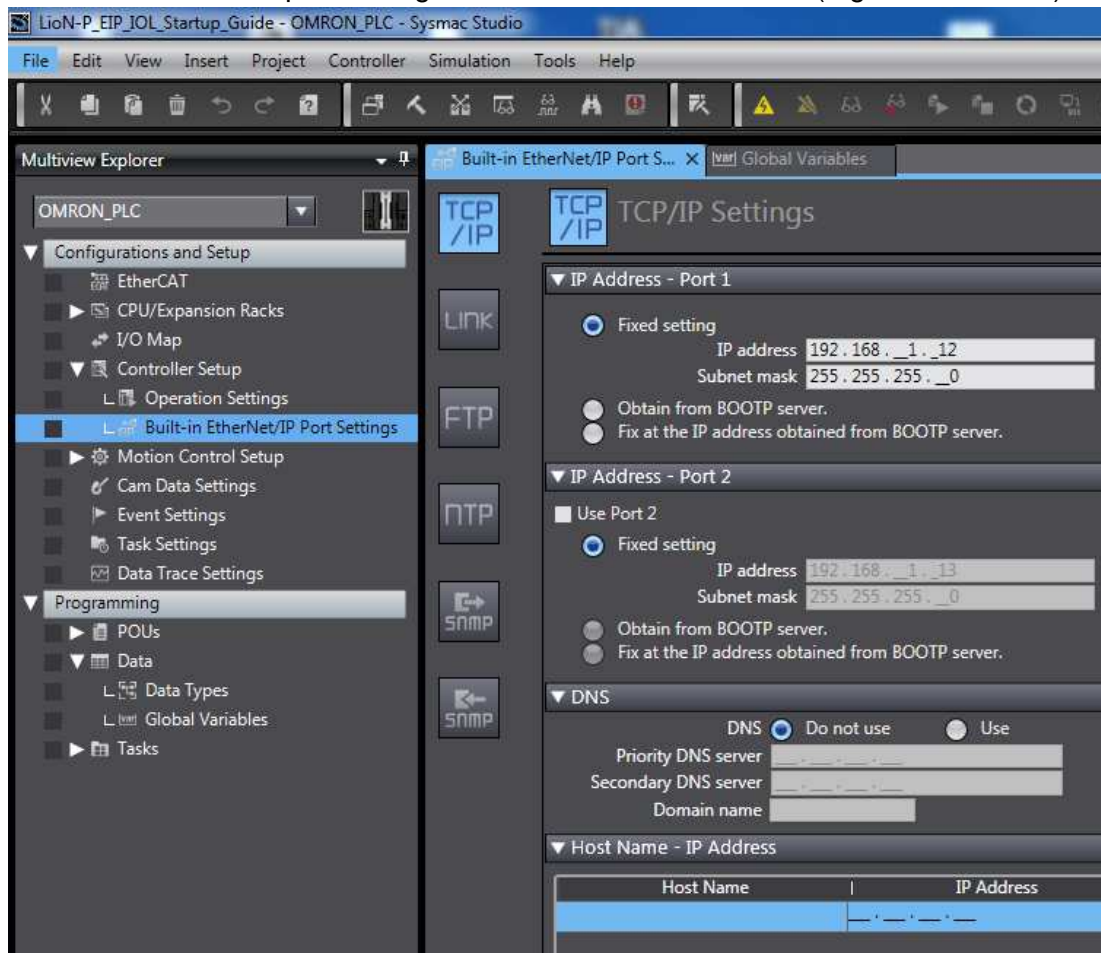


Startup guide for OMRON PLCs with Sysmac Studio

This introduction was created with Sysmac Studio V1.1.7.20 and the Network Configurator V3.61 for EtherNet/IP.

1. Connect your network devices and select the connection type to your PLC in Sysmac Studio. Refer to the manuals you can get a description for the establishment of a connection to a PLC.
2. Create a Sysmac Studio Project and configure the network parameters of your PLC. Set the IP address in the port settings of the EtherNet/IP interface (e.g. 192.168.1.12):

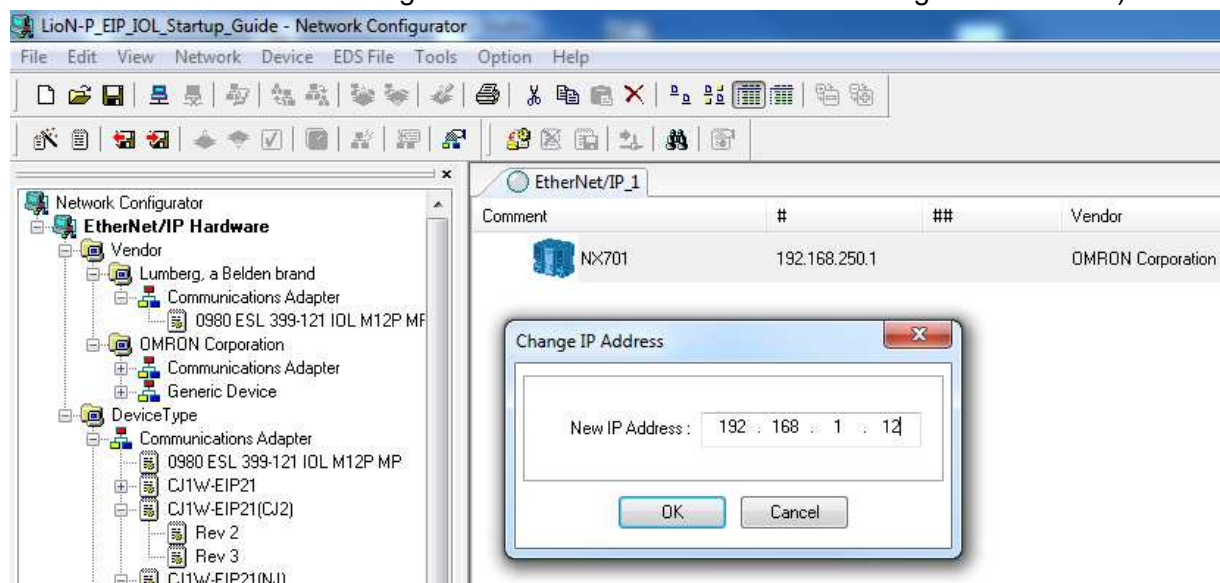


3. Set the IP address of the LioN-P module with the rotary switches. If the first three octets have to be changed use the webserver to change the default configuration.

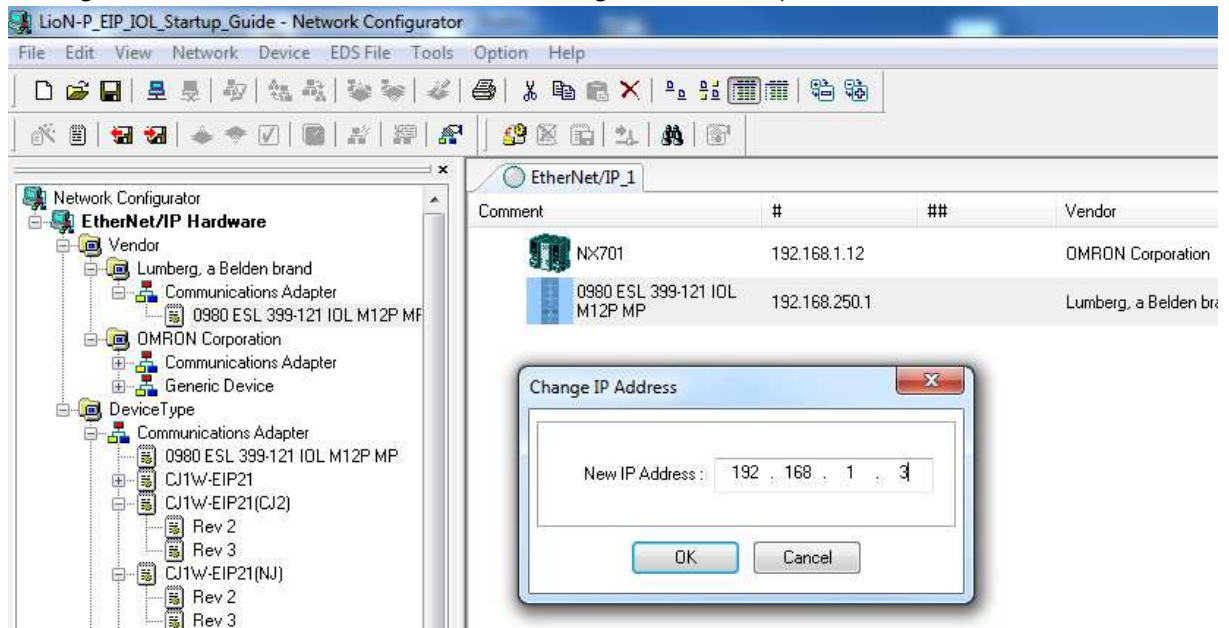
- Use the Network Configurator to set up the EtherNet/IP connections and install the EDS files (EDS File Menu → Install):



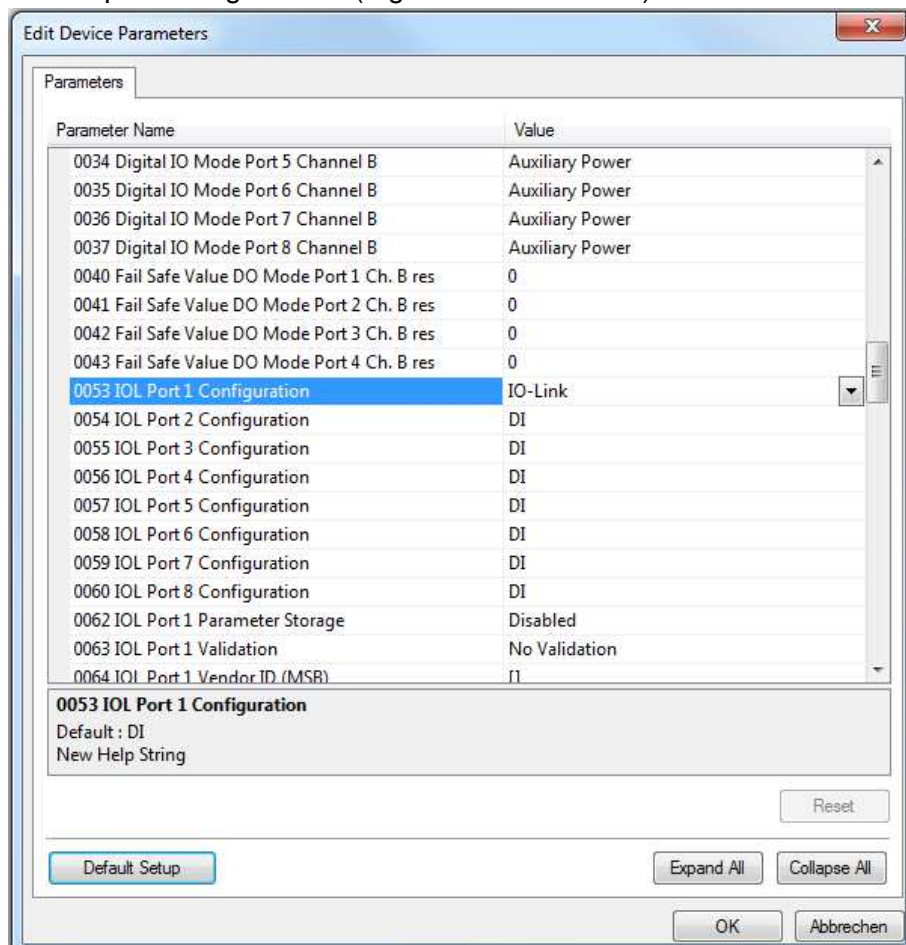
- Select the PLC (Hardware List → EtherNet/IP Hardware → Device Type → Communications Adapter → e.g. NX701 with double-click) and set its IP address (right-click on the PLC icon → Change Node Address → New IP Address e.g. 192.168.1.12):



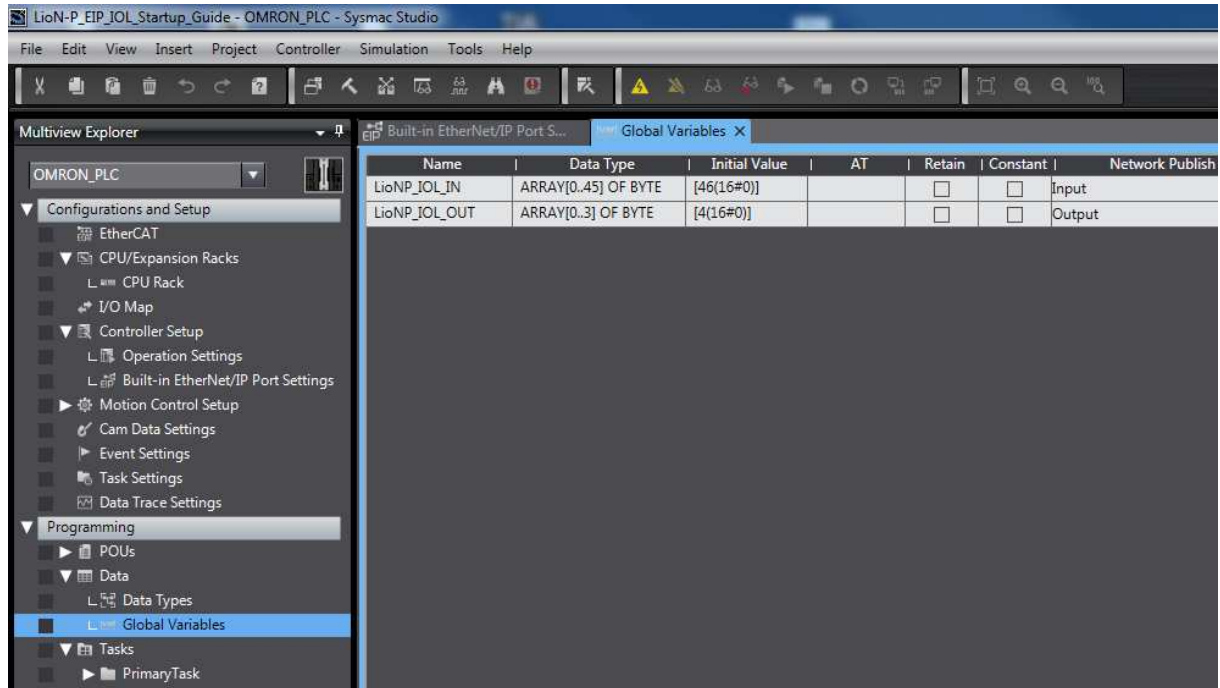
- Select the LioN-P module (Hardware List → EtherNet/IP Hardware → Vendor → Lumberg, a Belden brand → Communications Adapter → e.g. 0980 ESL 399-121 IOL M12P MP with double-click) and set its IP address (right-click on the module icon → Change Node Address → New IP Address e.g. 192.168.1.3):





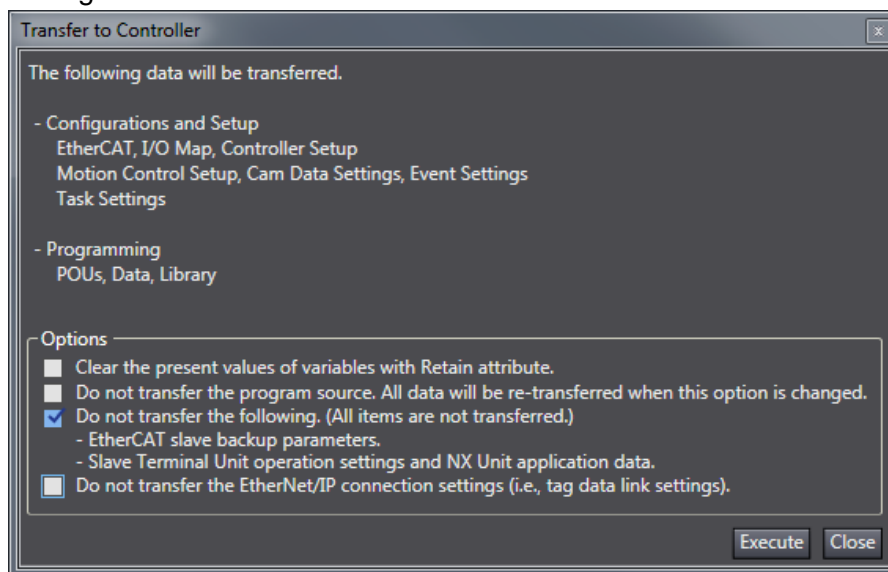
- Edit the device parameters of the LioN-P module (double-click on the module icon) and set the port configurations (e.g. IO-Link on Port 1):



- To assign some tags to the process data of the LiON-P module it is recommended to create Global Variables in Sysmac Studio which can be transferred to the Network Configurator. Select in Sysmac Studio the Multiview Explorer → Programming → Data → Global Variables with double-click and create each a tag for the input and output data direction of the LiON-P module (e.g. LiONP_IOL_IN with 46 bytes for input assembly 103 and LiONP_IOL_OUT with 4 bytes for output assembly 100):

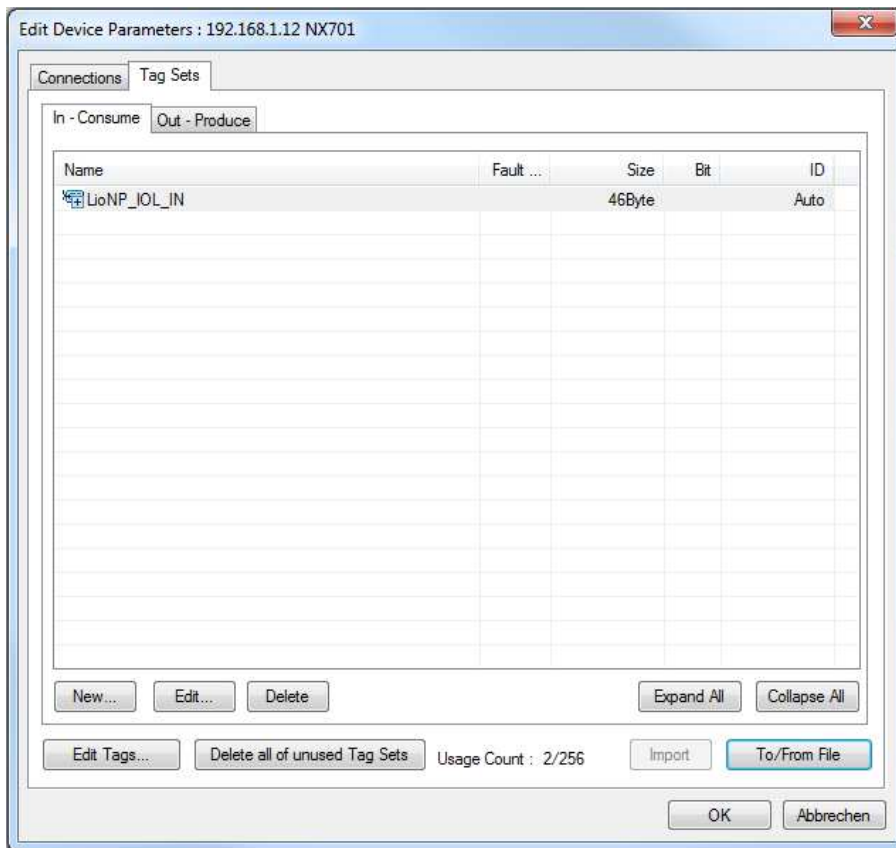


- Export the Global Variables (Tools Menu → Export Global Variables → Network Configurator) and save the CSV file to a known folder (e.g. OMRON_Global_Variables.csv)
- Go Online  with the PLC and transfer the project with the EtherNet/IP connection settings to the Controller :

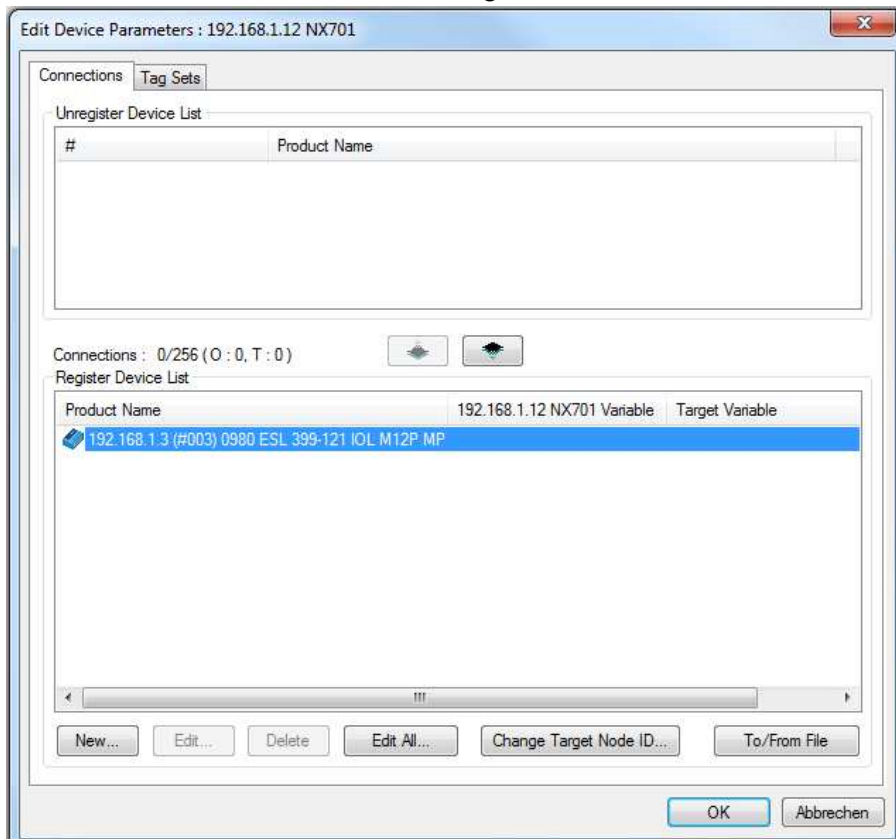


- To realize the process data exchange over the tags you have to import the created CSV file in the Network Configurator (double-click on the PLC icon → Tag Sets → To/From

File → Import from File → e.g. OMRON_Global_Variables.csv). The tags for the Global Variables are shown in the direction tabs:



12. Following you have to register the EtherNet/IP connections in the PLC. Click Connections tab, select the LioN-P module and register  the device:



13. Edit the EtherNet/IP connection and link the assemblies with the tags (double-click on the registered LioN-P module). Choose a Connection I/O Type or select the tag and assembly each for both directions, set the RPI time, register the connections and close the window:

192.168.1.3 0980 ESL 399-121 IOL M12P MP Edit Connection

It will add a connection configuration to originator device.
Please configure the Tag Set each of originator device and target device.

Connection I/O Type : Status/Ctrl

Originator Device

Node Address : 192.168.1.12
Comment : NX701
Input Tag Set : Edit Tag Sets
LioNP_IOL_IN - [46Byte]
Connection Type : Multi-cast connection

Output Tag Set : Edit Tag Sets
LioNP_IOL_OUT - [4Byte]
Connection Type : Point to Point connection

Target Device

Node Address : 192.168.1.3
Comment : 0980 ESL 399-121 IOL M12P
Output Tag Set : Input_103 - [46Byte]
Input Tag Set : Output_100 - [4Byte]

Hide Detail

Detail Parameter

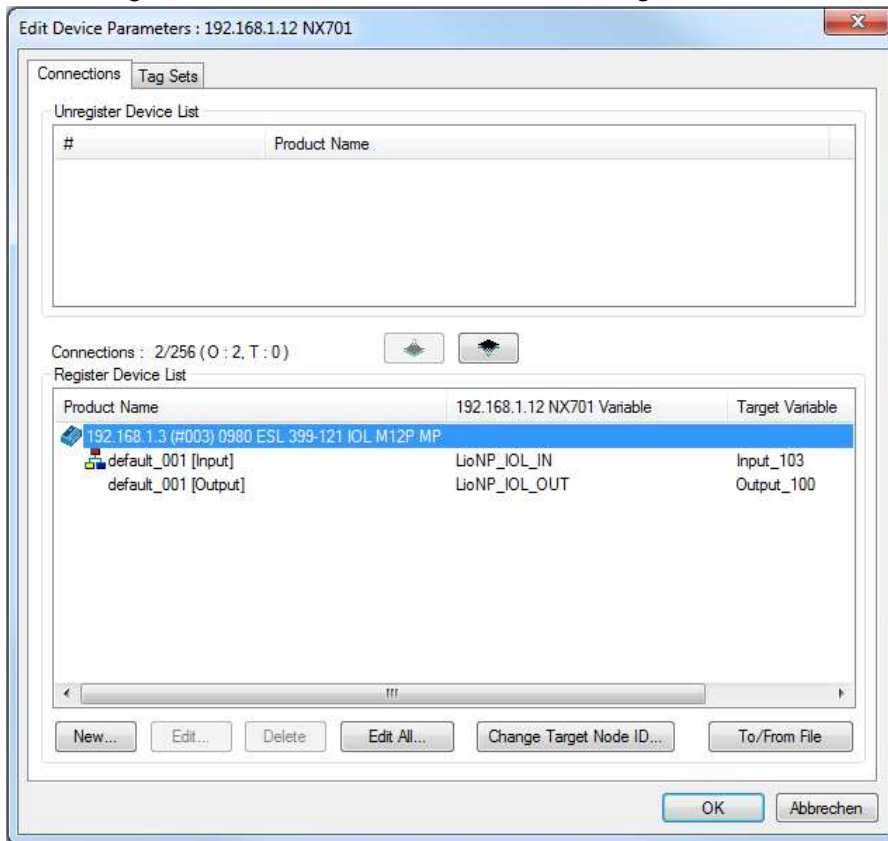
Packet Interval (RPI) : 50.0 ms (0.5 - 10000.0 ms)
Timeout Value : Packet Interval (RPI) x 4
Connection Name : (Possible to omit)


Connection Structure

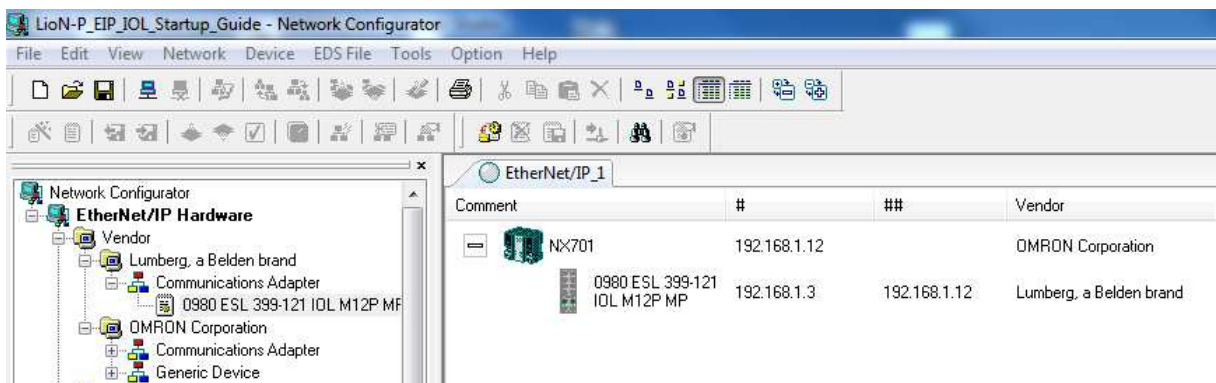
192.168.1.12 NX701

Register Close

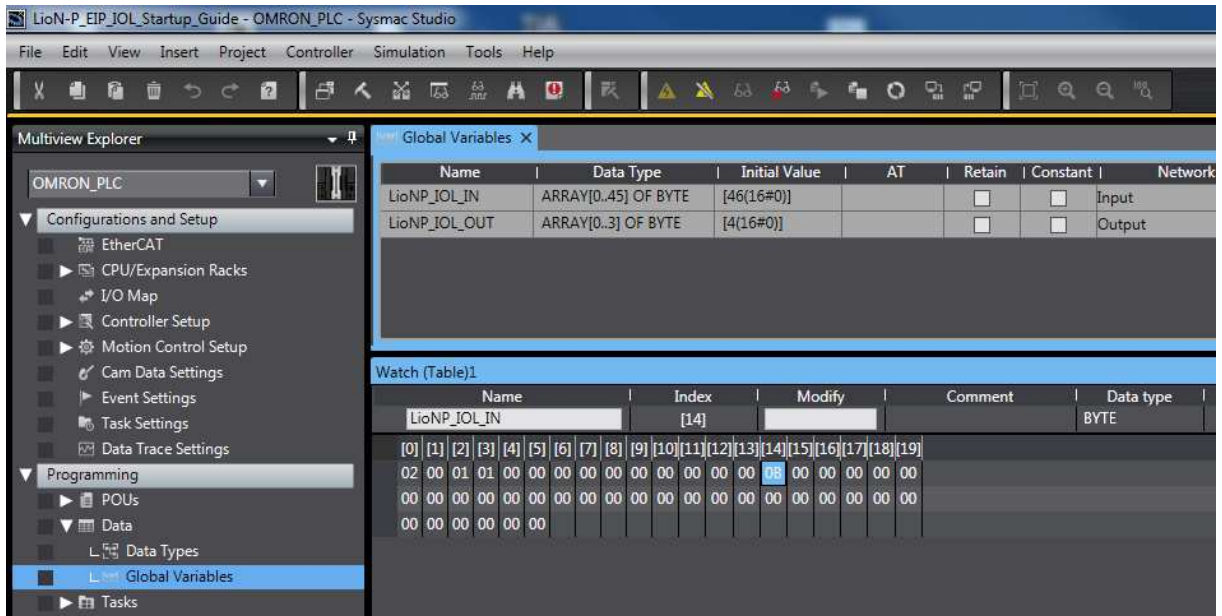
14. The configured connections are shown in the Register Device List:



15. The detailed view  in the Network Configurator shows the dependency between PLC and the LioN-P module:



18. You can show the process data of the LioN-P module with a watch table in Sysmac Studio:



19. Use the webserver to show the port status and get details about the IO-Link sensors.

