


[Help](#)

DCS800
DC Drives



**CoDeSys Exercise
Fieldbus connection
G562e_a_b Part 13**

eLearning



Note:
This module is an exercise without a speaker!



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Welcome to the CoDeSys training module for the DCS800, ABB DC drives.

If you need help navigating this module, please click the Help button in the top right-hand corner. To view the presenter notes as text, please click the Notes button in the bottom right corner.

Objectives

After completing this module, you will be able to

- Connect a value coming from fieldbus with CoDeSys and control the drive by Main Control Word



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Field bus with DCS800

- For communication between field bus and DCS800 there is a field bus adapter needed
- This adapter will be connected with Slot 1 on CON-4
- Values packed in word will be transmitted and can be written in parameters to control the drive
- Receive and transmit data is possible
- Parameter groups 90...93 must be used to share data to the right drive control parameter

Exercise 12: Field bus control

- In several cases the drive will be controlled by field bus
- Then the drive is controlled with main control word (parameter 7.01)
- But there is any problem when 1 bit of main control word will be triggered by a digital input
- Now the data from field bus must be manipulated with CoDeSys and the one bit from the digital input must be considered

bit	0	1	2	3	4	5	6	7	8	9	10
source	DI	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB

DI: digital input

FB: field bus



Configure hardware

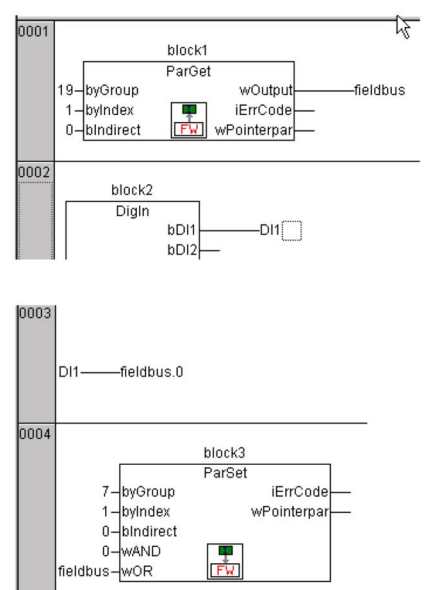
- Open DriveWindow light or DriveWindow
- Set parameter 90.04 → 19.01
- Now data from field bus will be written in group 19.01
- The next step is to read this data from 19.01 into CoDeSys
- Then state of digital inputs must be read

85	User Constants				
86	Adap Prog Outputs				
90	Dset Rec Addr 1				
01	DsetXVal1	1901	N/A	0	9999
02	DsetXVal2	0	N/A	0	9999
03	DsetXVal3	0	N/A	0	9999
04	DsetXplus2Val1	0	N/A	0	9999
05	DsetXplus2Val2	0	N/A	0	9999



Configure CoDeSys

- Open CoDeSys (DCS800 target)
- Define a new project
- Paste needed function blocks
 - ParGet (parameter 19.01)
 - DigIn (read digital input 1)
 - ParSet (parameter 7.01)
- Configure task configuration
- Download the program
- Test it!

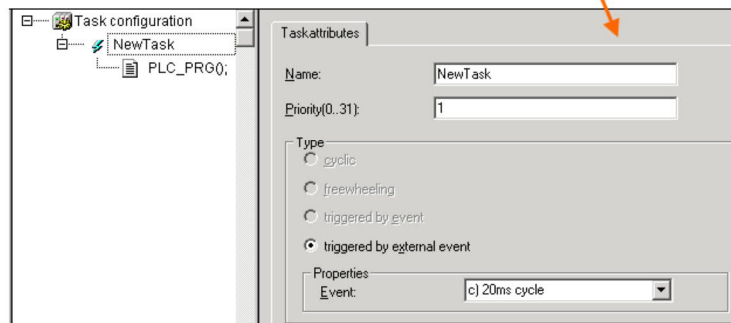


ABB

Configure CoDeSys

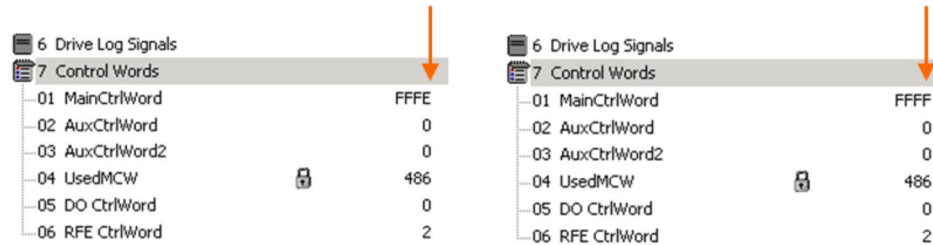
- Check your declaration window
- Check your task configuration
- Download and save the program on the Memory Card

```
0001 PROGRAM PLC_PRG
0002 VAR
0003   block1: ParGet;
0004   fieldbus: WORD;
0005   block2: DigIn;
0006   DI1: BOOL;
0007   block3: ParSet;
0008 END_VAR
0009
0010
```

**ABB**

Test the application

- If you don't have a field bus connection, write in parameter 19.01, e.g. 65535 (FFFF-Hex)
- Now change state of digital input 1 and look to parameter 7.01
- There you can see changing bit 0



6 Drive Log Signals	
7 Control Words	
01 MainCtrlWord	FFFE
02 AuxCtrlWord	0
03 AuxCtrlWord2	0
04 UsedMCW	486
05 DO CtrlWord	0
06 RFE CtrlWord	2


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Summary

Key points of this module

- Connect fieldbus data with CoDeSys and 7.01 Main Control Word

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Key points of this module is to connect the fieldbus data with CoDeSys and 7.01Main Control Word.

Additional information

■ Links to related information

- 3S-software.com
- DC-Drive-News (Intranet)

■ Additional references

- Application Manual (3ADW 000 199)
- Firmware Manual (3ADW 000 193)
- Hardware Manual (3ADW 000 194)
- Training Material

Glossary

- **CoDeSys**
Controller Development System (software tool)
- **Memory Card**
Flash memory
- **DriveWindow Light**
Software Tool for commissioning and maintenance using AC/DC
- **Target**
Interface between Drive and CoDeSys tool
- **Control Builder**
Whole system with software and hardware
- **PLC_PRG**
Main program which is used in all applications
- **POU**
Program Organization Unit
- **Library**
It includes function blocks which are given or designed by other users





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Thank you for your attention. You may now go ahead and move on to the next unit.