WAGO I/O SYSTEM 758

Configurating the fieldbus interface for CANopen, WAGO-I/O-System 758

Application note

A100000, English
Version 1.0.0

WAGO®
INNOVATIVE CONNECTIONS

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Every conceivable measure has been taken to ensure the correctness and completeness of this documentation. However, as errors can never be fully excluded we would appreciate any information or ideas at any time.

We wish to point out that the software and hardware terms as well as the trademarks of companies used and/or mentioned in the present manual are generally trademark or patent protected.

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1 Important comments

To ensure fast installation and start-up of the units described in this manual, we strongly recommend that the following information and explanation is carefully read and adhered to.

1.1 Legal principles

1.1.1 Copyright

1.1.2 Personnel qualification

The use of the product detailed in this manual is exclusively geared to specialists having qualifications in PLC programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the valid standards. WAGO Kontakttechnik GmbH declines all liability resulting from improper action and damage to WAGO products and third party products due to non-observance of the information contained in this manual.

1.1.3 Intended use

For each individual application, the components supplied are to work with a dedicated hardware and software configuration. Modifications are only admitted within the framework of the possibilities documented in the manuals. All other changes to the hardware and/or software and the non-conforming use of the components entail the exclusion of liability on part of WAGO Kontakttechnik GmbH.

Please direct any requirements pertaining to a modified and/or new hardware or software configuration directly to WAGO Kontakttechnik GmbH.

1.2 Range of validity

This application note is based on the stated hardware and software of the specific manufacturer as well as the correspondent documentation. This application note is therefore only valid for the described installation.

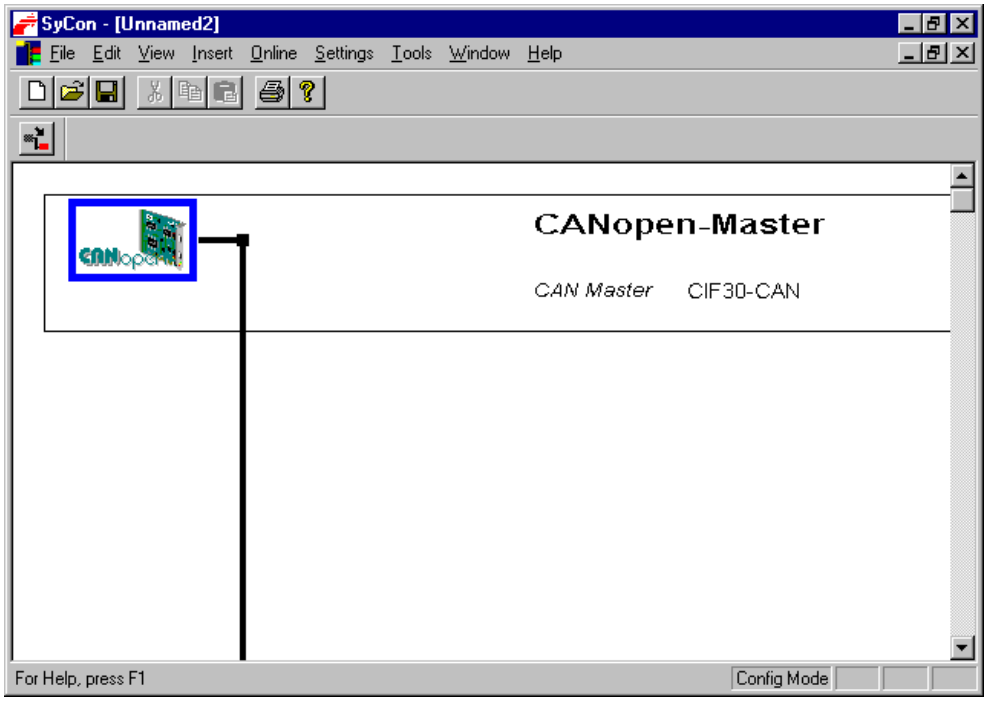
New hardware and software versions may need to be handled differently. Please note the detailed description in the specific manuals.

2 Description

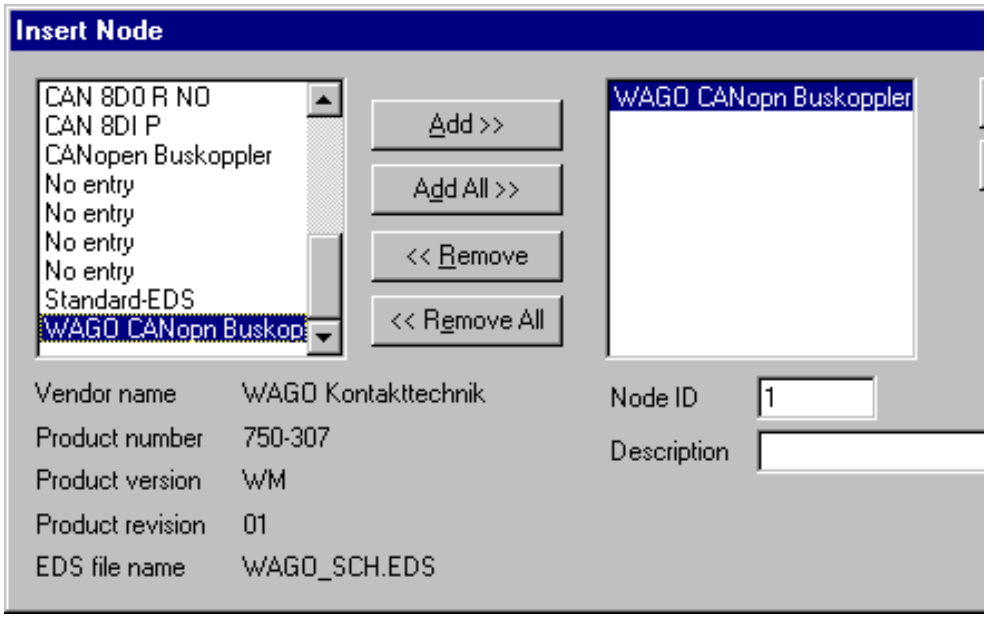
Configurating the fieldbus interface for CANopen, WAGO-I/O-System 758

3 Solution

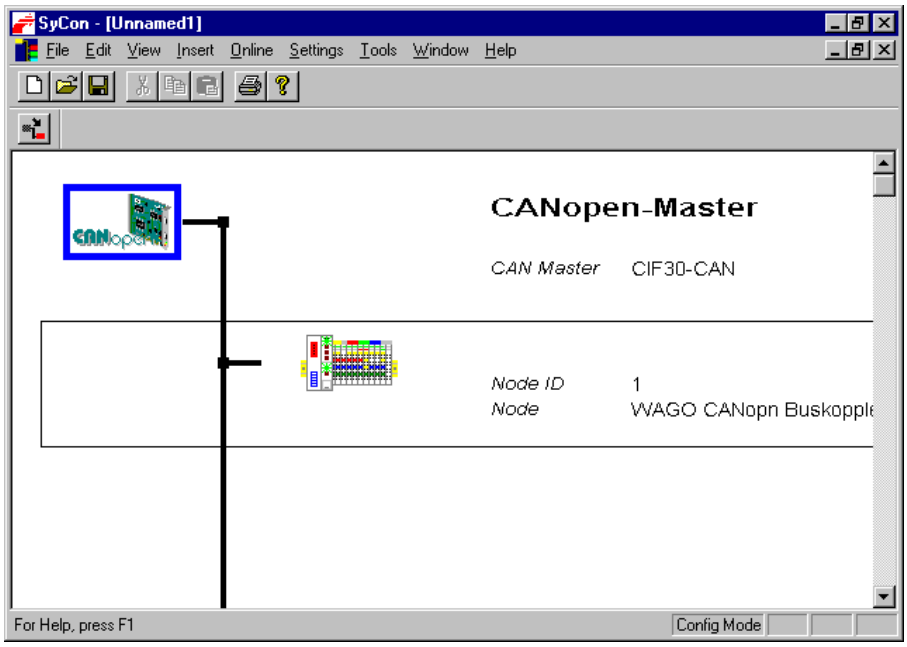
First you need the CanOpen EDS file with informations about the WAGO CanOpen I/O´s. You can copy it with the *copy eds* function in the menu *file*.

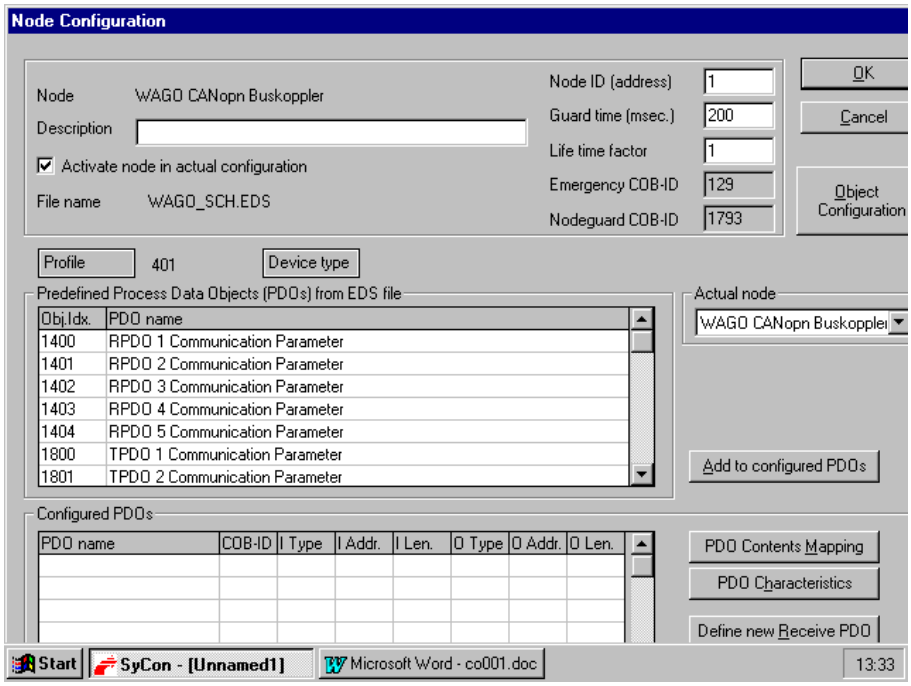


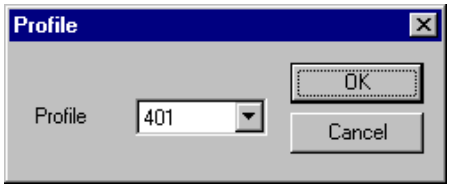
Select our I/O and paste it into the system

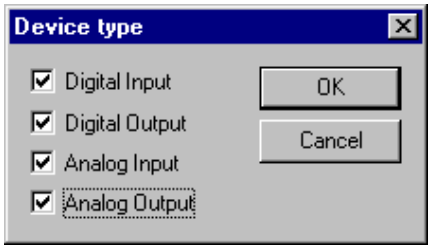


Following picture will appear.



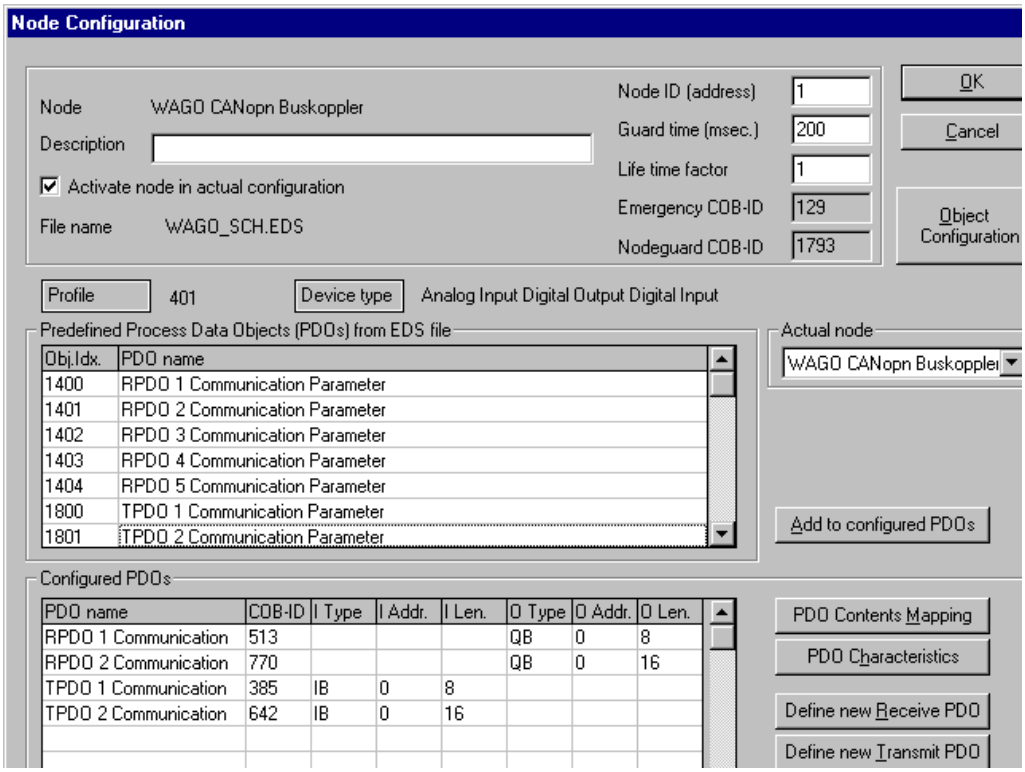






Now you have to reserve the PDO´s for the data transmission. A PDO is an 8 byte data carrier (max. length of the can message) with ist own CAN identifier. This identifier is both: adress and priority information. Transmit PDO´s carry input data, receive PDO´s output data. The WAGO CanOpen coupler supports up to 5 transmit and 5 receive PDO´s (40 byte input and 40 byte output data). More data on one node have to be transmitted by SDO´s. This is slower (lower priority) and not possible with the Hilscher CIF30.

The CanOpen specification reserves the 1st PDO for digital and the 2nd PDO for analog data.



By doubleclick on the upper window you paste the PDO in the lower window. By this operation you will be asked about the transmission type on the CanOpen. (Please refer to page 36 of the CanOpen manual)

3.1 Transmission Type (Operating mode)

For each PDO a mode of transmission (in index communication parameter) can be defined. Digital inputs are transmitted default with ´Change of Value´(COV), analog inputs with Remote Transmission Request (RTR). The following table shows the kind of transmission dependent on the transmission type for digital and analog inputs and outputs.

Transmission Type	PDO transmission						
	cyclic	acyclic	synchro-nous	asynchro-nous	RTR only	digitale inputs	analoge inputs
0		X	X			transmission for each SYNC if COV	transmission for each SYNC
1 - 240	X		X			transmission for each x. SYNC	transmission for each x. SYNC
241 - 251	- reserved -						
252			X		X	request via RTR	request via RTR
253				X	X	request via RTR	request via RTR
254				X		COV	COV [1]
255				X		COV	COV [1]

[1] data is sent in periods of the inhibit imte because the module always sends new data

The output of the data of digital inputs and outputs is made according to the transmission type.
Transmission Type 0 - 252: The output of the data is depends on the SYNC-Object.
Transmission Types 253 - 255: The output of the data is made with each PDO.

3.2 Inhibit Time

The inhibit time is taken into account only for transmit PDOs.

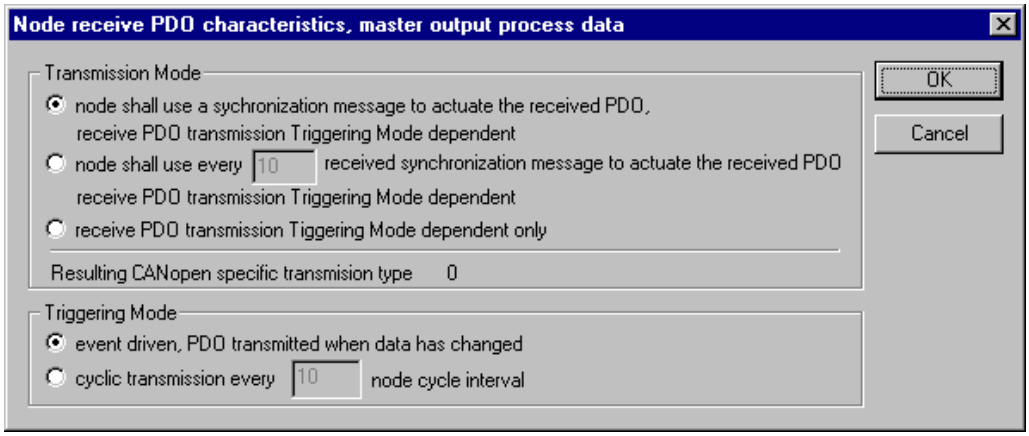
The inhibit time is the blocking time between two transmit PDOs in periods of 100 µs.

3.3 Error messages (Emergency)

The following error messages are supported at the moment:

Error Code	Error Register	Additional Code	Description
0xFF00	0x80	00 01 XX XX XX	Fieldbus error.
0xFF00	0x80	00 02 EE EE NN	Module error – EE : Errorcode module – NN : number of module with error.
0x5000	0x80	00 01 XX XX XX	HW configuration changed. New initialization of the buscoupler because the saved configuration is not the same as the actual one i.e. a reset node/communication service is made.
0x5000	0x80	00 02 XX XX XX	EEPROM-checksum error detected An error ocurred when saving the configuration to the EEPROM.
0x8100	0x80	00 02 XX XX XX	The period between two sync objects is longer than Communication_Cycle_Period X Life_Time_Faktor. Buscoupler stays in operational mode.

Receive PDO

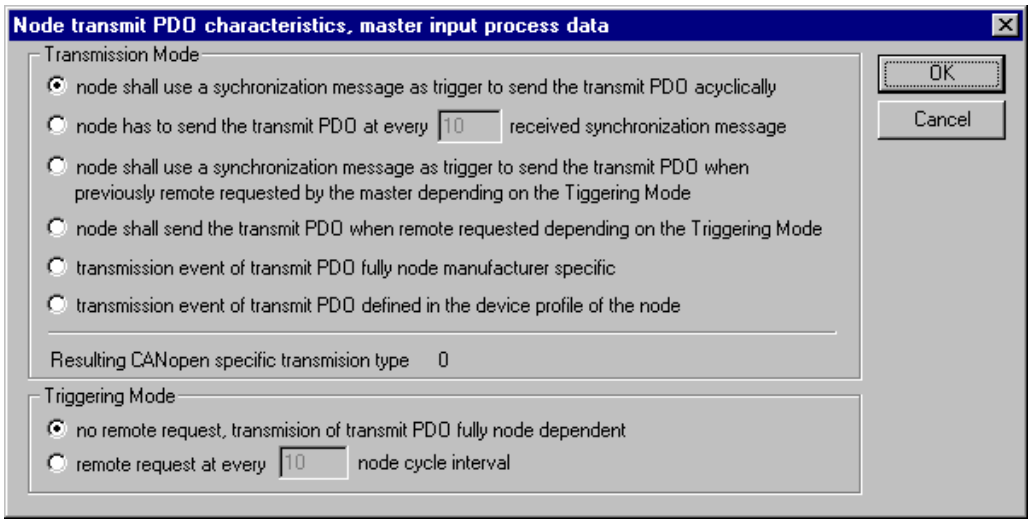


Resulting transmission type a.) 0

b.) 10

c.) 254

Transmit PDO



Resulting transmission type: a.) 0

b.) 10

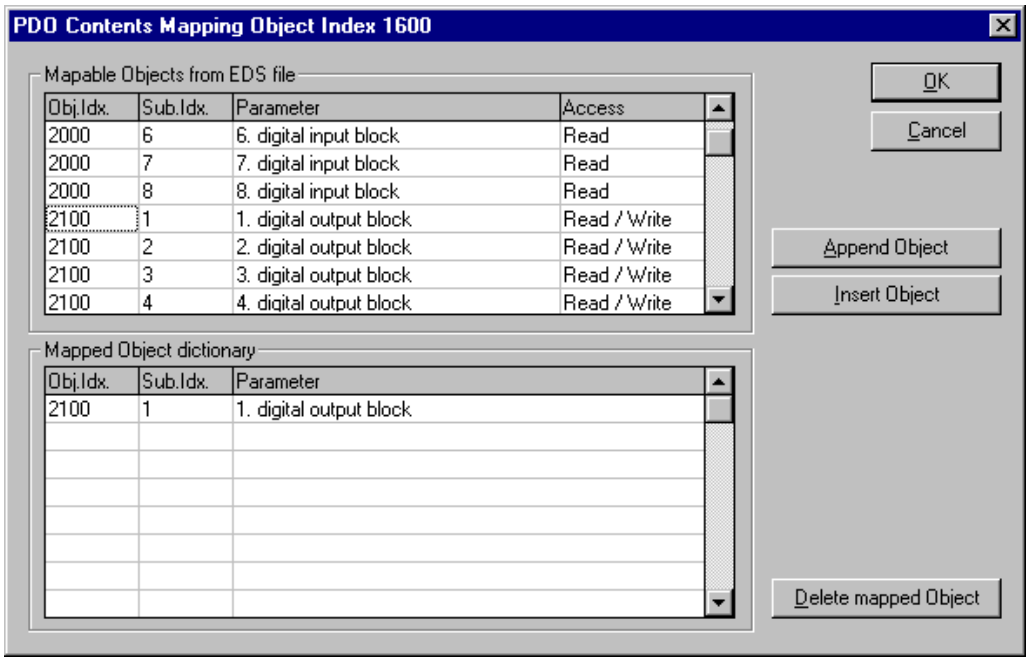
c.) 252

d.) 253

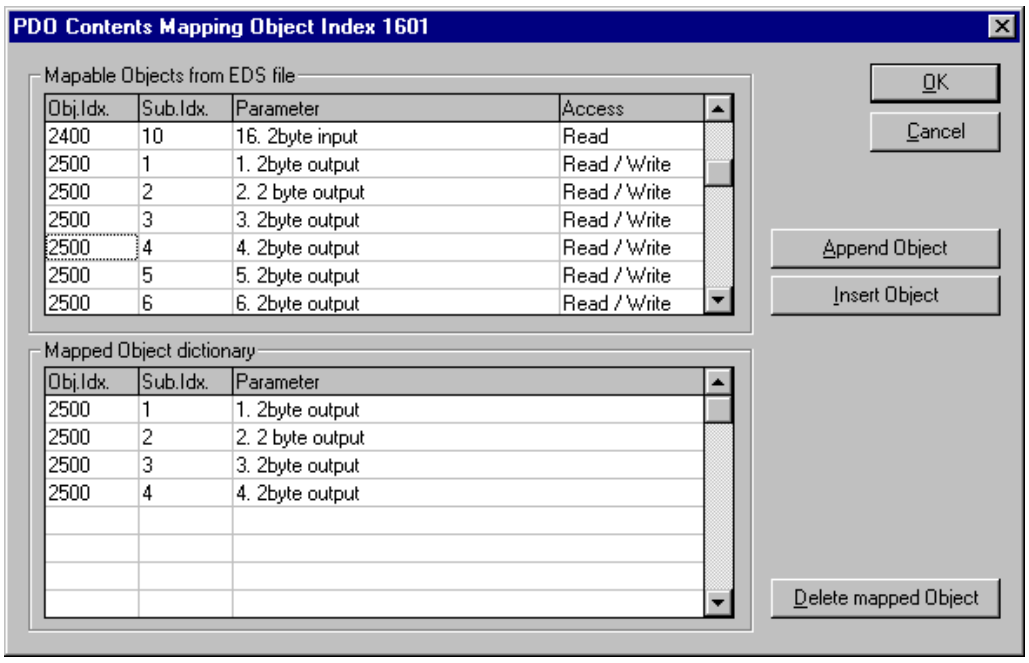
e.) 254

f.) 255

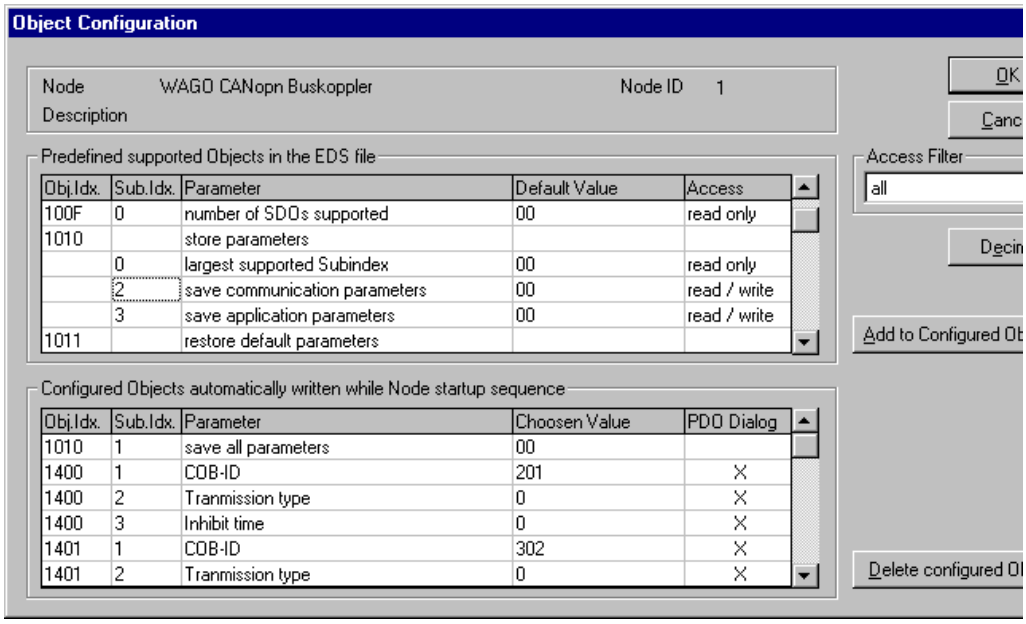
Now define each PDO as container for the terminal blocks
1st PDO digital (i.e. 8 DO)



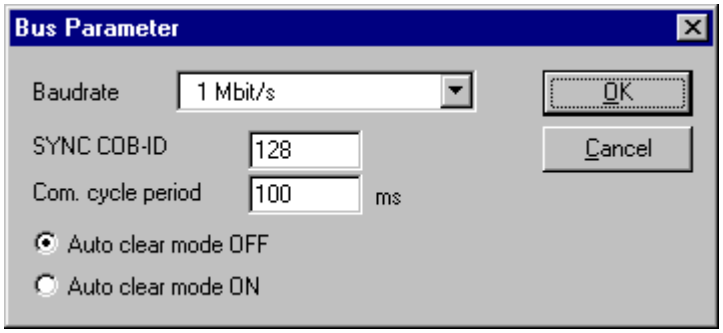
2nd PDO analog (4 channels AO)



As default the values will be saved in the coupler ram. If it is necessary to get the values remanent in the EEPROM of the coupler you have to select the object 1010-1 in the menu <Object configuration>

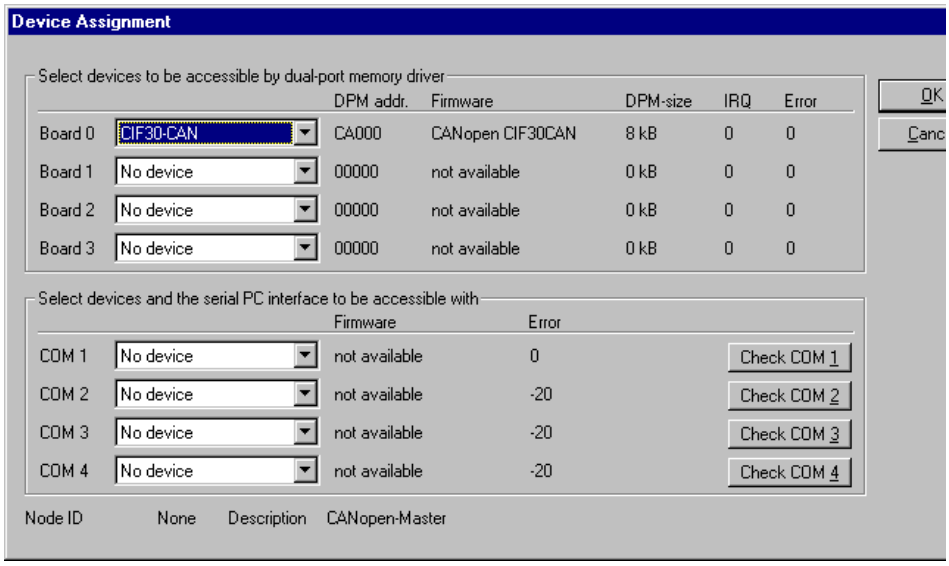


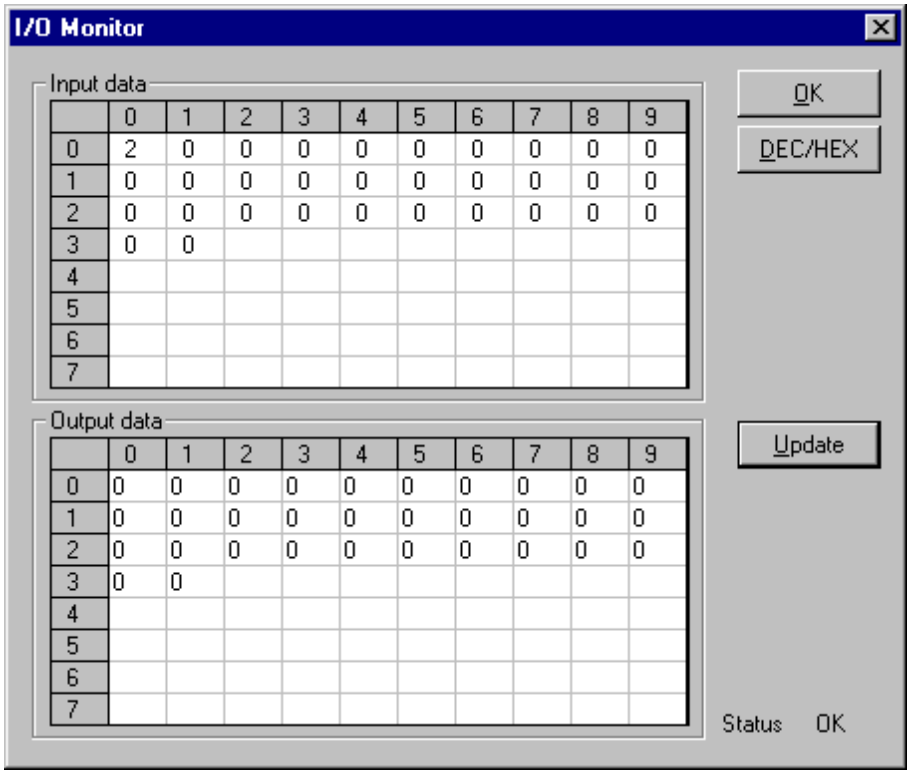
Now the settings of the CanOpen and the CIF30 have to be defined.



Download the settings in the fieldbuscard and into the coupler. This can be done by selecting <online> <download> from the main menu.

If anything has been done well, you can display or force the data with the data monitor. The order byte by byte in lines from left acc. to the order of the PDO´s. If you are running several nodes the order for the nodes is like the software surface.





	0	1	2	3	4	5	6	7	8	9
0	2	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0								
4										
5										
6										
7										

	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0								
4										
5										
6										
7										

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