

# **OMRON EtherNet/IP (NJ/NX Series)**

Supported Series: OMRON EtherNet/IP NJ / NX1P Series PLC Website: <u>http://www.omron.com/</u>

### HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	OMRON EtherNet/IP	(NJ Series)	
PLC I/F	Ethernet		
Port no.	44818		
PLC sta. no.	1		

On-line simulator	Yes	Multi-HMI connect	Yes
Array Index Register	Yes		

#### **Instructions:**

#### Note:

- 1. In Sysmac Studio, please select [Publish Only] for [Network Publish] when setting address tag.
- 2. When **[Do not publish]** is selected for a tag, different import methods may lead to different results. When import tags by **[Get Tags from Device]**, the tag will be eliminated. If **[Import tags]** is selected, the tags will be imported, but the communication will not succeed.





3. Bool data type cannot be mapped to contiguous memory addresses. To use this function, you need to allocate one word for each bool type variable. In the following case, please respectively set to **%W10.0**, **%W11.0**, **%W12.0**. (Only required if absolute addresses

are used)

Mill Global Variables 🗙 🔁 Data Types 🛛 😝 Built	-in EtherNet/IP Po	ort S	
Name	Data Type	Initial Value	I AT
A_W	BOOL		%W10.0
B_W	BOOL		%W10.1
C_W	BOOL		%W10.2
A	BOOL		
В	BOOL		
C	BOOL		

4. %H and %W are 16-bit addresses, so the following mapping method is recommended for better communication efficiency.

Tag1 array of [0..15] bool mapping to %H200.00

Tag2 array of [0..15] bool mapping to %W200.00

It is recommended not to use the following methods:

Tag1 BOOL Mapping to %H200.00

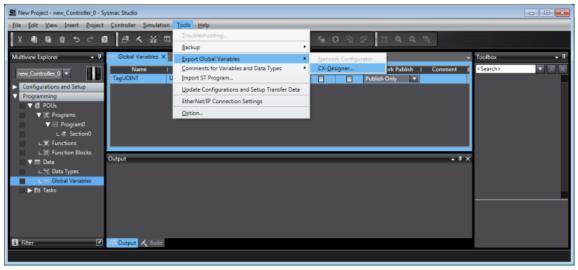
5. Avoid using the **[Get Tag Info]** method to obtain the **structure** tag, and use the **[Import Tags]** method.





#### Export Tags from Sysmac Studio

1. Launch Sysmac Studio, under Global Variables create the address tags, and then select [Tools] » [Export Global Variables] » [CX-Designer], it copies to clipboard.



2. Open Notepad, paste the content and save as \*.txt. (Encoding option select ANSI)

Save As									×
← → ~ ↑ 🗖	> Tł	is PC > Desktop >			~	õ	,P Search I	Desktop	
Organize 💌 Ne	w fold	er							0
This PC 3 D Objects Desktop Documents Downloads Music Pictures	Ŷ	Name AU CANOPEN JSobject	~			3/11/ 3/4/2	modified /2021 4:21 PM 2021 4:05 PM /2020 9:34 AM	Type File folder File folder File folder	
Videos	¥	<							>
File name:	*.txt								Ý
Save as type:	Text (	Documents (*.txt)							~
∧ Hide Folders			Encoding	ANSI		×	Save	Canc	el

3. Launch EasyBuilder, in System Parameter Settings add Omron EtherNet/IP (NJ/NX series).



### 4. Click [Import Tags] and select the txt file to be imported.

System Parameter Settings								
Cellular Data Network			Tin	Time Sync./DST			e-Mail	
Device	Model	Gene	eral	System	Remote Securi		curity	Extended Memory
Device list:								What's my IP?
	Name	Location	Device	Туре	Interface	I/F Protoco	l Stati	on No.
🔺 Local H	MI Local HMI	Local		2XH (1024 x 600)		-	0	
Lo	·· OMRO···	Local	OMRON	I EtherNet/IP (	Ethernet	TCP/IP	N/A	
Net	• HMI	Ne	w Devices	Server	De	lete		Settings

5. Enable SINT, INT or DINT as binary?



6. The following message is displayed when the import has succeed.



🗎 Tags	Name	Data type	Descriptio
VAR://Arr_Bool[3] VAR://Arr_Int[3] [0] [1]	VAR://Arr_Bool	BOOL[3]	
	VAR://Arr_Int	INT[3]	
[2] VAR://T_DInt	VAR://T_Bool	BOOL	
VAR://T_Int	VAR://T_Byte	BYTE	
VAR://T_SInt	VAR://T_DInt	DINT	
	VAR://T_DWord	DWORD	
	VAR://T_Int	INT	
	VAR://T_Real	REAL	
	VAR://T_SInt	SINT	
	VAR://T_UDInt	UDINT	
	VAR://T_UInt	UINT	
	VAR://T_USInt	USINT	
	VAR://T_Word	WORD	
	<		

- Supported data types include: BOOL, SINT, BYTE, USINT, INT, WORD, UINT, DINT, REAL, UDINT and DWORD. These data types support multiple dimensional array (Array index must start from 0).
- String length must be set to even. (Limitations of driver version v3.90 or earlier).
- String can use ASCII or UNICODE to communicate, it is recommended to use UNICODE.

–Data format –		
Encod	ing : Unicode 🗸 🗸	
Read/Write ad	dress	
Device :	OMRON EtherNet/IP (NJ/NX Series) V	
Tag :	VAR://Arr_Int[0] VAR://Arr_Int[0]	3 word(s)
		×
De	vice : OMRON EtherNet/IP (NJ/NX Series)	¥
	Tag: VAR://Arr_Int[0]	¥
Data t	ype: INT	
	Index register	
Element co	unt: 3	
	ОК	Cancel

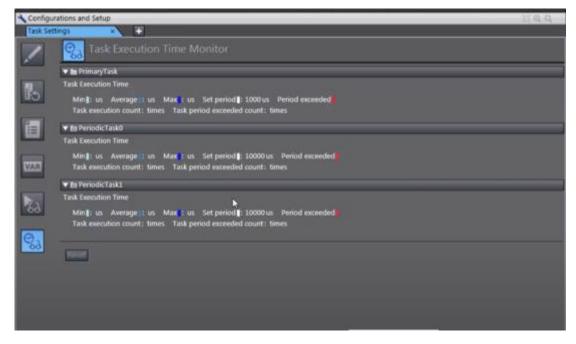
Note: **[Get Tag Info]** The obtained address may be incomplete, it is recommended to use the **[Import Tags]** function.



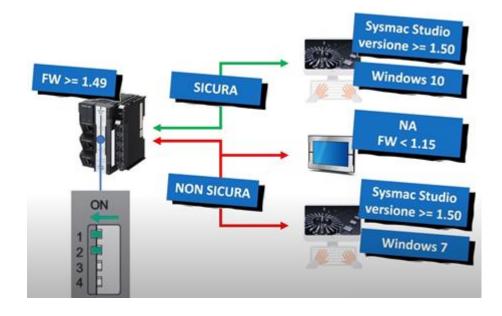


### **PLC Settings:**

[Task Execution Time] / [Set Period] needs to be set reasonably, otherwise it will affect the response speed of the PLC



After firmware version V1.49, certain security features have been enabled. To establish communication, switch DIP switch 1 and 2 to the ON position.



## Support Device Type:

Data type	EasyBuilder data format	Memo
Bool	bit	
Byte	16-bit BCD, Hex, Binary, Unsigned	8-bit
SInt	16-bit BCD, Hex, Binary, Signed	8-bit
USInt	16-bit BCD, Hex, Binary, Unsigned	8-bit
Word	16-bit BCD, Hex, Binary, Unsigned	16-bit
Int	16-bit BCD, Hex, Binary, Signed	16-bit
UInt	16-bit BCD, Hex, Binary, Unsigned	16-bit
DWord	32-bit BCD, Hex, Binary, Unsigned	32-bit
DInt	32-bit BCD, Hex, Binary, Signed	32-bit
Real	32-bit Float	32-bit
UDInt	32-bit BCD, Hex, Binary, Unsigned	32-bit
LInt	64-bit Signed	64-bit
ULInt	64-bit USigned	64-bit
LWord	64-bit USigned	64-bit
LReal	64-bit Float	64-bit
String	ASCII	Max: 80
Array	All of the above types	

**Note1:** EBPro V6.03.02 or later supports 64 bits data type **(cMT Series only)**, but please note that the address limit range is 48 bits in maximum.

Note2: String array is not supported. Ex: myString ARRAY[0..9] OF STRING[32]

# Wiring Diagram:

#### Ethernet cable:

