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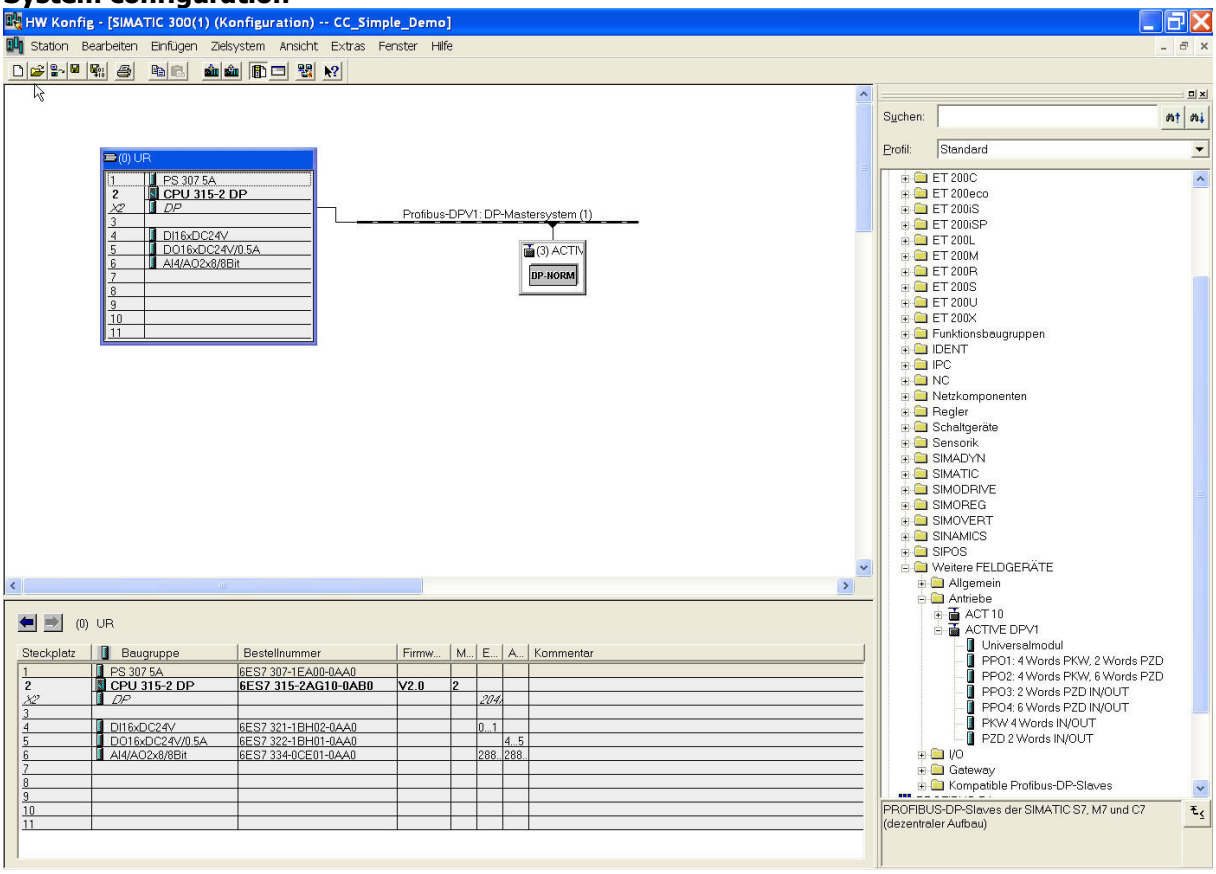
Description of example functions CM-PDPV1

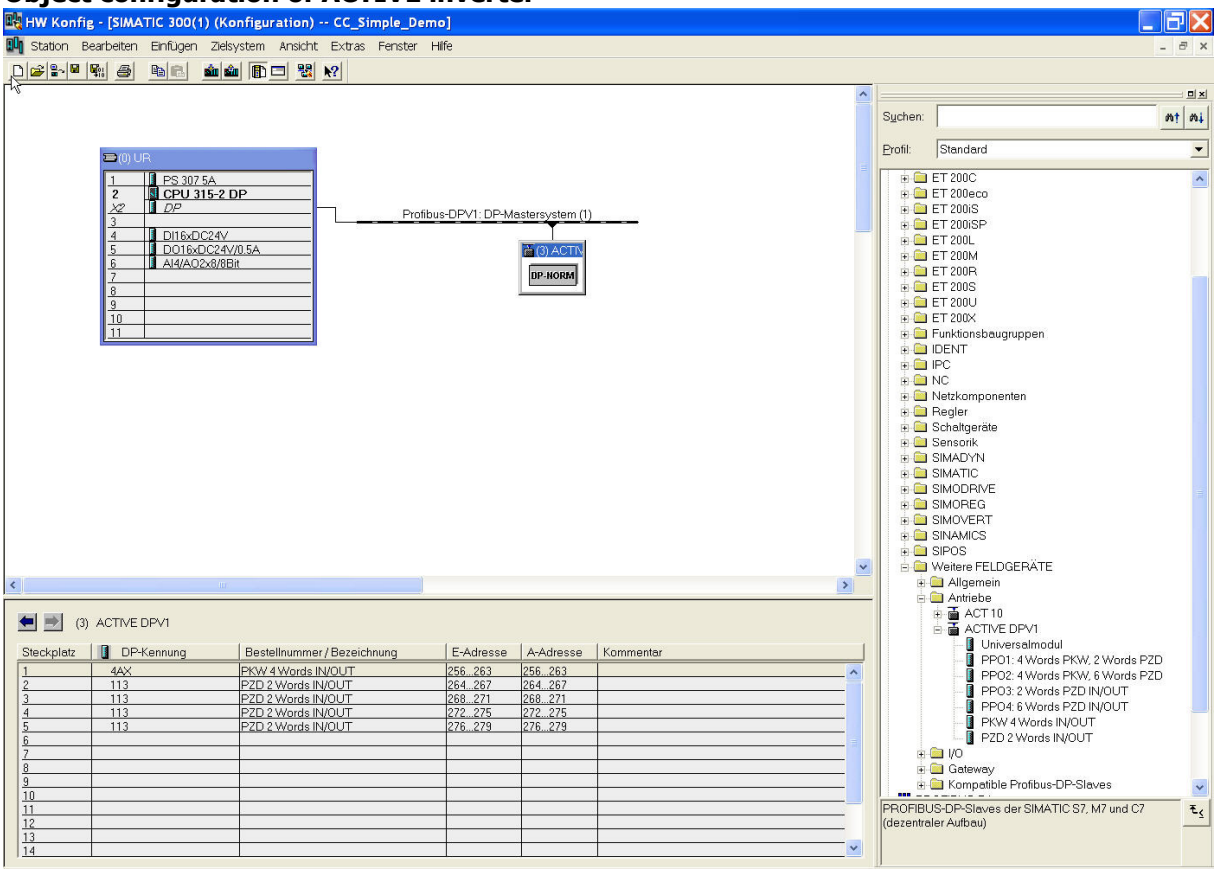
This document describes the functions included in the sample S7 PLC project Cc_simpl.zip. This zip-file is an S7 archive file which can be loaded into a STEP7 environment. It includes the complete S7 PLC environment used for demonstration of all important functions.

The software (module OB1) of S7 project is shown in S7-SoftwareOB1.pdf.

System configuration



Object configuration of ACTIVE inverter



The process data is configured with one communication object (8 bytes, PKW) and four PZD-objects (each 2 words IN/OUT, PZD).

The ACTIVE inverter including the Profibus Node (CM-PDPV1, inverter 1) is connected together with 3 additional ACTIVE inverters (inverter 2, 3, 4) by CAN-Systembus. The CAN-Systembus connection is shown in CM_PDPV1_conf.pdf.

All ACTIVE inverters are controlled by analogue and digital inputs on side of the PLC

Analogue input 1	➔ speed reference value for inverter 1 and 2	
Analogue input 2	➔ speed reference value for inverter 3 and 4	
Digital input E0.0	➔ TRUE	= start command inverter 1
	➔ FALSE	= stop command inverter 1
Digital input E0.1	➔ TRUE	= invert speed reference inverter 1
Digital input E0.2	➔ TRUE	= start command inverter 2
	➔ FALSE	= stop command inverter 2
Digital input E0.3	➔ TRUE	= invert speed reference inverter 2
Digital input E0.4	➔ TRUE	= start command inverter 3
	➔ FALSE	= stop command inverter 3
Digital input E0.5	➔ TRUE	= invert speed reference inverter 3
Digital input E0.6	➔ TRUE	= start command inverter 4
	➔ FALSE	= stop command inverter 4
Digital input E0.7	➔ TRUE	= invert speed reference inverter 4

Parameter access by communication object (8 bytes) included in process data

Positive edge on E1.0	write inverter 1 p.420 "acceleration clockwise" in data set 5 to 50,00 Hz/s
Negative edge on E1.0	write inverter 1 p.420 "acceleration clockwise" in data set 5 to 5,00 Hz/s
Positive edge on E1.1	write inverter 2 p.420 "acceleration clockwise" in data set 5 to 50,00 Hz/s
Negative edge on E1.1	write inverter 2 p.420 "acceleration clockwise" in data set 5 to 5,00 Hz/s
Positive edge on E1.1	read inverter 1 p.211 "RMS current" in data set 0
Negative edge on E1.2	read inverter 2 p.211 "RMS current" in data set 0

Parameter access by DP-V1-Write/Read

Positive edge on E1.3 write inverter 1 p.420 "acceleration clockwise" in data set 5 to 50,00 Hz/s
Negative edge on E1.3 write inverter 1 p.420 "acceleration clockwise" in data set 5 to 5,00 Hz/s

Positive edge on E1.4 write inverter 2 p.420 "acceleration clockwise" in data set 5 to 50,00 Hz/s
Negative edge on E1.4 write inverter 2 p.420 "acceleration clockwise" in data set 5 to 5,00 Hz/s

Positive edge on E1.5 write inverter 1 p.406 "warning limit long term Ixt" in data set 0 to 50 %
Negative edge on E1.5 write inverter 2 p.406 "warning limit long term Ixt" in data set 0 to 50 %

Positive edge on E1.6 read inverter 1 p.210 "stator frequency" in data set 0
Negative edge on E1.6 read inverter 2 p.210 "stator frequency" in data set 0

Positive edge on E1.7 read inverter 1 p.211 "RMS current" in data set 0
Negative edge on E1.7 read inverter 2 p.211 "RMS current" in data set 0