

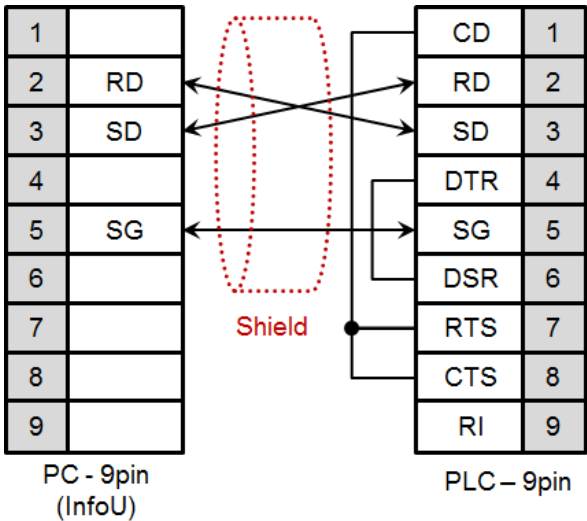
# Chapter 12 MITSUBISHI: MELSEC-A PLC

## 12.1 Wiring Diagram

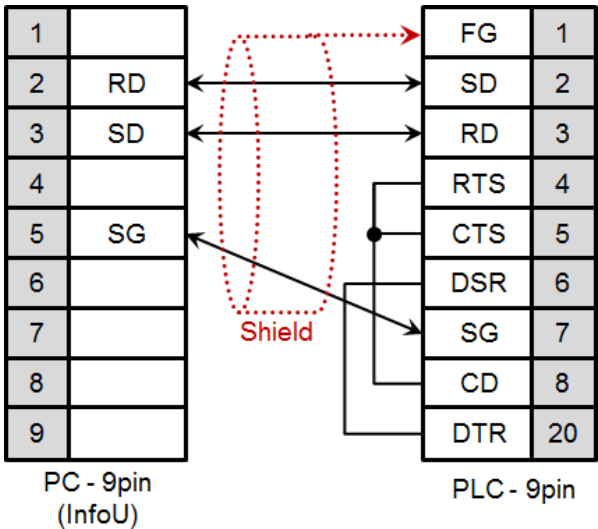
### 12.1.1 Link method: Cnet

Cnet can be divided into for RS-232C and RS-422/485.

The Cnet module of Mitsubishi MELSEC-A series that provides RS-232C has two types of connectors. First, the wiring method for 9 pins connector is as below.



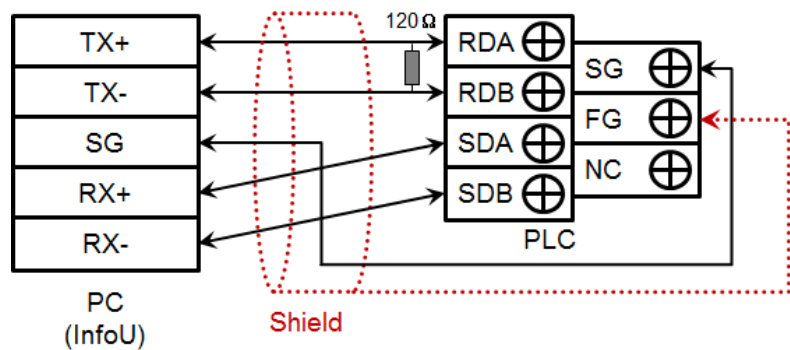
Second, the wiring method for 20 Pins connector is as below.



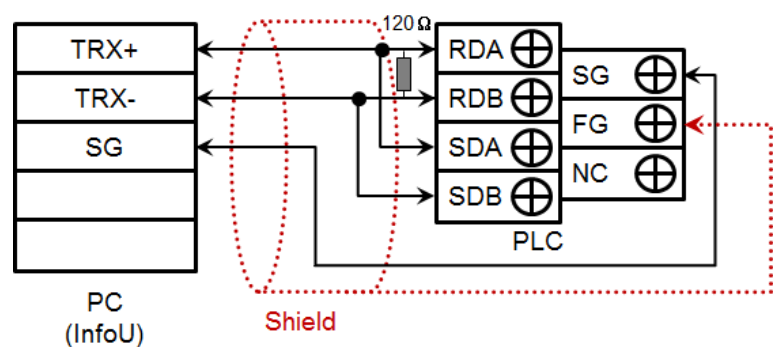
#### Notice

- MELSEC-A Cnet(RS-232C) adopts flow control so if the above wiring is not done, communication is not available.
- A shielded wire is recommended for stable communication.

The wiring method for RS-422/485 is as below.  
The following is wiring for RS-422 and Mitsubishi MELSEC-A is composed of 7 pins terminal blocks.



The wiring for RS-485 is as below.



Notice

- ☞ PC에서 RS-422/485 결선을 사용하려면 RS232 to RS422/485 컨버터가 필요합니다.
- ☞ The array of connector and pin may be different depending on the PLC type.
- ☞ A shielded wire is recommended for stable communication.

## 12.2 I/O Driver Setting

### 12.2.1 Link method: Cnet

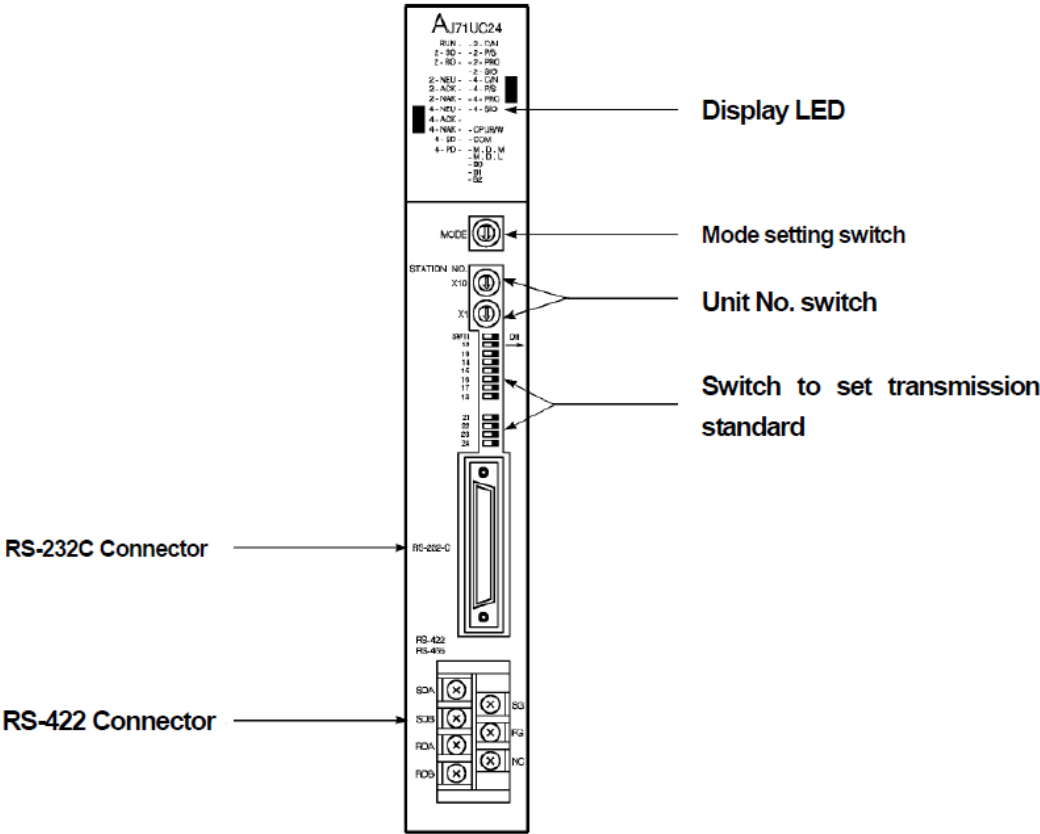
(1) PLC Setting

Cnet communication parameter of PLC is set with the switch of Cnet module. Setting methods are different depending on the type of device, for more details, refer to MITSUBISHI's communication manual.

The description on setting for typical kinds of devices(Cnet module) is provided hereupon.

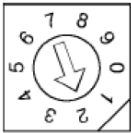
1) AJ71UC24

The outline of module is as below.

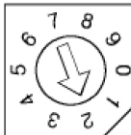


First of all, arrange mode setting switch. Setting as Exclusive communication Mode 1

Set communication No. with a unit number switch.



Switch to set tens(10) digit number  
(Ex.) As shown at the picture, the arrow points to 2, tens(10) digit of a unit number is 20



Switch to set ones(1) digit number  
(Ex.) As shown at the picture, the arrow points to 2, ones(1) digit of a unit number is 2.

Then, the unit number set by the two switches is 22.

There is communication setting switch to fix transmission standard such as communication type, communication speed.

	Switch No.	Setting items	Setting descriptions	
			On	Off
	SW11	Communication type	RS-422/485	RS-232C
	SW12	Data bit	8bit	7bit
	SW13~SW15	Communication speed(bps)	*Procedure: SW13, SW14, SW15 19200: Off, On, On 9600: On, Off, On (XGT Panel does not allow the communication speed of less than 9600bps.)	
	SW16	Whether using parity bit or not	Used	Not used
	SW17	Parity bit	Even Number	Odd Number
	SW18	Stop bit	2bit	1bit
	SW21	Setting checksum	Used	Not used
	SW22	Revision during run	Available	N/A
	SW23	Selecting Computer link/Multi drop link	Computer link	Multi-drop
	SW24	Setting Master/local	Master	Local












2) A1SJ71UC24-R2, A1SJ71C24-R2

The module provides RS-232C only and it has no switch to set a unit number.

You can set the mode switch as below.

Setting as Exclusive communication Mode 1

There is communication setting switch to fix transmission standard such as communication type, communication speed.

SW		Switch No.	Setting items	Setting descriptions	
				On	Off
03		SW03	Not used	-	
04		SW04	Revision during run	Available	N/A
05		SW05~SW07	Communication speed(bps)	*Procedure: SW05, SW06, SW07 19200: Off, On, On 9600: On, Off, On (XGT Panel does not allow the communication speed of less than 9600bps.)	
06					
07					
08					
09		SW08	Data bit	8 Bit	7 Bit
10		SW09	Whether using parity bit or not	Used	Not used
11		SW10	Parity bit	Even Number	Odd Number
12		SW11	Stop bit	2 Bit	1 Bit
		SW12	Setting checksum	Used	Not used

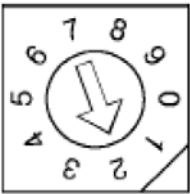
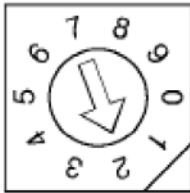
3) A1SJ71UC24-R4, A1SJ71C24-R4

The module provides only RS-422/485.

You can set the mode switch as below.

Setting as Exclusive communication Mode 1




Set communication No. with a unit number switch.

	×10	Switch to set tens(10) digit number (Ex.) As shown at the picture, the arrow points to 2, tens(10) digit of a unit number is 20
	×1	Switch to set ones(1) digit number (Ex.) As shown at the picture, the arrow points to 2, ones(1) digit of a unit number is 2. Then, the unit number set by the two switches is 22.

There is communication setting switch to fix transmission standard such as communication type, communication speed.

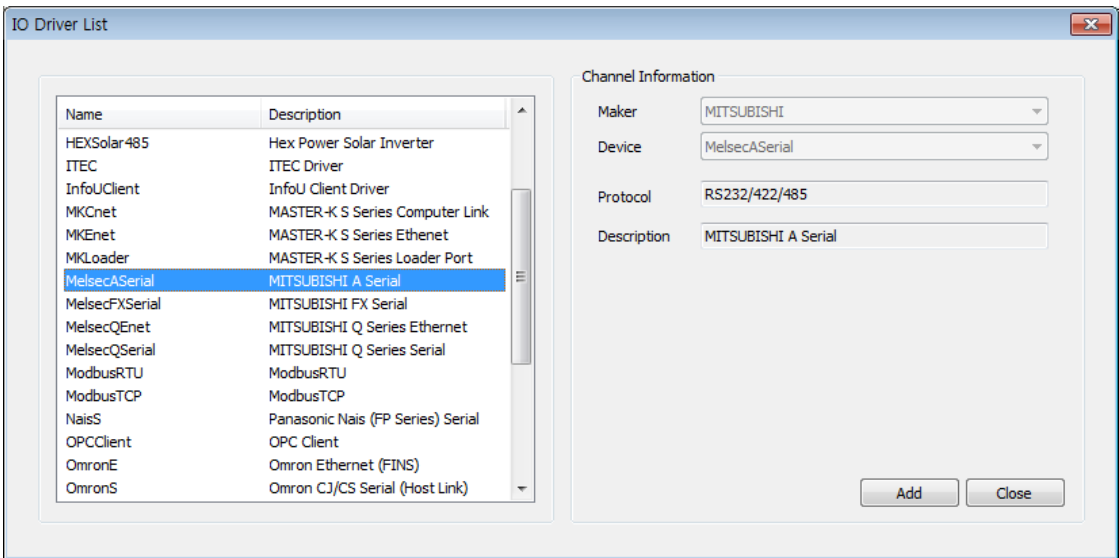
	스위치 번호	설정 항목	설정 내용	
			On	Off
	SW01	마스터/로컬 설정	마스터	로컬
	SW02	컴퓨터 링크/멀티드롭 링크 선택	컴퓨터 링크	멀티드롭 링크
	SW03	미사용	-	
	SW04	런 중 수정	가능	불가능
	SW05~SW07	통신 속도(bps)	*순서: SW05, SW06, SW07 19200: Off, On, On 9600: On, Off, On	
	SW08	데이터 비트	8비트	7비트
	SW09	패리티 비트 사용 유무	사용	사용안함
	SW10	패리티 비트	짝수(even)	홀수(odd)
	SW11	정지 비트	2비트	1비트
	SW12	체크섬 설정	사용	사용안함

Notice

1. Checking communication status
-  There are SD, RD LED for Cnet module. If you have a normal communication, you can see that LED flashes fast.
2. Suggestions to set PLC
-  For installation, make sure to refer to MITSUBISHI manual.
-  Especially, be noted that setting methods are different depending on the device type.

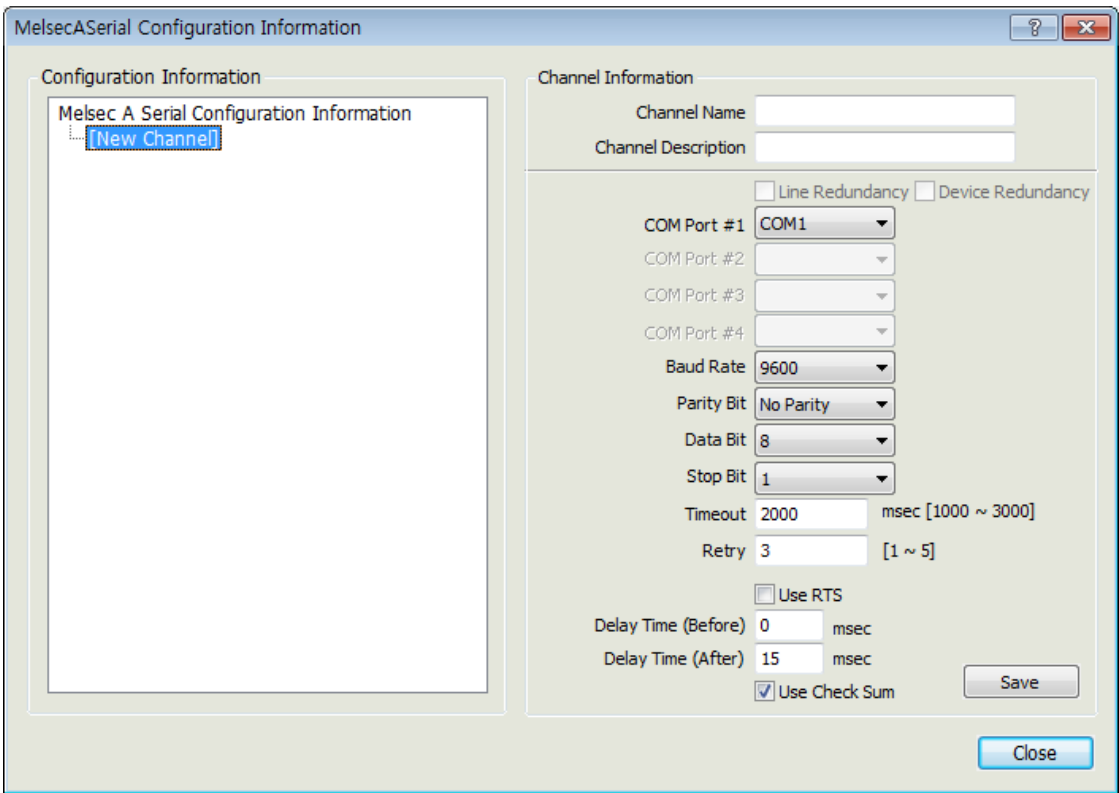
(2) InfoU Setting: MelsecA Serial

1) Add Channel



Select “MelsecASerial” from the I/O driver list and press “Add”.

InfoU Use Exclusive communication Mode 1



- Channel Name: Input a channel name.
- Description: Input some information on the channel.
- Baud Rate: Select a communication speed.
- Parity Bit: Select a parity bit.

- Data Bit: Select a data bit.
- Stop Bit: Select a stop bit.
- Time Out : It refers to a certain time period during which any response to the request for data is not made and after passing such a time period, the system will declare timeout to move on to the next process. The time period to be set will be a base to judge communication errors.
- Retry: Set up the number of times to retry when communication fails.
- Use RTS: Check ☒ in the box only when using Channel 485 and 422.
- Delay Time (Before): Information used only in Channel 485 and 422. The delay time right before requesting Data to PLC.
- Delay Time (After): Information used only in Channel 485 and 422. The delay time right after requesting Data to PLC.
- Save: If 'Save' button is pressed, Channel information will be saved and the saved information will add to the left "Configuration Information" tree.

MelsecASerial Configuration Information

Configuration Information

Melsec A Serial Configuration Information

- [New Channel]
- MelsecASerial**
- [New Station]

Channel Information

Channel Name: MelsecASerial

Channel Description:

☐ Line Redundancy ☐ Device Redundancy

COM Port #1: COM1

COM Port #2:

COM Port #3:

COM Port #4:

Baud Rate: 9600

Parity Bit: No Parity

Data Bit: 8

Stop Bit: 1

Timeout: 2000 msec [1000 ~ 3000]

Retry: 3 [1 ~ 5]

☐ Use RTS

Delay Time (Before): 0 msec

Delay Time (After): 15 msec

☒ Use Check Sum

Save

Close



## 2) Add Station

MelsecASerial Configuration Information

Configuration Information

- Melsec A Serial Configuration Information
  - [New Channel]
  - MelsecASerial
    - [New Station]

Station Information

Station Name

Station Description

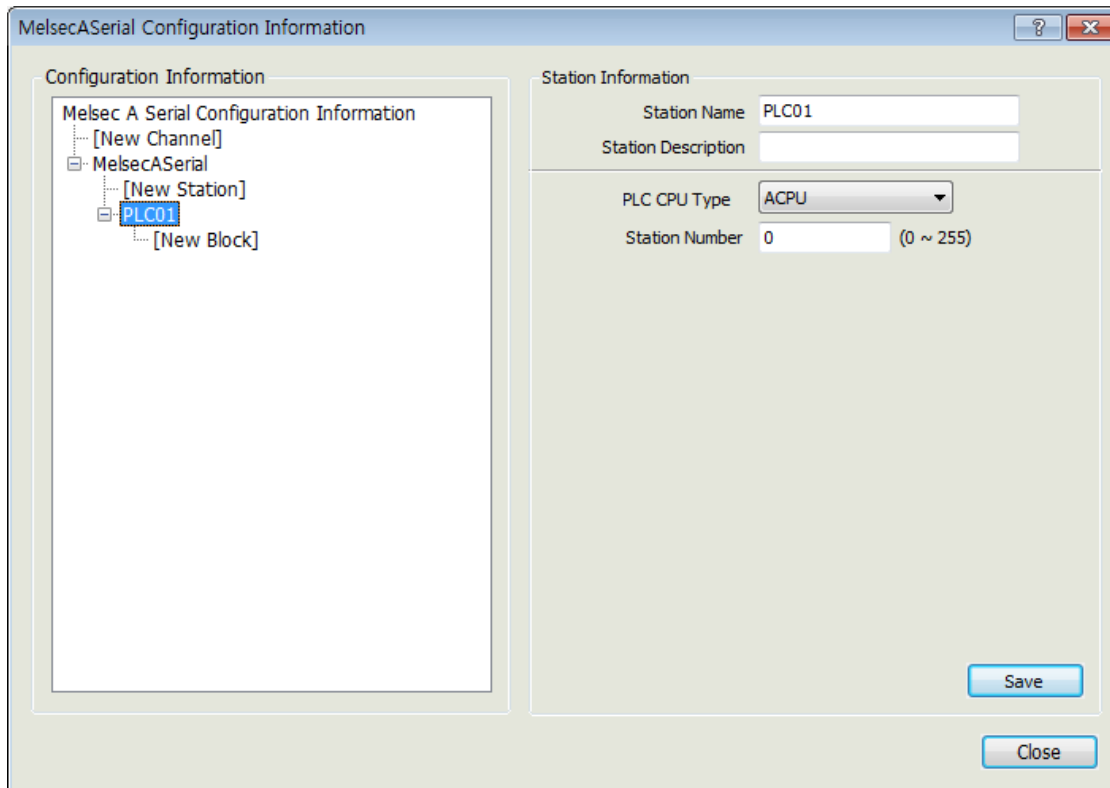
PLC CPU Type

Station Number  (0 ~ 255)

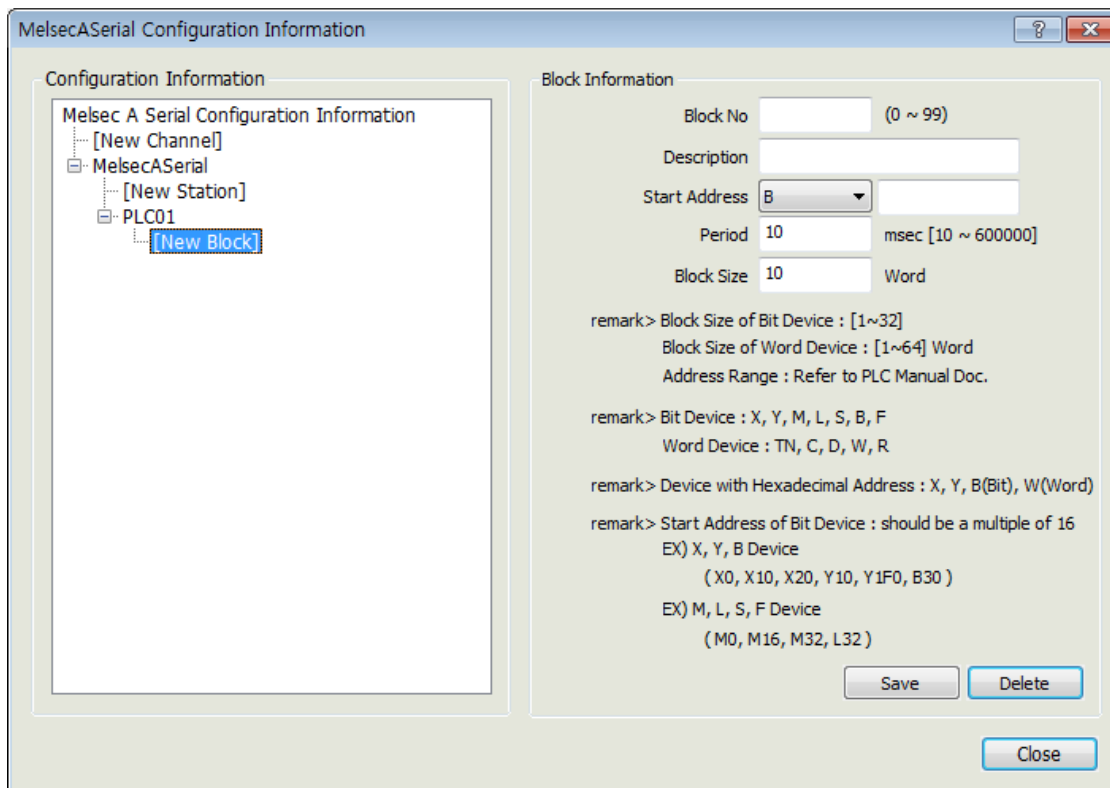
Save

Close

- Select [New Station] from “Configuration Information” tree.
- Station Name: Input a station name.
- Description: Input some information on the station.
- PLC CPU Type: Select a PLC CPU type.
- Station Number: Input the number of PLC Cnet Module.
- Save: If ‘Save’ button is pressed, Station information will be saved and the saved information will add to the left “Configuration Information” tree.



### 3) Add Block



- Select [New Block] from “Configuration Information” tree.
- Block Number: This number is a unique code of the block. The user needs to designate a different code

to each block.

- Description: Input some information on the block.
- Start Address: Input the Block's Start Address.
- Period: Input an interval to collect data of the relevant block (unit: msec).
- Save: If 'Save' button is pressed, Block information will be saved and the saved information will add to the left "Configuration Information" tree.
- Delete: If "Delete" button is pressed, the currently selected Block will be deleted.

MelsecASerial Configuration Information

Configuration Information

Melsec A Serial Configuration Information

- [New Channel]
- MelsecASerial
  - [New Station]
  - PLC01
    - [New Block]
    - 00 - B0, 10 Word, 10 msec
    - 01 - CN0, 10 Word, 10 msec
    - 02 - D0, 10 Word, 10 msec
    - 03 - F0, 10 Word, 10 msec

Block Information

Block No

(0 ~ 99)

Description

Start Address

B

Period

10

msec [10 ~ 600000]

Block Size

10

Word

remark> Block Size of Bit Device : [1~32]

Block Size of Word Device : [1~64] Word

Address Range : Refer to PLC Manual Doc.

remark> Bit Device : X, Y, M, L, S, B, F

Word Device : TN, C, D, W, R

remark> Device with Hexadecimal Address : X, Y, B(Bit), W(Word)

remark> Start Address of Bit Device : should be a multiple of 16

EX) X, Y, B Device

( X0, X10, X20, Y10, Y1F0, B30 )

EX) M, L, S, F Device

( M0, M16, M32, L32 )

Save

Delete

Close

4) I/O Address

Device Type		Device Code	Device No. Range				Example (InfoU Address)
Bit	Word		ACPU	AnA/AnU CPU	Decimal	Hexdecimal	
●		X	0000~07FF	000000~001FFF		●	X0, X1F, XFF
●		Y	0000~07FF	000000~001FFF		●	Y0, Y1F, YFF
●		M	0000~2047	000000~008191	●		M0, M22, M1024
●		L	0000~2047	000000~008191	●		L0, L22, L111
●		S	0000~2047	000000~008191	●		S0, S123
●		B	0000~03FF	000000~001FFF		●	B0, B1A, BAA
●		F	0000~0255	000000~002047	●		F0, F111, F23

	●	T	N000~N255	N00000~N02047	●		TN0, TN22, TN33
	●	C	N000~N255	N00000~N01023	●		CN0, CN34, CN11
	●	D	0000~1023	000000~008191	●		D0, D55, D45
	●	W	0000~03FF	000000~001FFF		●	W0, WF, W1F, W1FFF
	●	R	0000~8191	000000~008191	●		R0, R77, R1024

12.3 Available Device

InfoU에서 사용 가능한 디바이스는 통신 드라이버의 입출력 주소를 참고하시기 바랍니다.

Notice

- ☞ Use it within device area.
- ☞ The range of device may be different depending on CPU module so refer to each CPU module manual.