



CIMON

TRAINING

CM1 + CM3 SERIES PLC PROGRAMMING

CIMON
AUTOMATION

UNIT 1



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02

CONFIGURE A VIRTUAL CHASSIS

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ENERGIZE COILS WITH CONTACTS

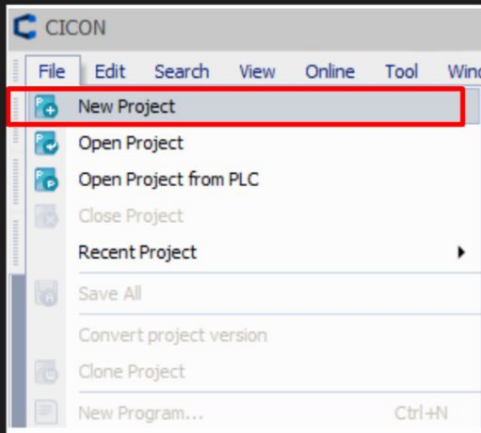
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INTERACT WITH A PROJECT USING THE
CICON SIMULATOR

CREATING A NEW CICON PROJECT



CONFIGURING A VIRTUAL CHASSIS

The screenshot displays the 'CIMON PLC Module setting - PLC-S' interface. A red arrow points from the 'Reserved IO' option in the 'Project Window' to the 'LD CONVERSION' button in the toolbar. A red box highlights the 'LD CONVERSION' button, with a callout box labeled 'LD CONVERSION'. Another red box highlights the 'BASE SETTING' button, with a callout box labeled 'BASE SETTING'. A third red box highlights the 'SAVE SETTINGS' button, with a callout box labeled 'SAVE SETTINGS'. The main workspace shows a virtual chassis rack with slots 0 through 6. The 'Function Block' window at the bottom left shows a 'User Library' with 'GET' blocks for digital conversion, temperature detection, and error codes. The right-hand pane lists the configured modules for the CIMON-PLC, including digital input/output cards, digital in/output, analog input/output, and special function blocks.

Project Window

CIMON PLC Module setting - PLC-S

Project [Pj0423_1817]

- Program
- Variable Editor
- Parameter
- Reserved IO
- Local : Detects Automatically
- Card Properties

LD CONVERSION

BASE SETTING

SAVE SETTINGS

Slot 0 : [XY:0000] PLC-S In/Out 32-point

Slot 1 : [XY:0020] No Card

Slot 2 : [XY:0030] No Card

Slot 3 : [XY:0040] No Card

Slot 4 : [XY:0050] No Card

Slot 5 : [XY:0060] No Card

Slot 6 : [XY:0070] No Card

Slot 7 : [XY:0080] No Card

Function Block

- User Library[Pj0423_1817]
- System Library
 - GET(Digital conversion value)
 - GET(Temp detection value)
 - GET(Error Code)

CIMON-PLC

- Digital input card
 - Input_32P(DC24V): A
 - Input_32P(DC24V): B
- Digital Output
 - Output_16P(Rly): A
 - Output_32P(TR Sink): A
 - Output_32P(TR Src): A
- Digital In/Out
- Analog Input
 - AD 4Ch (Voltage/Current)
 - AD 8Ch (Voltage/Current)
- Analog Output
 - DA 4Ch (Voltage)
 - DA 4Ch (Current)
- Analog In/Out
 - ADDA 2/2Ch (Voltage/Cur)
- Special(Temperature)
 - TC 4Ch
 - RTD 4Ch (PT1000)
- Special(General)

REVIEWING CIMON PLC DATA STRUCTURE

Bit



0 or 1, 2 possible expressions

4 Bits = Nibble



$2^4 = 16$ possible expressions

8 Bits = Byte



$2^8 = 256$ possible expressions

16 Bits = 2 Bytes = 1 Word



$2^{16} = 65,536$ possible expressions

32 Bits = 4 Bytes = 2 Words = Double Word (DWORD)



$2^{32} = 4,294,967,296$ expressions

REVIEWING CIMON PLC DATA STRUCTURE

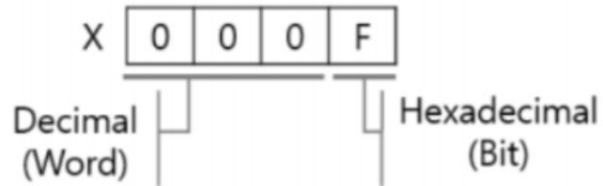
Device	Description	Read/Write
X	Input contact that receives signals from the input module.	R
Y	Output contact that delivers the operation result to the output module.	R/W
M	Auxiliary relay used in the PLC internally.	R/W
K	Similar use as M device. Supports latching by default. (Non-Volatile Memory)	R/W
L	Special contact area when used with computer/data link module (i.e. Modbus). Without a link, this area can be used same as M area.	R/W
F	Internal flag relay for the PLC state, time, date or other special contacts.	R
T	Auxiliary relay for Timer instructions.	R
C	Auxiliary relay for Counter instructions.	R
S	Step control relay.	R/W
D	Capable of 16/32-bit data.	R/W
Z	Similar to the D device, but is ideally used with subroutines. Cannot have an alias or description.	R/W
R	Index register used to indirectly indicate the address of device memory. CIMON PLC CPU provides 16 index registers. Each register can store offset value in 16-bit.	R/W

REVIEWING CIMON PLC DATA STRUCTURE

Bit Device Notation

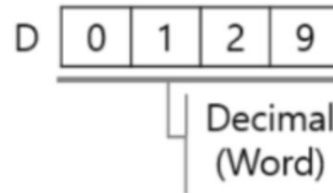
- Using Bit of Bit Device

(X, Y, M, K, L, F)

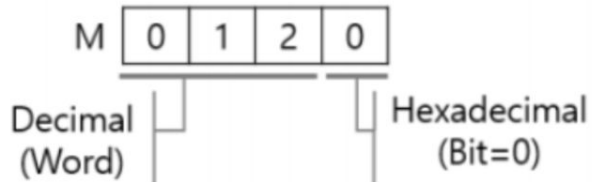


Word Device Notation

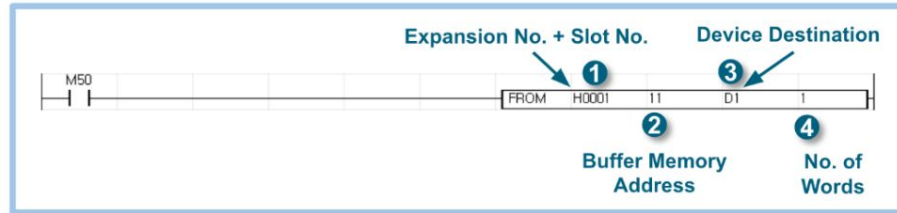
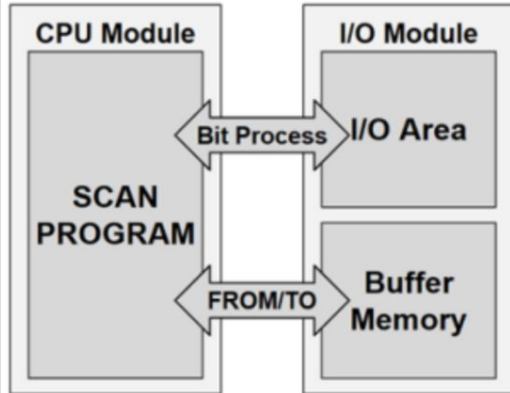
(T, C, D, Z)



Using Word of Bit Device



REVIEWING CIMON PLC DATA STRUCTURE



① Expansion No. & Slot No.

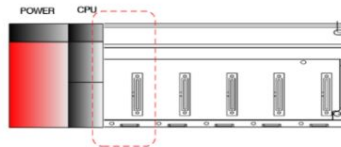
	Base No.	Slot No.
H	0A	0B

H + [Base No.] + [Slot No.]

H: Stands for hexadecimal

Base No.: 2 characters in hexadecimal

Slot No.: 2 characters in hexadecimal



② Buffer Memory Address

Address	Description	
Hexa	Deci	
9H	9	As signing averaging process
10H	10	Flag indicating AD-converted
11H	11	Digital output value of CH1
12H	12	Digital output value of CH2
13H	13	Digital output value of CH3
14H	14	Digital output value of CH4
15H	15	Digital output value of CH5
16H	16	Digital output value of CH6
17H	17	Digital output value of CH7
18H	18	Digital output value of CH8
19H	19	Error code
20H	20	Set range(CH1 ~ CH4)
21H	21	Set range(CH5 ~ CH8)
22H	22	Channel to calibrate offset

QUESTIONS

1. WHICH REGISTER(S) IS/ARE INTENDED FOR ANALOG USAGE?

2. IS M210 A WORD OR BIT?

3. WHICH INSTRUCTION EXTRACTS DATA FROM THE BUFFER MEMORY OF AN EXPANSION MODULE?

4. CAN Y1A BE USED IN A WORD INSTRUCTION, SUCH AS ADD?

5. WHICH REGISTERS ARE MY PHYSICAL INPUTS AND OUTPUTS?

ENERGIZING COILS WITH CONTACTS

The image shows a screenshot of a PLC ladder logic editor. On the left, a context menu is open over a ladder logic diagram. The menu items are:

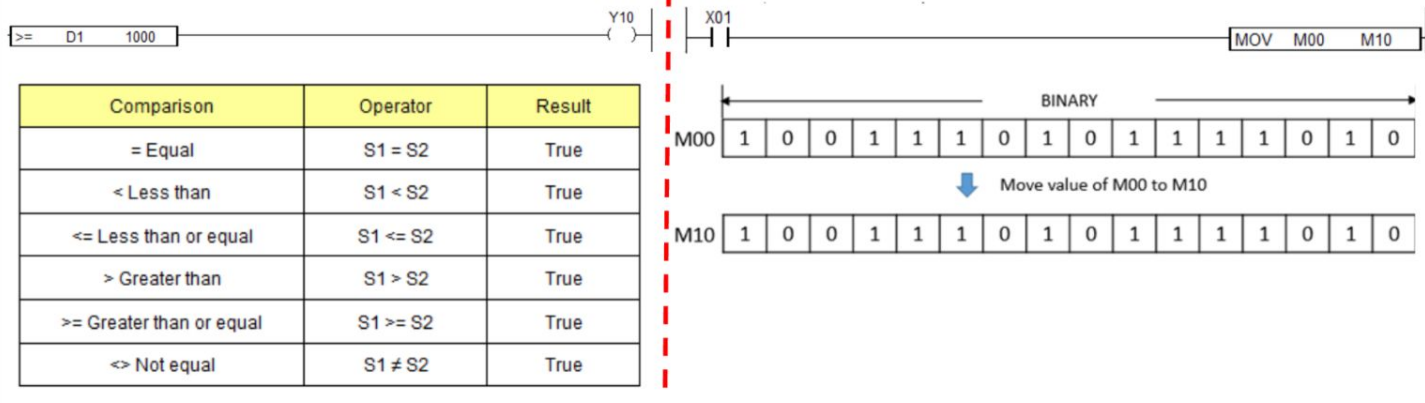
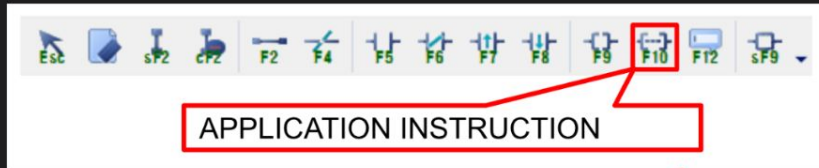
- Undo (Ctrl+Z)
- Redo (Ctrl+Y)
- Cut (Ctrl+X)
- Copy (Ctrl+C)
- Paste (Ctrl+V)
- Delete (Del)
- Select All (Ctrl+A)
- LD
- Insert Row (Ctrl+L)
- Insert Next Row (Ctrl+Enter)
- Delete Row (Ctrl+R)

Callouts point to the 'Insert Row' and 'Delete Row' items with labels 'CTRL + L' and 'CTRL + R' respectively.

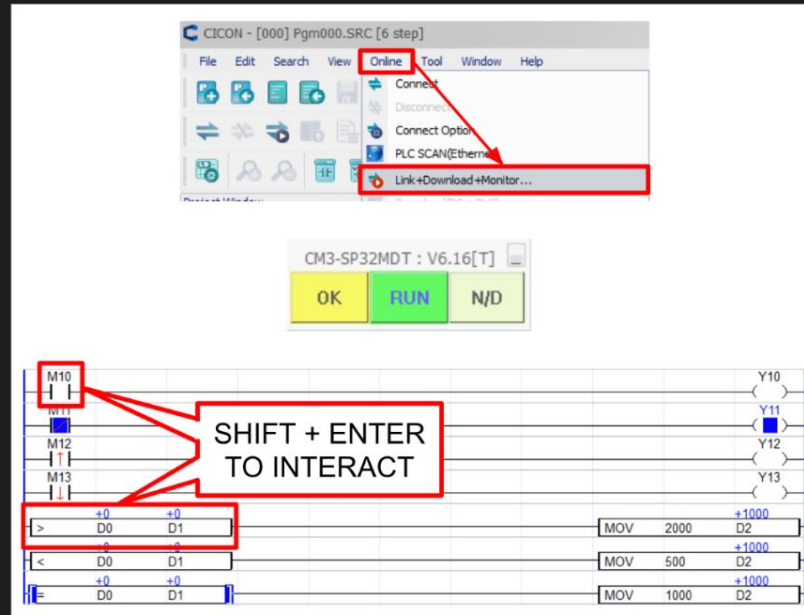
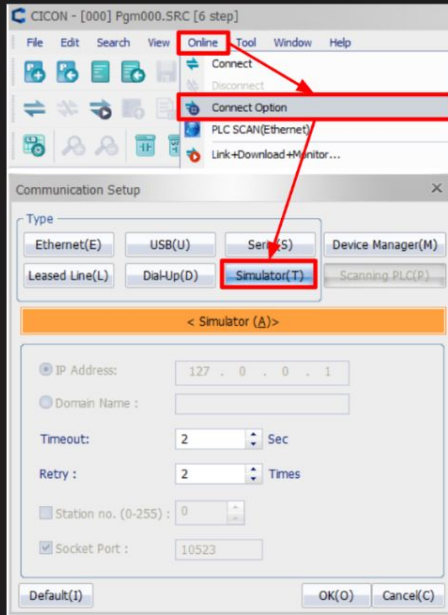
On the right, a toolbar contains various symbols for contacts and coils. Callouts identify the following symbols:

- CLOSED CONTACT (Green box)
- FALLING-EDGE CONTACT (Purple box)
- OPEN CONTACT (Red box)
- RISING-EDGE CONTACT (Blue box)
- COIL (Black box)

COMPARISON AND MOVEMENT INSTRUCTIONS



INTERACTING WITH CIMON SIMULATOR



QUESTIONS

1. WHICH HOTKEY ALLOWS FOR EASY TOGGING OF A CONTACT OR CHANGING A DATA REGISTER'S VALUE?
2. WHY DO Y12 OR Y13 NOT STAY ON CONTINUOUSLY AS OPPOSED TO Y10 OR Y11?
3. WHICH HOTKEY ALLOWS THE USER TO CREATE RUNGS QUICKLY? HOW ABOUT DELETING RUNGS?
4. WHICH BUTTON IS BEST FOR DOWNLOADING A PROJECT TO THE PLC?

The background of the image is a dark grey field filled with a repeating pattern of white line-art illustrations of various electronic components and connectors. These include integrated circuits, multi-pin connectors, and other hardware parts, arranged in a grid-like fashion.

THANK YOU

CIMON

A U T O M A T I O N