more than automation

APPLICATION NOTE
PNOZmulti
Fieldbus Connection

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CONTENTS

1 HISTORY

Datum	Versions-Nr.	Auslöser (N./A.)	betr. Kapitel	Grund der Änderung
13.09.2004	1.0	Bauer/Letsche	All	
14.12.04	1.1	Letsche	Omron	
02.02.05	1.2	Christ	9	Ethernet mc8p
13.10.2006		Hohlbauch	10	Profinet mc9p
05.01.2007		Hohlbauch	10	Erweiterung Profinet mc9p

2 Scope

This document describes the fieldbus communication of PNOZ multi. It is based on the developing documents. The document is subject to change without further notice.

The document is not intended as a technical documentation for general use of the fieldbus modules for the PNOZmulti. It may not be distributed to customers without a special note to its scope.

3 Introduction

3.1 Structure of Bus Connection

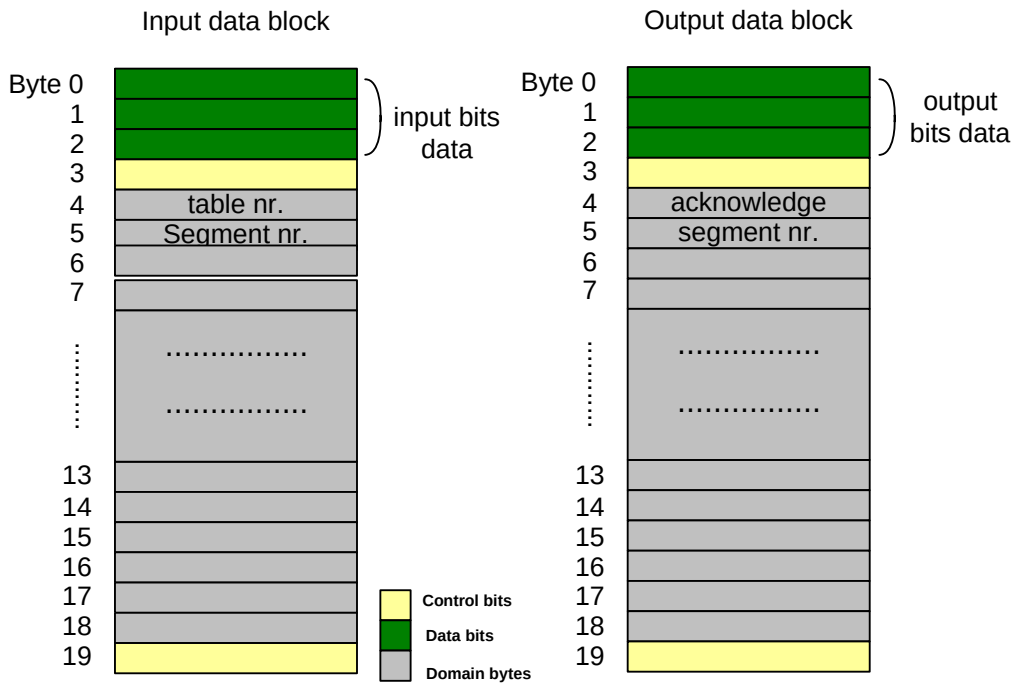
The PNOZmulti uses a common profile based on 20 bytes input and 20 bytes output using the process data channel for the following fieldbuses:

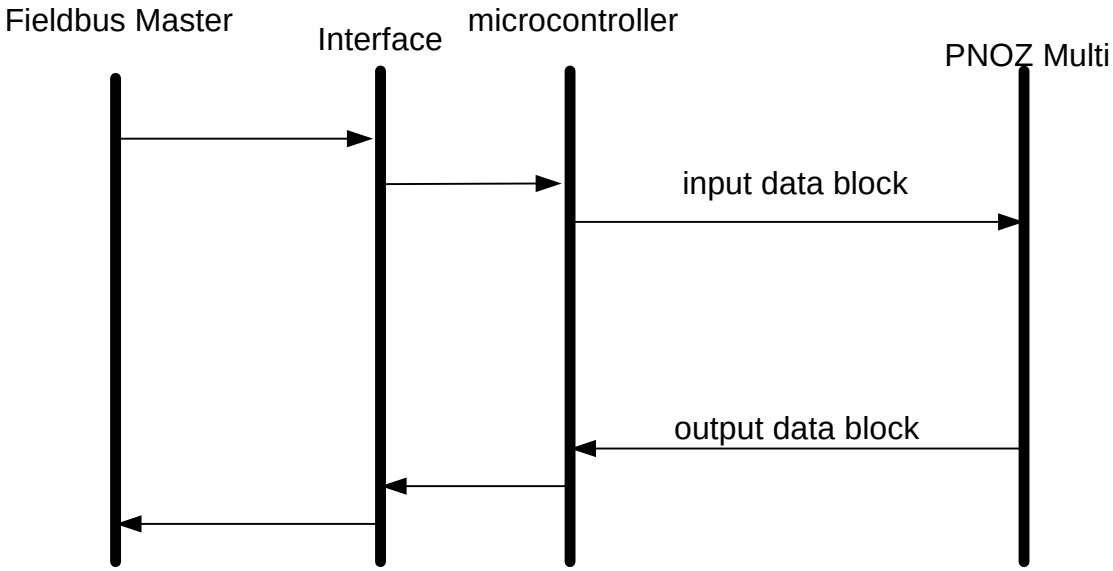
- Profibus-DP
- DeviceNet
- Interbus-S
- CC-Link (24 bytes)

Note: CANopen is handled differently

The Fieldbus module of the PNOZ multi sends an “output data block” and receives an “input data block” . with each OS-cycle.

Each data block consists of 20 bytes. The first three bytes are used for user bit data, the next one is for status bits and 15 bytes are used for Table transfer and one byte as Control bits.



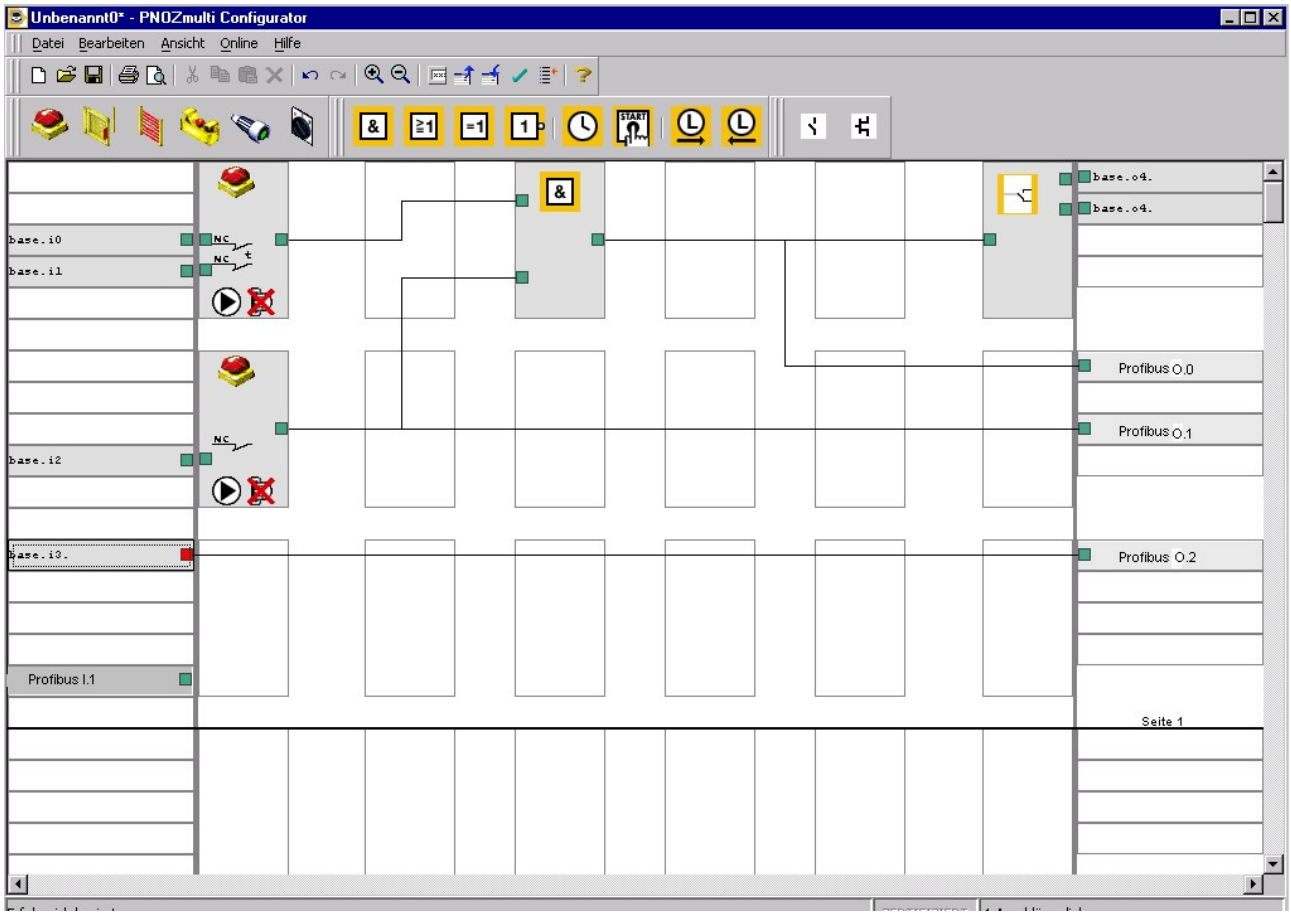


3.1.1 User I/O Bit Data

A part of the data blocks will be processed in PNOZmulti as fieldbus flags. The first three bytes of the input data block and the first three bytes of the output data block are user bit data.

3.1.1.1 Assignment of the I/O Bit Data

In the first step, (V3.0) the user can only assign 24 flags of the PNOZmulti and internal flags to the output data block. The transfer of bits to the Multi into the input data block is realized in a later version.



The user can choose the fieldbus bit in the same process using “set active”

The user can assign each internal flag of PNOZmulti to the fieldbus bits.

In the diagram “Profibus” is the name that the user has given to the fieldbus module during the configuration in the window “Select Base and Expansion Modules”.

The “O” and “I” after mean Output and Input. There are 24 bits as output.

In the same way for “Set input and outputs active”, the fieldbus bits can have comments. It will be displayed like the others symbolic names
For example: “Profibus O.2.Main E-Stop”

”Profibus” is the name of the module.
”O” means Output.
”2” means the bit 2 of the module.
”Main E-Stop” is the symbolic name of the bit.

There are some restrictions due to the safety to use the fieldbus input bits. The using of the input bits will be not realized in the first step (V3.0)

The bits 0 to 23 are organized in the bytes 0 to 2 as shown:

The current status of the outputs configured for the fieldbus plus the current LED status are always stored in Byte 0 ... Byte 3. All other information is stored in various tables.

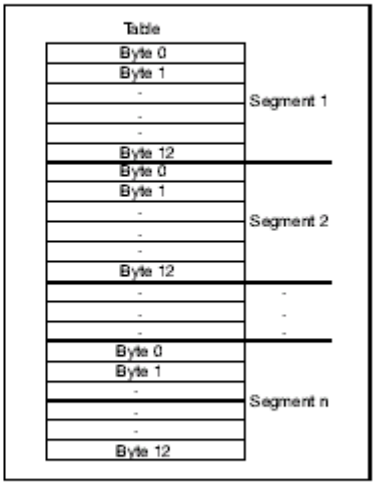
Assignment of Byte 0 ... Byte 3
The outputs are defined in the PNOZmulti Config. Each output that is used is given a number there, e.g. o0, o5... . The status of output o0 is stored in Bit 0 of Byte 0; the status of output o5 is stored in Bit 5 of Byte 0 etc.

Byte								
0	o7	o6	o5	o4	o3	o2	o1	o0
1	o15	o14	o13	o12	o11	o10	o9	o8
2	o23	o22	o21	o20	o19	o18	o17	o16

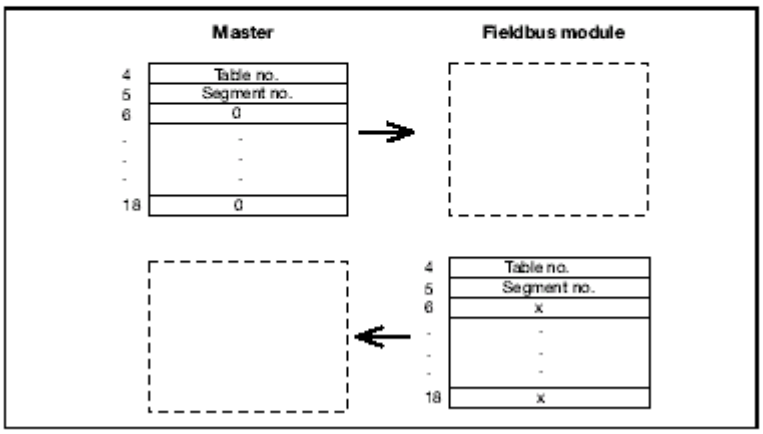
The status of the LEDs is stored in Byte 3:

Bit 0 = 1:	OFAULT LED is lit
Bit 1 = 1:	IFAULT LED is lit
Bit 2 = 1:	FAULT LED is lit
Bit 3 = 1:	DIAG LED is lit
Bit 4 = 1:	RUN LED is lit
Bit 5 = 1:	If communication between the PNOZmulti and the fieldbus is working
Bit 6:	Reserved
Bit 7:	Reserved

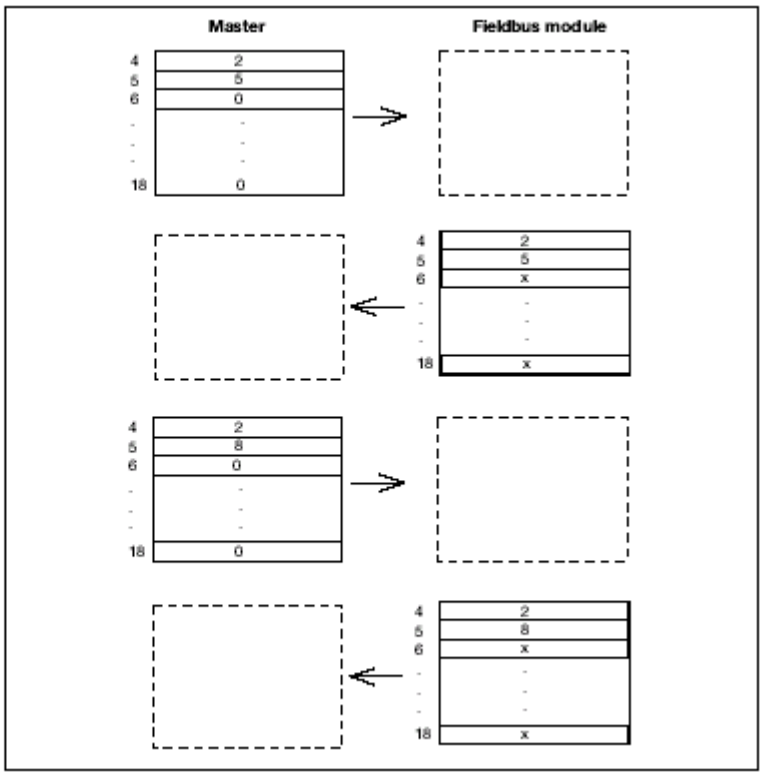
Assignment of Byte 4 ... Byte 18
Each table consists of one or more segments. Each segment is made up of a max. 13 Bytes. There are 6 tables, whose assignment is fixed.



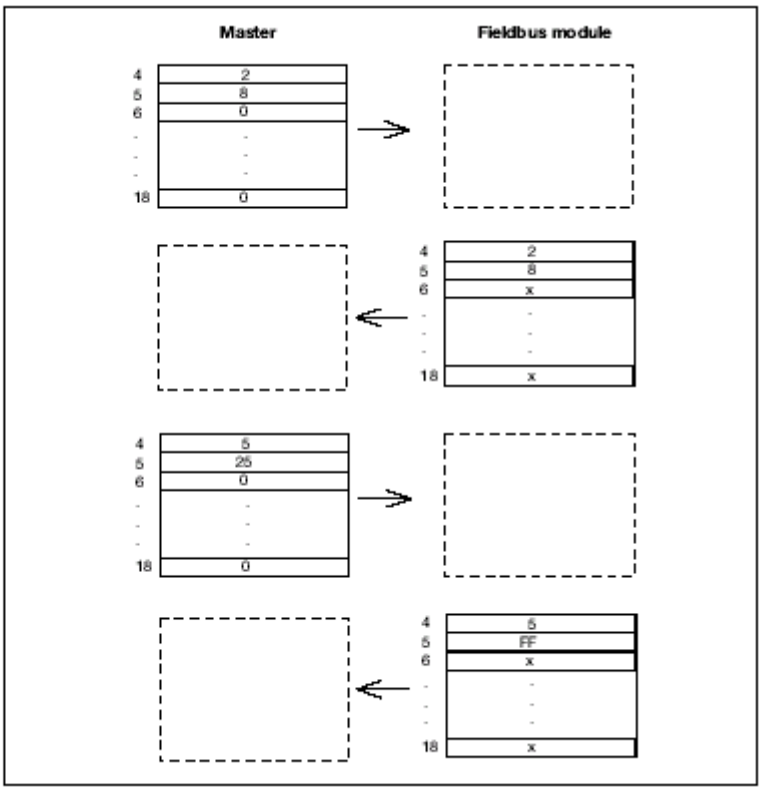
The Master must request the table number and segment number required. The Slave (e.g. PNOZ mc3p) repeats the two numbers and sends the requested data. If a number is requested that is not available, the Slave sends the error message 'FF' instead of the segment number.
The segments may be requested in any sequence.



Example 1:
The Master requests segment 5 from table 2. The fieldbus module repeats both these details and sends segment 5. Then the data from segment 8 in table 2 is transmitted.



Example 2:
The Master requests segment 8 from table 2. The fieldbus module repeats both of these details and sends segment 8. Then the Master requests segment 25 from table 5. As this table does not contain a segment 25, the Slave registers an error and sends back 'FF'.



3.1.2 List of Tables

Table No	Description	Number of Segments
1	Configuration	6
2	Error Stack	128 (Do not use)
3	Status of digital inputs	1
4	Status of digital outputs	2
5	Status of LED's	3
6	Error Stack in standard format	128 (Not implemented)

3.1.2.1 Table 1: PNOZmulti Configuration

Segment	Byte	Description	Comment
0	0	PN1	4 Byte Product number
	1	PN2	
	2	PN3	
	3	PN4	
	4	GV1	4 Byte Device version
	5	GV2	
	6	GV3	
	7	GV4	
	8	SN1	4 Byte Serial number
	9	SN2	
	10	SN3	
	11	SN4	
	12	Not used	
1	0	CRC- User Data Low Byte	Checksum of the user program
	1	CRC- User Data High Byte	
	2	CRC_ All Data Low Byte	Checksum of the entire Chip card
	3	CRC_ All Data High Byte	
	4	Date	4 Byte for creation date of the user program
	5	Date	
	6	Date	
	7	Date	
	8	Not used	
	9	Not used	
	10	Not used	
	11	Not used	
	12	Not used	
2	0	Expansion left type	9 Byte hardware registry Same code as in the Component-table
	1	Expansion 1 right type	
	2	Expansion 2 right type	
	3	Expansion 3 right type	
	4	Expansion 4 right type	
	5	Expansion 5 right type	
	6	Expansion 6 right type	
	7	Expansion 7 right type	
	8	Expansion 8 right type	
	9	Not used	
	10	Not used	
	11	Not used	
	12	Not used	
3	0	BYTE_0	Project name Byte 0 to 12: The end of the string is indicated
	1	BYTE_1	

Segment	Byte	Description	Comment
	2	BYTE_2	with 0xFFFF. If in this segment there is no 0xFFFF, another 13 Bytes can be read out (Segment 4).
	3	BYTE_3	
	4	BYTE_4	
	5	BYTE_5	
	6	BYTE_6	
	7	BYTE_7	
	8	BYTE_8	
	9	BYTE_9	
	10	BYTE_10	
	11	BYTE_11	
	12	BYTE_12	
4	0	BYTE_13	Project name Byte 13 to 25: The end of the string is indicated with 0xFFFF. If in this segment there is no 0xFFFF, another 13 Bytes can be read out (Segment 5).
	1	BYTE_14	
	2	BYTE_15	
	3	BYTE_16	
	4	BYTE_17	
	5	BYTE_18	
	6	BYTE_19	
	7	BYTE_20	
	8	BYTE_21	
	9	BYTE_22	
	10	BYTE_23	
	11	BYTE_24	
	12	BYTE_25	
5	0	BYTE_26	Project name Byte 26 to 31: The end of the string is indicated with 0xFFFF
	1	BYTE_27	
	2	BYTE_28	
	3	BYTE_29	
	4	BYTE_30	
	5	BYTE_31	
	6	END-String (FFFF)	
	7	END-String (FFFF)	
	8	Not used	
	9	Not used	
	10	Not used	
	11	Not used	
	12	Not used	

3.1.2.2 Table 2: Error Stack (DO NOT USE)

In total, the error stack has 64 entries with two segments each (Segment 0 to 127). Each second segment contains a relative time stamp to the last Power ON of the PNOZmulti. The Segment-number 0 is the most current one..

Segment	Byte	Description	Comment
0	0	F-Class	Error class
	1	F-Info.	Error Information
	2	F-Nr.	Error Number
	3	Par_0	5 Bytes for Parameters
	4	Par_1	
	5	Par_2	
	6	Par_3	
	7	Par_4	
	8	Not used	

Segment	Byte	Description	Comment
	9	Not used	
	10	not used	
	11	not used	
	12	not used	
...	0		
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
127	0	F-Class	Error class
	1	F-Info.	Error Information
	2	F-Nr.	Error Number
	3	Par_0	5 Bytes for Parameters
	4	Par_1	
	5	Par_2	
	6	Par_3	
	7	Par_4	
	8	Not used	
	9	not used	
	10	not used	
	11	Not used	
	12	Not used	

3.1.2.3 Table 3: Status of the Digital Inputs

Physically not available inputs are always shown with status "0".
Each input byte (IB) contains up to 8 bits of the module

Segment	Byte	Description	Comment
0	0	IB 0.0 - i00 to i07	Base Module
	1	IB 1.0 - i08 to i15	
	2	IB 2.0 - i16 to i19	
	3	0	reserved
	4	0	reserved
	5	IB 5.0 - i00 to i07	Expansion Modules
	6	IB 6.0 - i00 to i07	
	7	IB 7.0 - i00 to i07	
	8	IB 8.0 - i00 to i07	
	9	IB 9.0 - i00 to i07	
	10	IB 10.0 - i00 to i07	
	11	IB 11.0 - i00 to i07	
	12	IB 12.0 - i00 to i07	

3.1.2.4 Table 4: Status of the Digital Outputs

Physically not available outputs are always shown with status "0".
Each output byte (OB) contains up to 8 bits of the module

Segment	Byte	Description	Comment
0	0	0	Base Module
	1	0	
	2	0	
	3	OB 3.0 - o00 to o03	
	4	OB 4.0 - o04 to o05	
	5	OB 5.0 - o00 to o03	Expansion Modules
	6	OB 6.0 - o00 to o03	
	7	OB 7.0 - o00 to o03	
	8	OB 8.0 - o00 to o03	
	9	OB 9.0 - o00 to o03	
	10	OB 10.0 - o00 to o03	
	11	OB 11.0 - o00 to o03	
	12	OB 12.0 - o00 to o03	
1	0	0	Expansion Modules Second Byte
	1	0	
	2	0	
	3	0	
	4	0	
	5	OB 5.8	
	6	OB 6.8	
	7	OB 7.8	
	8	OB 8.8	
	9	OB 9.8	
	10	OB 10.8	
	11	OB 11.8	
	12	OB 12.8	

3.1.2.5 Table 5: Status of the LED's

Segment	Byte	Description	Comment
0	0	RUN	00h: Led is OFF FFh: Led is ON 30h: Led is flashing
	1	Diag	
	2	FAULT	
	3	I-Fault	
	4	O-Fault	
	5	FAULT 1.Expansion module	
	6	FAULT 2.Expansion module	
	7	FAULT 3.Expansion module	
	8	FAULT 4.Expansion module	
	9	FAULT 5.Expansion module	
	10	FAULT 6.Expansion module	
	11	FAULT 7.Expansion module	
	12	FAULT 8.Expansion module	
1	0	IB 0.0	Flash Mask of the digital inputs 0: LED is not flashing 1: LED is flashing
	1	IB 1.0	
	2	IB 2.0	
	3	Reserved	
	4	Reserved	
	5	IB 5.0	

Segment	Byte	Description	Comment
	6	IB 6.0	
	7	IB 7.0	
	8	IB 8.0	
	9	IB 9.0	
	10	IB 10.0	
	11	IB 11.0	
	12	IB 12.0	
2	0	LED A: Top left	LED Status of the Fieldbus Module 0000 0000 LED off or not used by the module 0000 0001 LED Green 0000 0010 LED Red other values are not defined!
	1	LED B: Top right	
	2	LED C: Bottom left	
	3	LED D: Bottom right	
	4	Not used	
	5	Not used	
	6	Not used	
	7	Not used	
	8	Not used	
	9	Not used	
	10	Not used	
	11	Not used	
	12	Not used	

3.1.2.6 Table 6: Error Stack in Standard Format

This table is not completely defined yet.

3.2 Configuration of the Fieldbus Module

3.2.1 Fieldbus Configuration in Programming Tool

In the configuration phase of PNOZmulti (in the window “Select Base Modules and Expansion Modules”) there is a possibility to select the fieldbus module.

There is no configuration necessary in the software.

All necessary settings are done at the Fieldbus module hardware.

3.2.2 Version Management

The PNOZmulti and the Fieldbus module can run together, if the communication protocol and data processing (the format) in both are matched.

The PNOZmulti tells the Fieldbus Module in the configuration segment 0, by which format it will run. After that, the Fieldbus module will match itself according to it.

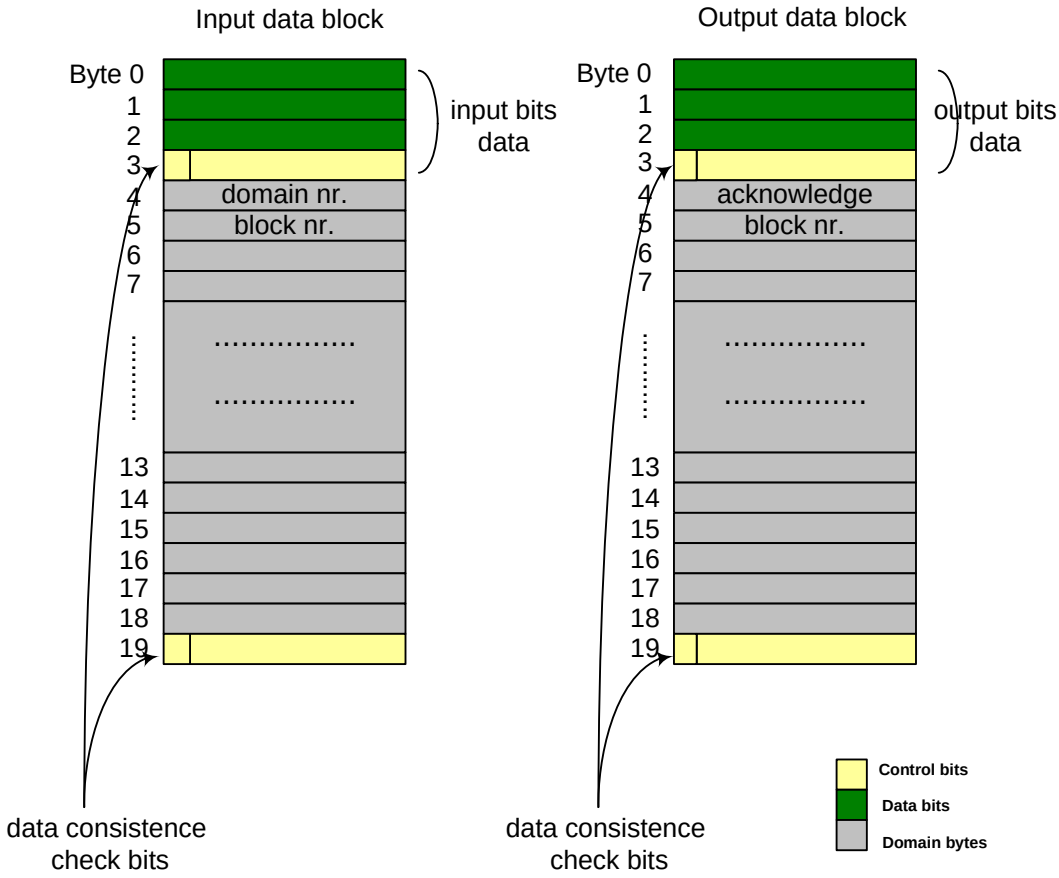
If the Fieldbus module cannot support (or simulate) the suggested format from the PNOZmulti, it will report an error and jump to stop.

3.2.3 Fieldbus Configuration File

Some Fieldbus systems require a configuration file. This file is part of the CD where the PNOZmulti configuration tool is supplied.

3.2.4 Data Consistency

Data consistency has to be guaranteed for the table transfer protocol.



Some fieldbuses cannot support data consistency or the user will not configure the fieldbus to support it (it has some disadvantage). E.g. for Profibus it is easy to select this feature in the configuration of the master.

In order to support data consistency for entire system between PNOZmulti and PLC, a special Protocol will be used.

3.2.5 Data Consistency Protocol

Here are used two bits in each data segment to guarantee the data consistence.
The bit 7 of byte 4 and bit 7 of byte 19 are used. The bits are always the same if the data are consistence. They will toggle for each data sending from the sender. The receiver should check these bits for equality.

This protocol will be used for both directions. The sender has to toggle the bits when it writes a new data into bytes 4 to 18 of the segment.

The receiver checks the two bits when it receives a new segment. The receiver checks the bits only for the equality and not for to be toggled. If the sender is not interested in data consistence check, it can leave the bits without changes, but they must be always equal.

From the PNOZmulti side as a sender, the bits will be toggled for each changing in the table bytes (bytes 4 to 18).

In the PNOZmulti as a receiver, the two bits will be checked always for equality only. If the bits are not equal, it will set a bit in its status segment. In this case, the table data will be used anyway if the bits are not same for two times after each other.

The PLC as a sender can toggle the 2 bits if it is interested in the data consistence check or let the 2 bits stay always equal and same as before.

The PLC as a receiver can check the two bits for equality, or ignore them.

3.3 Fieldbus Specific Features

Currently the following fieldbus modules are available

Bus System	Product Name	Order Number
Profibus DP	PNOZ mc3p	773 721
DeviceNET	PNOZ mc4p	773 722
Interbus-S	PNOZ mc5p	773 723
CANopen	PNOZ mc6p	773 724
CC-Link	PNOZ mc7p	773 726

3.3.1 Address and Baud Rate Setting

Bus System	Addressing	Baud Rate
Profibus DP	Setting from 1 to 99 with rotary switch	Auto Baud detection
DeviceNet	Setting of MAC ID from 0 to 63 with Dip switch	Setting 125, 250 or 500 KBaud with dip switch
Interbus-S	No address setting required	Setting 500Kbaud or 2Mbaud with jumper
CANopen	Setting from 1 to 99 with rotary switch	Setting 10, 20, 50, 125, 250, 500, 800 and 1MBaud with rotary switch
CC-Link	Setting from 1 to 64 with rotary switch	Setting 156, 625 KBaud, 2.5, 5 and 10MBaud with rotary switch

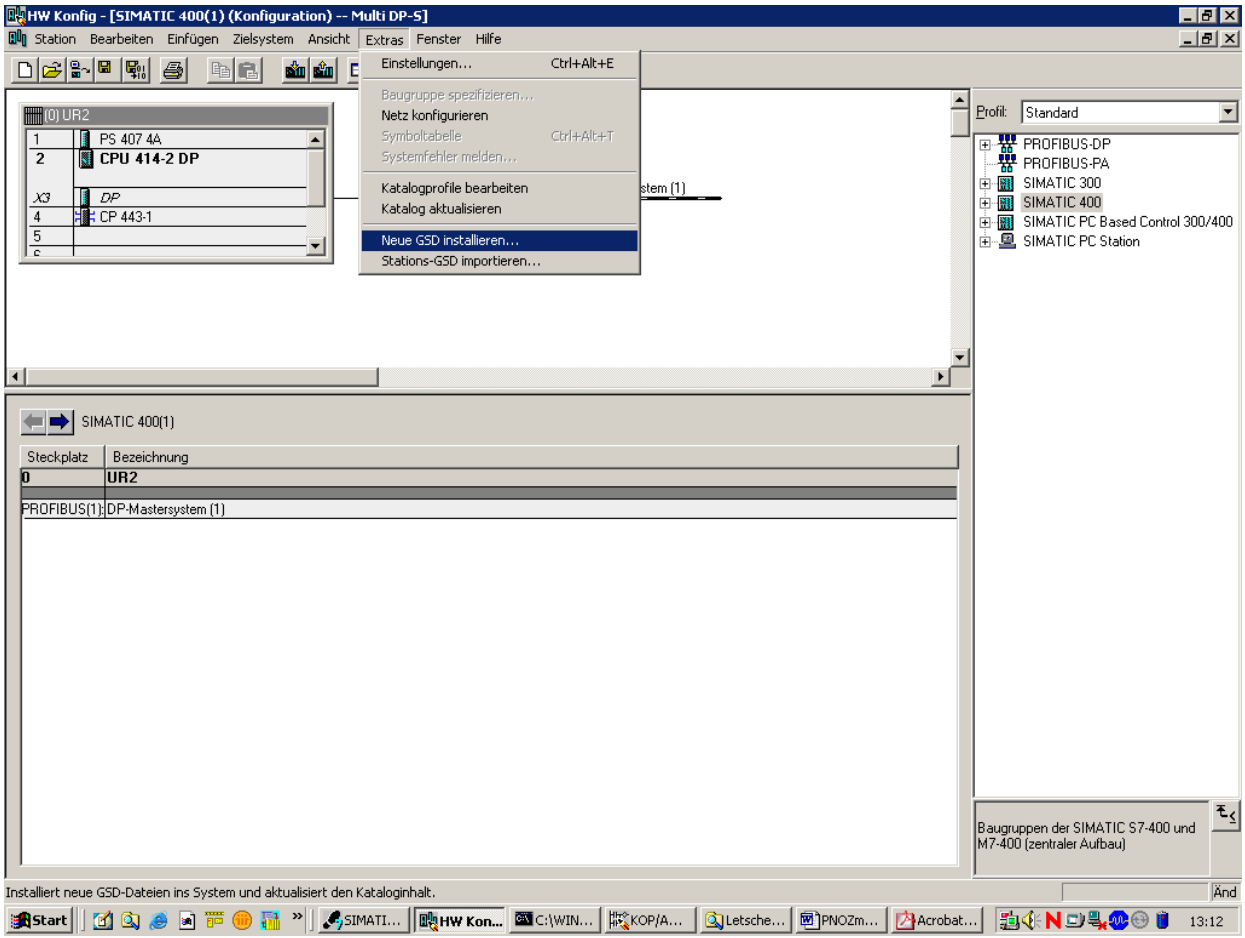
3.3.2 Configuration Files

Bus System	File Type	Name
Profibus DP	GSD file	Pilz07F3.GSD
DeviceNet	EDS file	PNOZmc4p.eds
Interbus-S	None ($ID03_{hex}$)	---
CANopen	EDS file	PNOZmc6p.eds
CC-Link	CSP file	PNOZ-MC7P_2.csp

4 Profibus DP (PNOZ mc3p)

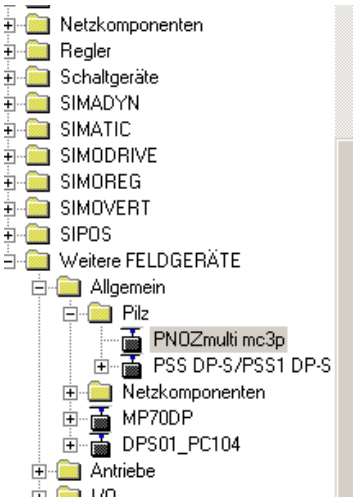
4.1 Importing the GSD file

It is necessary to import the actual GSD file. You can download the latest file on the homepage of PILZ.

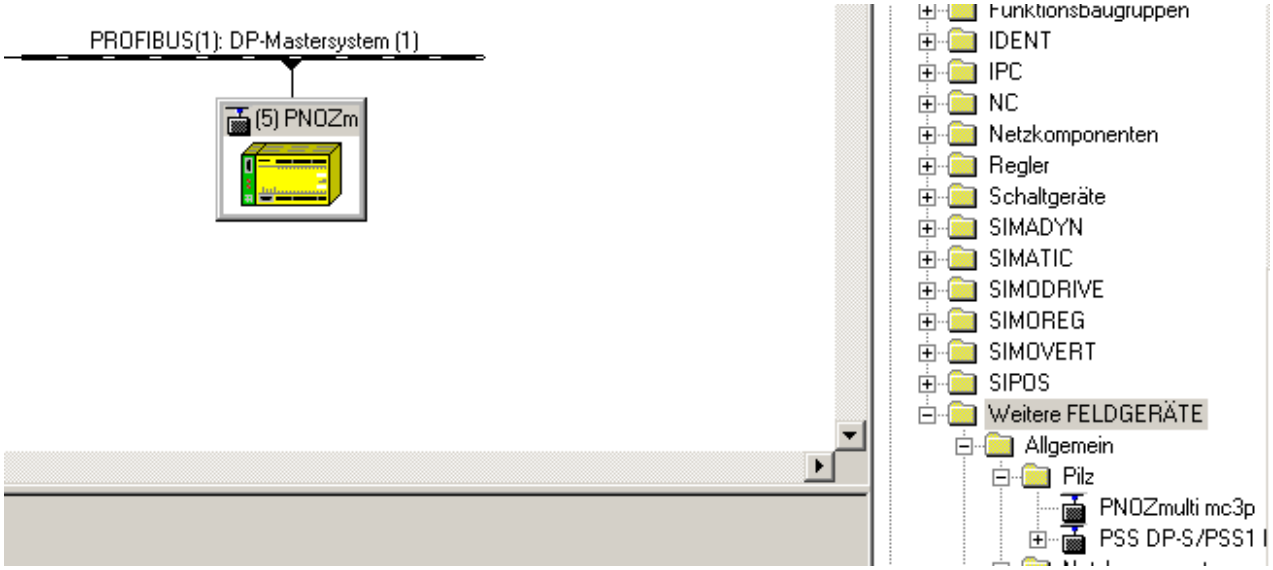


4.2 Configure the network

The PNOZ Multi mc3p module can be found in the hardware catalogue after the GSD file has been imported.



Select the module an insert it in the DP- master system.



Use the Address as configured on the HW module.

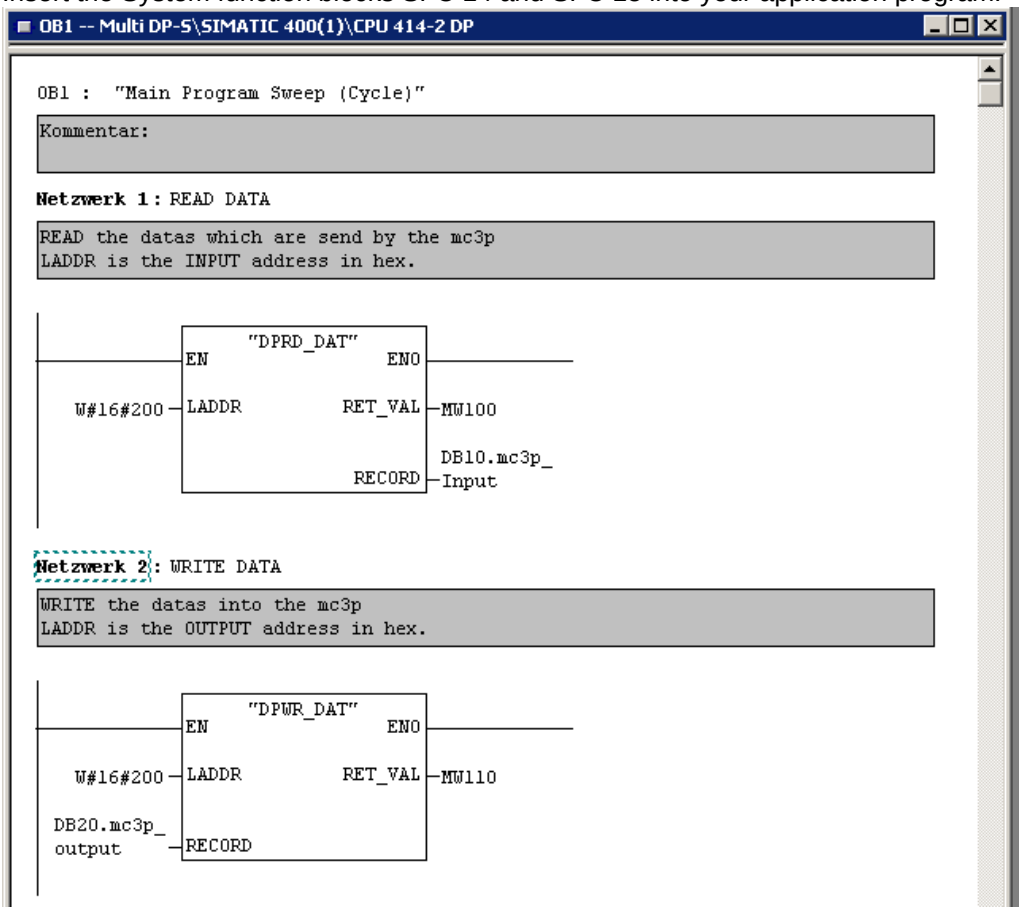
The input/output addresses are configured be the S7 Software. These adresses will be used in the application program. (SFC 14 / SFC 15)

Steckplatz	Baugruppe / DP-Kennung	Bestellnummer	E-Adresse	A-Adresse	Kommentar
0	192	mc3p	512..531	512..531	

It is possible to change the addresses.

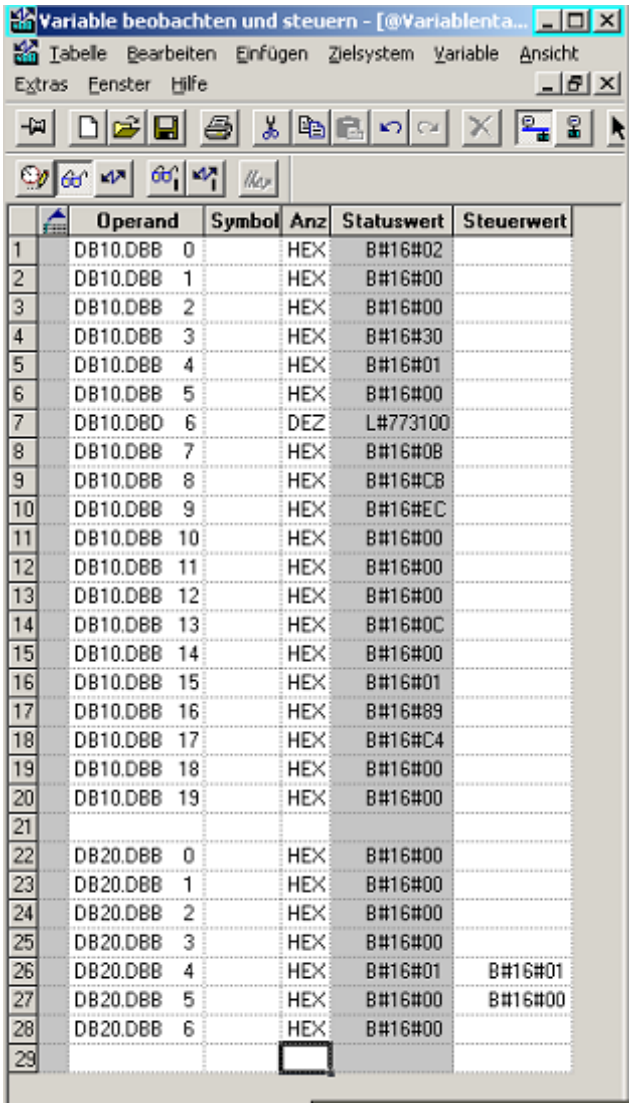
4.3 Application program

Insert the System function blocks SFC 14 and SFC 15 into your application program.



In the example we write the datas of the DB 20 and we store the datas into the DB 10.

To fetch a table we have to send the tabel number and the segment number to the mc3p. Therefore write the tabel number into the data byte 4 and the segment number into the byte 5



	Operand	Symbol	Anz	Statuswert	Steuerwert
1	DB10.DBB 0		HEX	B#16#02	
2	DB10.DBB 1		HEX	B#16#00	
3	DB10.DBB 2		HEX	B#16#00	
4	DB10.DBB 3		HEX	B#16#30	
5	DB10.DBB 4		HEX	B#16#01	
6	DB10.DBB 5		HEX	B#16#00	
7	DB10.DBD 6		DEZ	L#773100	
8	DB10.DBB 7		HEX	B#16#0B	
9	DB10.DBB 8		HEX	B#16#CB	
10	DB10.DBB 9		HEX	B#16#EC	
11	DB10.DBB 10		HEX	B#16#00	
12	DB10.DBB 11		HEX	B#16#00	
13	DB10.DBB 12		HEX	B#16#00	
14	DB10.DBB 13		HEX	B#16#0C	
15	DB10.DBB 14		HEX	B#16#00	
16	DB10.DBB 15		HEX	B#16#01	
17	DB10.DBB 16		HEX	B#16#89	
18	DB10.DBB 17		HEX	B#16#C4	
19	DB10.DBB 18		HEX	B#16#00	
20	DB10.DBB 19		HEX	B#16#00	
21					
22	DB20.DBB 0		HEX	B#16#00	
23	DB20.DBB 1		HEX	B#16#00	
24	DB20.DBB 2		HEX	B#16#00	
25	DB20.DBB 3		HEX	B#16#00	
26	DB20.DBB 4		HEX	B#16#01	B#16#01
27	DB20.DBB 5		HEX	B#16#00	B#16#00
28	DB20.DBB 6		HEX	B#16#00	
29					

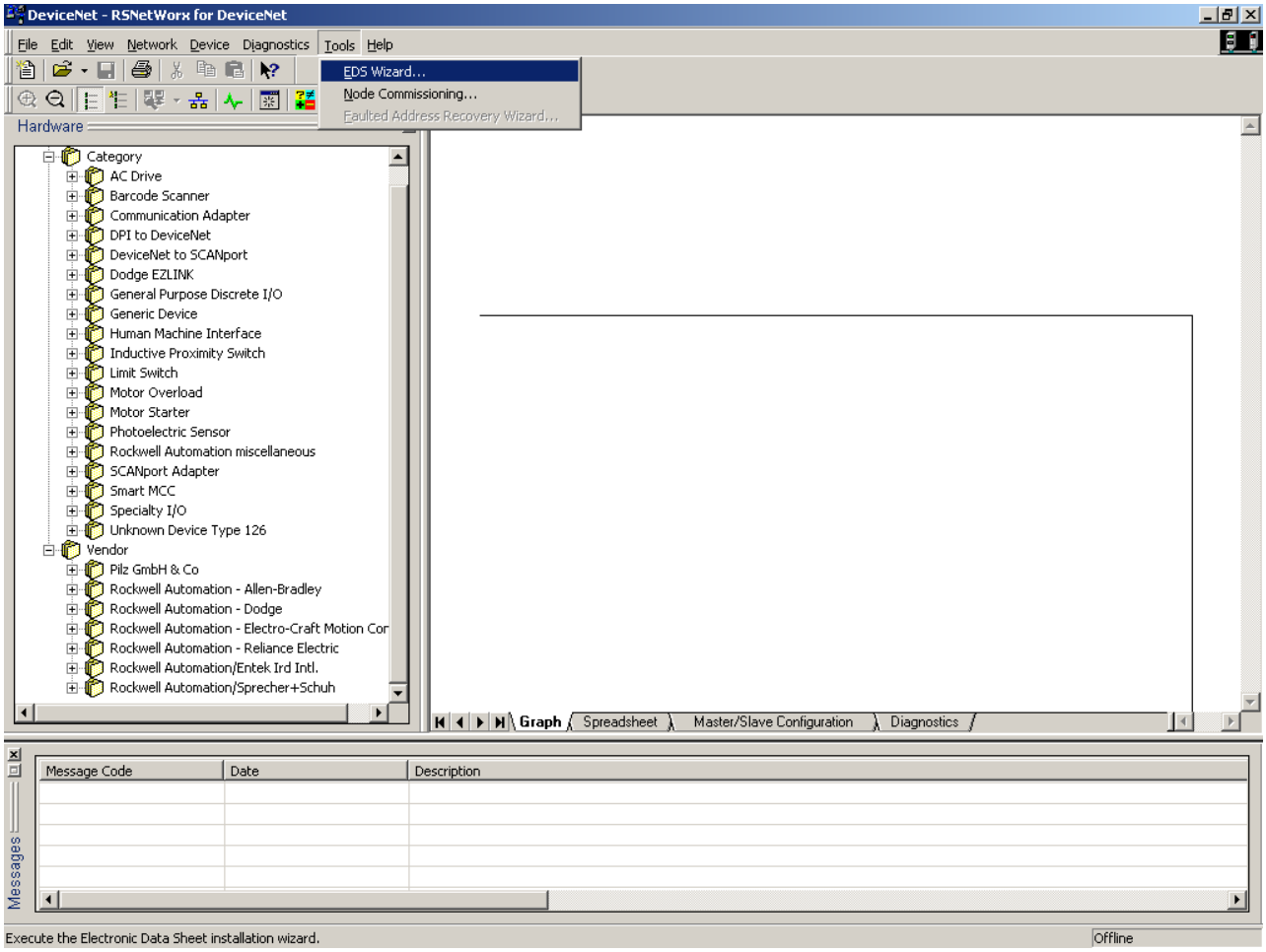
In the picture you can see the request of the table 1 segment 0.
To start the request you have to insert the number for the table into the databyte 4 and the number of the segment into the databyte 5.

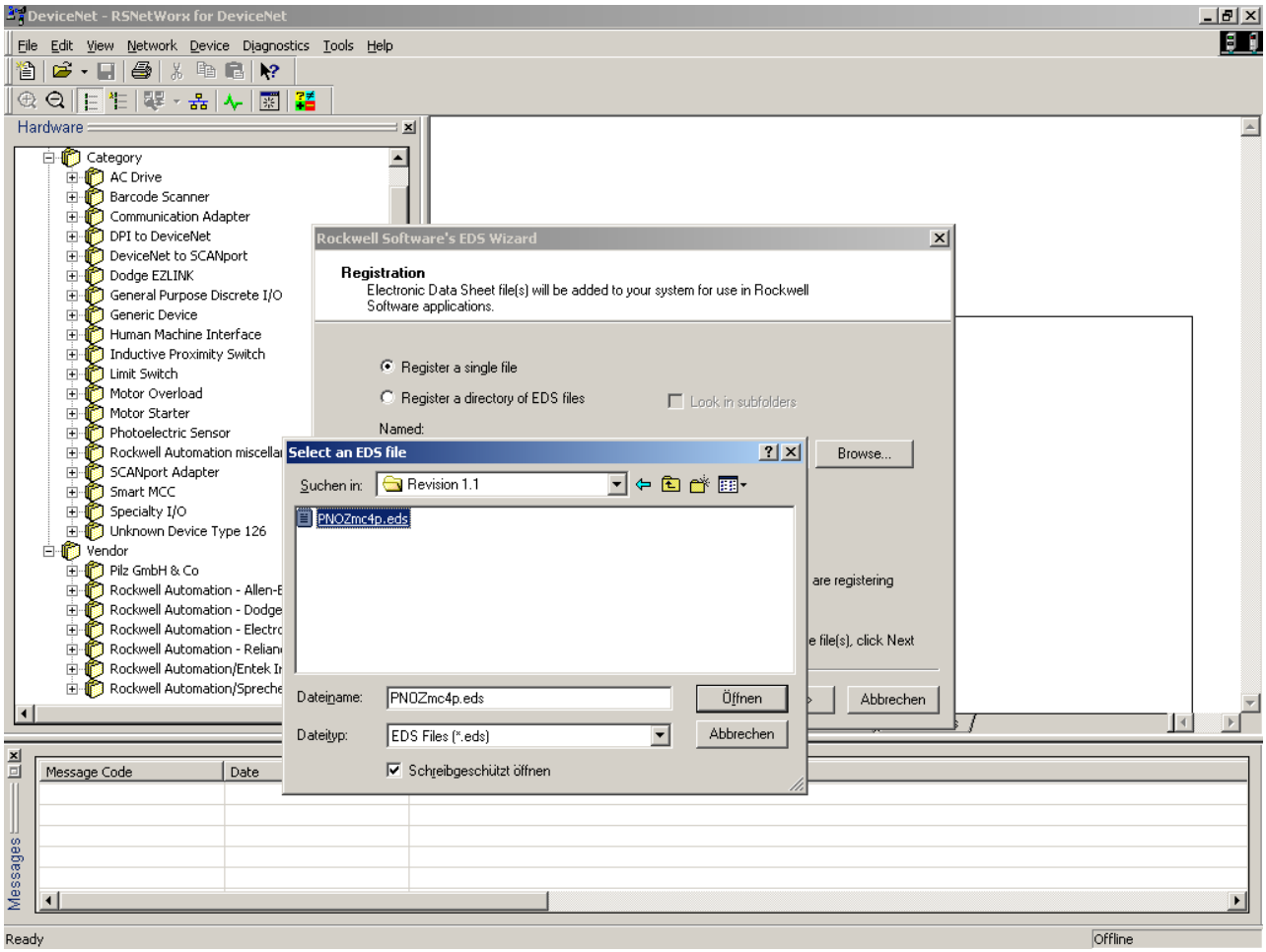
After a few milliseconds you receive the values of the table 1 segment 0.
In the example you can see this in the double word 6.

5 DeviceNet (PNOZ mc4p)

5.1 Sample I/O Communication with ControlLogix

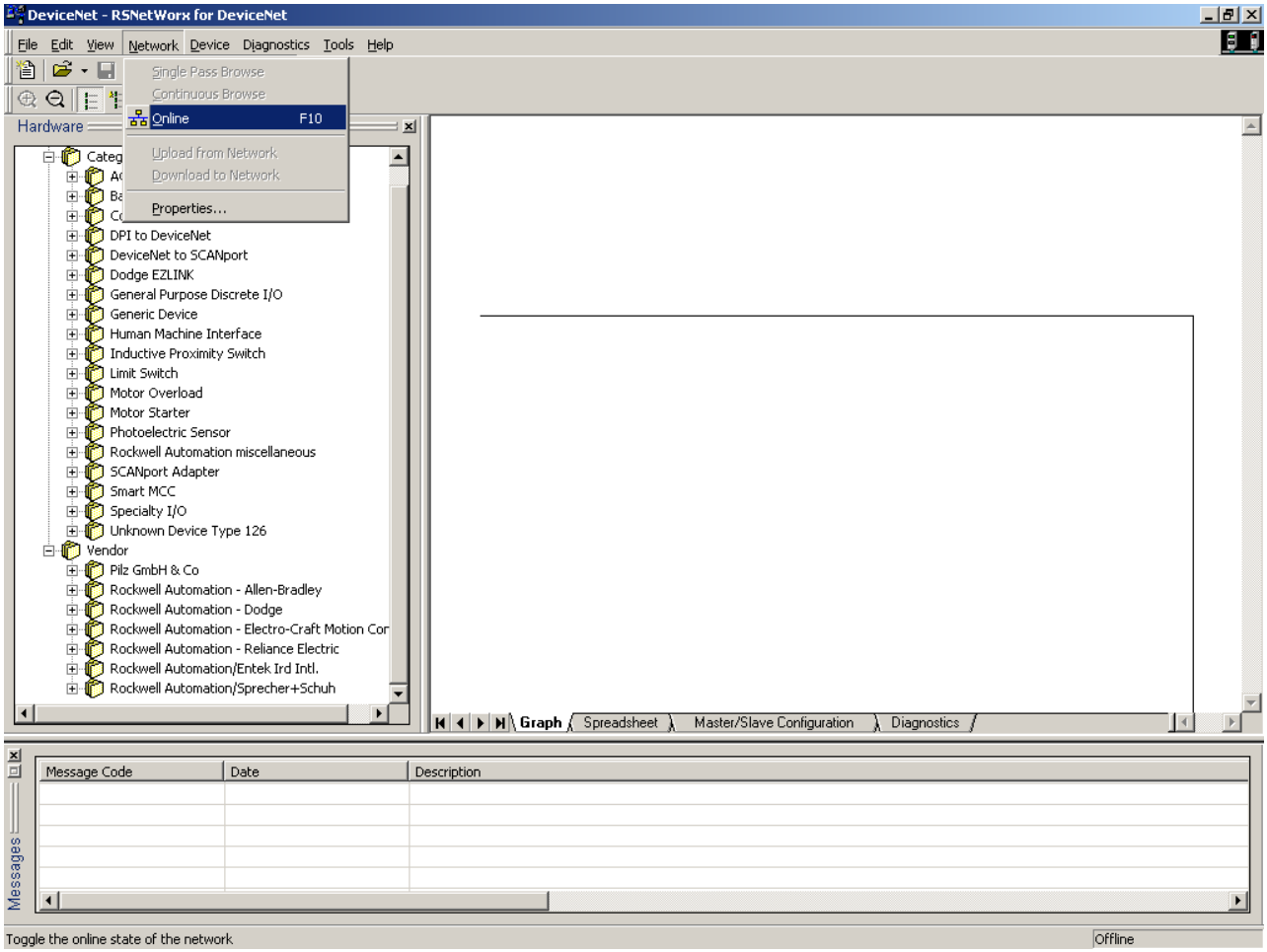
5.1.1 Import EDS File

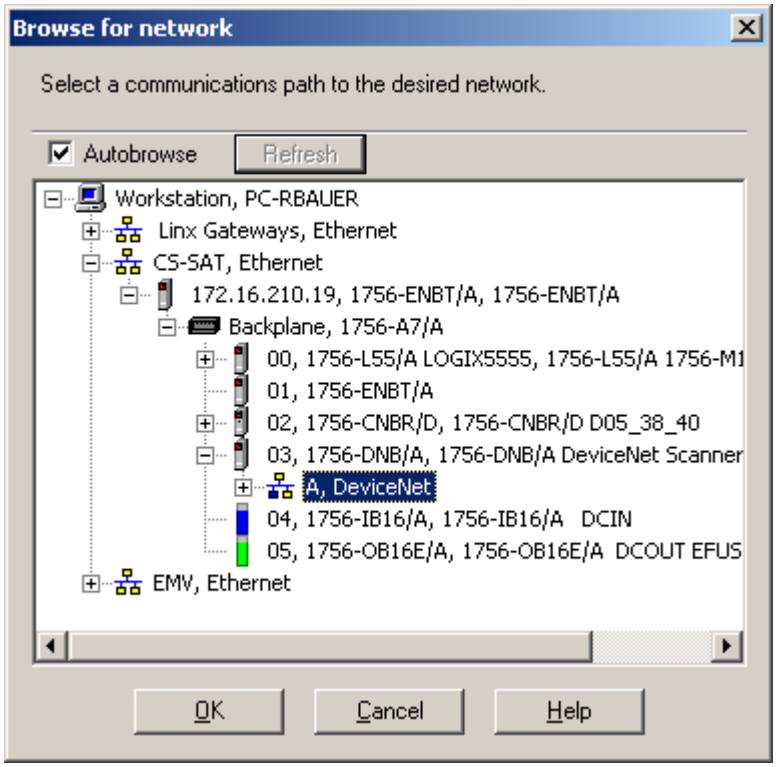


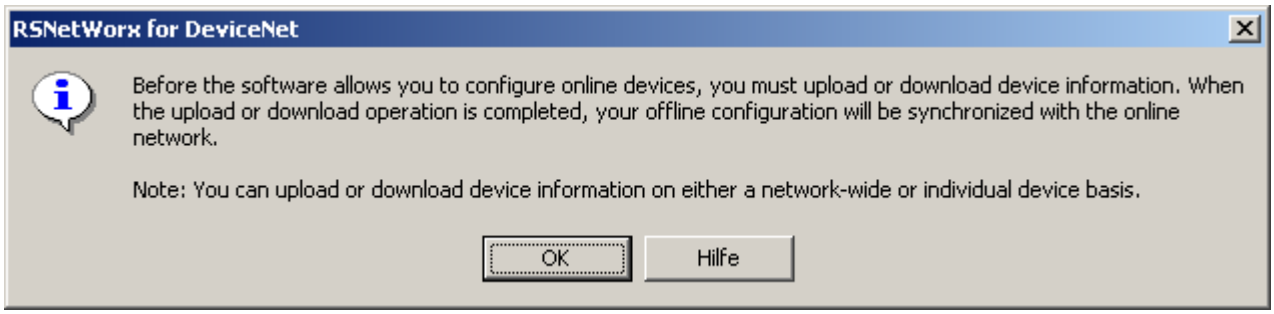


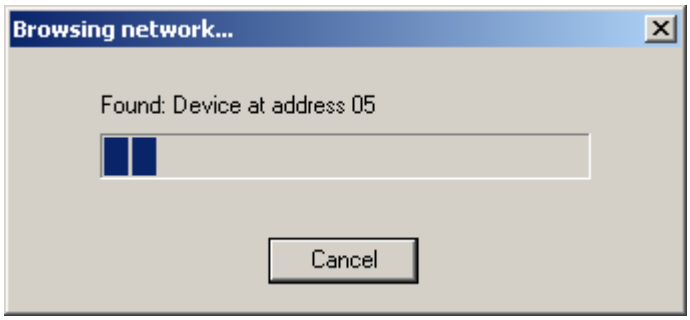
Identical Baudrate on Scanner and mc4p

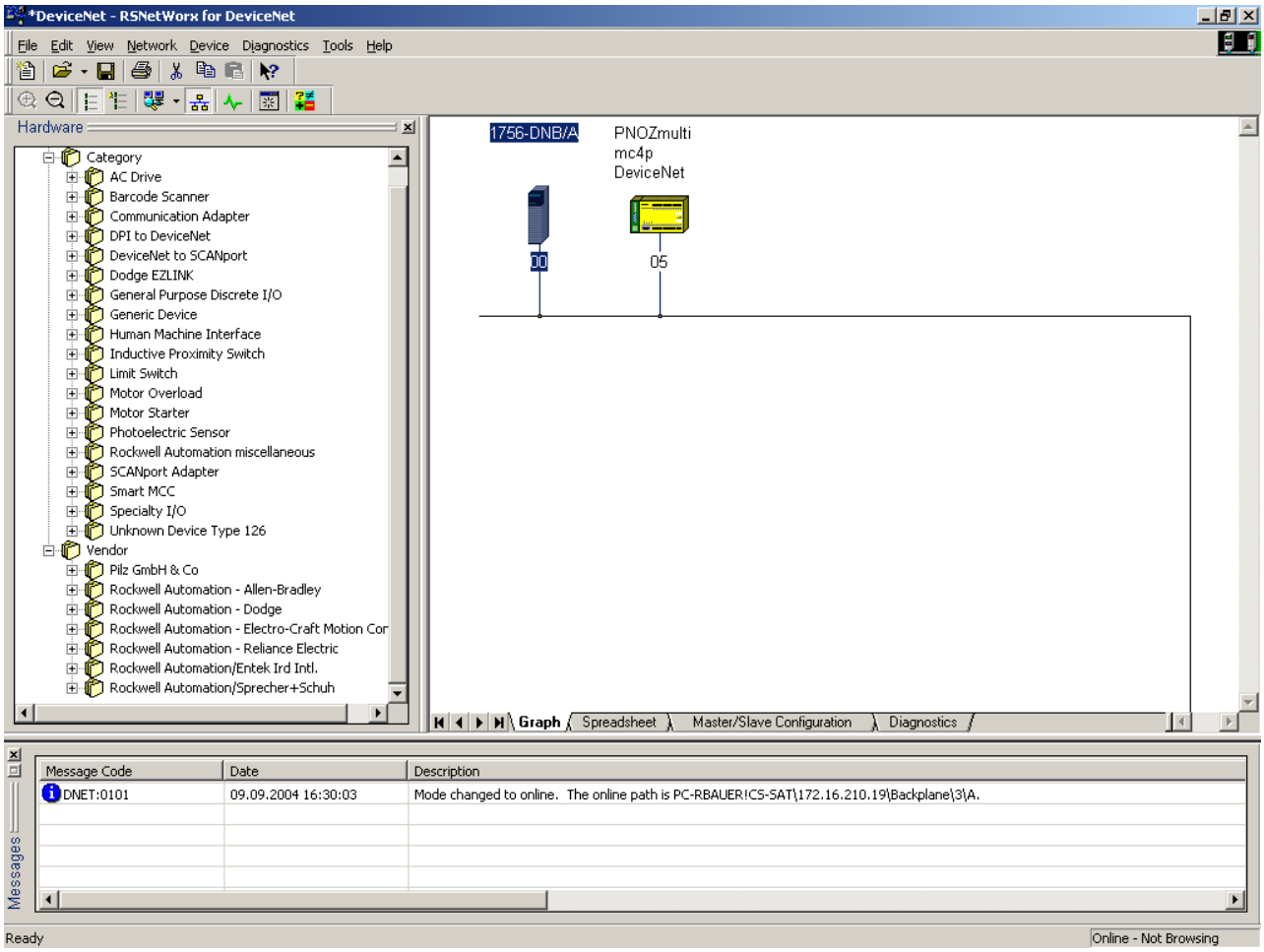
5.1.2 Configure Network

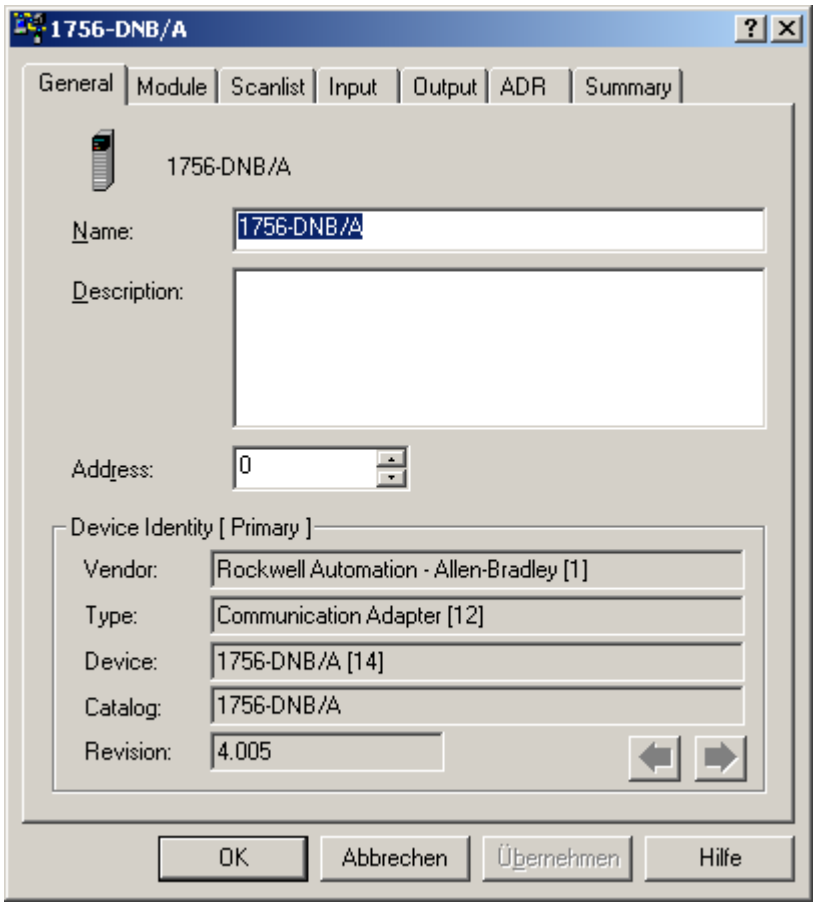


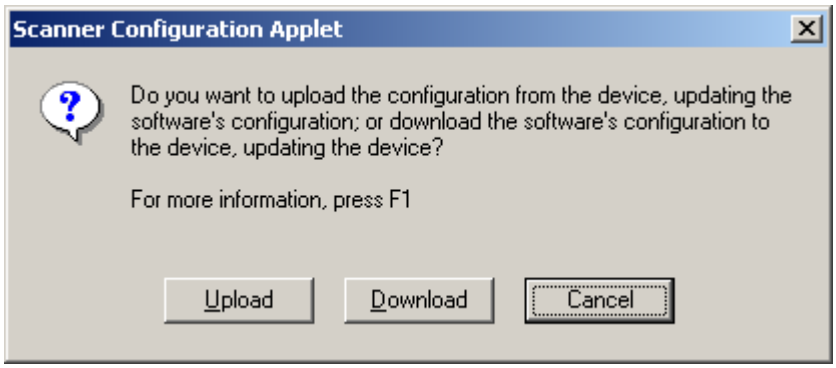


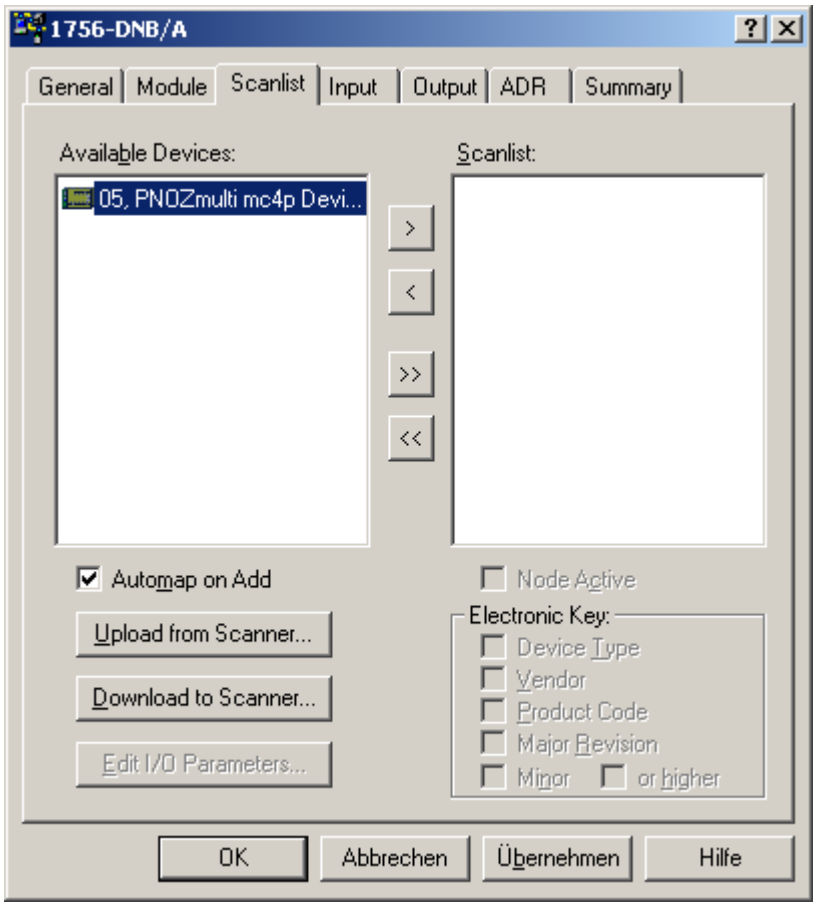

RSNetWorx for DeviceNet
Before the software allows you to configure online devices, you must upload or download device information. When the upload or download operation is completed, your offline configuration will be synchronized with the online network.
Note: You can upload or download device information on either a network-wide or individual device basis.
OK
Hilfe

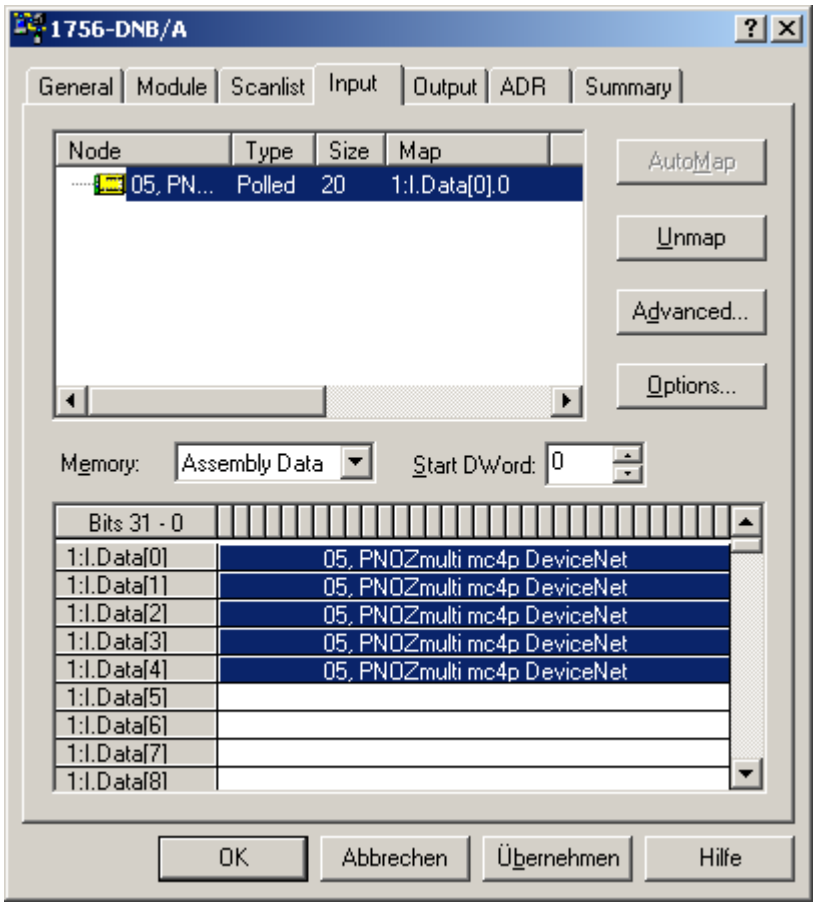

Browsing network...
Found: Device at address 05
Cancel

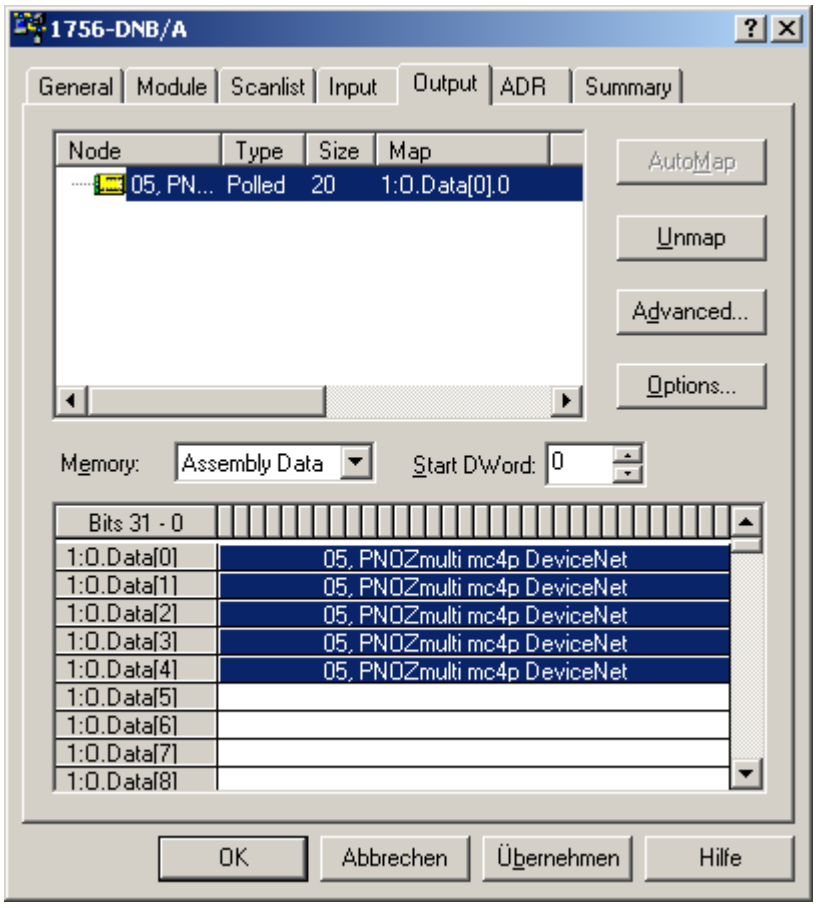

*DeviceNet - RSNetWorx for DeviceNet
File Edit View Network Device Diagnostics Tools Help
Hardware
Category
AC Drive
Barcode Scanner
Communication Adapter
DPI to DeviceNet
DeviceNet to SCANport
Dodge EZLINK
General Purpose Discrete I/O
Generic Device
Human Machine Interface
Inductive Proximity Switch
Limit Switch
Motor Overload
Motor Starter
Photoelectric Sensor
Rockwell Automation miscellaneous
SCANport Adapter
Smart MCC
Specialty I/O
Unknown Device Type 126
Vendor
Pilz GmbH & Co
Rockwell Automation - Allen-Bradley
Rockwell Automation - Dodge
Rockwell Automation - Electro-Craft Motion Cor
Rockwell Automation - Reliance Electric
Rockwell Automation/Entek Ird Intl.
Rockwell Automation/Sprecher+Schuh
1756-DNB/A
PNOZmulti
mc4p
DeviceNet
00
05
Graph
Spreadsheet
Master/Slave Configuration
Diagnostics
Message Code
Date
Description
DNET:0101
09.09.2004 16:30:03
Mode changed to online. The online path is PC-RBAUER!CS-SAT\172.16.210.19\Backplane\3\A.
Messages
Ready
Online - Not Browsing

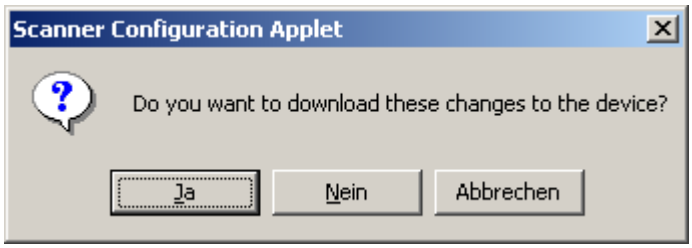

1756-DNB/A
General
Module
Scanlist
Input
Output
ADR
Summary
1756-DNB/A
Name:
1756-DNB/A
Description:
Address:
0
Device Identity [Primary]
Vendor:
Rockwell Automation - Allen-Bradley [1]
Type:
Communication Adapter [12]
Device:
1756-DNB/A [14]
Catalog:
1756-DNB/A
Revision:
4.005
OK
Abbrechen
Übernehmen
Hilfe

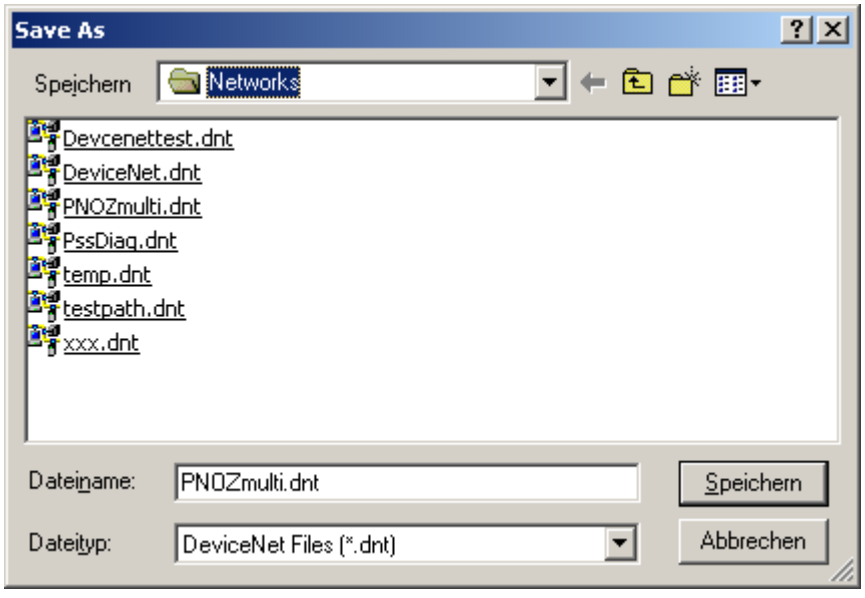

Scanner Configuration Applet
Do you want to upload the configuration from the device, updating the software's configuration; or download the software's configuration to the device, updating the device?
For more information, press F1
Upload
Download
Cancel


1756-DNB/A
General
Module
Scanlist
Input
Output
ADR
Summary
Available Devices:
05, PNOZmulti mc4p Devi...
Scanlist:
>
<
>>
<<
Automap on Add
Node Active
Electronic Key:
Device Type
Vendor
Product Code
Major Revision
Minor
or higher
Upload from Scanner...
Download to Scanner...
Edit I/O Parameters...
OK
Abbrechen
Übernehmen
Hilfe

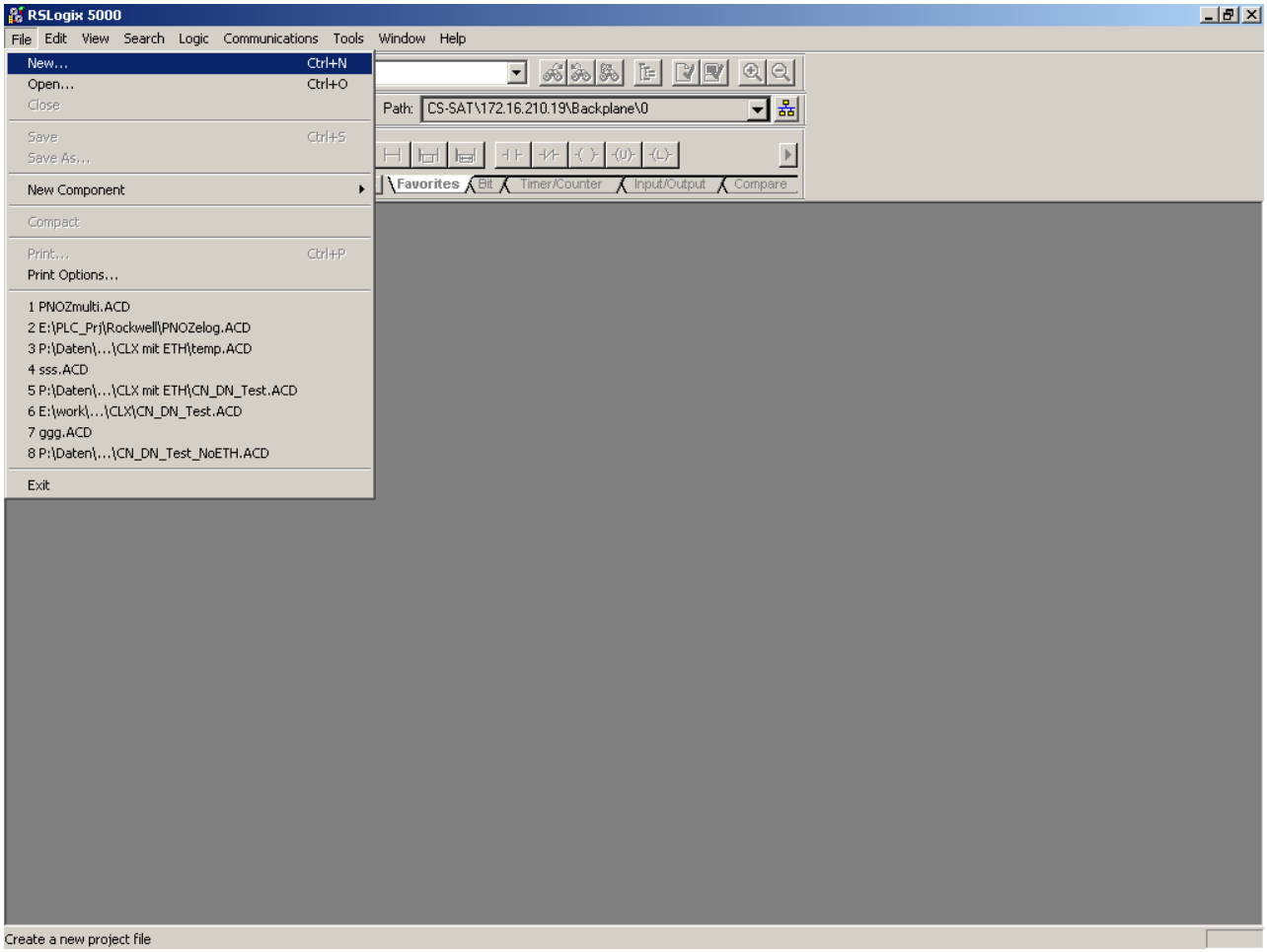

1756-DNB/A
General
Module
Scanlist
Input
Output
ADR
Summary
Node
Type
Size
Map
05, PN...
Polled
20
1:I.Data[0].0
AutoMap
Unmap
Advanced...
Options...
Memory:
Assembly Data
Start DWord:
0
Bits 31 - 0
1:I.Data[0]
1:I.Data[1]
1:I.Data[2]
1:I.Data[3]
1:I.Data[4]
1:I.Data[5]
1:I.Data[6]
1:I.Data[7]
1:I.Data[8]
05, PNOZmulti mc4p DeviceNet
OK
Abbrechen
Übernehmen
Hilfe

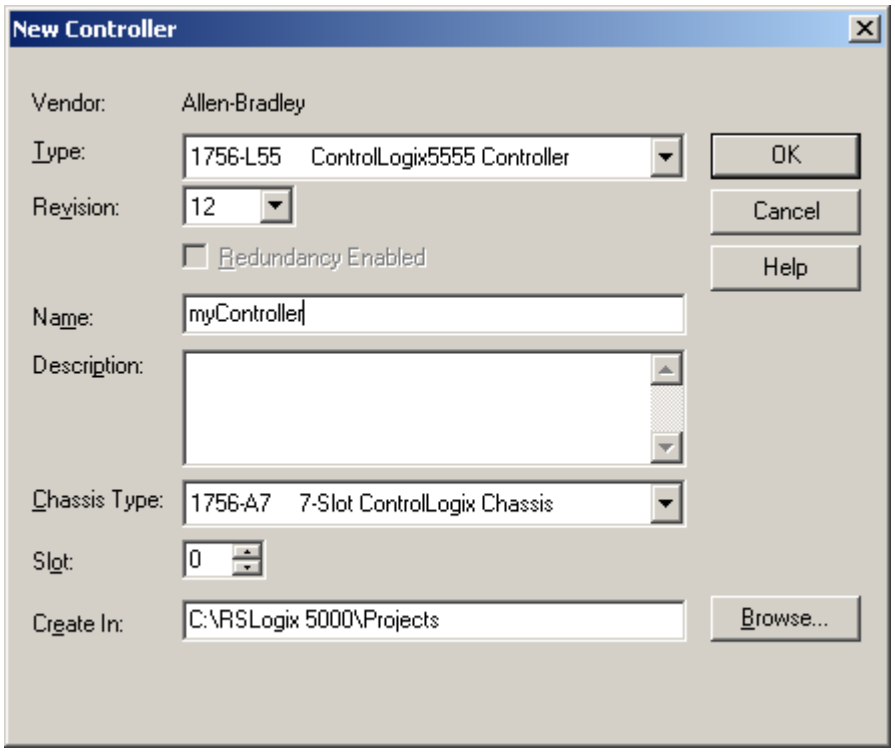

1756-DNB/A
General
Module
Scanlist
Input
Output
ADR
Summary
Node
Type
Size
Map
05, PN...
Polled
20
1:O.Data[0].0
AutoMap
Unmap
Advanced...
Options...
Memory:
Assembly Data
Start DWord:
0
Bits 31 - 0
1:O.Data[0]
1:O.Data[1]
1:O.Data[2]
1:O.Data[3]
1:O.Data[4]
1:O.Data[5]
1:O.Data[6]
1:O.Data[7]
1:O.Data[8]
05, PNOZmulti mc4p DeviceNet
OK
Abbrechen
Übernehmen
Hilfe

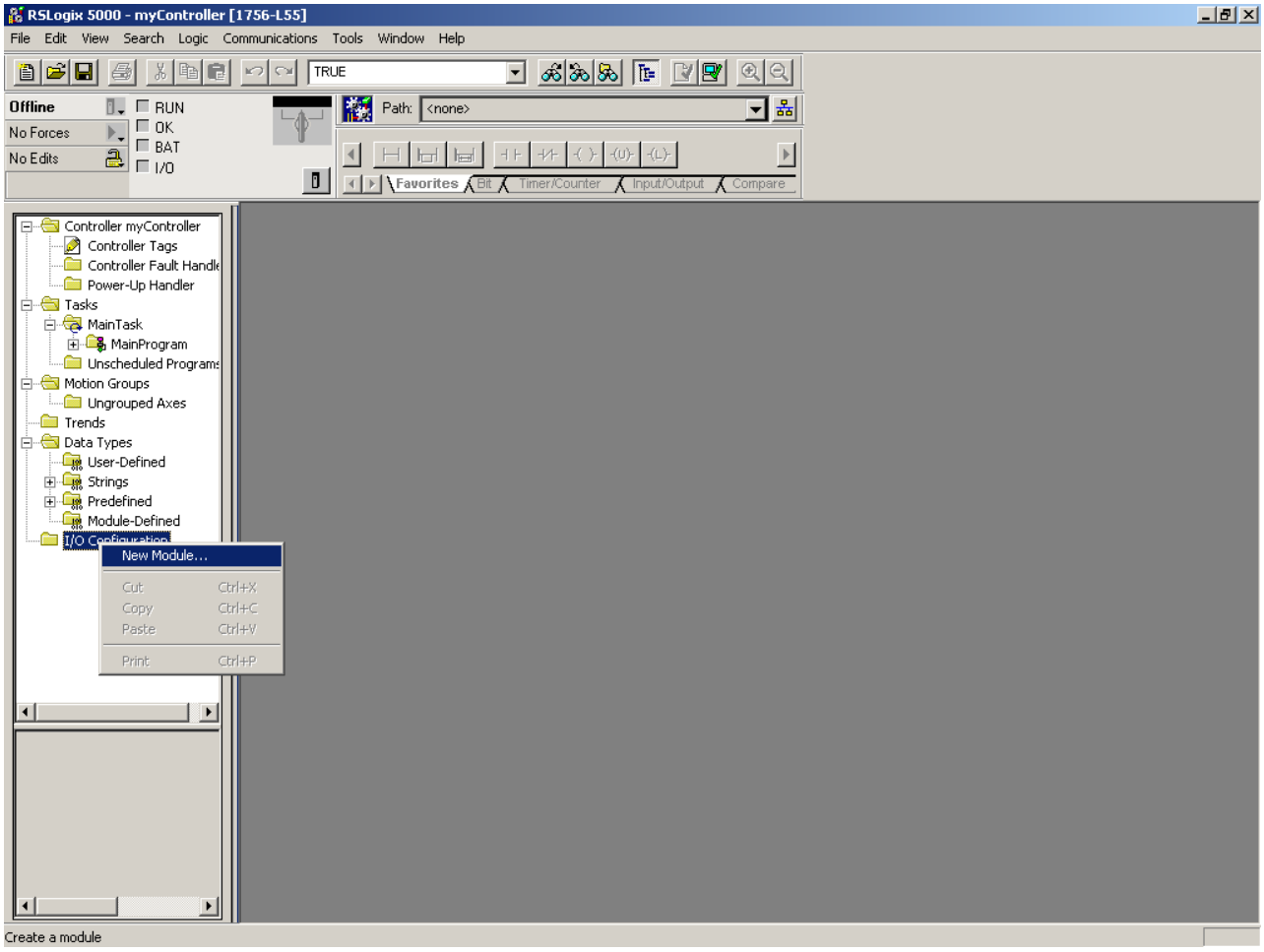

Scanner Configuration Applet
Do you want to download these changes to the device?
Ja
Nein
Abbrechen

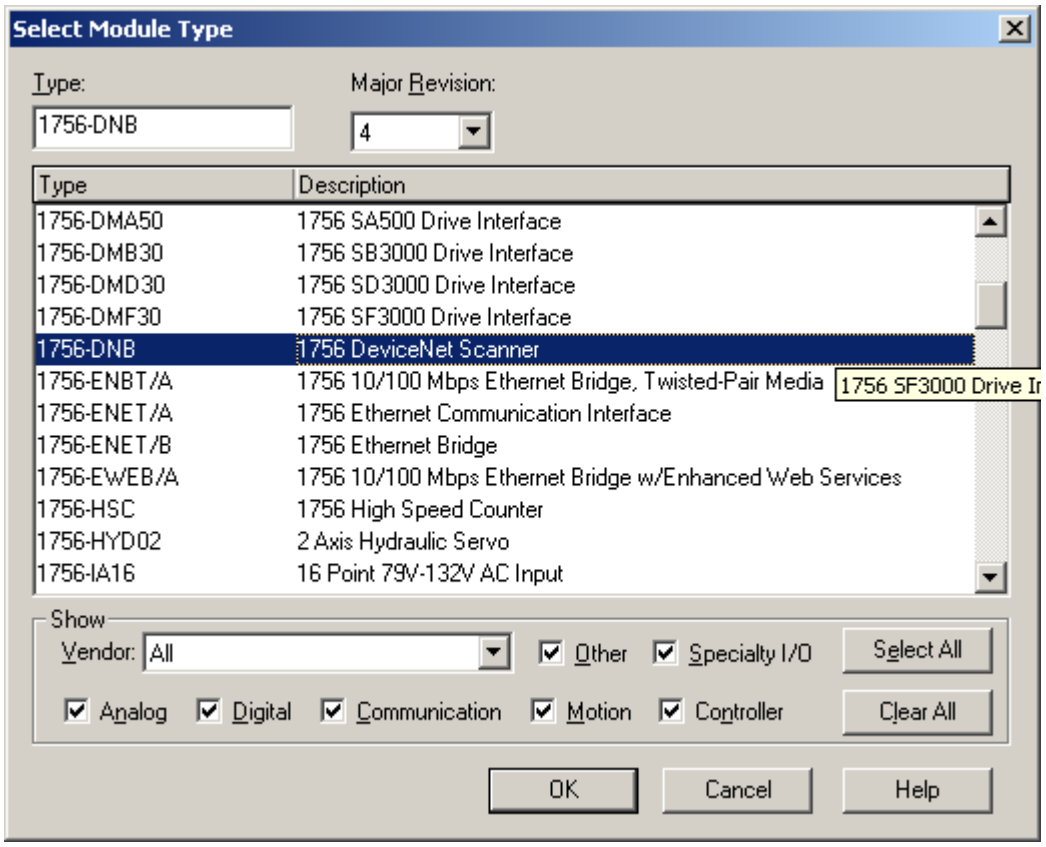

Save As
Speichern
Networks
Devcenettest.dnt
DeviceNet.dnt
PNOZmulti.dnt
PssDiag.dnt
temp.dnt
testpath.dnt
xxx.dnt
Dateiname:
PNOZmulti.dnt
Speichern
Dateityp:
DeviceNet Files (*.dnt)
Abbrechen

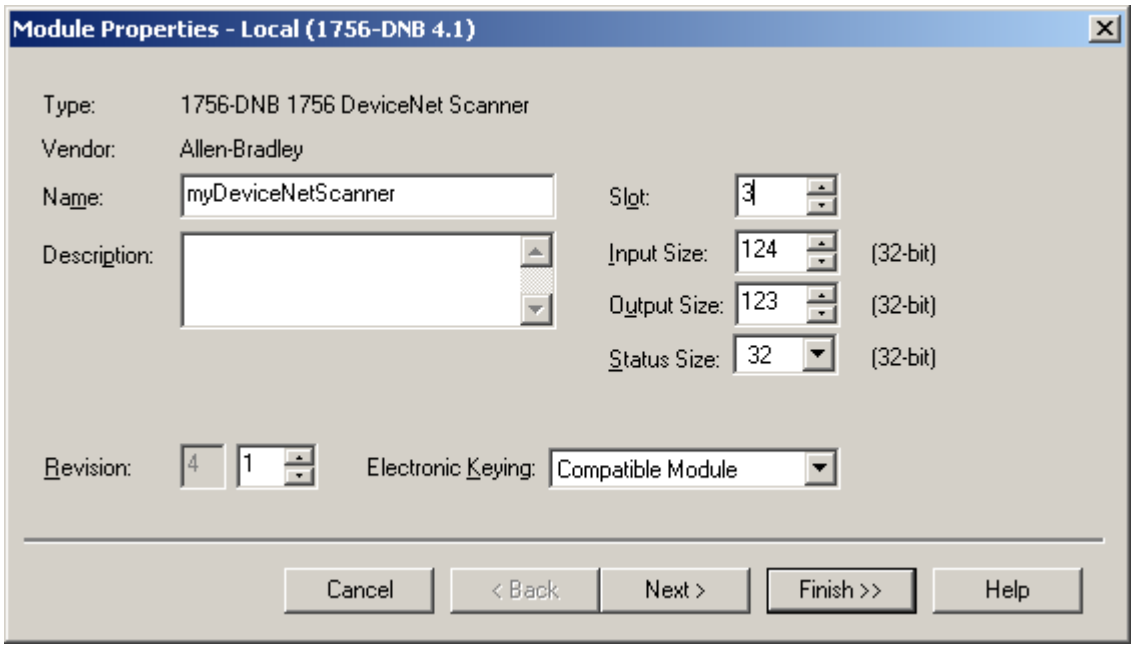
5.1.3 Application Program

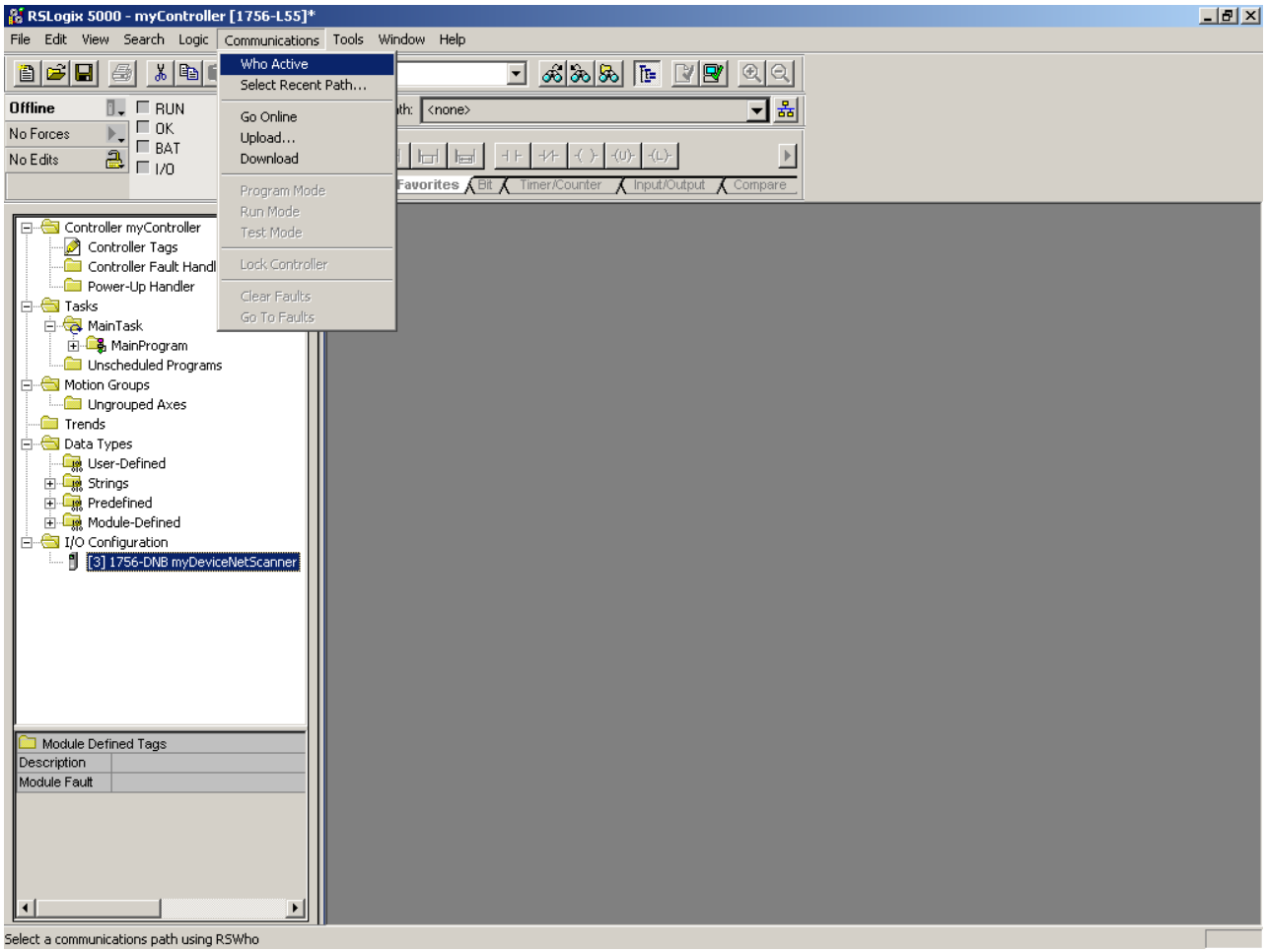


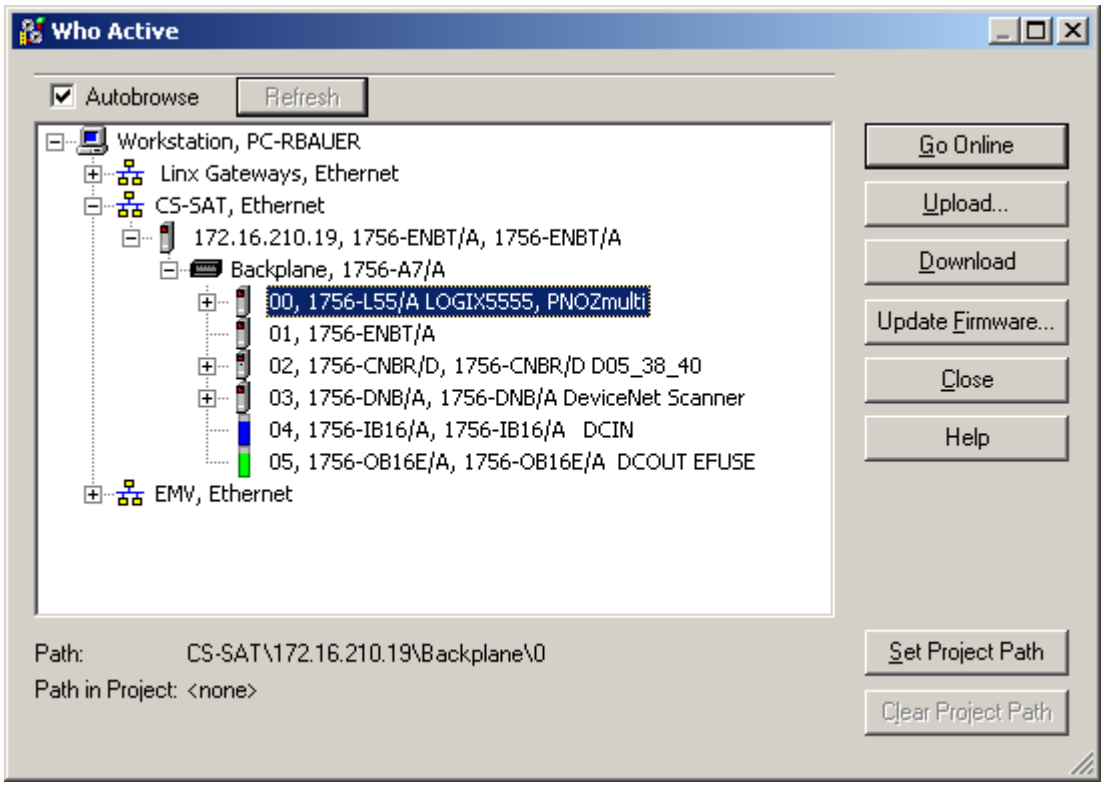

New Controller
Vendor:
Allen-Bradley
Type:
1756-L55 ControlLogix5555 Controller
Revision:
12
Redundancy Enabled
Name:
myController
Description:
Chassis Type:
1756-A7 7-Slot ControlLogix Chassis
Slot:
0
Create In:
C:\RSLogix 5000\Projects
OK
Cancel
Help
Browse...

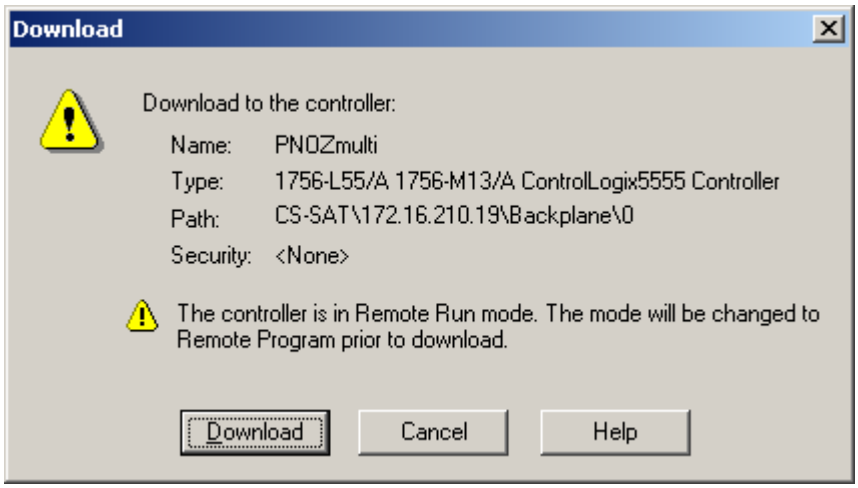

RSLogix 5000 - myController [1756-L55]
File Edit View Search Logic Communications Tools Window Help
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Path: <none>
Favorites
Bit
Timer/Counter
Input/Output
Compare
Controller myController
Controller Tags
Controller Fault Handl
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Program
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
New Module...
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Print Ctrl+P
Create a module

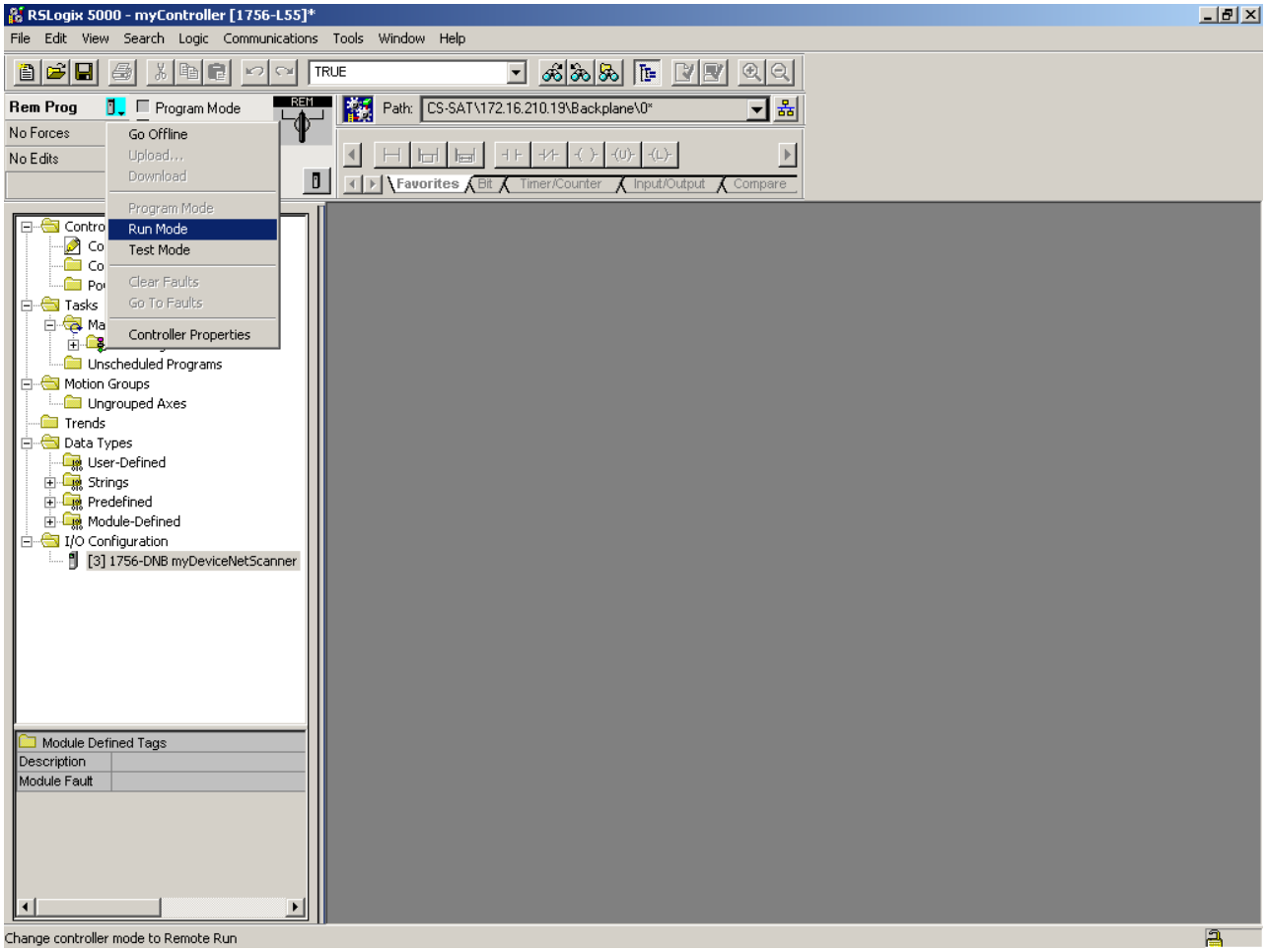

Select Module Type
Type:
1756-DNB
Major Revision:
4
Type
Description
1756-DMA50
1756 SA500 Drive Interface
1756-DMB30
1756 SB3000 Drive Interface
1756-DMD30
1756 SD3000 Drive Interface
1756-DMF30
1756 SF3000 Drive Interface
1756-DNB
1756 DeviceNet Scanner
1756-ENBT/A
1756 10/100 Mbps Ethernet Bridge, Twisted-Pair Media
1756 SF3000 Drive Ir
1756-ENET/A
1756 Ethernet Communication Interface
1756-ENET/B
1756 Ethernet Bridge
1756-EWEB/A
1756 10/100 Mbps Ethernet Bridge w/Enhanced Web Services
1756-HSC
1756 High Speed Counter
1756-HYD02
2 Axis Hydraulic Servo
1756-IA16
16 Point 79V-132V AC Input
Show
Vendor:
All
Other
Specialty I/O
Select All
Analog
Digital
Communication
Motion
Controller
Clear All
OK
Cancel
Help


Module Properties - Local (1756-DNB 4.1)
Type:
1756-DNB 1756 DeviceNet Scanner
Vendor:
Allen-Bradley
Name:
myDeviceNetScanner
Description:
Slot:
3
Input Size:
124
(32-bit)
Output Size:
123
(32-bit)
Status Size:
32
(32-bit)
Revision:
4
1
Electronic Keying:
Compatible Module
Cancel
< Back
Next >
Finish >>
Help

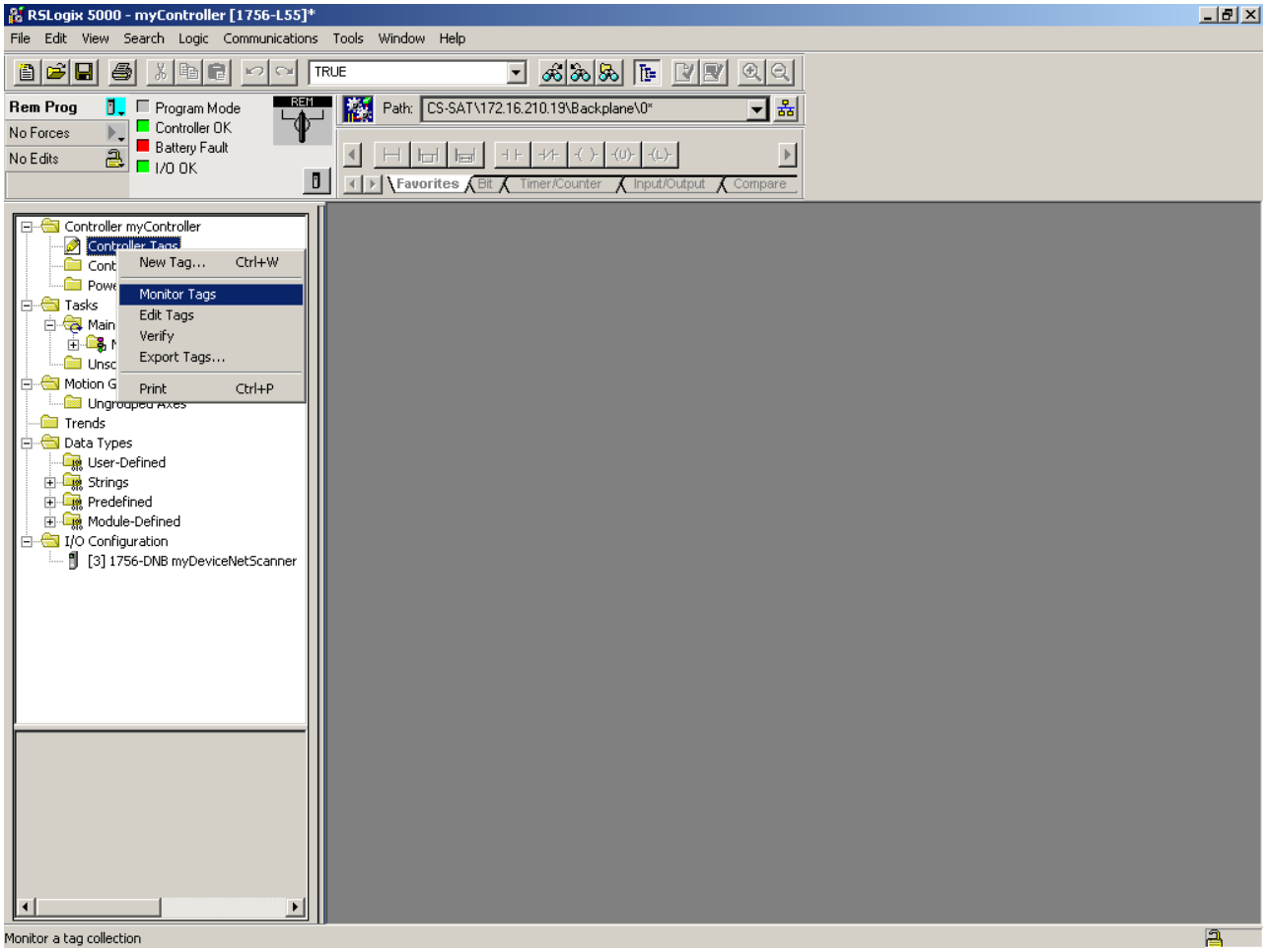

RSLogix 5000 - myController [1756-L55]*
File Edit View Search Logic Communications Tools Window Help
Who Active
Select Recent Path...
Go Online
Upload...
Download
Program Mode
Run Mode
Test Mode
Lock Controller
Clear Faults
Go To Faults
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Favorites
Bit
Timer/Counter
Input/Output
Compare
Controller myController
Controller Tags
Controller Fault Handl
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Module Defined Tags
Description
Module Fault
Select a communications path using RSWho

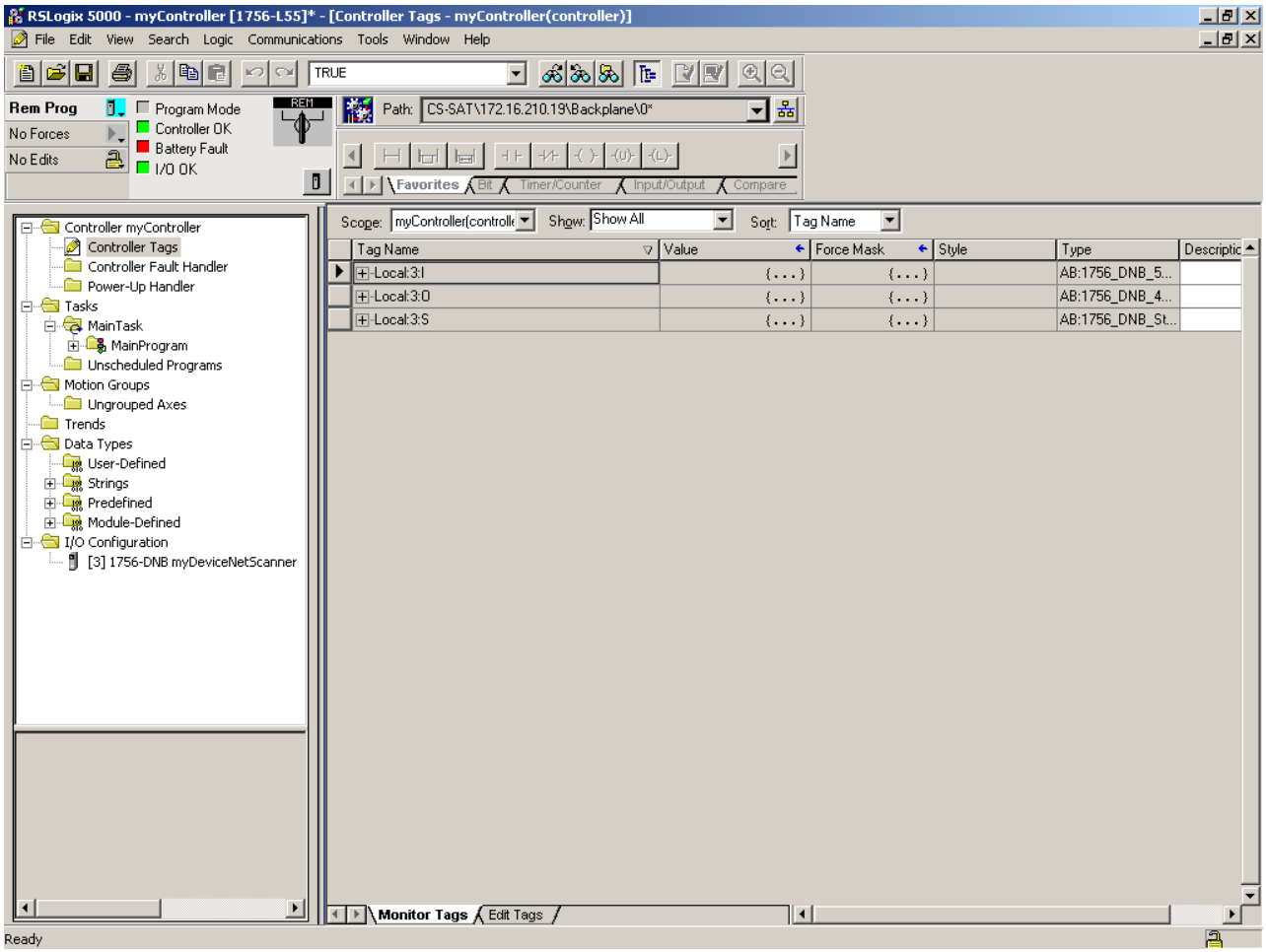

Who Active
Autobrowse
Refresh
Workstation, PC-RBAUER
Linx Gateways, Ethernet
CS-SAT, Ethernet
172.16.210.19, 1756-ENBT/A, 1756-ENBT/A
Backplane, 1756-A7/A
00, 1756-L55/A LOGIX5555, PNOZmulti
01, 1756-ENBT/A
02, 1756-CNBR/D, 1756-CNBR/D D05_38_40
03, 1756-DNB/A, 1756-DNB/A DeviceNet Scanner
04, 1756-IB16/A, 1756-IB16/A DCIN
05, 1756-OB16E/A, 1756-OB16E/A DCOUT EFUSE
EMV, Ethernet
Go Online
Upload...
Download
Update Firmware...
Close
Help
Path: CS-SAT\172.16.210.19\Backplane\0
Path in Project: <none>
Set Project Path
Clear Project Path

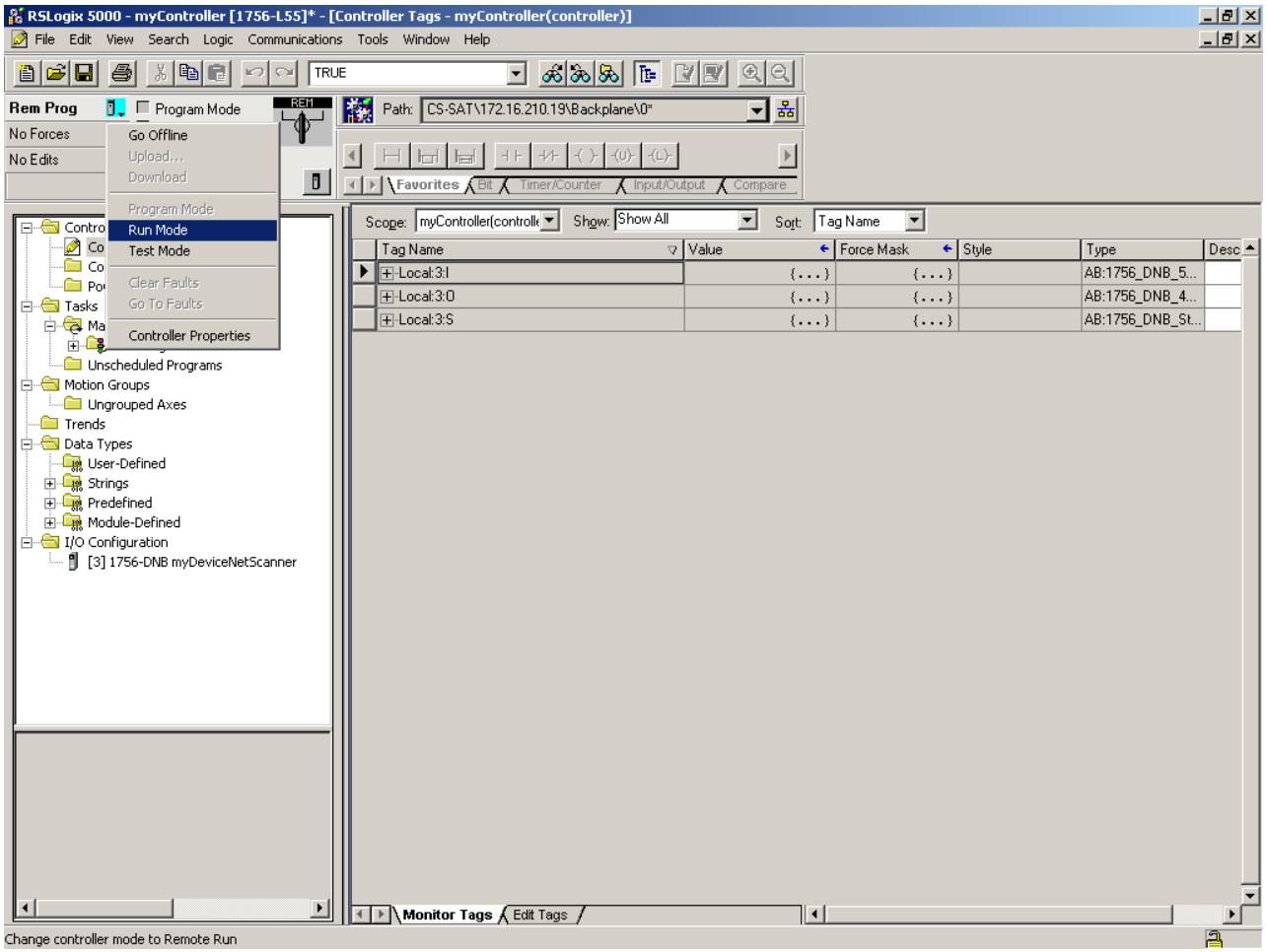

Download
Download to the controller:
Name: PNOZmulti
Type: 1756-L55/A 1756-M13/A ControlLogix5555 Controller
Path: CS-SAT\172.16.210.19\Backplane\0
Security: <None>
The controller is in Remote Run mode. The mode will be changed to Remote Program prior to download.
Download
Cancel
Help

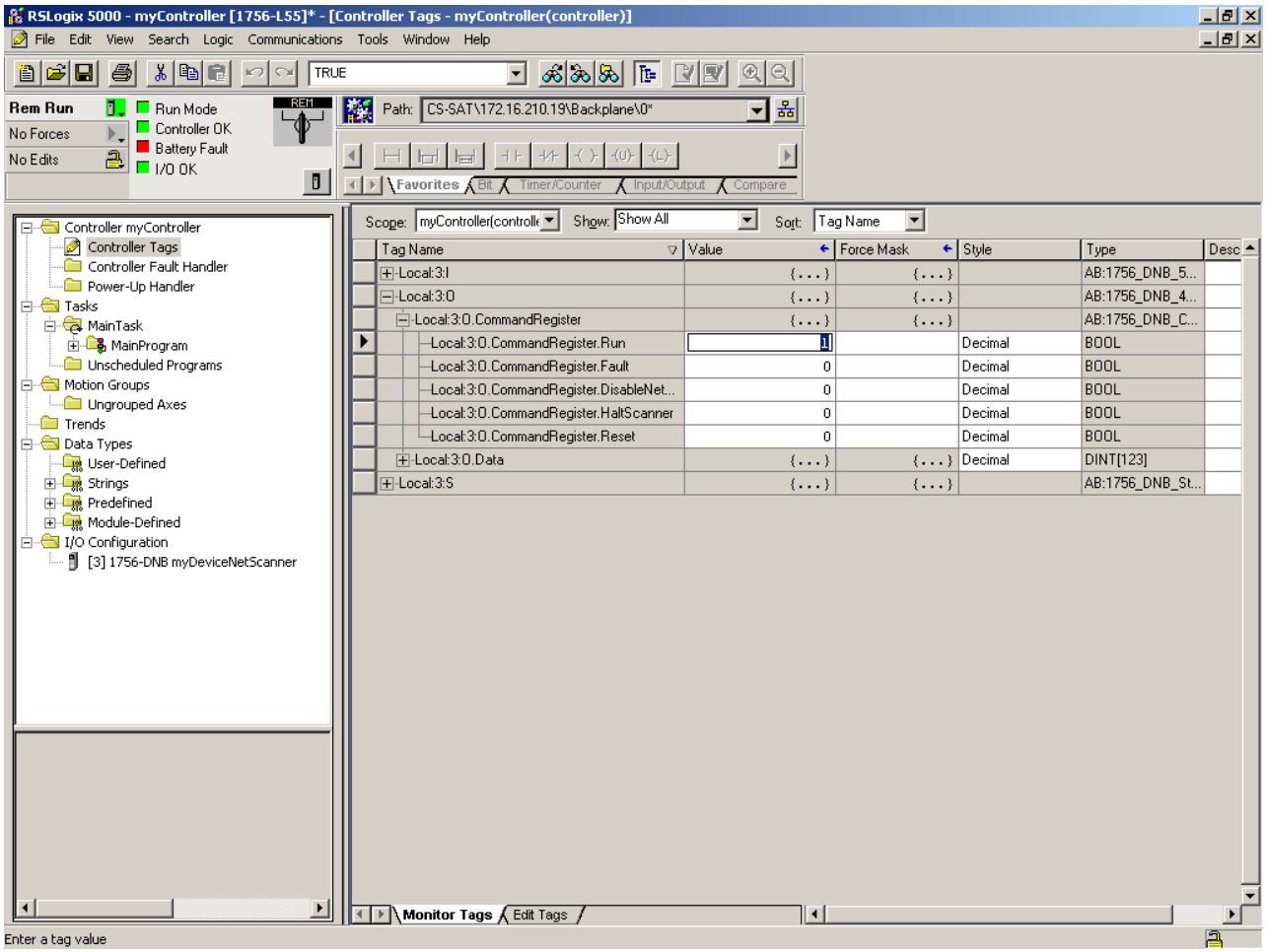

RSLogix 5000 - myController [1756-L55]*
File Edit View Search Logic Communications Tools Window Help
Rem Prog
Program Mode
No Forces
No Edits
Go Offline
Upload...
Download
Program Mode
Run Mode
Test Mode
Clear Faults
Go To Faults
Controller Properties
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites
Bit
Timer/Counter
Input/Output
Compare
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Module Defined Tags
Description
Module Fault
Change controller mode to Remote Run

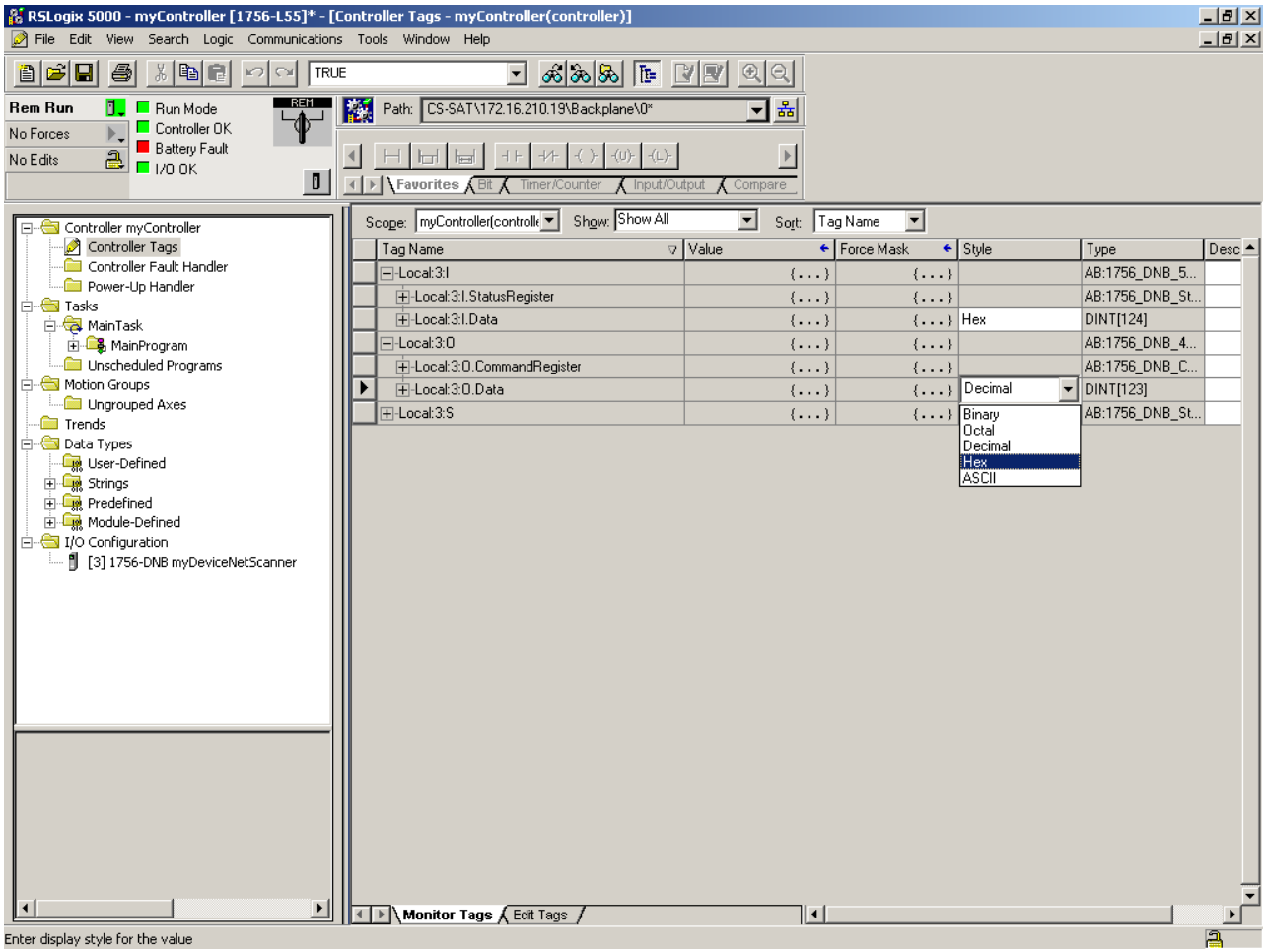
5.1.4 Test Data Exchange

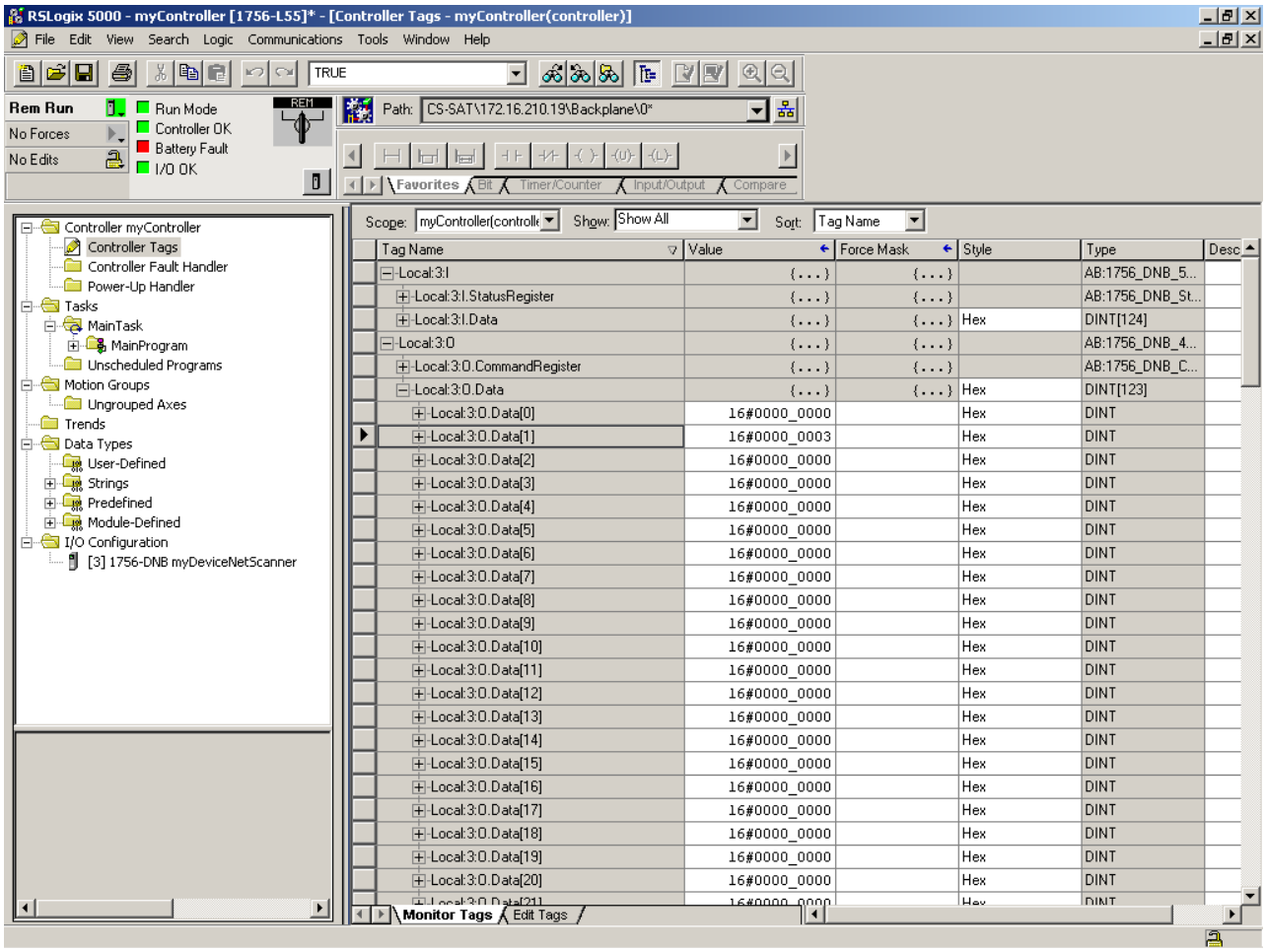


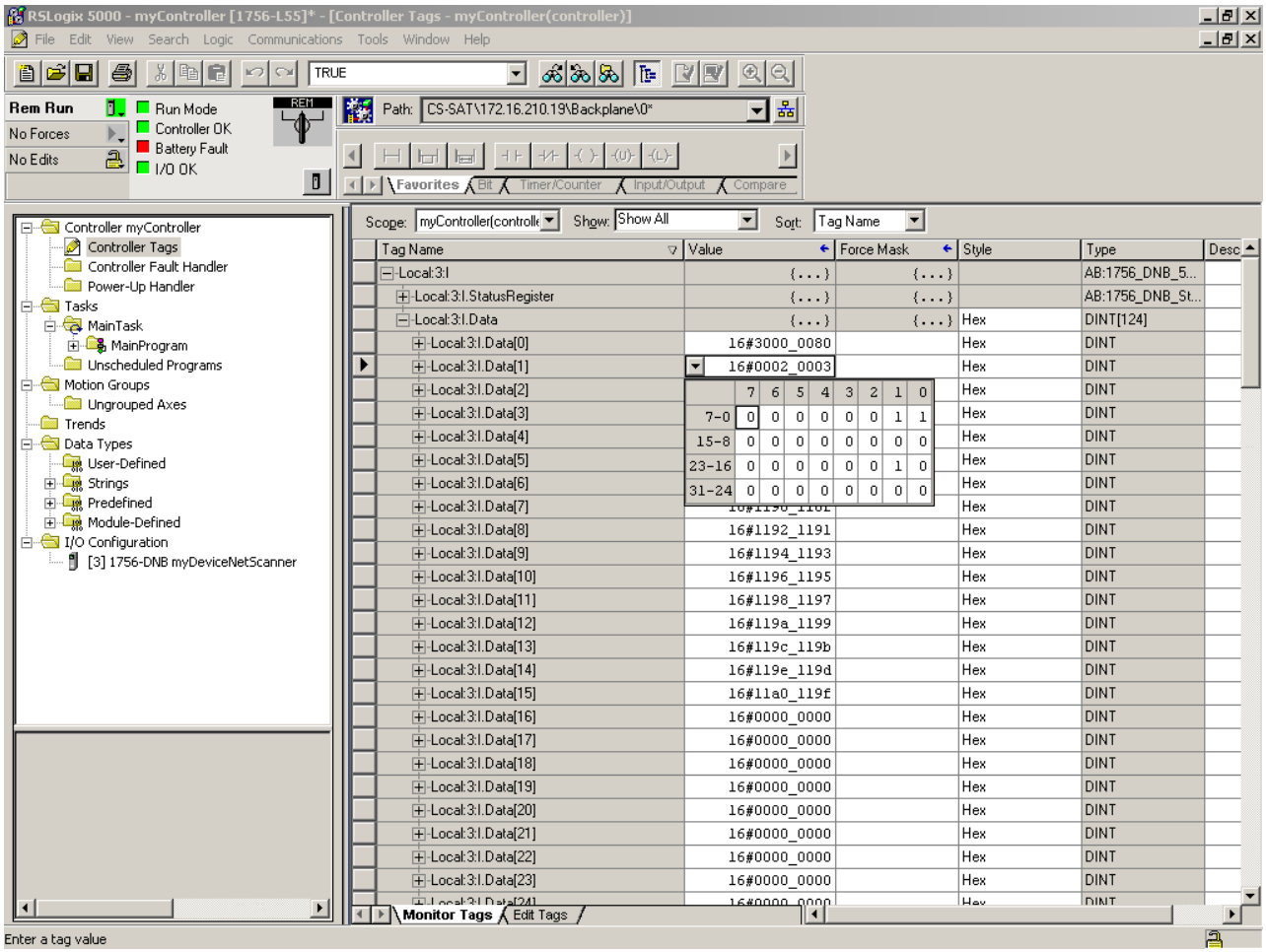

RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
TRUE
Rem Prog
No Forces
No Edits
Program Mode
Controller OK
Battery Fault
I/O OK
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controll
Show: Show All
Sort: Tag Name
Tag Name
Value
Force Mask
Style
Type
Local:3:I
Local:3:O
Local:3:S
AB:1756_DNB_5...
AB:1756_DNB_4...
AB:1756_DNB_St...
Monitor Tags
Edit Tags
Ready


RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
TRUE
Rem Prog
Program Mode
No Forces
No Edits
Go Offline
Upload...
Download
Program Mode
Run Mode
Test Mode
Clear Faults
Go To Faults
Controller Properties
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites
Bit
Timer/Counter
Input/Output
Compare
Scope: myController(controll
Show: Show All
Sort: Tag Name
Tag Name
Value
Force Mask
Style
Type
Local:3:I
Local:3:O
Local:3:S
AB:1756_DNB_5...
AB:1756_DNB_4...
AB:1756_DNB_St...
Tasks
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Monitor Tags
Edit Tags
Change controller mode to Remote Run


RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
TRUE
Rem Run
Run Mode
Controller OK
Battery Fault
I/O OK
No Forces
No Edits
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controll
Show: Show All
Sort: Tag Name
Tag Name
Value
Force Mask
Style
Type
Desc
Local:3:I
Local:3:O
Local:3:O.CommandRegister
Local:3:O.CommandRegister.Run
Local:3:O.CommandRegister.Fault
Local:3:O.CommandRegister.DisableNet...
Local:3:O.CommandRegister.HaltScanner
Local:3:O.CommandRegister.Reset
Local:3:O.Data
Local:3:S
AB:1756_DNB_5...
AB:1756_DNB_4...
AB:1756_DNB_C...
BOOL
DINT[123]
AB:1756_DNB_St...
Monitor Tags
Edit Tags
Enter a tag value

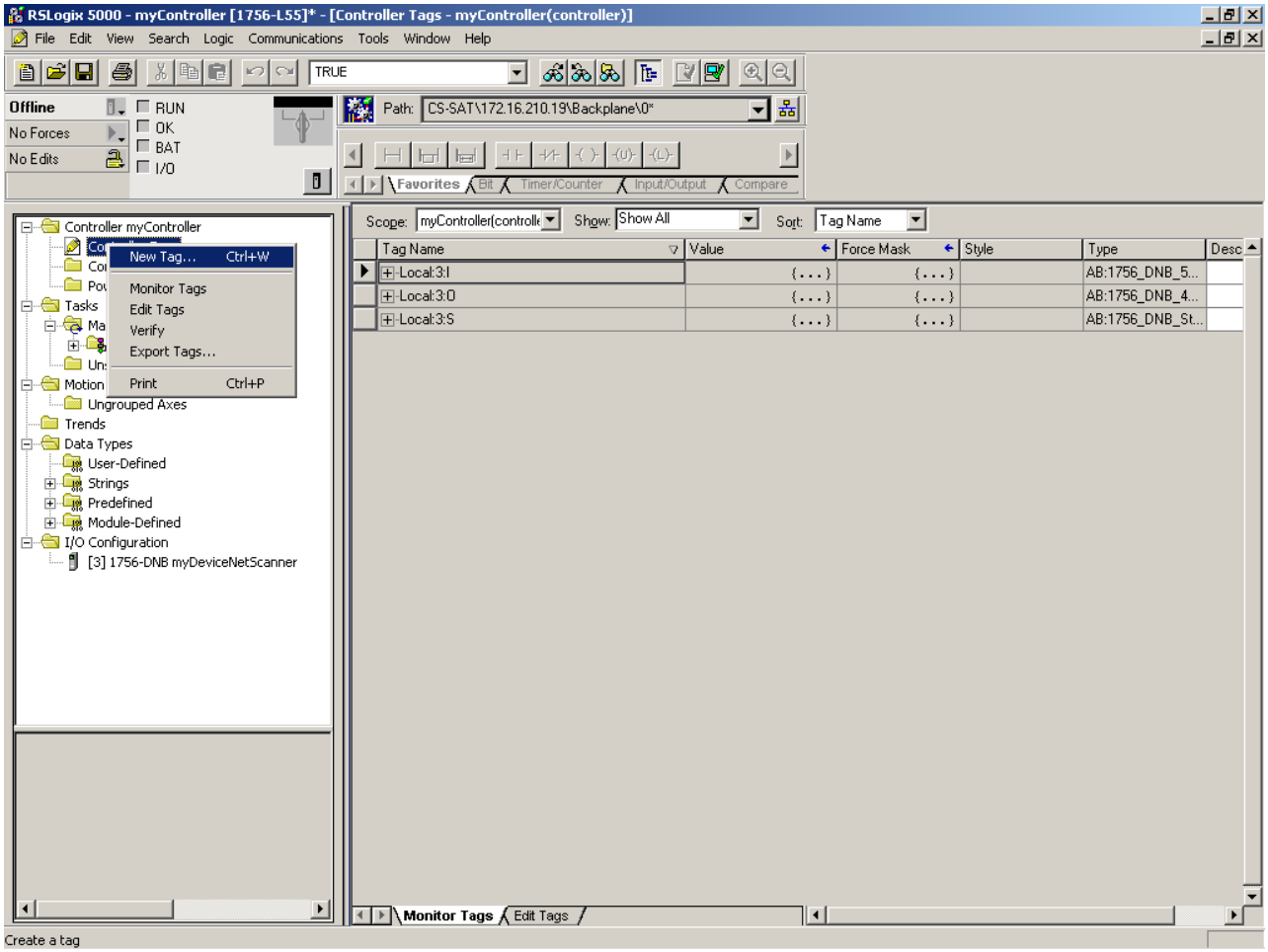

RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
TRUE
Rem Run
Run Mode
Controller OK
Battery Fault
I/O OK
No Forces
No Edits
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controll
Show: Show All
Sort: Tag Name
Tag Name
Value
Force Mask
Style
Type
Local:3:I
Local:3:I.StatusRegister
Local:3:I.Data
Hex
DINT[124]
Local:3:O
Local:3:O.CommandRegister
Local:3:O.Data
Decimal
DINT[123]
Local:3:S
Binary
Octal
Decimal
Hex
ASCII
Monitor Tags
Edit Tags
Enter display style for the value

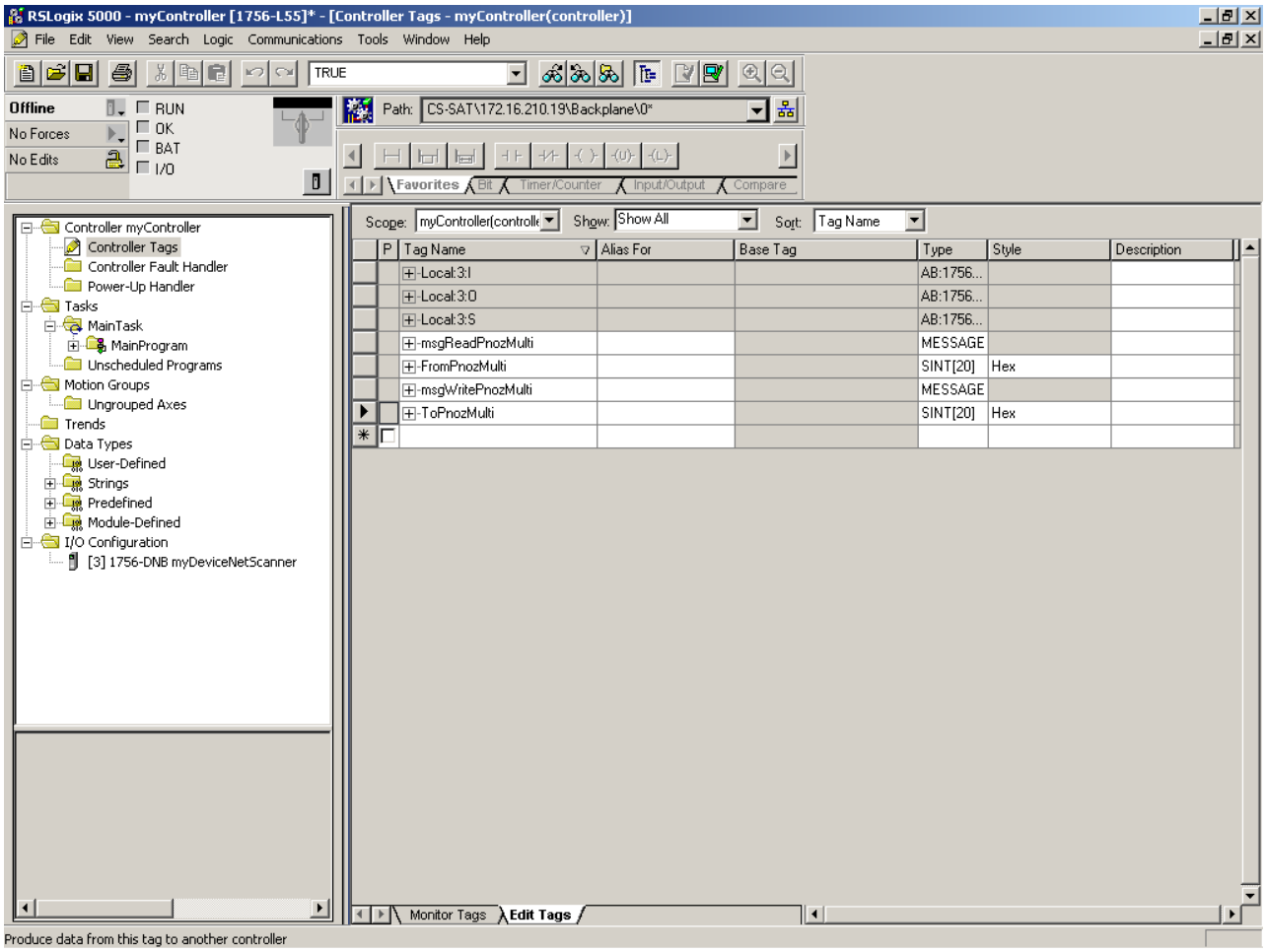

RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
TRUE
Rem Run
Run Mode
Controller OK
Battery Fault
I/O OK
No Forces
No Edits
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controlle
Show: Show All
Sort: Tag Name
Tag Name
Value
Force Mask
Style
Type
Desc
Local:3:I {...} {...} AB:1756_DNB_5...
Local:3:I.StatusRegister {...} {...} AB:1756_DNB_St...
Local:3:I.Data {...} {...} Hex DINT[124]
Local:3:O {...} {...} AB:1756_DNB_4...
Local:3:O.CommandRegister {...} {...} AB:1756_DNB_C...
Local:3:O.Data {...} {...} Hex DINT[123]
Local:3:O.Data[0] 16#0000_0000 Hex DINT
Local:3:O.Data[1] 16#0000_0003 Hex DINT
Local:3:O.Data[2] 16#0000_0000 Hex DINT
Local:3:O.Data[3] 16#0000_0000 Hex DINT
Local:3:O.Data[4] 16#0000_0000 Hex DINT
Local:3:O.Data[5] 16#0000_0000 Hex DINT
Local:3:O.Data[6] 16#0000_0000 Hex DINT
Local:3:O.Data[7] 16#0000_0000 Hex DINT
Local:3:O.Data[8] 16#0000_0000 Hex DINT
Local:3:O.Data[9] 16#0000_0000 Hex DINT
Local:3:O.Data[10] 16#0000_0000 Hex DINT
Local:3:O.Data[11] 16#0000_0000 Hex DINT
Local:3:O.Data[12] 16#0000_0000 Hex DINT
Local:3:O.Data[13] 16#0000_0000 Hex DINT
Local:3:O.Data[14] 16#0000_0000 Hex DINT
Local:3:O.Data[15] 16#0000_0000 Hex DINT
Local:3:O.Data[16] 16#0000_0000 Hex DINT
Local:3:O.Data[17] 16#0000_0000 Hex DINT
Local:3:O.Data[18] 16#0000_0000 Hex DINT
Local:3:O.Data[19] 16#0000_0000 Hex DINT
Local:3:O.Data[20] 16#0000_0000 Hex DINT
Monitor Tags
Edit Tags

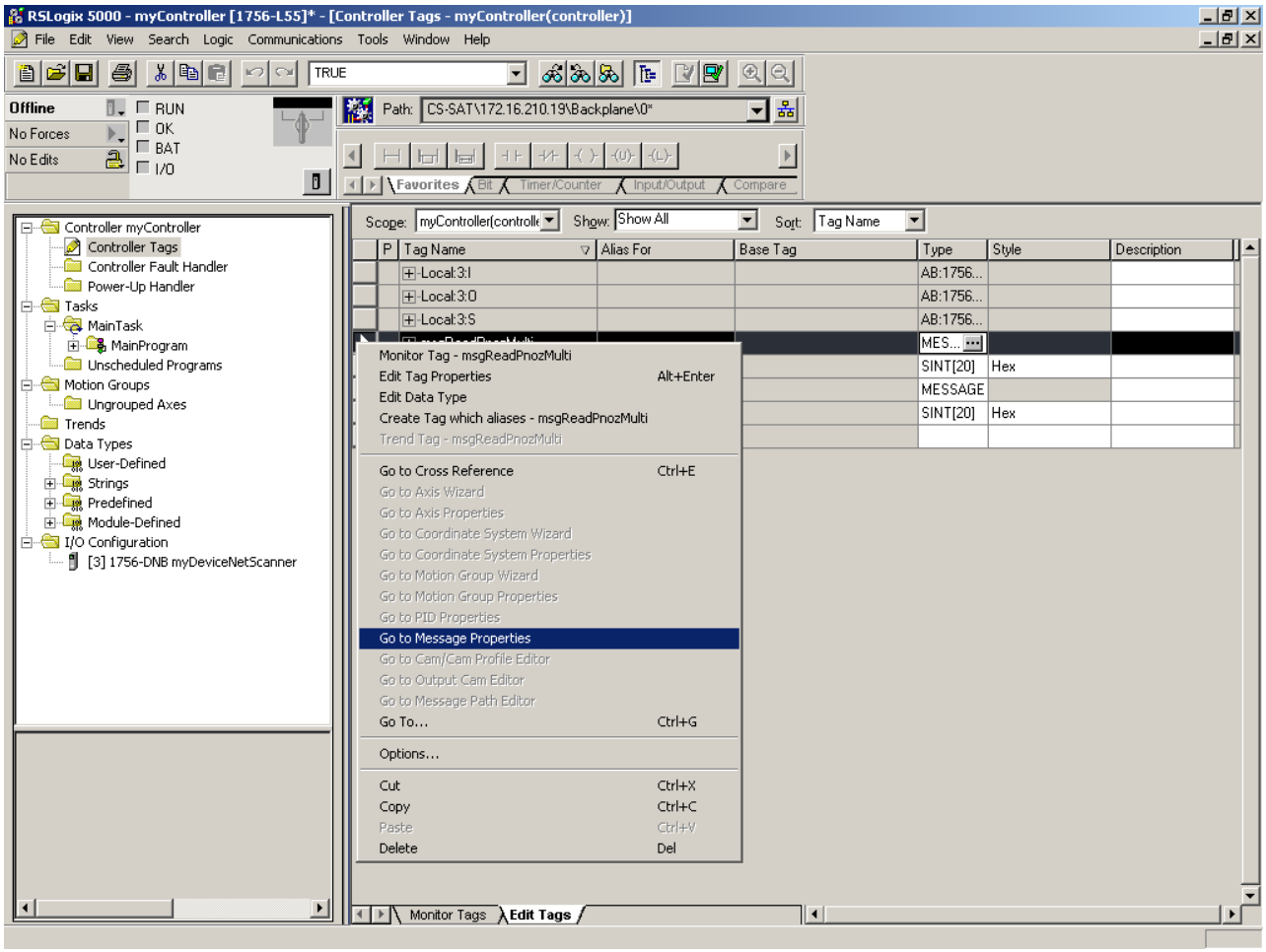

RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
Rem Run
Run Mode
Controller OK
Battery Fault
I/O OK
No Forces
No Edits
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controll
Show: Show All
Sort: Tag Name
Tag Name
Value
Force Mask
Style
Type
Local:3:I
Local:3:I.StatusRegister
Local:3:I.Data
Local:3:I.Data[0]
Local:3:I.Data[1]
Local:3:I.Data[2]
Local:3:I.Data[3]
Local:3:I.Data[4]
Local:3:I.Data[5]
Local:3:I.Data[6]
Local:3:I.Data[7]
Local:3:I.Data[8]
Local:3:I.Data[9]
Local:3:I.Data[10]
Local:3:I.Data[11]
Local:3:I.Data[12]
Local:3:I.Data[13]
Local:3:I.Data[14]
Local:3:I.Data[15]
Local:3:I.Data[16]
Local:3:I.Data[17]
Local:3:I.Data[18]
Local:3:I.Data[19]
Local:3:I.Data[20]
Local:3:I.Data[21]
Local:3:I.Data[22]
Local:3:I.Data[23]
AB:1756_DNB_5...
AB:1756_DNB_St...
DINT[124]
16#3000_0080
16#0002_0003
16#1192_1191
16#1194_1193
16#1196_1195
16#1198_1197
16#119a_1199
16#119c_119b
16#119e_119d
16#11a0_119f
16#0000_0000
7 6 5 4 3 2 1 0
7-0 0 0 0 0 0 0 1 1
15-8 0 0 0 0 0 0 0 0
23-16 0 0 0 0 0 0 1 0
31-24 0 0 0 0 0 0 0 0
Monitor Tags Edit Tags
Enter a tag value

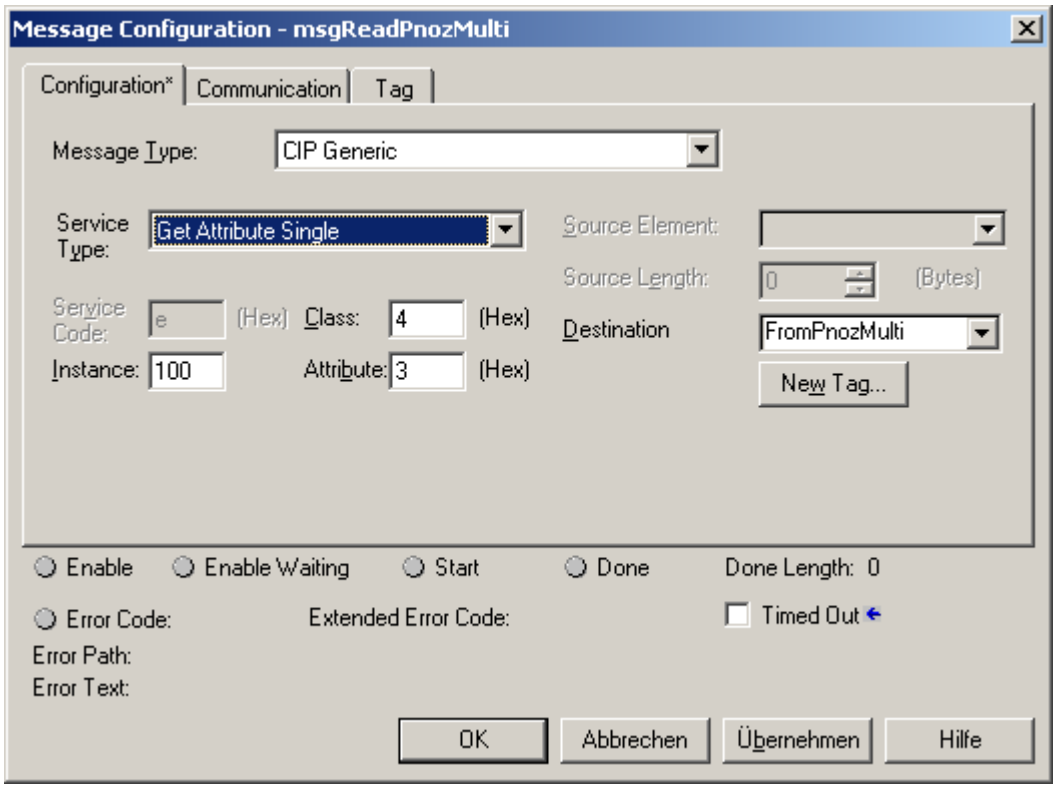
5.2 Sample Messages with ControlLogix

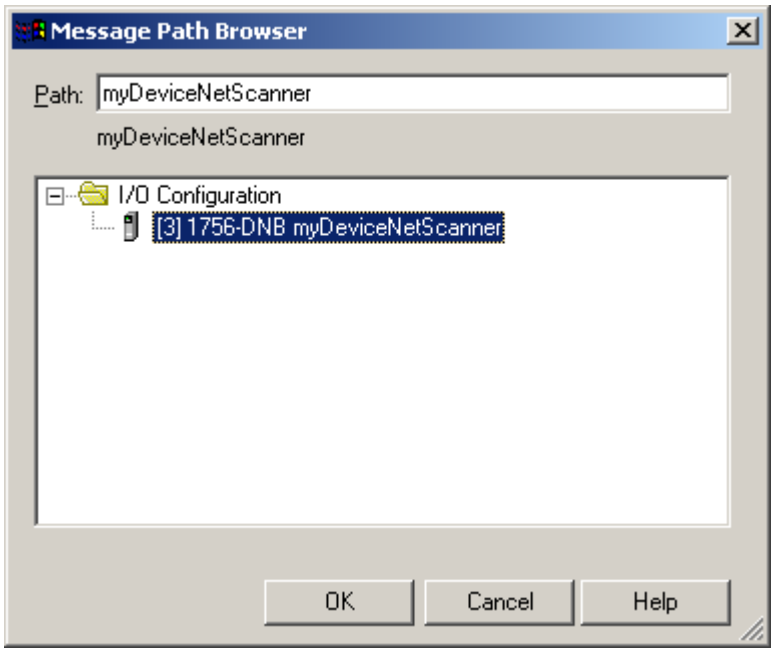
5.2.1 Application program

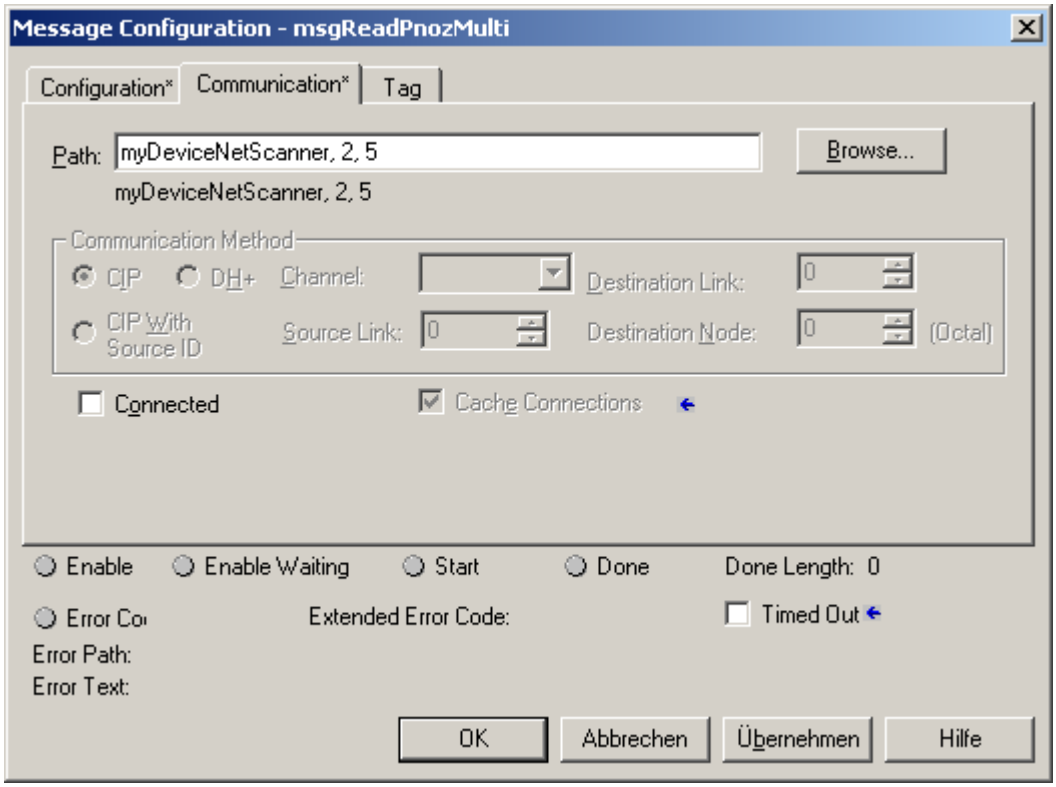


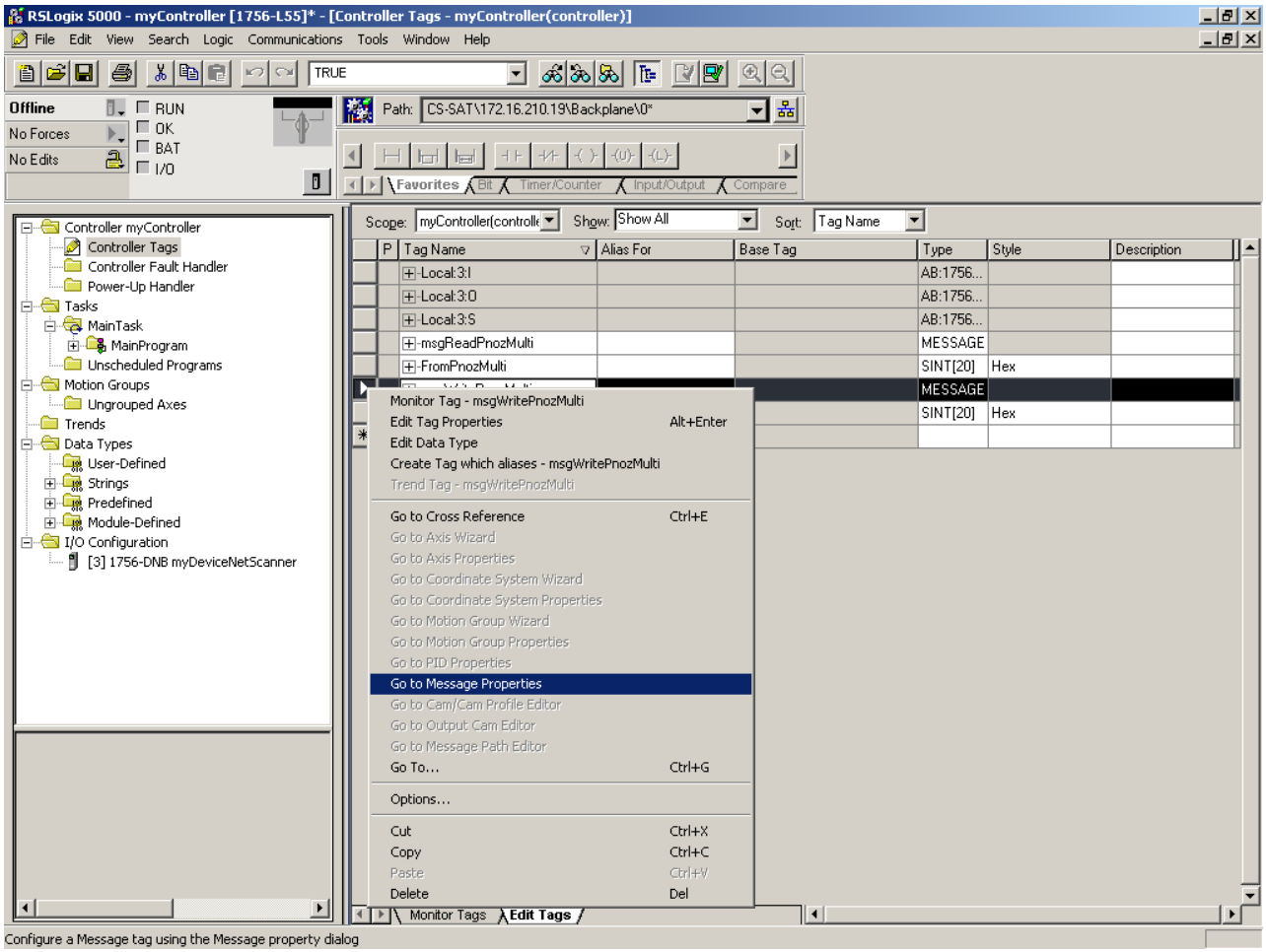

RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
TRUE
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controlle
Show: Show All
Sort: Tag Name
P Tag Name Alias For Base Tag Type Style Description
Local:3:I AB:1756...
Local:3:O AB:1756...
Local:3:S AB:1756...
msgReadPnozMulti MESSAGE
FromPnozMulti SINT[20] Hex
msgWritePnozMulti MESSAGE
ToPnozMulti SINT[20] Hex
Monitor Tags Edit Tags
Produce data from this tag to another controller

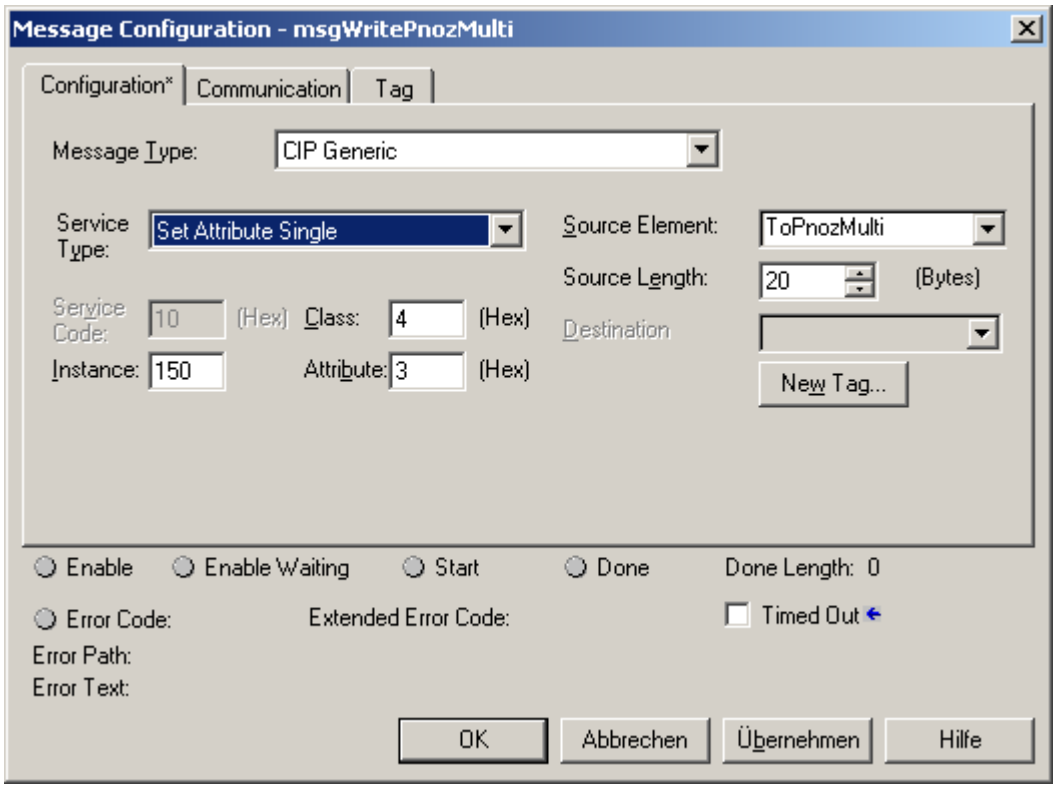

RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites
Bit
Timer/Counter
Input/Output
Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controll
Show: Show All
Sort: Tag Name
P
Tag Name
Alias For
Base Tag
Type
Style
Description
Local:3:I
Local:3:O
Local:3:S
AB:1756...
MES...
SINT[20]
Hex
MESSAGE
Monitor Tag - msgReadPnozMulti
Edit Tag Properties Alt+Enter
Edit Data Type
Create Tag which aliases - msgReadPnozMulti
Trend Tag - msgReadPnozMulti
Go to Cross Reference Ctrl+E
Go to Axis Wizard
Go to Axis Properties
Go to Coordinate System Wizard
Go to Coordinate System Properties
Go to Motion Group Wizard
Go to Motion Group Properties
Go to PID Properties
Go to Message Properties
Go to Cam/Cam Profile Editor
Go to Output Cam Editor
Go to Message Path Editor
Go To... Ctrl+G
Options...
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete Del
Monitor Tags
Edit Tags

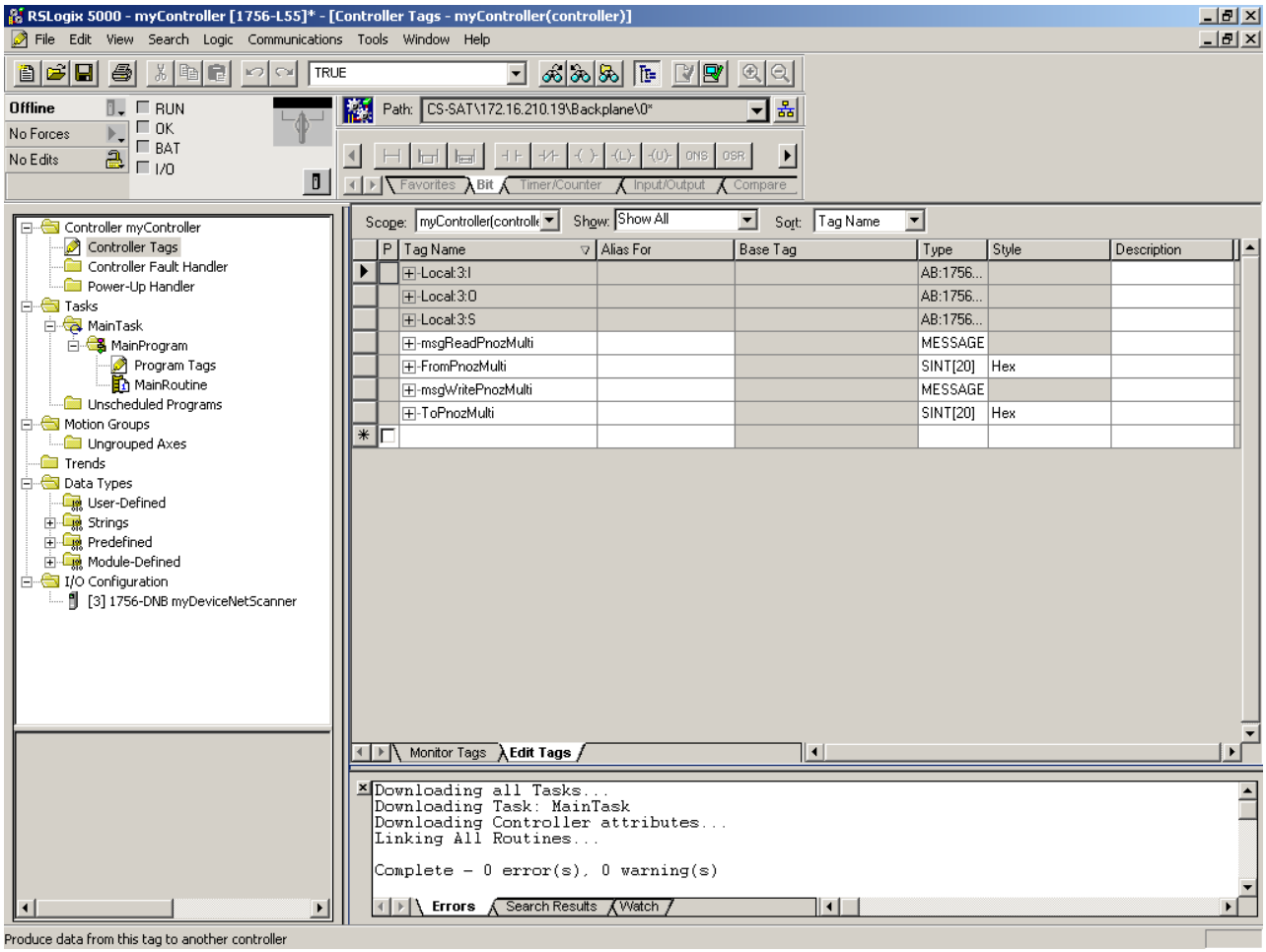

Message Configuration - msgReadPnozMulti
Configuration*
Communication
Tag
Message Type:
CIP Generic
Service Type:
Get Attribute Single
Source Element:
Source Length:
0
(Bytes)
Service Code:
e
(Hex)
Class:
4
(Hex)
Destination
FromPnozMulti
Instance:
100
Attribute:
3
(Hex)
New Tag...
Enable
Enable Waiting
Start
Done
Done Length: 0
Error Code:
Extended Error Code:
Timed Out
Error Path:
Error Text:
OK
Abbrechen
Übernehmen
Hilfe

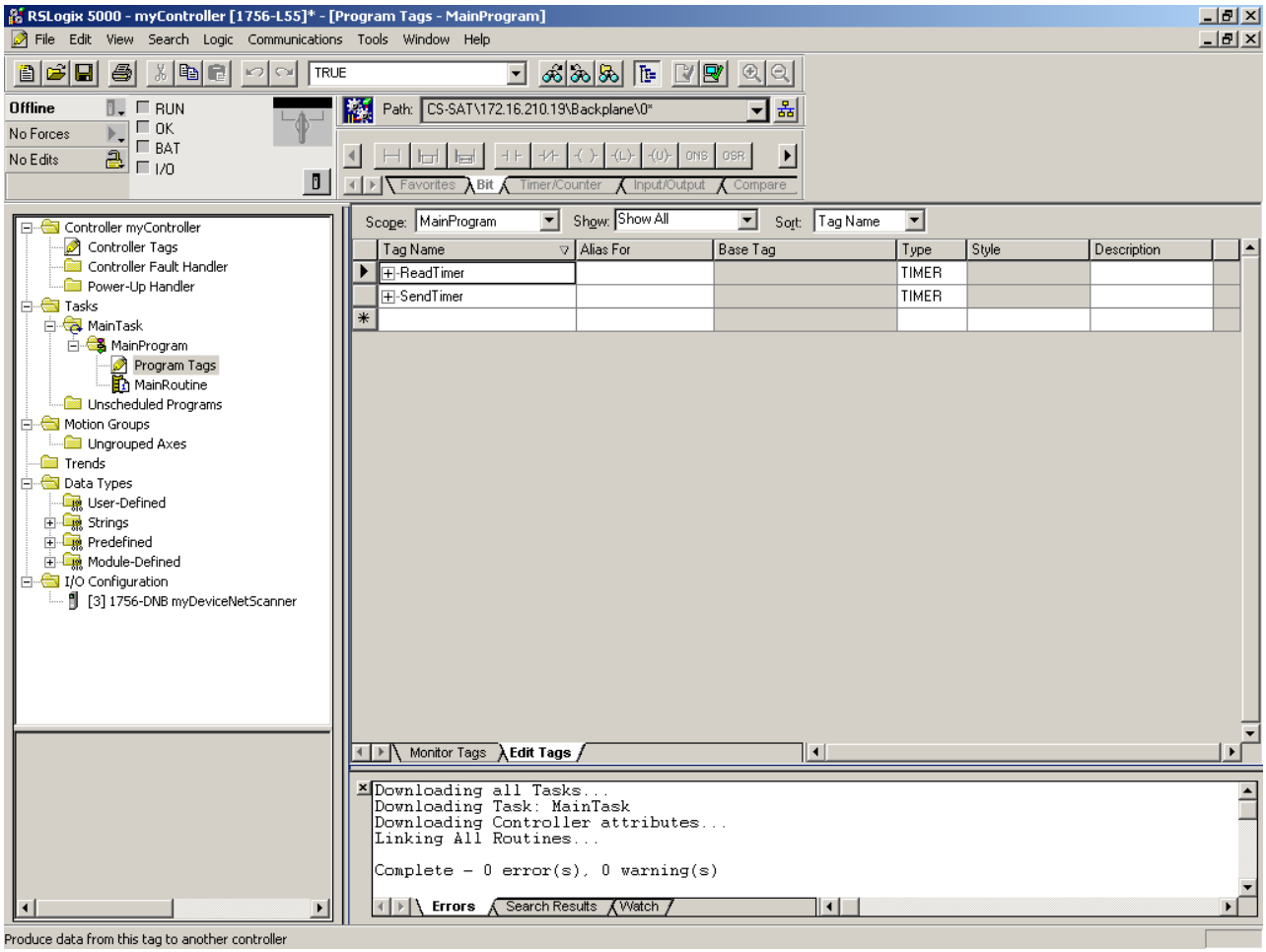

Message Path Browser
Path: myDeviceNetScanner
myDeviceNetScanner
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
OK
Cancel
Help

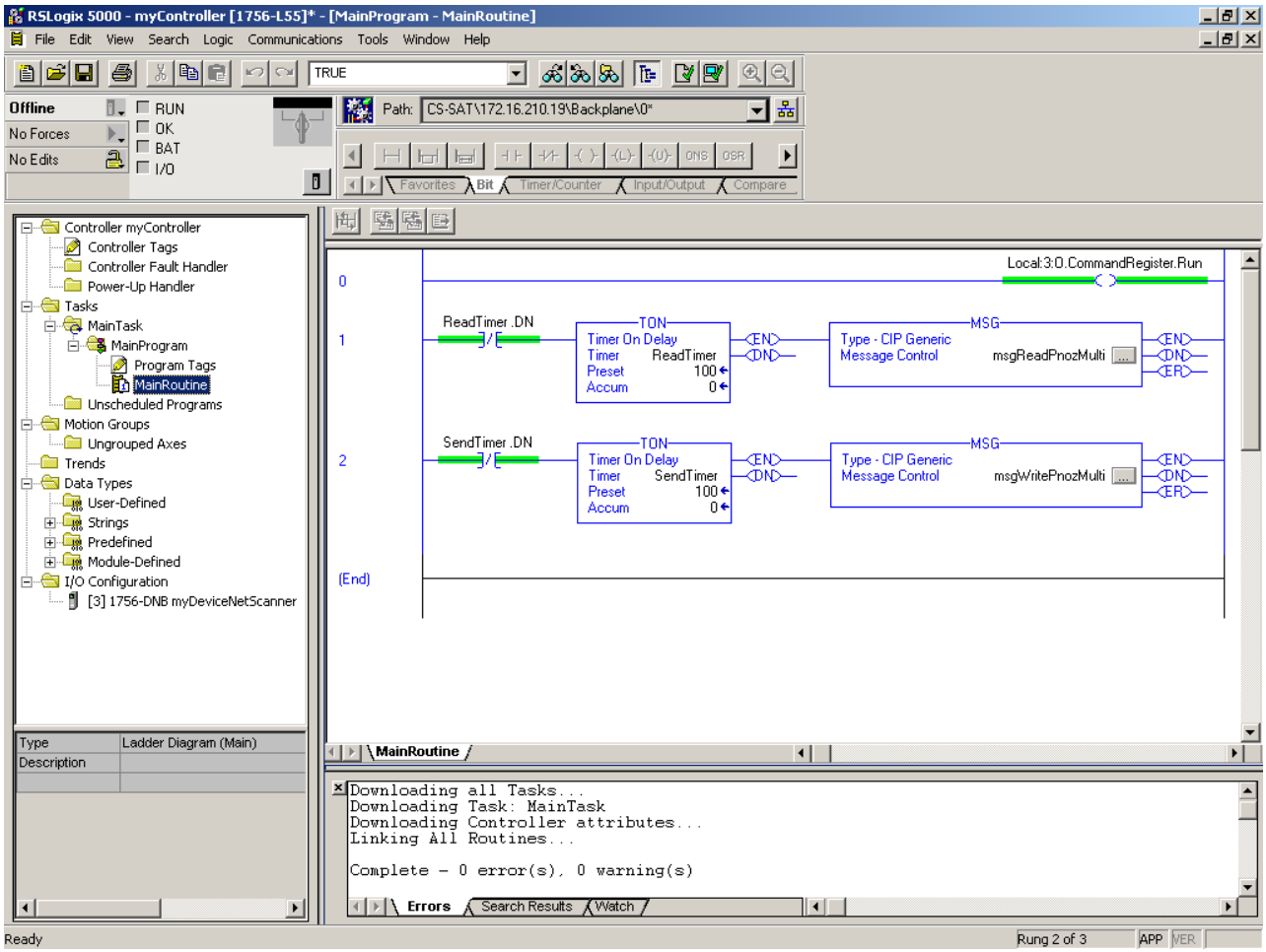

Message Configuration - msgReadPnozMulti
Configuration*
Communication*
Tag
Path: myDeviceNetScanner, 2, 5
Browse...
myDeviceNetScanner, 2, 5
Communication Method
CIP
DH+
Channel:
Destination Link:
CIP With Source ID
Source Link:
Destination Node:
(Octal)
Connected
Cache Connections
Enable
Enable Waiting
Start
Done
Done Length: 0
Error Co
Extended Error Code:
Timed Out
Error Path:
Error Text:
OK
Abbrechen
Übernehmen
Hilfe


RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controll
Show: Show All
Sort: Tag Name
P Tag Name Alias For Base Tag Type Style Description
Local:3:I AB:1756...
Local:3:O AB:1756...
Local:3:S AB:1756...
msgReadPnozMulti MESSAGE
FromPnozMulti SINT[20] Hex
MESSAGE
SINT[20] Hex
Monitor Tag - msgWritePnozMulti
Edit Tag Properties Alt+Enter
Edit Data Type
Create Tag which aliases - msgWritePnozMulti
Trend Tag - msgWritePnozMulti
Go to Cross Reference Ctrl+E
Go to Axis Wizard
Go to Axis Properties
Go to Coordinate System Wizard
Go to Coordinate System Properties
Go to Motion Group Wizard
Go to Motion Group Properties
Go to PID Properties
Go to Message Properties
Go to Cam/Cam Profile Editor
Go to Output Cam Editor
Go to Message Path Editor
Go To... Ctrl+G
Options...
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete Del
Monitor Tags Edit Tags
Configure a Message tag using the Message property dialog

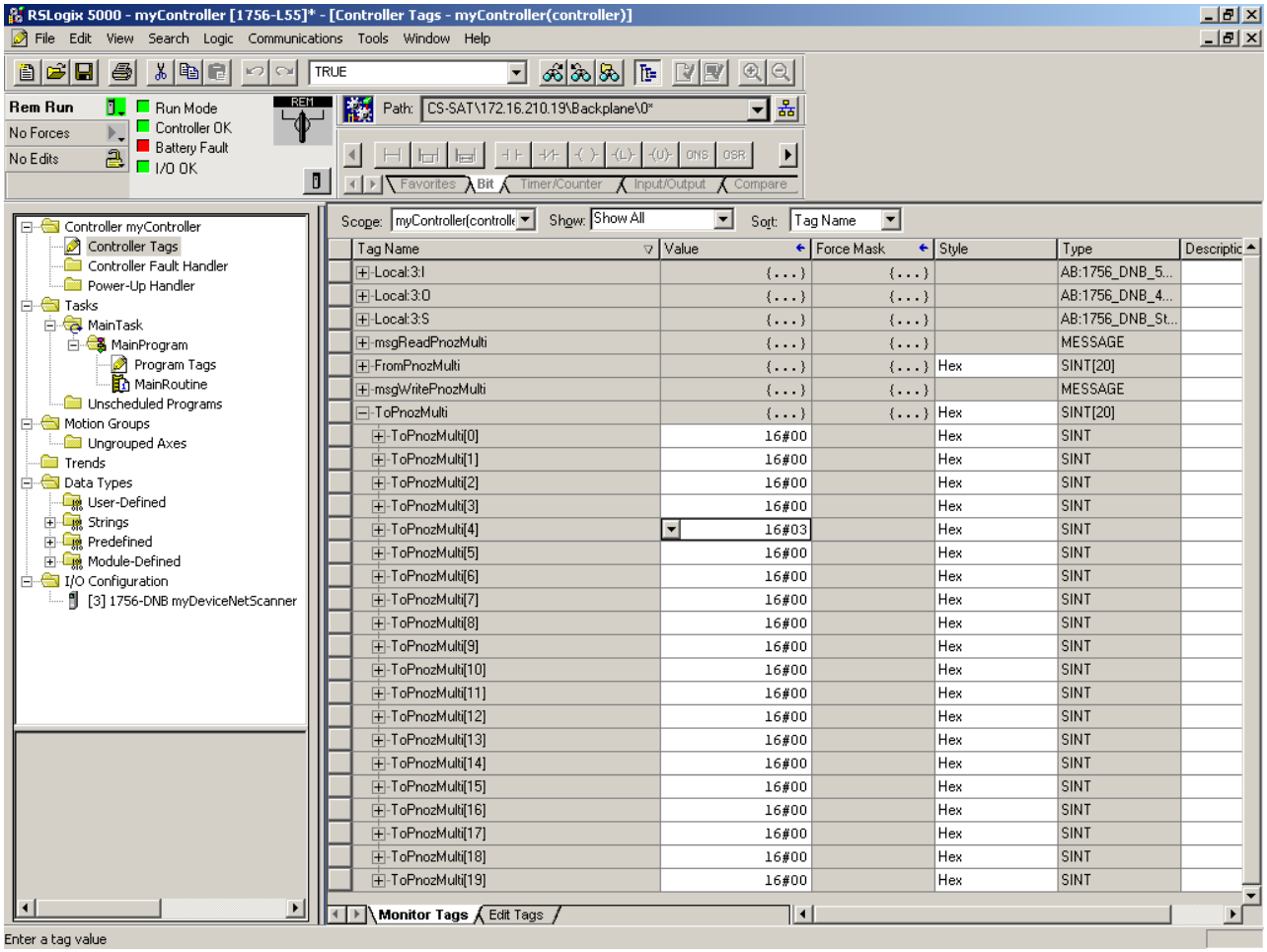

Message Configuration - msgWritePnozMulti
Configuration* Communication Tag
Message Type: CIP Generic
Service Type: Set Attribute Single
Source Element: ToPnozMulti
Source Length: 20 (Bytes)
Service Code: 10 (Hex) Class: 4 (Hex)
Destination
Instance: 150 Attribute: 3 (Hex)
New Tag...
Enable Enable Waiting Start Done Done Length: 0
Error Code: Extended Error Code: Timed Out
Error Path:
Error Text:
OK Abbrechen Übernehmen Hilfe

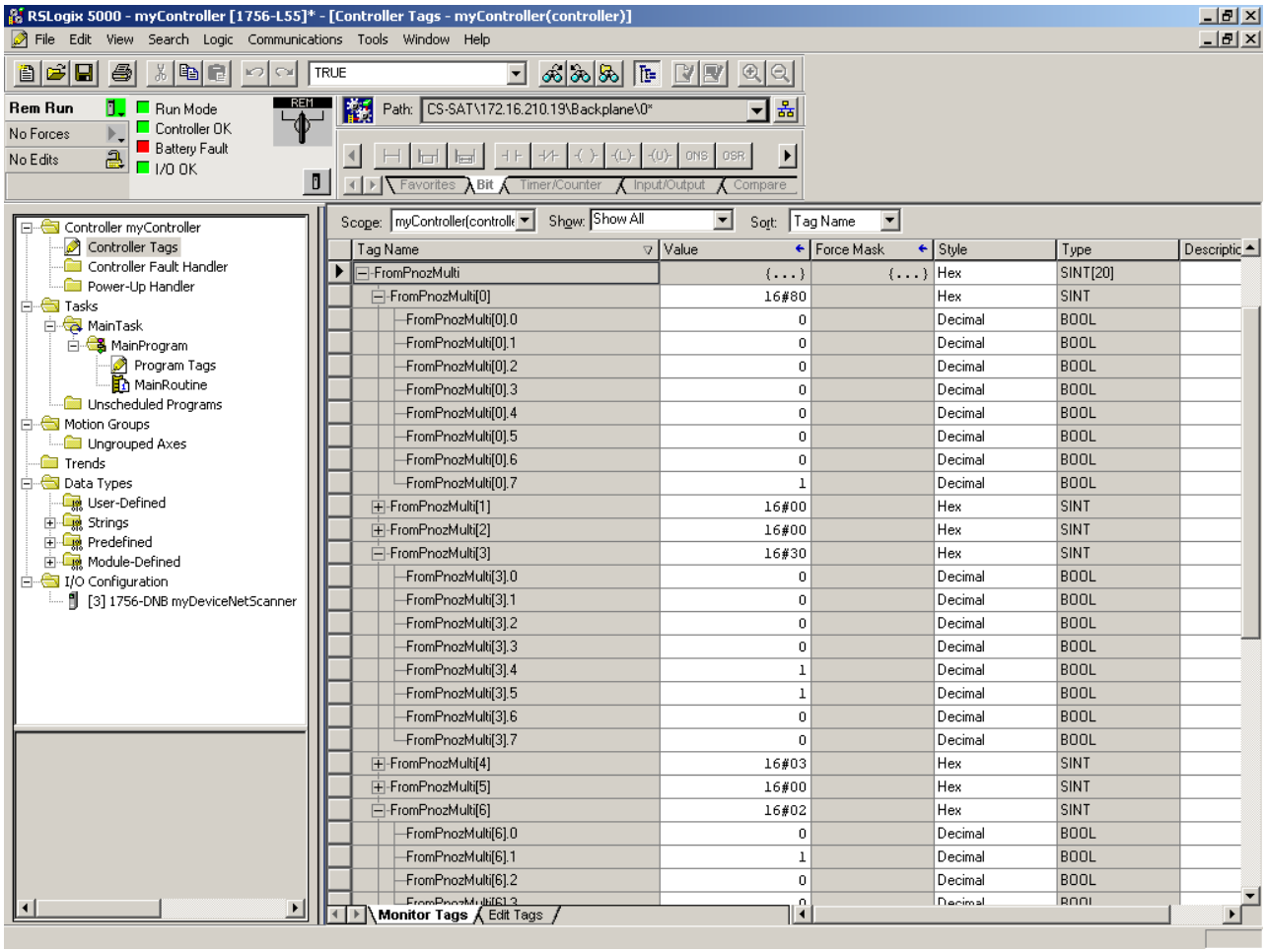

RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
TRUE
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Program Tags
MainRoutine
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controlle
Show: Show All
Sort: Tag Name
P Tag Name Alias For Base Tag Type Style Description
Local:3:I AB:1756...
Local:3:O AB:1756...
Local:3:S AB:1756...
msgReadPnozMulti MESSAGE
FromPnozMulti SINT[20] Hex
msgWritePnozMulti MESSAGE
ToPnozMulti SINT[20] Hex
Monitor Tags Edit Tags
Downloading all Tasks...
Downloading Task: MainTask
Downloading Controller attributes...
Linking All Routines...
Complete - 0 error(s), 0 warning(s)
Errors Search Results Watch
Produce data from this tag to another controller


RSLogix 5000 - myController [1756-L55]* - [Program Tags - MainProgram]
File Edit View Search Logic Communications Tools Window Help
TRUE
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Program Tags
MainRoutine
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: MainProgram
Show: Show All
Sort: Tag Name
Tag Name
Alias For
Base Tag
Type
Style
Description
ReadTimer
TIMER
SendTimer
TIMER
Monitor Tags
Edit Tags
Downloading all Tasks...
Downloading Task: MainTask
Downloading Controller attributes...
Linking All Routines...
Complete - 0 error(s), 0 warning(s)
Errors
Search Results
Watch
Produce data from this tag to another controller

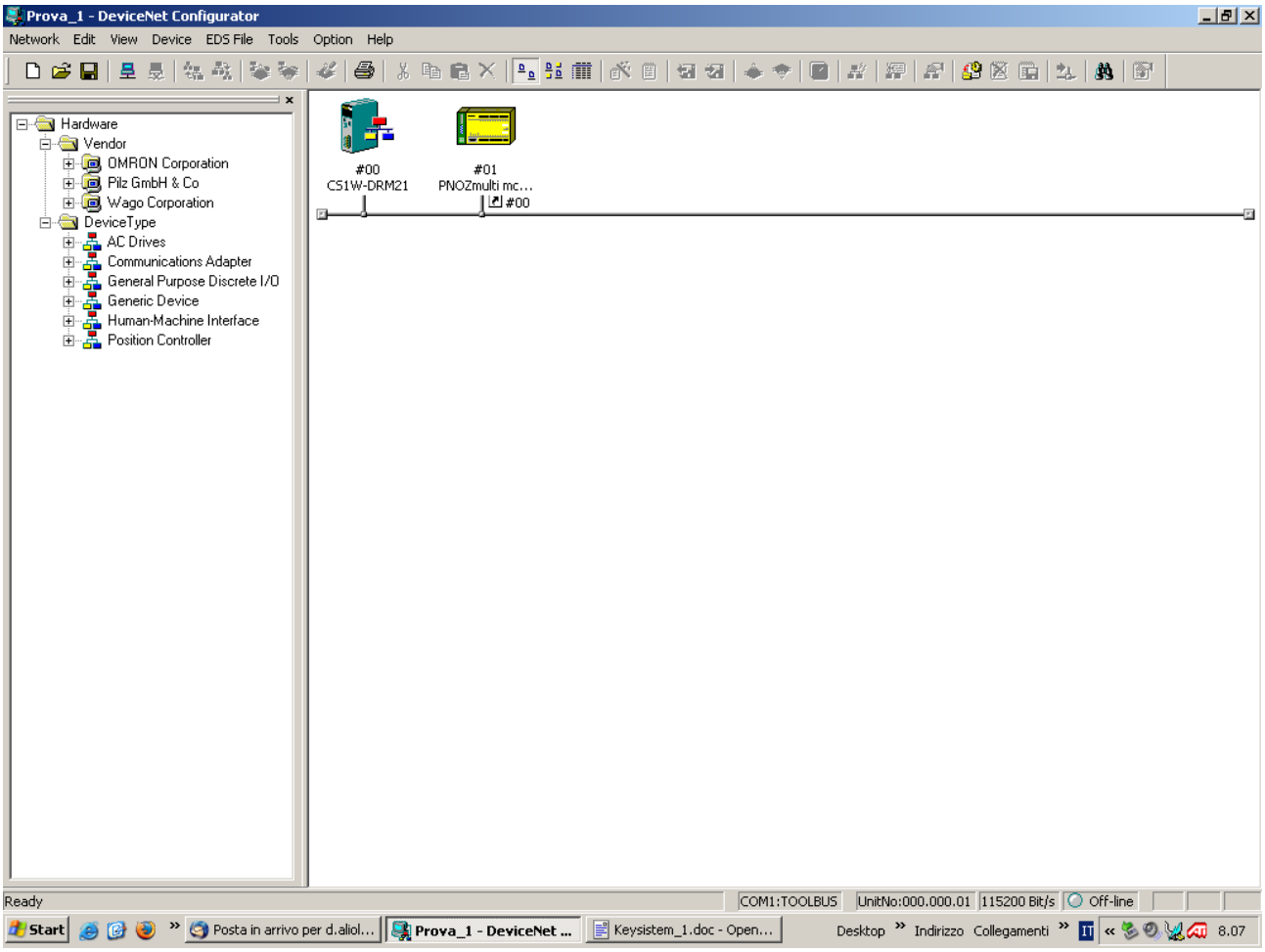

RSLogix 5000 - myController [1756-L55]* - [MainProgram - MainRoutine]
File Edit View Search Logic Communications Tools Window Help
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Program Tags
MainRoutine
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Type
Ladder Diagram (Main)
Description
Local:3:O.CommandRegister.Run
0
1
ReadTimer.DN
TON
Timer On Delay
Timer ReadTimer
Preset 100
Accum 0
MSG
Type - CIP Generic
Message Control msgReadPnozMulti
EN
DN
ER
2
SendTimer.DN
TON
Timer On Delay
Timer SendTimer
Preset 100
Accum 0
MSG
Type - CIP Generic
Message Control msgWritePnozMulti
(End)
MainRoutine
Downloading all Tasks...
Downloading Task: MainTask
Downloading Controller attributes...
Linking All Routines...
Complete - 0 error(s), 0 warning(s)
Errors Search Results Watch
Ready
Rung 2 of 3
APP
VER

5.2.2 Test Data Exchange

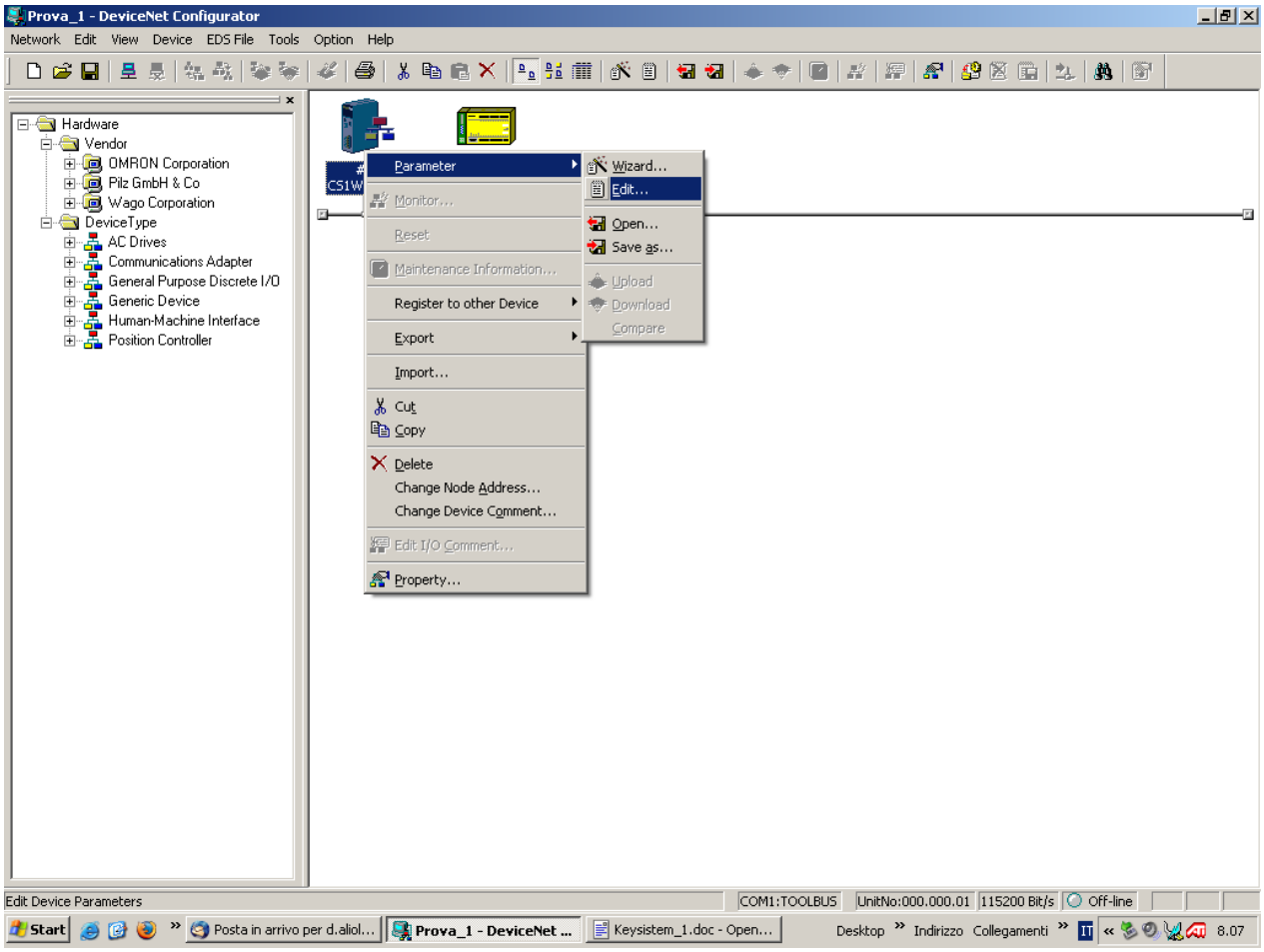


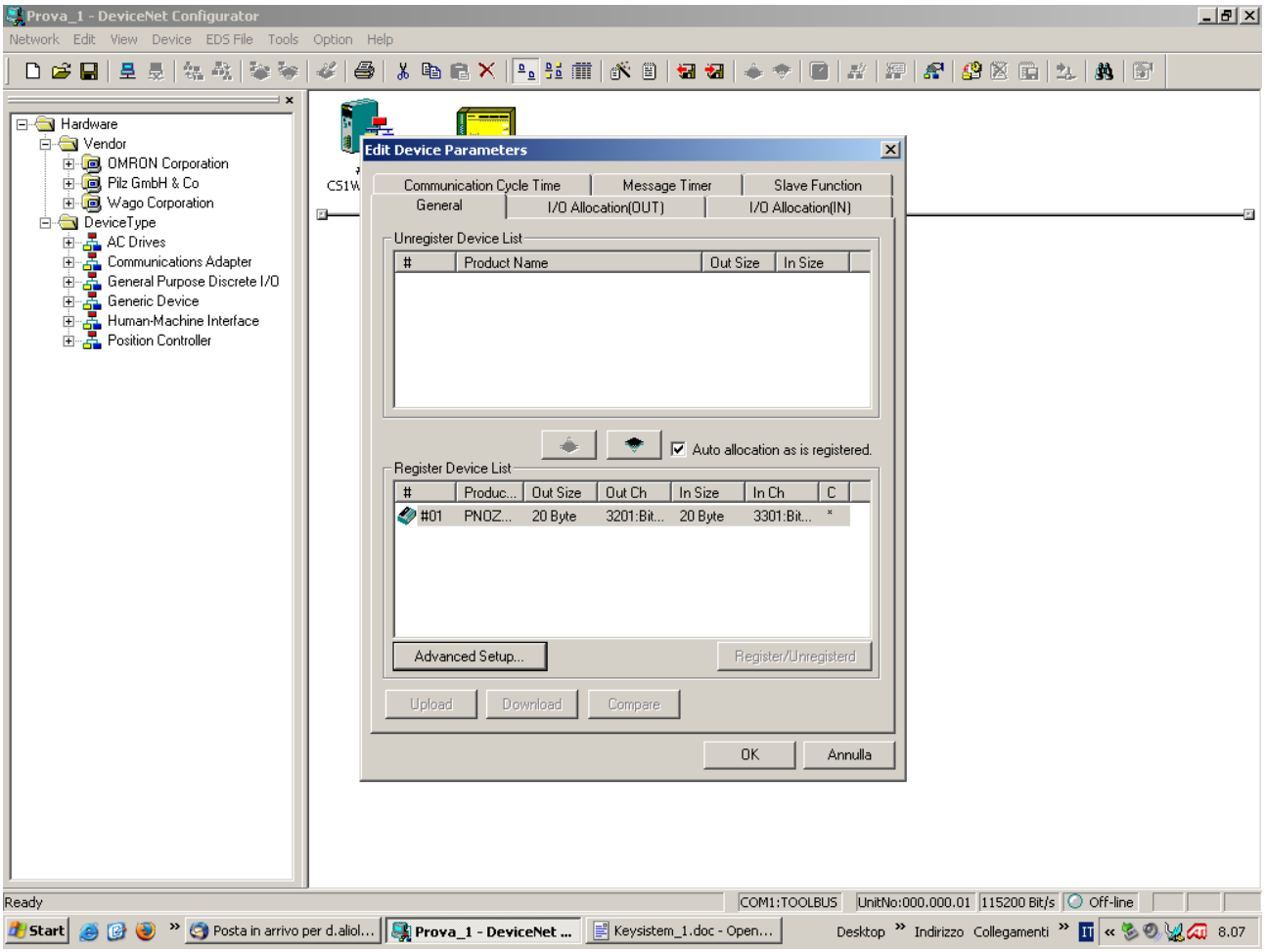

RSLogix 5000 - myController [1756-L55]* - [Controller Tags - myController(controller)]
File Edit View Search Logic Communications Tools Window Help
Rem Run
Run Mode
Controller OK
Battery Fault
I/O OK
No Forces
No Edits
Path: CS-SAT\172.16.210.19\Backplane\0*
Favorites Bit Timer/Counter Input/Output Compare
Controller myController
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Program Tags
MainRoutine
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration
[3] 1756-DNB myDeviceNetScanner
Scope: myController(controll
Show: Show All
Sort: Tag Name
Tag Name Value Force Mask Style Type
FromPnozMulti {...} {...} Hex SINT[20]
FromPnozMulti[0] 16#80 Hex SINT
FromPnozMulti[0].0 0 Decimal BOOL
FromPnozMulti[0].1 0 Decimal BOOL
FromPnozMulti[0].2 0 Decimal BOOL
FromPnozMulti[0].3 0 Decimal BOOL
FromPnozMulti[0].4 0 Decimal BOOL
FromPnozMulti[0].5 0 Decimal BOOL
FromPnozMulti[0].6 0 Decimal BOOL
FromPnozMulti[0].7 1 Decimal BOOL
FromPnozMulti[1] 16#00 Hex SINT
FromPnozMulti[2] 16#00 Hex SINT
FromPnozMulti[3] 16#30 Hex SINT
FromPnozMulti[3].0 0 Decimal BOOL
FromPnozMulti[3].1 0 Decimal BOOL
FromPnozMulti[3].2 0 Decimal BOOL
FromPnozMulti[3].3 0 Decimal BOOL
FromPnozMulti[3].4 1 Decimal BOOL
FromPnozMulti[3].5 1 Decimal BOOL
FromPnozMulti[3].6 0 Decimal BOOL
FromPnozMulti[3].7 0 Decimal BOOL
FromPnozMulti[4] 16#03 Hex SINT
FromPnozMulti[5] 16#00 Hex SINT
FromPnozMulti[6] 16#02 Hex SINT
FromPnozMulti[6].0 0 Decimal BOOL
FromPnozMulti[6].1 1 Decimal BOOL
FromPnozMulti[6].2 0 Decimal BOOL
Monitor Tags Edit Tags

5.3 Example Communication with Omron

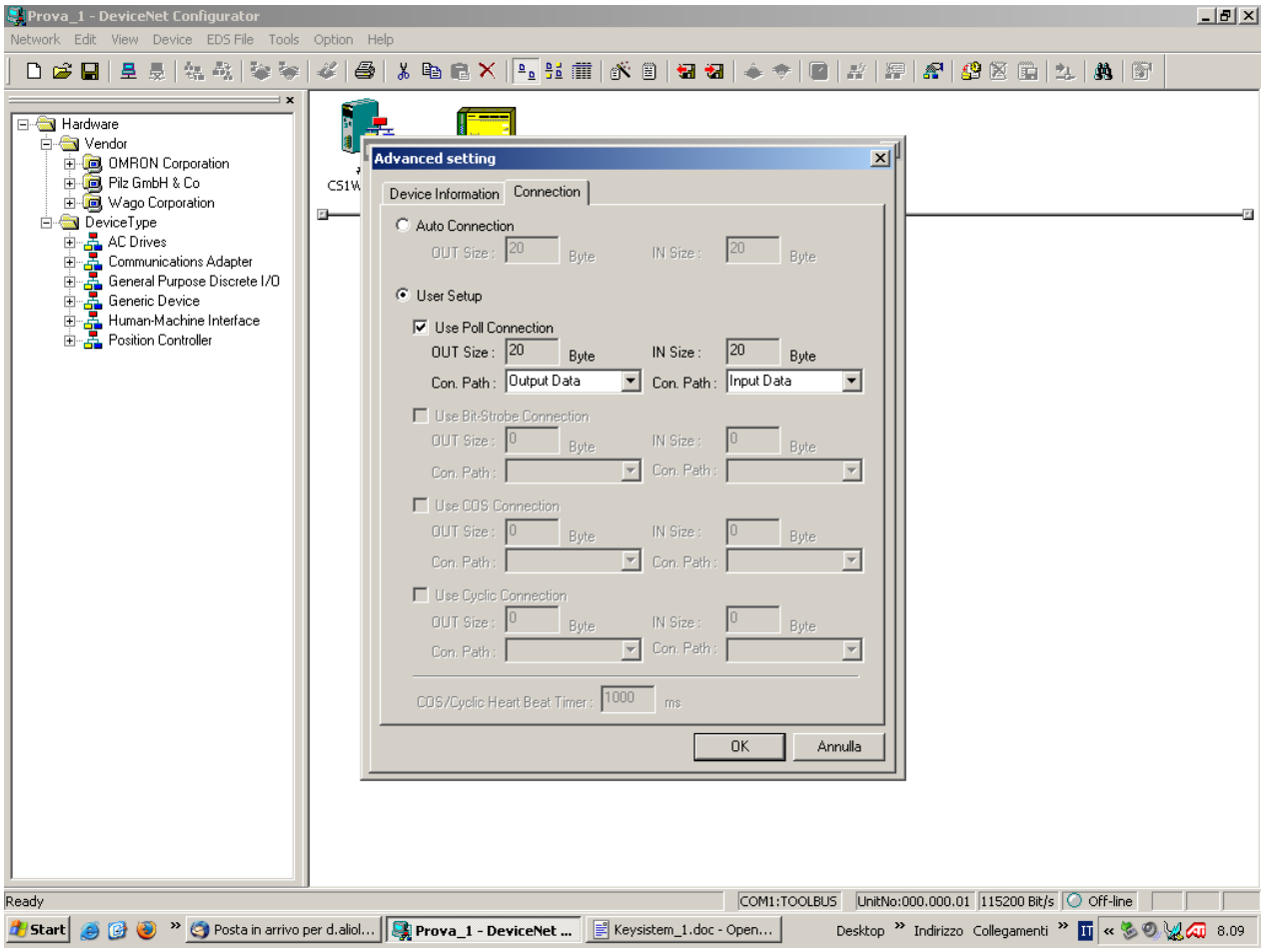


Be sure to use always the actual eds file...


Prova_1 - DeviceNet Configurator
Network Edit View Device EDS File Tools Option Help
Hardware
Vendor
OMRON Corporation
Pilz GmbH & Co
Wago Corporation
DeviceType
AC Drives
Communications Adapter
General Purpose Discrete I/O
Generic Device
Human-Machine Interface
Position Controller
Parameter
Monitor...
Reset
Maintenance Information...
Register to other Device
Export
Import...
Cut
Copy
Delete
Change Node Address...
Change Device Comment...
Edit I/O Comment...
Property...
Wizard...
Edit...
Open...
Save as...
Upload
Download
Compare
Edit Device Parameters
COM1:TOOLBUS
UnitNo:000.000.01
115200 Bit/s
Off-line
Start
Posta in arrivo per d.aliol...
Prova_1 - DeviceNet ...
Keysistem_1.doc - Open...
Desktop
Indirizzo
Collegamenti
8.07

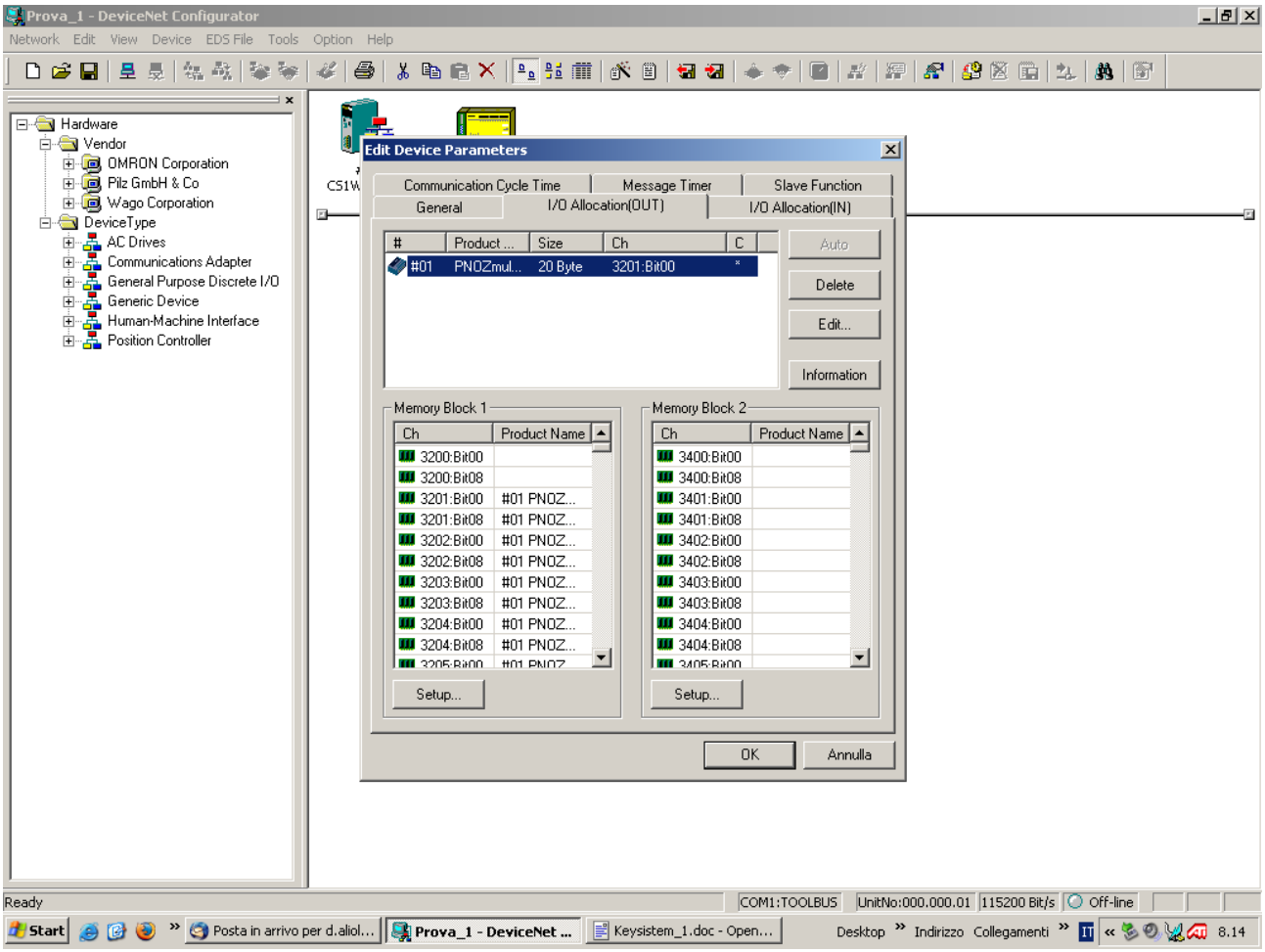


Advanced Setup...Connection...

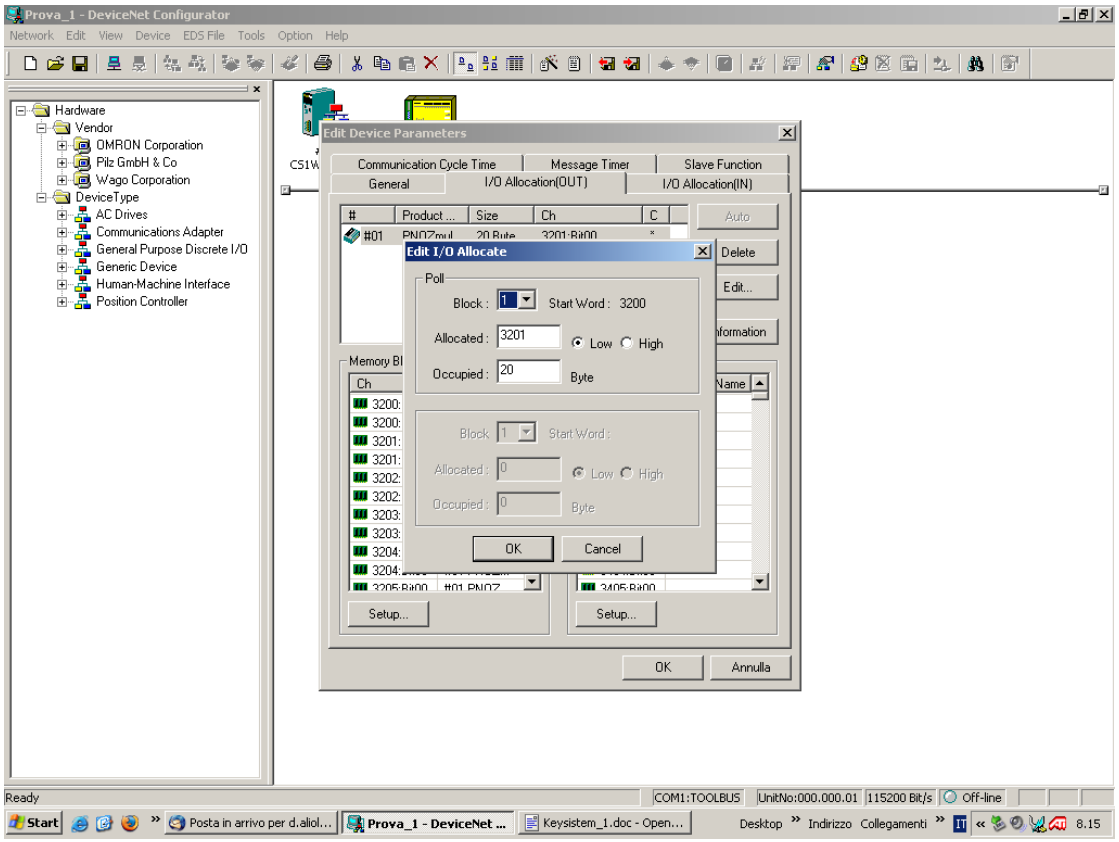


User Setup...use only Poll Connection with 20 Byte OUT and 20 Byte IN

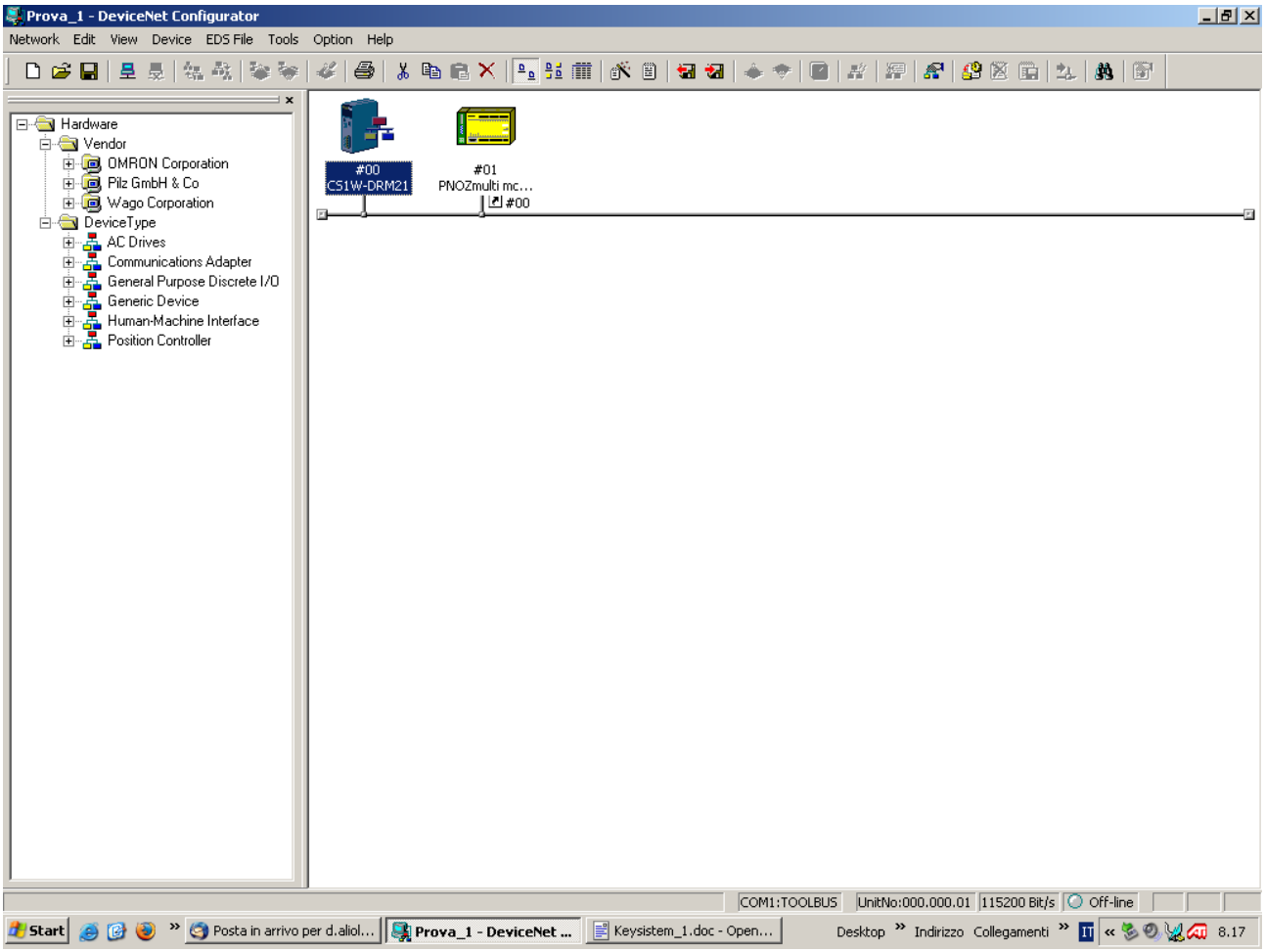
...



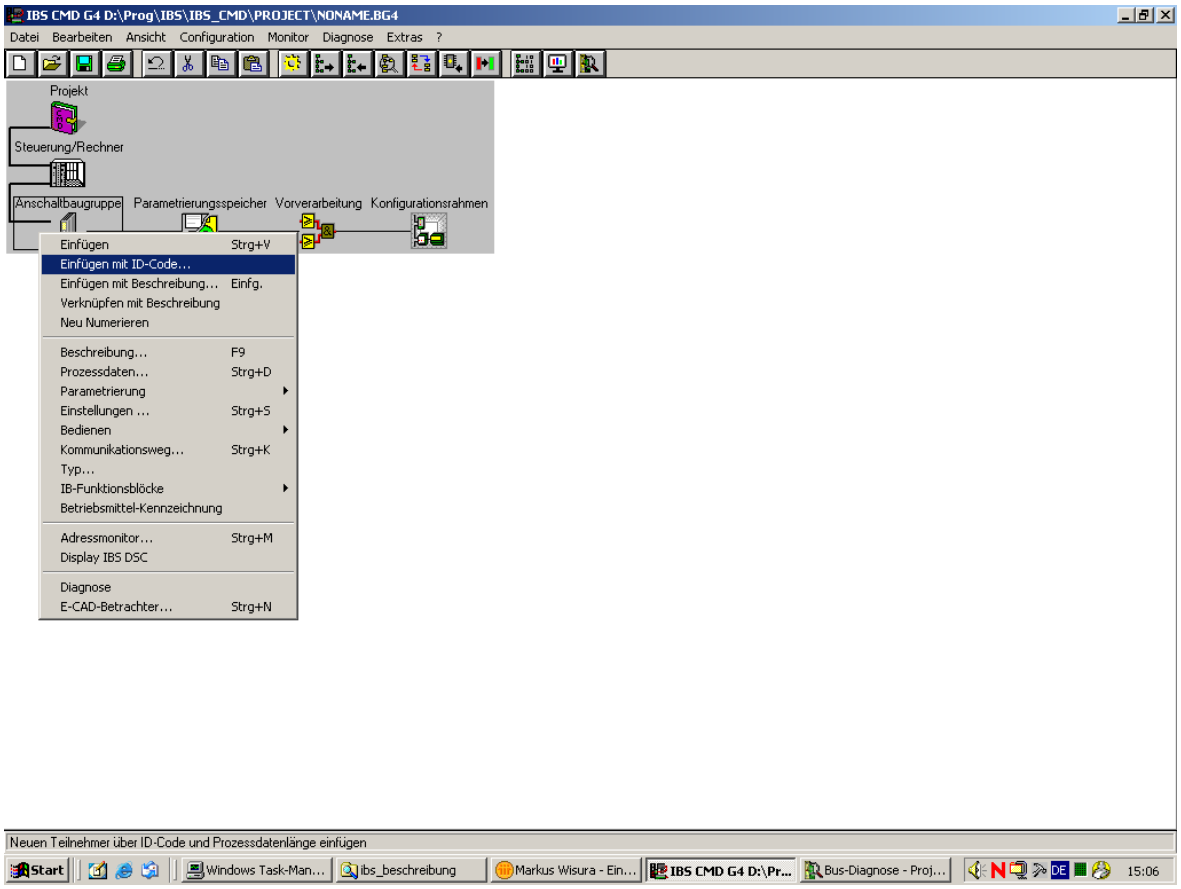
Selezionare l'area di memoria I/O desiderata...

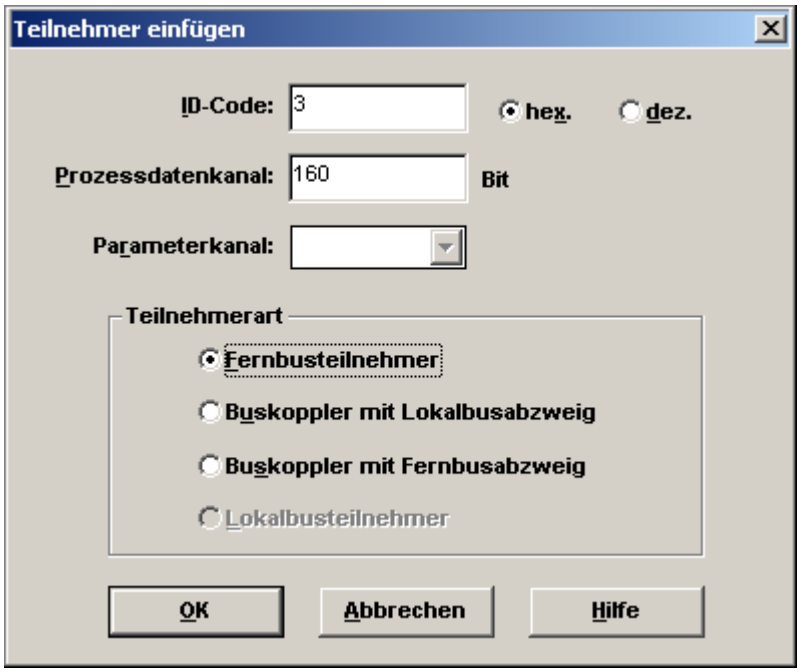

Prova_1 - DeviceNet Configurator
Network Edit View Device EDS File Tools Option Help
Hardware
Vendor
OMRON Corporation
Pilz GmbH & Co
Wago Corporation
DeviceType
AC Drives
Communications Adapter
General Purpose Discrete I/O
Generic Device
Human-Machine Interface
Position Controller
Edit Device Parameters
Communication Cycle Time
Message Timer
Slave Function
General
I/O Allocation(OUT)
I/O Allocation(IN)
Auto
Delete
Edit...
Edit I/O Allocate
Poll
Block : 1
Start Word : 3200
Allocated : 3201
Low High
Occupied : 20
Byte
Block 1
Start Word :
Allocated : 0
Low High
Occupied : 0
Byte
OK
Cancel
Setup...
Setup...
OK
Annulla
Ready
COM1:TOOLBUS
UnitNo:000.000.01
115200 Bit/s
Off-line
Start
Posta in arrivo per d.aliol...
Prova_1 - DeviceNet ...
Keysistem_1.doc - Open...
Desktop
Indirizzo
Collegamenti
8.15

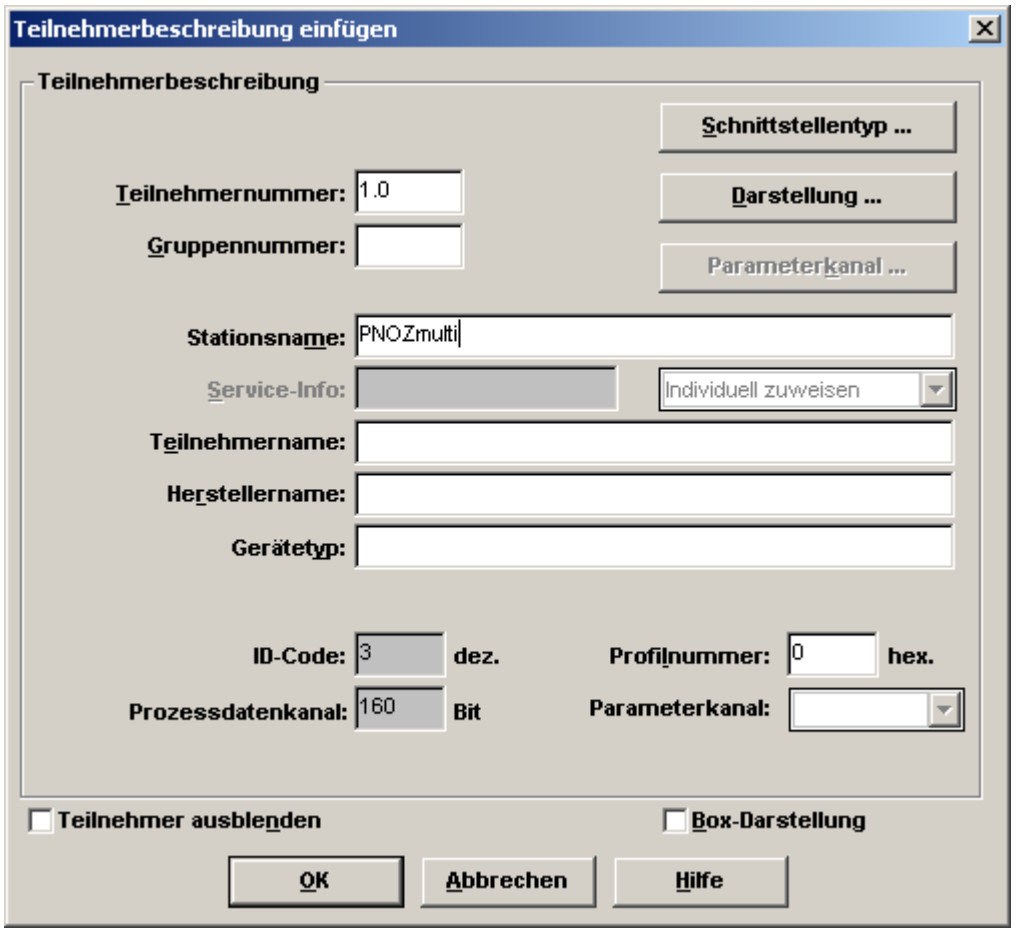
...

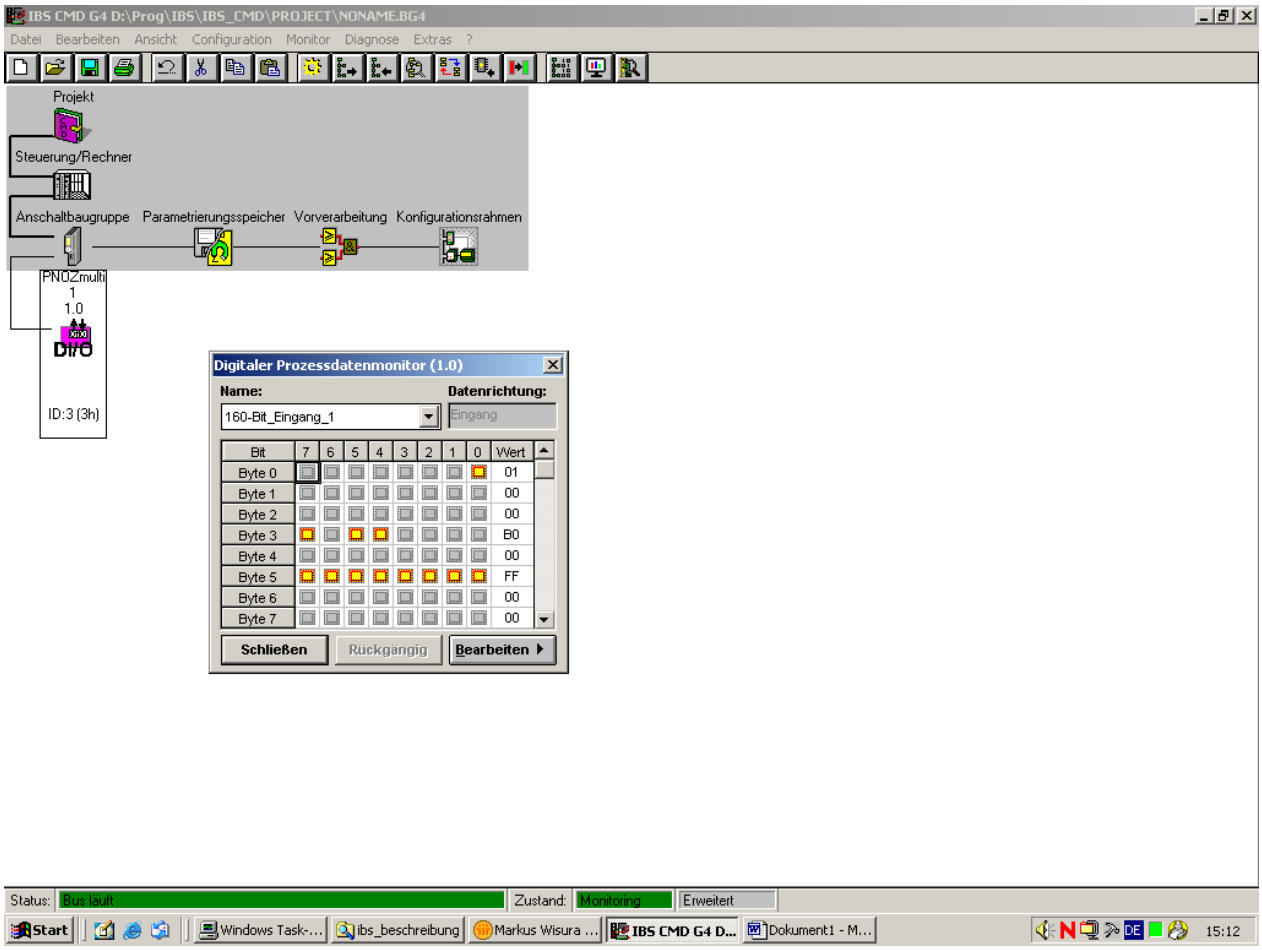

Prova_1 - DeviceNet Configurator
Network Edit View Device EDS File Tools Option Help
Hardware
Vendor
OMRON Corporation
Pilz GmbH & Co
Wago Corporation
DeviceType
AC Drives
Communications Adapter
General Purpose Discrete I/O
Generic Device
Human-Machine Interface
Position Controller
#00
CS1W-DRM21
#01
PNOZmulti mc...
#00
COM1:TOOLBUS
UnitNo:000.000.01
115200 Bit/s
Off-line
Start
Posta in arrivo per d.aliol...
Prova_1 - DeviceNet ...
Keysistem_1.doc - Open...
Desktop
Indirizzo
Collegamenti
8.17

6 Interbus-S (PNOZ mc5p)






Teilnehmerbeschreibung einfügen
Teilnehmerbeschreibung
Schnittstellentyp ...
Teilnehmernummer:
1.0
Darstellung ...
Gruppennummer:
Parameterkanal ...
Stationsname:
PNOZmulti
Service-Info:
Individuell zuweisen
Teilnehmername:
Herstellername:
Gerätetyp:
ID-Code:
3
dez.
Profilnummer:
0
hex.
Prozessdatenkanal:
160
Bit
Parameterkanal:
Teilnehmer ausblenden
Box-Darstellung
OK
Abbrechen
Hilfe


IBS CMD G4 D:\Prog\IBS\IBS_CMD\PROJECT\NONAME.BG4
Datei Bearbeiten Ansicht Configuration Monitor Diagnose Extras ?
Projekt
Steuerung/Rechner
Anschaltbaugruppe
Parametrierungsspeicher
Vorverarbeitung
Konfigurationsrahmen
PNOZmulti
1
1.0
DI/O
ID:3 (3h)
Digitaler Prozessdatenmonitor (1.0)
Name:
Datenrichtung:
160-Bit_Eingang_1
Eingang
Bit 7 6 5 4 3 2 1 0 Wert
Byte 0 01
Byte 1 00
Byte 2 00
Byte 3 B0
Byte 4 00
Byte 5 FF
Byte 6 00
Byte 7 00
Schließen
Rückgängig
Bearbeiten
Status: Bus läuft
Zustand: Monitoring
Erweitert
Start
Windows Task-...
ibs_beschreibung
Markus Wisura ...
IBS CMD G4 D...
Dokument1 - M...
15:12

7 CC-Link

7.1 What is CC-Link

Open Fieldbus from Mitsubishi

Baud Rate [bps]	156K	625K	2,5M	5M	10M
Distance [m]	1200	600	200	150	100
Max. Stations	64				
Addresses per Network	2048 I/O and 265 Register I/O (words)				
Addresses per Station	32 I/O and 8 Register I/O				

http://www.cc-link.org/eng/t_html/top.html

7.2 PNOZmulti Data in the CC-Link Registers

Register	**Content**		***System Q Address in Sample***
RX00-0F	Output status o00 – o15		*X10-X1F*
RX10-1F	LED status	Output status o16 – o23	*X20-X2F*
RWr00	Table no.	Segment no.	*D1000*
RWr01	Byte 0	Byte 1	*D1001*
RWr02	Byte 2	Byte 3	*D1002*
RWr03	Byte 4	Byte 5	*D1003*
RWr04	Byte 6	Byte 7	*D1004*
RWr05	Byte 8	Byte 9	*D1005*
RWr06	Byte 10	Byte 11	*D1006*
RWr07	Byte 12	Reserved	*D1007*

n	7	6	5	4	3	2	1	0
X1n	o07	o06	o05	o04	o03	o02	o01	o00
X2n	o23	o22	o21	o20	o19	o18	o17	o16

n	F	E	D	C	B	A	9	8
X1n	o15	o14	o13	o12	o11	o10	o09	o08
X2n	LED status							

The status of the LEDs is stored in RX18 ... RX1F:
X28 = 1: OFAULT LED is lit
X29 = 1: IFAULT LED is lit
X2A = 1: FAULT LED is lit
X2B = 1: DIAG LED is lit
X2C = 1: RUN LED is lit
X2D = 1: If communication between PNOZmulti and CC-Link is working
X2E: Reserved
X2F: Reserved

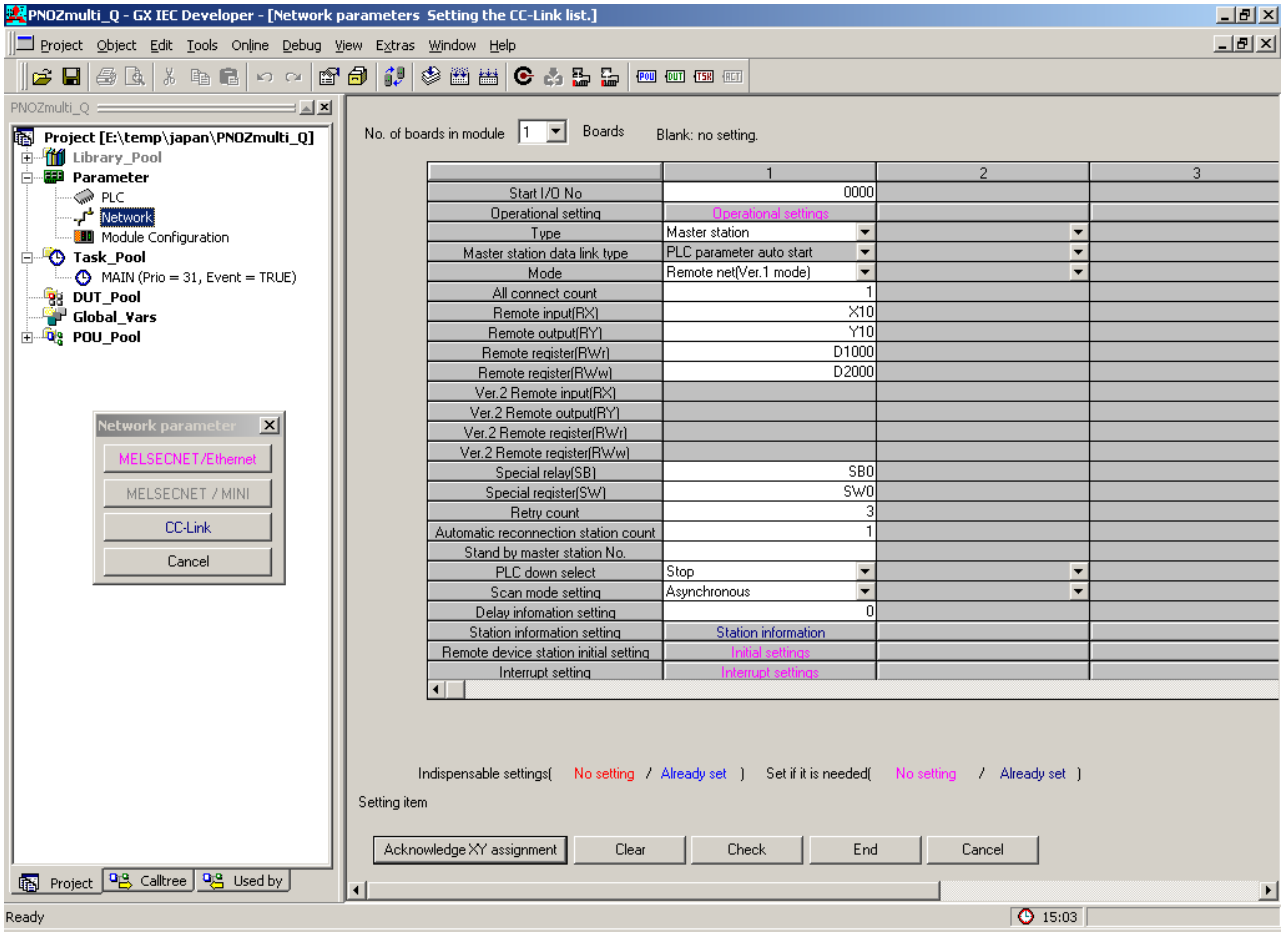
7.3 Sample with MELSEC System Q and GX IEC Developer

Mitsubishi MELSEC System Q Q00JCPU as CC-Link Master (Address 0, Baudrate 10Mbps)
PNOZmc1p with PNOZmc7p as CC-Link Slave (Address 1, Baudrate 10Mbps)

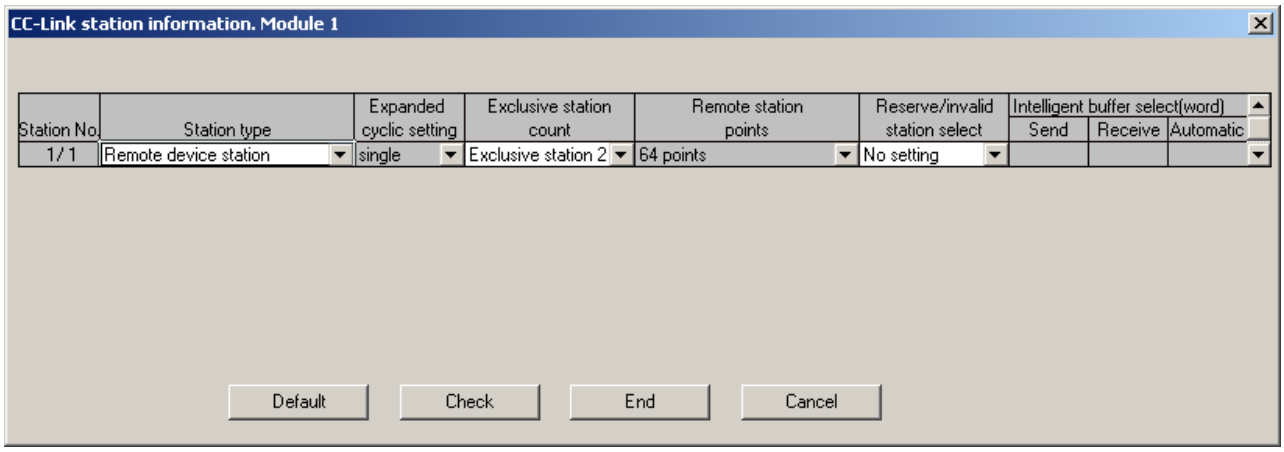
7.3.1 Configure the Network

Open MELSEC GX IEC Developer.
In the Parameter Branch of the Project Tree double click on “Network”.
Then click on the CC-Link Button.

In the CC-Link configuration window change the number of boards in module to 1.
In column 1 change the “All connect count” entry to 1 as we have only one station.
Map the Registers as shown in the following screenshot



Click on “Station Information”
Set the following :



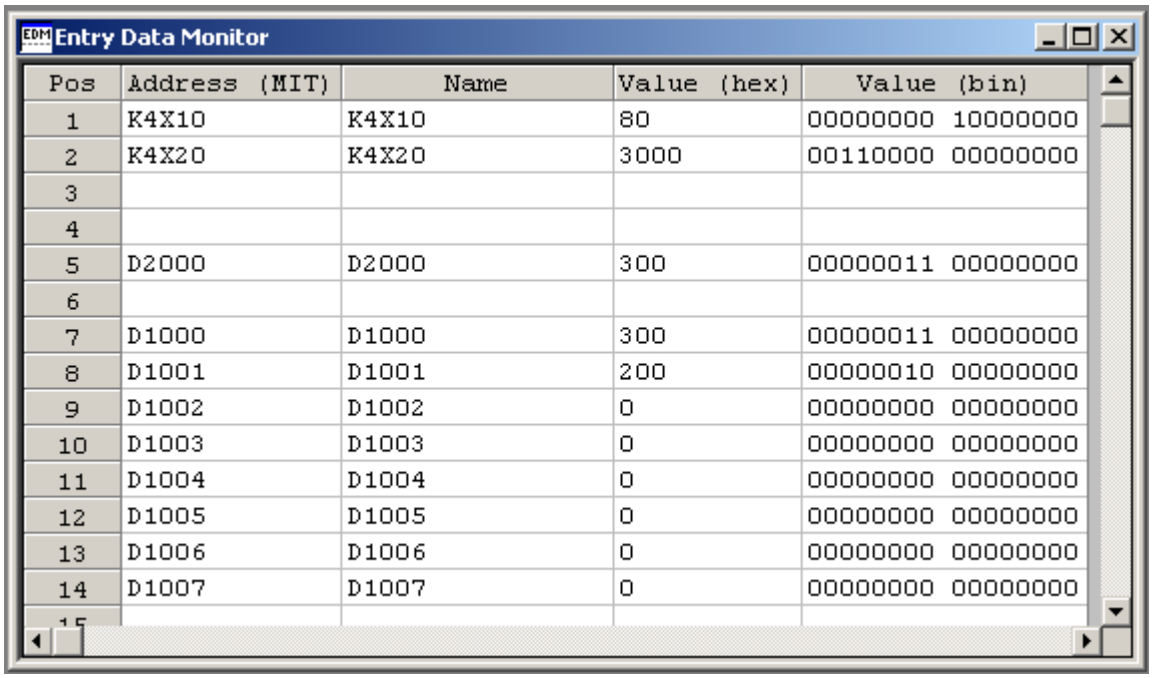
From the Project Menu chose rebuild all and download

7.3.2 Application Program

There is no application program necessary to read or write data.

7.3.3 Test Data Exchange

From the Online Menu start the Entry Data Monitor and enter the required Addresses to the first column.
To request segment 0 of table 3 from the PNOZmulti set D2000 to 16#0300.
The Answer of the PNOZmulti can be read in D1000 to D1007.



Pos	Address (MIT)	Name	Value (hex)	Value (bin)
1	K4X10	K4X10	80	00000000 10000000
2	K4X20	K4X20	3000	00110000 00000000
3				
4				
5	D2000	D2000	300	00000011 00000000
6				
7	D1000	D1000	300	00000011 00000000
8	D1001	D1001	200	00000010 00000000
9	D1002	D1002	0	00000000 00000000
10	D1003	D1003	0	00000000 00000000
11	D1004	D1004	0	00000000 00000000
12	D1005	D1005	0	00000000 00000000
13	D1006	D1006	0	00000000 00000000
14	D1007	D1007	0	00000000 00000000

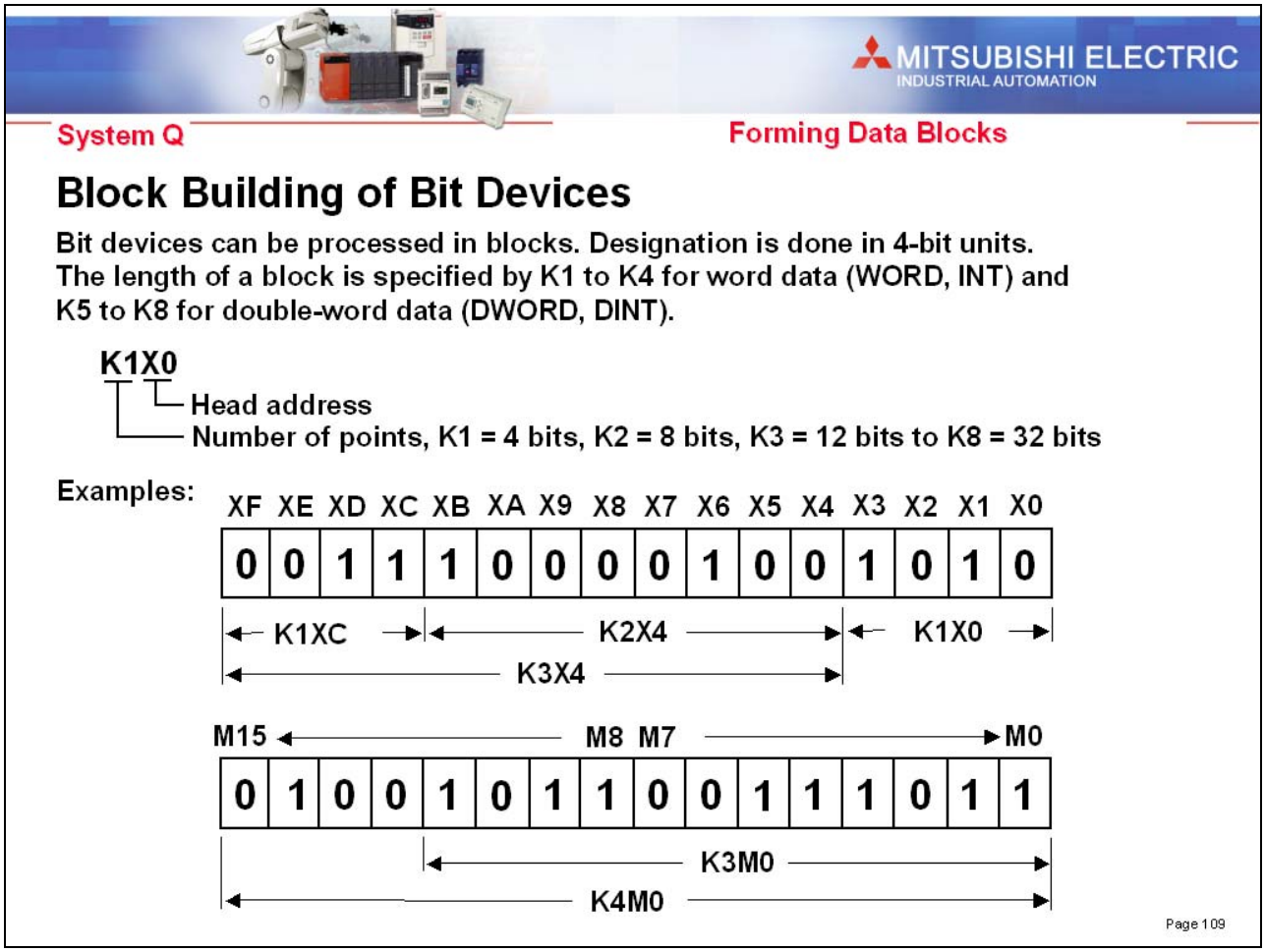
What you can see from the Data

Bus Output 07 is set to one X17
LED RUN is on

Communication between mc7p and mc1p is running

User requested Table 3 Segment 0 in D2000
mc7p echoes in D1000
Bit 9 of D1001 is set that means Bit 1 of Byte 0 of Segment 0 is set.

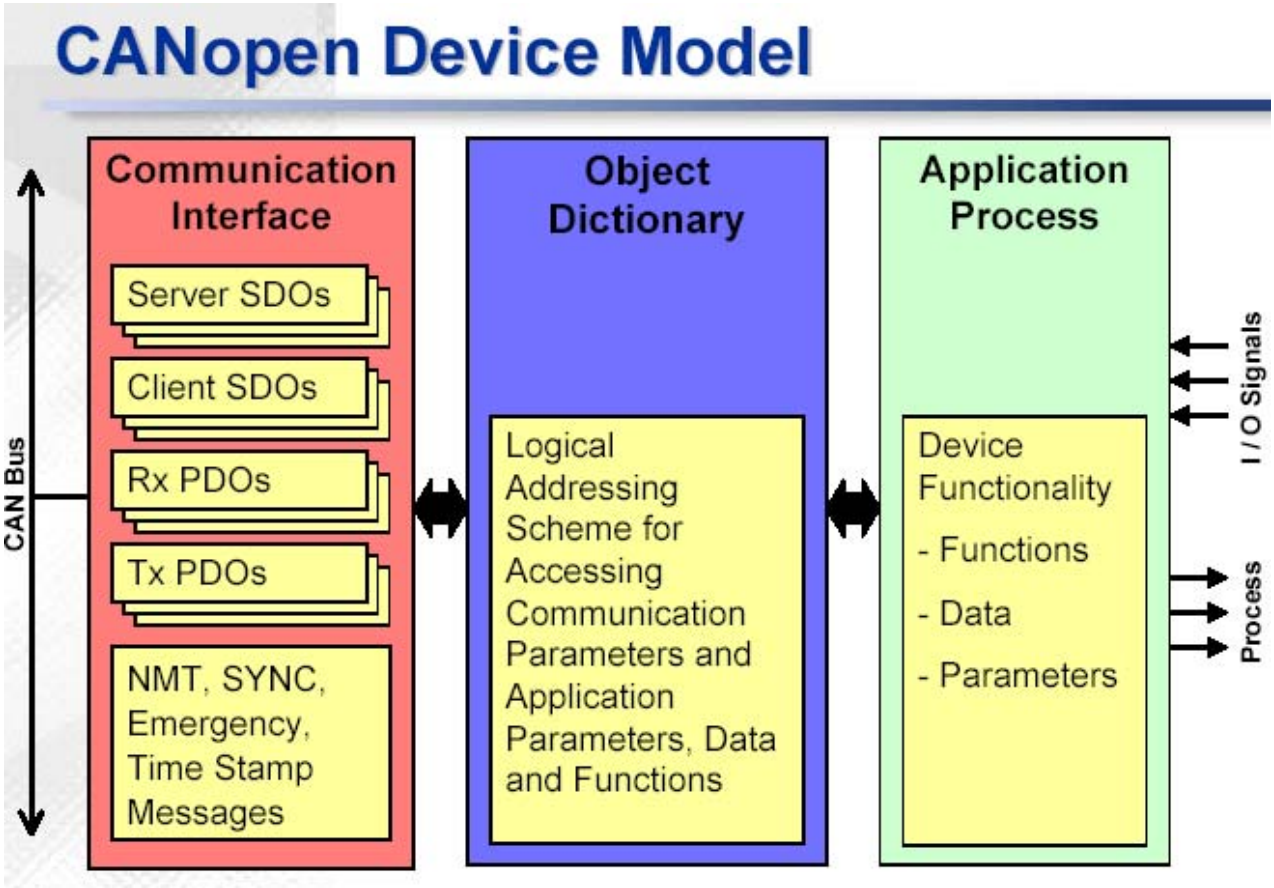
Additional Info :



8 CANopen (PNOZ mc6p)

8.1 What is CANopen ?

- Standardized system solution for CAN-based automation
- CANopen standard is currently established in Version CiA/DS301 V4.02 and is a European Standard CENELEC EN 50325-4
- PILZ INTERFACE: CANopen conformance: CIA DS-301 V3.0 !!!!



Service Data Object (SDO)
An SDO provides a client access to entries (objects) of a device OD (the device is the server) using the object's OD index and subindex, contained in the first few bytes of the CAN-message.

Process Data Object (PDO)
Is used to transfer real-time data; data is transferred from one (and only one) producer to one or more consumers. Data transfer is limited to 1 to 8 bytes (for example: one PDO can transfer at maximum 64 digital I/O values, or 4 16-bit analogue inputs). It has no protocol overhead. The data content of a PDO is defined through its CANidentifier only and this content is assumed known to sender as well as receiver(s) of the PDO.

8.1.1 CANopen Object Dictionary

CANopen Object Dictionary	
Index	**Object**
0000	*not used*
0001 - 001F	Static Data Types (standard data types, e.g. Boolean, Integer16)
0020 - 003F	Complex Data Types (predefined structures composed of standard data types, e.g. PDOCommPar, SDOParameter)
0040 - 005F	Manufacturer Specific Complex Data Types
0060 - 007F	Device Profile Specific Static Data Types
0080 - 009F	Device Profile Specific Complex Data Types
00A0 - 0FFF	*reserved*
1000 - 1FFF	Communication Profile Area (e.g. Device Type, Error Register, Number of PDOs supported)
2000 - 5FFF	Manufacturer Specific Profile Area
6000 - 9FFF	Standardised Device Profile Area (e.g. "DSP-401 Device Profile for I/0 Modules" [3]: Read State 8 Input Lines, etc.)
A000 - FFFF	*reserved*

8.2 Adressing the Pilz interface ?

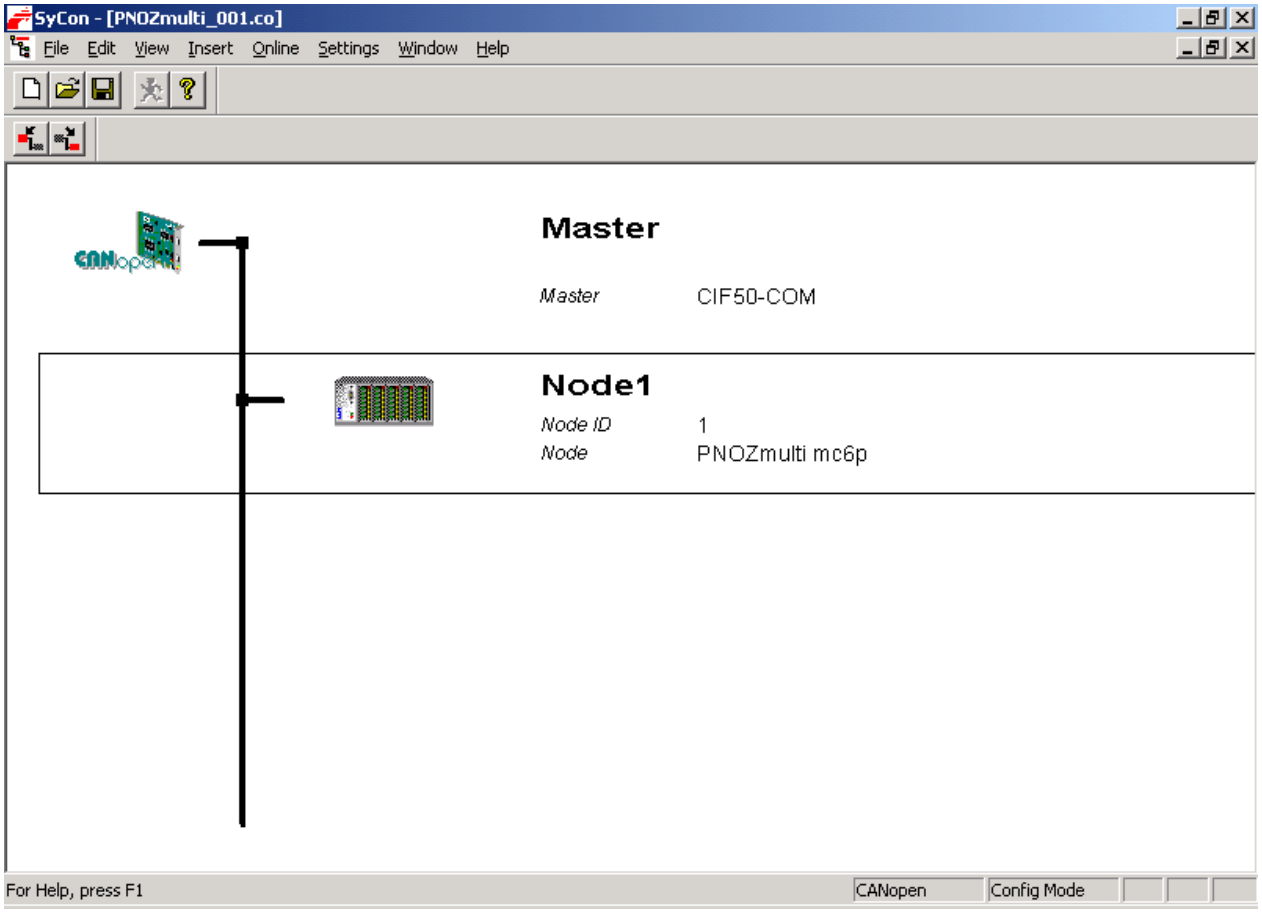
Note on the PNOZ mc6p (CANopen):
The output data on the PNOZmulti is stored as follows:

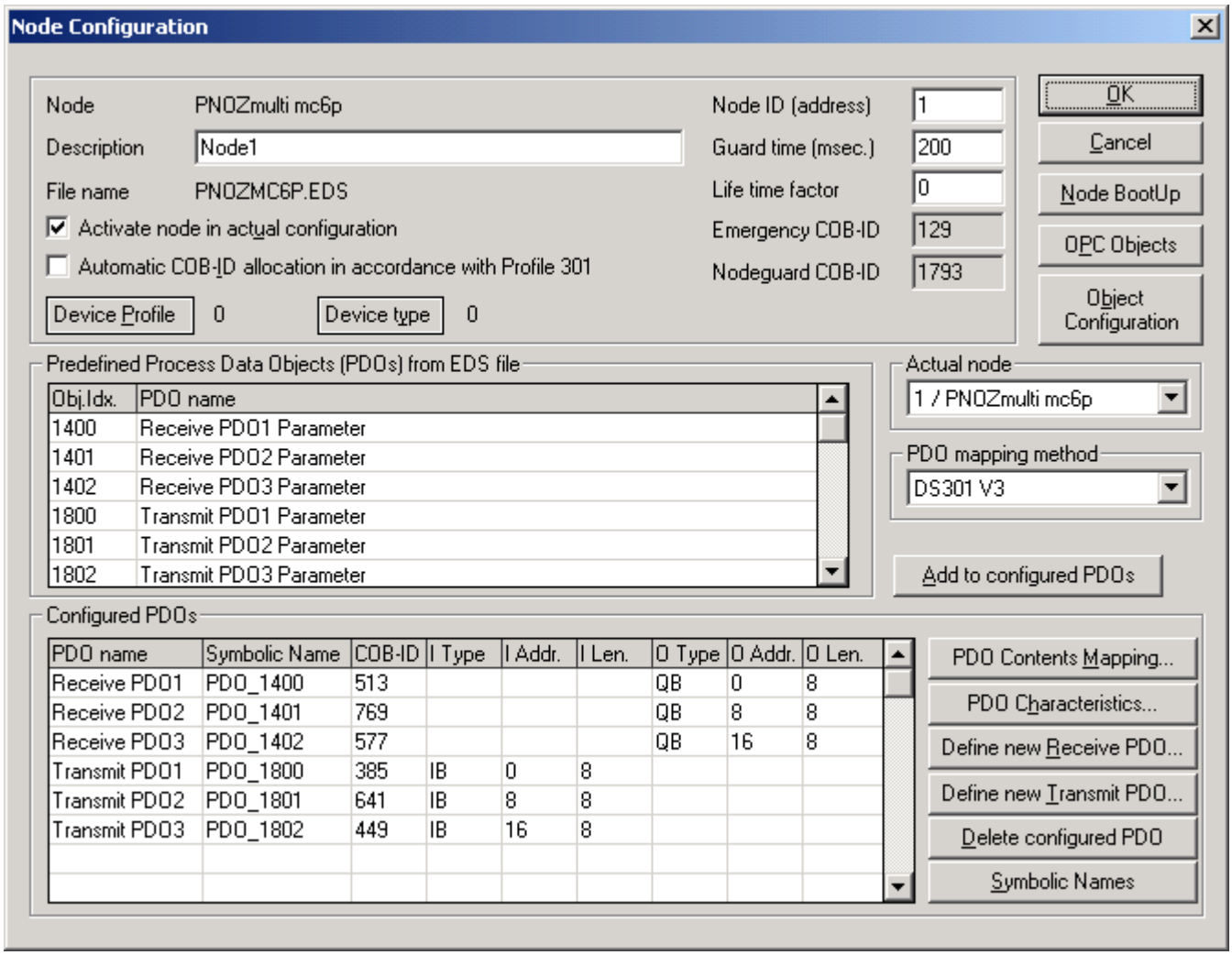
Byte	Object code	Sub-index	PDO	COB-ID
0	2000	1	TPDO 1	180 + node address
1	2000	2		
2	2000	3		
3	2000	4		
4	2000	5		
5	2000	6		
6	2000	7		
7	2000	8		
8	2000	9	TPDO 2	280 + node address
9	2000	A		
10	2000	B		
11	2000	C		
12	2000	D		
13	2000	E		
14	2000	F		
15	2000	10		
16	2000	11	TPDO 3	1C0 + node address
17	2000	12		
18	2000	13		
19	2000	14		

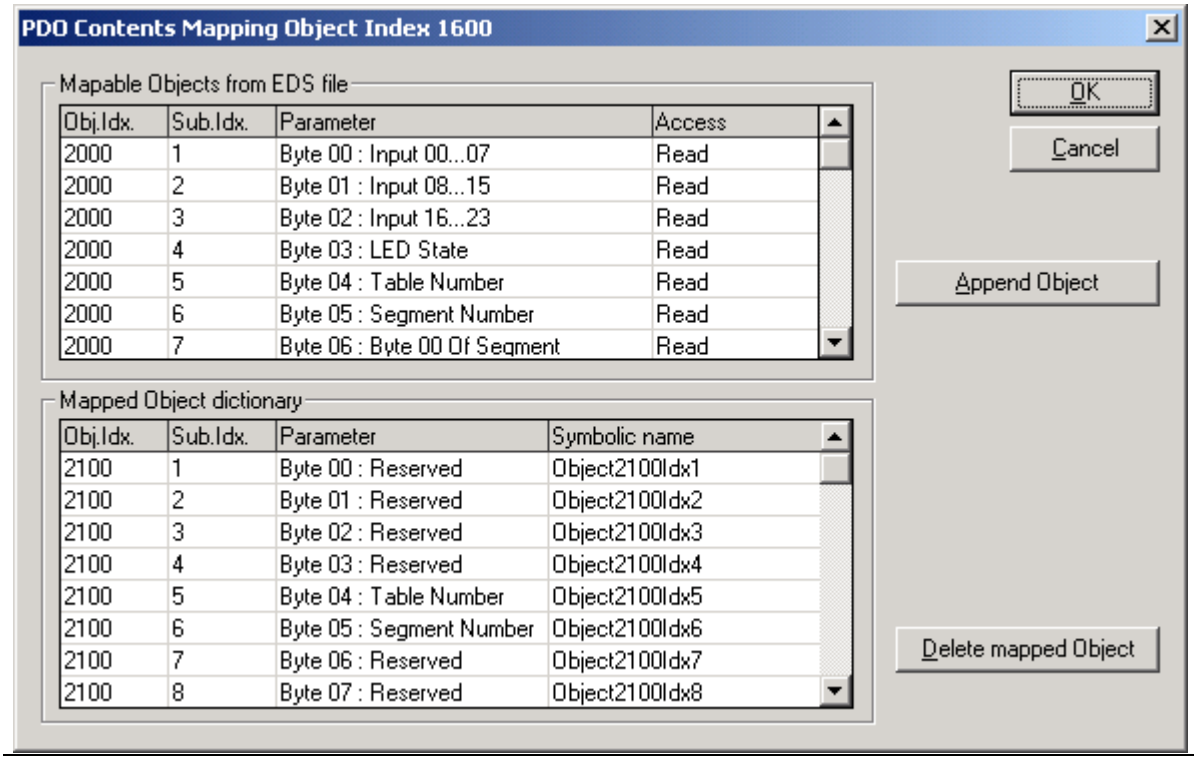
The input data on the PNOZmulti is stored as follows:

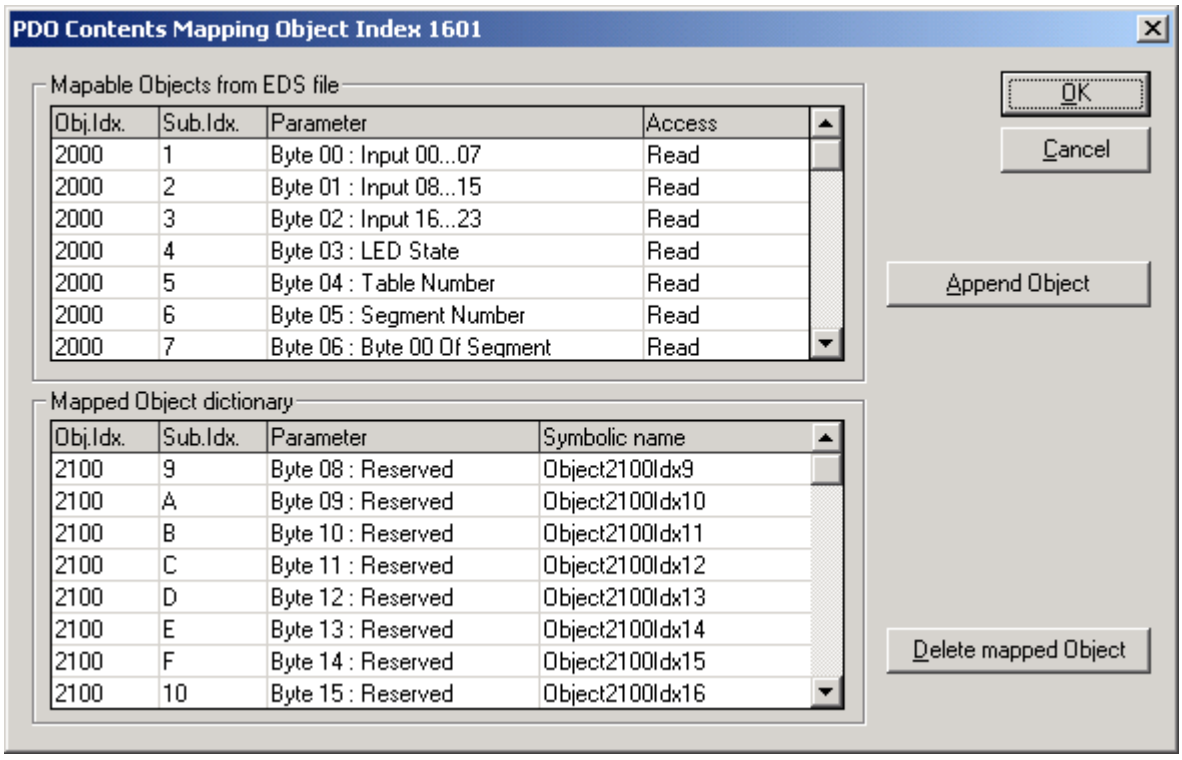
Byte	Object code	Sub-index	PDO	COB-ID
0	2100	1	RPDO 1	200 + node address
1	2100	2		
2	2100	3		
3	2100	4		
4	2100	5		
5	2100	6		
6	2100	7		
7	2100	8		
8	2100	9	RPDO 2	300 + node address
9	2100	A		
10	2100	B		
11	2100	C		
12	2100	D		
13	2100	E		
14	2100	F		
15	2100	10		
16	2100	11	RPDO 3	240 + node address
17	2100	12		
18	2100	13		
19	2100	14		

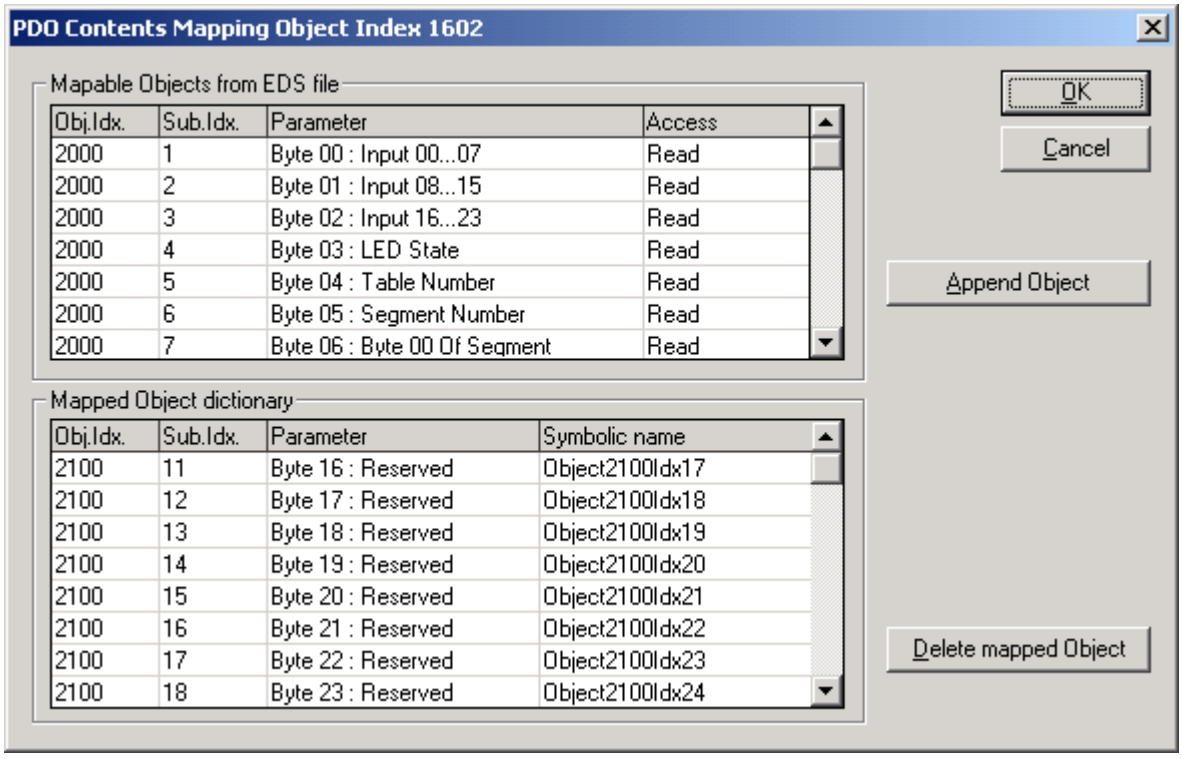
8.3 Example With Hilscher CANopen pc master

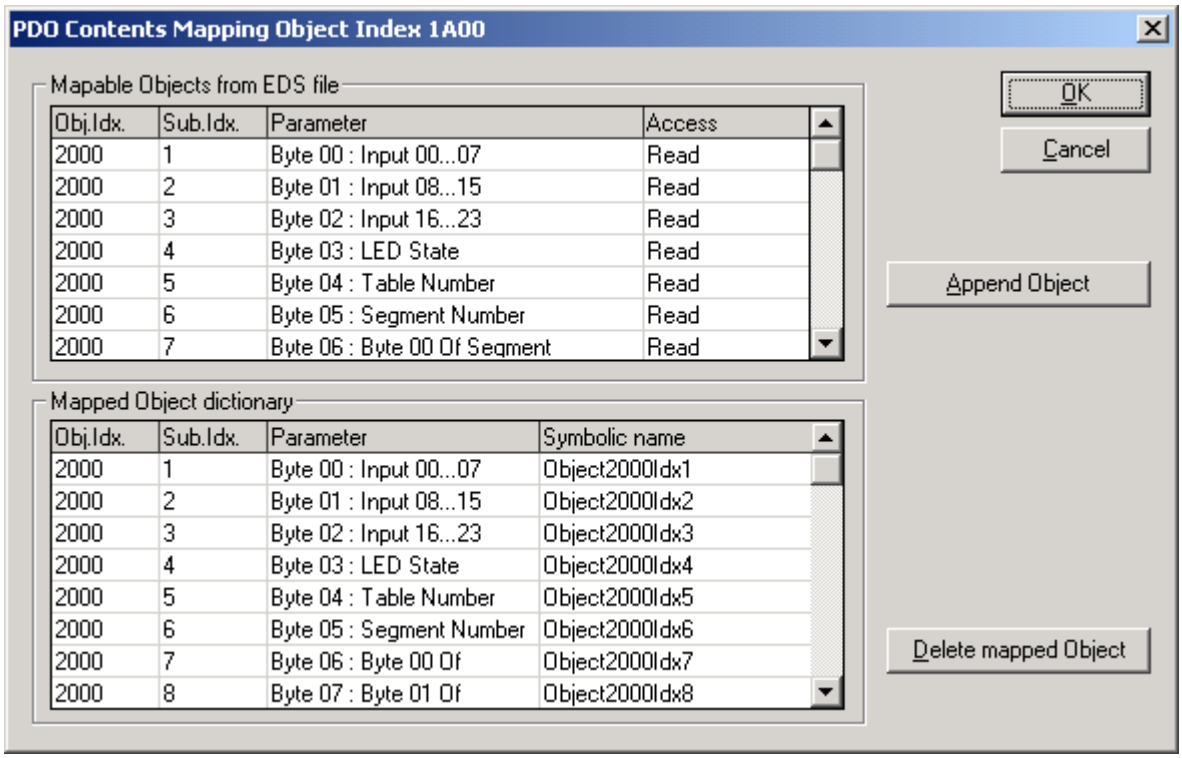


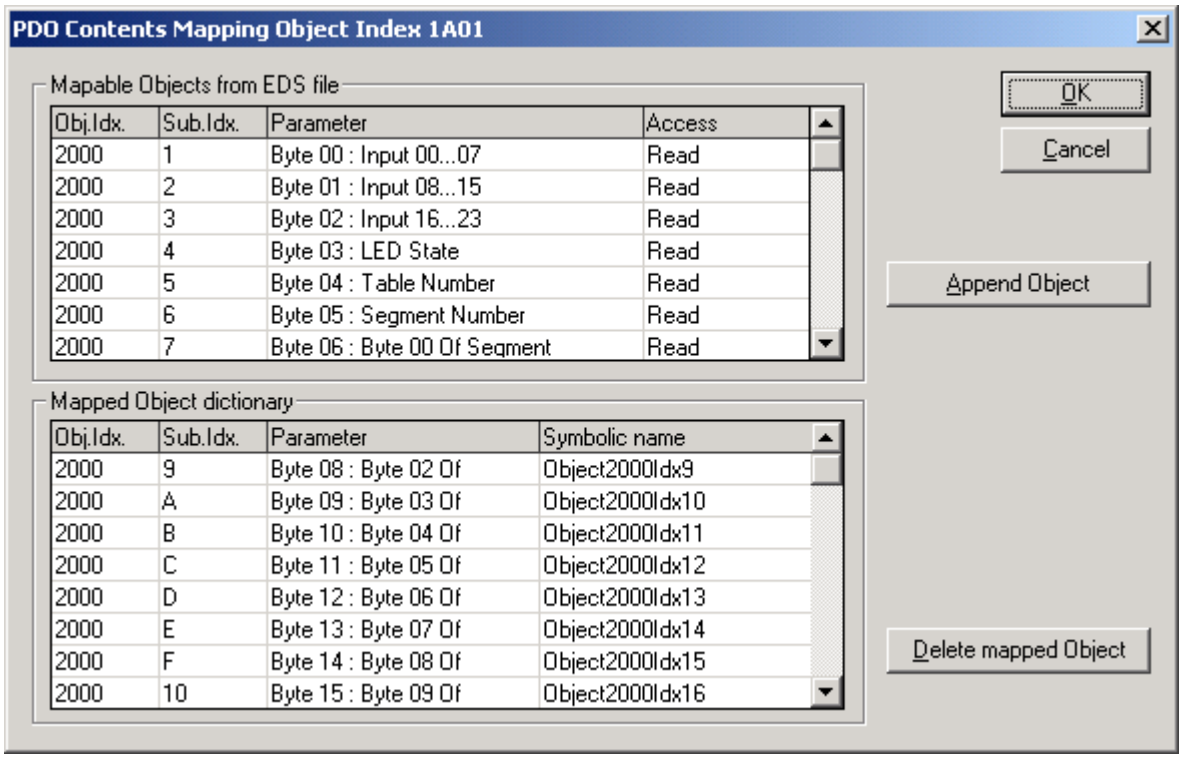

Node Configuration
Node
PNOZmulti mc6p
Description
Node1
File name
PNOZMC6P.EDS
Activate node in actual configuration
Automatic COB-ID allocation in accordance with Profile 301
Device Profile
0
Device type
0
Node ID (address)
1
Guard time (msec.)
200
Life time factor
0
Emergency COB-ID
129
Nodeguard COB-ID
1793
OK
Cancel
Node BootUp
OPC Objects
Object Configuration
Predefined Process Data Objects (PDOs) from EDS file
Obj.Idx. PDO name
1400 Receive PDO1 Parameter
1401 Receive PDO2 Parameter
1402 Receive PDO3 Parameter
1800 Transmit PDO1 Parameter
1801 Transmit PDO2 Parameter
1802 Transmit PDO3 Parameter
Actual node
1 / PNOZmulti mc6p
PDO mapping method
DS301 V3
Add to configured PDOs
Configured PDOs
PDO name Symbolic Name COB-ID I Type I Addr. I Len. O Type O Addr. O Len.
Receive PDO1 PDO_1400 513 QB 0 8
Receive PDO2 PDO_1401 769 QB 8 8
Receive PDO3 PDO_1402 577 QB 16 8
Transmit PDO1 PDO_1800 385 IB 0 8
Transmit PDO2 PDO_1801 641 IB 8 8
Transmit PDO3 PDO_1802 449 IB 16 8
PDO Contents Mapping...
PDO Characteristics...
Define new Receive PDO...
Define new Transmit PDO...
Delete configured PDO
Symbolic Names

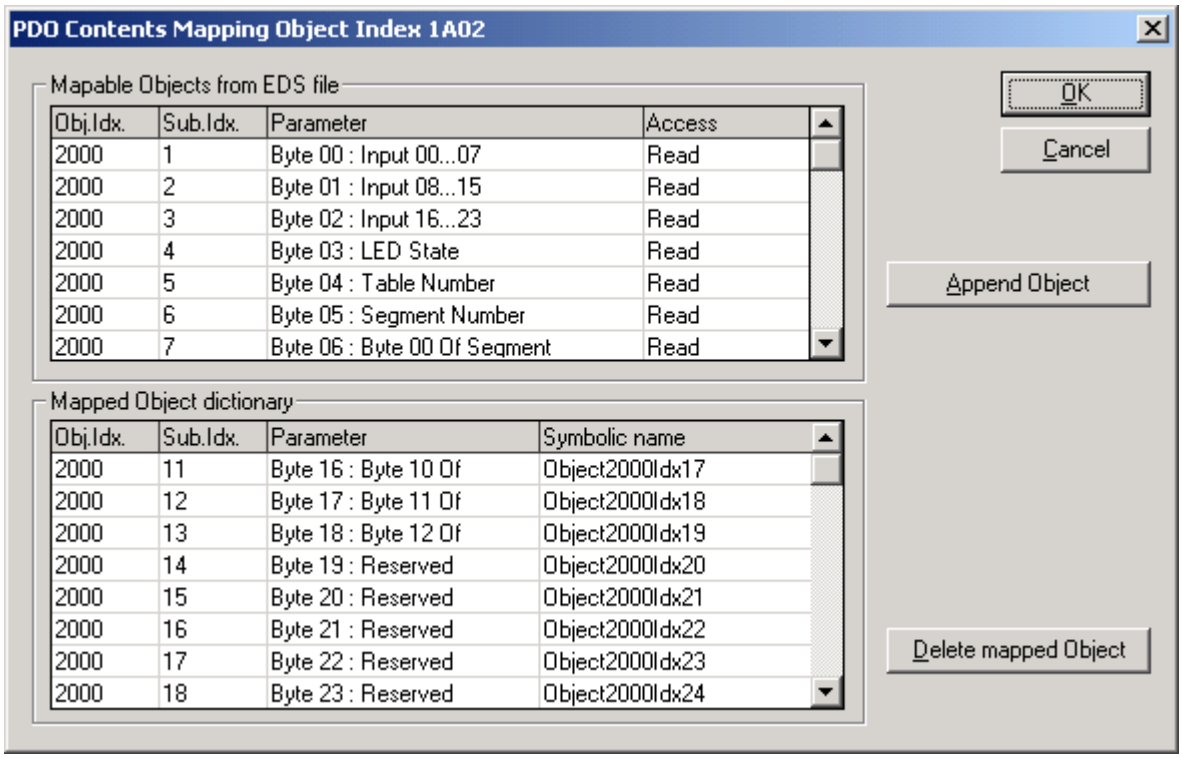

PDO Contents Mapping Object Index 1600
Mapable Objects from EDS file
Obj.Idx. Sub.Idx. Parameter Access
2000 1 Byte 00 : Input 00...07 Read
2000 2 Byte 01 : Input 08...15 Read
2000 3 Byte 02 : Input 16...23 Read
2000 4 Byte 03 : LED State Read
2000 5 Byte 04 : Table Number Read
2000 6 Byte 05 : Segment Number Read
2000 7 Byte 06 : Byte 00 Of Segment Read
Mapped Object dictionary
Obj.Idx. Sub.Idx. Parameter Symbolic name
2100 1 Byte 00 : Reserved Object2100Idx1
2100 2 Byte 01 : Reserved Object2100Idx2
2100 3 Byte 02 : Reserved Object2100Idx3
2100 4 Byte 03 : Reserved Object2100Idx4
2100 5 Byte 04 : Table Number Object2100Idx5
2100 6 Byte 05 : Segment Number Object2100Idx6
2100 7 Byte 06 : Reserved Object2100Idx7
2100 8 Byte 07 : Reserved Object2100Idx8
OK
Cancel
Append Object
Delete mapped Object

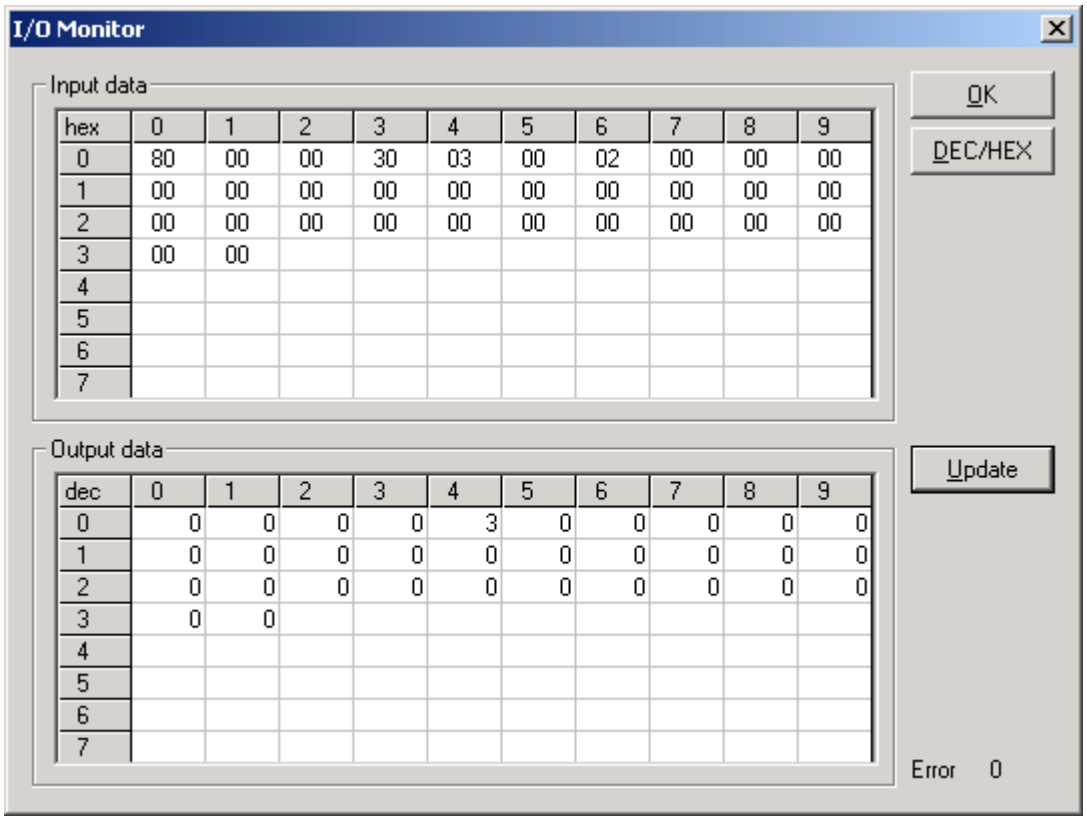

PDO Contents Mapping Object Index 1601
Mapable Objects from EDS file
Obj.Idx. Sub.Idx. Parameter Access
2000 1 Byte 00 : Input 00...07 Read
2000 2 Byte 01 : Input 08...15 Read
2000 3 Byte 02 : Input 16...23 Read
2000 4 Byte 03 : LED State Read
2000 5 Byte 04 : Table Number Read
2000 6 Byte 05 : Segment Number Read
2000 7 Byte 06 : Byte 00 Of Segment Read
Mapped Object dictionary
Obj.Idx. Sub.Idx. Parameter Symbolic name
2100 9 Byte 08 : Reserved Object2100Idx9
2100 A Byte 09 : Reserved Object2100Idx10
2100 B Byte 10 : Reserved Object2100Idx11
2100 C Byte 11 : Reserved Object2100Idx12
2100 D Byte 12 : Reserved Object2100Idx13
2100 E Byte 13 : Reserved Object2100Idx14
2100 F Byte 14 : Reserved Object2100Idx15
2100 10 Byte 15 : Reserved Object2100Idx16
OK
Cancel
Append Object
Delete mapped Object


PDO Contents Mapping Object Index 1602
Mapable Objects from EDS file
Obj.Idx. Sub.Idx. Parameter Access
2000 1 Byte 00 : Input 00...07 Read
2000 2 Byte 01 : Input 08...15 Read
2000 3 Byte 02 : Input 16...23 Read
2000 4 Byte 03 : LED State Read
2000 5 Byte 04 : Table Number Read
2000 6 Byte 05 : Segment Number Read
2000 7 Byte 06 : Byte 00 Of Segment Read
Mapped Object dictionary
Obj.Idx. Sub.Idx. Parameter Symbolic name
2100 11 Byte 16 : Reserved Object2100Idx17
2100 12 Byte 17 : Reserved Object2100Idx18
2100 13 Byte 18 : Reserved Object2100Idx19
2100 14 Byte 19 : Reserved Object2100Idx20
2100 15 Byte 20 : Reserved Object2100Idx21
2100 16 Byte 21 : Reserved Object2100Idx22
2100 17 Byte 22 : Reserved Object2100Idx23
2100 18 Byte 23 : Reserved Object2100Idx24
OK
Cancel
Append Object
Delete mapped Object


PDO Contents Mapping Object Index 1A00
Mapable Objects from EDS file
Obj.Idx. Sub.Idx. Parameter Access
2000 1 Byte 00 : Input 00...07 Read
2000 2 Byte 01 : Input 08...15 Read
2000 3 Byte 02 : Input 16...23 Read
2000 4 Byte 03 : LED State Read
2000 5 Byte 04 : Table Number Read
2000 6 Byte 05 : Segment Number Read
2000 7 Byte 06 : Byte 00 Of Segment Read
Mapped Object dictionary
Obj.Idx. Sub.Idx. Parameter Symbolic name
2000 1 Byte 00 : Input 00...07 Object2000Idx1
2000 2 Byte 01 : Input 08...15 Object2000Idx2
2000 3 Byte 02 : Input 16...23 Object2000Idx3
2000 4 Byte 03 : LED State Object2000Idx4
2000 5 Byte 04 : Table Number Object2000Idx5
2000 6 Byte 05 : Segment Number Object2000Idx6
2000 7 Byte 06 : Byte 00 Of Object2000Idx7
2000 8 Byte 07 : Byte 01 Of Object2000Idx8
OK
Cancel
Append Object
Delete mapped Object


PDO Contents Mapping Object Index 1A01
Mapable Objects from EDS file
Obj.Idx. Sub.Idx. Parameter Access
2000 1 Byte 00 : Input 00...07 Read
2000 2 Byte 01 : Input 08...15 Read
2000 3 Byte 02 : Input 16...23 Read
2000 4 Byte 03 : LED State Read
2000 5 Byte 04 : Table Number Read
2000 6 Byte 05 : Segment Number Read
2000 7 Byte 06 : Byte 00 Of Segment Read
Mapped Object dictionary
Obj.Idx. Sub.Idx. Parameter Symbolic name
2000 9 Byte 08 : Byte 02 Of Object2000Idx9
2000 A Byte 09 : Byte 03 Of Object2000Idx10
2000 B Byte 10 : Byte 04 Of Object2000Idx11
2000 C Byte 11 : Byte 05 Of Object2000Idx12
2000 D Byte 12 : Byte 06 Of Object2000Idx13
2000 E Byte 13 : Byte 07 Of Object2000Idx14
2000 F Byte 14 : Byte 08 Of Object2000Idx15
2000 10 Byte 15 : Byte 09 Of Object2000Idx16
OK
Cancel
Append Object
Delete mapped Object





Byte 4 is set 3, that means read out table 3.

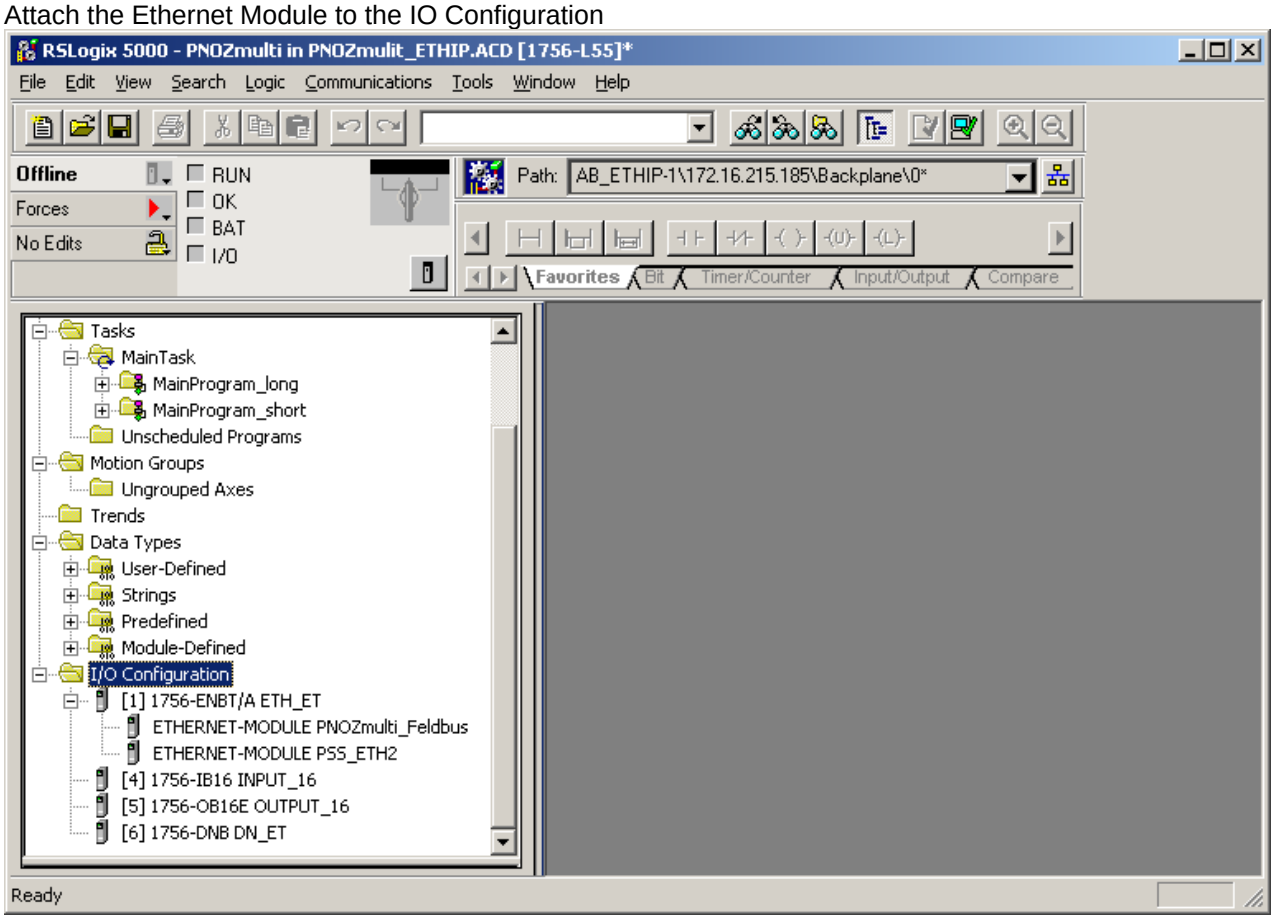
8.4 Summary

- No communication profil
- Missing objects(i.e.1018_h)
- Expansion of the object directory (Netstal)

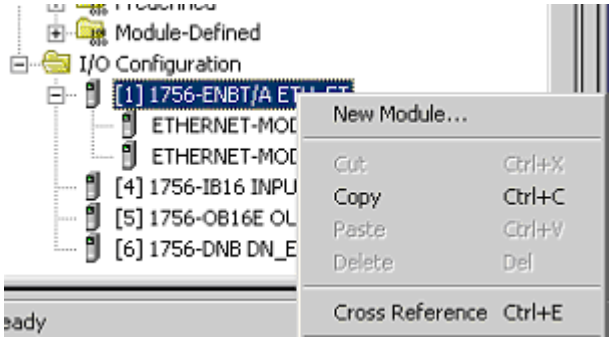
9 Ethernet (mc8p)

9.1 *Sample IO communication with ControlLogix*

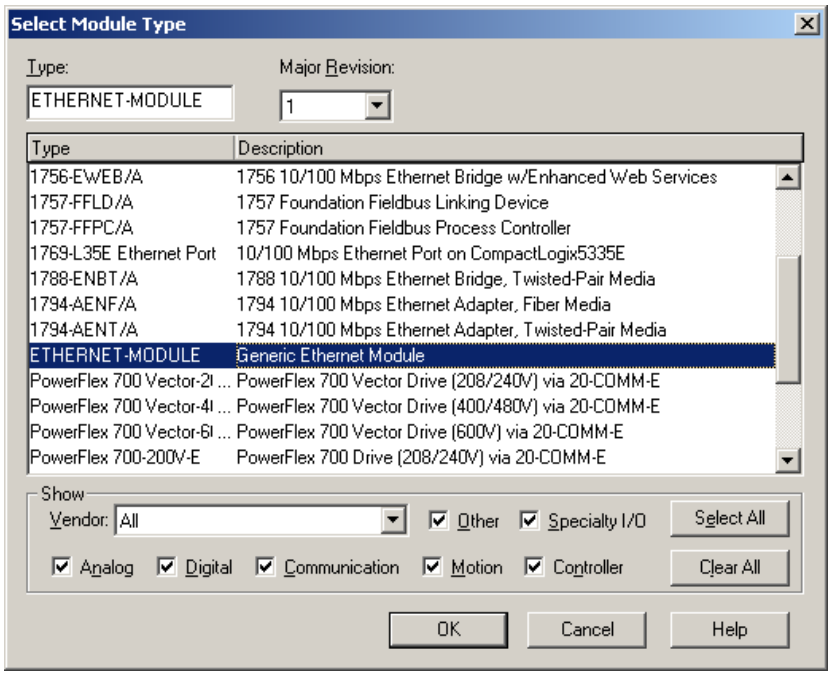
Attach the Ethernet Module to the IO Configuration



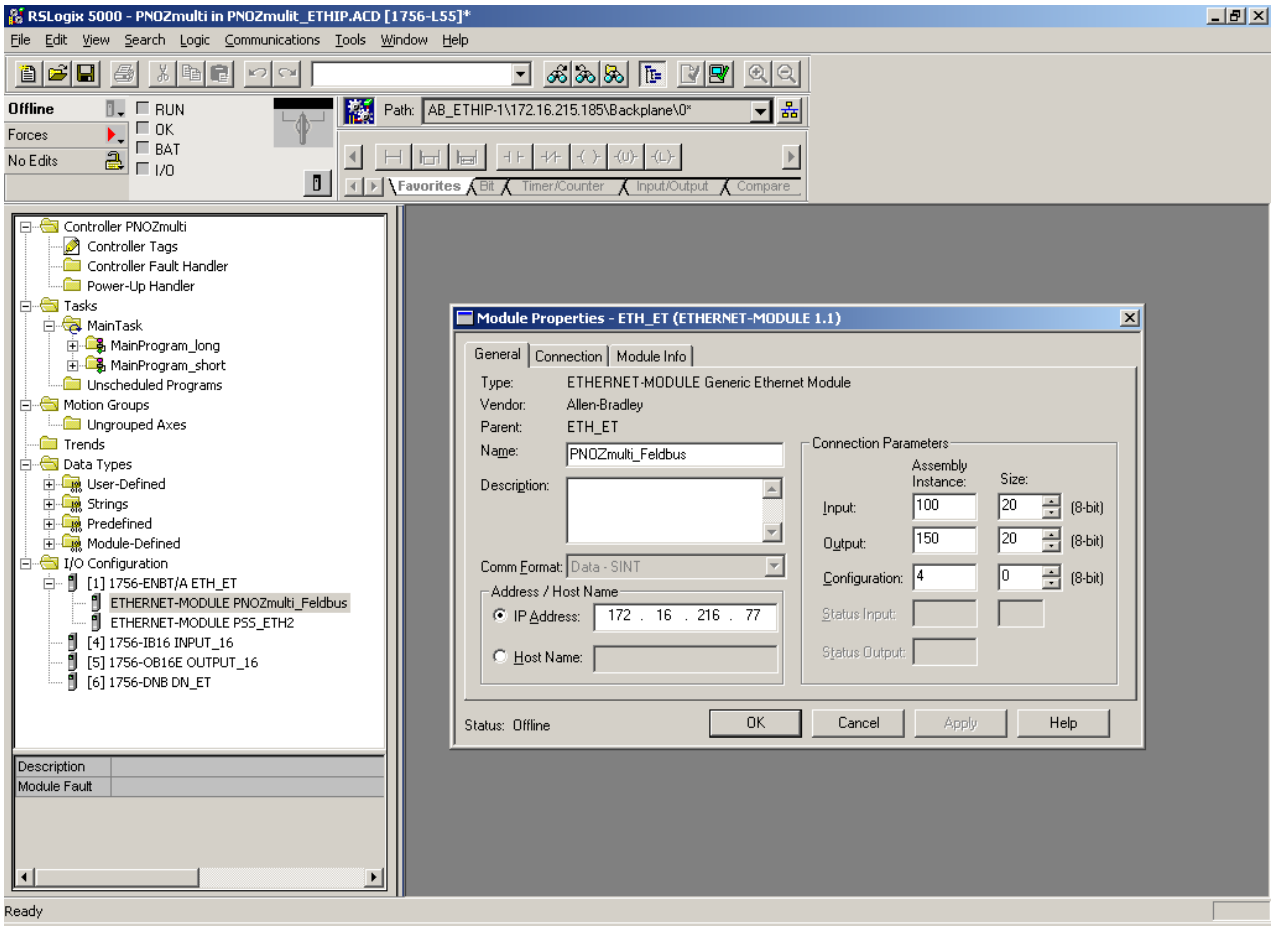
create a new module



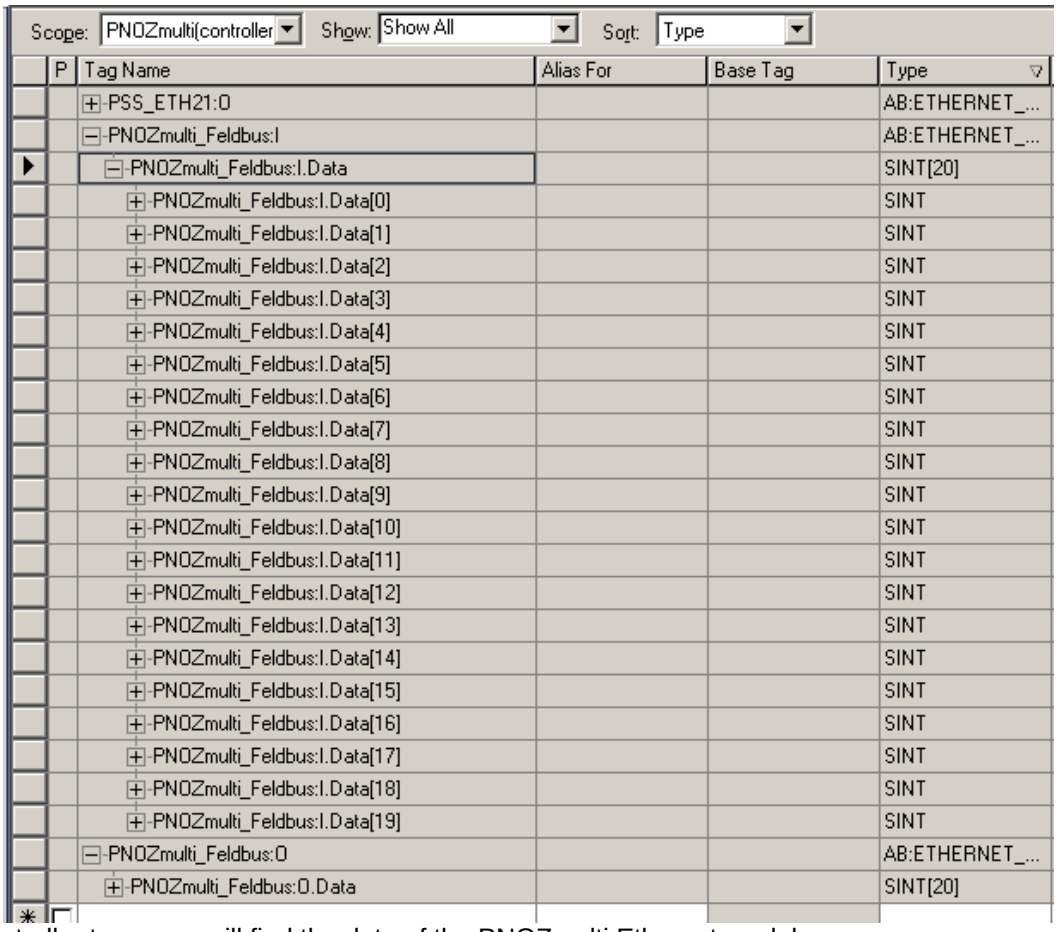
select the generic ethernet module



Configure the IP address and the assembly Object (Class 04h)



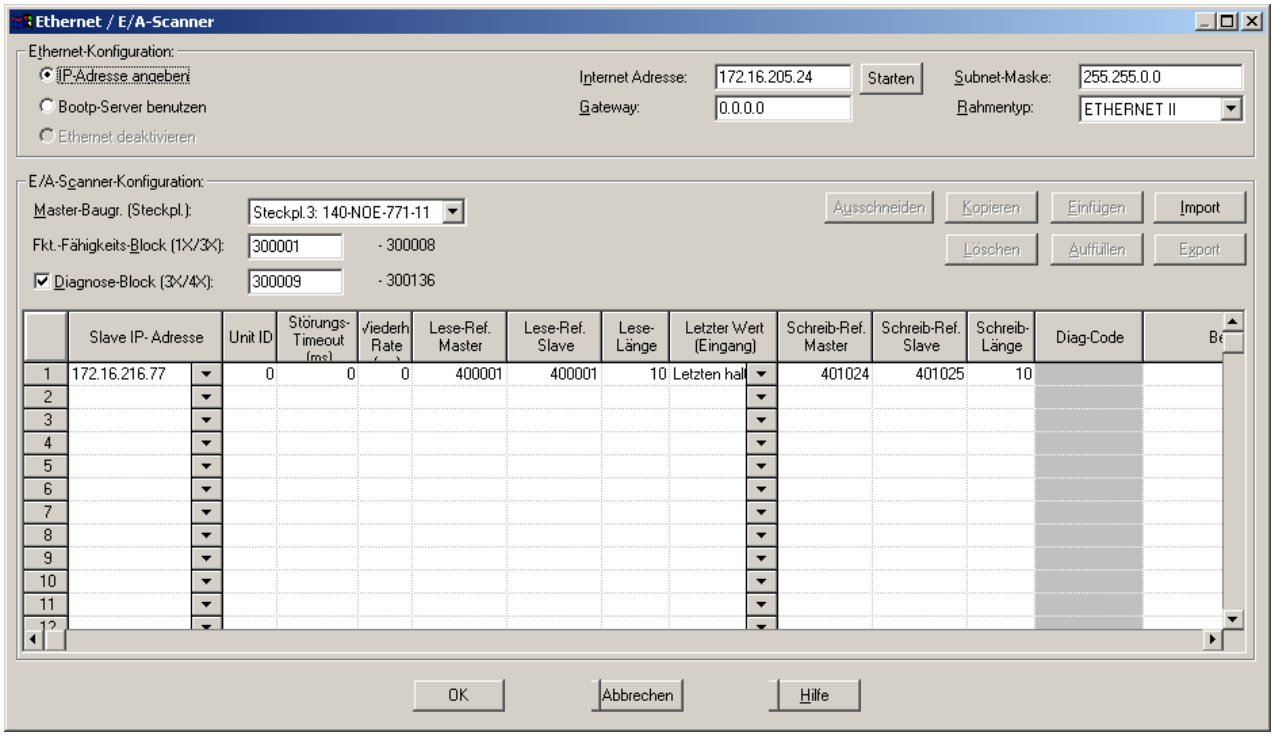
The byte size is limited to 20 bytes.



At the controller tags, you will find the data of the PNOZmulti Ethernet module

9.2 Sample IO scanner communication with Schneider Quantum PLC

Sample is for the programming software Concept 2.6.
The conditions for the communication is a configured Ethernet module at the Schneider PLC program.
Open the Ethernet I/O Scanner and create a new connection.
Configure the IP address of the PNOZmc8p in the field Slave IP address. The next step is to configure the Master Read and Master Write address.
The length is limited to 10 Register (1 Register = 2 bytes)
Notice: the slave read address must be 400001 and the slave write address must be 401025 fix.



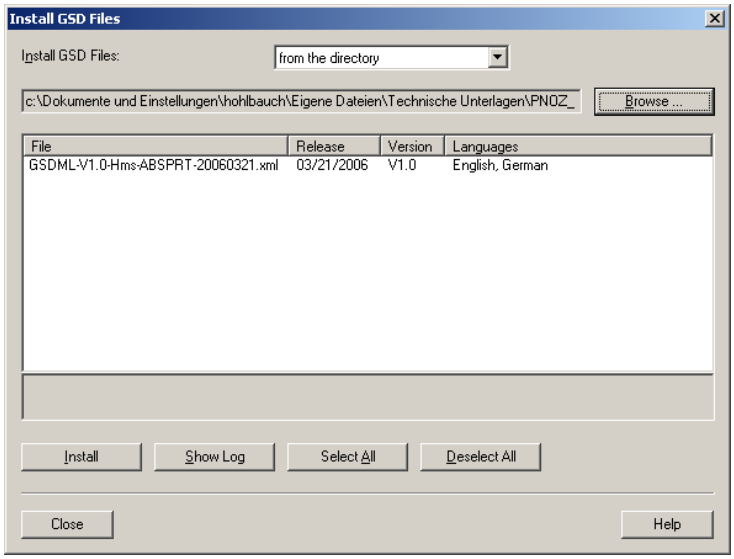
With the configuration of the I/O Scanner no application program for the communication is necessary.

Attention: there is byte swapping at the Ethernet.

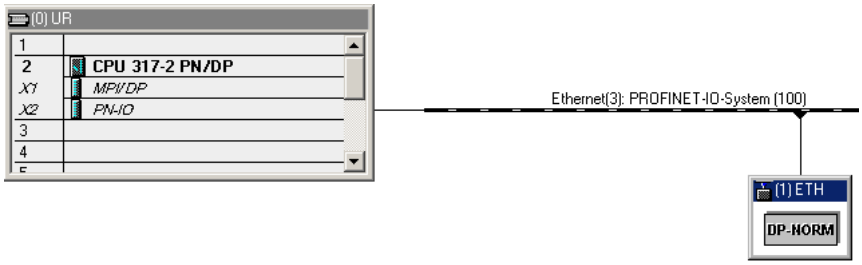
10 Profinet (mc9p)

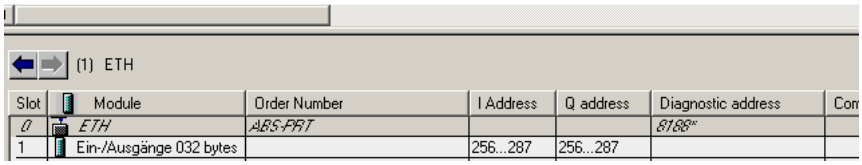
10.1 Sample IO communication with Siemens S7 V5.3 SP3

XML-File: Import from the XML-file into the Hardware Configurator (Options -> Install GSD…).

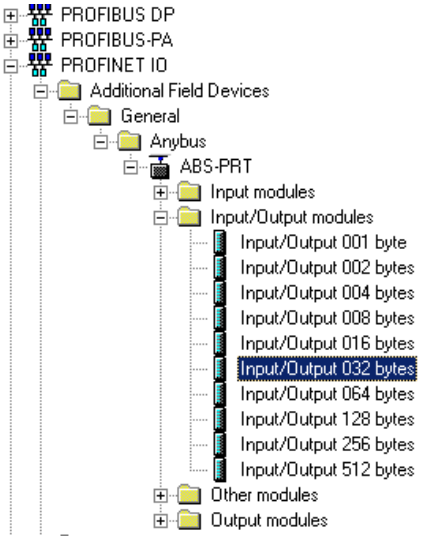


Configuration of the Inputs/Outputs:

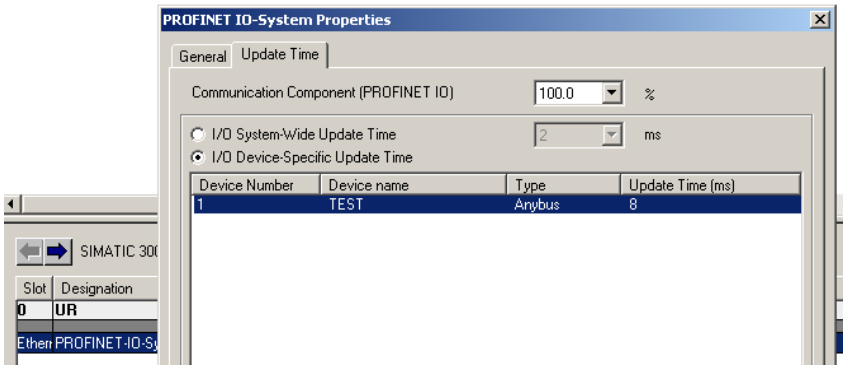




Input / Outputs: For the PNOZ mc9p you must configure 32 Bytes Input/Outputs, but only the first 20 Bytes are used.

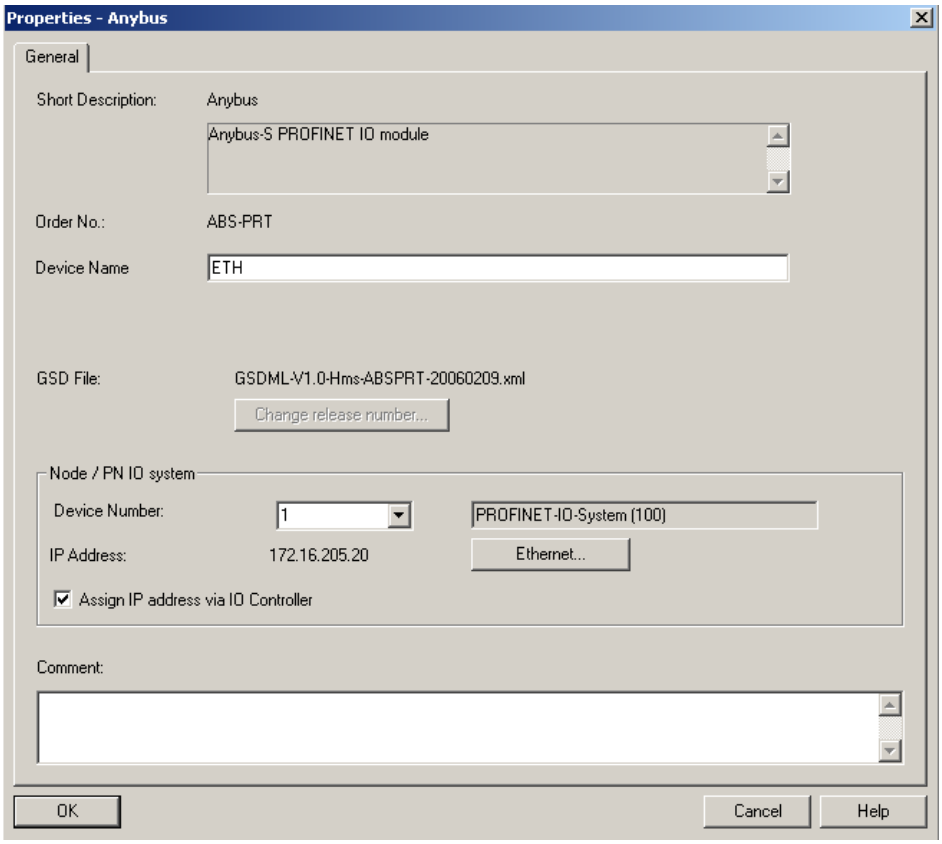


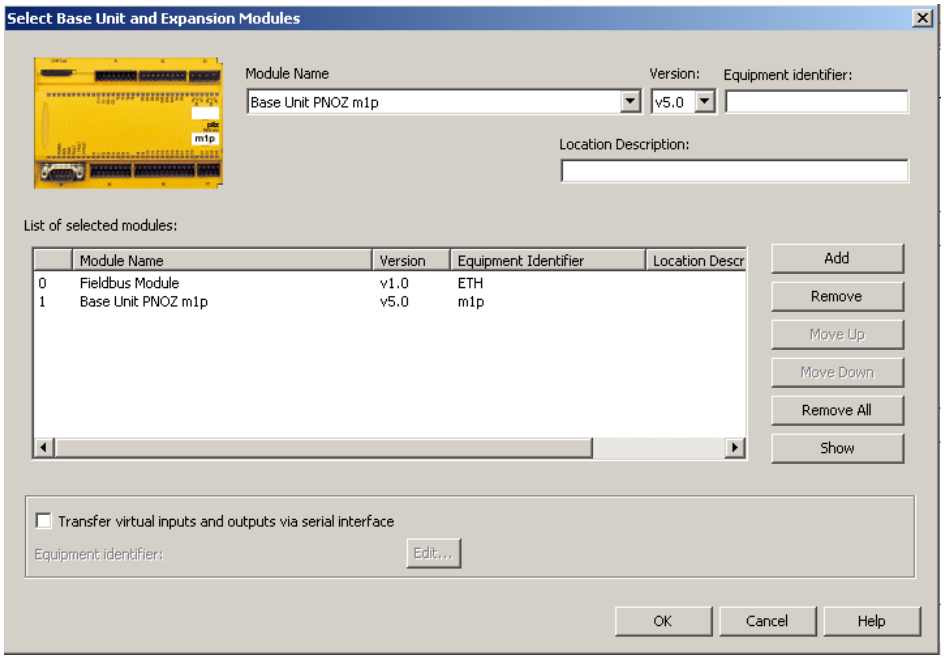
Update time: We suggest a value from 8 ms for larger networks.



IP-Address: The IP-Address could be set from the Siemens PLC or from a DHCP-Server. If you want set the IP-Address over the Siemens PLC then you must activate “Assign OP address via IO Controller“.

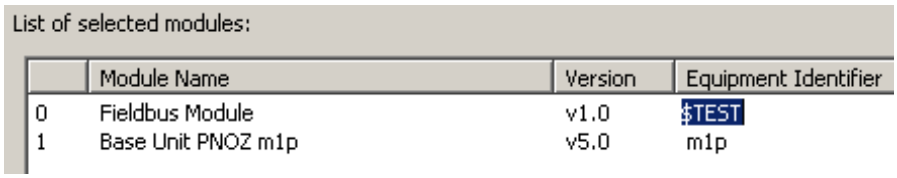
Device Name: The “Device Name” in the S7 Hardware Configuration must be the same how the “Equipment Identifier” into the PNOZmulti Configurator.

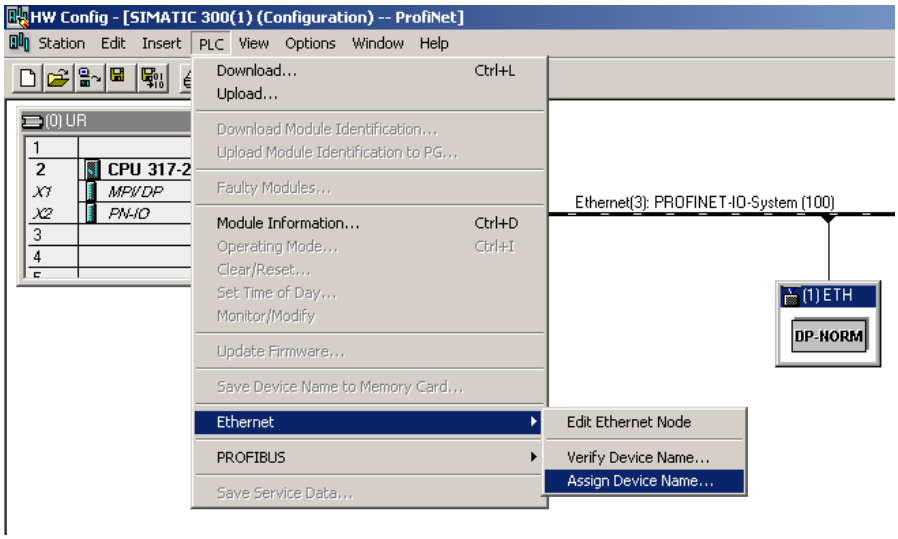


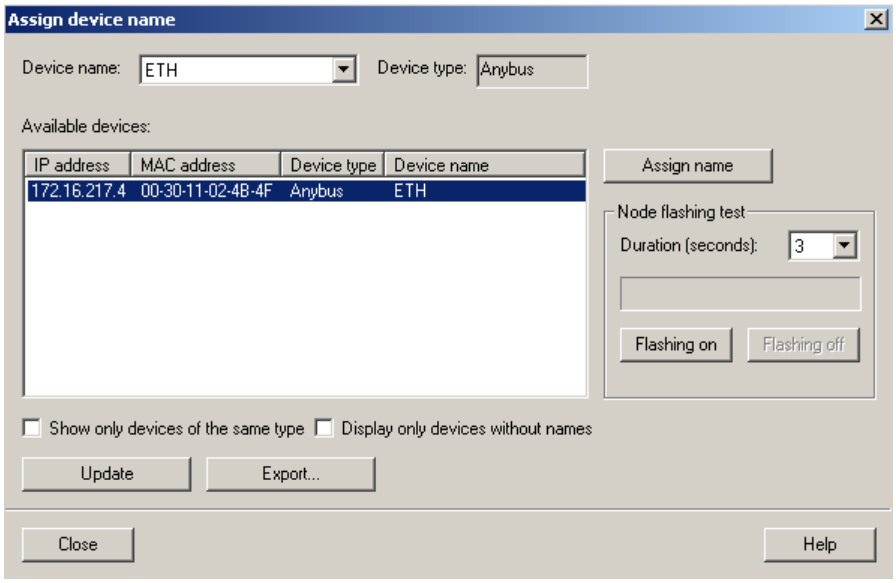


Set the PNOZ mc9p "Equipment Identifier" with the S7 software: If you want set the "Equipment Identifier" then you must write a $ before the name. Now it's possible that you assign a device name for the mc9p over the S7 software (the PC with the S7 software must be connected over Ethernet with the Siemens PLC). If you don't have a $ before the device name then the PNOZmulti always lost the "Equipment Identifier" after a reboot.

Disadvantage: If an exchange from the PNOZmulti basic module should be necessary then you must assign the device name over the S7 software again.







With the MAC-Address you can check if you have configured the right Device names.