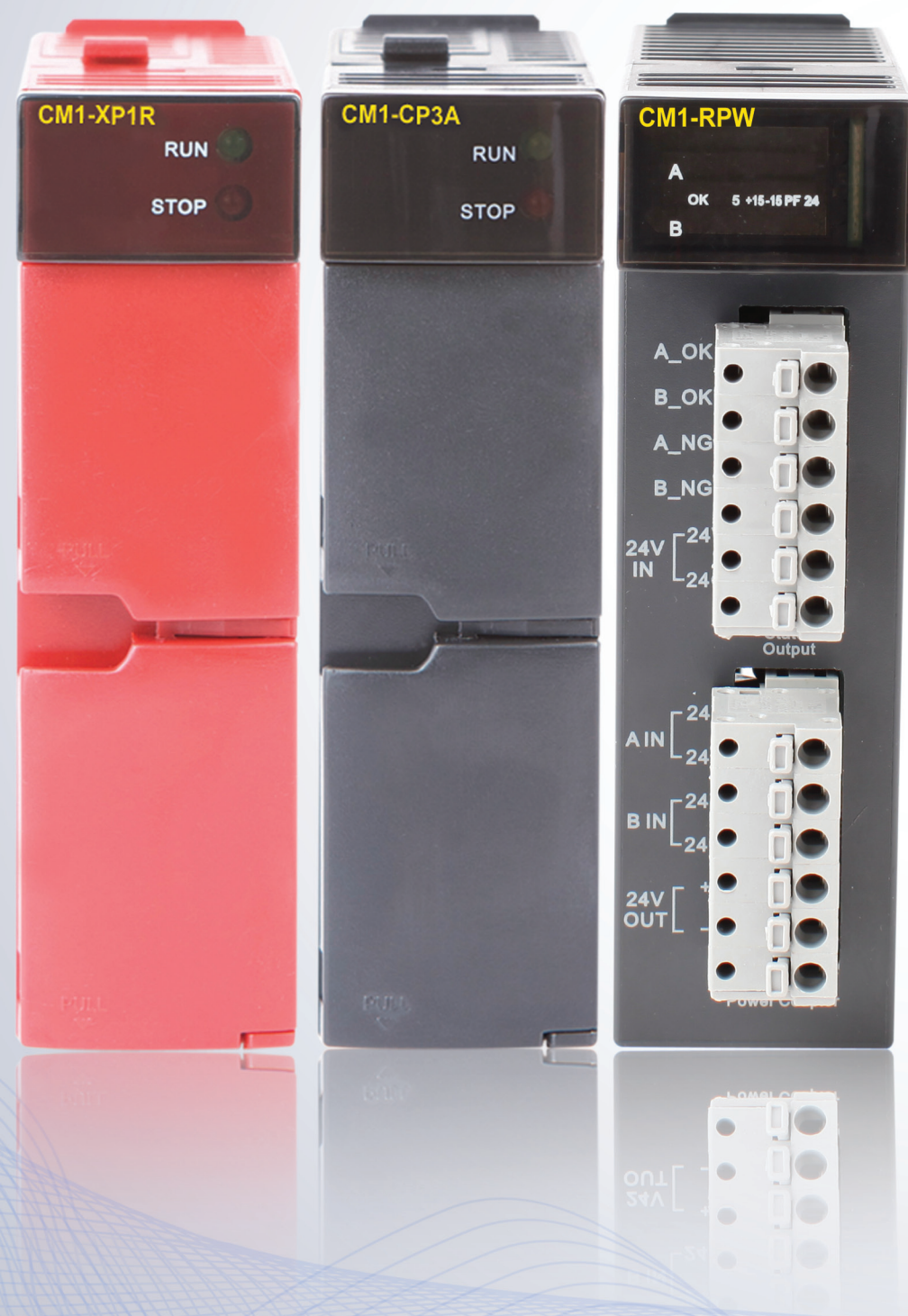


XP / CP Series

Small in size, Huge in functions





CPU Module

CM1-XP1A/R
CM1-XP2A
CM1-XP3A
CM1-CP3A/B/P/U
CM1-CP4A/B/C/D/U
CM1-SPA
CM1-SPC
CM1-SP2B

XP CPU

- MPU (ASIC) - high speed processing speed (75ns/step)
- Provides Over 400 instructions
- Abundant device capacity: I/O - maximum 8,192 points / Data - 32,000 word / (M,K,L) 16,000 points
- Compact size with exceptional performance
- Built-in USB 2.0 port
- Built-in loader port for downloading/uploading programs
- Maximum base expansion: 16
- Maximum number of slots in one base is 12
- XP series include all the functions and features of CP series and more

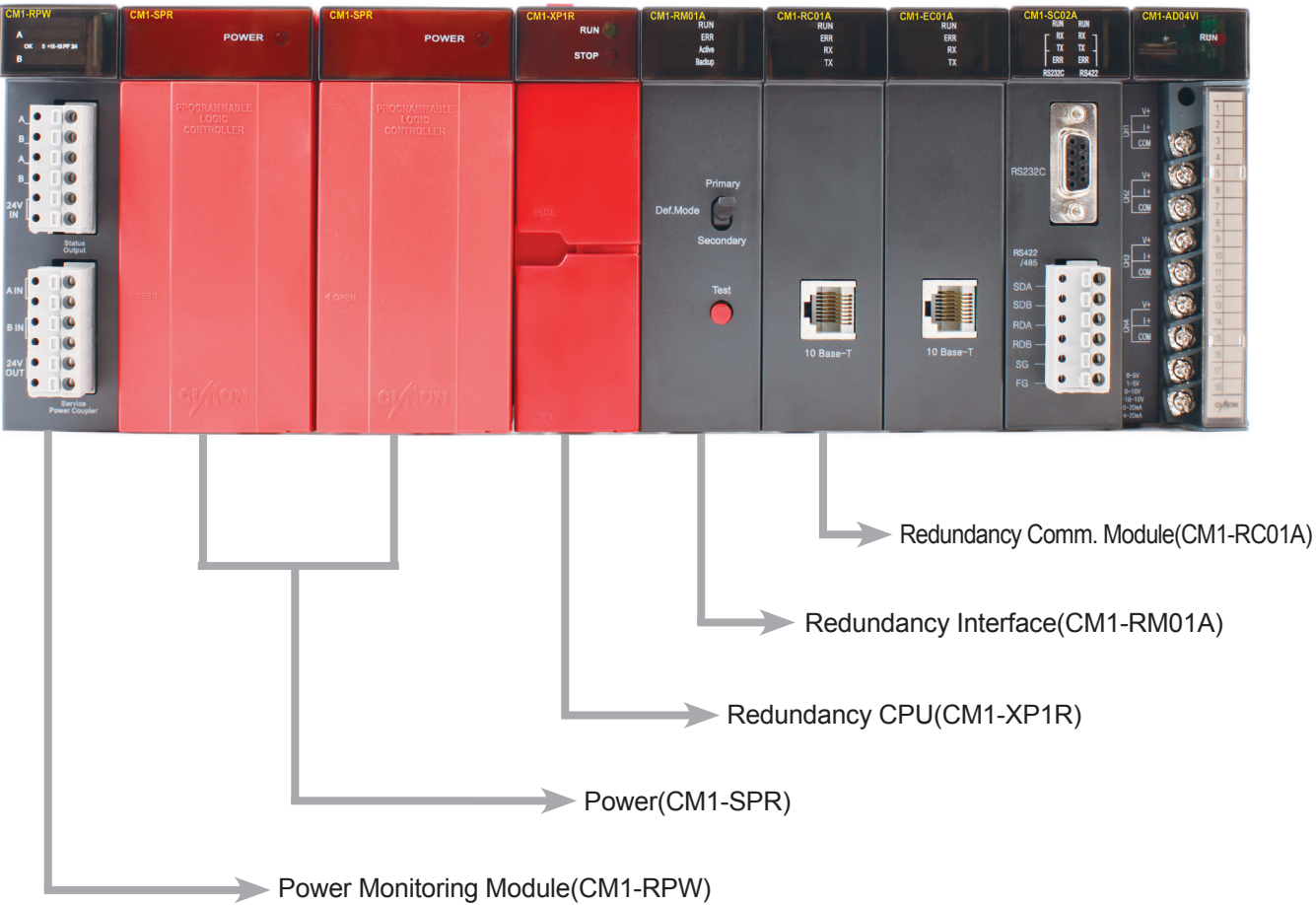


Item		Specification		
		CM1-XP1A/R	CM1-XP2A	CM1-XP3A
Operation Method		Stored Program, Cyclic Operation, Time Driven Interrupt		
I/O Control Method		Interrupt system, Direct by Instructions, Scan Synchronous Batch Processing System.		
Program Language		LD (ladder diagram), IL (instruction list)		
Data Processing Method		32 bits		
No. of Instruction	Sequence	55 instructions		
	Application	389 instructions		
Processing Speed		75 ns/step		
Program Memory Capacity		128K steps	64K steps	64K steps
		2M bytes	2M bytes	2M bytes
Base Expansion		Maximum 16		
Data Memory Capacity		1M bytes		
Data Memory Capacity	X	8,192	4,096	2,048
	Y	8,192	4,096	2,048
	M	16,000		
	K	16,000		
	L	16,000		
	F	2,048		
	T	4,096 (10 ms, 100 ms option)		
	C	4,096		
	S	100 card * 100 step		
	D	32,000		
	Z	1,024		
Timer	Type	On Delay, Off Delay, Integration, Monostable, Retriggerable		
	Time Range	0.01 sec ~ 6,553.5 sec		
Counter	Type	Up Counter, Down Counter, Up-Down Counter, Ring Counter		
	Coefficient Range	-32,768 ~ +32,767		
No. of Program Blocks		128		
Operation Mode		RUN, STOP, PAUSE, REMOTE		
Self Diagnosis		Watch-Dog Timer, Memory Error, I/O Error, Battery Error, Power Error, etc.		
Restart Mode		Cold, Warm		
Battery Back-up		Over 3 years		
Built-in Function		- Computer Link (RS232C) - Clock (RTC) - Program Editable on Run Mode - PID Control (32 Loops) - I/O Reservation - USB 2.0 Port		
Redundancy		Yes (CM1-XP1R)	N/A	

Redundancy System

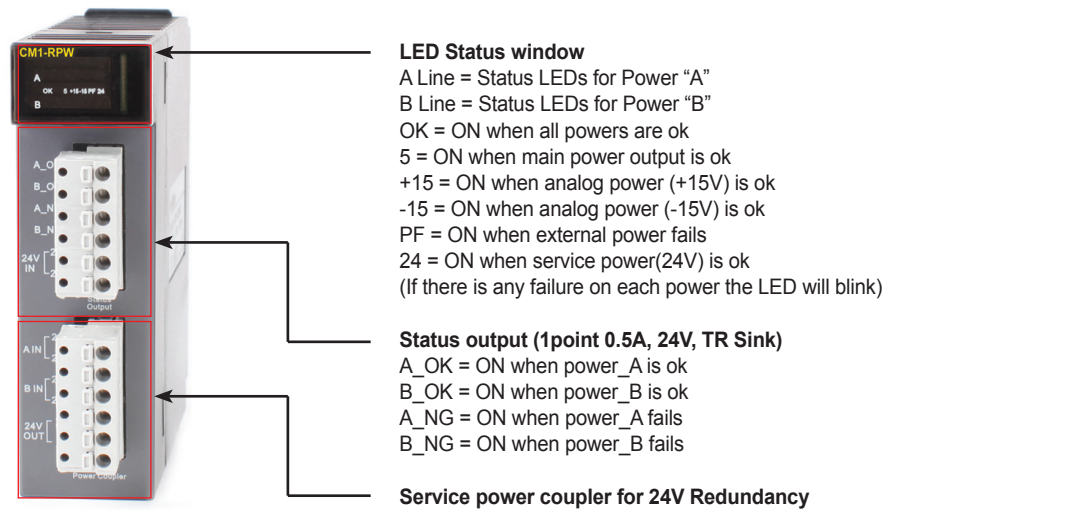
- CPU, power, base and communication redundancy available
- Perfect redundancy configuration derived from the base structure
- In case an errors in the active CPU, the back-up CPU will switch to active status automatically
- Test button to easily check and maintain the system
- Less than 50ms to switch to back-up CPU

Redundancy Configuration

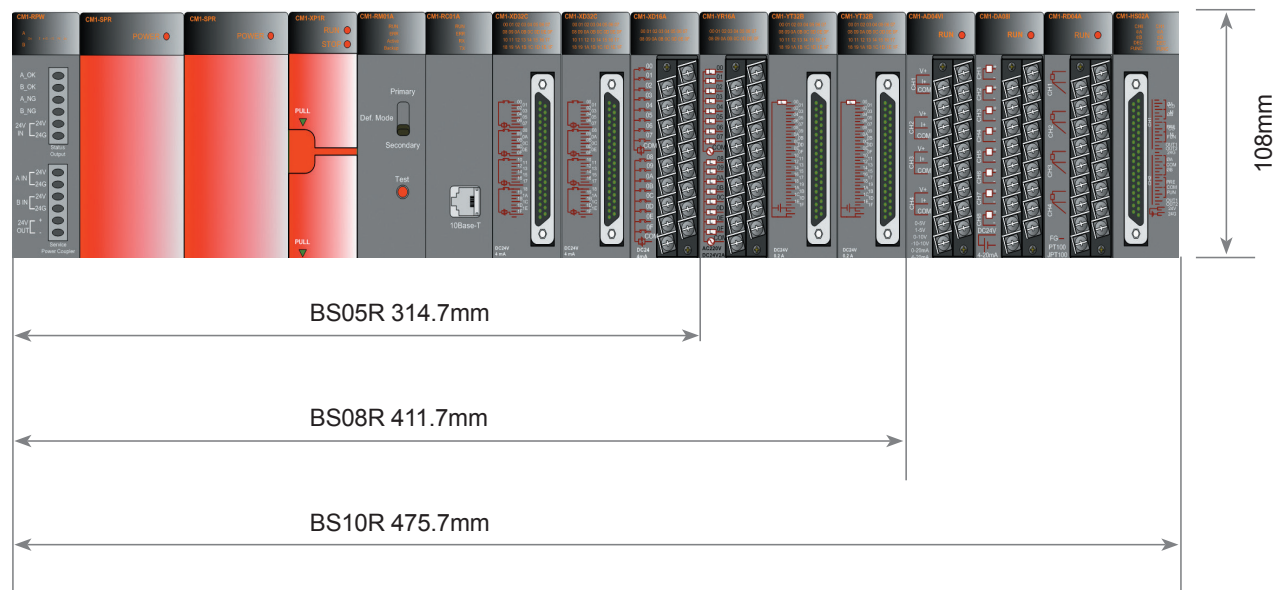


Redunancy Power Monitoring Module

- LED display to monitor operations
- Digital output (DC24V, Transistor, Sink)



» Dimensions



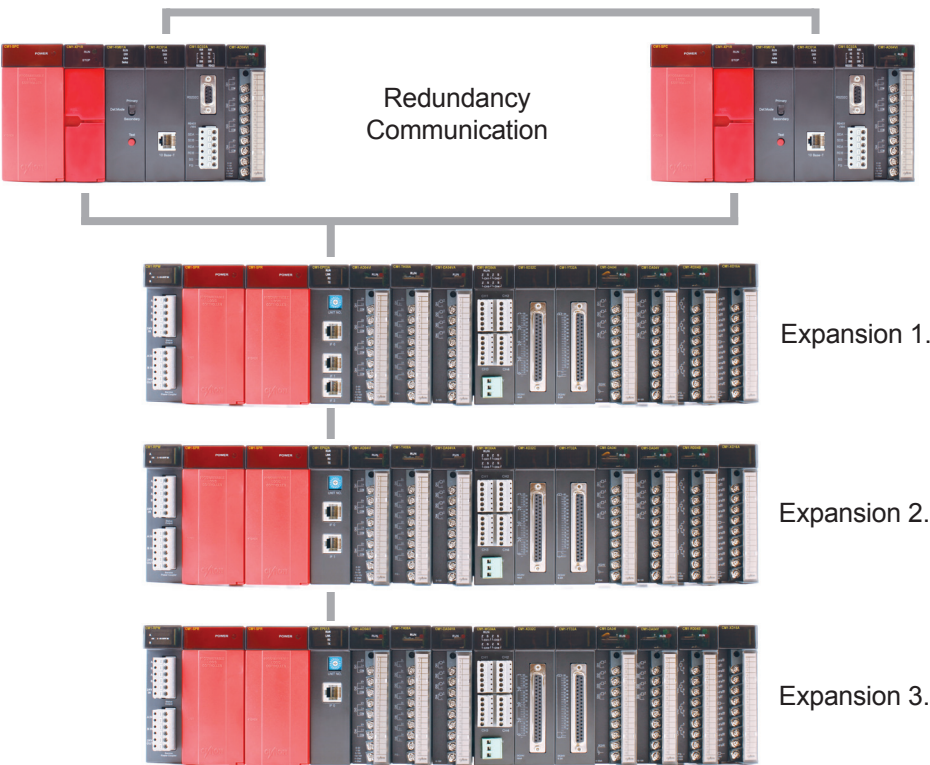
» Base for Redundancy

Model	No. of slots	Size(mm)
CM1-BS05R	5 slots	314.7 x 108
CM1-BS08R	8 slots	411.7 x 108
CM1-BS10R	10 slots	475.7 x 108

» Required Items For Redundancy

Base	Unit	Applicable Module
CPU	Base	CM1-BS03A and etc.
	Power	CM1-SPC and etc.
	CPU	CM1-XP1R
	Redundancy Interface	CM1-RM01A
	Redundancy Comm. Module	CM1-RC01A
	Redundancy Cable	CM0-CBE
	Comm. Module	CM1-EC01A and etc.
Expansion	Expansion Cable	CM0-CBE
	Expansion 1	CM1-EP03A or CM1-EP02A
	Expansion 2 or More	CM1-EP02A or CM1-EP01A
	Base	CM1-BS05R and etc.
	Power	CM1-SPR and etc.
	I/O	Modules of all kinds

» System Configuration



CP CPU

- Easily find errors with the self-diagnosis program
- Maximum base expansion: 16 (except CP4)
- Additional integrated communication port (CM1-CP4C:RS232C, CM1-CP4D/U:RS422/485)
- In the event that the CPU is replaced, I/O and base specifications are still maintained
- Various program types
- Supports over 300 instructions
- Built-in USB 2.0 port (CP4U / CP3U only)
- Attachable flash memory for flexibility (CP3P only)
- Built-in loader port for downloading/uploading programs
- Maximum number of slots in one base is 12



Item		Specification	
		CM1-CP3A/B/P/U	CM1-CP4A/B/C/D/U
Operation Method		Stored Program, Cyclic Operation, Time Driven Interrupt	
I/O Control Method		Indirect, Direct by Instructions	
Program Language		IL (Instruction List) , LD (ladder diagram)	
Data Processing Method		16 bits	
No. of Instructions	Sequence	55 instructions	
	Application	389 instructions	
Processing Speed		200 ns/step	
Program Memory Capacity		32K step	16K step
		512K byte	256K byte
Base Expansion		Maximum 16	N/A
Data Memory Capacity		512K byte	256K byte
Data Memory Capacity	X	1,024	384
	Y	1,024	384
	M	8,192	
	K	2,048	
	L	2,048	
	F	2,048	
	T	1,024 (10 ms or 100 ms)	
	C	1,024	
	S	100 card * 100 step	
	D	10,000	5,000
Timer	Z	1,024	
	Type	On Delay, Off Delay, Integration, Monostable, Retriggerable	
	Time Range	0.01 ~ 6,553.5 sec	
Counter	Type	Up Counter, Down Counter, Up-Down Counter, Ring Counter	
	Coefficient Range	-32,768 ~ +32,767	
No. of Program Blocks		128	
Operation Mode		RUN, STOP, PAUSE, REMOTE	
Self Diagnosis		Watch-Dog Timer, Memory Error, I/O Error, Battery Error, Power Error, etc	
Restart Mode		Cold, Warm	
Battery Back-up		Over 3 years	
Built-in Function		- Computer Link (RS232C) - PID Control (32 Loops) - I/O Reservation - Program Editable on Run Mode - USB 2.0 Port (CM1-CP*U) - Clock (except CP*A type)	

Power

- The power supply for CIMON PLC XP/CP Series (AC100-240V convert to DC +5V, +24V, +15V, -15V)
- Internal power disturbance monitoring function prevents data damage or system malfunctions
- Capacity of the power module must be checked before using the following table

Output voltage	Function
+5V	Operating Power for All PLC Modules
+24V	Sensor and Switch Power, Analog Current Output Module
+15V	Operating Power for Analog Module (except current output)
-15V	Operating Power for Analog Module (except current output)



Items		CM1-SPA	CM1-SPC	
Input	Input Voltage	AC100-240V, 50/60Hz		DC19-28V
	Input Current	0.25A MAX. For 220VAC		1.8A MAX. For 24VAC
	Inrush Current	30A or less		
	Efficiency	70% or more (rated input / load)		
	Power Disturbance Susceptability	20ms or less		
Output	Output Voltage/ (Output Current)	+5V(3.5A)	+5V(3.5A)	+5V(3.5A)
		+24V(0.3A)	+24V(0.3A)	+15V(0.5A)
			+15V(0.5A)	-15V(0.3A)
			-15V(0.3A)	
Voltage Indicator		LED ON When Output Voltage Is OK		

※ Use CM1-SPC for Analog Input/output module

Current Consumption

Item	Model	Current Consumption	Item	Model	Current Consumption
CPU Module	CM1-CP**	130mA	D/A Convert Module	CM1-DA04V	40mA
	CM1-XP**	170mA		CM1-DA04VA	40mA
Redundancy Module	CM1-RM01A	70mA		CM1-DA08V	50mA
	CM1-RC01A	290mA		CM1-DA08VA	50mA
Expansion Module	CM1-EP***	270mA		CM1-DA04I	40mA
	CM1-XD16*	60mA		CM1-DA08I	50mA
DC Input Module	CM1-XD32*	100mA	RTD Module	CM1-RD04*	50mA
	CM1-XD64C	220mA	TC Module	CM1-TC04A	60mA
	CM1-XD16W	32mA	Thermistor Module	CM1-TH08A	60mA
AC Input Module	CM1-XA08*	30mA	Load Cell Module	CM1-WG0**	170mA
I/O Module	CM1-XY16DR	180mA	Positioning Module	CM1-PS02A	240mA
Relay Module	CM1-YR16A	250mA	Communication Module	CM1-SC02A	190mA
Transistor Module	CM1-YT16*	110mA		CM1-SC01A	170mA
	CM1-YT32*	130mA		CM1-SC01B	170mA
	CM1-YT64*	260mA		CM1-SC01DNP	170mA
High-Speed Counter Module	CM1-HS02*	290mA		CM1-EC01A	290mA
	CM1-AD04VI	50mA		CM1-EC10*	290mA
A/D Convert Module	CM1-AD08V	50mA		CM1-BN01A	290mA
	CM1-AD08I	55mA		CM1-EC0*DNP	290mA
	CM1-AD04W	430mA		CM1-C*01*	60mA
				CM1-LG32A	170mA



Communication Module

CM1-SC02A
CM1-SC01A
CM1-SC01B
CM1-SC01DNP
CM1-SC02CDMA
CM1-CN01M
CM1-CN01S
CM1-PD01A
CM1-BN01A

Ethernet Module

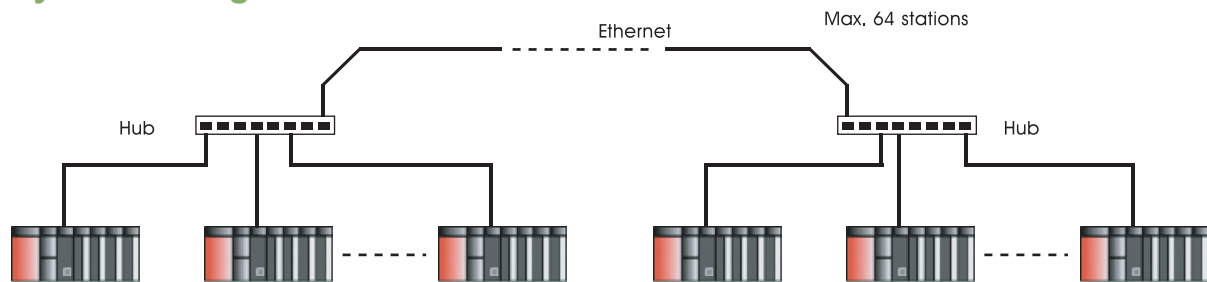
» Ethernet

- IEEE 802.3
- Various protocols (ARP, ICMP, IP, TCP, UDP)
- Ethernet communication modules can be installed in one base with no limitation
- High-speed linkage to simultaneously communicate along CIMON PLC's and up to 64 stations
- DNP 3.0 protocol (CM1-EC01DNP, CM1-EC04DNP)

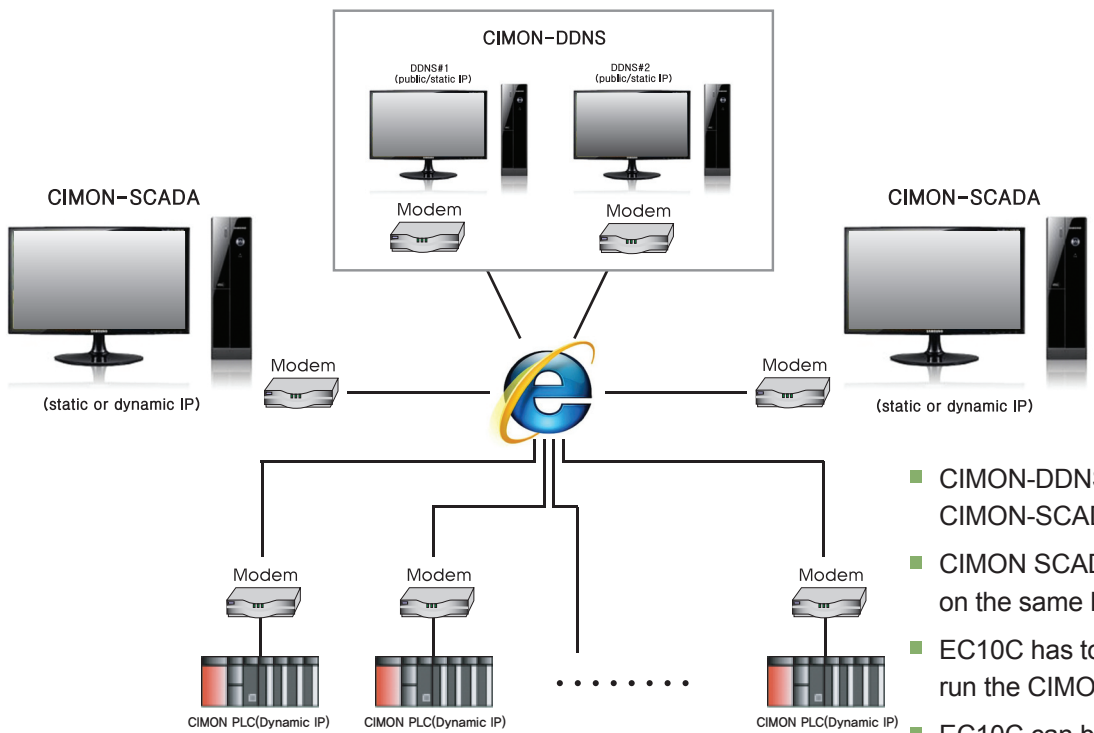


Model		CM1-EC01A	CM1-EC10A	CM1-EC10B	CM1-EC10C	CM1-EC01DNP/EC04DNP
Media interface		10BASE-T	10BASE-T 100BASE-TX	100BASE-FX	10BASE-T 100BASE-TX	10BASE-T
Transmission speed		10Mbps	10/100Mbps	100Mbps	10/100Mbps	10Mbps
Transmission Media		UTP/STP Category5	UTP/STP Category5 Auto MDIX	SC, Multi-Mode (1310mm)	UTP/STP Category5 Auto MDIX	UTP/STP Category5
Max. Distance (Node to Node)		100m		2Km	100m	
Service Capacity		UDP 9 Services TCP 9 Services	UDP 16 Services TCP 16 Services			EC01DNP : Single Host EC04DNP : 4 Hosts
S E R V I C E	Loader	Yes(UDP)				
	HMI Protocol	Yes(TCP,UDP)				No
	MODBUS/TCP SL.	Yes				
	MODBUS/TCP MS.	No	Yes	Yes	No	
	PLC Link(Private Net)	Yes	No	No	No	
	PLC Link(Public Net)	Yes	Yes	Yes	No	
	High-Speed Link	No	Yes	Yes	No	
	DHCP	No	No	No	Yes	
	DNP3	No	No	No	No	Yes

» System Configuration

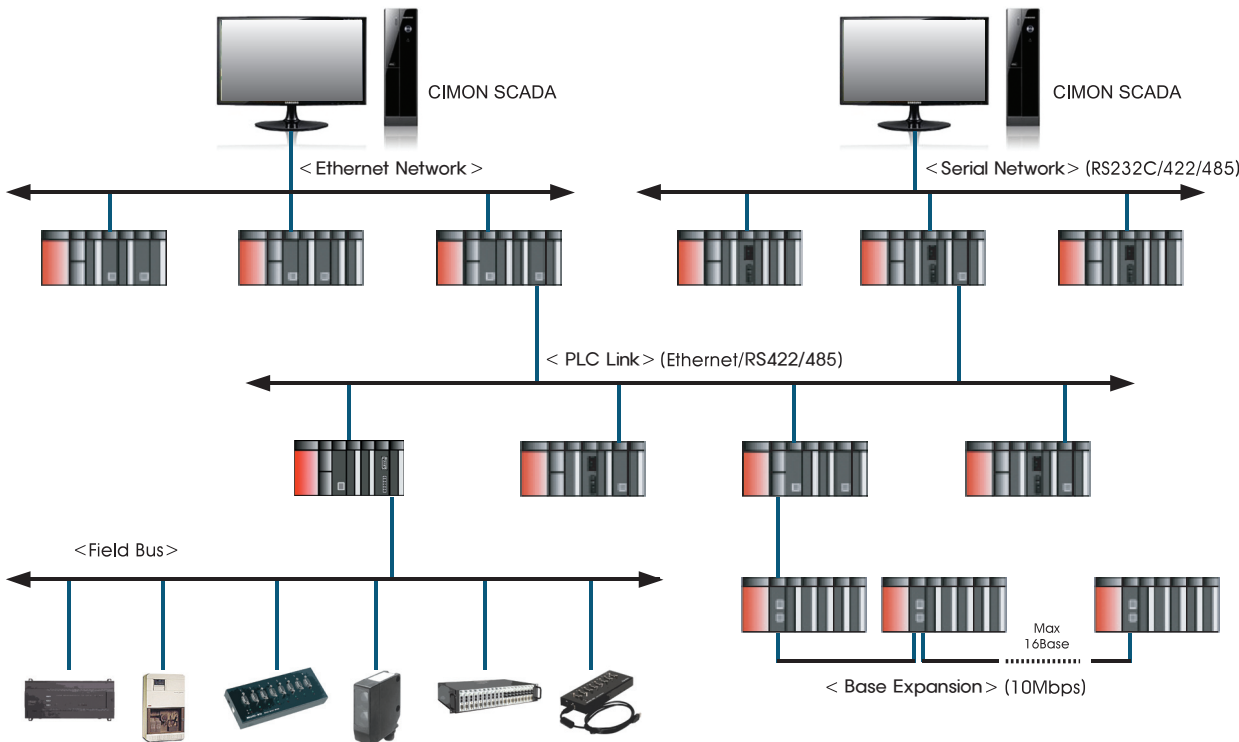


» CIMON - Dynamic IP SYSTEM



- CIMON-DDNS is integrated within CIMON-SCADA
- CIMON SCADA and DDNS can be run on the same PC
- EC10C has to be installed in order to run the CIMON PLC in dynamic IP
- EC10C can be run under the IP sharer

» CIMON Total Network



Serial Module



- Possible to read and write Data by HMI protocol
- Maximum 32 unit communications available for multi-drop configuration
- Long distance communication via modem connection
- Various communication speeds (300bps~76800bps)
- Various diagnostic functions with Loop-Back feature makes for an easy error check
- RS232C / RS422(RS485) communication port by setting up independent channel or linked channel
- 1:1 / 1:N / N:M communication (RS422 only)
- Full-Duplex (RS422) and Half-Duplex (RS485)
- RS485 Multi-Drop communication is available by using parameters
- Various diagnostic function and loop-back function make easy error check
- DNP 3.0 protocol (CM1-SC01DNP)
- Simultaneously link high-speed communication between CIMON PLCs and up to 32 stations

Model		CM1-SC02A	CM1-SC01A	CM1-SC01B	CM1-SC01DNP
Interface		RS232C / RS422 / RS485	RS232C	RS422 / RS485	RS232C
Comm. Mode	HMI Mode	CIMON Protocol (1 : n)			-
	Loader Mode	CICON Communication			-
	MODBUS	MODBUS RTU Mode (Master / Slave)			-
	PLC LINK	Communication between CIMON PLC's			-
	DNP	-			DNP 3.0 Protocol
	User defined mode	Protocol Program			-
Data Type	Data Bit	7 or 8 bit			
	Stop Bit	1 or 2 bit			
	Parity	Even / Odd / None			
Synchronization		Asynchronous			
Transmission Speed		300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 76800			
Modem		Long Distance Communication by External Modem			

CDMA Module

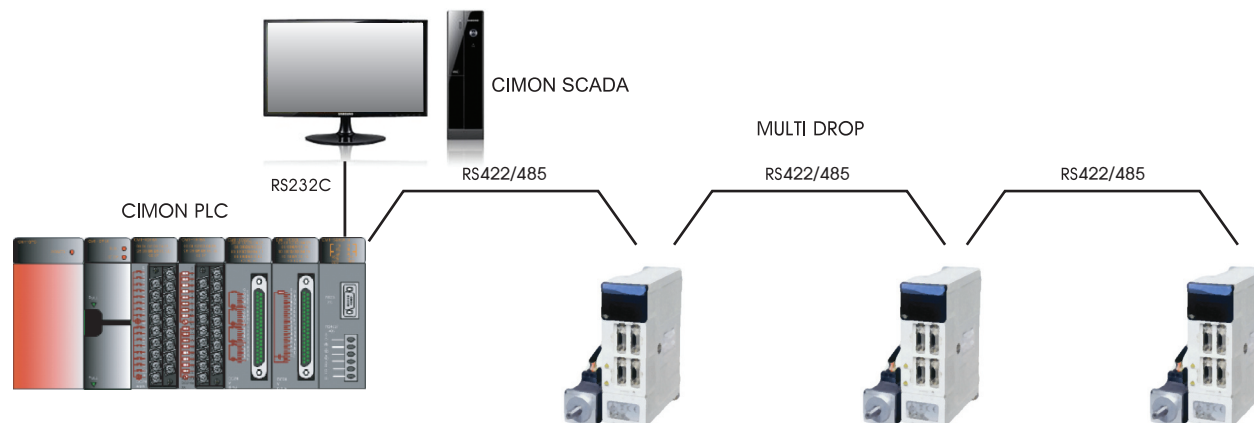


- CDMA Packet / Circuit communication
- Flexible choices for communication
- Easy parameter setup
- Communication connection management by user program
- Possible to read and write data by HMI protocol
- Maximum 32 communication
- Flexible communication speed set-up (300~76800bps)
- 1:1 / 1:N / N:M communication (with RS422 channel)
- Various diagnostic functions with Loop-Back feature make for an easy error check

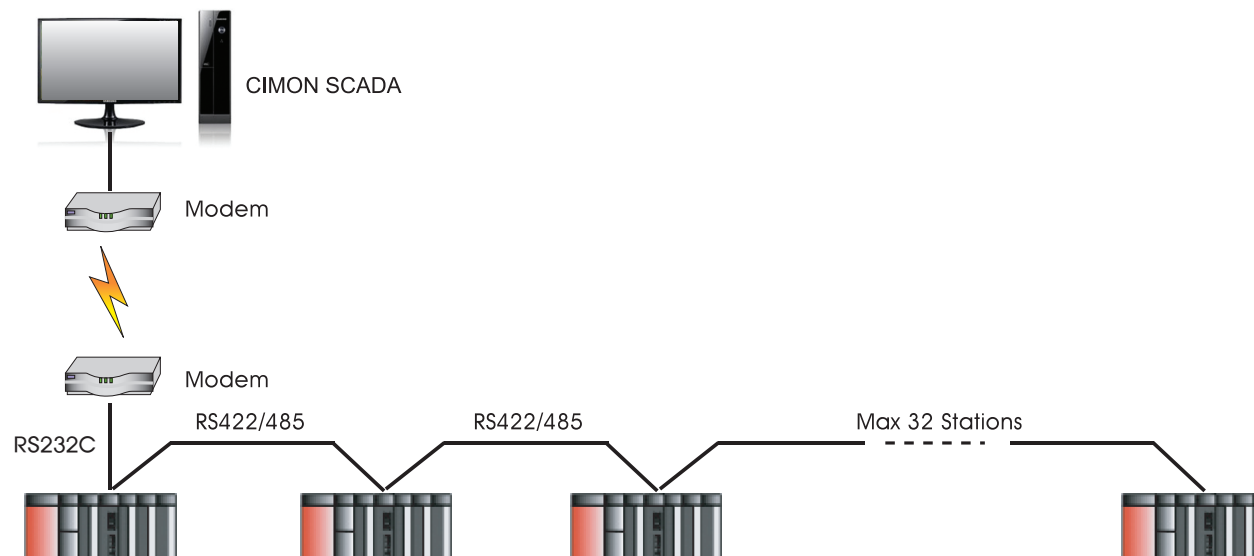
Item		CM1-SC02CDMA
Interface		RS232C / RS422 / RS485
Comm Mode	HMI Mode	CIMON Protocol (1 : n)
	Loader Mode	CICON Communication
	Modbus	MODBUS RTU Mode (Slave and Master)
	User defined mode	Communication between Different Kinds of Systems
Data Type	Data Bit	7 or 8 bit
	Stop Bit	1 or 2 bit
	Parity	Even / Odd / None
Synchronization		Asynchronous
Transmission Speed		300 ~ 76800 bps

» System Configuration

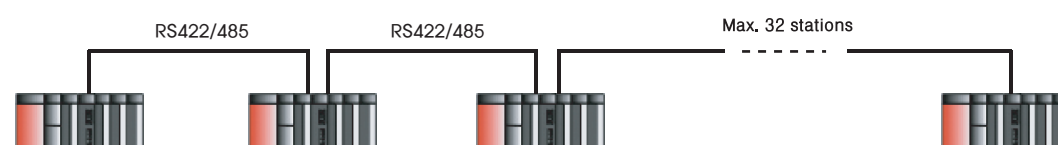
- Connecting the Application by protocol programs



- RS232C/422/485 SCADA Link (Using Modem)



- PLC Link : RS422/485



CIMON-NET Module

» About CIMON-NET

- CIMON-NET exchanges real time data with Remote I/O through the CANbus hardware which provides exceptional reliability.



» Advantages of CIMON-NET

- User can enjoy a simple installation of CIMON-NET system configuration with easy maintenance
- Provides flexibility during processing by elevating the main functions which reduces malfunctions, increase accurate data with reliable digital transmitting technology
- Reduces installation cost of I/O hardware by using one twisted pair cable which reduces the number of I/O cards required

» Features of CIMON-NET

- Maximum 63 slave stations available
- Maximum 1,400 bytes for each I/O data
- I/O Comm. Block: Maximum 16 modules
- Flexible communication speed set-up (10K,20K,50K,100K,125K,150K,500K,1000Kbps)
- Auto Scan: easy to find slave modules
- Built-in indicator LED to easily monitor network conditions
- Scan program: conveniently diagnose and monitor network condition and control communication flow (Start / Stop)
- Communication configuring software is integrated with CICON

» CIMON-NET Specification

Model	Item	CM1-CN01M	CM1-CN01S
Network Type		CIMON-NET	
Interface		CANbus	
Standard		ISO11898	
Comm. Method		Bus	
Media Access		POLL	
Transmission Distance & Speed	BUS Length (m)	Cross Section (mm ²)	Bit Rate (kbps/s)
	0 ~ 40	0.25 ~ 0.34	1000 kbps / 40m
	40 ~ 300	0.34 ~ 0.6	500 kbps / 200m
	300 ~ 600	0.5 ~ 0.6	100 kbps / 500m
	600 ~ 1000	0.75 ~ 0.8	10 kbps / 1km
Max. Number of Slave per Segment		63 stations	
Cable		Twisted Pair Electric Cable	
Max. I/O data		2800 byte	512 byte
Parameter Set-up		Graphical Loader Program Only for CIMON	

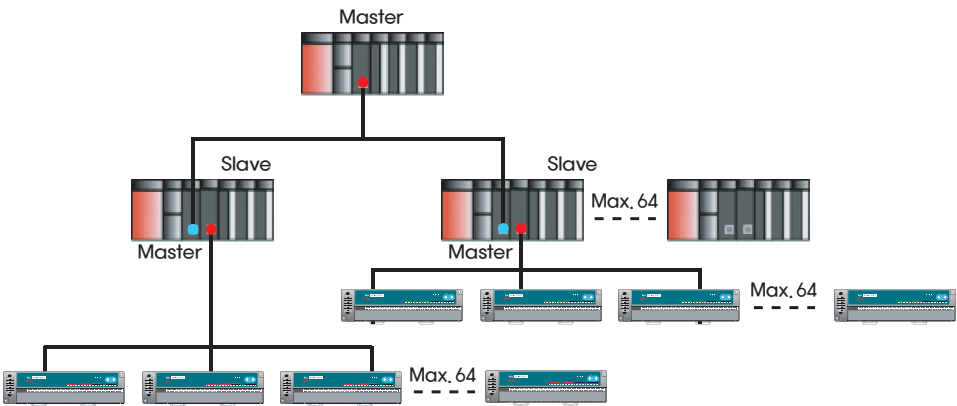
» Cable Specification

Model	cable 1	cable 2
Impedance	108 ~ 132 Ω (f=3 to 20MHz)	68 ~ 102 Ω (f>800KHz)
Electrostatic capacity	< 30 nF/Km ²	< 70 nF/Km ²
Conductor cross section	≥ 0.34 mm ² (22AWG)	≥ 0.34 mm ² (22AWG)

» Transmission Distance per Speed

Baud (kbps)	10	100	250	500	1000
Cable 1	1000	500	400	200	50
Cable 2	700	350	250	100	40

» System Configuration



PROFIBUS Module

» About Profibus

Profibus is an open-type fieldbus which is used universally for automation and enables seamless communication between different manufacturer's devices. As technology advances, Profibus is the industrial communication system that will be ready for the future.



» Advantages of Profibus

- Minimal hardware structure is required (I/O, terminal blocks, barriers). Easy and fast installation reduces cost
- Simple structure (device is constructed as one tool) with easy repairing and maintenance
- Provides maximum flexibility for work progress by powering up the main functions which reduces malfunctions while increasing accurate data log with reliable digital transmitting technology
- Further reduce cost by using a twisted pair cable which minimizes the amount of analog I/O card required

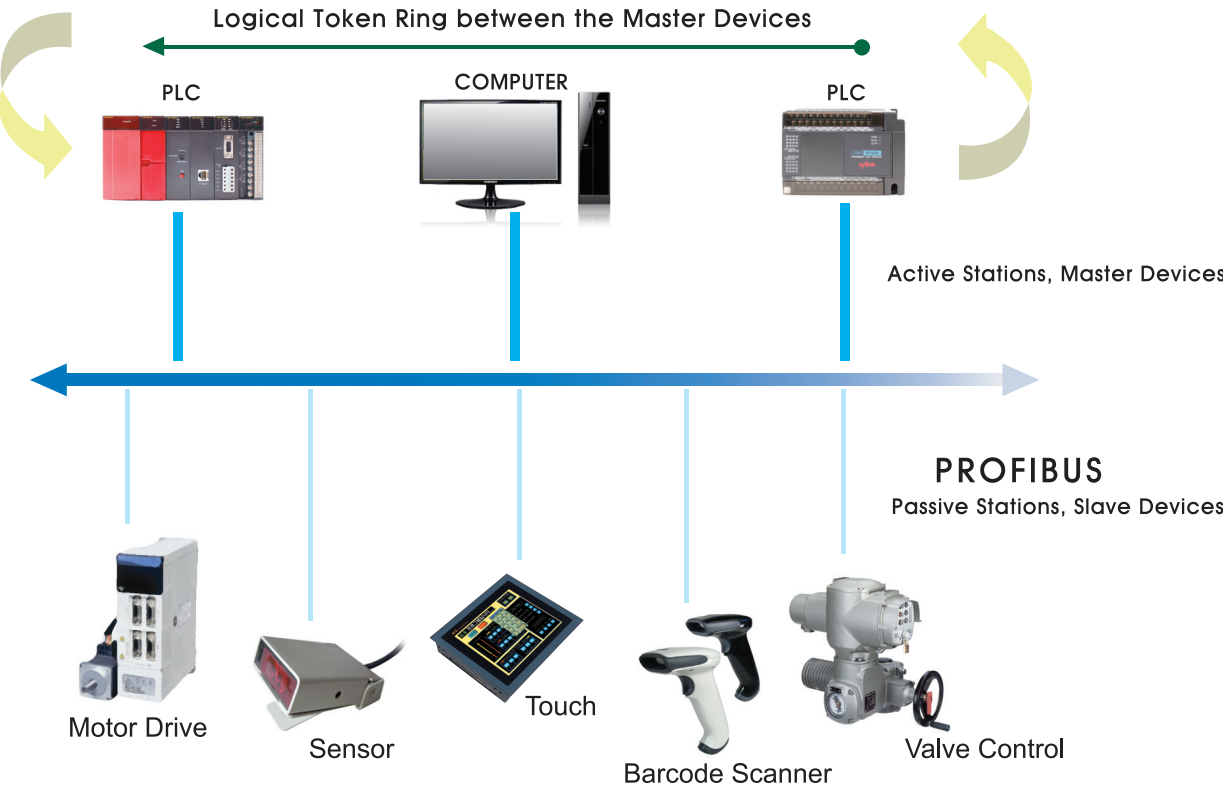
» Features of Profibus DP Module

- Suitable to communicate between master automation device and the slave I/O device
- Flexible communication speed (9.6Kbps~12Mbps)
- RS485 interface
- Easy installation by using the twisted pair cable
- Maximum 127 slave stations available (32 stations per segment)
- Network setup via Sycon-PB configuration tool
- 1 Kbyte transferred in 2ms
- Data transferred with an order or without an order
- Single or multi-master network function

Model	CM1-PD01A
Interface	RS-485
Network	Profibus DP
Media Access	Token Passing & Polling
Cable	Two Wire Shielded Twisted Pair Cable
Max. No. of Slave per Network / Network	127 stations
Max. No. of Slave per Segment/ Network	32 stations
Max. I/O Data Slave	244 byte
Max. I/O Data	I/O 3,584 each
Configuration Tool	Sycon-PB
Configuration Port	RS-232C
Comm. Parameter Setting	High-speed Linked Parameter Communication Setting

Transmission	9.6K(bps)	19.2K	93.75K	187.5K	500K	1,500K	12,000K
Distance	1200m	1200m	1200m	1000m	400m	200m	100m

» System Configuration



BACnet Module

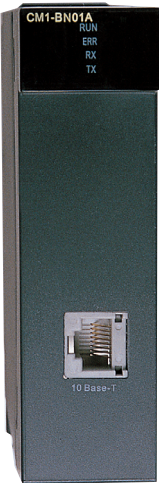


» About BACnet

- BACnet stands for Building Automation and Control Network.
- BACnet is applicable to various building utilities such as HVAC control system, lighting control system, security system, elevator control system etc.

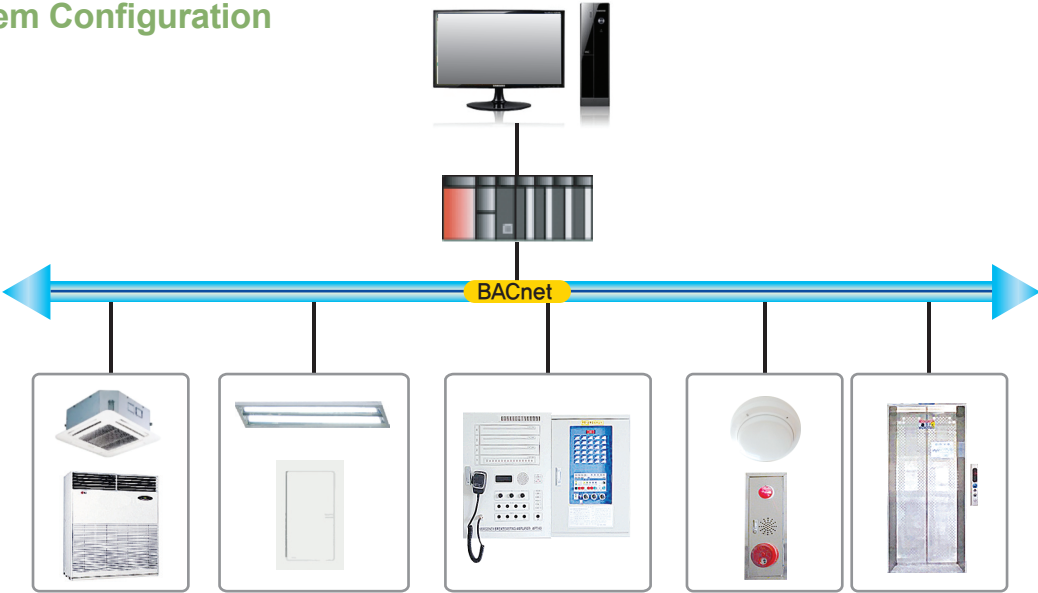
» Features of BACnet Module

- Easy to modify and expand due to use of standard protocol
- Supports BACnet which is the standard of building automation system
- Supports functionality of BACnet class 3 servers
- Uses Ethernet for communication physical layer (BACnet IP)



Model	CM1-BN01A
Size of Protocol	ANSI / ASHRAE 135-1995 (KS X 6909)
Stack of Protocol	UDP / IP
Standard of Physical Layer	ISO / IEC8802-3 (IEEE 802.3, CSMA / CD, 10Base-T)
Speed of Data Transmitting	10 Mbps
Transmitting Method	Base Band
Max. Length of Segment	100 m
Max. I/O Data Slave	244 byte
Support Service	Loader, BACnet / IP, PLC Link (public Net)

» System Configuration





Digital Module

CM1-XD16A / CM1-XD32C

CM1-XD64C / CM1-XD16B

CM1-XD32B / CM1-XD16W

CM1-XY16DR / CM1-YT16A

CM1 - YT16B / CM1 - YT32A

CM1 - YT32B / CM1-YT64A

CM1-AD04W / CM1-AD04VI

CM1-AD08V / CM1-AD16V

CM1-AD08I / CM1-AD16I

CM1-DA04V / CM1-DA08V

CM1-DA16V / CM1-DA04VA

CM1-DA08VA / CM1-DA16VA

CM1-DA04I / CM1-DA08I

CM1-DA16I

Digital I/O Module

- Photo-coupler insulation and relay insulation
- LED display to monitor running conditions
- Terminal block type: Easy maintenance and installation

» DC Input Module

Model		DC Input					
		CM1-XD16A	CM1-XD32C	CM1-XD64C	CM1-XD16B	CM1-XD32B	CM1-XD16W
Input Points		16 points	32 points	64 points	16 points	32 points	16 points
Rated Input Voltage		DC 24 V					DC 100 V
Rated Input Current		4 mA					
On Voltage / On Current		DC 19 V / 4 mA			DC 15 V / 4 mA		60 V / 4 mA
Off Voltage / Off Current		DC 11 V / 1 mA			DC 12 V / 1 mA		40 V / 1 mA
Response Time	Off -> On	5 ms or less					
	On -> Off	5 ms or less					
Common Type		8 points / 1com		32 points / com	8 points / com		
Operation Indication		LED will be ON when the Input is ON					
Insulation Type		Photo Coupler Insulation					
Input Type		Sink / Source					



» I/O Mixed Module

Model	I/O Mixed	
	CM1-XY16DR	
No. of I/O points	8 points	
	SINK / SRC	Relay
Rated I/O Voltage	DC 24 V	DC 12 / 24 V
	N/A	AC 220 V
Off Voltage / Off Current	DC 19 V / 4 mA	-
Response Time	Off -> On	DC 11 V / 1 mA
	On -> Off	5 ms or less
Common Type	8 points	
Operation Indication	LED will be ON when the Input is ON	
Insulation Type	Photo Coupler Insulation	Relay



» Relay Output Module

Model	Relay Output	
	CM1-YR16A	CM1-YR32A
No. of Output Points	16 points	32 points
Rated Load Voltage	DC 12 / 24 V	
	AC 220 V	
Rated Load Current	1 Point	2 A
	1 Com	5 A
Response Time	Off -> On	10 ms or less
	On -> Off	5 ms or less
Operation Indication	LED will be ON when the Input is ON	
Insulation Type	Relay Insulation	



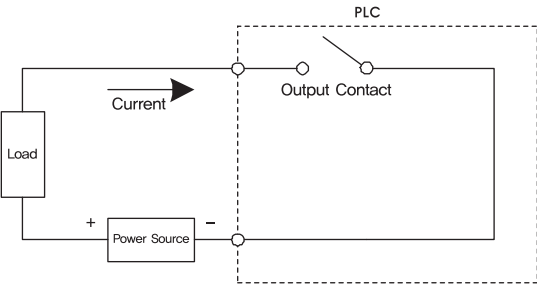
※ If this module is used as an inductive load switch, it will shorten the life of the module, please use transistor output module for this purpose

» Transistor Output Module



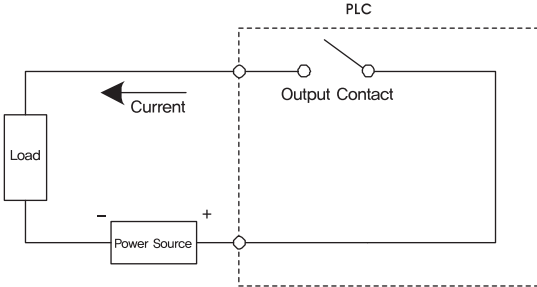
Model	Transistor Output				
	CM1-YT16A	CM1 - YT16B	CM1 - YT32A	CM1 - YT32B	CM1-YT64A
No. of Output Points	16 points Sink	16 points Source	32 points Sink	32 points source	64 points Sink
Rated Load Voltage	DC 12 ~ 24 V	DC 12 ~ 24 V	DC 12 ~ 24 V	DC 12 ~ 24 V	DC 12 ~ 24 V
Rated Load Current	1 Points	0.5 A	0.5 A	0.2 A	0.2 A
	1 Com	4 A	4 A	4 A	4 A
Response Time	Off -> On	1 ms or less	1 ms or less	1 ms or less	1 ms or less
	On -> Off	1 ms or less	1 ms or less	1 ms or less	1 ms or less
Common Type	16 points	16 points	32 points	32 points	32 points
Operation Indication	LED will be ON when the Input is ON				
Insulation Type	Photo Coupler Insulation				

» Sink Type



※ CM1-YT16A, CM1-YT32A, CM1-YT64A are Sink Type

» Source Type



※ CM1-YT16B, CM1-YT32B are Source Type

AD Module

» A/D Converter Module



- 4, 8, or 16 channels of A/D conversion with one module
- Voltage or current input can be selected from each channel (CM1-AD04VI only)
- High resolution of 1/64000 (CM1-AD04W only) and 1/16000

Model		AD16bit / Voltage-Current Input		AD14bit / Voltage-Current Input	AD14bit / Voltage Input		AD14bit / Current Input	
		CM1-AD04W		CM1-AD04VI	CM1-AD08V	CM1-AD16V	CM1-AD08I	CM1-AD16I
Analog Input point		4 channels			8 channels	16 channels	8 channels	16 channels
Rated Load Current		Voltage	0 ~ 5 V 1 ~ 5 V 0 ~ 10 V -10 ~ +10 V		0 ~ 5 V 1 ~ 5 V 0 ~ 10 V -10 ~ +10 V		0 ~ 20 mA 4 ~ 20 mA	
		Current	0 ~ 20 mA 4 ~ 20 mA					
Digital Output		16 bit Binary Value (-32000 ~ 32000 or 0 ~ 64000), Measured Value, Percentage Value (0 ~ 10000)		14 bit Binary Value (0~16000 or -8000~8000)				
Max. Resolution	0 ~ 5 V	78.1 μV		0.3125 mV				
	1~5V	62.5 μV		0.25 mV				
	0~10V	156.3 μV		0.625 mV				
	-10~+10V	312.5 μV		1.25 mV				
	0~20mA	312.5 nA		1.25 μA				
	4~20mA	250 nA		1.0n μA				
Max. Conversion Rate		±0.05 % or less (25℃)		5 ms / 1 ch				
Absolute Max. Input	Voltage	±12 V						
	Current	±21 mA						
Insulation Type		Photo Coupler Insulation between an Input Port and PLC.						
		Insulation between Photo Coupler and Channel		Non-Insulation between Channels				

DA Module



- D/A converting module is used to convert a digital value to an analog signal
- D/A converting of 4 to 16 channels is possible with one module
- No quantity restrictions within a base

Model	DA14bit / Voltage Output			DA14bit / Voltage Output		
	CM1-DA04V	CM1-DA08V	CM1-DA16V	CM1-DA04VA	CM1-DA08VA	CM1-DA16VA
No. of Input Channel	4 channels	8 channels	16 channels	4 channels	8 channels	16 channels
Digital Input	14 bit Binary Value (0~16000 or -8000~8000)					
Analog Output	-10 ~ 10 V			0 ~ 10 V		
Max. Resolution	1.25 mV			0.625 mV		
Accuracy	Within ±0.1 %					
Max. Conversion Rate	10 ms	16 ms	28 ms	10 ms	16 ms	28 ms
Absolute Max. Output	±12 V			-0.5 ~ 10.5 V		
Insulation Type	Insulation between Photo Coupler and Channel , Non-Insulation between Channels					

Model	DA14Bit / Current Output		
	CM1-DA04I	CM1-DA08I	CM1-DA16I
No. of Input Channel	4 channels	8 channels	16 channels
Digital Input	14 bit Binary Value (0~16000 or -8000~8000)		
Analog Output	4 ~ 20 mA		
Max. Resolution	1.25 mV		
Accuracy	Within $\pm$ 0.1 %		
Max. Conversion Rate	10 ms	16 ms	28 ms
Absolute Max. Output	$\pm$ 21mA		
Insulation Type	Insulation between Photo Coupler and Channel, Non-Insulation between Channels		





Special Module

CM1-RD04A / CM1-RD08A
CM1-RD04B / CM1-RD08B
CM1-TC04A / CM1-TC08A
CM1-WG04A / CM1-WG02C
CM1-WG02D / CM1-WG02E
CM1-HS02C / CM1-HS02E
CM1-LG32A / CM1-PS02A

RTD Module



- By using a platinum-coated thermometer Pt100, JPt100 or Pt1000, Ni1000, it can convert the inputted temperature data to process as a digital value.
- It can process inputted temperature data to digital value down to the first decimal place
- One module can connect with Pt100, JPt100 or Pt1000, Ni1000 with 4 point and 8 point to use respectively
- Can detect a wire disconnection from each channel and detect the excess range of input temperature

Model	CM1-RD04A	CM1-RD08A	CM1-RD04B	CM1-RD08B
RTD Type	Pt100 (JIS C1640-1989, DIN 43760-1980)		Pt1000 (DIN EN 60751) Ni1000 (DIN 43760) Ni1000 (TCR 5000)	
	JPt100 (KS C1603-1991, JIS C1604-1981)			
Range of Input Temperatures	Pt100 : -200.0 ℃ to 600 ℃ (18.48 to 313.59 Ohm)		Pt1000 : -200.0 ℃ to 600 ℃ (18.43 to 313.59 Ω) Ni1000(DIN 43760) : -50 ℃ to 160 ℃ (742.6 to 1986.3 Ω) Ni1000(TCR 5000) : -50 ℃ to 160 ℃ (790.9 to 1799.3 Ω)	
	JPt100 : -200.0 ℃ to 600 ℃ (17.14 to 317.28 Ohm)			
Digital Output	Digital Converted Value : 0 ~ 16,000 Detected Temperature Value (first decimal point value X 10)			
Breakdown Detection	3 wires for Each Channels			
Accuracy	±0.1 % [full scale]			
Max. Conversion Rate	400 ms / 1 channel			
No. of input Channels	4 channels	8 channels	4 channels	8 channels
Insulation TypeInsulation Type	Insulation between Input Port and PLC, No Insulation between Channels			
Connection Terminal	18 points Terminal			

TC Module



- Convert the temperature data (℃, °F) to a digital value for processing by directly connecting to various temperature sensors
- Inputted data can be processed to the first decimal point as a digital value
- One module can connect with 4 points of temperature sensors
- Can detect if the temperature exceeds the measuring range and adjust automatically
- Automatic compensation for error caused by the temperature sensor

Model		CM1-TC04A			
Available TC		Type K, J, E, T, B, R, S, N			
Range of Input Temperature		Type of TC	Standard	Range of measured temperature(℃)	Range of measured voltage(μV)
		K	ITS-90	-200.0 ~ 1200.0	-5891 ~ 48828
		J		-200.0 ~ 800.0	-7890 ~ 45498
		E		-200.0 ~ 600.0	-8824 ~ 45085
		T		-200.0 ~ 400.0	-5602 ~ 20869
		B		400.0 ~ 1800.0	786 ~ 13585
		R		0.0 ~ 1750.0	0 ~ 21006
		S		0.0 ~ 1750.0	0 ~ 21006
		N		-200.0 ~ 1250.0	-3990 ~ 43846
Digital Output		Digitally Converted Value : 0 ~ 16,000 (-8000 ~ 8000) Converted Temperature Value : ℃, °F (0.1℃ Resolution)			
Compensation Type		Automatic Compensation			
Breakdown Detection		Detection by Channels			
Accuracy		±0.3 % (full scale), ±1℃ (error for base contact compensation)			
Max. Conversion Rate		50 ms / 1 channels			
No. of Input Channel		4 channels / module			
Connection Terminal		18 point Terminal			
Internal Current Consumption (mA)	+5 V	60 mA			
	+15 V	30 mA			
	-15 V	10 mA			

Thermistor Module

- Maximum of 8 channels NTC (Negative Temperature Coefficient) measuring thermistor with one module
- Temperature data (°C) is accurately measured down to the first decimal place
- Can detect disconnection with each channel and also adjust if the temperature exceeds the measuring range
- If using the thermistor temperature-resistance table, the module is able to input desired minimum, medium, maximum temperature point (°C) and resistance (Ω) to measure.



Model		CM1-TH08A
Range of Thermistor Input		NTC Type
Range of Thermistor Input Resistance		0 ~ 1MΩ
Resolving Power of Thermistor Input Resistance		0 Ω ~ 40 kΩ : 1 Ω
		40 kΩ ~ 400 kΩ : 10 Ω
		400 kΩ ~ 1 MΩ : 30 Ω
Cover Range	Temperature Convert Value	℃, °F (0.1℃ Resolution)
	Digital Value	0 ~ 16000, -8000 ~ 8000
Resistance - Temperature Calculation		Steinhart-Hart Thermistor Polynomial
Accuracy		±0.3 % (full scale)
Max. Conversion Rate		1 sec (8 channel)
Temperature Input Point		8 points
Insulation Method		CPU and Analog Arithmetic Operation Photo Coupler Insulation
Connection Terminal		18 points Terminal

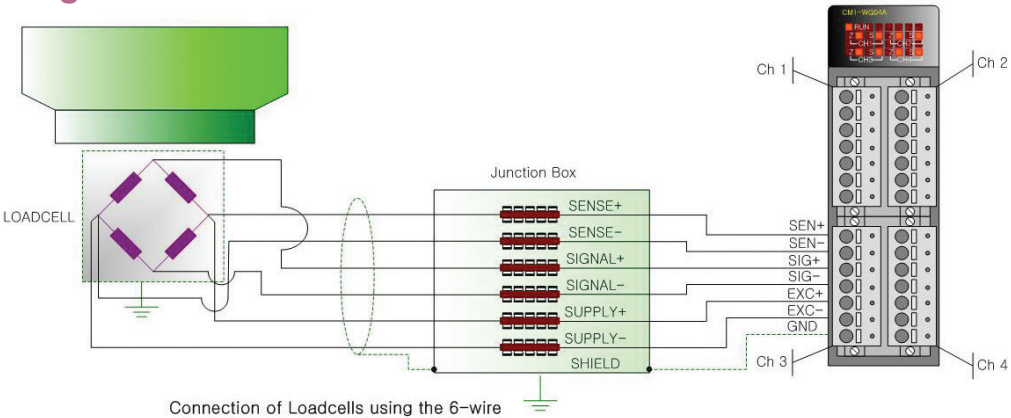
Load Cell Module



- 2 or 4 channels per module
- The unit is compatible with various applicable fields such as Unload Scale, Bin Scale, Mixing Scale, Filling Scale (packaging) etc
- 24 bit sigma delta AD conversion provides high resolution digital values
- Supports built-in programs such as input and discharge measurements
- WG02C model can be in dynamic measurements by getting external 24V DI input.

Model	CM1-WG04A	CM1-WG02C	CM1-WG02D	CM1-WG02E
Channel	4 channels	2 channels	2 channels	2 channels
Load Cell	Strain Gage Method			
Insulation Type	Photo-Coupler			
External Power	DC24V			
Load Cell Approval Voltage	Maximum 350 Ω Cell of 4 Parallel Connection is Possible per Channel			
A/D Conversion Method	Sigma Delta			
Max. Output of Load Cell	3.6 mV / V	2 mV / V	2 mV / V	2 mV / V
Max. Resolving Power	1 / 10,000	1 / 40,000	1 / 40,000	1 / 40,000
A/D Conversion Speed (each channel)	10 times / sec	1,000 times / sec (standard form)	1,000 times / sec (dynamic measurement form)	1,000 times / sec (wide range)

» Operating Introduction



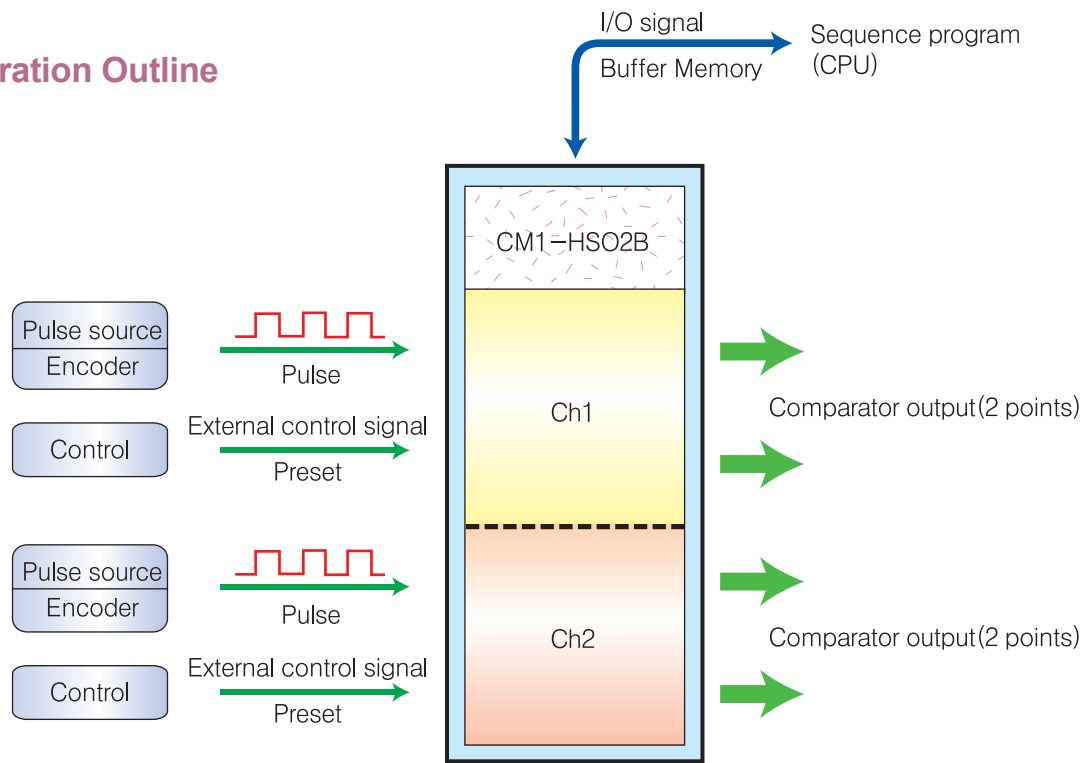
High-Speed Counter Module

- 1-Phase input: Up / Down count by a program or B-phase
- 2-Phase input: Up / Down count by Phase difference
- Adding and subtracting functions for 2-phase difference
- 1-multiple, 2-multiple, 4-multiple functions for 2-phase input
- Preset function by external input signal or a program
- Outputs comparison signal by comparing the base value and the current value through the built-in transistor
- Enables ring counting, sampling counting, periodic pulse counting and latch function



Model		CM1-HS02C	CM1-HS02E
Channel		2 channels	
Counting Input	Signal	1 phase Input / 2 phase Input	Line Drive Input
	Level of Signal	DC 5 / 12 / 24V, 10 ~ 12mA	RS-422A (Line Drive)
Range of Counting		32 bit (-2,147,483,648 ~ 2,147,483,647)	
Counting rate		300 kpps	
Form		UP / DOWN Linear Counting + Ring Counting	
External Output	Type	Comparison (> , = , <)	
	Form of Signal	Open Collector Output	

» Operation Outline



Data Logger Module

- Large capacity with non-combustible log memory (32MB)
- Real time data sampling & saving
- Acquires the stored data anytime from SCADA when the communication status returns to normal
- Simultaneously samples data with a maximum of 32 word and a maximum period of 10ms
- Built in HMI protocol: no optional communication card needed
- Self-diagnostic function: communication error, memory error, capacity check, etc.
- Triggers logging by sequence program
- Provides event logging (COS, VOC)
- Includes special program for downloading the collected data



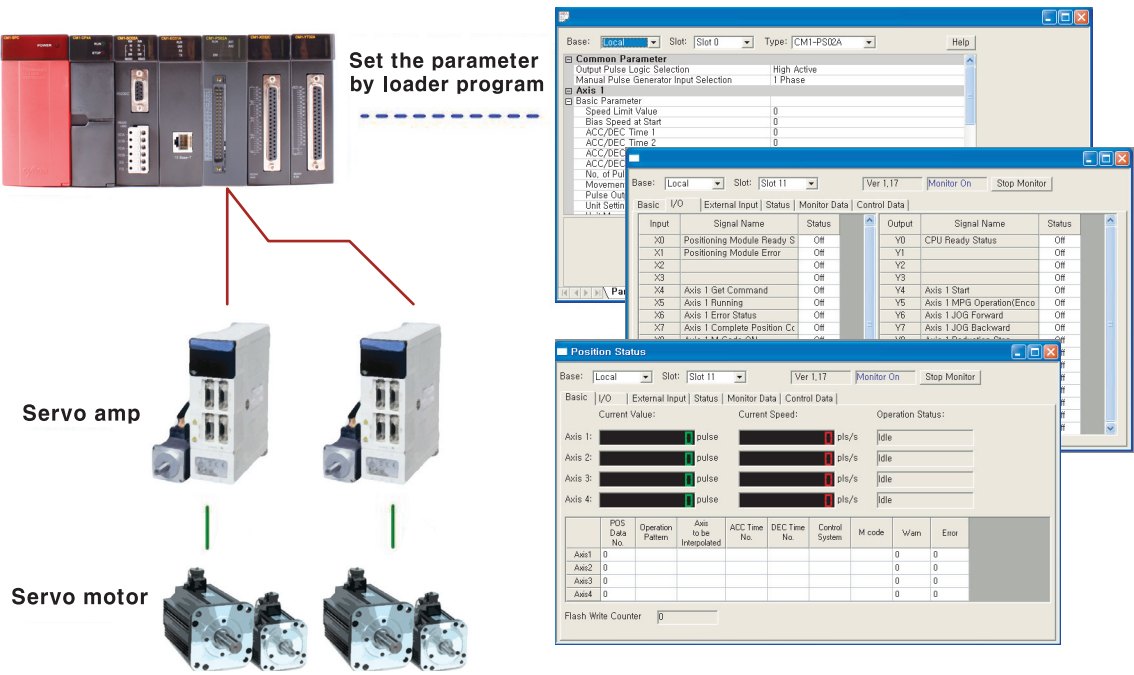
Model		CM1-LG32A
Comm. Mode	HMI Mode	CIMON SCADA Protocol (HMI protocol)
	Terminal Mode	Text Transmission
Data Type	Data Bit	7 / 8
	Stop Bit	1 / 2
	Stop Bit	1 / 2
Synchronous		Asynchronous
Transmission Speed		300 / 600 / 1200 / 4800 / 9600 / 19200 / 38400
Comm. Method		RS232C
Modem Connection		Cable Modem or Dial Up Modem
Log Memory Capacity		32 Mbytes
Sampling Interval		10 msec ~ 327,670 msec
Max. Logging Data Size		32 words
Log Data		Block Sampling or Event Data
Logging Method		Periodic, Trigger, Event (COS / VOC)
Built-in Function		Memory Condition Check, Communication Error Check, Memory Capacity Check

Positioning Module

- Enable to set a maximum of 600 positioning data
- Features position control and speed control
- Positioning control of one axis: linear interpolation, separate/synchronous operation
- Positioning control of two axes: speed control, arc/linear interpolation, separate/synchronous operation
- Origin point return method
 - Search origin point after near zero point is off
 - Search origin point after reducing speed when near zero point is on
 - Search origin point by detecting the origin point and upper/lower limit
 - Enable to set an absolute origin point



» Operation Outline



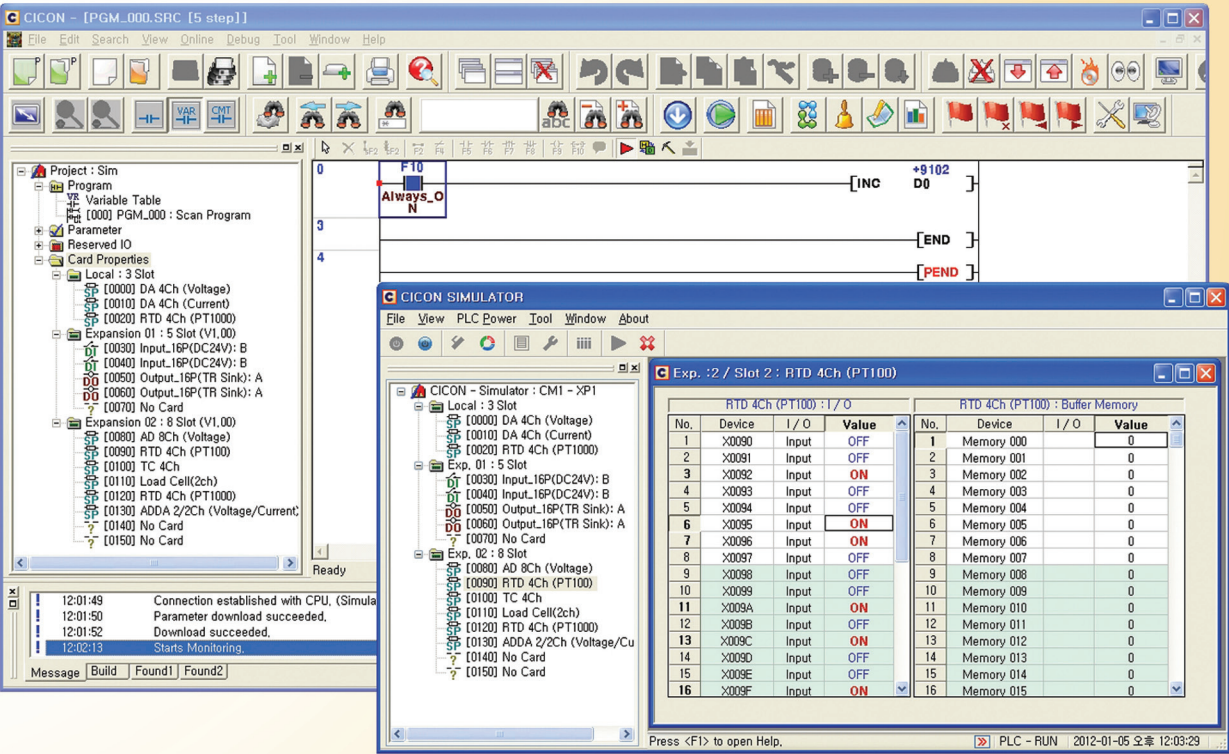
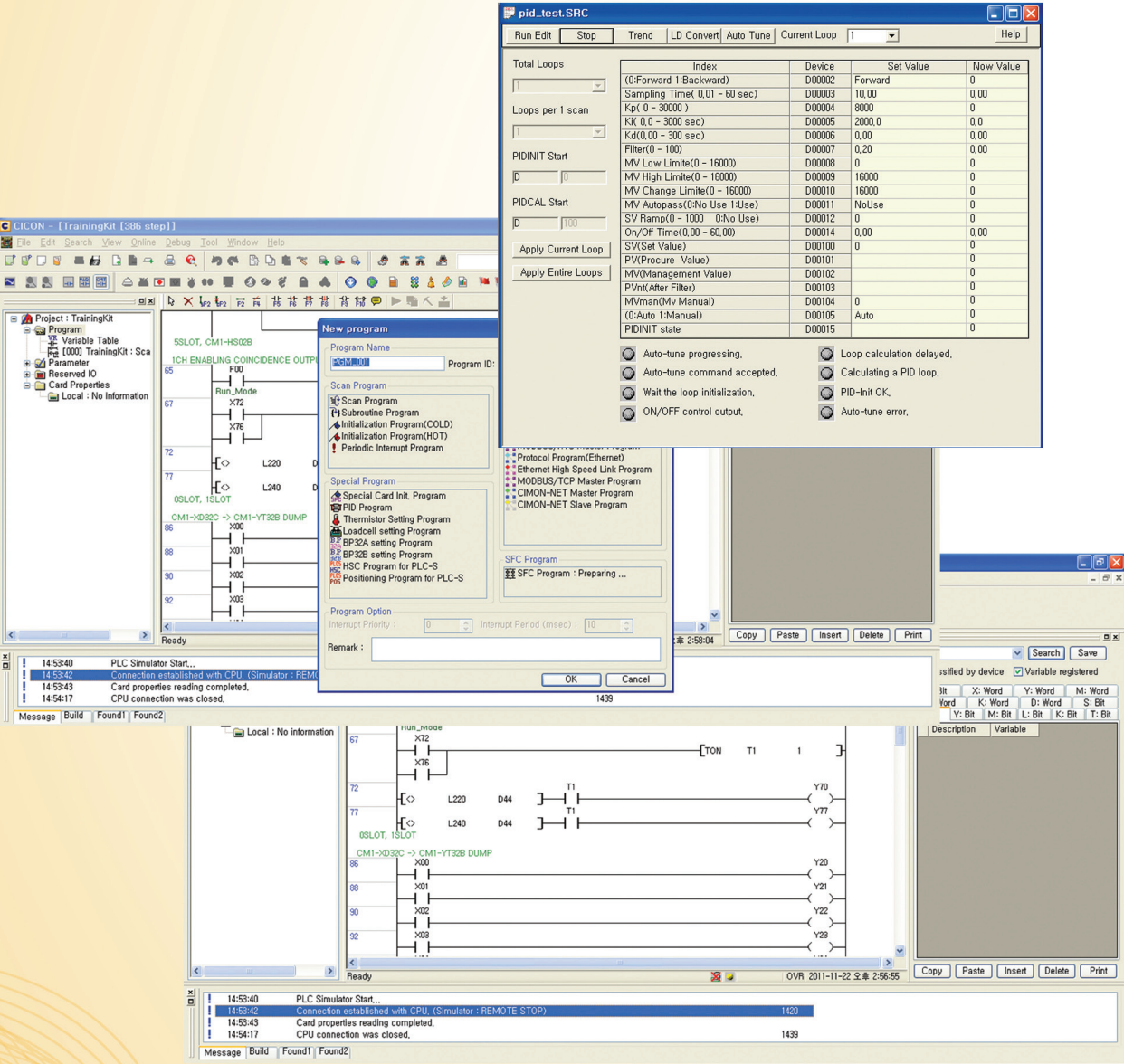
» Specifications

Model	CM1-PS02A
Number of Axis	2 axis
Interpolation	2-axis Linear Interpolation, 2-axis Circular Interpolation
Control Method	Position, Locus, Speed, Speed / Position, Position / Speed Control
Control Unit	pulse, mm, inch, degree
Positioning Data	600 ea / axis
Positioning Method	Absolute or Relative Method
Backup	Flash Rom Backup (parameter, positioning data, block data, condition data)
Positioning	Positioning Method
	Position Control Absolute / Relative Coordinate Method
	Position / Speed Switching Control - Relative Coordinate Method
	Speed / Position Switching Control - Absolute / Relative Coordinate Method
	Locus Control - Absolute / Relative Coordinate Method
	Positioning Range
	▪ Absolute Coordinate Method
	-214748364.8 ~ 214748364.7 μm
	-21474.83648 ~ 21474.83647 inch
	0 ~ 359.9999 degree
	-2147483648 ~ 2147483647 pulse
	▪ Relative Coordinate Method
	-214748364.8 ~ 214748364.7 μm
	-21474.83648 ~ 21474.83647 inch
	-21474.83648 ~ 21474.83647 degree
	-2147483648 ~ 2147483647 pulse
	▪ Speed / Position Switching Control (relative coordinate method), Position / Speed Switching Control
	0 ~ 214748364.7 μm
	0 ~ 21474.83647 inch
	0 ~ 2147483647 pulse
	▪ Speed / Position Switching Control (absolute coordinate method)
	0 ~ 359.9999 degree
Control Speed	0.01 ~ 20,000,000.00 (mm / min)
	0.001 ~ 2,000,000.000 (inch / min)
	0.001 ~ 2,000,000.000 (degree / min)
	1 ~ 1,000,000 (pulse / sec)
Acceleration/Deceleration Pattern	Trapezoidal / S-curve
Acceleration/Deceleration Time	125 ~ 1x106 PPS/sec
External Disconnection Method	40 pin Connector
40 pin Connector for External	40 pin Male
Max. Output Pulse	1 MPPS (line driver pulse output)
Max. Distance	10 m
Number of Flash Rom Saving	25 times After Power ON

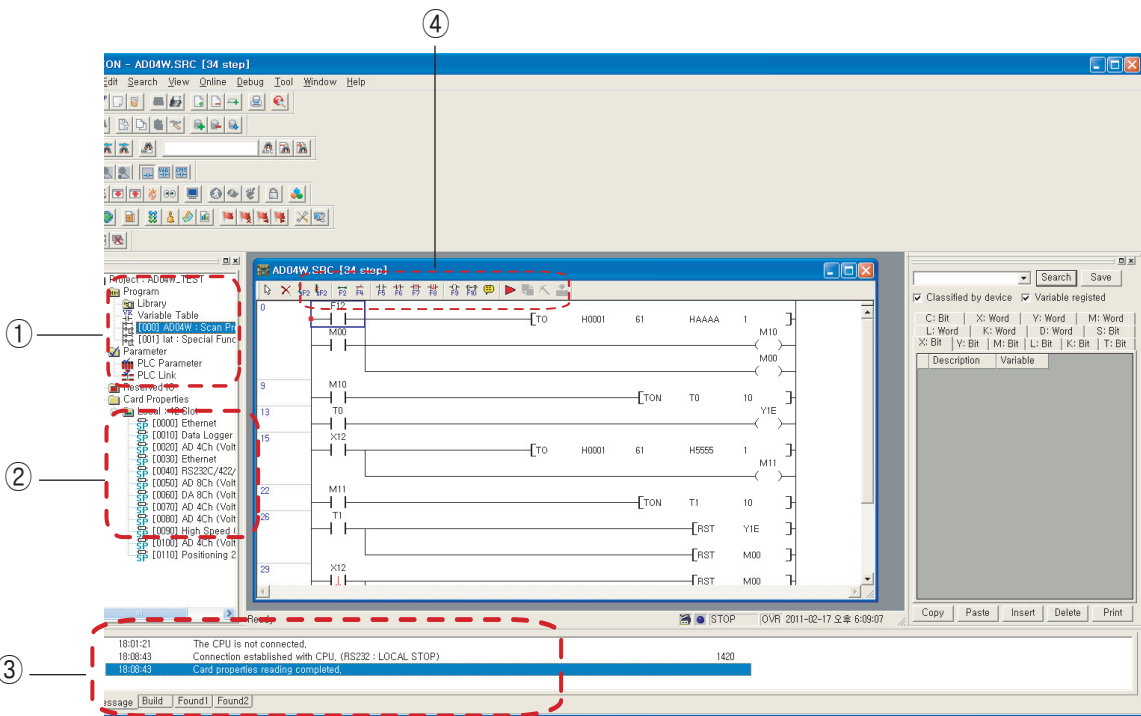
Intelligent User-Friendly Software

CICON

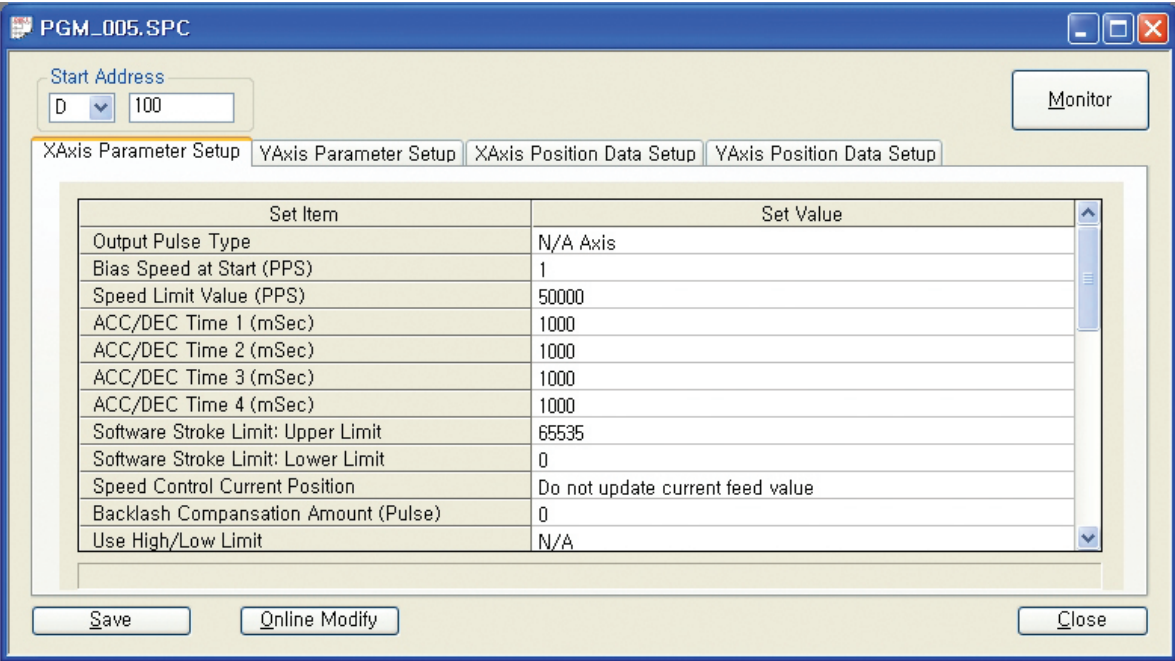
Engineering Software



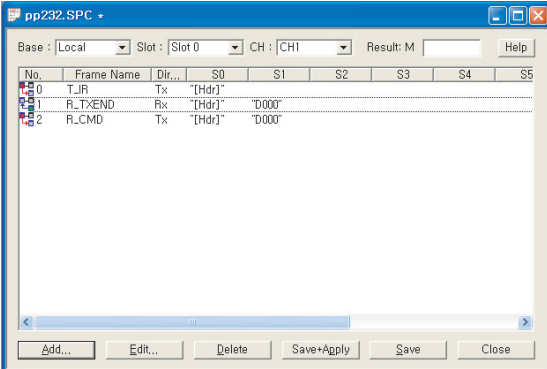
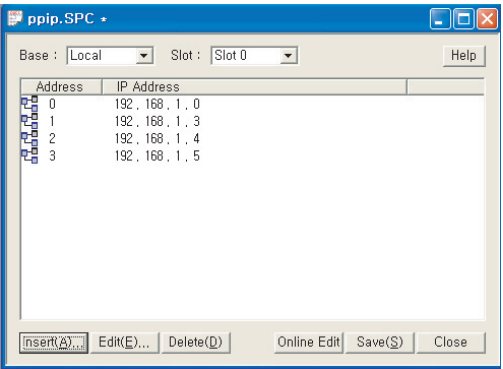
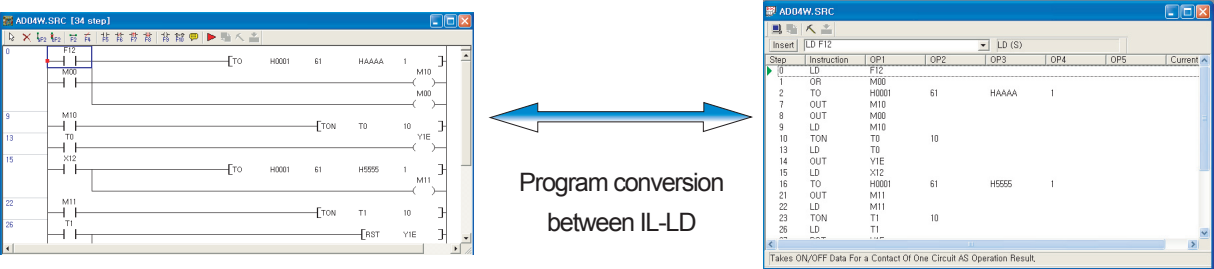
- User-friendly interface for editing and modifying the program
- Supports various types of communication methods such as CPU Loader, RS232C/422/485 and Ethernet
- Debugging function and system diagnosis



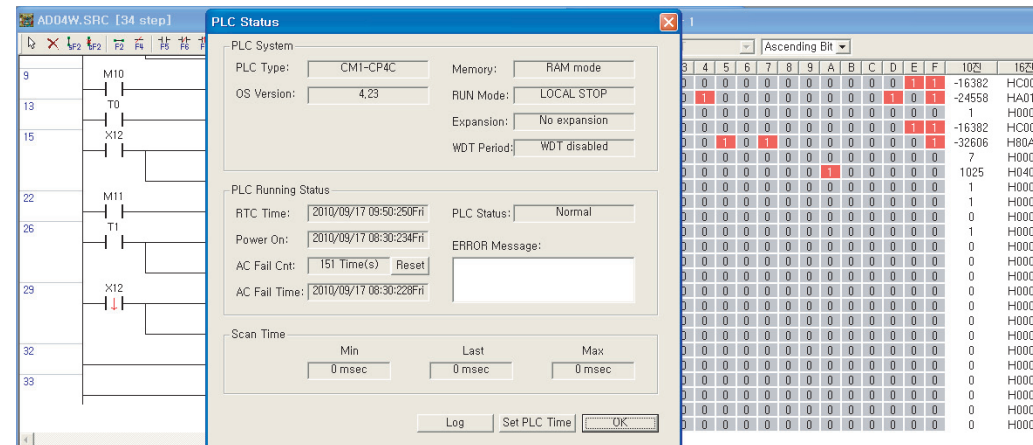
- Stress-free programming by simply setting up a dialog box for special functions instead of writing a complicated ladder program. (communication set-up, positioning, PID, protocol program, etc.)



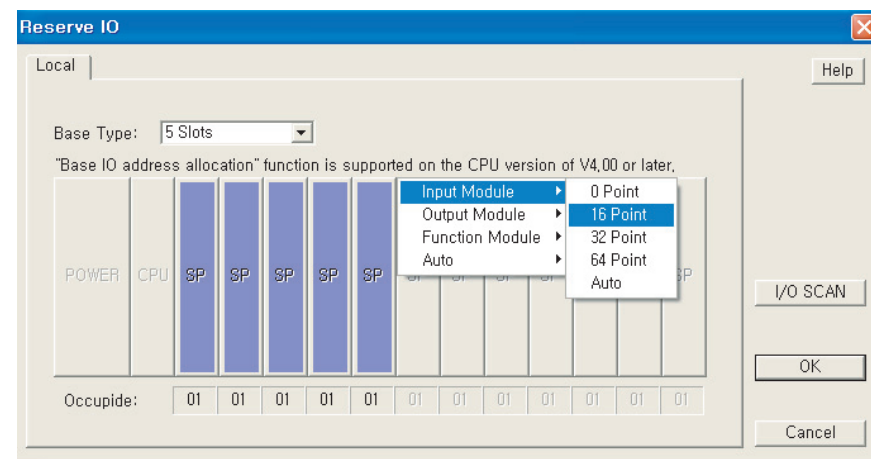
- ① Easy management of project files
- ② Automatically detects special cards info
- ③ Present processing condition shown in the message window
- ④ Convenient editing by keyboard shortcuts



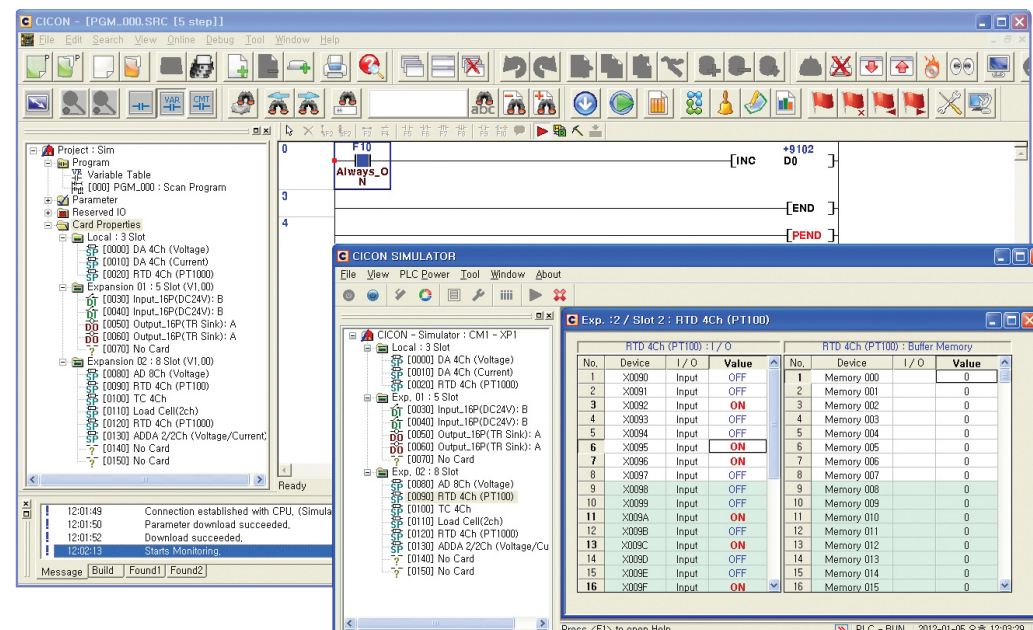
- Constant monitoring of the PLC status
- Fast and accurate error detection for each cards



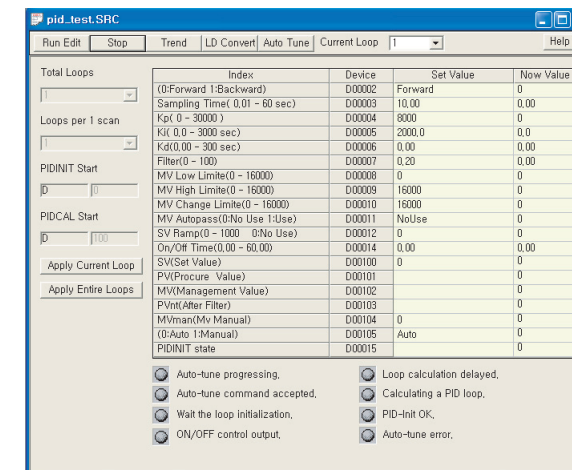
- Reserving the I/O
- Compares and detects a card and checks if the card is inserted or not



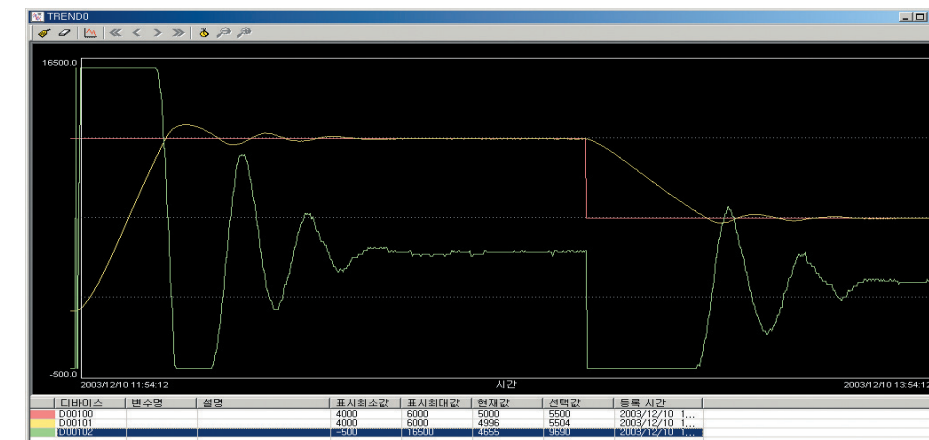
- Testing functions and programs is possible without connecting to a physical PLC by CICON Simulator



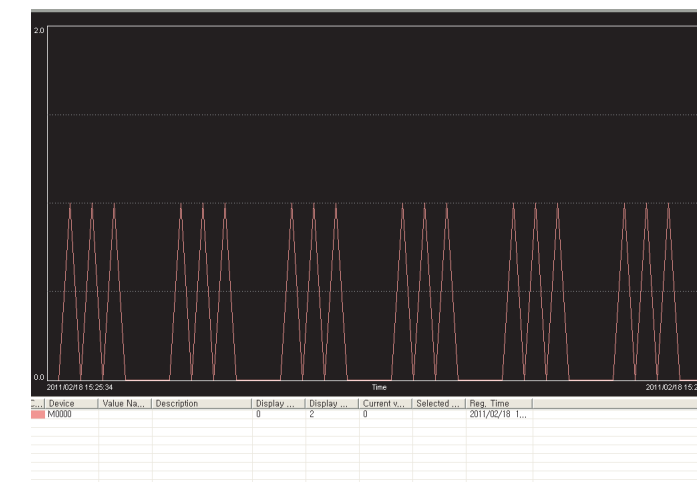
- PID auto tuning
- Check PID input and current values constantly in dialog box.



- PID operation condition shows as a trend type.



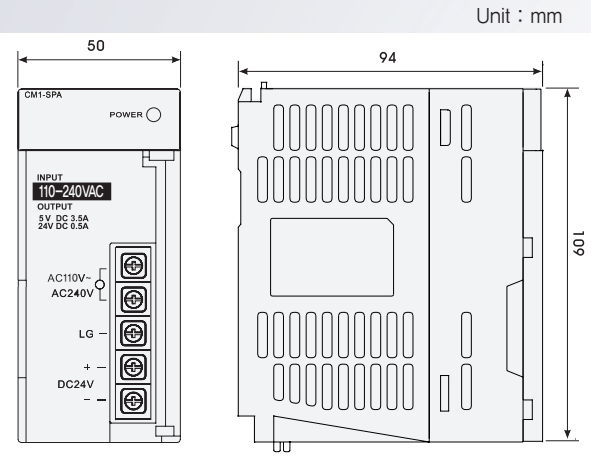
- PID tuning is available by controlling ON-OFF.



CIMON-PLC Dimensions

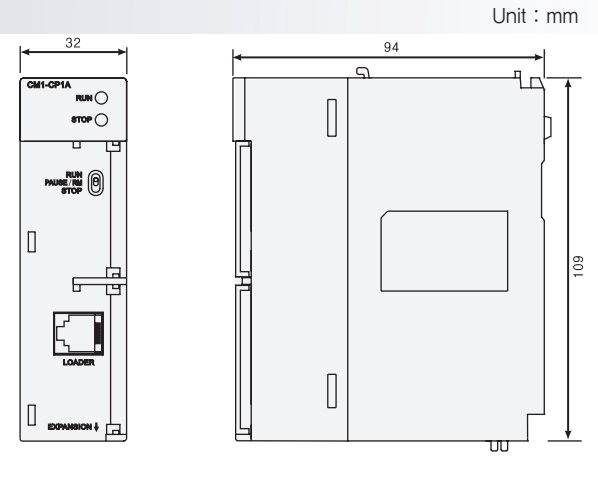
XP/CP

Power Module



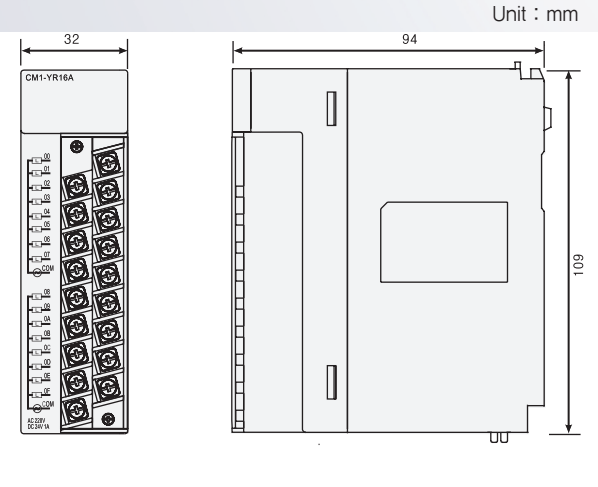
Model	Weight
CM1-SP*	278.3g
CM1-SP2B	270.5g

CPU Module



Model	Weight
CM1-CP*	132g

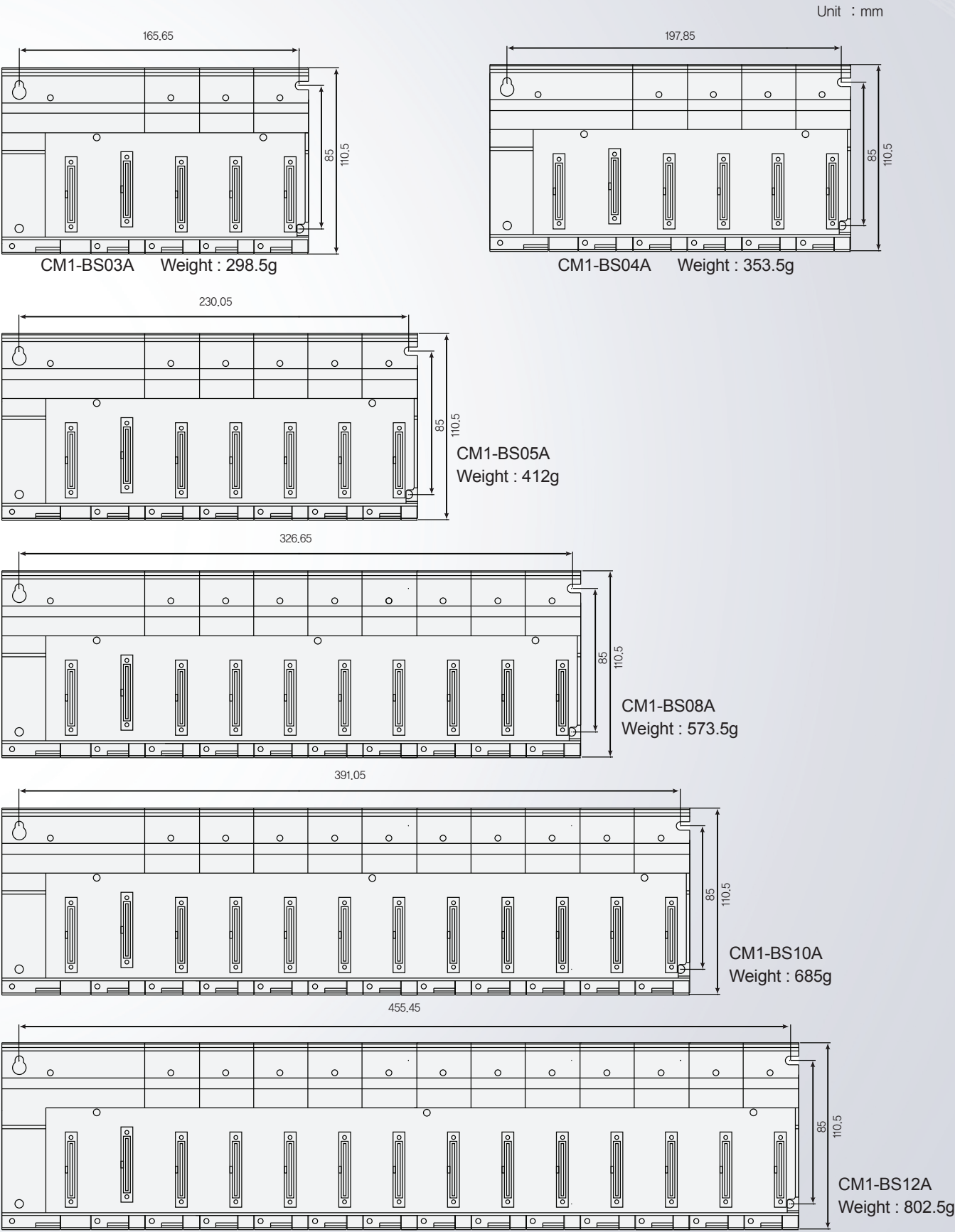
I/O Module



Model	Weight	Model	Weight
CM1-XD16A	158g	CM1-AD04VI	193.5g
CM1-XD32C	121g	CM1-AD08I	195.5g
CM1-XA08*	168.5g	CM1-AD08V	194.5g
CM1-YR16A	202g	CM1-DA08I	219g
CM1-YS08A	202.5g	CM1-DA08V	197.5g
CM1-YT16*	159.5g	CM1-RD04A	194.5g
CM1-YT32*	122g	CM1-TC04A	200.5g
CM1-EC01*	111.5g	CM1-SC***	118.5g

※ Comm. module and other module's dimension is same as IO module.

XP/CP Base



CIMON-XP/CP Series

» Redundancy

Type	Model	Description
CPU	CM1-XP1R	128K step/ 32 bit/ 75 ns/ 8192 pts/ Expandable/ RTC/ Floating Point Calculation/ Redundancy
Comm.	CM1-RC01A	10 Mbps Redundancy Communication Module
I/F	CM1-RM01A	Dual I/F Master/Standby Setting - Redundancy Interface Module
Exp.	CM1-EP03A	10 Mbps 3 ports Expansion Module
Redundancy Base	CM1-BS05R	5 slot Dual Power Base
	CM1-BS08R	8 slot Dual Power Base
	CM1-BS10R	10 Slot Dual power Base
Redundancy Power Supply	CM1-SPR	Redundancy Power Supply 5V 3A/ +15V 0.5A/ -15V 0.2A/ 24V 0.2AAC100V~240V
	CM1-RPW	Redundancy Power Supply Status Monitoring Module

» CPU Module

Type	Model	Description
High Speed CPU	CM1-XP1A	128K step/ 32bit/ 75 ns/ 8192 pts/ Expandable/ RTC/ USB Port/ Floating Point Calculation
	CM1-XP2A	64K step/ 32 bit/ 75 ns/ 4096 pts/ Expandable/ RTC/ USB Port/ Floating Point Calculation
	CM1-XP3A	64K step/ 32 bit/ 75 ns/ 2048 pts/ Expandable/ RTC/ USB Port/ Floating Point Calculation
CPU	CM1-CP3A	32K step/ 16 bit/ 1024 pts/ Expandable
	CM1-CP3B	32K step/ 16 bit/ 1024 pts/ Expandable/ RTC
	CM1-CP3U	32K step/ 16 bit/ 1024 pts/ Expandable/ RTC/ USB Port
	CM1-CP3P	32K step/ 16 bit/ 1024 pts/ Expandable/ RTC/ Flash ROM Pack
	CM1-CP4A	16K step/ 16 bit/ 384 pts
	CM1-CP4B	16K step/ 16 bit/ 384 pts/ RTC
	CM1-CP4C	16K step/ 16 bit/ 384 pts/ RTC/ RS232C Port
+ Comm.	CM1-CP4D	16K step/ 16 bit/ 384 pts/ RTC/ RS422/485 Port
+ Comm.	CM1-CP4U	16K step/ 16 bit/ 384 pts/ RTC/ RS422/485 Port/ USB Port

» Power Module

Type	Model	Description
Power supply	CM1-SPA	5V 3.5A/ 24V 0.5AAC100V~240V
	CM1-SPC	5V 3A/ +15V 0.5A/ -15V 0.2A/ 24V 0.2AAC100V~240V
	CM1-SP2B	5V 3.5A/ +15V 0.5A/ -15V 0.3A DC24V
	CM1-SPW	5V 3A/ +15V 0.5A/ -15V 0.2A/ 24V 0.2A DC70V~110V

» Expansion Module

Type	Model	Description
Expansion	CM1-EP01A	10 Mbps 1 port - Single-Expansion Module
	CM1-EP02A	10 Mbps 2 port - Multi-Expansion Module

» Base

Type	Model	Description
Base	CM1-BS03A	3 slot Base
	CM1-BS04A	4 slot Base
	CM1-BS05A	5 slot Base
	CM1-BS08A	8 slot Base
	CM1-BS10A	10 slot Base
	CM1-BS12A	12 slot Base

» Digital I/O Module

Type	Model	Description
DI-DO	CM1-XD16A	DC 24V Input/ 16 pts/ Sink & Source/ ON Voltage 19V/ OFF Voltage 11V
	CM1-XD16B	DC 24V Input/ 16 pts/Sink & Source/ ON Voltage 15V/ OFF Voltage 12V
	CM1-XD16W	DC 100V Input/ 16 pts/Sink & Source/ On Voltage 80V/ OFF Voltage 50V
	CM1-XD32B	DC 24V Input/ 32pts/ Sing & Source/ ON voltage 15V/ OFF Voltage 12V
	CM1-XD32C	DC 24V Input/ 32pts/ Sing & Source/ ON voltage 19V/ OFF Voltage 11V
	CM1-XD64C	DC 24V Input/ 64pts/ Sing & Source/ ON voltage 19V/ OFF Voltage 11V
DO-R	CM1-YR16A	Relay Output/ 16 pts/ 2A
DO-TR	CM1-YT16A	TR Output/ 16 pts/ 0.5A SINK
	CM1-YT16B	TR Output/ 16 pts/ 0.5A SOURCE
	CM1-YT32A	TR Output/ 32 pts/ 0.2A SINK
	CM1-YT32B	TR Output/ 32 pts/ 0.2A SOURCE
	CM1-YT64A	TR Output/ 64 pts/ 0.2A SINK
DI/O	CM1-XY16DR	DC 24V Input 8 pts/ Relay Output 8 pts

» Analog I/O Module

Type	Model	Description
AI	CM1-AD04VI	AD 14 bit/ 4 ch/ Current & Voltage Input
	CM1-AD08V	AD 14 bit/ 8 ch/ Voltage Input
	CM1-AD08I	AD 14 bit/ 8 ch/ Current Input
	CM1-AD04W	AD 16 bit/ 2.1 ms Sampling / 4 ch/ Current & Voltage Input
AO	CM1-DA04V	DA 14 bit/ 4 ch/ Voltage Output -10~+10V
	CM1-DA04VA	DA 14 bit/ 4 ch/ Voltage Output 0~+10V
	CM1-DA08V	DA 14 bit/ 8 ch/ Voltage Output -10~+10V
	CM1-DA08VA	DA 14 bit/ 8 ch/ Voltage Output 0~+10V
	CM1-DA04I	DA 14 bit/ 4 ch/ Current Output
	CM1-DA08I	DA 14 bit/ 8 ch/ Current Output

» RTD & TC Module

Type	Model	Description
RTD	CM1-RD04A	4 ch (PT100, JPT100)
	CM1-RD04B	4 ch (PT1000)
TC	CM1-TC04A	4 ch (Thermocoupler)

» Special Module

Type	Model	Description
HSC	CM1-HS02C	2 ch High-Speed Counter Module (pulse in)/ 2 output/ch 200kpps
	CM1-HS02E	2 ch High-Speed Counter Module (pulse in)/ 2 output/ch 500kpps
Load Cell	CM1-WG04A	4 ch Load Cell Module/ Strainguage/ 1/10000 Resolution/ 3.6mV/V
	CM1-WG02C	2 ch Load Cell Module/ Strainguage/ 1/40000 Resolution/ 2mV/V (Standard)
	CM1-WG02D	2 ch Load Cell Module/ Strainguage/ 1/40000 Resolution/ 2mV/V (High Speed Weighing)
	CM1-WG02E	2 ch Load Cell Module/ Strainguage/ 1/40000 Resolution/ 3.6mV/V (Wide Range)
Data Logger	CM1-LG32A	32 Mbytes Data Logging Module
Positioning	CM1-PS02A	2 axis Positioning Module/ Open Collector Type
Communication	CM1-SC02A	Serial Module (RS232C, RS422/485)
	CM1-SC01A	Serial Module (RS232C)
	CM1-SC01B	Serial Module (RS422/485)
	CM1-SC01DNP	Serial Module (RS232C, DNP 3.0)
	CM1-EC01A	Ethernet Module/ 10 Mbps/ UDP/IP/ TCP/IP(Slave)/ 10BaseT
	CM1-EC10A	Ethernet Module/ 10/100 Mbps/ UDP/IP/ TCP/IP(Master)/ 100BaseT
	CM1-EC10B	Ethernet Module/ 100 Mbps/ UDP/IP/ TCP/IP/ Fiber Optic
	CM1-EC10C	Ethernet Module/ 100 Mbps/ UDP/IP/ TCP/IP/ 100BaseT/ DHCP Supported
	CM1-EC01DNP	Ethernet Module/ 10 Mbps/ DNP3.0 Single Host
	CM1-PD01A	(Fieldbus) Profibus Communication Module
	CM1-BN01A	Bacnet I/F Module/ 10base-T

» Accessories

Type	Model	Description
Dummy	CM0-DM	Dummy
Memory	CM1-FM512	Flash Memory Pack for CM1-CP3P (512 kbytes)
Loader Cable	CM0-CBL15	1.5 m Graphic Loader PC Connection Cable
	CM0-CBL30	3 m Graphic Loader PC Connection Cable
I/O Cable	CM0-SCB15I	1.5 m I/O Cable
Expansion Cable	CM0-CBE05	0.5 m, CP Expansion Module Connection Cable
	CM0-CBE10	1 m, CP Expansion Module Connection Cable
	CM0-CBE15	1.5 m, CP Expansion Module Connection Cable
Base Slot Cover	CM0-BSCVR	Base Slot Cover
Battery	CM0-BAT	Battery
Profibus Comm. I/O Connector	RP-DPC01A	Profibus Comm. I/O connector for connection