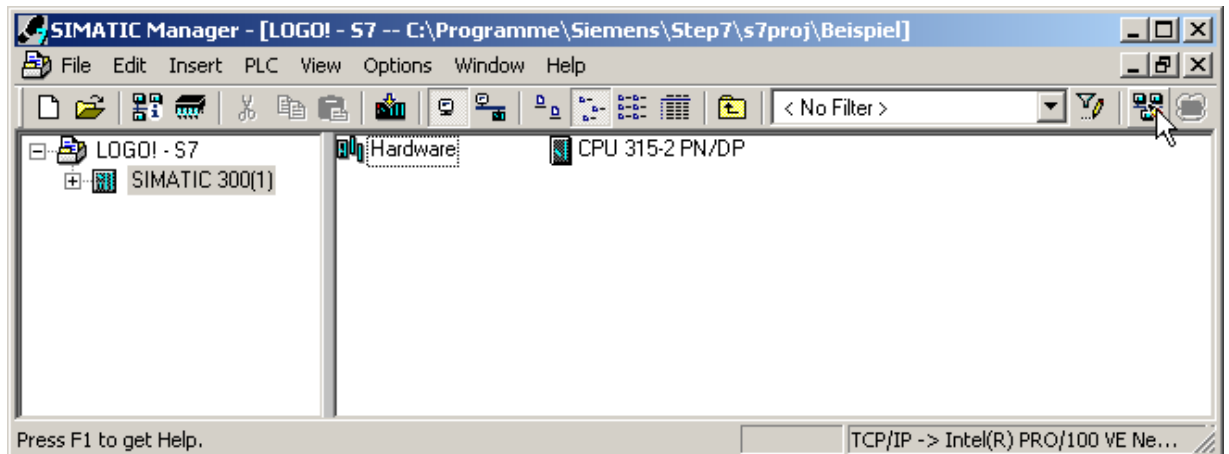


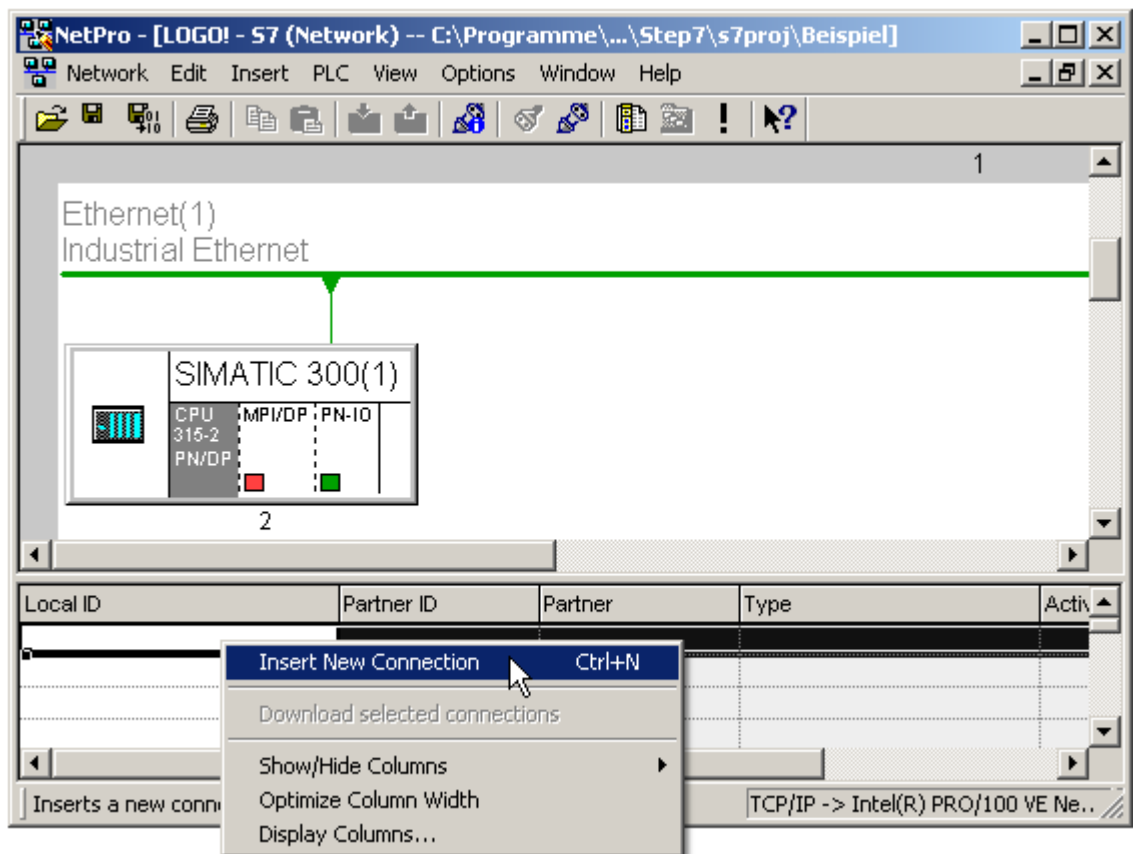
Setting up communication LOGO! ...0BA7 – S7-300 (Step 7 classic)

Settings in Step 7

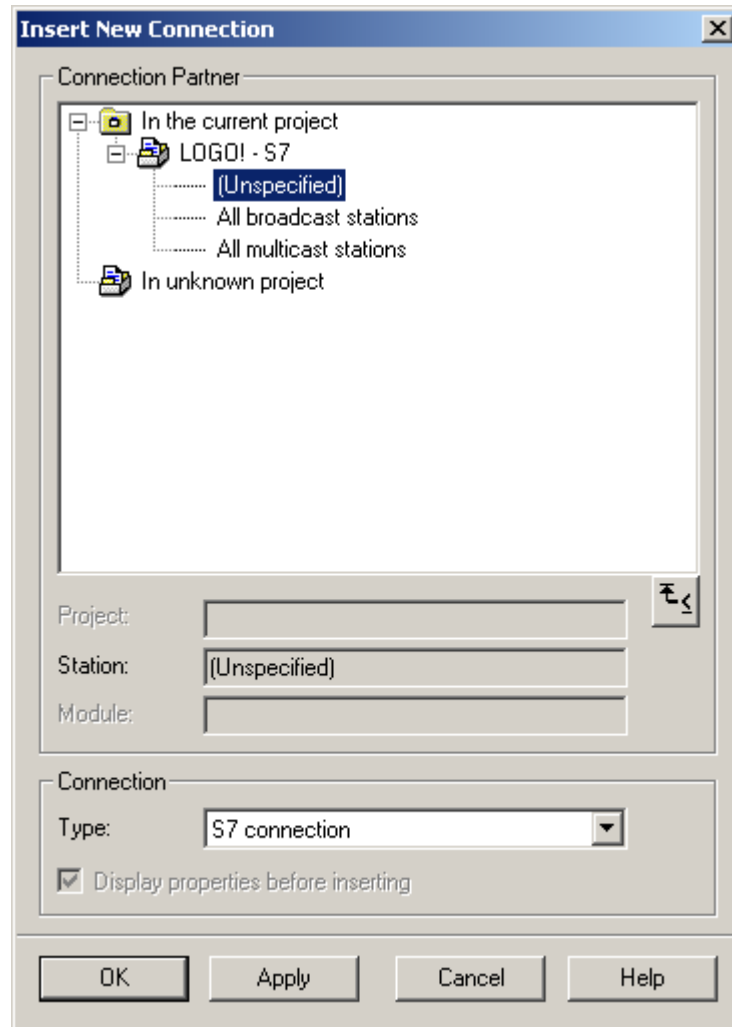
Open a new project in SIMATIC Manager and create the hardware configuration. Add a Ethernet subnet to your CPU (or CP). Then change to NetPro to configure the networks.



Select your CPU (or your CP) and insert a new connection in the connection table with a right-click.



Create an unspecified S7 connection.



Then edit the properties of the added S7 connection. Enter IP address of LOGO! and disable “establish an active connection”. Now your S7 CPU is working as server and your LOGO! take the properties of client and do the write and read cycles.

Properties - S7 connection

General | Status Information

Local Connection End Point

- ☐ Fixed configured dynamic connection
- ☒ One-way
- ☐ Establish an active connection
- ☐ Send operating mode messages

Block Parameters

Local ID (Hex): 1

W#16#1

Default

Connection Path

	Local	Partner
End Point:	SIMATIC 300(1)/CPU 315-2 PN/DP	LOGO! ...0BA7
Interface:	CPU 315-2 PN/DP, PN-IO(R0/S2)	Unspecified
Subnet:	Ethernet(1) [Industrial Ethernet]	[Industrial Ethernet]
Address:	192.168.0.1	192.168.0.2

Address Details...

OK Cancel Help

Change to address details and adjust the TSAPs. For the first connection of LOGO! use TSAP 20.00.

Address Details

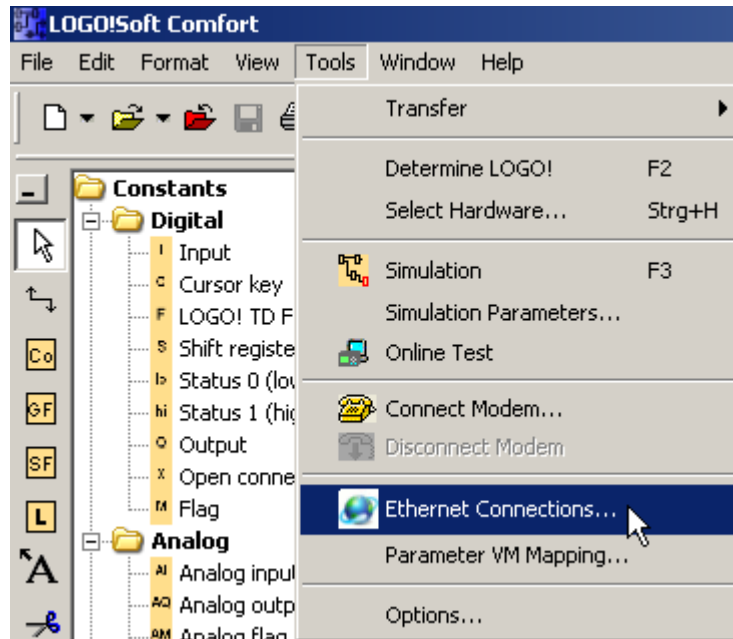
	Local	Partner
End Point:	SIMATIC 300(1)/CPU 315-2 PN/DP	LOGO! ...0BA7
Rack/Slot:	0 / 2	0 / 0
Connection Resource (hex):	10	20
TSAP:	10.02	20.00
S7 Subnet ID:	0028 - 0004	-

OK Cancel Help

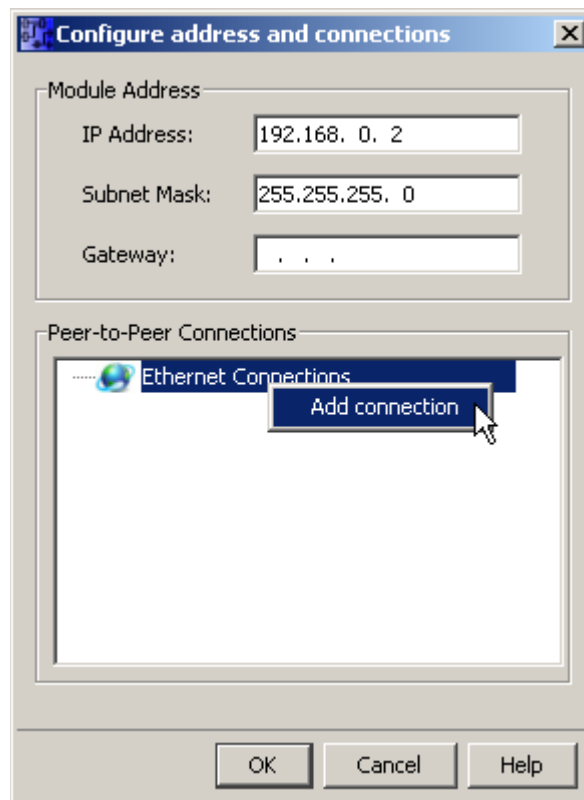
Compile your configuration and download it in your CPU.

Settings in LOGO!Soft Comfort V7

Create a new project and go to Tools > Ethernet-Connections...



Enter IP address and subnet mask of LOGO! and add a new connection with a right-click on Ethernet-Connections.



Now you have to configure a client connection in the properties of the added connection because your S7 station is the server. Enter TSAP and IP address of S7 station in the remote properties. In the table for data transfer you can specify which and how many data are transferred from LOGO! to the server or read from this.

Connection1

☒ Client Connection: Requests data transfer between the local PLC and a remote PLC
☐ Server Connection: Responds to connection requests from remote clients

Local Properties (Client)
TSAP: 20.00

Remote Properties (Server)
TSAP: 10.02
IP Address: 192.168. 0. 1

Data Transfer (Read: Local<-Remote; Write: Local->Remote)

ID	Operate	Length (Bytes)	Address (Local)	Address (Remote)
1				

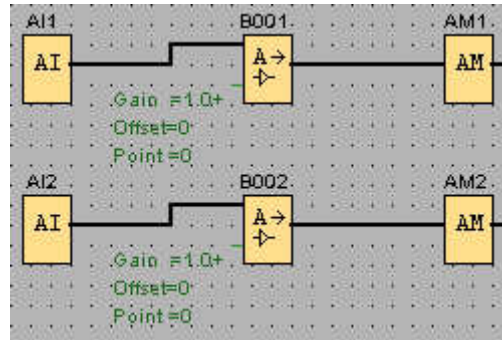
Keep Alive
☐ Enable the Keep Alive function for this connection
Keep Alive Interval: 0 Seconds

OK Cancel Help

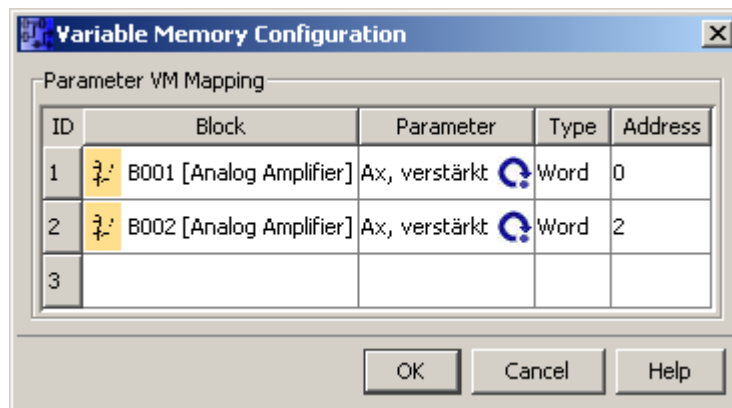
Example:

The digital inputs I1 to I6 and the analog inputs AI1 and AI2 are to be processed in the S7-300. The S7-300 should also be able to address the digital outputs Q1 to Q4.

To transfer the analog input values to the S7-300, you have to enter them in the "Parameter-VM mapping" first. The analog inputs are added to the program of LOGO! for this purpose and then connected with the analog amplifier and the analog flags.



Then you open the "Parameter VM Mapping" under "Tools" and add the analog signals (Ax, amplified) of the two analog amplifiers in the table.



Then you define in the properties of the client connection which data are written to the S7-300 and which data are read from it.

Connection1 (Client of 192.168.0.1)

☒ Client Connection: Requests data transfer between the local PLC and a remote PLC
☐ Server Connection: Responds to connection requests from remote clients

Local Properties (Client)
 TSAP: 20.00

Remote Properties (Server)
 TSAP: 10.02
 IP Address: 192.168.0.1

Data Transfer (Read: Local<-Remote; Write: Local->Remote)

ID	Operate	Length (Bytes)	Address (Local)	Address (Remote)
1	Read	1	VB4	DB1.DBB6
2	Write	1	IB0	DB1.DBB0
3	Write	2	VB0	DB1.DBB2
4	Write	2	VB2	DB1.DBB4

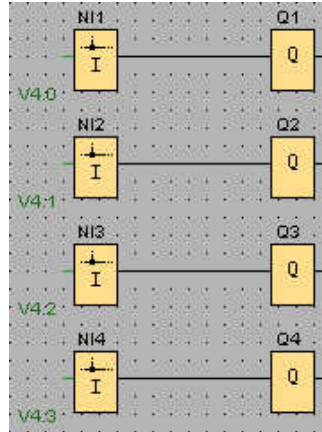
Keep Alive
☐ Enable the Keep Alive function for this connection
 Keep Alive Interval: 0 Seconds

OK Cancel Help

Explanation:

- Line 1: From data block 1 of the S7-300, the data (1 byte) are read from data block byte 6 and sent to variable byte 4 of LOGO!. The outputs of LOGO! are later set from variable byte 4.
- Line 2: The input byte 0 (I1 to I8) of LOGO! is written to the data block type 0 in data block 1 of the S7-300.
- Line 3: The data of the analog amplifier B001 from variable byte 0 of LOGO!, which carries the value of analog input AI1, is written to data block byte 2 (2 bytes).
- Line 4: The data of the analog amplifier B002 from variable byte 2 of LOGO!, which carries the value of analog input AI2, is written to data block byte 4 (2 bytes).

You must also add four network inputs in the LOGO! program and link them with outputs Q1 to Q4. You must set bits 4.0 to 4.3 in the properties of the network inputs because the data for the outputs from data block 1 of the S7-300 are read in to variable byte 4 of LOGO! (see table for data transfer).



A data block must be added in Step7. The lines according to the data transfer table have to be created in this data block.

Address	Name	Type	Initial value	Comment
0.0		STRUCT		
+0.0	I1	BOOL	FALSE	LOGO! Input/Eingang 1
+0.1	I2	BOOL	FALSE	LOGO! Input/Eingang 2
+0.2	I3	BOOL	FALSE	LOGO! Input/Eingang 3
+0.3	I4	BOOL	FALSE	LOGO! Input/Eingang 4
+0.4	I5	BOOL	FALSE	LOGO! Input/Eingang 5
+0.5	I6	BOOL	FALSE	LOGO! Input/Eingang 6
+2.0	AI1	INT	0	LOGO! Analog-Input/Eingang 1
+4.0	AI2	INT	0	LOGO! Analog-Input/Eingang 2
+6.0	Q1	BOOL	FALSE	LOGO! Output/Ausgang 1
+6.1	Q2	BOOL	FALSE	LOGO! Output/Ausgang 2
+6.2	Q3	BOOL	FALSE	LOGO! Output/Ausgang 3
+6.3	Q4	BOOL	FALSE	LOGO! Output/Ausgang 4
=8.0		END_STRUCT		

You can now create a program in Step7 Basic V11. If you want to access LOGO! data or address LOGO! outputs, you only have to configure the corresponding bit or word in the data block.

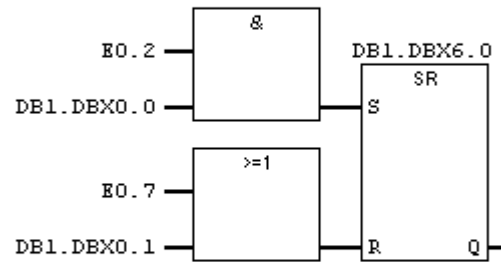
Sample program:

OB1 : "Main Program Sweep (Cycle)"

Comment:

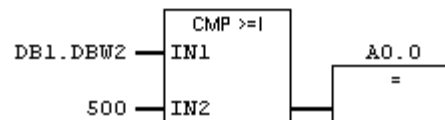
Network 1 : Title:

Comment:



Network 2 : Title:

Comment:



Explanation:

- Network 1: If a 1 signal is present at input I0.2 of the S7-300 and at input I1 of LOGO!, output Q1 of LOGO! is set. If a 1 signal is present at input I0.7 of the S7-300 and at input I2 of LOGO!, output Q1 of LOGO! is reset.
- Network 2: The output Q0.0 of the S7-300 is addressed if the value of the AI1 analog input of LOGO! is greater than or equal to 500 (AI1 \geq 5V).