CIMON PLC-S

- PLC-S Mini-Modular PLC
- Micro-S Micro Brick PLC

PROGRAMMABLE LOGIC CONTROLLER

SLIM, SMART, STRONG

The compact all-around PLC

The CIMON PLC-S series is designed to be the most cost-effective unit in the PLC world. It provides high-level performance and rock-solid reliability for small-scale industrial automation systems.


SP32EOT
SP04EAA
SP04EOAI
Ext. 24V
Ext. 24V
INPUT
OFF→ON
CH1
CH2
CH3
CH4
ON
EXPANSION CONNECTOR
CM3-SP04EOAI

PLC-S KEY FEATURES

CIMON PLC-S provides high reliability and expandability with various network modules, allowing easy maintenance of process control systems.

SLIM

- Slim, without compromising strong performance
- Special instructions, programs, and function blocks available
- Supports flexible expansion

SIMPLE

- Easy to install with simple design
- Optimized usage of space with its compact size
- DIN rail mountable

SPEED

- Max. 32 PID loop control
- Equipped with 16Kpps high-speed counter

SMART

- 2 axes motion control
- Supports floating point arithmetic
- Automatically recognizes protocols

CPU PERFORMANCE

PLC-S CPU

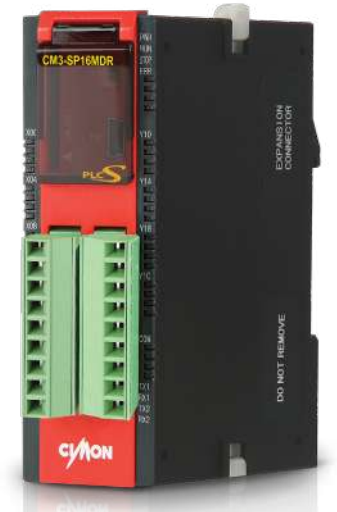
Model	Input	Output	RS-232C	RS485	Ethernet
CM3-SP32MDTF-SD	16pts	TR (Sink) Output 16pts	Y	Y	Y
CM3-SP32MDCF-SD	16pts	TR (Source) Output 16pts	Y	Y	Y
CM3-SP16MDRV	8pts	Relay type 8pts	Y	Y	N
CM3-SP16MDRF		Relay type 6pts			Y

Type	Module	Description
Digital I/O Module	CM3-SP32EDO	DC24V Input 32 pts
	CM3-SP32EOT/EOC	TR (Sink) Output 32 pts
	CM3-SP16EOR	DO 16 pts (Relay) / expandable up to 4 modules
	CM3-SP32EDT	DI 16 pts (DC24V), DO 16 pts (TR(SINK))
	CM3-SP16EDR	DI 8 pts (DC24V), DO 8 pts (Relay)
Analog Module	CM3-SP04EAO	4 ch for current / voltage input, 14bit
	CM3-SP04EAA	2ch for current / voltage input + 2 ch for current / voltage Output, option for 16 bit or 14 bit
	CM3-SP04EOAI	4 ch for current output, 14bit
	CM3-SP04EOAV	4 ch for voltage output, 14bit
	CM3-SP04ERO	AI 4 ch RTD
	CM3-SP04ETO	AI 4 ch TC
Communication Module	CM3-SP01EET	Ethernet 1 ch, 10/100Mbps
	CM3-SP02ERS	RS232C 1 ch, RS485 1ch
	CM3-SP02ERR	RS232C 2 ch

CPU MODULE

• Specification

CM3-SP32MDTF-SD
CM3-SP32MDCF-SD



CM3-SP16MDRV
CM3-SP16MDRF

PLC-S CPU CM3-SP32MDTF I CM3-SP32MDCF I CM3-SP16MDRV/MDRF

Item		Description	Note
Power		DC12V~24V	-
Program Control		Repetitive operation, Time-driven interrupt	-
Method for Controlling Input/Output		Indirect method, Direct method by instruction	-
Program Language		IL (Instruction List), LD (Ladder Diagram), SFC (Sequential Function Chart) , FB (Function Block)	-
Data Processing		32 Bit	-
Instruction Library	Basic	55 Instructions	-
	Advanced	389 Instructions	-
Execution Processing Speed (Basic Instruction)		300 ns/Step	-
Program Memory		10k Step	-
Number of I/O Points		384 pts	-
Operating Modes		Remote Run, Remote Stop	-
Data Preservation Against Power Failure		Data storage and conservation (Latch) in K device	-
Number of Program Blocks		128	-
Type of Program	Scan	5 types including standard scan program, Subroutine, COLD / HOT initialization, periodic interrupts	-
	Periodic Interrupts	Ability to register up to 15 (Minimum period: 10ms)	-
	Special Configuration	6 types including PID control program	-
		High-Speed Counter, Positioning control, Input module filtering, Initializing special card	-
	Communication	8 types including user protocol (Serial) communication	-
		Modbus RTU Master/Slave, Modbus TCP Slave, User Protocol (Serial), High Speed PLC Link, CIMON HMI Protocol	-
	Etc.	SFC program, FBD (Function Block Diagram)	-
Self-diagnosis		Processing delays, memory issues, I/O / Battery / Power error	-
Restarting		COLD, HOT Restart	-
Expansion		1 CPU block + Maximum 11 expansion blocks	-
Memory Type	X	1024 pts (X0000-X063F)	Bit
	Y	1024 pts (Y0000-Y063F)	Bit
	M	8192 pts (M0000-M511F)	Bit
	L	4096 pts (L0000-L255F)	Bit
	K	4096 pts (K0000-K255F)	Bit
	F	2048 pts (F0000-F127F)	Bit
	T	512 pts (T0000-T0511)	Word
	C	512 pts (C0000-C0511)	Word
	S	100 states x 100 set (00.00-99.99)	-
	D	10000 words (D0000-D9999)	Word
	Z	1,024 words (Call Stack: Z0000-Z0063, Z1000-Z1063)	Word
	Q	8192 pts (Q0000-Q511F)	Bit
	R	16 pts (Index)	-

Item	Description	Note
High-speed Counter	Maximum count speed: 16kpps (Maximum 4kpps when using 2 phase 2 channels)	-
Positioning	X-axis: Position / Velocity control 100kpps	-
	Y-axis: Position control 5kpps, Velocity control 100kpps	-
PID	32 channels, Auto-Tuning	-
Real Time Clock (RTC)	Built-in battery (CR2032)	-
Communication Channel	[Basic] USB : 1 channel (CICON Loader) / RS-232-C : 1 channel (Universal communication)	-
	[Option (Universal communication)] RS485 : 1ch / Ethernet : 1 ch (10/100Mbps automatic identification)	-
Etc.	Real number arithmetic, modification of program during Run status	-

• Features

Built-in Functions

• PID Control
- PID operation can be executed without an additional PID module.

• RTC
- Reads the time from the RTC module and stores the value at an F device memory location.

• I/O Reservation
- Checks if a correct card was mounted in the assigned slot. Additionally, when expanding or exchanging parts, addresses used by the program can be maintained without making changes to the I/O.

• Modification of program during RUN mode.
- Program can be modified while PLC is in RUN mode.

• 2 channel high-speed counter
- 16kpps Maximum count speed (Maximum 4kpps when using 2 phase 2 channels).
- Photocoupler insulation.

• Positioning control by 2-axis pulse output at 100kpps
- Supports pulse + direction output, Position, velocit, velocity – position, position-velocity control.

Characteristics

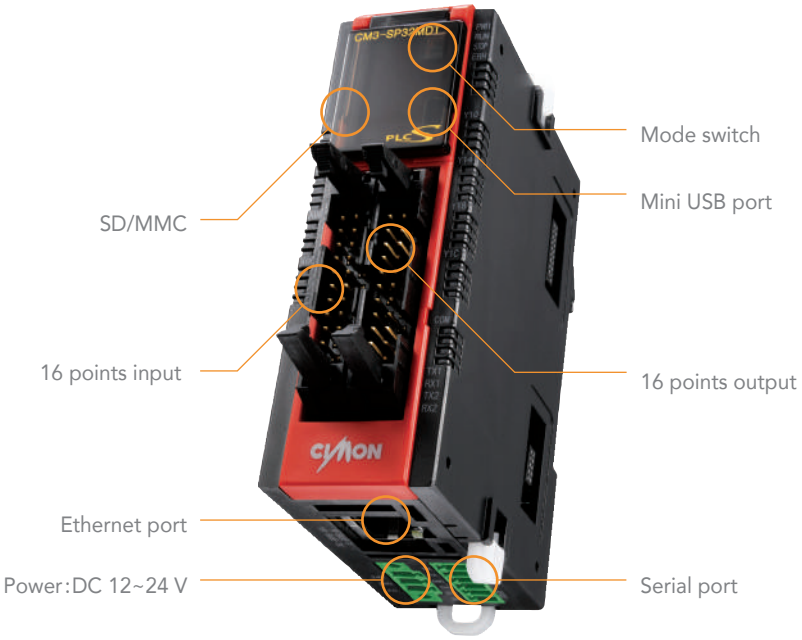
• Embedded SD/MMC memory
- Scan program and firmware upgrades are available via SD memory card.
- After installing the memory card, set the operation mode switch to STOP. Turn the operation mode switch to RUN within 5 seconds of powering up. The firmware upgrade will proceed for 20 seconds and will indicate completion when the LEDs (RUN, STOP, and ERR) are turned on. Remove the SD memory and restore the power.)

• Simultaneous communication via Ethernet and serial (RS-232, RS-485)
- Supports various protocols such as CIMON HMI, MODBUS RTU/TCP, PLC Link, user protocol, and loader protocol.
- Program upload/download and remote access is available.

• Large capacity for program data
- 10k steps of program memory are available for scan programs.

• Preserving data during power outage
- Since the internal memory is flash-based, no backup memory cards or batteries are needed.

CPU MODULE



TR output (DC Power) Sink type

Model	SP32MDTF-SD
Digital I/O	Digital input 16pts Digital output 16pts
Mini USB	Y
SD/MMC Card Slot	Y
RS-232-C 1 ch	Y
RS-485 1 ch	Y
Ethernet 1 ch	Y

TR output (DC Power) Source type

Model	SP32MDCF-SD
Digital I/O	Digital input 16pts Digital output 16pts
Mini USB	Y
SD/MMC Card Slot	Y
RS-232-C 1 ch	Y
RS-485 1 ch	Y
Ethernet 1 ch	Y

Relay Output (DC POWER)

Model	SP16MDRV	SP16MDRF
Digital I/O	Digital input 8pts Digital output 8pts	Digital input 8pts Digital output 6pts
Mini USB	Y	Y
SD/MMC Card Slot	N	N
RS-232-C 1 ch	Y	Y
RS-485 1 ch	Y	Y
Ethernet 1 ch	N	Y

CPU

Current Consumption

Type	Model	Current Consumption (Main Power)	Current Consumption (Auxiliary Power)	Maximum number of expansions
CPU	CM3-SP32MDTF-SD	3.12W	-	-
	CM3-SP32MDCF-SD	3.12W	-	-
	CM3-SP16MDRV	3.12W	-	-
	CM3-SP16MDRF	3.6W	-	-
Digital Expansion Block	CM3-SP32EDO	0.48W	-	-
	CM3-SP32EOT	0.48W	-	-
	CM3-SP32EOC	0.48W	-	-
	CM3-SP32EOR	2.16W	-	4
Analog Expansion Block	CM3-SP04EAO	0.36W	1.44W	-
	CM3-SP04EAA	0.36W	1.68W	-
	CM3-SP04EOAI	0.36W	1.68W	-
	CM3-SP04EOAV	0.36W	1.44W	-
	CM3-SP04ERO	0.48W	0.72W	-
	CM3-SP04ETO	0.48W	0.72W	-
Communication Block	CM3-SP02ERR	0.48W	-	-
	CM3-SP02ERS	0.48W	-	-
	CM3-SP01EET	0.72W	-	5

- CM3-SP16EOR can be used with up to 4 modules. The required capacity of SMPS (Switched mode power supply) is 24VDC 20W.
- Please be sure to check each PLC-S module's current consumption to ensure that it does not exceed the 10W limit.
- Please make sure to check safety factor of the total power consumption when using SMPS.

DIGITAL I/O

• Specification

Item	CM3-SP32EDO	CM3-SP32EOT	CM3-SP32EOC
I/O Type	SINK/SRC Input 32pts	TR output 32pts	TR output 32pts
Input Voltage	DC 24 V	N/A	N/A
Output Voltage	N/A	DC 12 V / 24 V	DC 12 V / 24 V
Input Current	4 mA	N/A	N/A
Output Current	N/A	1 point 0.2A COM 2A	1 point 0.2A COM 2A
On Voltage / On Current	DC 19V / 3mA	N/A	N/A
Off Voltage / Off Current	DC 6V / 1mA	N/A	N/A
Response Time	Less than 3 ms	Less than 1 ms	Less than 1 ms
Operation Indication	LED On	LED On	LED On
Insulation Type	Photocoupler	Photocoupler	Photocoupler
Output method	N/A	Sink	Source

Item	CM3-SP16EOR	CM3-SP32EDT	CM3-SP32EDR
I/O Type	Relay output 16pts	SINK/SRC Input 16pts TR output 16pts	SINK/SRC Input 8pts Relay output 8pts
Input Voltage	N/A	DC 24 V	DC 24 V
Output Voltage	AC 220 V / DC 24 V	DC 12 V / 24 V	DC 12 V / 24 V
Input Current	N/A	4 mA	4 mA
Output Current	1 point 2A COM 5A	1 point 0.2A COM 2A	1 point 2A COM 5A
On Voltage / On Current	N/A	N/A	DC19V / 3mA
Off Voltage / Off Current	N/A	N/A	DC6V / 1mA
Response Time	Less than 10 ms	Less than 1 ms	Less than 3 ms
Operation Indication	LED On	LED On	LED On
Insulation Type	Relay	Photocoupler	Photocoupler
Output method	Relay	Sink	Relay

» Relay output in PLC-S series cannot use more than 64 points.
Ex) CM3-SP16EOR cannot be expanded with more than 4 modules.

• Features

• Convenient terminal block connection allows for easy maintenance.

ANALOG I/O

• Specification

Input (AD conversion)

Item		CM3-SP04EAO
Number of Analog Inputs		4 channels
Analog Input	Voltage	0 ~ 5 V / 1 ~ 5 V / 0 ~ 10 V / -10 ~ 10 V
	Current	0 ~ 20 mA / 4 ~ 20 mA
Digital Output		14 bit (0 ~ 16000)
Rated Voltage / Current	0V ~ 5 V	312.5 mV
	1V ~ 5 V	250 mV
	0V ~ 10 V	625 mV
	-10V ~ 10 V	1250 mV
	0mA ~ 20 mA	1.25 nA
	4mA ~ 20 mA	1 nA
Accuracy		±0.1% (full scale)
Conversion Speed		2.1 ms / 4 channels
Absolute Max. Input		Voltage : ±15V, Current : ±30mA
		Photocoupler between input terminal and PLC (No insulation between channels)
Insulation Method		24VDC
Power Supply		50mA

- Provides various input types and range.
- High reliability demonstrated by ±0.05% error.
- Photocoupler insulation protects operation from interference.

Output (DA Conversion)

Item	CM3-SP04EOAV	CM3-SP04EOAI
Number of Analog Output	4 channels	4 channels
Analog Output	-10V ~ 10V / 0V ~ 10V (Selection with DIP switch)	4mA ~ 20mA
Digital Output	14 bit (0 ~ 16000)	
Rated Voltage / Current	1.25 mV	1.25 μA
Accuracy	±0.1 %	
Conversion Speed	10ms	
Absolute Max. Input	Voltage : ±15V	Current : ±24mA
Insulation Method	Photocoupler between input terminal and PLC	
Power Supply	24VDC	

- Provides various output types and range.
- High reliability demonstrated by ±0.05% error
- Photocoupler insulation protects operation from interference.

• Specification

I/O (AD/DA module)

Item		CM3-SP04EAA
Number of Analog Input		Input : 2 Channels, Output: 2 Channels
Analog Input	Voltage	0 ~ 5 V / 1 ~ 5 V / 0 ~ 10 V I -10 ~ 10 V
	Current	0 ~ 20 mA / 4 ~ 20 mA
Digital Output		Selection between 14 bit (0 ~ 16000) / 16 bit (0 ~ 64000)
Rated Voltage / Current	0V ~ 5 V	78.1 μV
	1V ~ 5 V	62.5 μV
	0V ~ 10 V	156.3 μV
	-10V ~ 10 V	312.5 μV
	0mA ~ 20 mA	312.5 nA
	4mA ~ 20 mA	250 nA
Accuracy		±0.05 % (full scale)
Conversion Speed		2.1 ms / 4 channels
Absolute Max. Input		Voltage : ±15V, Current: ±30mA
Insulation Method		Photocoupler between input terminal and PLC (No insulation between channels)
Power Supply		24VDC

- Provides various input types and range.
- High resolution of 16 bit digital conversion is available.
- High reliability demonstrated by ±0.05% error.
- Photocoupler insulation protects operation from interference.

• Features

- CM3-SP04EAO is the AD module used to input 4 channels of voltage and current.
- CM3-SP04EOAV is the DA module used to output 4 channels of voltage (-10 ~ 10V, 0~10V).
- CM3-SP04EOAI is the DA module used to output 4 channels of current (4 ~ 20mA).
- CM3-SP04EAA is the AD / DA module used to input 2 channels of voltage and current, and output 2 channels of voltage and current.
- The DA module is used to convert digital values into analog signals (voltage or current output). It converts a digital value of 0~16000(-8000~8000) / 0~64000(-32000~32000) into an analog value of 0~20mA, 4~20mA, -10~10V, 0~5V, 0~10V, or 1~5V.
- There are two AD conversion methods that the user can choose: average processing or digital filtering.
- With the Hold/Clear setting the user can select what should happen when the operation mode changes from RUN to STOP mode. The Clear selection will change the output signal of the 4mA or 10V signal to its offset value. The Hold selection will maintain the 4mA or 10V signal at the last known value.
- Channels on which conversion is prohibited output the minimum value in each output mode (0mA, 4mA, -10V, 0V, 1V).
- The LED on during normal condition and blinks at 0.5 second intervals during error condition.

TEMPERATURE

• Specification

RTD Module

Item		CM3-SP04ERO
Available RTD		PT100,JPT100,PT1000, NI1000 (DIN 43760), NI1000 (TCR 5000)
Range of Temperature Input		PT100: -200.0°C to 600°C (18.48 to 313.59 Ω) JPT100: -200.0°C to 600°C (17.14 to 317.28 Ω) PT1000: -200.0°C to 600°C (184.8 to 3135.9 Ω) NI1000 (DIN 43760): -50.0°C to 160°C (742.6 to 1986.3 Ω) NI1000 (TCR 5000): -50.0°C to 160°C (790.9 to 1799.3 Ω)
Digital Output		Digital Value: 0 ~ 16,000 (-8000 ~ 8000) Temp: -200.0°C ~ 600.0°C (floating point x 10)
Detecting Broken Wires		3 wires for each channel
Accuracy		± 0.1 % (full scale)
Max. Conversion Speed		50 ms / 4 Channels
Number of Temperature Inputs		4 channels
Insulation Method		Photocoupler between input terminal and PLC (No insulation between channels)
Power Supply		24VDC
Internal Current Consumption (mA)	+24V	60
External Current Consumption (mA)	+5V	30

- The module can detect a broken wire or out of range measurement.
- The module supports most resistance temperature detectors.
- The module provides full scale accuracy.
- Digital temperature measurement in 0.1°C increments is possible.
- The temperature value can be converted into a 14-bit digital value.

• Features

- By using the platinum resistance temperature sensor, Pt100, JPt100 or Pt1000, Ni1000, the temperature value (°C or °F) can be processed as digital values (0~16000) within about one decimal point of accuracy.
- RTD module converts temperature from -200°C to 600°C (PT100/1000/JPT100) or from -50°C to 160°C (Ni1000) into a digital value of 0~16000 (-8000~8000).
- It can show temperature -250°C~650°C(PT100/PT1000/JPT100) or -60°C~170°C(Ni1000). These values are converted into digital values -192~16191(-8192~8191).
- If the operator sets the minimum and the maximum temperature values, it converts the minimum temperature value to 0 (-8000) and the maximum temperature value to 16000 (8000).
- Wire disconnection and exceeding measurement range can be detected by each channel.
- A single module has 4 channels for thermocouples.
- The LED stays on during normal condition and blinks at 0.2 second intervals during error condition.
- Temperature-sensing resistance is a type of sensor that measures temperature in the form of resistance.
- The platinum temperature-sensing resistance PT100 and JPT100 output 100.0Ω for 0°C. PT1000 outputs 1000.00Ω for 0°C. The nickel temperature-sensing resistance Ni1000 outputs 1000.00Ω for 0°C.

• Specification

TC Module

Item		CM3-SP04ETO
Available TC		Type K,J,E,T,B,R,S,N
Digital Output		Converted digital value: 0 ~ 16,000 (-8000 ~ 8000) Converted temperature value: °C, °F (0.1°C Resolution)
Detecting Broken Wires		3 wires per each channel
Accuracy		±0.3 % (Full Scale) ±1°C (Error for base compensation)
Max. Conversion Speed		50 ms / 4 Channels
Compensation Type		Automatic compensation
Number of Input Channels		4 channels / 1 module
Insulation Method		Photocoupler between input terminal and PLC (No insulation between channels)
Power Supply		24VDC
Internal Current Consumption (mA)	+24V	60
External Current Consumption (mA)	+5V	30

Range of Input Temperature

Type of TC	Standard	Range of Measured Temp. (°C)	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 ~ 18612
N		-200.0 ~ 1250.0	-3990 ~ 43846

- TC module can measure high temperature values.
- The module supports various thermocouples.
- The module provides ±0.3% of accuracy.
- Digital temperature measurement in 0.1°C increments is possible.
- Wire disconnection and exceeding measurement range can be detected by each channel.
- Channels in TC module are uninsulated. FG is commonly used in the module installation.
- FG reinforcement is strongly recommended for highly fluctuating values.
- Simultaneous connection with TC sensor and another device is not recommended as abnormal measurements and/or diminished performance can occur.

» When TC module is used with a third-party device, FG must be connected between products.

COMMUNICATION

• Specification

Item		CM3-SP01EET
Standard		10 BASE-T 100 BASE-TX
Transmission Speed		10/100 M
Max. Distance (Node to Node)		100 m
Service Capacity		UDP, TCP : 12 Services
Service	Loader	Yes (UDP)
	HMI Protocol	Yes (TCP, UDP)
	MODBUS TCP Slave	Yes
	MODBUS TCP Master	Yes
	Protocol Special Program	Yes (TCP, UDP)
	High-Speed PLC Link	Yes
	DHCP	Yes

• Features

- This module follows IEEE 802.3 and supports ARP, ICMP, IP, TCP, and UDP protocols.
- The module provides CIMON DHCP server allowing dynamic IP address allocation.
- MODBUS TCP Master special program allows communication with various devices.
- High-speed linkage to CIMON PLCs allows simultaneous communication with up to 64 stations.

• Specification

Serial Module

CM3*

Item		SP02ERS	SP02ERR	SP02ERC	SP02ERSC
Interface		RS232C:1CH RS422/485:1CH	RS232C: 2CH	RS232C: 1CH	RS232C:1CH RS422/485:1CH
Communication Method	Null Modem	Y	Y	Y	Y
	Leased Line Modem	Y	Y	Y	Y
	CDMA Modem	Y	Y	Y	Y
Operation Mode	Protocol Special Program	Communication via user-defined protocol program			
	HMI Protocol	Communication via CIMON-PLC HMI protocol			
	MODBUS Protocol	Communication via Modbus RTU protocol			
	Graphic Loader Protocol	Control PLC through connection function in CICON software			
	MODBUS Master Protocol	Communicate with slave device using MODBUS RTU protocol			
Data Type	Data Bit	8 bit			
	Stop Bit	1 or 2 bit			
	Parity	Even / Odd / None			
Synchronization Mode		Asynchronous			
Transmission Speed (bps)		300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400			
Insulation Method		RS232C: No insulation, RS422/485: photocoupler			

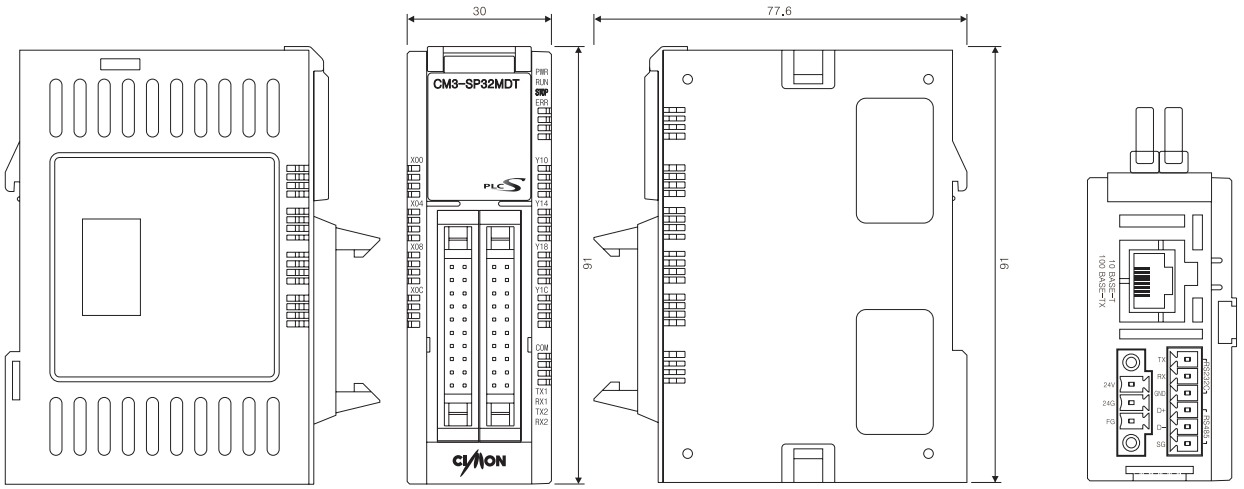
- Independent operations are possible for each channel by creating third party protocols for RS-232-C and RS-422 / 485 channels.
- Data can be read or written via the HMI protocol.
- Maximum of 32 units for HMI communication are supported (RS-422/485)
- Modem communication is built into all serial modules to control the PLC remotely (RS-232-C).
- Provides a wide range of communication speeds (300bps ~ 38400bps)
- RS-232-C and RS-422/485 communication ports can be used as independent channel or linked channel.
- 1:1 / 1:N / n:M (in case of RS-422/485) communication is available.
- RS-422 supports Full-Duplex, and RS-485 supports Half-Duplex (RS-485).
- Setting RS-485 as default will enable a multi-drop communication channel.
- The module supports universal protocols.
- MODBUS RTU Master function helps data acquisition from third party devices (MODBUS Slave).
- The RS-422/485 channels are isolated from the internal circuitry to prevent communication quality degradation due to noise.

• Features

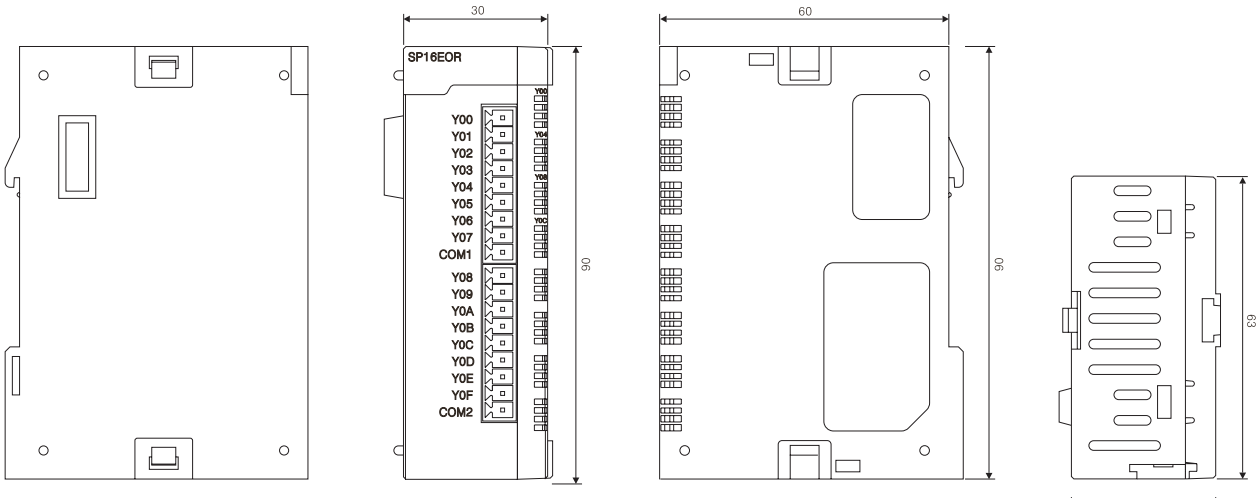
- This module follows IEEE 802.3 and supports ARP, ICMP, IP, TCP, UDP, and DHCP protocols.
- Ethernet communication module can be expanded on a single base without limits.
- The communication module can be installed on the extension base.
- The module provides DHCP by communicating with UltimateAccess SCADA.
- MODBUS TCP Master function provides full compatibility with various devices.
- High-speed linkage to CIMON PLCs allows simultaneous communication with up to 64 stations.
- Up to 4 Ethernet modules can be expanded for PLC link communication.

DIMENSIONS

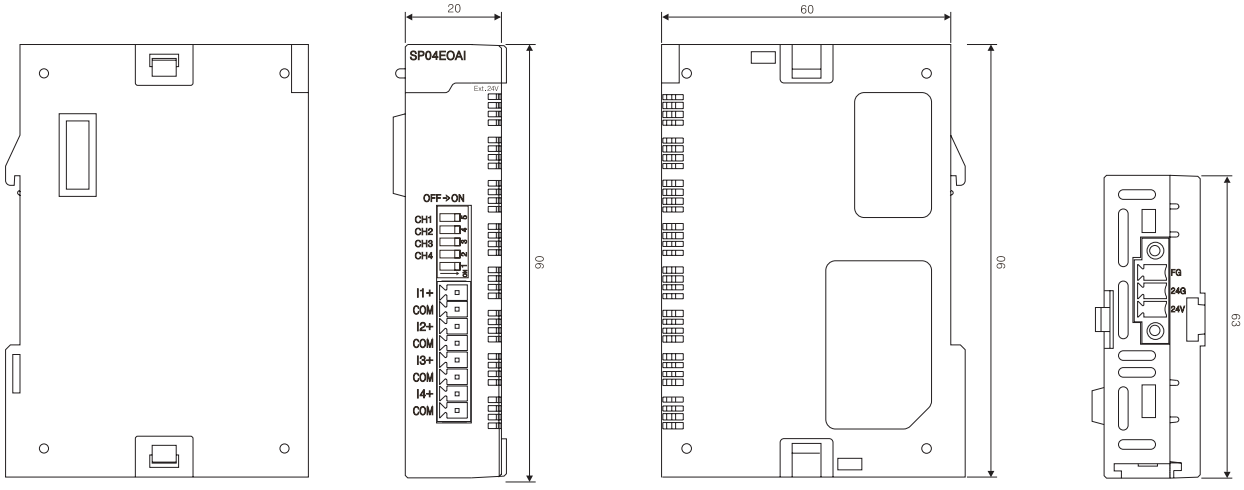
Unit : mm



CM3-SP32MDTF-SD / CM3-SP32MDCF-SD (Sizes are the same in the CPU line.)



CM3-SP16EOR (Sizes are the same in the Digital I/O line.)



CM3-SP04EOAI (Sizes are the same in the Analog I/O line.)

LINE-UP

Item		Model	Specification
CPU	TR Output (DC Power)	CM3-SP32MDTF-SD	DI 16/DO 16, USB Loader, SD/MMC Card Slot, RS232C 1ch, Ethernet 1 ch, RS-485 1 ch, SFC Language, Web Server, Sink
		CM3-SP32MDCF-SD	DI 16/DO 16, USB Loader, SD/MMC Card Slot, RS-232-C 1 ch, Ethernet 1 ch, RS-485 1 ch, SFC Language, Web Server, Source
	Relay Output (DC Power)	CM3-SP16MDRV	DI 8/DO 8, USB Loader, RS-232 1 ch, RS-485 1 ch
		CM3-SP16MDRF	DI 8/DO 6, USB Loader, RS-232-C 1 ch, Ethernet 1 ch, RS-485 1 ch
Digital Expansion	DI-32	CM3-SP32EDO	DI 32pts, DC 24V
	DO-32	CM3-SP32EOT	DO 32pts, DC 24V (TR) Sink
	DO-32	CM3-SP32EOC	DO 32pts. DC 24V (TR) Source
	DO-16	CM3-SP16EOR	DO 16pts, Relay Output
	DI-8 / DO-8	CM3-SP16EDR	DI 8pts, Relay Output
	DI-16 / DO-16	CM3-SP32EDT	DI 16pts, DO 16pts, DC 24V (TR) Sink
Analog Expansion	AI-4	CM3-SP04EAO	AI 4 ch voltage and current, 14bit
	AIO-2/2	CM3-SP04EAA	AI 2 ch voltage and current /AO 2 ch voltage and current, 16bit, 14bit
	AO-4	CM3-SP04EOAI	AO 4 ch current, 14bit
		CM3-SP04EOAV	AO 4 ch voltage, 14bit
Temperature	AI-4	CM3-SP04ERO	AI 4 ch RTD
		CM3-SP04ETO	AI 4 ch TC
Communication Block	Ethernet	CM3-SP01EET	Ethernet 1 ch, 10/100Mbps
	Serial	CM3-SP02ERS	RS-232-C 1ch, RS-422/485 1 ch
	Serial	CM3-SP02ERR	RS232C 2ch
Accessories		CM0-TB32M	Multi-Terminal
		CM0-SCB15M	Main Block 1.5M Cable
		CM0-SCB15E	I/O 32pts. 1.5M Cable

Firmware upgrade is available for all PLC-S models

MICRO-S BRICK TYPE

• Specification

BRICK TYPE CPU CM3-SB16MDTF | CM3-SB16MDCF

Item		Description	Note
Power		DC12V~24V	-
Rated I/O Current		4mA Input; 1 point 0.2A, COM 2A Output	-
Ambient Temp		-10°C~65°C	
Storage Temp		-25°C~80°C	
Ambient Humidity		5~95%RH, Non-Condensing	
Storage Humidity		5~95%RH, Non-Condensing	
I/O Method		SINK/SOURCE	-
Program Language		IL (Instruction List), LD (Ladder Diagram), SFC (Sequential Function Chart), FB (Function Block)	-
Data Processing		32 Bit	-
Instruction Library	Basic	55 Instructions	-
	Advanced	389 Instructions	-
Execution Processing Speed (Basic Instruction)		300 ns/Step	-
Program Memory		10k Step	-
Number of I/O Points		DI 8pts, DO 8pts	-
Operating Mode		Remote Run, Remote Stop	-
Number of Program Blocks		127	-
Type of Program	Scan	5 types including standard scan program (Subroutine, COLD / HOT initialization, periodic interrupts)	-
	Periodic Interrupts	Maximum 15 Scan Program (Minumum Period: 10 Mins)	-
	Special	PID, HSC, Positioning	-
	Communication	User Protocol (Serial) Comm. Program, MODBUS RTU	-
		Master, MODBUS RTU/TCP Slave High-Speed PLC Link	-
Self-diagnosis		Detect Delay of scan time, Memory, I/O, Power Supply	-
Expansion		No Expansion	-
Memory Type	X	8pts (X00-X07)	Bit
	Y	Physical: 8pts (Y10-Y17); Memory: 992pts (Y20-Y63F)	Bit
	M	8192 pts (M0000-M511F)	Bit
	L	4096 pts (L0000-L255F)	Bit
	K	4096 pts (K0000-K255F); Latching	Bit
	F	2048 pts (F0000-F127F)	Bit
	T	512 pts (T0000-T0511)	Word
	C	512 pts (C0000-C0511)	Word
	S	100 states x 100 set (00.00-99.99)	-
	D	10000 words (D0000-D9999)	Word
	Z	1,024 words(Call Stack: Z0000-Z0063, Z1000-Z1063)	Word
	Q	8192 pts (Q0000-Q511F)	Bit
	R	16 pts (Index)	-
Etc.		Floating Arithmetic, Online edit	

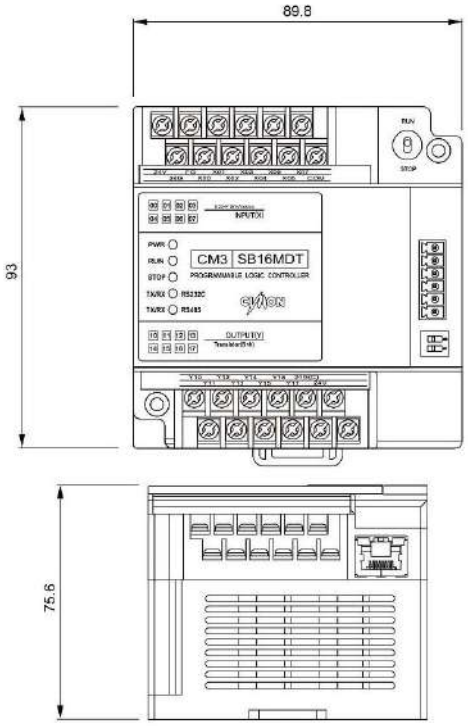
MICRO-S BRICK TYPE

• Specification

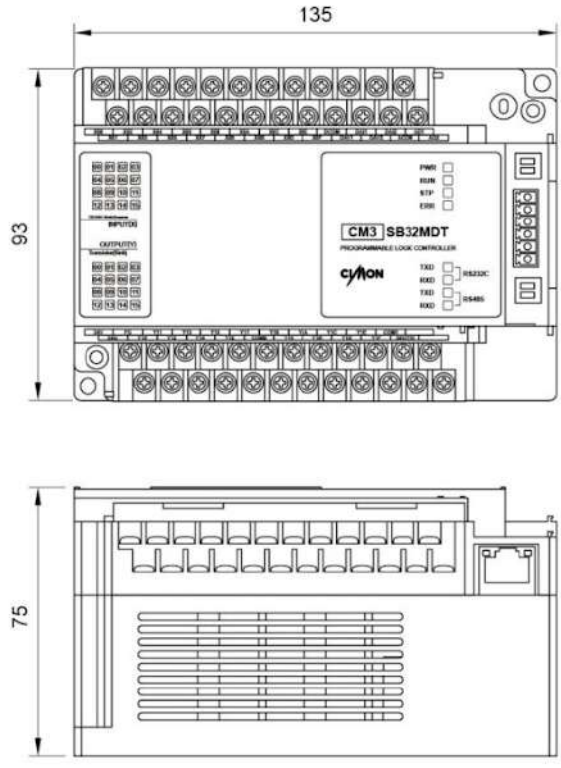
BRICK TYPE CPU CM3-SB326MDTF | CM3-SB32MDCF | CM3-SB32MDRF

Item		Description		Note
Power		DC12V~24V		-
Rated I/O Current	Input	4mA		-
	Output	1 point 0.2 mA, COM 2 A	1 point 2 mA, COM 5 A	
Ambient Temp		-10°C~65°C		
Storage Temp		-25°C~80°C		
Ambient Humidity		5~95%RH, Non-Condensing		
Storage Humidity		5~95%RH, Non-Condensing		
I/O Method		SINK/SOURCE		-
Program Language		IL (Instruction List), LD (Ladder Diagram), SFC (Sequential Function Chart), FB (Function Block)		-
Data Processing		32 Bit		-
Instruction Library	Basic	55 Instructions		-
	Advanced	389 Instructions		-
Execution Processing Speed (Basic Instruction)		300 ns/Step		-
Program Memory		10k Step		-
Number of I/O Points		DI 16pts, DO 16pts		-
Operating Mode		Remote Run, Remote Stop		-
Number of Program Blocks		127		-
Type of Program	Scan	5 types including standard scan program (Subroutine, COLD / HOT initialization, periodic interrupts)		-
	Periodic Interrupts	Maximum 15 Scan Program (Minumum Period: 10 Mins)		-
	Special	PID, HSC, Positioning		-
	Communication	User Protocol (Serial) Comm. Program, MODBUS RTU		-
		Master, MODBUS RTU/TCP Slave High-Speed PLC Link		-
Self-diagnosis		Detect Delay of scan time, Memory, I/O, Power Supply		-
Expansion		No Expansion		-
Memory Type	X	Physical: 16 pts (X00-X0F); Memory: 992 pts (X20-X63F)		Bit
	Y	Physical: 16pts (Y10-Y1F); Memory: 992pts (Y20-Y63F)		Bit
	M	8192 pts (M0000-M511F)		Bit
	L	4096 pts (L0000-L255F)		Bit
	K	4096 pts (K0000-K255F); Latching		Bit
	F	2048 pts (F0000-F127F)		Bit
	T	512 pts (T0000-T0511)		Word
	C	512 pts (C0000-C0511)		Word
	S	100 states x 100 set (00.00-99.99)		-
	D	10000 words (D0000-D9999)		Word
	Z	1,024 words(Call Stack: Z0000-Z0063, Z1000-Z1063)		Word
	Q	8192 pts (Q0000-Q511F)		Bit
	R	16 pts (Index)		-
Etc.		Floating Arithmetic, Online edit		

MICRO-S DIMENSIONS



CM3-SB16MDT, CM3-SB16MDCF, CM3-SB16MDRF



CM3-SB32MDTF, CM3-SB32MDCF, CM3-SB32MDRF

DRAWINGS

MEMO

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CIMON PLC

PROGRAMMABLE LOGIC CONTROLLER

XP SERIES | CP SERIES | RIO | CICON

PROGRAMMABLE LOGIC CONTROLLER

Programmable logic controller (PLC) is a general-purpose control device that automates processes by controlling machinery such as assembly lines. PLC operates based on user-defined programs which includes a variety of functions for sequence, motion, and process control.

CIMON PLC series provides innovative solutions not only for general automation fields but also for enterprise information integration. CIMON will meet your needs by delivering the highest productivity and performance.

PLC PERFORMANCE

CIMON PLC can access various devices such as sensors, controllers, and motors to control the industrial process, allowing you to enhance your manufacturing operations.

Extensive Lineup

Covers a wide range of applications from a simple device control to large scale factory operations

Redundancy System

Provides high reliability of control with network redundancy

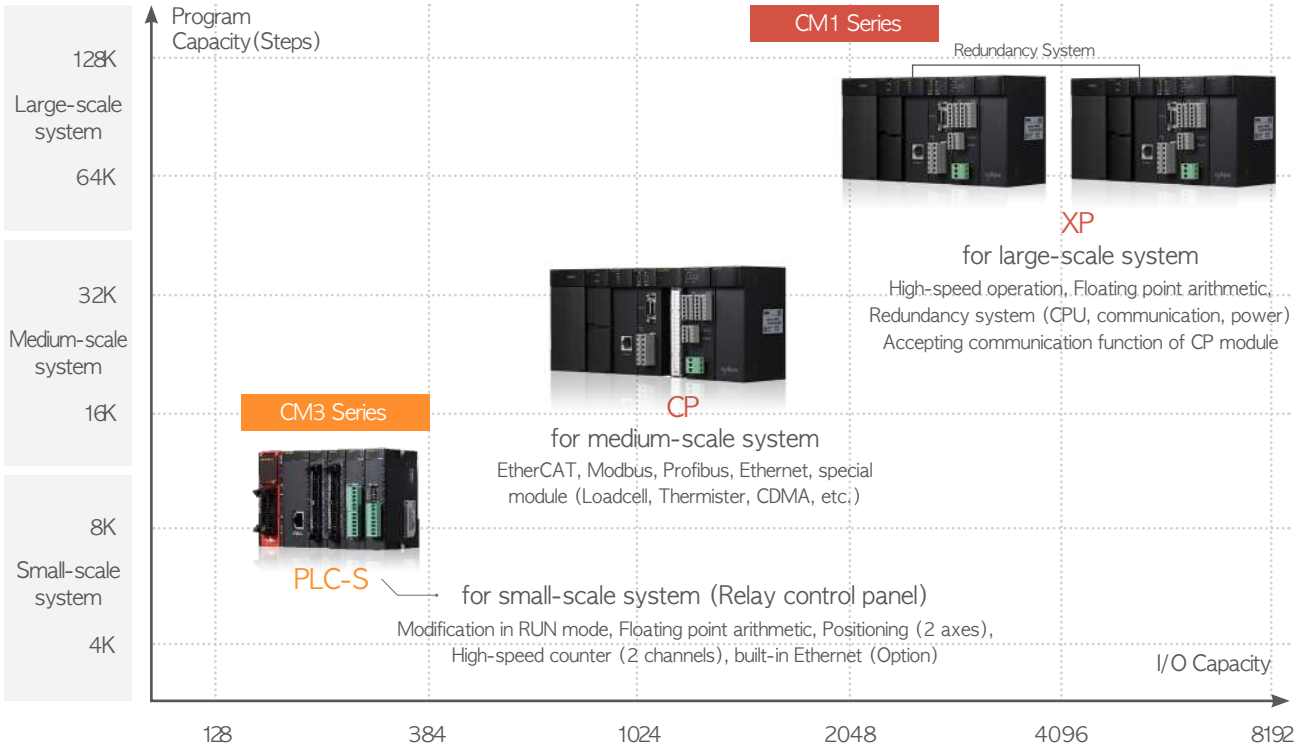
Easy Expansion

Allows the system to be easily expanded via Ethernet ports

High Precision Positioning

Precise motor position control with EtherCAT communication

Product Line-up



- Supports EtherCAT positioning, Data Logger (including 'Real-time data logging' function).
- Supports Ethernet and Serial modules including Ethernet TCP/UDP and RS232C/RS485 serial interfaces.
- Compatible I/O modules between the CP and XP series. Supports high-speed expansion system.
- Variety of special modules in the CM1 series supported (positioning, load cell, thermistor, etc)
- Embedded Auto-Tuning PID in the CM1 / CM3 series
- Allows open network configuration in the CM1 series (Fieldbus / RIO Series)

PLC Module Type: XP Series

Contains high speed operation, floating point arithmetic, and redundancy system with large memory capacity for large scale systems

PLC Module Type: CP series

Provides extensive network solutions enabling medium scale system operations

All-in-One Compact PLC: PLC-S series

Compact PLC with high performance CPU which is suitable for all industrial sites

*Please refer to PLC-S catalog for more information

PLC PERFORMANCE

Optimized for Industry 4.0, CIMON PLC offers powerful durability even in harsh environments of factories and facilities, ensuring stable operations in large scale processes.

CICON Software

- CICON is an interactive software to simply and easily create ladder programs.

BASE Expansion

- The extension function using Ethernet allows simple base extension.

Variety of network solutions supported

- The protocol program can be used to communicate according to the protocols of various control devices.

Embedded Flash Memory

- With built-in flash memory, RAM/ROM operation mode can be selected and used.

High-Speed MPU

- High-speed MPU enhances high-speed processes.

PLC Series Compatibility

- XP, CP, and PLC-S can all be programmed using CICON software.

Redundancy System

- CPU module, power module, base, and communication redundancies available
- Redundancy configuration possible through separated base structure
- Backup CPU becomes active automatically when currently active CPU fails due to an error
- Takes less than 50ms to switch to the backup CPU
- Redundancy network can be built up with the host computer

CPU PERFORMANCE

XPnF/G CPU provides newly added user-friendly features.

XP Series

* New product

Model	Scan program	I/O	Built-in Serial	Built-in Ethernet	F/W Upgrade	SD Card	Ring Expansion
*CM1-XP1S	128k	8,192	O	O	O	O	O
*CM1-XP1F			O	O	O	O	O
*CM1-XP2F		4,096	O	O	O	O	O
*CM1-XP3F		2,048	O	O	O	O	O
*CM1-XP1E		8,192	O	-	O	-	-
*CM1-XP2E		4,096	O	-	O	-	-
*CM1-XP3E		2,048	O	-	O	-	-
CM1-XP1R		8,192	-	-	-	-	-
CM1-XP1A			-	-	-	-	-
CM1-XP2A	64k	4,096	-	-	-	-	-
CM1-XP3A		2,048	-	-	-	-	-

*USB Loader, RTC, BASE extension supported in the entire model
*Line redundancy supported in CM1-XP1R
*Floating point arithmetic supported

CP Series

* New product

Model	Scan Program	I/O	Built-in Serial	USB Loader	Expansion	ROM PACK
*CM1-CP3E	64K	1,536	RS-232	O	O	-
CM1-CP3A	32K	1,024	-	-	O	-
CM1-CP3B			-	-	O	-
CM1-CP3P			-	-	O	O
CM1-CP3U			-	O	O	-
*CM1-CP4E	16K	384	RS-232	O	-	-
*CM1-CP4F			RS-232,RS-485	O	-	-
CM1-CP4A			-	-	-	-
CM1-CP4B			-	-	-	-
CM1-CP4C			RS-485	-	-	-
CM1-CP4D				-	-	-
CM1-CP4U				O	-	-

*RTC not supported in CP3A, CP4A
*Floating point arithmetic not supported
*Ring Extension not supported in CP series

CPU XP REDUNDANCY (NEW MODEL)

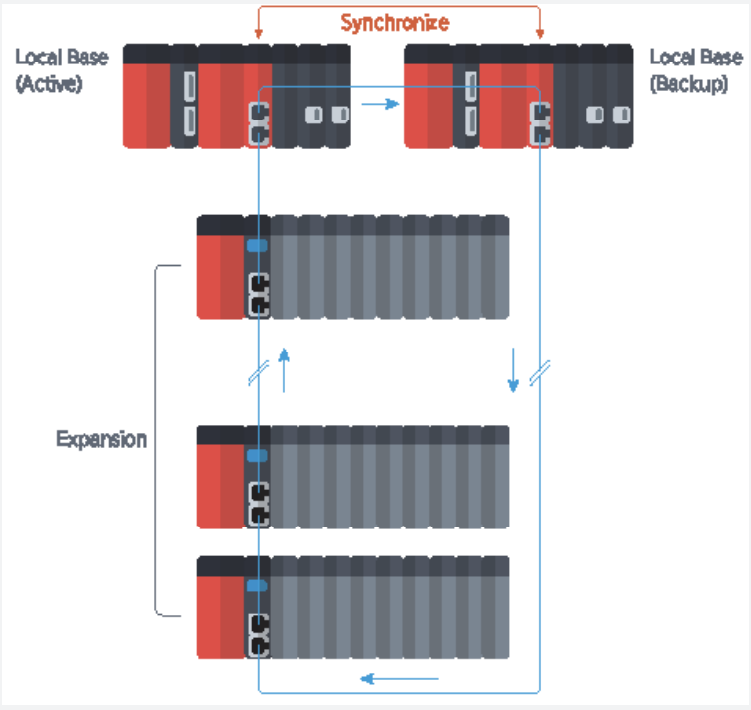
• Specification

Redundancy

Item		CM1-XP1S
Program Control		Repetitive operation, Stored Program (ROM mode), Periodic operation
Method for Controlling I/O		Indirect method, Direct method by instruction, Scan synchronous batch processing system (I/O refresh)
Program Language		LD(Ladder Diagram), IL(Instruction List), SFC(Sequential Function Chart), FB (Function Block), FB Extension
Number of Instruction		Basic Instruction : 60 , Application instruction : 480
Data Processing	LD	0.028㎲/step
	Floating Point Arithmetic	+, -, x, / : 0.4㎲ s / Instruction
Program Memory		7M Byte(Including Upload, Parameter, System)
Number of Program Block		Max 128, up to 65,530 STEPs per block (PID)
Number of I/O		8,192 Points (Max 12,288 Points)
Number of I/O Device		Input : 131,072 points, output : 131,072 points
Supporting Program	LD	Scan, Subroutine, Initialize (COLD), Initialize (HOT), Periodic interruption
	Special Configuration	Initializing special card, PID control, Thermistor setting, Loadcell setting, IO Input module filter setting
	Communication	User protocol(Serial), User protocol(Ethernet), MODBUS TCP/RTU Master, Ethernet High-speed link, CIMON-NET Master / Slave, DNP3, Public network IP setting, Fieldbus
	SFC	SFC Program
Periodic Interruption		Maximum 15, cycle setting (10~60,000msec, Unit :10ms), priority setting(0~14)
Base Expansion		Maximum 16, Ring structure redundancy
Max. Distance		S TYPE (Electricity 100M)
Redundancy		Supported
RUN mode		LOCAL / Remote (RUN, STOP, PAUSE)
Restarting		Cold, Hot Restart
Self-Diagnosis		Monitoring delay of processing, problems of memory, IO, battery, power error
Data Preservation Against Power Failure		K device and conservation (Latch) in M, L, T, C, S, D device
WDT		Maximum 5000msec (Unit: 10msec)
Timer		On Delay, Off Delay, Addition, Monostable, Retriggerable Cycle: Either 10 or 100msec TC(Current value)/TS(Setting value)
Counter		UP, DOWN, UP/DOWN, RING COUNTER, CC(Current value)/CS(Setting value) No limitation on number of points Count range : -32,768 ~ +32,767
PID		32 Channels, Auto-Tuning
Communication Channels	USB	USB 2.0 Mini-B : For Loader Protocol
	Serial	RS-232C (Maximum 115,200bps) : CICON Loader, CIMON-HMI, MODBUS RTU Slave
	Ethernet	For expanded communication :10/100Base -T/TX , -FX

Item		CM1-XP1S
Event Log		Maximum 100 (Power, Mode, Error)
Power		5Vdc , 220mA
Weight(g)		138g
Floating Point Arithmetic		Supporting instructions for floating point arithmetic
Capacity of Scan Program		128K Step
Device Memory	X	8,192
	Y	8,192
	M	16,000
	L	16,000
	K	16,000
	F	2,048
	T	4,096 (Select between 10ms and 100ms)
	C	4,096
	S	100Card * 100Step
	D	32,000 Word
	Z	1,024 Word
	R	16 Word
	Q	512 Word

Ring structure redundancy system



CPU XP REDUNDANCY

Redundancy

Item		CM1-XP1R
Program Control		Repetitive operation, Stored Program (ROM mode)
Method for Controlling I/O		Indirect method, Direct method by instruction, Scan synchronous batch processing system (I/O refresh)
Program Language		LD(Ladder Diagram), IL(Instruction List), SFC(Sequential Function Chart), FB (Function Block), FB Extension
Number of Instruction		Basic Instruction : 60 , Application instruction : 480
Data Processing	LD	0.028㎲/step
	Floating Point Arithmetic	+, -, x, / : 0.4㎲ s / Instruction
Program Memory		7M Byte (Including Upload, Parameter, System)
Number of Program Block		Max 128, up to 65,530 STEPs per block (PID)
Number of I/O		8,192 Points (Max 12,288 Points)
Number of I/O Device		Input : 131,072 points, output : 131,072 points
Supporting Program	LD	Scan, Subroutine, Initialize (COLD), Initialize (HOT), Periodic interruption
	Special Configuration	Initializing special card, PID control, Thermistor setting, Loadcell setting, IO Input module filter setting
	Communication	User protocol(Serial), User protocol(Ethernet), MODBUS TCP/RTU Master, Ethernet High-speed link, CIMON-NET Master / Slave, DNP3, Public network IP setting, Fieldbus
Periodic Interruption		Maximum 15, cycle setting (10~60,000msec, Unit :10ms), priority setting(0~14)
Base Expansion		Maximum 16 (10Base - T)
Max. Distance		Electricity 100M
Redundancy		Supported
RUN mode		LOCAL / Remote (RUN, STOP, PAUSE)
Restarting		Cold, Hot Restart
Self-Diagnosis		Monitoring delay of processing, problems of memory, IO, battery, power error
Data Preservation Against Power Failure		K device and conservation (Latch) in M, L, T, C, S, D device
WDT		Maximum 5000msec (Unit: 10msec)
Timer		On Delay, Off Delay, Addition, Monostable, Retriggerable Cycle: Either 10 or 100msec TC(Current value)/TS(Setting value)
Counter		UP, DOWN, UP/DOWN, RING COUNTER, CC(Current value)/CS(Setting value) No limitation on number of points Count range : -32,768 ~ +32,767
PID		32 Channels, Auto-Tuning
Communication Channels	USB	USB 2.0 B Type : For Loader Protocol
	Serial	RS-232C (Maximum 38400bps) : CICON Loader / Connection type: RJ11

Item		CM1-XP1R
Event Log		Maximum 100 (Power, Mode, Error)
Power		5Vdc, 315mA
Weight(g)		157g
Floating Point Arithmetic		Supporting instructions for floating point arithmetic
Capacity of Scan Program		128K Step
Device Memory	X	8,192
	Y	8,192
	M	16,000
	L	16,000
	K	16,000
	F	2,048
	T	4,096 (Select between 10ms and 100ms)
	C	4,096
	S	100Card * 100Step
	D	32,000 Word
	Z	1,024 Word
	R	16 Word

• Features

Built-in functions

- PID Control – PID operation can be executed without an additional PID module.
- RTC – Reads the time from the RTC module and stores the value at the F device memory location.
- I/O Reservation – Detects whether the correct card is installed in the designated slot. Additionally, when expanding or exchanging parts, reservation to writing a program can be made without making changes to the I/O.
- Modification of program during RUN mode – program can be modified while PLC is in the RUN mode.

Self-diagnosis functions

- Monitoring processing delay – processing delay caused by user program errors can be monitored.
- Module removal check – checks if the module was removed from the base or mounted incompletely on the base.
- Memory error – if an error occurs in the CPU flash memory or in a card, error is displayed in the F device memory location.
- Battery – F0034 will be ON when the battery needs to be replaced.
- Power – if the voltage supplied to the power supply is lower than the required level, the power error will be detected and malfunction preventative measures will be automatically executed.

CPU XP (NEW MODEL)

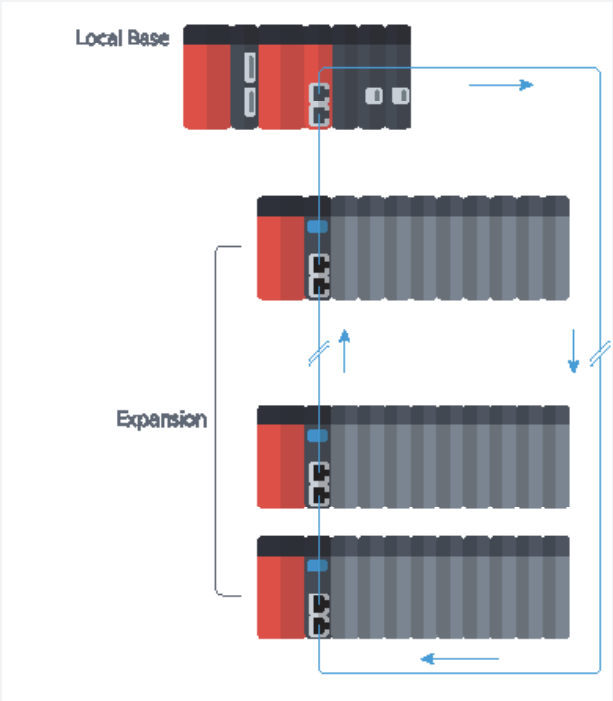
• Specification

General

Item		CM1-XP1F	CM1-XP2F	CM1-XP3F
Program Control		Repetitive operation, Stored Program (ROM mode), Periodic operation		
Method for Controlling I/O		Indirect method, Direct method by instruction, Scan synchronous batch processing system (I/O refresh)		
Program Language		LD(Ladder Diagram), IL(Instruction List), SFC(Sequential Function Chart), FB (Function Block), FB Extension		
Number of Instruction		Basic Instruction : 60 , Application instruction : 480		
Data Processing	LD	0.028㎲/step		
	Floating Point Arithmetic	′ +, -, x, / : 0.4㎲ s / Instruction		
Program Memory		7M Byte(Including Upload, Parameter, System)		
Number of Program Block		Max 128, up to 65,530 STEPs per block (PID)		
Number of I/O		8,192	4,092	2,048
Number of I/O Device		Input : 131,072 points, output : 131,072 points		
Supporting Program	LD	Scan, Subroutine, Initialize (COLD), Initialize (HOT), Periodic interruption		
	Special Configuration	Initializing special card, PID control, Thermistor setting, Loadcell setting, IO Input module filter setting		
	Communication	User protocol(Serial), User protocol(Ethernet), MODBUS TCP/ RTU Master, Ethernet High-speed link, CIMON-NET Master / Slave, DNP3, Public network IP setting, Fieldbus		
	SFC	SFC Program		
Periodic Interruption		Maximum 15, cycle setting (10~60,000msec, Unit :10ms), priority setting(0~14)		
Base Expansion		Maximum 16, Ring Topology		
Max. Distance		Electricity (100m), Optic (2km)		
Redundancy		-		
RUN mode		LOCAL / Remote (RUN, STOP, PAUSE)		
Restarting		Cold, Hot Restart		
Self-Diagnosis		Monitoring delay of processing, problems of memory, IO, battery, power error		
Data Preservation Against Power Failure		K device and conservation (Latch) in M, L, T, C, S, D device		
WDT		Maximum 5000msec (Unit: 10msec)		
Timer		On Delay, Off Delay, Addition, Monostable, Retriggerable Cycle: Either 10 or 100msec TC(Current value)/TS(Setting value)		
Counter		UP, DOWN, UP/DOWN, RING COUNTER, CC(Current value)/ CS(Setting value) No limitation on number of points Count range : -32,768 ~ +32,767		
PID		32 Channels, Auto-Tuning		
Communication Channels	USB	USB 2.0 Mini-B : For Loader Protocol		
	Serial	RS-232C (Maximum 115,200bps) : CICON Loader, CIMON-HMI, MODBUS RTU Slave		
	Ethernet	Expanded / Built-in Ethernet : 10/100Base -T/TX , -FX Built-in Ethernet: CICON Loader, CIMON-HMI, Modbus TCP Slave *Built-in Ethernet service available when expansion is not in use.		

Item		CM1-XP1F	CM1-XP2F	CM1-XP3F
Event Log		Maximum 100 (Power, Mode, Error)		
Power		5Vdc, 220mA		
Weight(g)		138g		
Floating Point Arithmetic		Supporting instructions for floating point arithmetic		
Capacity of Scan Program		128K Step		
Device Memory	X	8,192	4,096	2,048
	Y	8,192	4,096	2,048
	M	16,000		
	L	16,000		
	K	16,000		
	F	2,048		
	T	4,096 (Select between 10ms and 100ms)		
	C	4,096		
	S	100Card * 100Step		
	D	32,000 Word		
	Z	2,048 Word		
	R	16 Word		
	Q	512 Word		

Ring Topology System



CPU XP (NEW MODEL)

General

Item		CM1-XP1E	CM1-XP2E	CM1-XP3E
Program Control		Repetitive operation, Stored Program (ROM mode), Periodic operation		
Method for Controlling I/O		Indirect method, Direct method by instruction, Scan synchronous batch processing system (I/O refresh)		
Program Language		LD(Ladder Diagram), IL(Instruction List), SFC(Sequential Function Chart), FB (Function Block), FB Extension		
Number of Instruction		Basic Instruction : 60 , Application instruction : 480		
Data Processing	LD	0.028㎲/step		
	Floating Point Arithmetic	′ +, -, x, / : 0.4㎲ s / Instruction		
Program Memory		7M Byte(Including Upload, Parameter, System)		
Number of Program Block		Max 128, up to 65,530 STEPs per block (PID)		
Number of I/O		8,192	4,092	2,048
Number of I/O Device		Input : 131,072 points, output : 131,072 points		
Supporting Program	LD	Scan, Subroutine, Initialize (COLD), Initialize (HOT), Periodic interruption		
	Special Configuration	Initializing special card, PID control, Thermistor setting, Loadcell setting, IO Input module filter setting		
	Communication	User protocol(Serial), User protocol(Ethernet), MODBUS TCP/ RTU Master, Ethernet High-speed link, CIMON-NET Master / Slave, DNP3, Public network IP setting, Fieldbus		
	SFC	SFC Program		
Periodic Interruption		Maximum 15, cycle setting (10~60,000msec, Unit :10ms), priority setting(0~14)		
Base Expansion		Maximum 16 (10/100 Base -T/TX)		
Max. Distance		Electricity (100m)		
Redundancy		-		
RUN mode		LOCAL / Remote (RUN, STOP, PAUSE)		
Restarting		Cold, Hot Restart		
Self-Diagnosis		Monitoring delay of processing, problems of memory, IO, battery, power error		
Data Preservation Against Power Failure		K device and conservation (Latch) in M, L, T, C, S, D device		
WDT		Maximum 5000msec (Unit: 10msec)		
Timer		On Delay, Off Delay, Addition, Monostable, Retriggerable Cycle: Either 10 or 100msec TC(Current value)/TS(Setting value)		
Counter		UP, DOWN, UP/DOWN, RING COUNTER, CC(Current value)/CS(Setting value) No limitation on number of points Count range : -32,768 ~ +32,767		
PID		32 Channels, Auto-Tuning		
Communication Channels	USB	USB 2.0 Mini-B : For Loader Protocol		
	Serial	RS-232C (Maximum 115,200bps) : CICON Loader, CIMON-HMI, MODBUS RTU Slave		

Item		CM1-XP1E	CM1-XP2E	CM1-XP3E
Event Log		Power, Mode, Error		
Power		5Vdc, 220mA		
Weight(g)		138g		
Floating Point Arithmetic		Supporting instructions for floating point arithmetic		
Capacity of Scan Program		128K Step		
Device Memory	X	8,192	4,096	2,048
	Y	8,192	4,096	2,048
	M	16,000		
	L	16,000		
	K	16,000		
	F	2,048		
	T	4,096 (Select between 10ms and 100ms)		
	C	4,096		
	S	100Card * 100Step		
	D	32,000 Word		
	Z	2,048 Word		
	R	16 Word		
	Q	512 Word		

CPU XP

General

Item		CM1-XP1A	CM1-XP2A	CM1-XP3A
Program Control		Repetitive operation, Stored Program (ROM mode), Periodic operation		
Method for Controlling I/O		Indirect method, Direct method by instruction, Scan synchronous batch processing system (I/O refresh)		
Program Language		LD(Ladder Diagram), IL(Instruction List), FB (Function Block), FB Extension		
Number of Instruction		Basic Instruction : 60 , Application instruction : 480		
Data Processing	LD	0.028㎲/step		
	Floating Point Arithmetic	′ +, -, x, / : 0.4㎲ s / Instruction		
Program Memory		7M Byte(Including Upload, Parameter, System)		
Number of Program Block		Max 128, up to 65,530 STEPs per block (PID)		
Number of I/O		8,192	4,092	2,048
Number of I/O Device		Input : 131,072 points, output : 131,072 points		
Supporting Program	LD	Scan, Subroutine, Initialize (COLD), Initialize (HOT), Periodic interruption		
	Special Configuration	Initializing special card, PID control, Thermistor setting, Loadcell setting, IO Input module filter setting		
	Communication	User protocol(Serial), User protocol(Ethernet), MODBUS TCP/RTU Master, Ethernet High-speed link, CIMON-NET Master / Slave, DNP3, Public network IP setting, Fieldbus		
Periodic Interruption		Maximum 15, cycle setting (10~60,000msec, Unit :10ms), priority setting(0~14)		
Base Expansion		Maximum 16 (10/100 Base -T/TX)		
Max. Distance		Electricity (100m)		
Redundancy		-		
RUN mode		LOCAL / Remote (RUN, STOP, PAUSE)		
Restarting		Cold, Hot Restart		
Self-Diagnosis		Monitoring delay of processing, problems of memory, IO, battery, power error		
Data Preservation Against Power Failure		K device and conservation (Latch) in M, L, T, C, S, D device		
WDT		Maximum 5000msec (Unit: 10msec)		
Timer		On Delay, Off Delay, Addition, Monostable, Retriggerable Cycle: Either 10 or 100msec TC(Current value)/TS(Setting value)		
Counter		UP, DOWN, UP/DOWN, RING COUNTER, CC(Current value)/CS(Setting value) No limitation on number of points Count range : -32,768 ~ +32,767		
PID		32 Channels, Auto-Tuning		
Communication Channels	USB	USB 2.0 B Type : For Loader Protocol		
	Serial	RS-232C (Maximum 38,400bps) : CICON Loader / Connection Type: RJ11		

Item		CM1-XP1A	CM1-XP2A	CM1-XP3A
Event Log		Power, Mode, Error		
Power		5Vdc, 315mA		
Weight(g)		157g		
Floating Point Arithmetic		Supporting instructions for floating point arithmetic		
Capacity of Scan Program		128K Step	64K Step	64K Step
Device Memory	X	8,192	4,096	2,048
	Y	8,192	4,096	2,048
	M	16,000		
	L	16,000		
	K	16,000		
	F	2,048		
	T	4,096 (Select between 10ms and 100ms)		
	C	4,096		
	S	100Card * 100Step		
	D	32,000 Word		
	Z	2,048 Word		
	R	16 Word		

• Features

Built-in functions

- PID Control – PID operation can be executed without an additional PID module.
- RTC – Reads the time from the RTC module and stores the value at the F device memory location.
- I/O Reservation – Detects whether the correct card is installed in the designated slot. Additionally, when expanding or exchanging parts, reservation to writing a program can be made without making changes to the I/O.
- Modification of program during RUN mode – program can be modified while PLC is in the RUN mode.
- Module Replacement during RUN mode – modules can be replaced during RUN mode (does not apply to XPnA models)

Self-diagnosis functions

- Monitoring processing delay – processing delay caused by user program errors can be monitored.
- Module removal check – checks if the module was removed from the base or mounted incompletely on the base.
- Memory error – if an error occurs in the CPU flash memory or in a card, error is displayed in the F device memory location.
- Battery – F0034 will be ON when the battery needs to be replaced.
- Power – if the voltage supplied to the power is lower than the required level, the power error will be detected and malfunction preventative measures will be automatically executed.

CPU CP (NEW MODEL)

General

Item		CM1-CP3E	CM1-CP4E	CM1-CP4F
Program Control		Repetitive operation, Stored Program (ROM mode), Periodic operation		
Method for Controlling I/O		Indirect method, Direct method by instruction, Scan synchronous batch processing system (I/O refresh)		
Program Language		LD(Ladder Diagram), IL(Instruction List), SFC(Sequential Function Chart), FB (Function Block), FB Extension		
Number of Instruction		Basic Instruction : 60 , Application instruction : 480		
Data Processing	LD	0.084㎲/step	0.028㎲/step	
Program Memory		512Kbyte	256 Kbyte	
Number of Program Block		Max 128, up to 65,530 STEPs per block (PID)		
Number of I/O		1,536	384	
Number of I/O Device		32,768	8,192	
Supporting Program	LD	Scan, Subroutine, Initialize (COLD), Initialize (HOT), Periodic interruption		
	Special Configuration	Initializing special card, PID control, Thermistor setting, Loadcell setting, IO Input module filter setting		
	Communication	User protocol(Serial), User protocol(Ethernet), MODBUS TCP/RTU Master, Ethernet High-speed link, CIMON-NET Master / Slave, DNP3, Public network IP setting, Fieldbus		
	SFC	SFC Program		
Periodic Interruption		Maximum 15, cycle setting (10~60,000msec, Unit : 10ms), priority setting(0~14)		
Base Expansion		Maximum 3 (10Base-T)	-	
Max. Distance		Electricity (100m)	-	
Redundancy		-		
RUN mode		LOCAL / Remote (RUN, STOP, PAUSE)		
Restarting		Cold, Hot Restart		
Self-Diagnosis		Monitoring delay of processing, problems of memory, IO, battery, power error		
Data Preservation Against Power Failure		K device and conservation (Latch) in M, L, T, C, S, D device		
WDT		Maximum 5000msec (Unit: 10msec)		
Timer		On Delay, Off Delay, Addition, Monostable, Retriggerable Cycle: Either 10 or 100msec TC(Current value)/TS(Setting value)		
Counter		UP, DOWN, UP/DOWN, RING COUNTER, CC(Current value)/CS(Setting value) No limitation on number of points Count range : -32,768 ~ +32,767		
PID		32 Channels, Auto-Tuning		
Communication Channels	USB	USB 2.0 Mini-B : For Loader Protocol		
	Serial	RS-232C (Maximum 38,400bps) : CICON Loader, CIMON-HMI, MODBUS RTU Slave / Connection Type: Terminal Block		

Item		CM1-CP3E	CM1-CP4E	CM1-CP4F
Communication Channels	Serial	-		RS-485 (Maximum 115,200) : Same option is provided with RS-232C / Connection type: RJ45
Event Log		Power, Mode, Error		
Power		5Vdc , 195mA	5Vdc , 70mA	5Vdc , 100mA
Weight(g)		140g	127g	137g
Capacity of Scan Program		32K Step	16K Step	
Device Memory	X	1,536	384	
	Y	1,536	384	
	M	8192		
	L	2,048		
	K	2,048		
	F	2,048		
	T	1,024 (Select between 10ms and 100ms)		
	C	1,024		
	S	100Card * 100Step		
	D	10,000 Word	5,000 Word	
	Z	1,024 Word		
	R	16 Word		
	Q	512 Word		

CPU CP

• Specification

General

Item		CM1-CP3A	CM1-CP3B	CM1-CP3U
Program Control		Repetitive operation, Stored Program (ROM mode), Periodic operation, Fixed cycle scan		
Method for Controlling I/O		Indirect method, Direct method by instruction, Scan synchronous batch processing system (I/O refresh)		
Program Language		LD(Ladder Diagram), IL(Instruction List), SFC(Sequential Function Chart), FB (Function Block), FB Extension		
Number of Instruction		Basic Instruction : 60 , Application instruction : 480		
Data Processing	LD	0.2μ s / Step		
Program Memory		512Kbyte		
Number of Program Block		Max 128, up to 65,530 STEPs per block (PID)		
Number of I/O		1,024		
Number of I/O Device		Input: 32,768 Output: 32,768		
Supporting Program	LD	Scan, Subroutine, Initialize (COLD), Initialize (HOT), Periodic interruption		
	Special Configuration	Initializing special card, PID control, Thermistor setting, Loadcell setting, IO Input module filter setting		
	Communication	User protocol(Serial), User protocol(Ethernet), MODBUS TCP/RTU Master, Ethernet High-speed link, CIMON-NET Master / Slave, DNP3, Public network IP setting, Fieldbus		
Periodic Interruption		Maximum 15, cycle setting (10~60,000msec, Unit :10ms), priority setting(0~14)		
Base Expansion		Maximum 16 (10Base -T)		
Max. Distance		Electricity (100m)		
Redundancy		-		
RUN mode		LOCAL / Remote (RUN, STOP, PAUSE)		
Restarting		Cold, Hot Restart		
Self-Diagnosis		Monitoring delay of processing, problems of memory, IO, battery, power error		
Data Preservation Against Power Failure		K device and conservation (Latch) in M, L, T, C, S, D device		
WDT		Maximum 5000msec (Unit: 10msec)		
Timer		On Delay, Off Delay, Addition, Monostable, Retriggerable Cycle: Either 10 or 100msec TC(Current value)/TS(Setting value)		
Counter		UP, DOWN, UP/DOWN, RING COUNTER, CC(Current value)/CS(Setting value) No limitation on number of points Count range : -32,768 ~ +32,767		
PID		32 Channels, Auto-Tuning		
Communication Channels	USB	-		USB 2.0 B Type : For Loader Protocol
	Serial	RS-232C (Maximum 38,400bps) : CICON Loader / Connection Type: RJ11		

Item		CM1-CP3A	CM1-CP3B	CM1-CP3U
Event Log		Power, Mode, Error		
Power		5Vdc, 240mA		
Weight(g)		135g		153g
Capacity of Scan Program		32K Step		
Device Memory	X	1,024		
	Y	1,024		
	M	8,192		
	L	2,048		
	K	2,048		
	F	2,048		
	T	1,024 (Select between 10ms and 100ms)		
	C	1,024		
	S	100Card * 100Step		
	D	10,000 Word		
	Z	1,024 Word		
	R	16 Word		

General

Item		CM1-CP4A	CM1-CP4B	CM1-CP4C	CM1-CP4D/U
Program Control		Repetitive operation, Stored Program (ROM mode), Periodic operation			
Method for Controlling I/O		Indirect method, Direct method by instruction, Scan synchronous batch processing system (I/O refresh)			
Program Language		LD(Ladder Diagram), IL(Instruction List), SFC(Sequential Function Chart), FB (Function Block), FB Extension			
Number of Instruction		Basic Instruction : 60 , Application instruction : 480			
Data Processing	LD	0.2μ s / Step			
Program Memory		256Kbyte			
Number of Program Block		Max 128, up to 65,530 STEPs per block (PID)			
Number of I/O		384			
Number of I/O Device		Input: 32,768 Output: 32,768			
Supporting Program	LD	Scan, Subroutine, Initialize (COLD), Initialize (HOT), Periodic interruption			
	Special Configuration	Initializing special card, PID control, Thermistor setting, Loadcell setting, IO Input module filter setting			
	Communication	User protocol(Serial), User protocol(Ethernet), MODBUS TCP/RTU Master, Ethernet High-speed link, CIMON-NET Master / Slave, DNP3, Public network IP setting, Fieldbus			
Periodic Interruption		Maximum 15, cycle setting (10~60,000msec, Unit :10ms), priority setting(0~14)			
Base Expansion		-			
Redundancy		-			
RUN mode		LOCAL / Remote (RUN, STOP, PAUSE)			
Restarting		Cold, Hot Restart			
Self-Diagnosis		Monitoring delay of processing, problems of memory, IO, battery, power error			
Data Preservation Against Power Failure		K device and conservation (Latch) in M, L, T, C, S, D device			
WDT		Maximum 5000msec (Unit: 10msec)			
Timer		On Delay, Off Delay, Addition, Monostable, Retriggerable Cycle: Either 10 or 100msec TC(Current value)/TS(Setting value)			
Counter		UP, DOWN, UP/DOWN, RING COUNTER, CC(Current value)/CS(Setting value) No limitation on number of points Count range : -32,768 ~ +32,767			
PID		32 Channels, Auto-Tuning			
Communication Channels	USB	-			USB 2.0 B Type : For Loader Protocol
	Serial	RS-232C (Maximum 38,400bps) : CICON Loader / Connection Type: RJ11			
		-		RS-232C: CICON Loader, CIMON-HMI / Connection Type: RJ45	RS-485: CICON Loader, CIMON-HMI / Connection Type: RJ45

Item		CM1-CP4A	CM1-CP4B	CM1-CP4C	CM1-CP4D/U
Event Log		Power, Mode, Error			
Power		5Vdc, 240mA			
Weight(g)		130g			133g / 137g
Capacity of Scan Program		16K Step			
Device Memory	X	384			
	Y	384			
	M	8,192			
	L	2,048			
	K	2,048			
	F	2,048			
	T	1,024 (Select between 10ms and 100ms)			
	C	1,024			
	S	100Card * 100Step			
	D	5,000 Word			
	Z	1,024 Word			
	R	16 Word			

• Features

CP CPU Comparison

The new CPnE/F CPU series includes more convenient features when compared to the older CPnA/B/U/P models.

Mini-B Type USB Connector

PLC can be easily connected to CICON software with a Mini-B type USB connector.

RS232C

- Simply connect the serial port to the PLC. There is no need to use connection tools or soldering on the terminal block.
- Enhanced communication compatibility by supporting three protocols and increased convenience with auto-verifying protocol feature which allows the user to skip the additional settings.
- Supported protocol : MODBUS/RTU Slave, CIMON-HMI, CICON (Loader)

FB (Function Block) and SFC Program Language Support

Programs can be built with various languages providing a flexible environment for the users. Not only programs can be written using IL and LD languages, but they can also be written using SFC language.

OS Upgrade

CPU module can be upgraded to the latest OS using CICON software on-site without any additional tools.

Enhanced Expansion System

Speed of communication in the expansion system improved from 10Mbps to 100Mbps. Users can now experience rapid performance when designing a system with the expansion module.

I/O module replacement during RUN mode (CPU XP Series E, F type)

In case of failure of the I/O module while the PLC is in operation, the I/O module can be replaced while the PLC is in RUN mode so that the PLC processes are not interrupted.

Built-in Functions

- PID Control – PID operation can be executed without an additional PID module.
- RTC (Excluding CP*A Type) – Reads the time from the RTC module and stores the value at the F device memory location.
- I/O Reservation – Detects whether the correct card is installed in the designated slot. Additionally, when expanding or exchanging parts, reservation to writing a program can be made without making changes to the I/O.
- Modification of program during RUN mode – program can be modified while PLC is in the RUN mode.
- RS-232 port (CP4C, CP3E, CP4E/F)
- RS-422 / 485 port (CP4D/U, CP4F)
- RS-232 port for Loader communication (CP3A/B/P/U, CP4A/B/C/D/U)

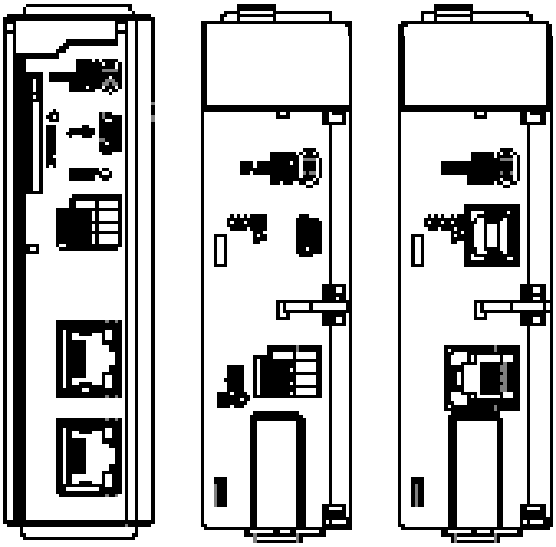
Self-diagnosis Functions

- Monitoring processing delay – processing delay caused by user program errors can be monitored.
- Module removal check – checks if the module was removed from the base or mounted incompletely on the base.
- Memory error – if an error occurs in the CPU flash memory or in a card, error is displayed in the F device memory location.
- Battery – F0034 will be ON when the battery needs to be replaced.
- Power – if the voltage supplied to the power is lower than the required level, the power error will be detected and malfunction preventative measures will be automatically executed.

• Appearance

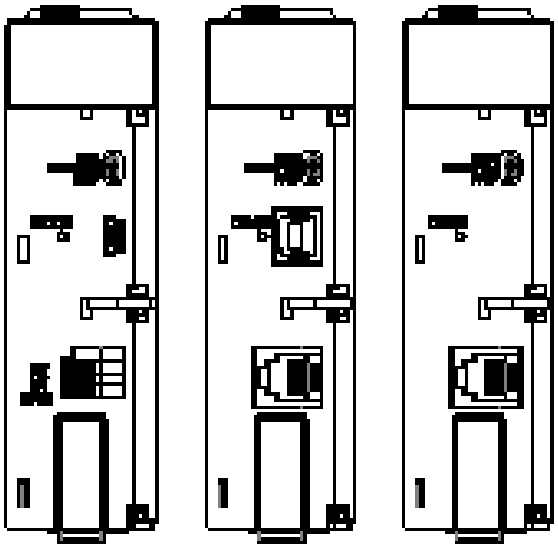
CPU XP / Redundancy

- CM1-XP1S
- CM1-XP1F
- CM1-XP2F
- CM1-XP3F
- CM1-XP1E
- CM1-XP2E
- CM1-XP3E
- CM1-XP1R
- CM1-XP1A
- CM1-XP2A
- CM1-XP3A



CPU CP

- CM1-CP3E
- CM1-CP4E
- CM1-CP4F
- CM1-CP3U
- CM1-CP4U
- CM1-CP3A
- CM1-CP3B
- CM1-CP4A
- CM1-CP4B
- CM1-CP4C
- CM1-CP4D



POWER

• Specification

Redundancy power

Item		CM1-SPR
Input	Input Voltage	AC100-240V, 50/60Hz
	Input Current	1.8A(110V) / 0.95A(220V)
	Inrush Current	50A Peak
	Efficiency	65%
	Power Disturbance Susceptibility	10ms
Output	Output Voltage / (Output Current)	+24V(0.3A) / +5.5V(3.5A) / +15V(0.5A) / -15V(0.3A)
Voltage Indicator		LED ON when output voltage is normal

• The status of the Power module is displayed by the LED.
• Outputs are provided for the operations of Power. (DC24V, TR Sink)

General power

Item		CM1-SPA	CM1-SPC	CM1-SP2B	CM1-SPW
Input	Input Voltage	AC100-240V, 50/60Hz		DC19-28V	DC70-110V
	Input Current	1.15A(110V) 0.57A(220V)	1.71A(110V) 0.85A(220V)	1.9A(24V)	0.6A(100V)
	Inrush Current	50A Peak			
	Efficiency	65%			
	Power Disturbance Susceptibility	10ms			
Output	Output Voltage / (Output Current)	+24V(0.3A) +5V(3.5A)	+24V(0.3A) +5V(3.5A) +15V(0.5A) -15V(0.3A)	+5V(3.5A) +15V(0.5A) -15V(0.3A)	+24V(0.3A) +5V(3.5A) +15V(0.5A) -15V(0.3A)
Voltage Indicator		LED ON when output voltage is normal			

※ Use CM1-SPC for Analog Input / Output module.

Usage according to output voltage

Item	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)

• The power supply for CIMON PLC XP / CP series provides DC +5V/+24V/+15V/-15V to each PLC.
• 'Internal power disturbance monitoring' function prevents system malfunctions or data damages.

Current Consumption (5V DC)

Item	Model	Current Consumption
CPU Module	CM1-XPnF/1S/1E	220mA
	CM1-XPnA/ 1R	315mA
	CM1-CP3E	195mA
	CM1-CP4E	70mA
	CM1-CP4F	100mA
	CM1-CP3A/B/U/P	240mA
	CM1-CP4A/B/C/D/U	200mA
Redundancy Module	CM1-RM01B	70mA
	CM1-RC01A/10A	290mA
Expansion Module	CM1-EP***	270mA
Digital Input Module	CM1-XD16*	60mA
	CM1-XD32*	100mA
	CM1-XD64C	220mA
I/O Module	CM1-XY16*	180mA
Output Module	CM1-YR16E	370mA
Digital output Module	CM1-YT16*	110mA
	CM1-YT32*	130mA
	CM1-YT64*	260mA
High-speed Counter Module	CM1-HS02*	290mA
Analog Input Module	CM1-AD04VI	50mA
	CM1-AD08V	50mA
	CM1-AD08I	55mA
	CM1-AD04W	430mA
	CM1-AD16VI	50mA
Analog Output Module	CM1-DA04V	40mA
	CM1-DA04VA	40mA
	CM1-DA08V	50mA
	CM1-DA08VA	50mA
	CM1-DA04I	40mA
	CM1-DA08I	50mA
RTD Module	CM1-RD04*	50mA
TC Module	CM1-TC04A	60mA
Thermistor Module	CM1-TH08A	60mA
Load Cell Module	CM1-WG0**	170mA
Positioning Module	CM1-PS02A	240mA
	CM1-PS08N	240mA
Communication Module	CM1-SC02*	190mA
	CM1-SC01A	170mA
	CM1-SC01B	170mA
	CM1-SC01DNP	170mA
	CM1-EC01A	290mA
	CM1-EC10*	290mA
	CM1-BN01A	290mA
	CM1-EC0*DNP	290mA
	CM1-C*01*	60mA
	CM1-LG02G	140mA

※ Please be sure to check that each module's current consumption does not exceed the regular output capacity of the power module.

ADDITIONAL REDUNDANCY MODULE

• Specification

Redundancy Power Monitoring Module

Item		CM1-RPW
Status Output (A_OK, B_OK, A_NG, B_NG)	Output Type	TR Sink Type
	Max. Output Current	0.5A / point
	Rated Input Voltage	DC 24V
Status Output (24V IN)	Rated Input Voltage	DC 24V
	Max. Input Current	0.8 A
Power Coupler Input (AIN/BIN)	Rated Input Voltage	DC 24V
Power Coupler Output (24V OUT)	Rated Input Voltage	DC 24V
	Max. Output Current	8A
Operation Indication		LED ON when the power ON
Insulation Type		Photo-coupler

Redundancy Communication Module

Item	CM1-RC01A	CM1-RC10A
Communication Standard	10 BASE-T	100 BASE-TX
Communication Speed	10Mbps	100 Mbps
Distance of Communication	100m	
Protocol	CIMON internal redundancy protocol	
Standard of Cable	UTP/STP Category5, Twisted-pair cable	

Redundancy Interface

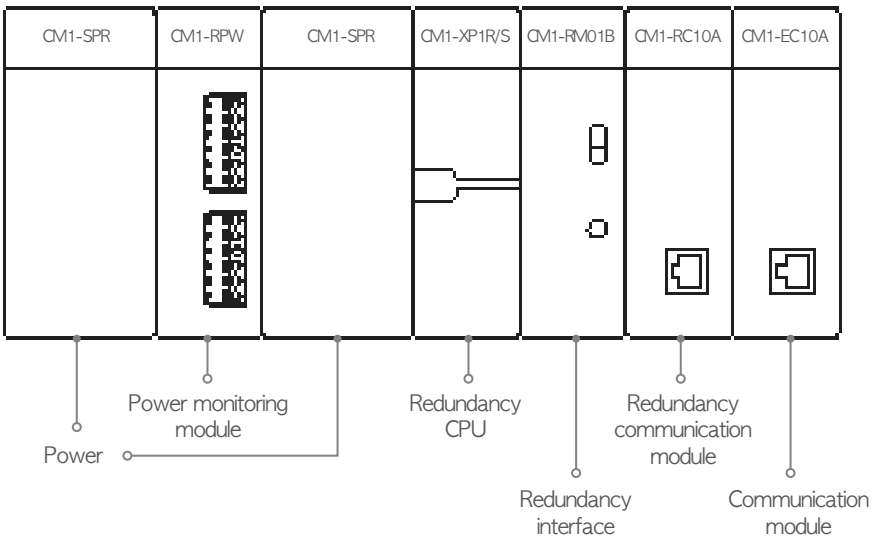
Item	CM1-RM01B
Primary/Secondary Switch	Toggle Type 2- position (UP:Primary, Down:Secondary)
Active/Back up Changeover Switch	Push Button Switch

※ To prevent tampering or accidental operation, the Active/Backup switch is not located on the outside of the module. Instead, a small sized Primary / Secondary switch is placed to serve the same purpose.

Miscellaneous Redundancy Module

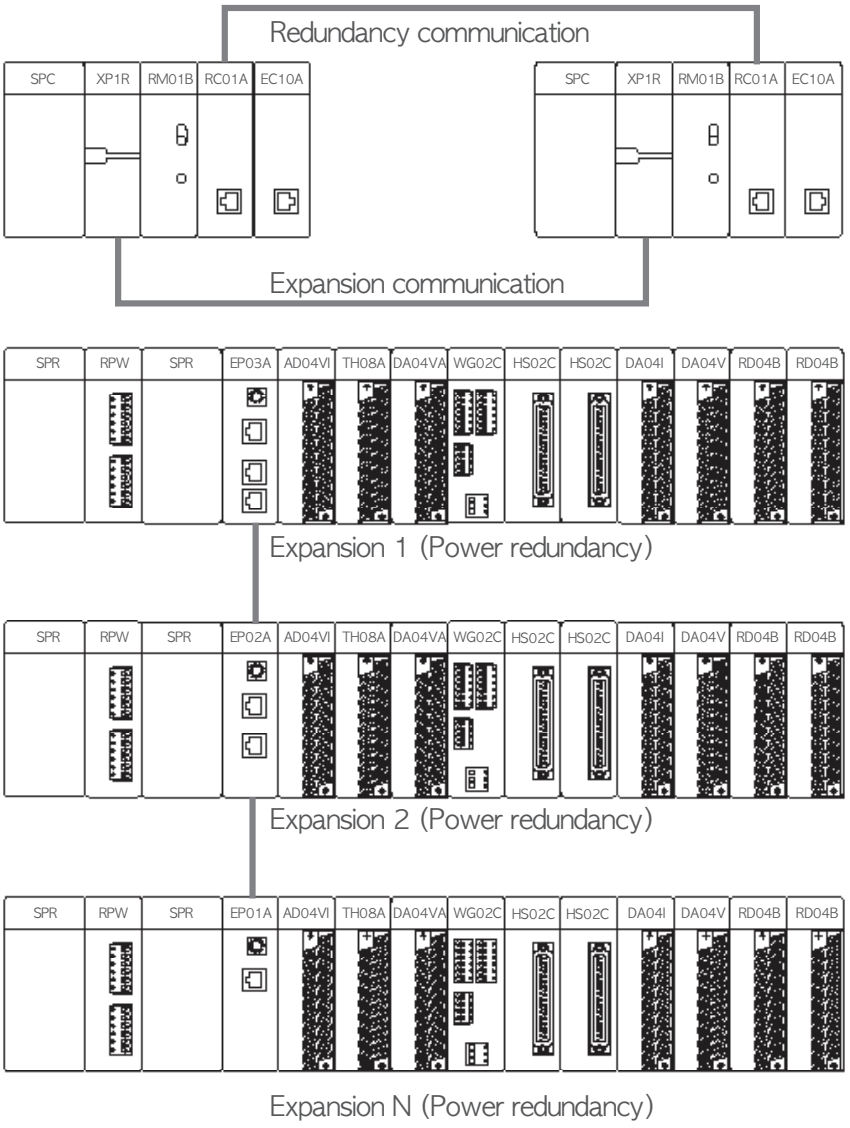
Item	Unit	Model
Power Redundancy	Base	CM1-BS05S or Redundancy base
	Power	CM1-SPR
	Power monitor module	CM1-RPW
	CPU	All CPU Types
System Redundancy	Base	General base (CM1-BS05A)
	Power	CM1-SPA or standard power
	CPU	CM1-XP1R
	Redundancy interface	CM1-RM01B
	Redundancy communication module	CM1-RC01A / CM1-RC10A
	Redundancy cable	CM0-CBE
Power Redundancy + System Redundancy	Base	CM1-BS05S or Redundancy base
	Power	CM1-SPR
	Power monitor module	CM1-RPW
	CPU	CM1-XP1R
	Redundancy interface	CM1-RM01B
	Redundancy communication module	CM1-RC01A / CM1-RC10A
	Redundancy cable	CM0-CBE

Redundancy Configuration



Example for System configuration

※CM1-*



* The system can be expanded with up to 16 modules. (The number may differ depending on the CPU's specification.)

• Features

- CPU module, power module, base, and communication redundancies available
- Redundancy configuration possible through separated base structure
- Backup CPU becomes active automatically when currently active CPU fails due to an error
- Test button available to easily check and maintain the system
- Backup CPU can be quickly switched
- Redundancy network can be built with the host computer
- Expansion power redundancy available

DIGITAL I/O

• Specification

Input

Item		DC Input		
		CM1-XD16E	CM1-XD32E	CM1-XD64E
Input Type		SINK/ SRC		
Rated Input Voltage		DC 24 V		
Rated Input Current		4 mA		
On Voltage / On Current		DC 19 V / 4 mA		
Off Voltage / Off Current		DC 11 V / 1 mA		
System Redundancy	Off -〉 On	3ms and below		
	On -〉 Off	3ms and below		
Number of Input		16	32	64
Common Type		8 / 1 Com		32 / 1 Com
Operation Indication		LED ON when the input is ON		
Insulation Type		Photo-coupler		
Current Consumption		60mA	100mA	220mA

Item		DC Input	
		CM1-XD16F	CM1-XD32F
Input Type		SINK/ SRC	
Rated Input Voltage		DC 24 V	
Rated Input Current		4 mA	
On Voltage / On Current		DC 15 V / 4 mA	
Off Voltage / Off Current		DC 9 V / 1mA	
System Redundancy	Off -〉 On	3ms and below	
	On -〉 Off	3ms and below	
Number of Input		16	32
Common Type		8 / 1 Com	
Operation Indication		LED ON when the input is ON	
Insulation Type		Photo-coupler	
Current Consumption		60mA	100mA

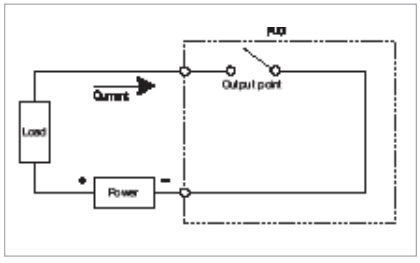
Output

Item		Transistor Output	
		CM1-YT16E	CM1-YT16F
Number of Output		SINK 16 points	SRC 16 points
Rated Voltage		DC12~24V	
Rated Current	1 point	0.5A	0.5A
	1Com	4A	
Response Time	Off -〉On	1ms and below	
	On -〉Off	1ms and below	
Common Type		16	32
Operation Indication		LED ON when the output is ON	
Insulation Type		Photo-coupler	

Item		Transistor Output		
		CM1-YT32E	CM1-YT32F	CM1-YT64E
Number of Output		SINK 32 points	SRC 32 points	SINK 64 points
Rated Voltage		DC12~24V		
Rated Current	1 point	0.2A		
	1Com	4A		
Response Time	Off -〉On	1ms and below		
	On -〉Off	1ms and below		
Common Type		32		
Operation Indication		LED ON when the output is ON		
Insulation Type		Photo-coupler		

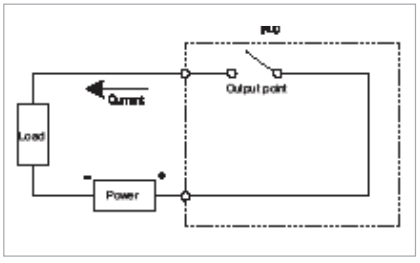
Sink Type

CM1-YT16E, CM1-YT32E, CM1-YT64E



Sink Type

CM1-YT16F, CM1-YT32F



Item		Relay Output
		CM1-YR16E
Number of Output		16
Rated Voltage		DC12~24V
Rated Current	1 point	2A
	1Com	5A
Response Time	Off -〉On	10ms and below
	On -〉Off	5ms and below
Common Type		8 point / 1 Com
Operation Indication		LED ON when the output is ON
Insulation Type		Relay

• If this module is used as an inductive load switch, it will shorten the lifespan of the module.
If you wish to use the module for such purpose, please use the transistor output module instead.

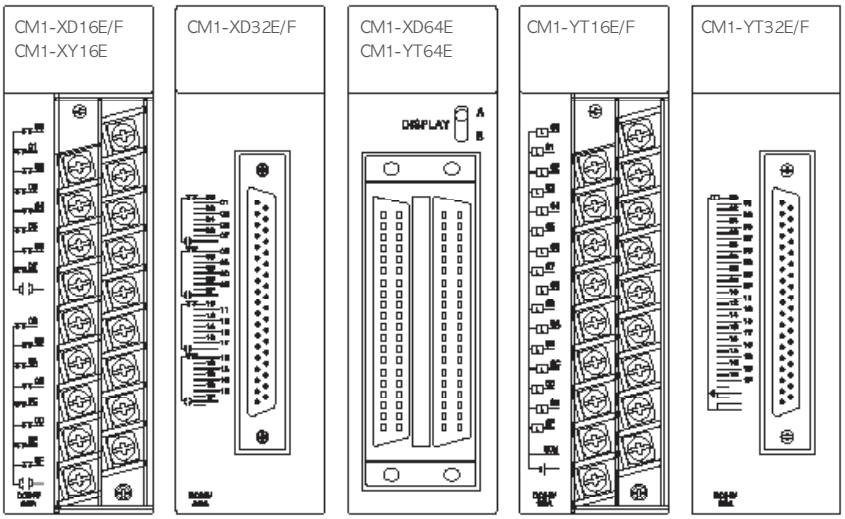
I/O

Item		CM1-XY16E	
		Input	Output
Number of I/O		8	8
		SINK/ SRC	Relay
Rated I/O Voltage		DC24V	DC12/24V / AC220V
Rated I/O Current		4mA	2A
On Voltage / On Current		DC 19V / 4mA	
Off Voltage / Off Current		DC 11V / 1mA	
Response Time	Off -〉 On	5ms and below	10ms and below
	On -〉 Off	5ms and below	5ms and below
Common Type		8 point / 1 Com	8 point / 1 Com
Operation Indication		LED ON when the output is ON	
Insulation Type		Photo-coupler	Relay

• Features

- All module contains photo-coupler or relay insulation type.
- LED displays the operations of the module.
- Since the module is designed using the terminal block method, the module can be moved during wiring or maintenance.

• Appearance



ANALOG I/O

• Specification

Input

Item		CM1-AD04VI	CM1-AD08V
Number of Analog Input		4	8
Analog Input		0~+5V(0~20mA) 1~+5v(4~20mA) 0~+10V -10V~+10V	0~+5V 1~+5V 0~+10V -10V~+10V
Accuracy		±0.3% (Full Scale)	
Conversion Speed		5ms / 1ch	
Absolute Max. Input		Voltage : ±12V, Current : ±25mA	±12V
Insulation Type		Insulation between Analog and Digital	
Occupied I/O points		16	
Connection Terminal		18 points Terminal Block	
Current Consumption(mA)	+5V	50	50
	+15V	40	40
	-15V	35	20

Item		CM1-AD08I	CM1-AD16VI
Number of Analog Input		8	16
Analog Input		0 ~ 20mA 4 ~ 20mA	0~+5V(0~20mA) 1~+5v(4~20mA) 0~+10V -10V~+10V
Accuracy		±0.3% (Full Scale)	
Conversion Speed		5ms / 1ch	
Absolute Max. Input		±25mA	Voltage : ±15V, Current : ±25mA
Insulation Type		Insulation between Analog and Digital	
Occupied I/O points		16	
Connection Terminal		18 points Terminal Block	32 points Terminal Block
Current Consumption(mA)	+5V	50	50
	+15V	40	45
	-15V	20	1

Digital Output

Type of Input Signal	Min. Value	Measured Value	Max. Value
4~20mA	3,808	4,000~20,000	20,191
0~20mA	-240	0~20,000	20,239
1~5V	952	1,000~5,000	5,047
0~5V	-60	0~5,000	5,059
-10~10V	-12,000	-10,000~10,000	10,119
0~10V	-10,240, -240	0~10,000	10,239

Maximum Resolution

Input	Range of Analog Input	Max. Resolution	Digital Output
Voltage	0~+5V	312.5 μ V	0~16000 -8000~8000
	1~+5V	250 μ V	
	0~+10V	625 μ V	
	-10V~+10V	1.25 mV	
Current	0 ~ 20mA	1.25 μ V	
	4 ~ 20mA	1.0 μ V	

Input

Item	CM1-AD04W
Number of Analog Input	4
Analog Input	0~+5V(0~20mA), 1~+5v(4~20mA), 0~+10V, -10V~+10V
Accuracy	±0.3% (Full Scale)
Conversion Speed	2.1ms / 4ch
Absolute Max. Input	Voltage : ±15V, Current : ±30mA
Insulation Type	Insulation between Analog and Digital
Occupied I/O points	16
Connection Terminal	18 points Terminal Block
Current Consumption (mA)	430mA
Weight (g)	187g

Digital Output

Voltage				
Input Signal	0~5V	1~5V	0~10V	-10~10V
Raw value	-32000~32000			
Measuring Value	0~5000	1000~5000	0~10000	-10000~10000
Percentile Value	0~10000			

Current		
Input Signal	0~20mA	4~20mA
Raw value	-32000~32000	
Measuring Value	0~20000	4000~20000
Percentile Value	0~10000	

Maximum Resolution

Current	Range of Analog Input	Max. Resolution
Voltage	0~+5V	312.5 μ V
	1~+5V	250 μ V
	0~+10V	625 μ V
	-10V~+10V	1.25 mV
Current	0 ~ 20mA	1.25 μ V
	4 ~ 20mA	1.0 μ V

Output

Item		CM1-DA04V/VA	CM1-DA08V/VA
Number of Analog Input		4	8
Analog Output		-10V~+10V	
Digital Input		-192~16191 (-8192~8191)	
Accuracy		No more than ±0.1%	
Conversion Speed		10ms	16ms
Absolute Max. Input		Voltage : ±15V	
Insulation Type		Between Input terminal and PLC: Photo-coupler No insulation between output channels No insulation between power and analog output	
Power Supply		None	
Occupied I/O points		16	
Connection Terminal		18 points Terminal Block	
Current Consumption(mA)	+5V	50	
	+15V	50	
	-15V	30	
	24V	-	

Item		CM1-DA04I	CM1-DA08I
Number of Analog Input		4	8
Analog Output		4~20mA	
Digital Input		-192~16191 (-8192~8191)	
Accuracy		No more than ±0.1%	
Conversion Speed		10ms	16ms
Absolute Max. Input		Voltage : ±15V	
Insulation Type		Between Input terminal and PLC: Photo-coupler No insulation between output channels No insulation between power and analog output	
Power Supply		±24V	
Occupied I/O points		16	
Connection Terminal		18 points Terminal Block	
Current Consumption(mA)	+5V	50	
	+15V	-	
	-15V	-	
	24V	100	

Maximum Resolution

Output	Digital Input	Range of Analog Output		Max. Resolution
Voltage	0 ~ 16000 (-8000~8000)	V type	-10V~10V	1.25mV
		VA type	0~10V	
Current	0 ~ 16000 (-8000~8000)	4 ~ 20mA		1.0μ V

• Features

Analog Input Module

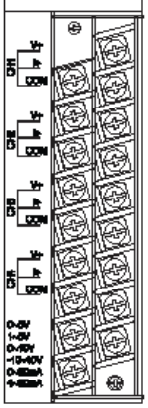
- CM1-AD04VI/CM1-AD04W is the AD module used to input 4 channels of voltage and current.
- CM1-AD08I has 8 channels of analog input for current.
- CM1-AD08V has 8 channels of analog input for voltage.
- AD04VI, AD04W, AD16VI (0~20mA, 4~20mA, 0~5V, 1~5V, -10~10V, 0~10V)
- AD08I (0~20mA, 4~20mA)
- AD08V (0~5V, 1~5V, -10~10V, 0~10V)
- There are two AD conversion methods that the user can choose: Average processing and Sampling processing.
- Analog Input module converts input Max. and Min value into 0 ~ 16,000 (-8,000 ~ 8,000). If input value gets out of the range, it converts into -192 ~ 16,191 (-8192 ~ 8191). If value gets out of this, the value -192 ~ 16,191 (-8192 ~ 8191) is fixed.
  (*AD04W: An input signal is converted into 3 formats of digital value as below)
  A. Digital value: 0 ~ 64000 (or -32000 ~ 32000, 16 bit resolution of 1/64000)
  B. Measuring value: Refer to the specification.
  C. Percentile value: 0 ~ 10000 (0 ~ 100.00%)
- There is no limitation for the number of modules that can be installed on a single base.
- The LED lights on in normal condition and blinks at 0.3 second intervals in error condition..

Analog Output Module

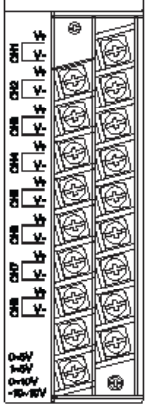
- DA08I has 8 channels of analog output for current (4~20mA).
- DA04I has 4 channels of analog output for current (4~20mA).
- DA08V has 8 channels of analog output for voltage (-10~10V).
- DA04V has 4 channels of analog output for voltage (-10~10V).
- DA08VA has 8 channels of analog output for voltage (0~10V).
- DA04VA has 4 channels of analog output for voltage (0~10V).
- If you select the changed digital value to 1/16000, it can be converted into high resolution of analog value.
- The DA module is used to convert digital value (Signed 16-bit binary data) into the analog signal (voltage or current output). It converts the digital value of 0 ~ 160000 (-8000 ~ 8000) into the analog value of 4 ~ 20mA (-10 ~ 10V).
- Through the Hold/Clear setting, the user can select one of the states shown below:
  When the RUN mode is switched to the STOP mode, it outputs the offset value (4mA, -10V).
  Although the RUN mode is switched to the STOP mode, it maintains the same value.
- The channel for which conversion is prohibited outputs the offset value (4mA, -10V).
- The offset/gain value can be simply set in the CICON software.
- There is no limitation for the number of modules that can be installed on a single base.
- The LED lights on in normal condition and blinks at 0.3 second intervals in error condition.

• Appearance

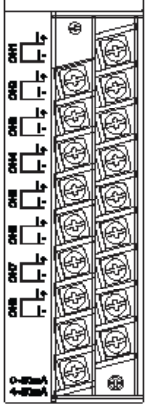
CM1-AD04VI/W



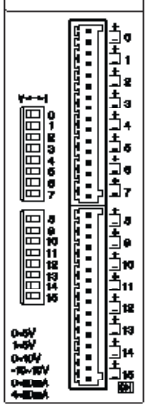
CM1-AD08V



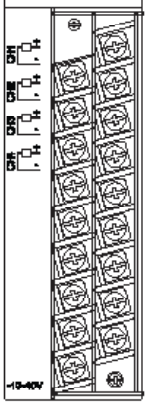
CM1-AD08I



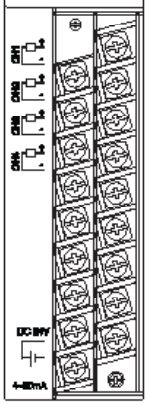
CM1-AD16VI



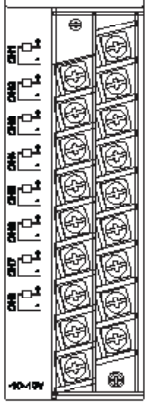
CM1-DA04V/VA



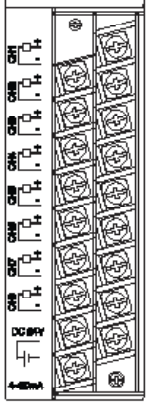
CM1-DA04I



CM1-DA08V/VA



CM1-DA08I



THERMOMETER

• Specification

RTD

Item		CM1-RD04A	CM1-RD04B
Available RTD		Pt100 (JIS C1640-1989, DIN 43760-1980) JPt100 (KS C1603-1991, JIS C1604-1981	Pt1000 (DIN EN 60751)
Range of Temperature Input		Pt100:-200.0° C to 600° C (18.48 to 313.59Ω) JPt100:-200.0° C to 600° C (17.14 to 317.28Ω)	Pt1000:-200.0° C to 600° C (185.20 to 3137.08Ω)
Digital Output		Digital converted value: 0~16,000 (-8000~8000) Detected temperature value: -2000~6000 (First decimal place value x 10)	
Detecting the Broken Wires		3 wires for each channel	
Accuracy		±0.1%(Full Scale)	
Max. Conversion Speed		50ms / 1 channel	
Number of Temperature Input		4 Ch. / 1 module	
Insulation Type		Between input terminal and PLC power: Photo-coupler Between channels: None	
Connection Terminal		18 points Terminal Block	
Occupied I/O Inputs		16	
Current Consumption (mA)	+5V	50	
	+15V	30	
	-15V	10	

- By using the platinum resistance temperature sensor, Pt100, JPt100 or Pt1000, Ni1000, the temperature value (℃ or °F) can be converted into signed 16-bit binary data, which can be processed as a digital value. The temperature can be processed as digital values up to the first decimal place.
- A single module can connect with Pt100, JPt100 or Pt1000, Ni1000 with 4 points and 8 points respectively.
- Each channel can detect the wire disconnection and overrange of the input temperature.

TC

Item		CM1-TC04A
Available TC		K, J, E, T, B, R, S, N-Type
Digital Output		Converted digital value : 0 ~ 16,000(-8000~8000) Converted temperature value : (Range of measured Temp. X10)
Compensation Type		Automatic Compensation
Detecting the Breaking of Wires		Each channel
Accuracy		±{(Full Scale)x0.3%+1° C(Error for base compensation)}
Max. Conversion Speed		50ms / 1 channel
Number of Input Channel		4 channels / module
Connection Terminal		Between input terminal and PLC power: Photo-coupler Between channels: None
Occupied I/O Inputs		18 points Terminal Block
Current Consumption (mA)	+5V	60
	+15V	30
	-15V	10

Range of Input Temperature

Type of TC	Range of Input	Range of Measured Temp.(° C)	Range of Measured Voltage(㎶)
K	KS C1602	-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	0~18612
N		-200.0~1250.0	-3990~43846

- TC module can connect 8 types of thermocouple (K, J, E, T, R, S, B, N) directly and displays converted temperature as Celsius or Fahrenheit (℃, °F).
- The temperature value can be converted into digital value up to the first decimal place.
- TC module converts temperature data into signed 16-bit binary digital value.
- It converts maximum and minimum value of Thermocouple into 0~16,000 (-8,000 ~ 8,000).
- The temperature is displayed from minimum -50 ℃ to maximum +50 ℃, and digital value is displayed from -192 to 16191.
- If minimum and maximum value are configured, TC module converts minimum value into 0(-8,000) and maximum value into 16,000(8,000).
- Each channel of TC module can detect disconnection of Thermocouple and cable and excess of measuring range.
- A single module has 4 channels for thermocouples.
- There is no limitation for the number of TC modules that can be installed on a single base
- The LED lights on in normal condition and blinks at 0.3 second intervals in error condition.

Thermistor

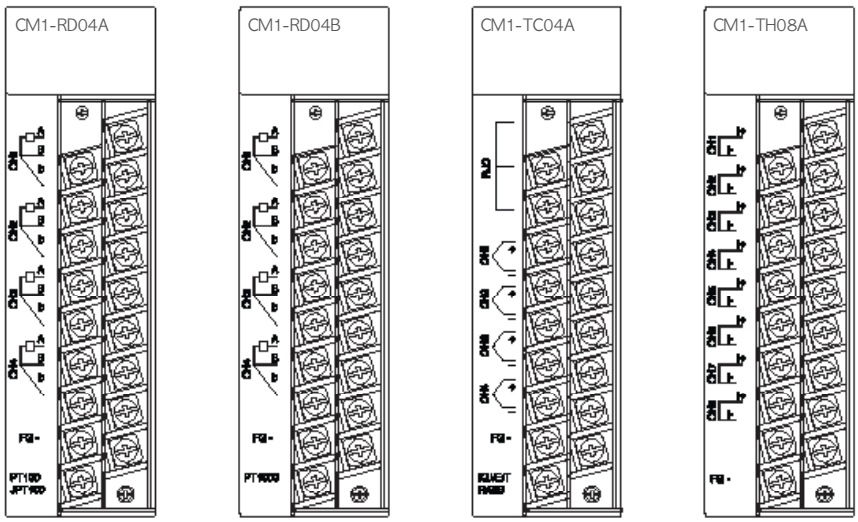
Item		CM1-TH08A
Range of Thermistor Input		NTC TYPE
Range of Thermistor Input Resistance		0~1MΩ
Resolving Power of Thermistor Input Resistance		0 Ω~40kΩ : 1Ω
		40 kΩ~400kΩ : 10Ω
		400 kΩ~1MΩ : 30Ω
Conversion Range	Temp. Conversion value	℃, °F(0.1℃ Resolution)
	Digital value	0~16000, -8000~8000
Resistance-Temperature Calculation		Steinhart-Hart thermistor polynomial
Accuracy		±0.3 %(Full Scale)
Max. Conversion Speed		1 sec(8ch)
Number of Temp. Input		8
Insulation Type		Between CPU and analog arithmetic: Photo-coupler Between Channels: None
Connection Terminal		18 points Terminal Block

※ Note: Please note that the thermistor module cannot be used with CM1-SPA power module.

• Features

- A single module offers a maximum of 8 channels of NTC (Negative Temperature Coefficient) measuring thermistor.
- Temperature data (℃) can be measured down to the first decimal place.
- Each channel can detect the wire disconnection and the excess of measuring range.
- When using the thermistor temperature-resistance table, desired minimum, medium, and maximum temperature (℃) and resistance (Ω) can be set to be measured.

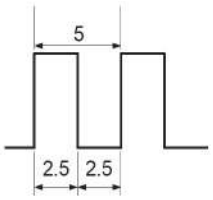
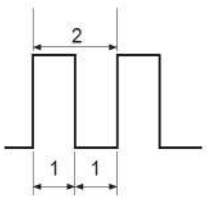
• Appearance



SPECIAL

• Specification

High-Speed Counter

Item		Model			
		CM1-HS02C	CM1-HS02F	CM1-HS02E	CM1-HS02E-24
I/O points		16			
Number of channels		2 Channels			
Count Input Signal	Phase	1 phase input / 2 phase input			
	Level (φA, φB)	5/12/24 V DC 2~5mA		RS-422A Line Drive (5V)	Line Drive (24V)
	Types	PNP Encoder (-Common)	NPN Encoder (+Common)	Line Drive Encoder	
Count	Count Speed	200 kPPS		250 kPPS	
	Count Range	32bit signed binary values (-2147483648~2147483647)			
	Mode	Up/Down Preset Count + Ring Count			
	Min. Count Pulse Period (uS) (Duty ratio 50%)				
Compared Output	Compared Range	32bit signed binary values			
	Comparison	Compared value 〈 Present value Compared value = Present value Compared value 〉 Present value			
External Input	Preset	5/12/24 V DC 2~5mA			
	Enable Count				
External Output	Compared Output	TR (SINK Type) Output, 12 ~ 24V			

- High-Speed Counter module can count a wide range of high-speed pulses (-2147483648~2147483647). The counted value is saved in the buffer memory as signed 32-bit binary value.
- The type of pulse input may be selected.
  - 1 Phase Input 1 Multiplication (Increasing/decreasing count by software setting)
  - 1 Phase Input 2 Multiplication (Increasing/decreasing count by software setting
  - CW (Clockwise) / CCW (Counter Clockwise)
  - 2 Phase Input 1 Multiplication
  - 2 Phase Input 2 Multiplication
  - 2 Phase Input 4 Multiplication
- Count type may also be selected.
  - Linear Count: Ranges from -2,147,483,648 to 2,147,483,647. The count out of range causes the overflow.
  - Ring Count: Counts repeatedly between minimum and maximum value.
- 'Compared Output' function (2 outputs in each channel)
  - This function is used to compare present count value with compared value. The compared output may switch between ON and OFF according to the condition.
- The module provides 'Count' Functions as listed below:
  - Count Latch - Sampling Count - Periodic Pulse Count - Count Disable
- 'Preset' and 'Enable Count' function can be operated by giving external signals to each terminal.

Data Logger

Item		CM1-LG02G
Processing System		Multi-task (High-speed, multiprocessing)
(*) Memory Capacity		4GB (2GB for logging data)
Function Setting		Using CICON software (PLC Loader Program)
CM1-CPU	Connection Method	Connection with RS-232C port or USB at CPU module Passthru connection through communication module (EC Series)
	Configuration	Network setting, logging type, logging cycle, data list, Log file ID (*)
	Monitoring	The number of clients, communication status, logged data transmission status, progress of data logging, CPU status, memory consumption(%), memory overflow (Automatic dump, deletion) status, error information
Communication Function	Comm. Standard	Ethernet 10/100Mbps or 1Gbps
	Protocol	TCP, CIMON HMI Ethernet Protocol
	Access Limitation	Simultaneous connections of up to 5 clients (Up to 3 clients can simultaneously access when using FTP feature)
Comm. Cable		Over CAT.5 STP(Shielded Twisted pair) cable
Max. Distance		Maximum 100m for preliminary physical connection with the network device(host system, hub, router, etc.)
Logging Function	Logging Type	Event Sampling, Trigger Monitoring (*)
	Range of Cycle	1 ~ 327,67 (x L ms) L(*) = Time interval scale (1, 10, 100), The value is fixed at L = 10 in under V2.0
	Range of Deadband	0 ~ 65535(*) The value is fixed at '0' in under V2.0.
	Logging Device Type	X, Y, M, L, K, F, T, TC, TS, C, CC, CS, S, D, Z, R Device in PLC CPU
	Data Type	Bit, Byte, Word, DWord, DDWord
Data Storage		Non-volatile memory (ROM) storage (Does not require a battery)
Data Capacity		24Byte for saving in the device type
Data Managing	Storage Method	Event sampling: Saving data by date/hour Trigger monitoring (*): Saving data by file ID (Including time information)
	Delete Method	Automatic delete: The oldest data is deleted when memory is at capacity (Overflown) Manual delete: All logged data, (*) event sampling log data, (*) trigger monitoring log data
Compatible Host System		SCADA V3.90 and above version including 'Historian' feature Recommended system requirements: 64-bit version of Windows, 8GB RAM
Range of Time Synchronization Frequency		1~32767 (x10 sec)
Error Display		LED, Display error code (LG02G configuration/monitoring window in CICON)
Comm. Status Display		LED, Display error code (LG02G configuration/monitoring window in CICON)
Number of I/O points		16 points (Input 16 points/output 16 points)
Current Consumption		136mA
Weight (g)		113.5

(*) Supported in App V2.0 and above version
(*) The memory has been expanded to 2GB for OS&App extension and additional functionality

- The Data Logger module is the best solution for the field which requires continuity and reliability of data.
- The module is fully applicable to the measuring system.
- The Data Logger module supports the following features :
  - Logging types of Event Sampling and Trigger Monitoring
  - 10/100Mbps, 1Gbps Ethernet communication
  - CIMON-HMI Ethernet Protocol
  - Memory monitoring
  - Transferring the real-time / logged data to the host system

Load Cell

Item	CM1-WG02C	CM1-WG02D	CM1-WG02E
Channel	2 Channel	2 Channel	2 Channel
Load Call	Strain Gauge Method		
Insulation Method	Photo-Coupler		
Power	DC24V		
Load Cell Approval Voltage	Max. 350Ω cell of 4 parallel connection is available for each channel (DC5V ±5%)		
A/D Conversion Method	Sigma Delta		
Max. Output of Load Cell	2mV/V	2mV/V	3.6mV/V
Max. Resolving Power	1/40,000	1/40,000	1/40,000
A/D Conversion Speed (Each Channel)	1,000 times/sec (Standard)	1,000 times/sec (Dynamic measurement)	1,000 times/sec (Wide Range)

Maximum Resolution (Expected Result)

Load Cell Output	CM1-WG02C	CM1-WG02D	CM1-WG02E
1mV/V	1/20000	1/20000	1/11111
2mV/V	1/40000	1/40000	1/22222
3mV/V	Out of measurement range	Out of measurement range	1/33333
3.6mV/V	Out of measurement range	Out of measurement range	1/40000

- WG02C for accurate measurements
  - The exceeded section is not measurable when output of load cell is over 2mV/V
- WG02D for rapid and continuous/dynamic measurements with high accuracy
  - Continuous measurements for an interval of up to 0.2 seconds according to the system
  - Dynamic measurements by getting external 24 DC input
- WG02E is designed to measure the output of load cell up to 3.6mV/V.
- A single module can receive 2 or 4 channels of load cell input.
- Compatible with various 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

Positioning

Item		CM1-PS08N		
Number of Controlled axes		8		
Control Type		Position, Velocity, Velocity /Position, Position/Velocity, Position / Torque (*), Feed		
Control Units		pulse, mm, inch, degree		
Positioning data setting		Using CICON software (PLC Loader Program)		
CM1 CPU	Connection Method	Connection with RS-232C port or USB at CPU module Passthru connection through communication module (EC Series)		
	Configuration	Common, Basic, Expansion, Manual operation, Servo parameter, Operation data, Cam data, Command data (*)		
	Monitoring	Operation data, Trace, Input terminal data, Axis/Driver error data		
Data Storage		Parameter, Operation data saved in flash memory (Does not require a battery)		
Positioning	Positioning Type	Absolute Positioning / Incremental Positioning / Index Degree Positioning		
	Position Command Values	Absolute Movements	Incremental Movements	Interpolation Movements
		-2,147,483,648 ~ 2,147,483,647 (mm)		
		-2,147,483,648 ~ 2,147,483,647 (inch)		
		Multi rotary coordinate system : -2,147,483,648 ~ 2,147,483,647 (degree) Single(1) rotary coordinate system (ABS) : 0 ~ 359.9999 (degree)		
		-2,147,483,648 ~ 2,147,483,647 (pulse)		
	Speed Command Values	1 ~ 2,147,483,647 (mm/min)		
		1 ~ 2,147,483,647 (inch/min)		
		1 ~ 2,147,483,647 (degree/ min)		
		1 ~ 2,147,483,647 (pulse/sec)		
		1 ~ 2,147,483,647 (RPM)		
	ACC/DEC Type	Trapezoidal type, S-shaped type		
	ACC/DEC Time	1 ~ 65,535ms, ACC pattern 4 types / DEC pattern 4 types (Select)		
Manual Operation		Jogging / Inching		
Homing Types		Total 15 types supported by CiA402 Profile		
Interpolation		2~8 axes linear interpolation, 2 axes circular interpolation (*), 3 axes Helical interpolation		
Velocity Unit		Value / Percent (%) (*)		
Torque Unit		Percent (%)		
Absolute Position System		Available (When using the absolute encoder/second battery type servo driver)		
Comm. Period		1 ~ 65,535ms		
Max. Distance		100m between module and servo driver		
Comm. Cable		Over CAT.5 STP(Shielded Twisted pair) cable		
Error Display		LED on the module		
Comm. Status Display		LED on the module		
Number of I/O points		16 points (Input 16 points/output 16 points)		
Current Consumption		136mA		

(*) Supported in App V2.0 and above version

- Direct connection with the servo driver via EtherCAT
- Positioning control of single axes: Position control, Velocity control, Feed control
- Switching control is easily done during the operation.
  - Position / Velocity, Velocity / Position control switch)
- PS08N saves the parameters and operation data into the memory. (No battery is required)
- The absolute positioning system is available with absolute encoder-type servo driver.
- The simultaneous operation for 8 axes by '8 axes Gear In' feature (Speed motivation)

Positioning

Item		CM1-PS02A
Number of Controlled axes		2
Interpolation		2-axes linear interpolation / 2-axes circular interpolation
Control Type		Position, Locus, Velocity, Velocity/Position, Position/ Velocity
Control Units		Pulse, mm, inch, degree
Positioning Data		600 / 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 / Velocity switching control– Relative coordinate method
		Velocity / Position switching control - Absolute / Relative coordinate method
		Locus control – Absolute / Relative coordinate method
	Absolute Coordinate Method	-214748364.8 ~ 214748364.7 ㎛
		-21474.83648 ~ 21474.83647 inch
		0 ~ 359.9999 degree
		-2147483648 ~ 2147483647 pulse
	Relative Coordinate Method	-214748364.8 ~ 214748364.7 ㎛
		-21474.83648 ~ 21474.83647 inch
		-21474.83648 ~ 21474.83647 degree
		-2147483648 ~ 2147483647 pulse
	Velocity / Position switching control (Relative Coordinate)	0 ~ 214748364.7 ㎛
		0 ~ 21474.83647 inch
		0 ~ 21474.83647 degree
		0 ~ 2147483647 pulse
	Velocity / Position switching control (Absolute Coordinate)	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)
	ACC/DEC Type	Trapezoidal type, S-shaped type
	ACC/DEC Time	125 ~ 1X106 PPS/sec
External Connection		40 Pin Connector
Connector for External		40 Pin Male
Max. Output Pulse		1 MPPS (Line Driver Pulse output)
Max. Distance		10 m
Number of Flash Rom		25 times after power ON

- The user can set up to 600 positioning data
- Features for position control and speed control available
- Positioning control of a single axis: linear interpolation, separated/synchronous operation
- Positioning control of two axes: speed control, circular/linear interpolation, separated synchronous operation
- Functions for returning origin point
  - Searching origin point after near zero point is off
  - Searching origin point after reducing speed when near zero point is on
  - Searching origin point by detecting the origin point and upper/lower limit
  - Searching origin point by detecting approximate origin point
- Provides 'Floating Origin Setting function' for positioning from current position to origin completion position.

COMMUNICATION

• Specification

Ethernet

Item		CM1-EC01A	CM1-EC10A	CM1-EC10B
Standard		10BASE-T	10BASE-T 100BASE-TX	100BASE-FX
Transmission Speed		10Mbps	10/100Mbps	10/100Mbps
Transmission Distance		100m	100m	2km
Service Capacity		UDP 9 Services	UDP 16 Services	
		TCP 9 Services	TCP 16 Services	
Transmission Media		UTP/STP Category5	UTP/STP Category5 Auto MDIX	SC, Multi-Mode (1310mm)
SER-VICE	Loader	Yes(UDP)		
	HMI Protocol	Yes(TCP,UDP)		
	MODBUS TCP Sl.	Yes		
	MODBUS TCP Ms.	No	Yes	Yes
	PLC Link(Private Net)	Yes	No	No
	PLC Link(Public Net)	Yes	Yes	Yes
	고속 PLC Link	No	Yes	Yes
	DHCP	No	No	No
	DNP3.0	No	No	No

※ CM1-EC01A will be serviced until 08. 2018.

Item		CM1-EC10C	CM1-EC01DNP/EC04DNP
Standard		10BASE-T 100BASE-TX	10BASE-T
Transmission Speed		10/100Mbps	10Mbps
Transmission Distance		100m	100m
Service Capacity		UDP 16 Services	EC01DNP : Single Host
		TCP 16 Services	EC04DNP : 4 Hosts
Transmission Media		UTP/STP Category5 Auto MDIX	UTP/STP Category5
SER-VICE	Loader	Yes(UDP)	
	HMI Protocol	Yes(TCP,UDP)	No
	MODBUS TCP Sl.	Yes	
	MODBUS TCP Ms.	No	
	PLC Link(Private Net)	No	
	PLC Link(Public Net)	No	
	High-speed PLC Link	No	
	DHCP	Yes	
	DNP3.0	No	Yes

- Follows IEEE 802.3
- ARP, ICMP, IP, TCP, UDP protocols supported
- High-speed linkage to the CIMON PLCS to simultaneously communicate with up to 64 stations
- DNP 3.0 protocol (CM1-EC01DNP, CM1-EC04DNP) supported

Serial

Item		CM1-SC01A	CM1-SC01B	CM1-SC02A
Interface		Ch1: RS232C	N/A	Ch1: RS232C
		N/A	Ch2: RS422/485	Ch2: RS422/485
Communication Mode	HMI	CIMON Protocol (1:n)		
	Loader	CICON Communication		
	MODBUS	MODBUS RTU Mode (Slave / Master)		
	PLC link	Communication between CIMON PLCs		
	User-definition	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		

Item		CM1-SC02C	CM1-SC01DNP
Interface		Ch1: RS232C	Ch1: RS232C
		Ch2: RS232C	N/A
Communication Mode	HMI	CIMON Protocol (1:n)	N/A
	Loader	CICON Communication	N/A
	MODBUS	MODBUS RTU Mode (Slave / Master)	N/A
	PLC link	Communication between CIMON PLCs	N/A
	DNP	N/A	DNP 3.0
	User-definition	Protocol Program	N/A
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	

- Independent operation by channel with 3rd party protocol RS-232C and RS422/485 channels available.
- Reading and writing data through HMI protocol
- Maximum 32 units for HMI communication (RS422/485)
- Modem built in some serial modules to control for PLC in remote field (RS232C)
- A wide range of communication speed (300bps~76800bps)
- RS232C and RS422/485 communication port can be used as independent channel or linked channel.
- 1:1 / 1:N / N:M (in case of RS422/485) communication
- RS422 supporting Full-Duplex, and RS485 supporting Half-Duplex (RS485)
- Default parameter setting for RS485 stands the multi-drop communication channel.
- Built-in MODBUS RTU MASTER helps data acquisition from 3rd party device (MODBUS Slave)
- RS422/485 channels are insulated to prevent noise.

CDMA

Item		CM1-SC02CDMA
Interface		CH : RS232C / CH2 : RS422/485
Communication Mode	HMI	CIMON Protocol (1:n)
	Loader	CICON Communication
	MODBUS	MODBUS/RTU Mode (Slave / Master)
	User-definition	Dissimilar communication
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

Supported CDMA Models / Specifications

Communications Network	Model	Manufacturer	Connection Method	Note
2G (CDMA)	BSM-856	Bellwave	Circuit or Packet	Recommended
	RCU-800	Woojin	Circuit or Packet	
3G(WCDMA)	NTWE-300	NTmore	Packet	Recommended

- CIMON-SCADA fully supports the CDMA (WCDMA) communication.
- Packet connection method is only compatible with the CICON loader protocol. (Other protocols do not support the packet method.)
- Communication with CDMA Packet / Circuit
- User-selectable CDMA communication network
- Easy parameter setting through a dialog box
- Utilizing user program for connection establishment and termination
- Reading and writing data through HMI protocol
- Maximum 32 units for Multi-drop communication
- A wide range of communication speed (300bps~76800bps)
- 1:1 / 1:N / N:M (in case of RS422) communication
- Feature-rich to diagnose errors (Self-diagnosis / Loop-back diagnosis)

CIMON-Net

Item	CM1-CN01M(Master)	CM1-CN01S(Slave)
Network Type	CIMON-NET	
Interface	CANbus	
Standard	ISO11898	
Comm. Method	Bus	
Media Access	POLL	
Max. Number of Slave per Segment	63 stations	
Max. I/O Data	2800Byte	512 Byte
Parameter Setting	CICON (Loader program)	

Transmission Distance and Speed				
BUS length(m)	0~40	40~300	300~600	600~1000
Cross section(mm2)	0.25~0.34	0.34~0.6	0.5~0.6	0.75~0.8
Bit rate(kbps/s)	1000kbps/40m	500kbps/200m	100kbps/500m	10kbps/1km

Cable Standard

Characteristic of Cable	Cable #1	Cable #2
Impedance	108~132Ω (f=3 to 20MHz)	68~102Ω (f〉800KHz)
Electrostatic Capacity	〈 30nF/Km2	〈 70nF/Km2
Conductor Cross Section	≥0.34mm²(22AWG)	≥0.34mm²(22AWG)

Transmission Distance per Speed

Baud (kbps)	50	125	250	500	1000
Cable #1(m)	1000	500	250	100	40
Cable #2(m)	500	250	100	40	-

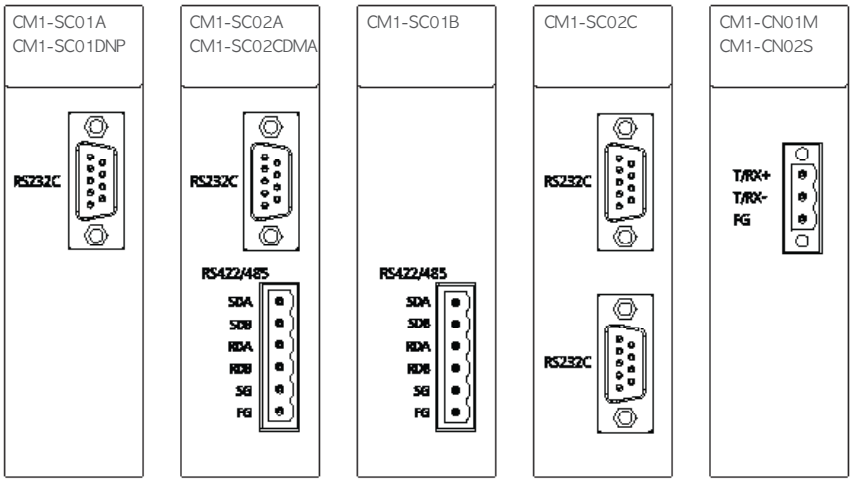
- CIMON-NET exchanges real-time data with Remote through the CANbus hardware.
- Maximum 63 slave stations available
- Maximum 1400 Bytes for each I/O data
- Maximum 16 I/O communication blocks
- Flexible communication speed (10K/20K/50K/100K/125K/250K/500K/1000Kbps)
- Auto Scan function for easy to find slave modules
- Built-in LED to easily monitor network conditions
- Utilizing the scan program to conveniently monitor network conditions
- Controlling communication flow (Start/Stop) within the scan program
- Communication configuration integrated into CICON software

BACnet

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

- 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.
- Supports BACnet which is the standard for building automation system (KS X 6909)
- Functionality of BACnet class 3 servers
- Uses Ethernet for physical communication layer (BACnet IP)

• Appearance



EXPANSION

• Specification

Expansion

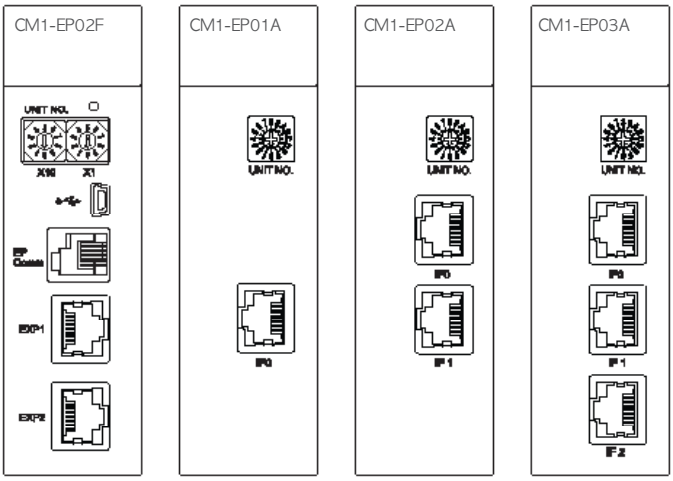
Item	CM1-EP02F
Number of Expansion Port	2
Standard	10/100 BASE-T/TX
Transmission Speed	10/100 Mbps
Comm. Method	Half Duplex
Max. Distance (Node - Node)	100m
Max. Base Expansion	31 (Depending on the specifications of CPU)
Reset Button	O (Push button)
Loader Port	O (Mini-B USB)

Item	CM1-EP01A	CM1-EP02A	CM1-EP03A
Number of Expansion Port	1	2	3
Standard	10 BASE-T		
Transmission Speed	10 Mbps		
Comm. Method	Half Duplex		
Max. Distance (Node - Node)	100m		
Max. Base Expansion	16		
Reset Button	X		
Loader Port	X		

• Features

- It is not recommended to mount the communication module on the base. If done so, the performance of the system or the network can be slowed due to communication delays.
- EP02F is suitable to build the redundancy system or install the communication / special module on the base.
- Some special modules such as positioning module (CM1-PS02A) cannot mounted on the base.
- Expansion rank of each base can be differentiated by rotary switches.
- Depending on the specifications of the CPU, CIMON PLC can be expanded up to 16 bases.
- Follows 10/100 Base-T/TX standard with high-speed communication (10/100Mbps)
- Maximum distance between the expanded segments is 100m

• Appearance



BASE

• Specification

Base

Model	I/O Slot	Dimension(mm)	Weight(g)
CM1-BS03A	3 slot	183 x 109	240g
CM1-BS04A	4 slot	215 x 109	290g
CM1-BS05A	5 slot	248 x 109	330g
CM1-BS08A	8 slot	344 x 109	465g
CM1-BS10A	10 slot	409 x 109	545g
CM1-BS12A	12 slot	473 x 109	615g

※ Please do not mount the Redundancy Power module (CM1-SPR) on the base.
It can cause damage or malfunction in the system.

Base for Redundancy

Model	I/O Slot	Dimension(mm)
CM1-BS05S	5 slot	330 X 109
CM1-BS08S	8 slot	426 X109
CM1-BS10S	10 slot	491 X 109

※ On the redundancy base, a Redundancy Power module (CM1-SPR) must be installed.
The installation of a general power module may cause a malfunction in the system.

CIMON NET

• Specification

CIMON-Net RIO

Item		Input		Output
		DC(Sink/Source)		Relay
Model		RC-XD32A	RC-XD16A	RC-YR16A
Number of Points		32	16	16
Power		DC24V		
I/O Voltage / Current		DC24V / 7mA		DC24V / 2A AC220 / 2A
Response Time	Off→On	3ms and below		10ms and below
	On→Off	3ms and below		5ms and below
Common Method		16 points / COM		
Current Consumption		300mA		500mA
External Connection		Terminal Connector		
Status Display		LED ON when input ON		LED ON when output ON
Insulation	Communication	Between Comm. and inner circuit: Photo-Coupler		
	I/O	Between I/O and inner circuit: Photo-Coupler		
Inner Circuit		Sink/Source		

Item		Mixed Module	
		DC(Sink/Source)	Transistor(Sink)
Model		RC-XY32DT	
Number of Points		16	
Power		DC24V	
I/O Voltage / Current		DC24V / 7mA DC24V / 0.5A	
Response Time	Off→On	3ms and below	2ms and below
	On→Off	3ms and below	2ms and below
Common Method		32 points / COM	
Current Consumption		400mA	
External Connection		Terminal Connector	
Status Display		LED ON when input ON	LED ON when output ON
Insulation	Communication	Between Comm. and inner circuit: Photo-Coupler	
	I/O	Between I/O and inner circuit: Photo-Coupler	
Inner Circuit		Sink/Source	Sink

Communication Standard

Item	Specification
Standard	ISO11898
Interface	CAN BUS
Media Access	POLL
Comm. Method	Bus
Cable	Twisted Pair Shielded Cable
Transmission Distance	1000 m (10 kbps)
	500m (125 kbps)
	100m (500 kbps)
	40m (1000kbps)
Max. Number of Nodes	63 stations
Max.I/O Data	8 byte

• Features

- Real-time control of diffused I/O
- Supports numerous I/O of 16-point and 32-point units
- Available to build up to 64 stations
- Cost-effective for installation and maintenance
- Easy system set-up with repair and maintenance
- Simple communication programming
  – Special program through dialog form
  –Auto-scan function offered by CICON software (Auto-searching slaves in the network)
- Combination of CPU, power, I/O, communication function in one module provides a convenient all-in-one solution
- Simple monitoring for communication condition of remote device
- Auto Baud Rate function reduces extra settings for communication speed
- Supportsvariouscommunicationspeed(10K/20K/50K/80K/100K/125K/250K/500K/1000Kbps)
- Prevents noise from the line by communication insulation
- LED for diagnostic functions (Power, Module, Line condition)

Accessory

CM0-DM
Dummy module for empty slot

CM0-TB32M
32-point terminal block

CM1-FM512
Base cap

CM0-BAT
CPU battery for data backup

CM0-CBL15/30
Loader cable

CM0-CBHE05/10/15
Expansion cable for XP/CP series

CM0-SCB15M
Cable for PLC-S I/O 16/16-point module

CM0-SCB15E
Cable for PLC-S I/O 32-point module

CM0-SCB15I
Cable for PLC-CM1I/O 32-point module

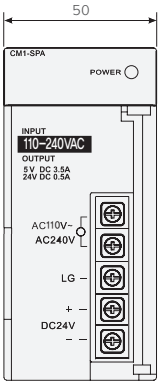
* Terminal blocks and cables provided by CIMON are compatible with those provided by I/O LINK.
(CM0-TB32M and CM0-SCB15I can be each connected with cable and terminal block of I/O LINK.)
※Please refer to the connection diagram for connection number.

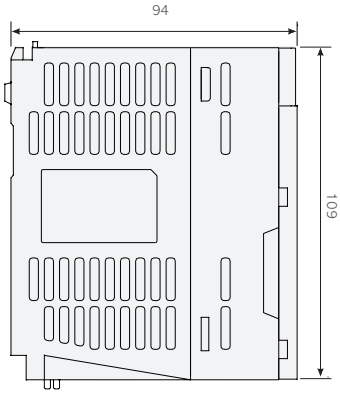
Compatible Cable

Cable Model	PLC Model	Terminal Block
CM0-SCB15M	CM3-SP32MDT	CM0-TB32M
	CM3-SP32EDT	
CM0-SCB15E	CM3-SP32EDO	
	CM3-SP32EOT	
CM0-SCB15I	CM1-YT32B	
	CM1-HS02C/F	
	CM1-HS02E	

DIMENSIONS

• XP / CP

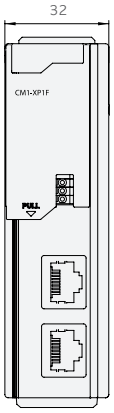


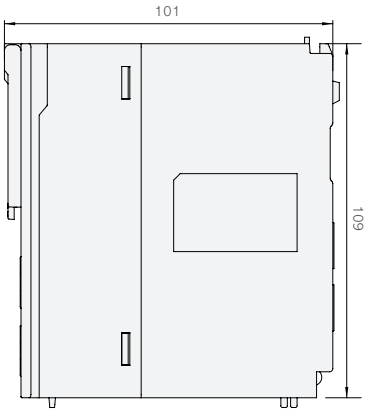


Power Module

Unit: mm

Model	Weight
CM1-SP*	278g
CM1-SP2B	270g

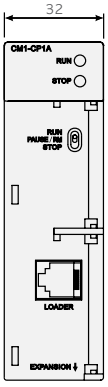


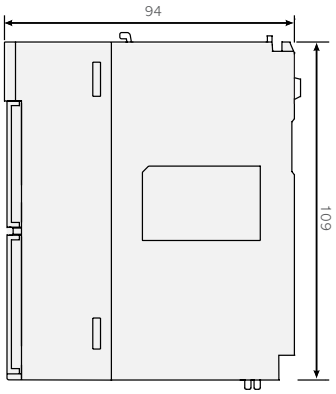


CPU Module

Unit: mm

Model	Weight
CM1-XPnF/1S	150g

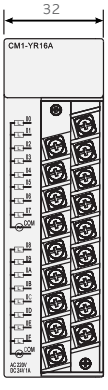


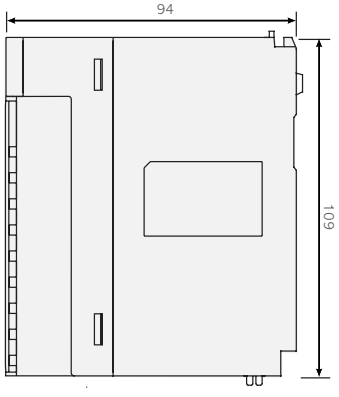


CPU Module

Unit: mm

Model	Weight	Model	Weight
CM1-XP*E	138g	CM1-XP*A/1R	157g
CM1-CP3E	138g	CM1-CP4E	127g
CM1-CP4F	137g	CM1-CP3A/B	135g
CM1-CP3U	153g	CM1-CP3P	139g
CM1-CP4A/B/C	130g	CM1-CP4D	133g
CM1-CP4U	137g		





I/O Module

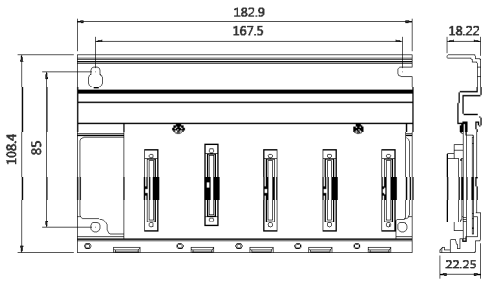
Unit: mm

Model	Weight	Model	Weight
CM1-YT16*	159g	CM1-DA08I	219g
CM1-YT32*	122g	CM1-DA08V	197g
CM1-EC01*	111g	CM1-RD04A	194g
CM1-AD04VI	193g	CM1-TC04A	200g
CM1-AD08I	195g	CM1-SC***	118g
CM1-AD08V	194g		

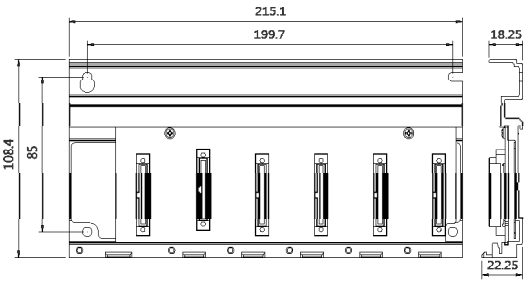
Comm. Model and other model's weight is same as IO model

• XP/CP Series Base

Unit: mm



CM1-BS03A



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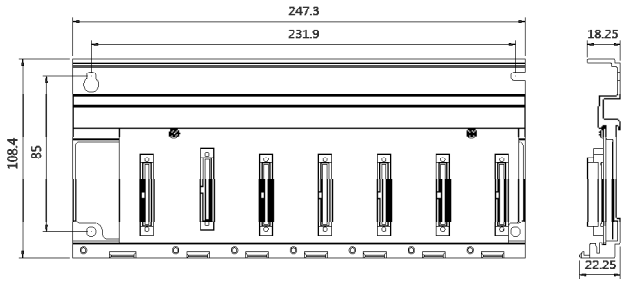

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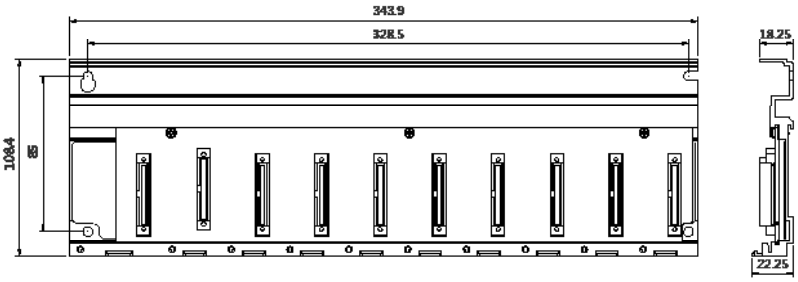

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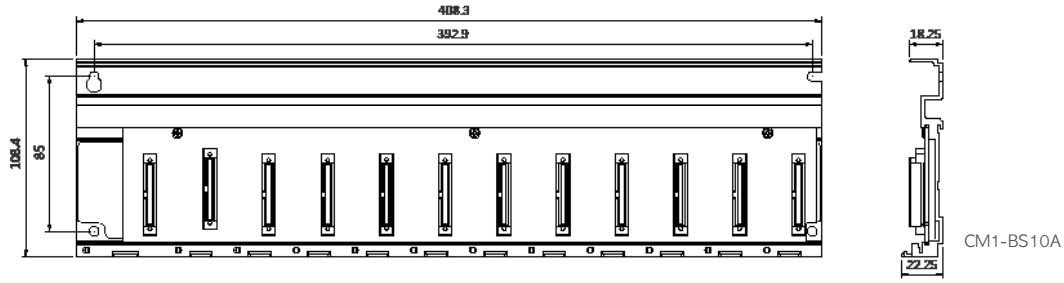
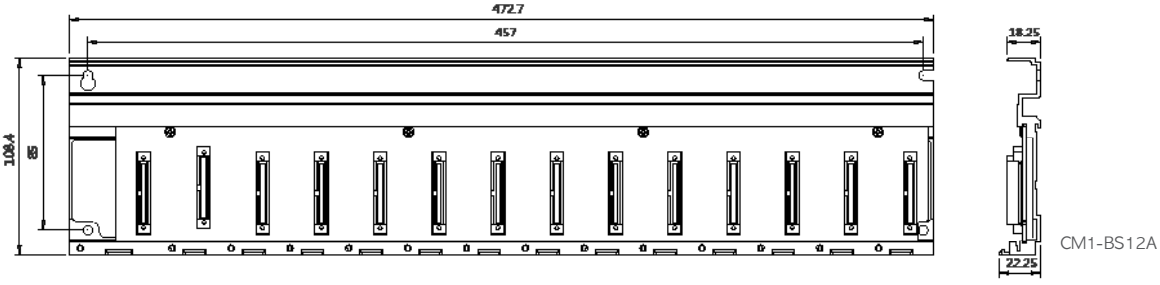


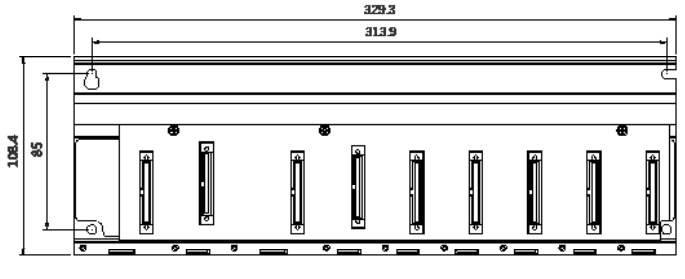
CM1-BS10A



CM1-BS12A

• Redundancy Base

Unit: mm



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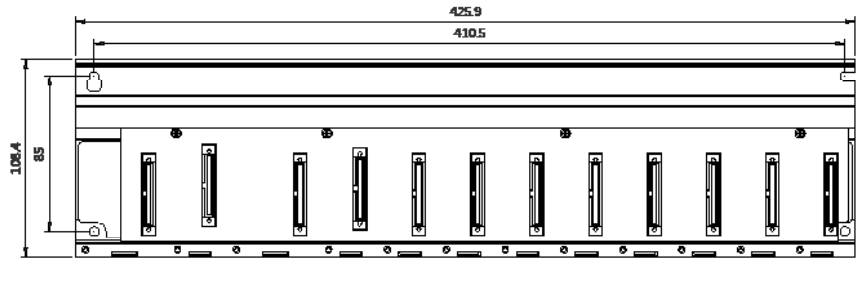

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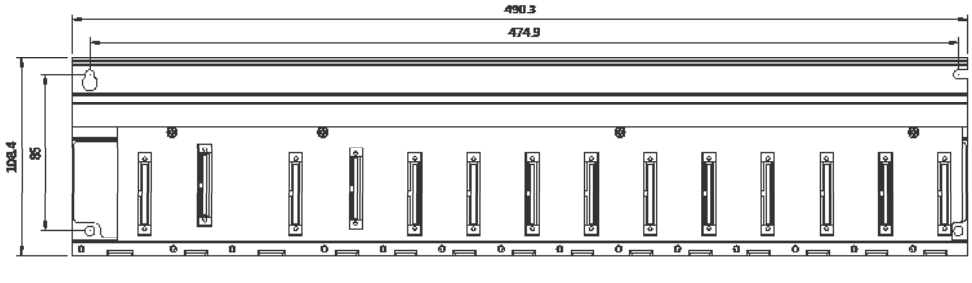
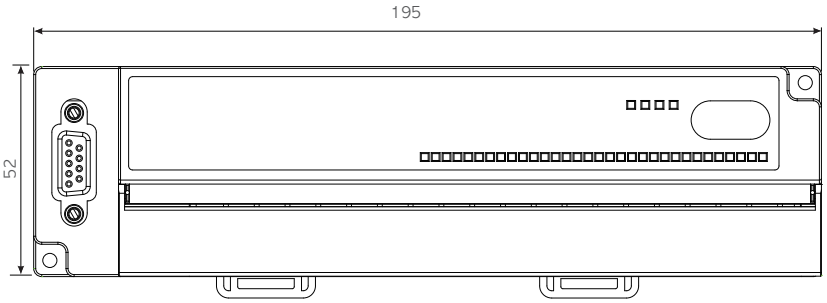
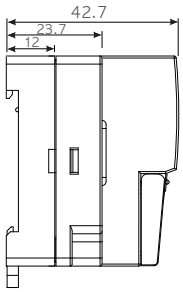
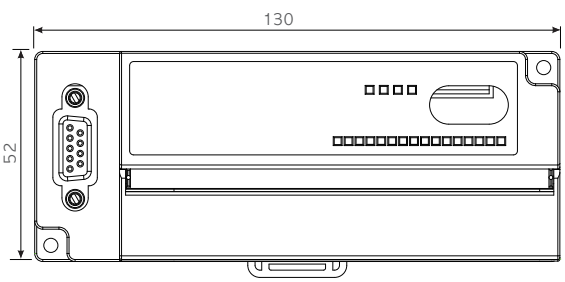


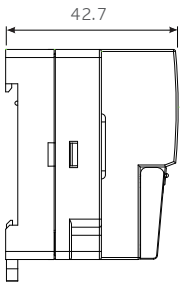
CM1-BS10S

• CIMON NET









PLC GENERAL SPECIFICATION

<table>
<tr><th>Item</th><th colspan="4">Specification</th><th>Standard</th></tr>
<tr><td>Operating Temperature</td><td colspan="4">-10℃ ~ 65℃</td><td>-</td></tr>
<tr><td>Preserving Temperature</td><td colspan="4">-25℃ ~ 80℃</td><td>-</td></tr>
<tr><td>Operating Humidity</td><td colspan="4">Relative Humidity 5 ~ 95%, Avoid condensation</td><td>-</td></tr>
<tr><td>Preserving Humidity</td><td colspan="4">Relative Humidity 5 ~ 95%, Avoid condensation</td><td>-</td></tr>
<tr><td rowspan="8">Inner Vibration</td><td colspan="4">Intermittent Vibration</td><td>IEC 61131-2</td></tr>
<tr><td>Frequency (Hz)</td><td>Acceleration (㎨)</td><td>Amplitude (mm)</td><td>Number</td><td rowspan="7">IEC 61131-2</td></tr>
<tr><td>5≤f〈9Hz</td><td>-</td><td>1.75mm</td><td rowspan="2">10 times for each direction
X, Y, Z</td></tr>
<tr><td>9≤f≤150Hz</td><td>9.8m/s^2{1G}</td><td>-</td></tr>
<tr><td colspan="4">Continual Vibration</td></tr>
<tr><td>Frequency (Hz)</td><td>Acceleration (㎨)</td><td>Amplitude (mm)</td><td>Number</td></tr>
<tr><td>5≤f〈9Hz</td><td>-</td><td>3.5mm</td><td rowspan="2">10 times for each direction
X, Y, Z</td></tr>
<tr><td>9≤f≤150Hz</td><td>4.9m/s^2{0.5G}</td><td>-</td></tr>
<tr><td>Inner Impact</td><td colspan="4">Maximum impact acceleration: 147m/s2{15G}
Impression time: 11ms
Pulse wave: a sine half-wave pulse (3 times for each direction ±X, ±Y, ±Z)</td><td>IEC 61131-2</td></tr>
<tr><td rowspan="6">Inner Noise</td><td>Square Wave Impulse Noise</td><td colspan="3">±2kV</td><td>CIMON Internal Test Standard</td></tr>
<tr><td>Electromagnetism Discharge</td><td colspan="3">Voltage: ±4kV(Contact Discharge), ±8kV(Air Discharge)</td><td>IEC 61131-2
IEC 61000-4-2</td></tr>
<tr><td>Radiation EMF Noise</td><td colspan="3">80~1,000 MHz, 10V/m</td><td>IEC 61131-2
IEC 61000-4-3</td></tr>
<tr><td rowspan="4">FAST Transient Burst Noise</td><td>Power, CPU</td><td>3kV</td><td rowspan="4">IEC 61131-2
IEC 61000-4-4</td></tr>
<tr><td>Digital/Analog I/O module (AC)</td><td>2kV</td></tr>
<tr><td>Digital/Analog I/O module (DC)</td><td rowspan="2">1kV</td></tr>
<tr><td>Communication module</td></tr>
<tr><td>Ambient Conditions</td><td colspan="4">No corrosive gas and no dust</td><td></td></tr>
<tr><td>Operating Altitude</td><td colspan="4">2,000m or less</td><td></td></tr>
<tr><td>Pollution Level</td><td colspan="4">2 or less</td><td></td></tr>
<tr><td>Cooling System</td><td colspan="4">Natural Air Cooling</td><td></td></tr>
</table>

CIMON PLC LINE-UP

Item		Model	Specification
Redundancy	CPU	CM1-XP1R	128K step / 8192 pts / RTC / USB Port / Floating point arithmetic / Expandable / Redundancy
		CM1-XP1S	128K step / 8192 pts / RTC / USB Port / Floating point arithmetic / Expandable/ SFC Language / F/W Upgrade / Ring expansion(Electricity) / RS232 / Redundancy
	Redundancy Communication	CM1-RC01A	10 Mbps Redundancy Data Sync
		CM1-RC10A	100 Mbps Redundancy Data Sync
	Redundancy MMI	CM1-RM01B	Redundancy Setting MMI (Primary/Secondary, test button)
	Expansion	CM1-EP03A	10 Mbps CPU Redundancy expansion, Built-in 3Ports Hub
	Redundancy Base	CM1-BS05S	5 slot power expansion base
		CM1-BS08S	8 Slot power expansion base
		CM1-BS10S	10 slot power expansion base
	Redundancy Power	CM1-SPR	Redundancy power supply 5V 3A / +15V 0.5A / -15V 0.2A / 24V 0.2A AC100V~240V
		CM1-RPW	Redundancy power supply monitoring module
CPU	High Functional CPU	CM1-XP1A	128K step / 75 ns / 8192 pts / RTC / USB Port / Floating point arithmetic / Expandable
		CM1-XP2A	64K step / 75 ns / 4096 pts / RTC / USB Port / Floating point arithmetic / Expandable
		CM1-XP3A	64K step / 75 ns / 2048 pts / RTC / USB Port / Floating point arithmetic / Expandable
		CM1-XP1E	128K step / 8192 pts / RTC / USB Port / Floating point arithmetic / Expandable/ SFC Language / F/W Upgrade
		CM1-XP2E	128K step / 4096 pts / RTC / USB Port / Floating point arithmetic / Expandable/ SFC Language / F/W Upgrade
		CM1-XP3E	128K step / 2048 pts / RTC / USB Port / Floating point arithmetic / Expandable / SFC Language / F/W Upgrade
		CM1-XP1F	128K step / 8192 pts / RTC / USB Port / Floating point arithmetic / Expandable/ SFC Language / F/W Upgrade / Ring expansion(Electricity) / RS232 / Built-in Ethernet
		CM1-XP2F	128K step / 4096 pts / RTC / USB Port / Floating point arithmetic / Expandable/ SFC Language / F/W Upgrade / Ring expansion(Electricity) / RS232 / Built-in Ethernet
		CM1-XP3F	128K step / 2048 pts / RTC / USB Port / Floating point arithmetic / Expandable / SFC Language / F/W Upgrade / Ring expansion(Electricity) / RS232 / Built-in Ethernet
	CPU	CM1-CP3E	64K step / 1,536 pts / RTC / USB Port / Floating point arithmetic / Expandable/ SFC Language / F/W Upgrade / RS232
		CM1-CP3A	32K step / 1024 pts / Expandable
		CM1-CP3B	32K step / 1024 pts / RTC / Expandable
		CM1-CP3P	32K step / 1024점 / RTC / Expandable / ROM PACK
		CM1-CP3U	32K step / 1024 pts / RTC / USB Port / Expandable
		CM1-CP4E	16K step / 384 pts / RTC / USB Port / SFC Language / RS232 / Not expandable
		CM1-CP4F	16K step / 384 pts / RTC / USB Port / SFC Language / RS232 / RS422(485) / Not expandable
		CM1-CP4A	16K step / 384 pts / Not expandable
		CM1-CP4B	16K step / 384 pts / RTC / Not expandable
		CM1-CP4C	16K step / 384 pts / RTC / RS485 / Not expandable
		CM1-CP4D	16K step / 384 pts / RTC / RS485 / Not expandable
		CM1-CP4U	Maximum impact acceleration: 147m/s2{15G} Impression time: 11ms Pulse wave: a sine half-wave pulse (3 times for each direction ±X, ±Y, ±Z)

Item		Model	Specification
Power	Power Supply	CM1-SPA	Input: AC 100-240VAC / 40W / Output: 5V 3.5A, 24V 0.3A
		CM1-SPC	Input: AC 100-240VAC / 60W / Output: 5V 3.5A, +15V 0.5A, -15V 0.3A, 24V 0.3A
		CM1-SP2B	Input: DC 19-28VDC/ 50W / Output : 5V 3.5A, +15V 0.5A, -15V 0.3A
		CM1-SPW	Input: DC 70-110VDC/ 60W / Output : 5V 3.5A, +15V 0.5A, -15V 0.3A, 24V 0.3A
Expanded Communication	Expansion	CM1-EP02F	100Mbps, Ring Expansion, Electricity 2 Port
		CM1-EP01A	10Mbps, Electricity 1 Port
		CM1-EP02A	10Mbps, Electricity 2 Port
		CM1-EP03A	10Mbps, Electricity 3Port, CPU for Redundancy
Base	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
Thermometer	RTD	CM1-RD04A	Pt100, JPt100, 4 Ch
		CM1-RD04B	Pt1000, Ni1000, 4 Ch
	TC	CM1-TC04A	Thermocouple (K, J, E, T, B, R, S, N), 4 Ch
	Thermistor	CM1-TH08A	NTC type Thermistor, 8 Ch
Digital I/O	Input	CM1-XD16E	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-XD32B	DC 24V Input / 32 pts / Sink & Source / ON Voltage 15V / OFF Voltage 12V
		CM1-XD32E	DC 24V Input / 32 pts / Sink & Source / ON Voltage 19V / OFF Voltage 11V
		CM1-XD64C	DC 24V Input / 64 pts / Sink & Source / ON Voltage 19V / OFF Voltage 11V
		CM1-XD64E	DC 24V Input / 64 pts / Sink & Source / ON Voltage 19V / OFF Voltage 11V
	Output	CM1-YR16E	Relay Output / 16 pts / 2A
		CM1-YT16E	TR Output / 16 pts / 0.5A SINK
		CM1-YT16F	TR Output / 16 pts / 0.5A SOURCE
		CM1-YT32E	TR Output / 32 pts / 0.2A SINK
		CM1-YT32F	TR Output / 32 pts / 0.2A SOURCE
		CM1-YT64A	TR Output / 64 pts / 0.2A SINK
		CM1-YT64E	TR Output / 64 pts / 0.2A SINK
	I/O	CM1-XY16E	DC 24V Input 8 pts / Relay Output 8 pts 2A
Analog I/O	AI	CM1-AD08V	AD 14 bit / 8 ch / Voltage Input
		CM1-AD08I	AD 16 bit / 8 ch / Current Input
		CM1-AD16VI	AD 14 bit / 16 ch / Voltage, Current Input for common use
		CM1-AD04VI	AD 14 bit / 4 ch / Voltage, Current Input for common use
		CM1-AD04W	AD 16 bit / 4 ch / Voltage, Current Input for common use, Insulation between channels
Special	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 (4~20mA)
		CM1-DA08I	DA 14 bit / 8 ch / Current output (4~20mA)

Item		Model	Specification
Special	High-speed Counter	CM1-HS02C	2 ch, 200kpps, Encoder PNP Open Collector (-Common)
		CM1-HS02E	2 ch, 250kpps, Line Drive Encoder
		CM1-HS02F	2 ch, 200kpps, Encoder NPN Open Collector (+Common)
	Loadcell	CM1-WG02C	2 ch, Strain gauge Type, Resolution 1/40000, 2mV/V Input (Standard Type)
		CM1-WG02D	2 ch, Strain gauge Type, Resolution 1/40000, 2mV/V Input (Dynamic Type)
		CM1-WG02E	2 ch, Strain gauge Type, Resolution 1/40000, 3.6mV/V Input (Wide Range)
	Data Logger	CM1-LG02G	10/100/1000BaseT(Mbps), TCP/IP CIMON HMI Protocol
	Positioning	CM1-PS02A	2 axes, Linear/Circular Interpolation, 1Mpps, Line Driver Output
		CM1-PS08N	EtherCAT, 8-axes positioning
Communication	Serial (RS232C / 422/485)	CM1-SC02A	Port 1 : RS232C / Port 2 : RS422/485
		CM1-SC01A	Port 1 : RS232C / Port 2 : None
		CM1-SC01B	Port 1 : None / Port 2 : RS422/485
		CM1-SC02C	Port 1 : RS232C / Port 2 : RS232C (Null Modem)
	Ethernet	CM1-EC01A	10Base T(10Mbps), UDP/IP 9 Service, TCP/IP 9 Service
		CM1-EC10A	100Base TX (100Mbps), UDP/IP 16 Service, TCP/IP 16 Service
		CM1-EC10B	100BASE FX(100Mbps, Optical communication), UDP/IP 16 Service, TCP/IP 16 Service
		CM1-EC10C	100Base TX (100Mbps), UDP/IP 16 Service, TCP/IP 16 Service, DHCP (Dynamic IP)
	DNP3.0	CM1-SC01DNP	DNP3.0 Protocol, Level 2 Slave, RS232C 1 Port
		CM1-EC01DNP	DNP3.0 Protocol, Level 2 Slave, 10BaseT (10Mbps),TCP/IP, UDP/IP
		CM1-EC04DNP	DNP3.0 Protocol, 4Hosts, 10BaseT (10Mbps),TCP/IP, UDP/IP
	BACnet	CM1-BN01A	BACnet / IP, Class 3 Slave, 10BaseT (10Mbps)
	CDMA	CM1-SC02CDMA	CDMA(Packet or Circuit Mode), WCDMA (3G, Packet Mode) Modem communication, RS232C RS422/485 Wire-Wireless
	CIMON-NET	CM1-CN01M	CIMON-Net Master, CANbus, I/O Capacity: 1,400Byte
		CM1-CN01S	CIMON-Net Slave, CANbus, I/O Capacity: 255 Byte

CIMON-NET

Item		Model	Specification
CIMON-NET	I/O	RC-XY32DT	Input/Output, DC24V 16 pts(Sink/Source), 0.5Amp, TR Sink 16 Pts, 0.5Amp
	Input	RC-XD16A	Input, DC24V 16 pts (Sink/Source)
		RC-XD32A	Input, DC24V 32 pts (Sink/Source)
	Output	RC-YR16A	Output, RELAY 16 pts, AC220V 2Amp

Accessory

Item	Model	Specification
Dummy	CM0-DM	Dummy module (Replacement for empty slot of the base)
MEMORY	CM1-FM512	Flash memory pack for CM1-CP3P (512 kbytes)
Loader Cable	CM0-CBL15/30	Programming cable (CICON software, RJ11 ↔ DB9 Connector 1.5/3.0 m)
Terminal Block	CM0-TB32M	Screw Type, 32 pts, Terminal block (Used with CM0-SCB15x)
Wiring Cable	CM0-SCB15I	Used with CM0-TB32M / CM1-YT32B, HS02C, HS02E module wiring cable
Dust-proof Cover	CM0-BSCVR	Dust-proof cover for empty slot of XP/CP Series Base (Prevents dust or debris)
Battery	CM0-BAT	Battery Ass'y for XP/CP Series CPU (3V Lithium, CR 1/2 AA)

CICON PERFORMANCE

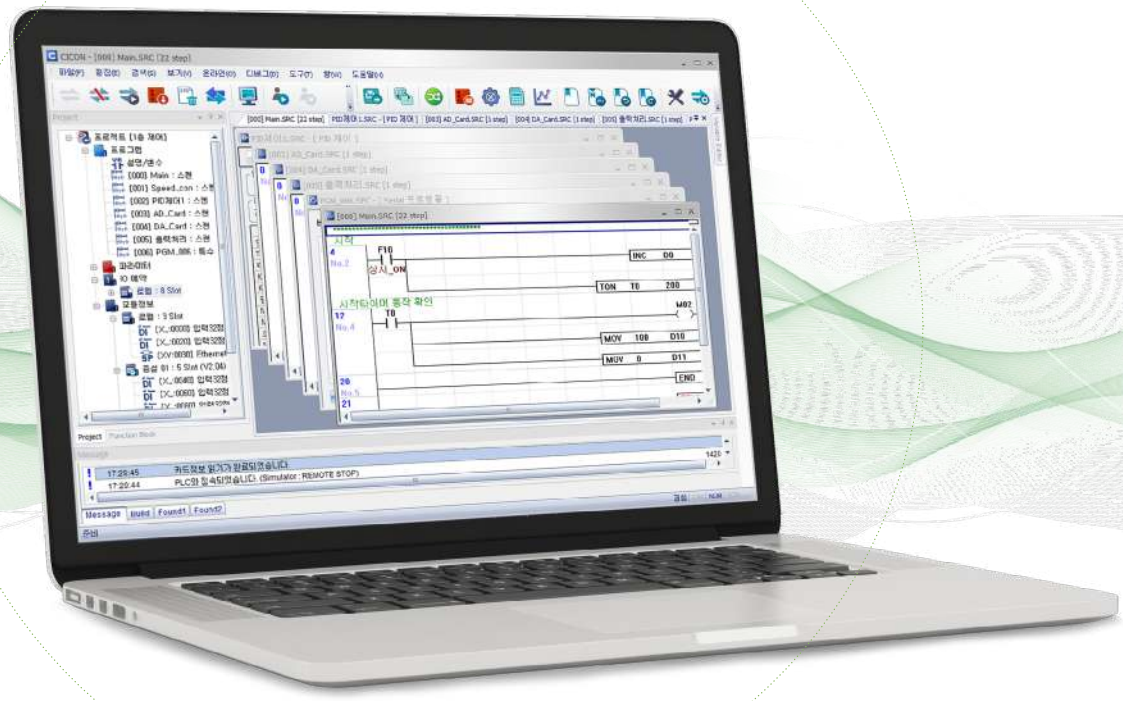
CICON is a PLC program editor/compiler that loads user-created programs directly to the PLC. The software comes with a rich set of features and provides an easy, intuitive interface to save time on development and maximize system performance.

Variety of PLC connection

Supports multiple connection interfaces such as RS232/422/485, USB cable, and Ethernet

Easy PID control

Convenient functions such as managing historical data, trends, screen shots, etc.



PLC permission mode

Provides security function to protect programs from unauthorized users (Supported in CICON software V7.00 or above)

PLC simulator

Virtually run scan programs and special card settings without having to connect the PLC to the Software

FB

Function Block (FB) Language

The FB language can be used with all CIMON PLC/CPU models. Features included are "FB Extension" mode for advanced programming, "System Library" for controlling special cards, "Backup/Recovery" for safe programming and a user manual which includes examples and instructions to ease the programming experience. (Supported in CICON software V6.00 or above)

Backup and recovering PLC information

CICON software lets the user manage the PLC programs safely and easily with auto-backup and cloning functionality. With Upload/Download project, Upload/Download SD card, and Upload/Download Special Card Initialization Program features, the user will be able to backup or restore the PLC information.

HMI

HMI Protocol

With the HMI protocol, communication can be established between CICON, PLC Simulator, and SCADA or CICON and Xpanel. Test program performance by simply configuring communication settings without worrying about converting CIMON SCADA or CIMON Xpanel projects.

Variety of themes

There are at least 100 themes for the software.

Providing wide assortment of PLC languages

Programs can be designed with PLC languages such as IL, LD, SFC, or FB. (The SFC language cannot be used in XPnA and CPnA model.)

Quick and easy programming

CICON software provides functions to help save program development time. Contacts can be increased automatically by clicking and dragging on the ladder. In the variable editor, the device address can quickly be edited in the additional edit menu.

Interactive dialog

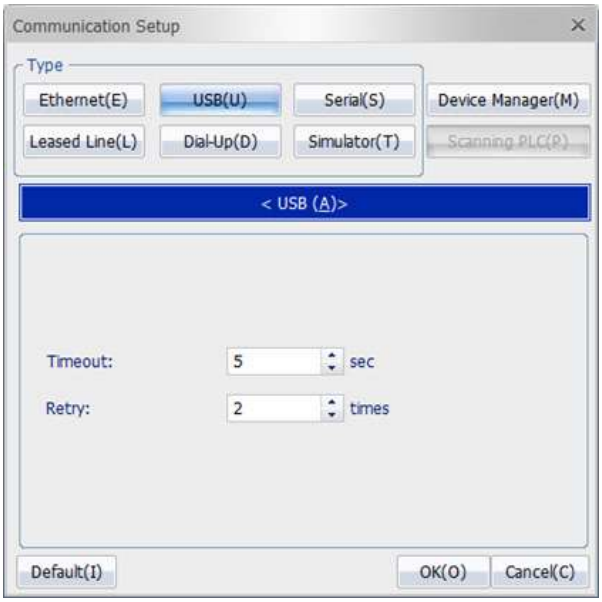
Provides interactive dialogs for various functionalities such as configuring communication settings, positioning, PID control, Special card settings, etc.

CICON

• Creating a project

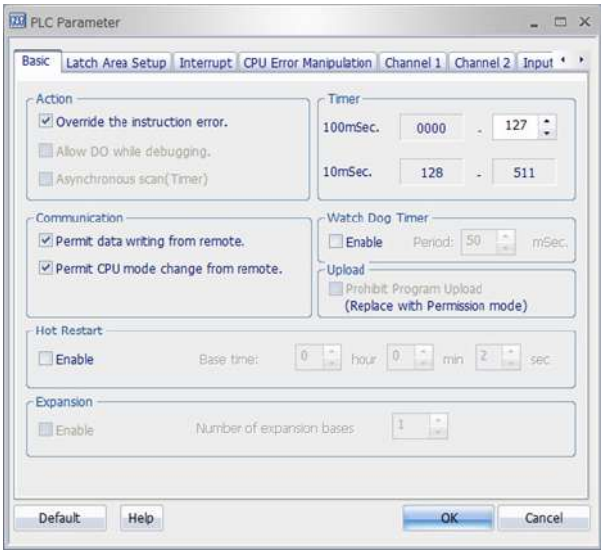
• Communication Setup

Serial / Dial-up Modem / Leased Line /
Ethernet / USB cable / simulator connection



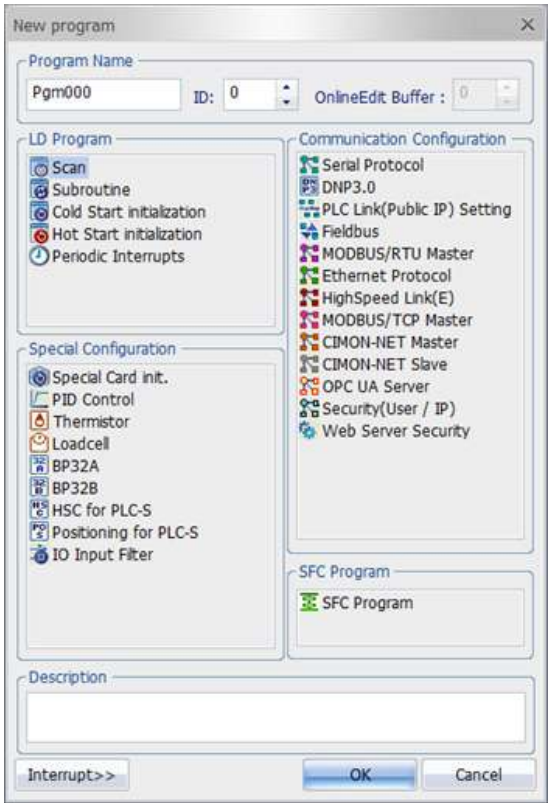
• PLC Parameter

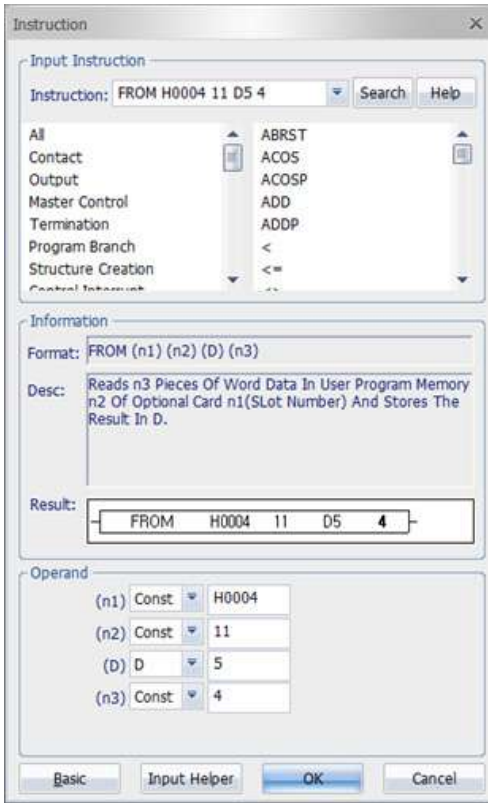
Basic operation / Latch Area Setup / CPU error
manipulation / communication port setup

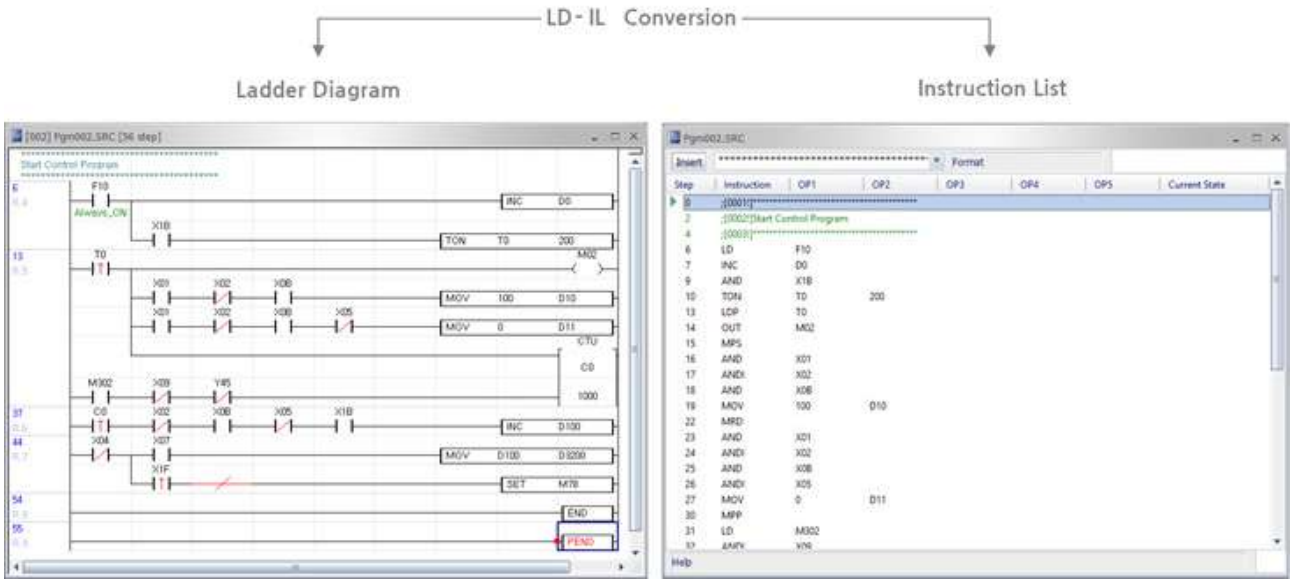


• PLC program

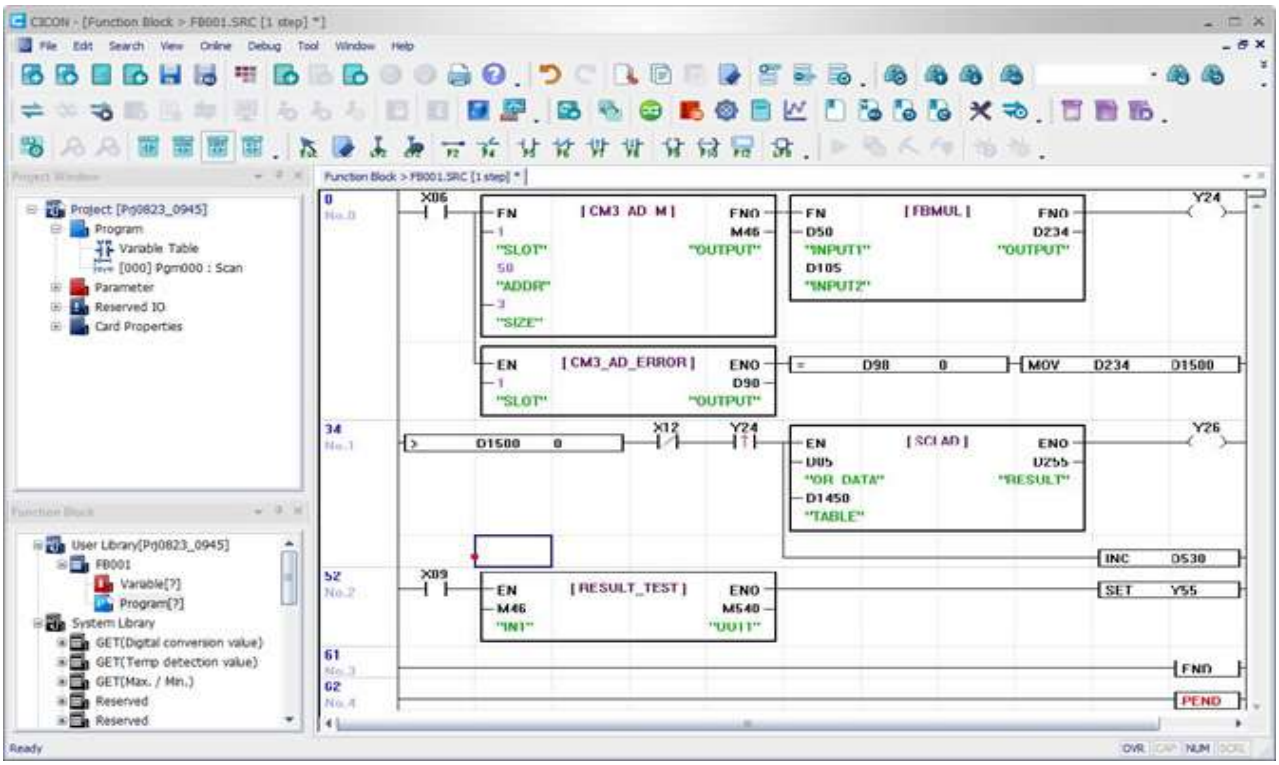
- Scan program: Ladder Diagram program
- Communication program: Interactive dialog formed program for communication
- Special program: Interactive dialog formed program for Special card control
- SFC program: Sequential Function Chart program







• FB (Function Block) program



• Full System Library

Comes with a collection of 200 system libraries.
Additional system libraries may be downloaded
from the Cimon website.

• Easy to Program

Simply add Function Blocks
with preconfigured settings.

• Supports All CPU types

Function Blocks are supported for the full range of CIMON PLCs.
(Please refer to the corresponding manual for Extension mode.)

• PLC Download/Upload

Function Blocks can be downloaded to the PLC
and uploaded to the CICON software.

• Extensive Options

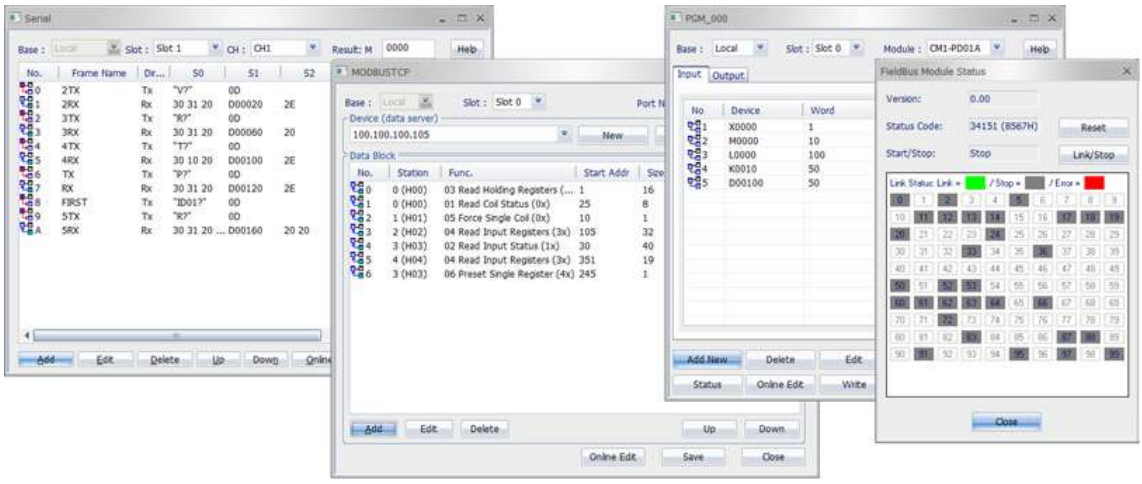
Provides various string configurations as well as color
configurations for Function Blocks.

Item		User Library	User System Library	System Library
Author		User		Built-in
Saved Path		Project	CICON software	
FB Edit	Variable	Available	Not Available (Readable)	
	Program		Not Available (Not readable)	
Reuse (Between Projects)		Available after export	Always	
Max. Capacity of FB		128	1024	

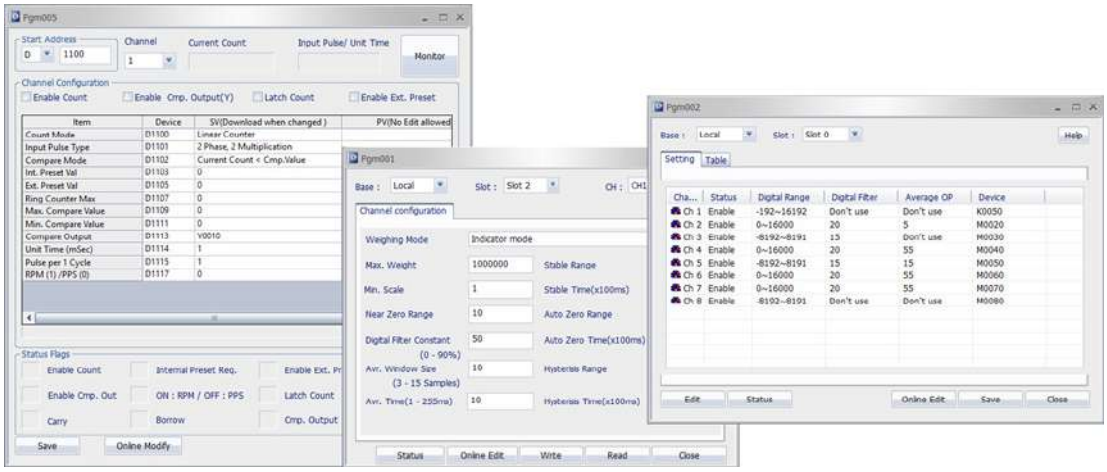
* The system library may be updated by adding additional files in the system library folder without having to reinstall the CICON software.
* The latest system library files may be downloaded from the CIMON website.

• Communication / Special program (Interactive Dialog)

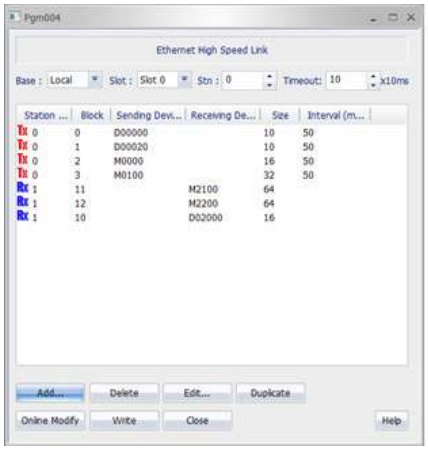
• User protocol (Serial) program / Modbus TCP Master program / Fieldbus Program

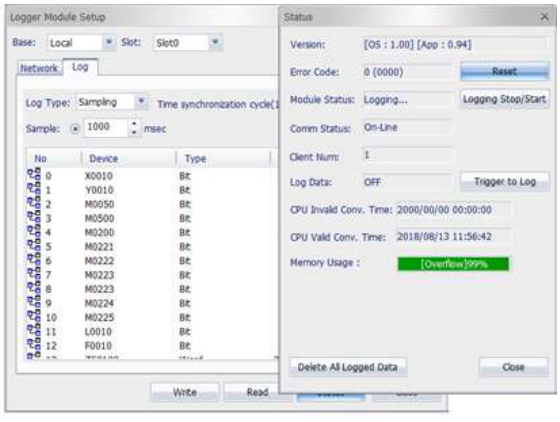


• High-speed Counter program / Load Cell program / Thermistor Program



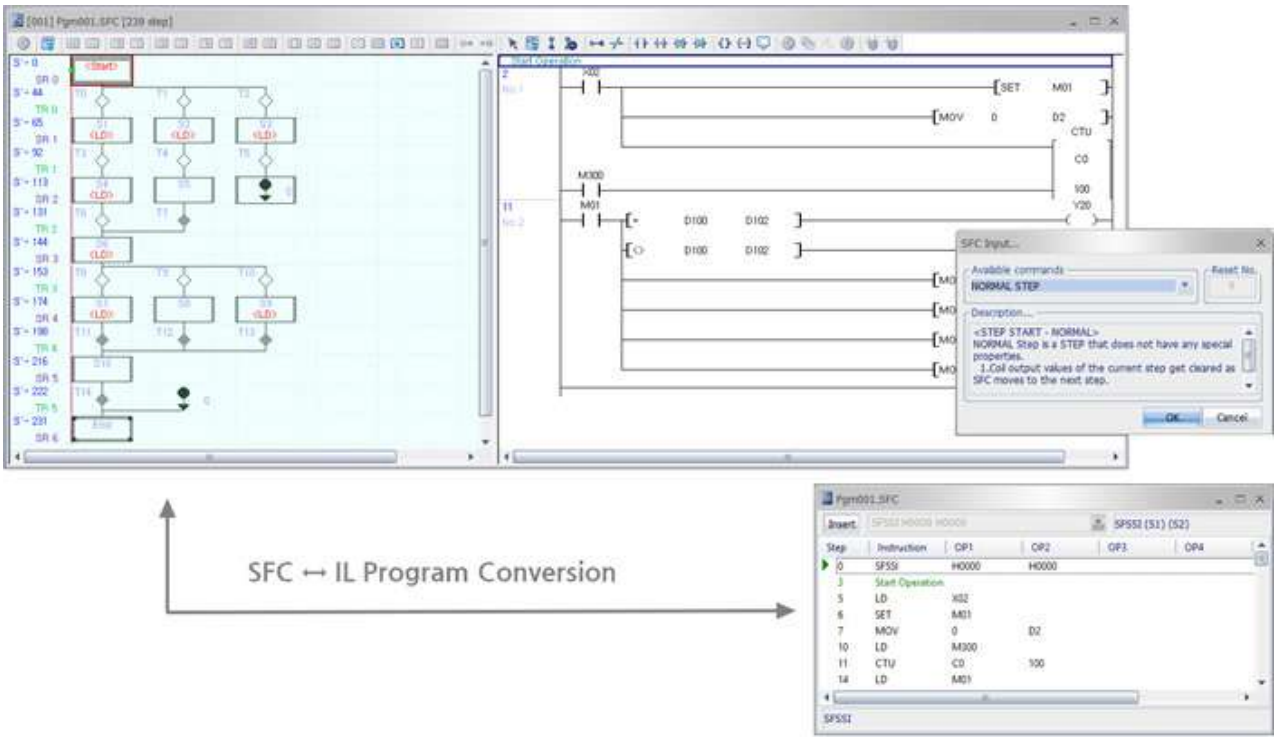
• PLC Link (PLC parameter) : Enables communication between CIMON PLCs / Data Logger Module





• SFC (Sequential Function Chart) program

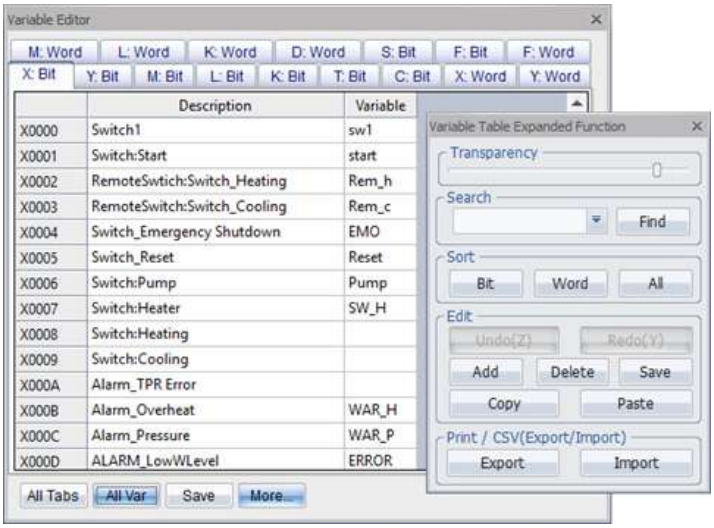
• (Supported CPU type: XPnB, PLC-S)



• Variable Editor

Variable file backup, CSV Export / Import, Print,
Paste on the excel

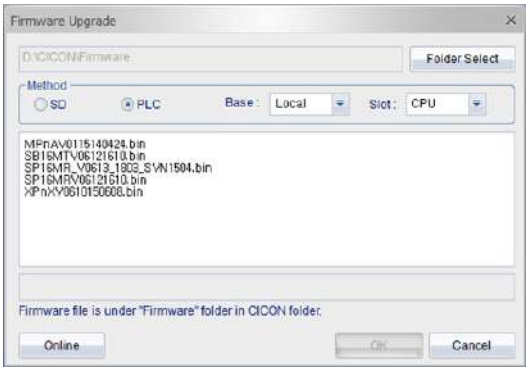
※ Not supported on CP3A/B/P/U, CP4A/B/C/D/U,
XP1A/2A/3A/1R CPU type



• Firmware Upgrade

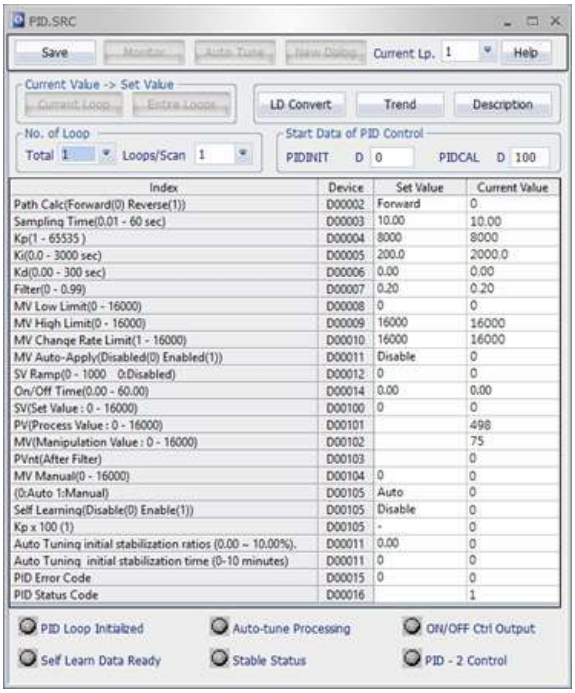
(Supported CPU type: XPnB, MP, PLC-S)

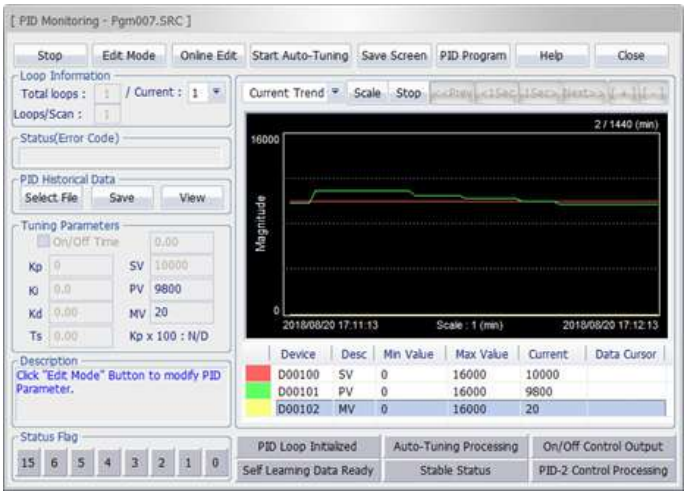
※ Not supported on CP3A/B/P/U, CP4A/B/C/D/U,
XP1A/2A/3A/1R CPU type



• PID Auto-tuning

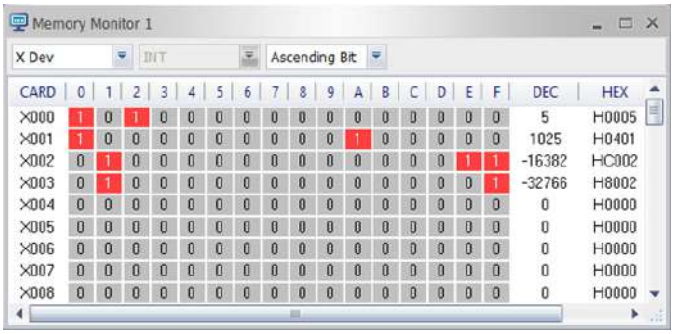
• Provides importing and exporting CSV files, saving history settings, and saving screens features.





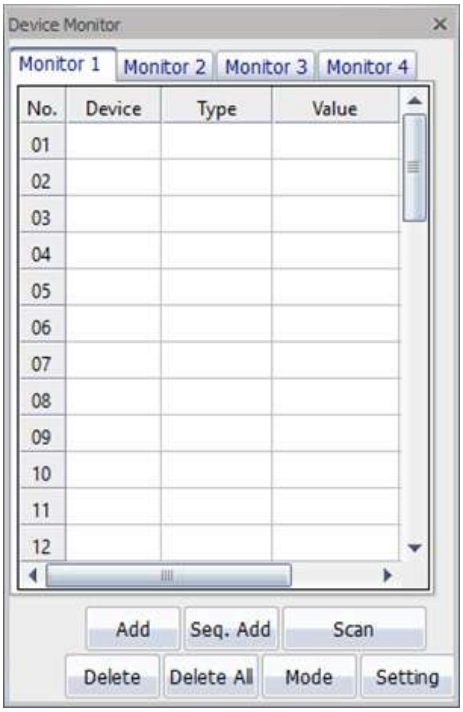
• Memory Monitor

View all CPU device memory addresses



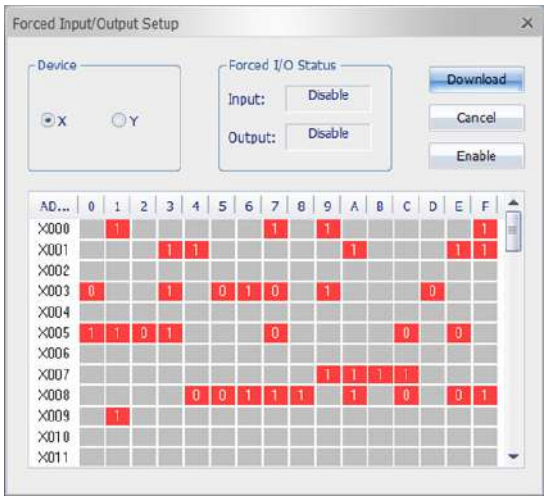
• Device Monitor

Monitors device memory in real-time



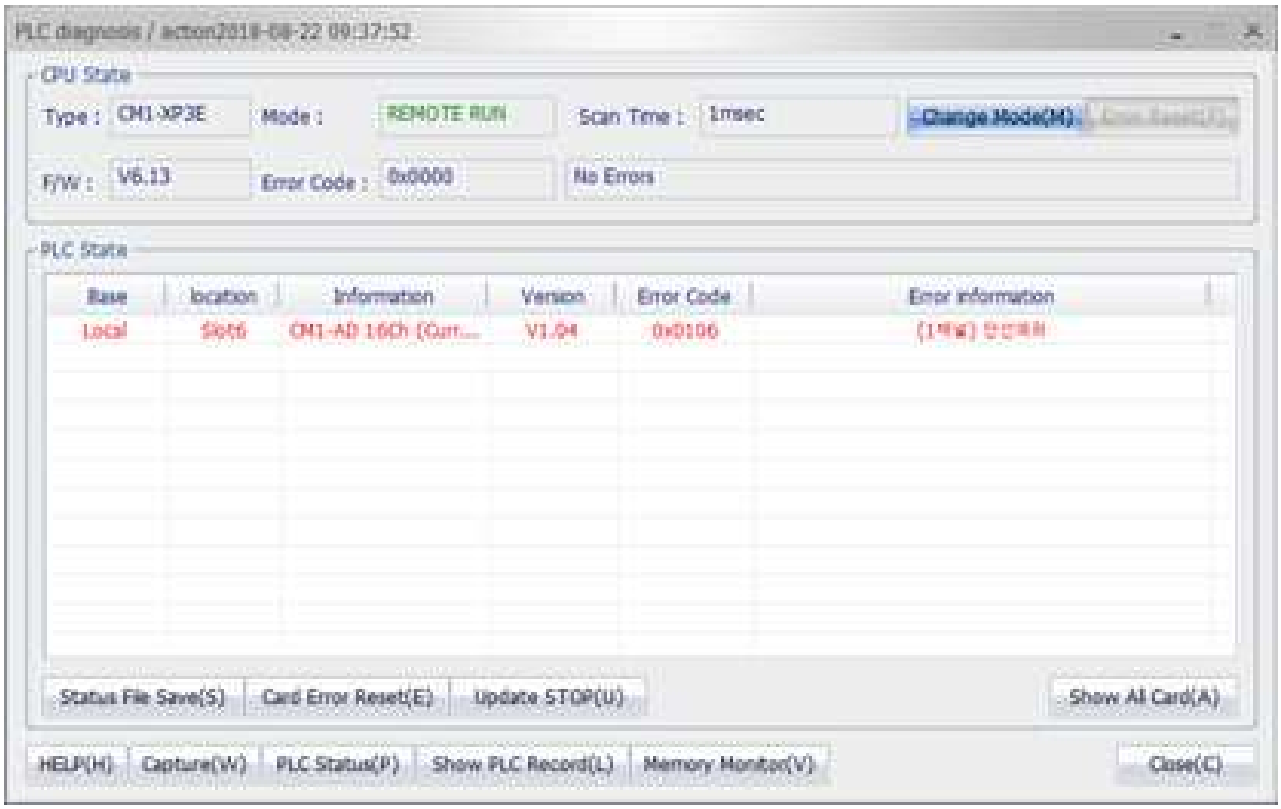
• Forced Input / Output Setup

Supports forcing input and output signals



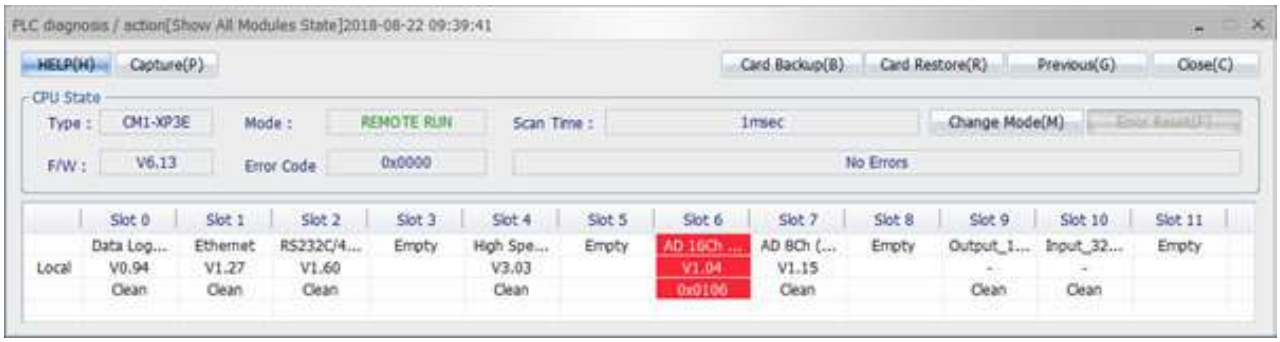
• PLC diagnosis

• Monitors errors that occur in the CPU or other special modules and provides possible solutions.
(Requires CICON V7.00 and above)



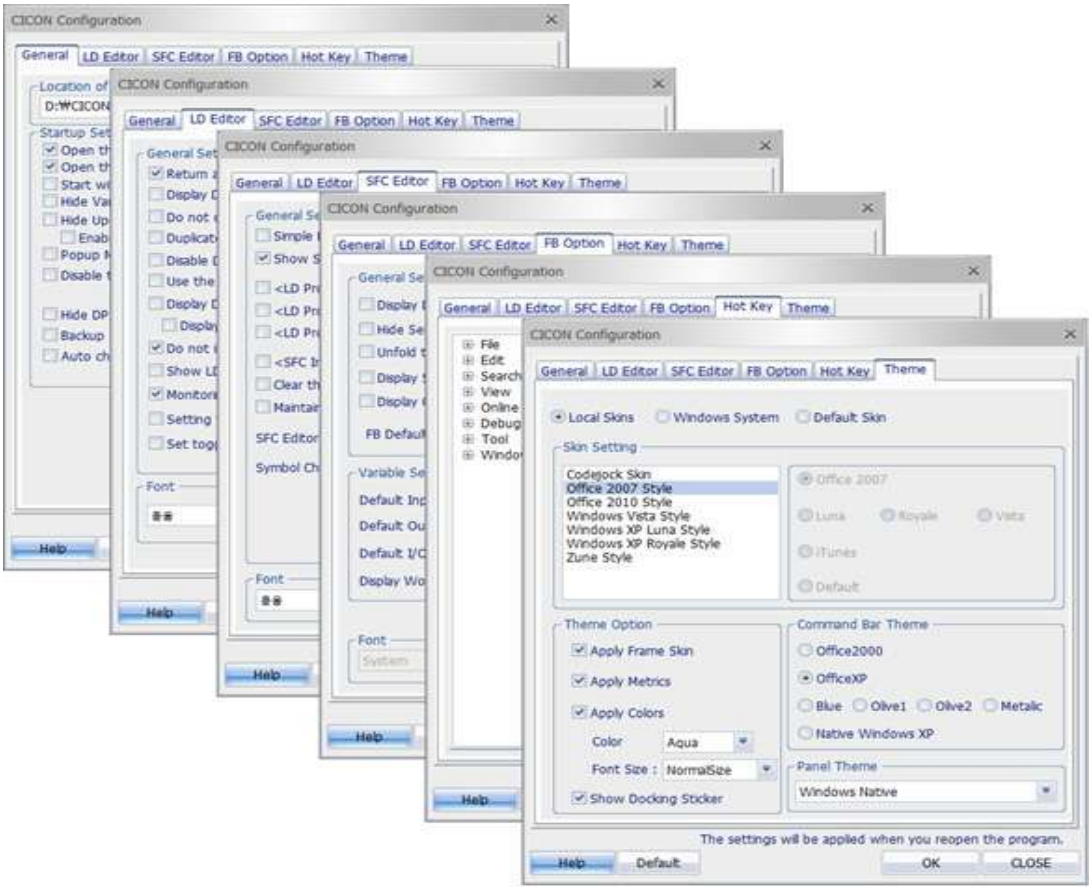
• Show all module state

• View module configurations and currently installed H/W or S/W. Also allows
the export of buffer memory in CSV format.



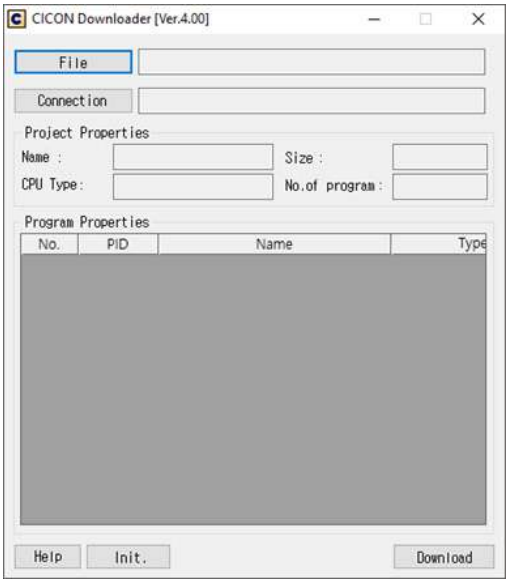
• CICON Setup

• Highly configurable options, including themes, for the CICON software



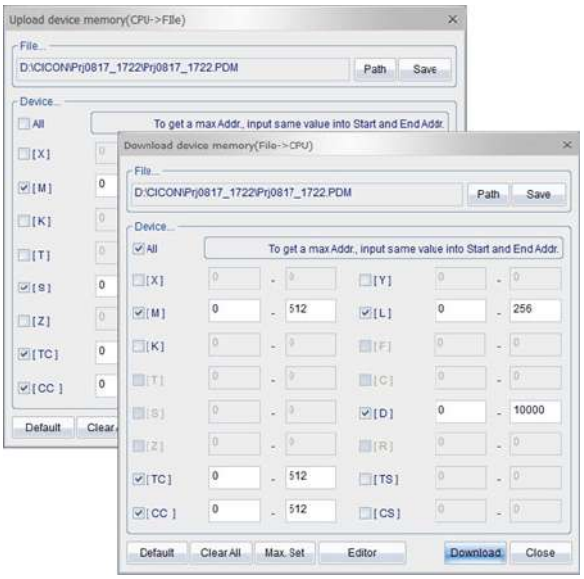
• CICON Downloader

Downloads programs to the PLC
without having to open the project



• Upload / Download device memory

Backup and restore the memory of PLC CPU

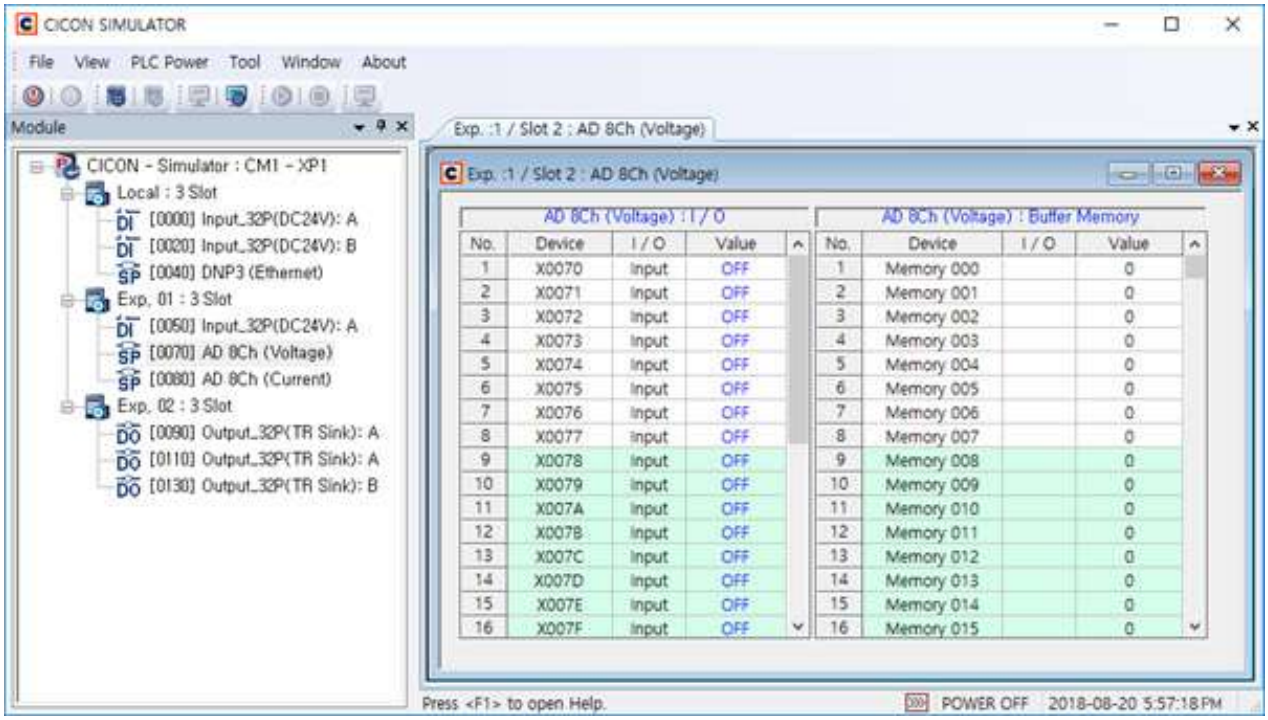


• Simulator

• Features

Quickly debug functions and programs without having to physically connect to a PLC

- Operates a scan program in the same environment as a physical PLC (Program download/upload)
- On-line (PLC-CICON connection) mode features supported
- The simulator is compatible with all PLC CPU types.
- Virtually conduct a performance test of special equipment through the simulator

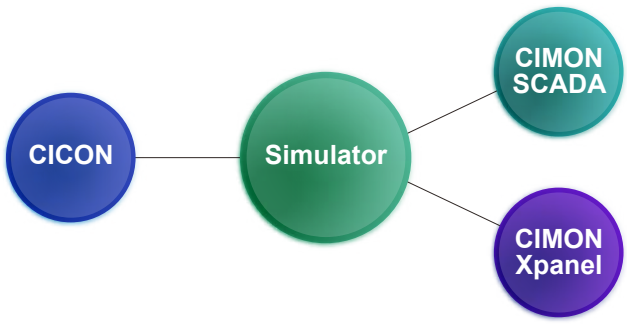


• Simulator with HMI Protocol communication (Supported in CICON V5.02 and above)

The HMI protocol allows an operator to connect the CICON simulator with CIMON SCADA or CIMON Xpanel without having to convert projects.

*Sample projects may be downloaded from the Cimon website.

Ethernet HMI Protocol



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