)
Power failure protection	Data of holding relay (HR), auxiliary storage relay (AR), counter (CNT), data memory (DM), and clock (RTC) is held.
Memory backup period	The life of the battery is 5 years at 25{degC}. If used at higher temperatures, the life decreases., replace the battery within 1 week of a battery error. Once the battery is removed, be sure to complete the replacement within 5 minutes.
Self-diagnosis function	I/O verification error, memory error, battery error, I/O bus error, remote I/O error, and others.

*The allocation of the above relay areas is the same as that of SYSMAC α.

B7A interface unit

Name	Model
B7A interface unit	Model: C200H-B7A□□
B7A interface unit (group 2)	Model: C200H-B7A□□

High-density I/O unit

Name	Model
High-density I/O Unit classified as special I/O Units.	Model: C200H-ID□□, Model:C200H-OD□□
Group 2 high-density I/O Units	Model: C200H-ID□□, Model: C200H-OD□□, Model: C200H-MD□□

Special I/O Unit

Name	Model
Thermal control unit	Model: C200H-TC□□□
Heat/Cool Temperature Control Units	Model: C200H-TV□□□
Temperature sensor unit	Model: C200H-TS□□□
PID control unit	Model: C200H-PID□□□
Cam positioner unit	Model: C200H-CP114
Analog input unit	Model: C200H-AD□□□
Analog output unit	Model: C200H-DA□□□
Motion control unit	Model: C200H-MC221
Position control unit	Model: C200H-NC□□□
ID sensor unit	Model: C200H-IDS□□□
Voice unit	Model: C200H-OV001
Fuzzy Logic unit	Model: C200H-FZ001

*Functions of units that require the IORD and IOWR instructions are not available.

Communication unit

Name	Model
Host link unit	Model: C200H-LK□□□
CompoBus/D master unit	Model: C200HW-DRM21-V1
CompoBus/S master unit	Model: C200HW-SRM21
Remote I/O master unit	Model: C200H-RM□□□
PC link unit	Model: C200H-LK401

Options

Product Model	Specification
Model: C200PC-PCM01	PC card board
Model: C200PC-BC081	Backplane (for 8-slot type)
Model: C200PC-BC031	Backplane (for 3-slot type)
Model: C200PC-FAN01	Fan, filter
Model: C200PC-TG001-JF2	ISaGRAF target software (Japanese version)
Model: C200PC-TG001-EF2	ISaGRAF target software (English version)
Model: XW2Z-200V/500V	COM2 cable, D-sub 9-pin female connector
Model: ES100-CT023-202	COM1 special cable, Mini-jack 9-pin female connector

Outer dimensions

•CPU unit
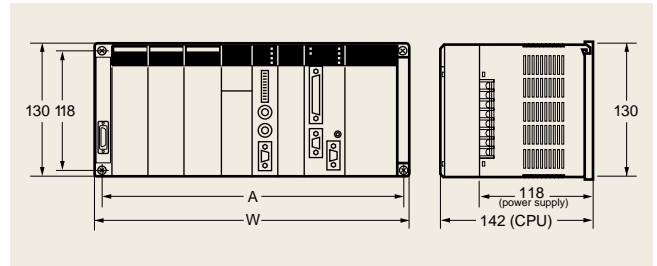
Base Unit Model	A	W
Model: C200PC-BC031 (for 3 slots)	310	330
Model: C200PC-BC081 (for 8 slots)	491	505

Differences with the standard ISaGRAF DOS target software

There are the following differences between the C200PC-TG001-EF2 ISaGRAF target software and the standard ISaGRAF DOS target software:

Specification Differences

- •Only the I/O board dedicated for OMRON Corporation, which is specified at the installation, is available.
- •The MODBUS protocol is not supported.
- •The memory backup function for holding the ISaGRAF parameters during power failure is not available. Note that the data before power failure can be held using the data memory (DM).
- •The precision of the timer is 1 msec.

Other precautions

- •The target software is the equivalent of ISaGRAF version 3.23.
- •ISaGRAF user program capacity is up to 64 Kbytes. However, if the uploading function of ISaGRAFV.3.23 is used, area available for user programs decreases because the project information and so on are included in the program data.
- •I/O boards dedicated for OMRON Corporation do not allow the use of the operate instruction.
- •Ethernet connection is not supported.

PC/AT is a trademark of IBM Corporation.

Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.

Note 1. Do not use this document to operate the Unit.
    2. The names of companies and products appearing in this document are registered trademarks of the respective companies.

Authorized Distributor:

Note: Specifications subject to change without notice.

Cat.No.V200-E1-1
Printed in Japan
1098-2M