

Quickstart Guide

ABB PLC and drives integration using PROFIBUS DP



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Introduction

This guide will take you through the configuration of ABB drives and PLC (AC500) in order to prepare for PROFIBUS DP control and Drive Manager handling. ABB-specific ready-made function blocks and visualizations from the PS553-DRIVES library will be used for the control of the drives.

Drive Manager is an integrated tool in Control Builder Plus, which for instance include online parameter handling of ABB drives.

This guide is built up in “modules” and can be useful even if all “modules” are not used. For instance, Drive Manager may be used separately and does not require use of the PS553-DRIVES library. In the same way, the PS553-DRIVES library may be used independently from Drive Manager.

Safety instructions

Follow all safety instructions delivered with the used components:

- Read the complete safety instructions for the used drive before you install, commission or use the drive. The complete safety instructions are given at the beginning of the drives user’s manual (e.g. for ACS355: 3AUA0000066143 [English]).
- Read all safety and installation instructions of the used PLC. See the online help in CoDeSys (Help → Contents → Target System → AC500 / S500 → Introduction → Overview → Regulations).

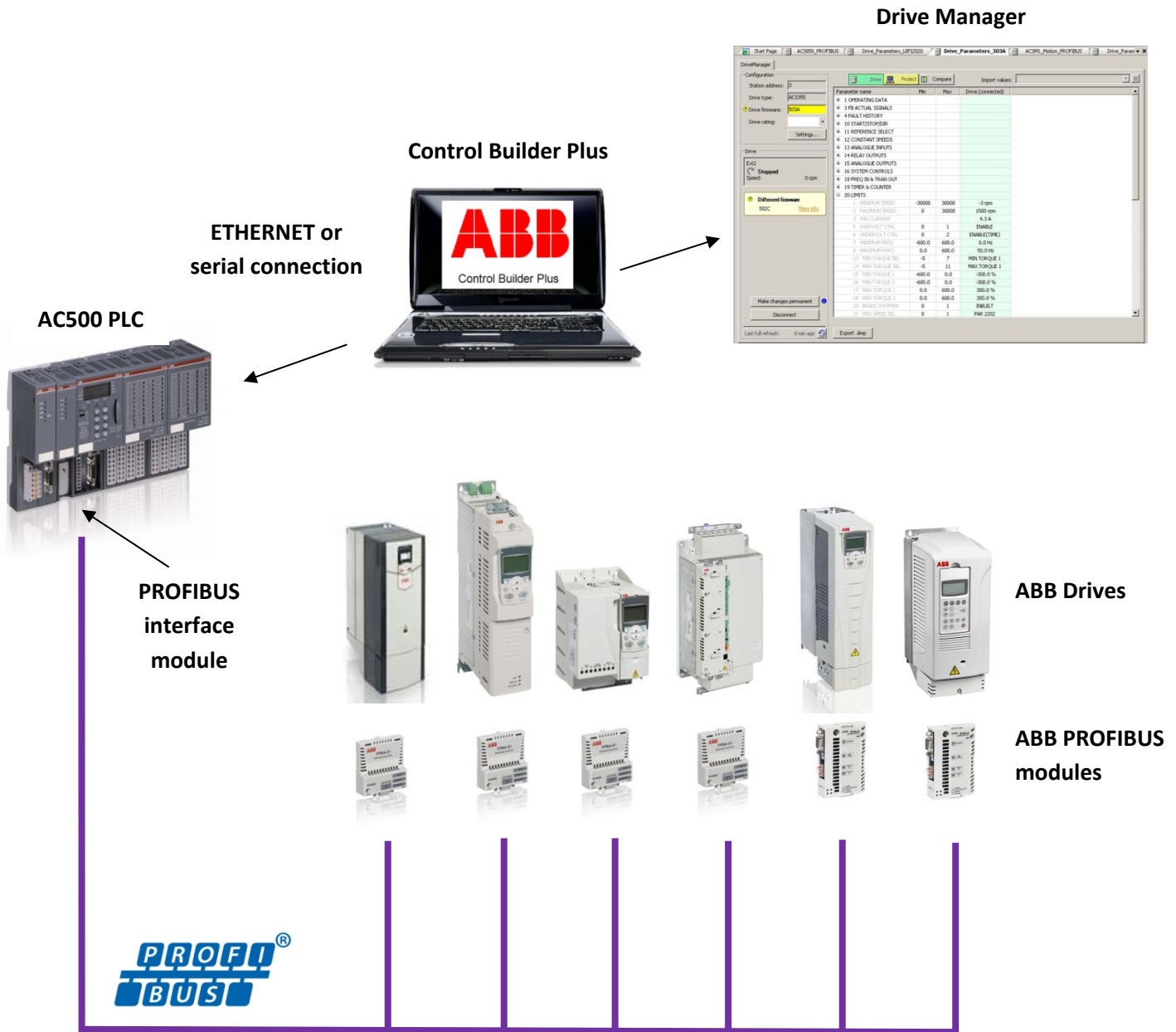
Limitations

The following limitations are valid for this guide:

- For all use
 - All instructions in this guide are based on default settings in PLC and drives
 - PS501 Control Builder Plus version 2.2 or later
 - The PLC must be equipped with a CM572 PROFIBUS interface module
 - The drive must be equipped with a PROFIBUS adapter
- Function block and visualization library PS553-DRIVES compatibility
 - PROFIBUS DP protocol: DP-V0 or DP-V1
 - PROFIBUS DP Communication profile: ABB drives
 - Drive types: All PROFIBUS-compatible ABB drives
 - Application types: speed/frequency control or torque control
- Drive Manager compatibility
 - PROFIBUS DP protocol: DP-V1
 - Drive types: ACS355, ACS850, ACS880, ACSM1 Speed, ACSM1 Motion
(**Note!** More drive types, such as ACS550, will be added in the near future).
 - Application types: speed/frequency control, torque control or motion control.

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Setup



Hardware physical connection

In the following chapter, physical connection of the hardware will be explained briefly.

AC500 and CM572 PROFIBUS Master

The PROFIBUS coupler (CM572) is inserted to the lower part of the terminal base, then clicked in above, in the coupler slot to the left next to the CPU.

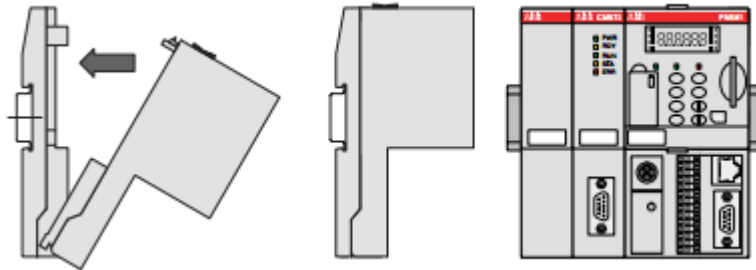
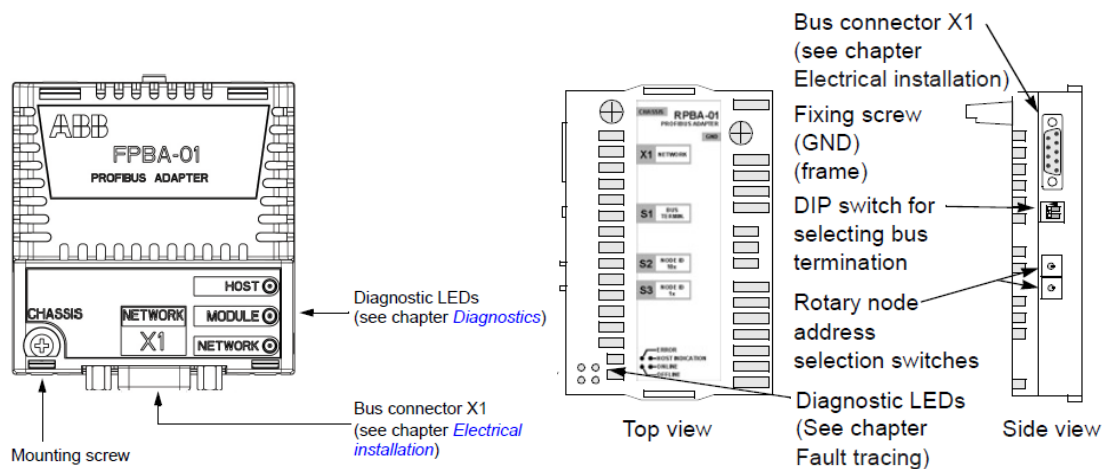


ABB Drive and PROFIBUS adapter

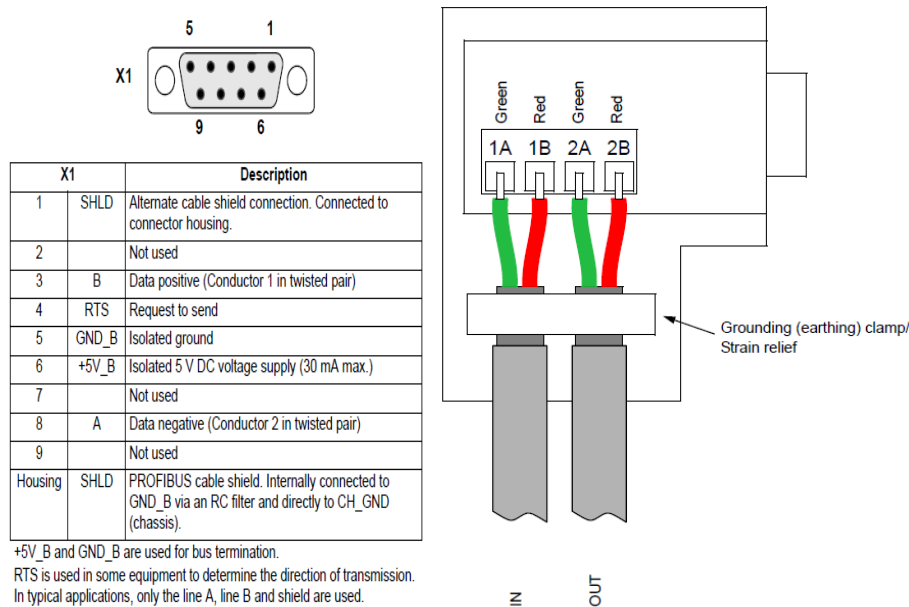
Depending on drive type, an FPBA-01 or RPBA-01 PROFIBUS adapter is used. The adapter is mounted in one of the drive slots (slot number depends on drive type).



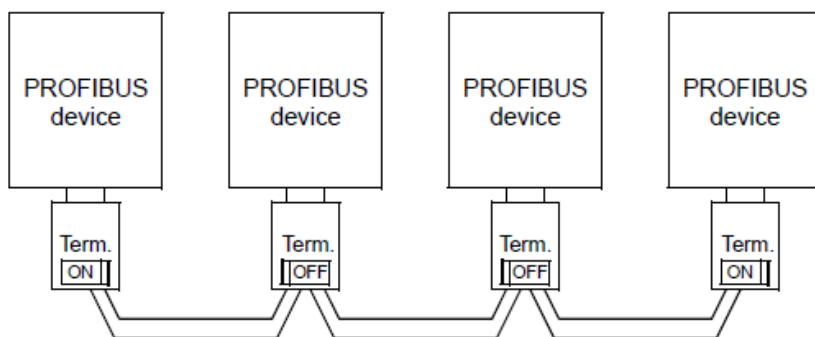
PROFIBUS connector

Connect the bus cable to connector X1 on the adapter module. The connector pin allocation described below follows the PROFIBUS standard.

It is recommended to use a PROFIBUS-approved D-SUB 9 connector. These connectors have a built-in termination network and inductors for station capacitance compensation. Connect the cable to the D-SUB connector according to picture below.



Bus termination is required to prevent signal reflections from the bus cable ends. The adapter module is not equipped with internal bus termination. Therefore, the D-SUB connectors at the first and last modules of the bus must have built-on termination switched on as shown in the diagram below. The adapter module is able to supply power for an active-type termination circuitry (30 mA max).



Drive configuration

The drive needs to be equipped with PROFIBUS DP adapter according to actual drive type.

The following drive configuration steps will adapt the drive to PROFIBUS DP control based on ABB-specific drives library PS553-DRIVES as well as prepare the drive for Drive Manager handling.

Drive parameters can be set from the drive's control panel or from drive-specific pc tool (*DriveWindow Light* for ACS355 and ACS550, *DriveStudio* for ACS850 and ACSM1, *Drive Composer* for ACS880 and *DriveWindow* for ACS800). It is also possible to do most of the settings from Drive Manager, see chapter "Drive Manager".

Note! All parameter settings are based on drive default settings. If the drive has been parametrized previously, return to default settings before continuing. It can be done by:

- Changing macro (and then changing back again) in parameter **99.02** for ACS355 and ACS550.
- Setting parameter **99.03** *APPLIC RESTORE* to **YES** in ACS800.
- Setting parameter **16.04** *Param restore* to **Restore defs** in ACS850 and ACSM1.
- Setting parameter **96.06** *Parameter restore* to **Restore defaults** in ACS880.

Starting up ACS355 drives

1. Power up the drive.
2. Enable the communication between the adapter module and the drive by setting parameter **98.02 COMM PROT SEL** to **EXT FBA**.
3. Set the FPBA-01 configuration parameters in group 51. At the minimum, set the required node address in parameter **51.02** and the communication profile in **51.05 = 1** (ABB Drives).
4. With parameter **30.18 COMM FAULT FUNC**, select how the drive reacts to a fieldbus communication break.
5. With parameter **30.19 COMM FAULT TIME**, define the time between communication break detection and the selected action.
6. Define the process data transferred to and from the drive in the FPBA-01 configuration parameter groups 54 and 55. **Note!** The adapter module sets the Status word and actual value automatically in parameters **54.01** and **54.02**, and Control word and reference in parameters **55.01** and **55.02**.
7. Validate the settings made in parameter groups 51, 54 and 55 by setting parameter **51.27 FBA PAR REFRESH** to **REFRESH**.
8. Set the relevant drive control parameters to control the drive according to the application.

ACS355 Minimum required parameter settings (based on factory default settings)

Parameter	Description	Setting	Comment
98.02	COMM PROT SEL	EXT FBA	Activates fieldbus module
51.02	NODE ADDRESS	[PB NODE]	PROFIBUS DP node address of the drive
51.05	PROFILE	1	Communication profile "ABB Drives"
54.01	FBA DATA IN1	4	Status Word as Data Word 1 from drive
54.02	FBA DATA IN2	5	Actual speed as Data Word 2 from the drive (+/- 20.000)
55.01	FBA DATA OUT1	1	Control Word as Data Word 1 to drive
55.02	FBA DATA OUT2	2	Speed reference as Data Word 2 to the drive (+/- 20.000)
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 51 to 55)
10.01	EXT 1 COMMANDS	COMM	Fieldbus interface as source for start and stop
11.02	EXT1/EXT2 SEL	COMM	Fieldbus interface as source to switch to EXT2
11.03	REF1 SELECT	COMM	Fieldbus interface as source for speed reference

16.04	FAULT RESET SEL	COMM	Fieldbus interface as source for fault reset
(11.05)	REF1 MAX	[Scale max]	Max speed/frequency scaling value (used in function block/visualization input "SPEED_REF_MAX"). Must be less or equal to drive parameter max speed/frequency.

ACS355 More actual values or parameters to be read from drive to PLC (optional)

Parameter	Description	Setting	Comment
54.03 .. 54.10	Actual value or parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 0104 = actual current; 0145 = motor temp
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 51 to 55)

ACS355 More parameters to be written from PLC to drive (optional)

Parameter	Description	Setting	Comment
55.03 .. 55.10	Parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 2202 = acceleration time 1
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 51 to 55)

Starting up ACS850 drives

1. Power up the drive.
2. Enable the communication between the adapter module and the drive by setting parameter **50.01 FBA enable** to **Enable**.
3. With parameter **50.02 Comm loss func**, select how the drive reacts to a fieldbus communication break. Note that this function monitors both communication between the fieldbus master and the adapter module and communication between the adapter module and the drive.
4. With parameter **50.03 Comm loss t out**, define the time between communication break detection and the selected action.
5. Select application-specific values for parameters **50.04...50.11**.
6. Set the FPBA-01 configuration parameters in group 51. At the minimum, set the required node address in parameter **51.02** and the communication profile in **51.05 = 1** (ABB Drives).
7. Define the process data transferred to and from the drive in the FPBA-01 configuration parameter groups 52 and 53. **Note!** The adapter module sets the Status word and actual value automatically in parameters **52.01** and **52.02**, and Control word and reference in parameters **53.01** and **53.02**.
8. Validate the settings made in parameter groups 51, 52 and 53 by setting parameter **51.27 FBA par refresh** to **Refresh**.
9. Set the relevant drive control parameters to control the drive according to the application.

ACS850 Minimum required parameter settings (based on factory default settings)

Parameter	Description	Setting	Comment
50.01	Fba enable	Enable	Activates fieldbus module
51.02	NODE ADDRESS	[PB NODE]	PROFIBUS DP node address of the drive
51.05	PROFILE	1	Communication profile "ABB Drives"
52.01	FBA data in1	4	Status Word as Data Word 1 from drive
52.02	FBA data in2	5	Actual speed as Data Word 2 from the drive (+/- 20.000)
53.01	FBA data out1	1	Control Word as Data Word 1 to drive
53.02	FBA data out2	2	Speed reference as Data Word 2 to the drive (+/- 20.000)
51.27	FBA par refresh	Refresh	Updates fieldbus settings (groups 50 to 53)
10.01	Ext1 start func	FB	Fieldbus interface as source for start and stop

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12.01	EXT1/EXT2 SEL	P.02.22 bit 15	Fieldbus interface as source to switch to EXT2
21.01	Speed ref1 sel	FBA ref1	Fieldbus interface as source for speed reference
10.10	Fault reset sel	P.02.22 bit 8	Fieldbus interface as source for fault reset
(19.01)	Speed scaling	[Scale max]	Max speed/frequency scaling value (used in function block/visualization input "SPEED_REF_MAX"). Must be less or equal to drive parameter max speed/frequency.

ACS850 More actual values or parameters to be read from drive to PLC (optional)

Parameter	Description	Setting	Comment
52.03 .. 52.12	Actual value or parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 0104 = actual current; 0117 = motor temp 1
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 50 to 53)

ACS850 More parameters to be written from PLC to drive (optional)

Parameter	Description	Setting	Comment
53.03 .. 53.12	Parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 2202 = acceleration time 1
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 50 to 53)

Starting up ACS880 drives

1. Power up the drive.
2. Enable the communication between the adapter module and the drive by setting parameter **50.01 FBA A Enable** to **Enable**.
3. With parameter **50.02 FBA A comm loss func**, select how the drive reacts to a fieldbus communication break. Note that this function monitors both communication between the fieldbus master and the adapter module and communication between the adapter module and the drive.
4. With parameter **50.03 FBA A comm loss t out**, define the time between communication break detection and the selected action.
5. Select application-specific values for the rest of the parameters in group 50, starting from **50.04**.
6. Set the FPBA-01 configuration parameters in group 51. At the minimum, set the required node address in parameter **51.02 Node address** and the communication profile in **51.05 = 1** (ABB Drives).
7. Define the process data transferred to and from the drive in FPBA-01 configuration parameter groups 52 and 53. **Note!** The adapter module sets the Status word and Control word automatically in parameters **52.01** and **53.01**.
8. Validate the settings made in parameter groups 51, 52 and 53 by setting parameter **51.27 FBA par refresh** to **Configure**.
9. Save the valid parameter values to permanent memory by setting parameter **96.07 Param save** to **Save**.
10. Set the relevant drive control parameters to control the drive according to the application.

ACS880 Minimum required parameter settings (based on factory default settings)

Parameter	Description	Setting	Comment
50.01	FBA A Enable	Enable	Activates fieldbus module
51.02	NODE ADDRESS	[PB NODE]	PROFIBUS DP node address of the drive
51.05	PROFILE	1	Communication profile "ABB Drives"
52.01	FBA data in1	4	Status Word as Data Word 1 from drive
52.02	FBA data in2	5	Actual speed as Data Word 2 from the drive (+/- 20.000)
53.01	FBA data out1	1	Control Word as Data Word 1 to drive
53.02	FBA data out2	2	Speed reference as Data Word 2 to the drive (+/- 20.000)
51.27	FBA par refresh	Configure	Updates fieldbus settings (groups 50 to 57)

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19.11	Ext1/Ext2 selection	MCW Bit11 (06.01)	Fieldbus interface as source to switch to EXT2 control location
20.01	Ext 1 commands	Fieldbus A	Fieldbus interface as source for start and stop
20.02	Ext1 start trigger	Level	To directly restart after Coast Stop (Off3)
22.11	Speed ref1 selection	FB A ref1	Fieldbus interface as source for speed reference
31.11	Fault reset selection	P.06.01 bit 7	Fieldbus interface as source for fault reset
(46.01)	Speed scaling	[Scale max]	Max speed/frequency scaling value (used in function block/visualization input "SPEED_REF_MAX"). Must be less or equal to drive parameter max speed/frequency.

ACS880 More actual values or parameters to be read from drive to PLC (optional)

Parameter	Description	Setting	Comment
52.03 .. 52.12	Actual value or parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 0107 = actual current; 3501 = motor est. temp
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 50 to 57)

ACS880 More parameters to be written from PLC to drive (optional)

Parameter	Description	Setting	Comment
53.03 .. 53.12	Parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 2312 = acceleration time 1
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 50 to 57)

Starting up ACSM1 drives

1. Power up the drive.
2. Enable the communication between the adapter module and the drive by setting parameter **50.01 FBA ENABLE** to **Enable**.
3. With parameter **50.02 COMM LOSS FUNC**, select how the drive reacts to a fieldbus communication break. Note that this function monitors both communication between the fieldbus master and the adapter module and communication between the adapter module and the drive.
4. With parameter **50.03 COMM LOSS T OUT**, define the time between communication break detection and the selected action.
5. Select application-specific values for parameters **50.04...50.11**.
6. Set the FPBA-01 configuration parameters in group 51. At the minimum, set the required node address in parameter **51.02** and the communication profile in **51.05 = 1** (ABB Drives).
7. Define the process data transferred to and from the drive in the FPBA-01 configuration parameter groups 52 and 53. **Note!** The adapter module sets the Status word and Control word automatically in parameters **52.01** and **53.01**.
8. Validate the settings made in parameter groups 51, 52 and 53 by setting parameter **51.27 FBA PAR REFRESH** to **REFRESH**.
9. Set the relevant drive control parameters to control the drive according to the application.

ACSM1 Minimum required parameter settings (based on factory default settings)

Parameter	Description	Setting	Comment
50.01	FBA ENABLE	Enable	Activates fieldbus module
51.02	NODE ADDRESS	[PB NODE]	PROFIBUS DP node address of the drive
51.05	PROFILE	1	Communication profile "ABB Drives"
52.01	FBA DATA IN1	4	Status word as Data Word 1 from the drive
52.02	FBA DATA IN2	5	Actual speed as Data Word 2 from the drive (+/- 20.000)
53.01	FBA DATA OUT1	1	Control word as Data Word 1 to the drive
53.02	FBA DATA OUT2	2	Speed reference as Data Word 2 to the drive (+/- 20.000)
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 50 to 53)
10.01	EXT1 START FUNC	FBA	Fieldbus interface as source for start and stop

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34.01	EXT1/EXT2 SEL	P.02.12 bit15	Fieldbus interface as source to switch to EXT2 control location
24.01	SPEED REF1 SEL	FBA REF1	Fieldbus interface as source for speed reference
10.08	FAULT RESET SEL	P.02.12 bit 8	Fieldbus interface as source for fault reset
(25.02)	SPEED SCALING	[Scale max]	Max speed/frequency scaling value (used in function block/visualization input "SPEED_REF_MAX"). Must be less or equal to drive parameter max speed/frequency.

ACSM1 More actual values or parameters to be read from drive to PLC (optional)

Parameter	Description	Setting	Comment
52.03 .. 52.12	Actual value or parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 0104 = actual current; 0117 = motor temp
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 50 to 53)

ACSM1 More parameters to be written from PLC to drive (optional)

Parameter	Description	Setting	Comment
53.03 .. 53.12	Parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 2503 = acceleration time
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 50 to 53)

Starting up ACS550 drives (supported by Drive Manager from CBP version 2.3)

1. Power up the drive.
2. Enable the communication between the adapter module and the drive by setting parameter **98.02 COMM PROT SEL** to **EXT FBA**.
3. Set the RPBA-01 configuration parameters in group 51. At the minimum, set the required node address in parameter **51.02**.
4. With parameter **30.18 COMM FAULT FUNC**, select how the drive reacts to a fieldbus communication break.
5. With parameter **30.19 COMM FAULT TIME**, define the time between communication break detection and the selected action.
6. Define the process data transferred to and from the drive in the RPBA-01 configuration parameter group 51.
Note! The Status Word, Actual Speed, Control Word and Speed Reference are fixed in ACS550 and not necessary to set.
7. Validate the settings made in parameter group 51 by setting parameter **51.27 FBA PAR REFRESH** to **REFRESH**.
8. Set the relevant drive control parameters to control the drive according to the application.

ACS550 Minimum required parameter settings (based on factory default settings)

Parameter	Description	Setting	Comment
98.02	COMM PROT SEL	EXT FBA	Activates fieldbus module
51.02	NODE ADDRESS	[PB NODE]	PROFIBUS DP node address of the drive
51.21	DP MODE	[DP MODE]	1 for DPV1 (necessary for Drive Manager), 0 for DPV0
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (group 51)
10.01	EXT 1 COMMANDS	COMM	Fieldbus interface as source for start and stop
11.02	EXT1/EXT2 SEL	COMM	Fieldbus interface as source to switch to EXT2
11.03	REF1 SELECT	COMM	Fieldbus interface as source for speed reference
16.04	FAULT RESET SEL	COMM	Fieldbus interface as source for fault reset
(11.05)	REF1 MAX	[Scale max]	Max speed/frequency scaling value (used in function block/visualization input "SPEED_REF_MAX"). Must be less or equal to drive parameter max speed/frequency.

ACS550 More actual values or parameters to be read from drive to PLC (optional)

Parameter	Description	Setting	Comment
51.06,51.08,,51.20	Actual value or parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 0104 = actual current; 0145 = motor temp
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (group 51)

ACS550 More parameters to be written from PLC to drive (optional)

Parameter	Description	Setting	Comment
51.05,51.07,,51.19	Parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 2202 = acceleration time 1
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (group 51)

Starting up ACS800 drives (not supported by Drive Manager)

1. Power up the drive.
2. Enable the communication between the adapter module and the drive by setting parameter **98.02 COMM. MODULE LINK** to **FIELD BUS**.
3. Set the RPBA-01 configuration parameters in group 51. At the minimum, set the required node address in parameter **51.02**.
4. With parameter **30.18 COMM FLT FUNC**, select how the drive reacts to a fieldbus communication break.
5. With parameter **30.19 MAIN REF DS T-OUT**, define the time between communication break detection and the selected action.
6. Define the process data transferred to and from the drive in the RPBA-01 configuration parameter group 51.
Note! The Status Word, Actual Speed, Control Word and Speed Reference are configured as default.
7. Validate the settings made in parameter group 51 by setting parameter **51.27 FBA PAR REFRESH** to **REFRESH**.
8. Set the relevant drive control parameters to control the drive according to the application.

ACS800 Minimum required parameter settings (based on factory default settings)

Parameter	Description	Setting	Comment
98.02	COMM. MODULE LINK	FIELD BUS	Activates fieldbus module
98.07	COMM PROFILE	ABB DRIVES	Communication profile "ABB Drives"
51.02	NODE ADDRESS	[PB NODE]	PROFIBUS DP node address of the drive
51.21	DP MODE	[DP MODE]	1 for DPV1 (necessary for Drive Manager), 0 for DPV0
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (groups 51 to 55)
10.01	EXT 1 STRT/STP/DIR	COMM.CW	Fieldbus interface as source for start and stop
11.02	EXT1/EXT2 SELECT	COMM.CW	Fieldbus interface as source to switch to EXT2 control location
11.03	EXT REF1 SELECT	COMM.REF	Fieldbus interface as source for speed reference
16.04	FAULT RESET SEL	COMM.CW	Fieldbus interface as source for fault reset
(11.05)	EXT REF1 MAXIMUM	[Scale max]	Max speed/frequency scaling value (used in function block/visualization input "SPEED_REF_MAX"). Must be less or equal to drive parameter max speed/frequency.

ACS800 More actual values or parameters to be read from drive to PLC (optional)

Parameter	Description	Setting	Comment
51.06,51.08,,51.20	Actual value or parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 0104 = actual current; 0145 = motor temp
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (group 51)

ACS800 More parameters to be written from PLC to drive (optional)

Parameter	Description	Setting	Comment
51.05,51.07,,51.19	Parameter of drive	GGii	GG = parameter group, ii = parameter index e.g. 2202 = acceleration time 1
51.27	FBA PAR REFRESH	REFRESH	Updates fieldbus settings (group 51)

Control Builder Plus for PLC and Drives

Start the “Control Builder Plus” PC tool for PLC configuration and Drive Manager handling and go through the following steps.

Install PS553-DRIVES library

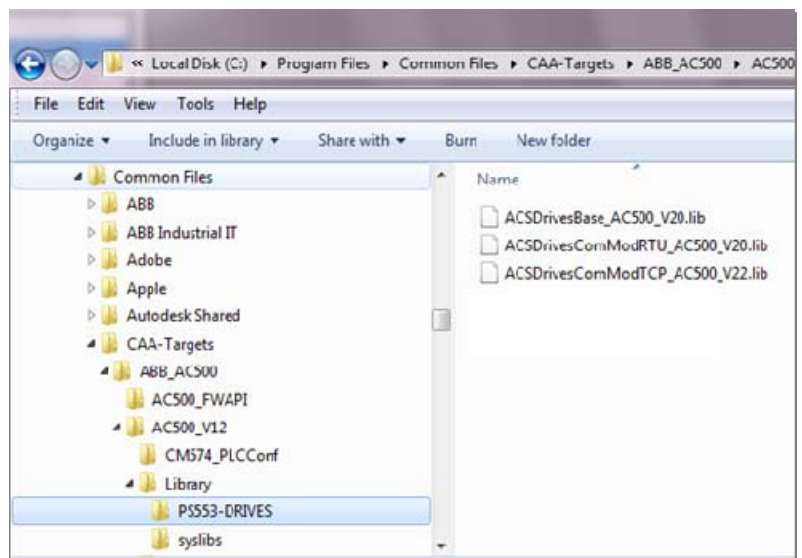
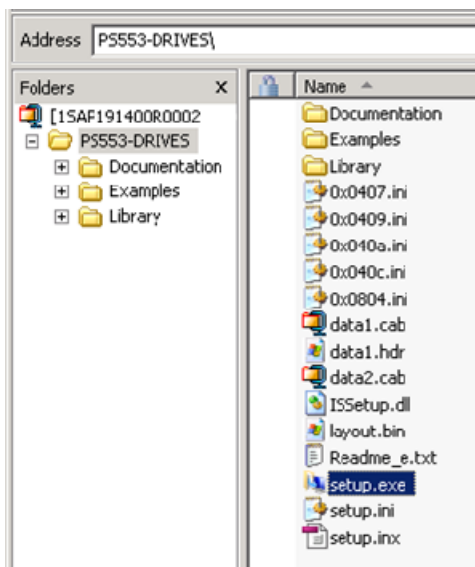
Note! In Control Builder Plus V2.3 and later, the ACSDrivesBase library is already installed. You can find it in the subfolder “PS553-DRIVES” of the default library folder (see right picture below)

Note! The version of the library can differ, nevertheless the name will stay the same! Creation date and main changes can be seen in the library manager of CODESYS only.

For older Versions of Control Builder Plus you can download the installation package in the following way from:

- www.abb.com/PLC:
- On right side menu under heading "Your preferences": Select "English" as language ... (country doesn't matter).
- On right side menu under "More Info Links" : Click on "PS501 Updates".
- Select "PS501-UPDA: PS553-DRIVES..." to download *.zip file.

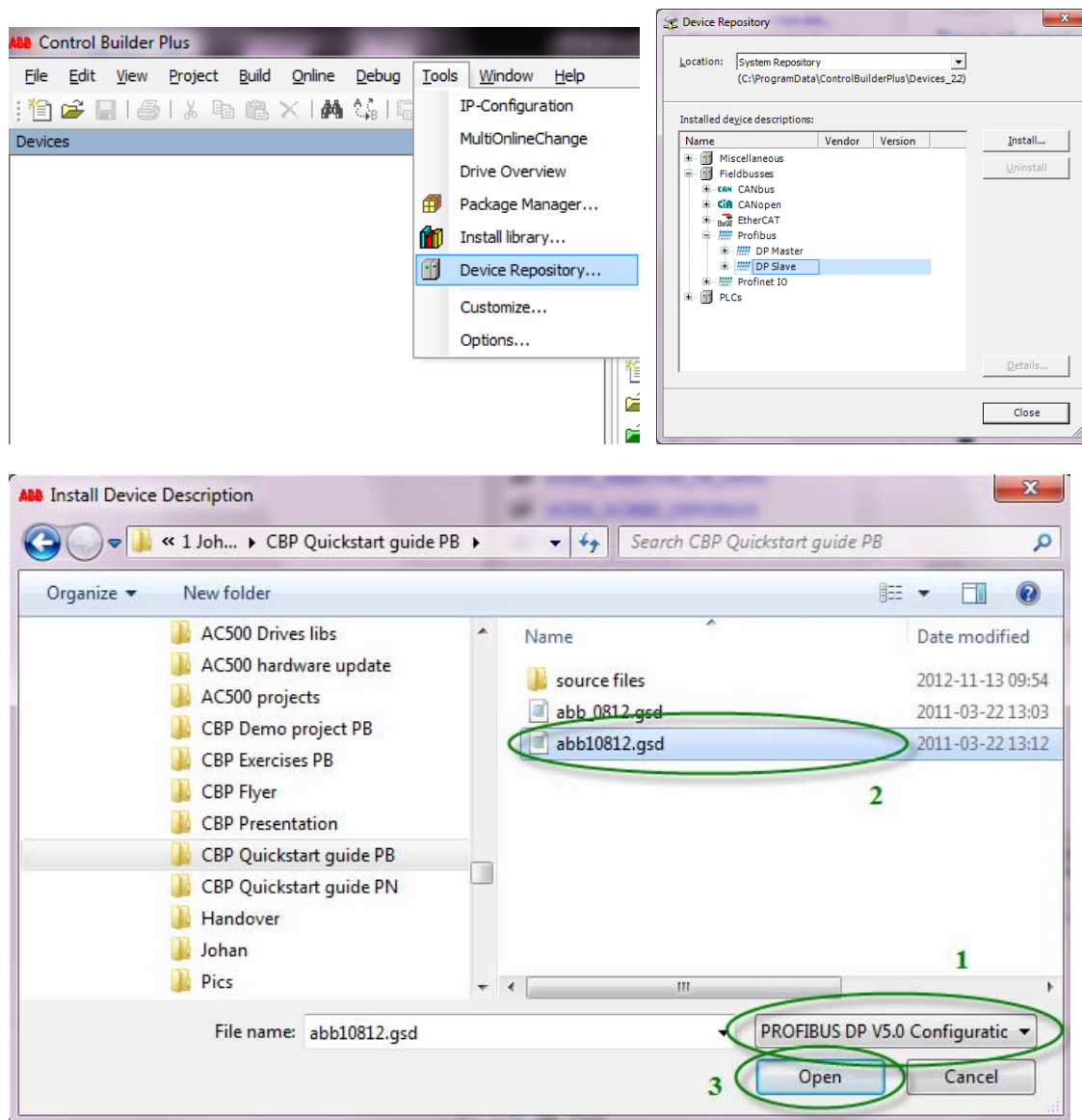
Install the drives library “PS553-DRIVES” with ready-made function blocks and visualization objects by unzipping to a temporary directory and clicking on the file “setup.exe” (see left picture below).



Install GSD files

In the installation of Control Builder Plus version 2.2.0 and later, GSD files for the ABB PROFIBUS module FPBA-01 are included. However, for RPBA-01 PROFIBUS modules (used in drives ACS550 and ACS800) you need to install the GSD file manually (RPBA-01 GSD file for DP-V1 is included in this package). In later versions of Control Builder Plus, also GSD files for RPBA-01 will be included in the installation.

To install a GSD file, open Control Builder Plus and choose “Device Repository” from the “Tools” menu. Click “Install”, choose to display PROFIBUS objects (1), select the GSD file included in this package (2) and click “Open”. Close the Device Repository window and check that the question marks have disappeared from ACS550 and ACS800 in the Control Builder Plus device tree.

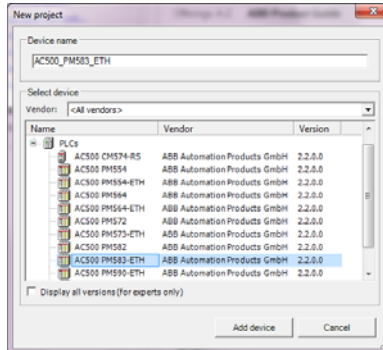
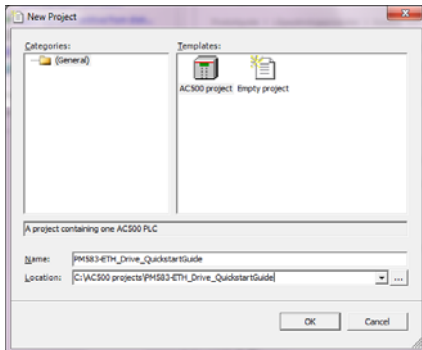


Quickstart Guide

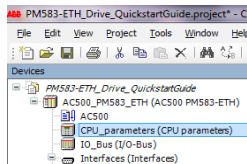
ABB PLC and drives integration using PROFIBUS DP

Hardware configuration

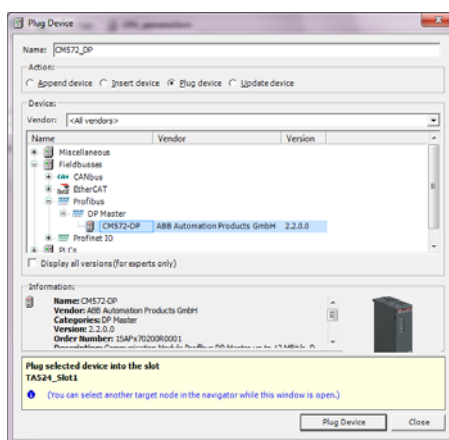
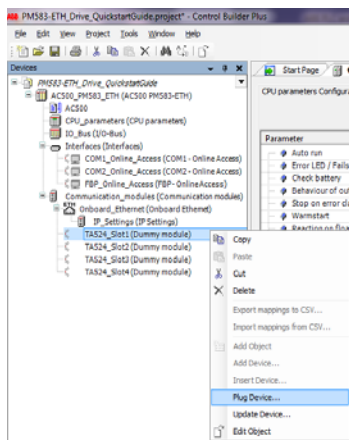
File → New Project → Choose “AC500 project” and name the project. Choose PLC device according to your equipment and then “Add device”.



Double-click “CPU_parameters” and configure according to your application. Set for instance “Check battery” = “Off” if your CPU does not have a battery installed.



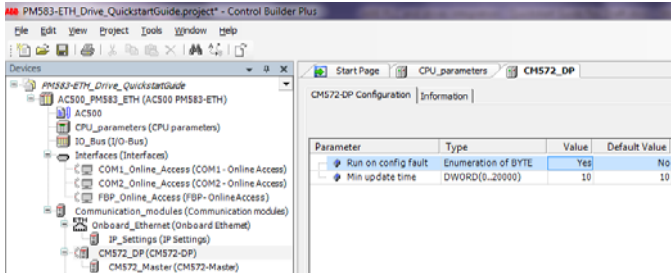
Add a PROFIBUS communication interface (PROFIBUS Master). Right-click “TA524_Slot1” under “Communication modules” and click “Plug Device”. Choose “Fieldbuses → Profibus → DP Master → CM572-DP” and “Plug Device”, then “Close”.



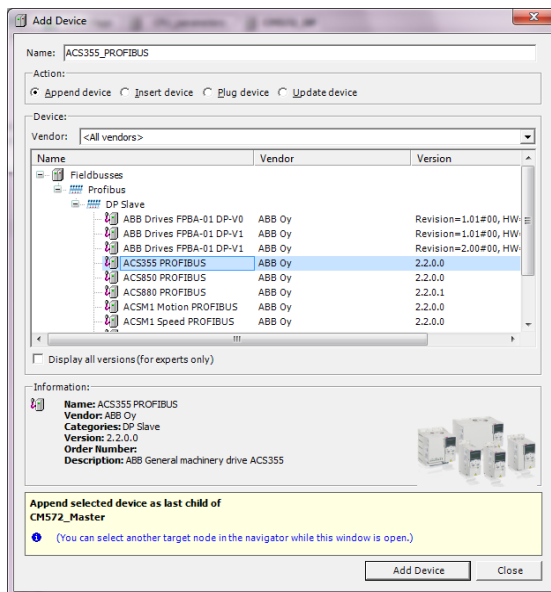
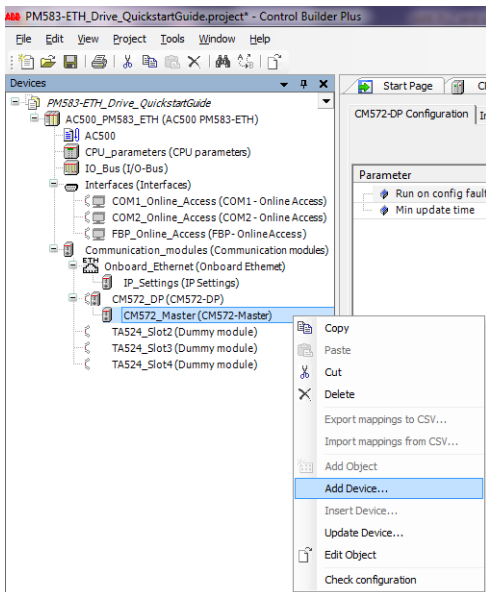
Quickstart Guide

ABB PLC and drives integration using PROFIBUS DP

If you want the PLC to stay in “Run” mode even when a PROFIBUS DP slave is missing (unconnected for instance), then double-click “CM572_DP” and set “Run on config fault” = “Yes”.



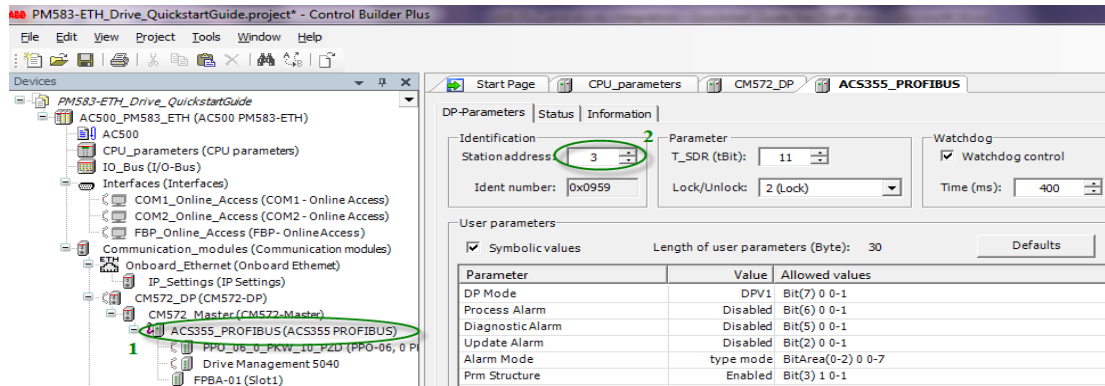
Add a drive to the PROFIBUS DP line. Right-click “CM572_Master” and click “Add Device”. Choose DP Slave according to actual drive type and click “Add Device”. Add more drives if needed and then click “Close”.



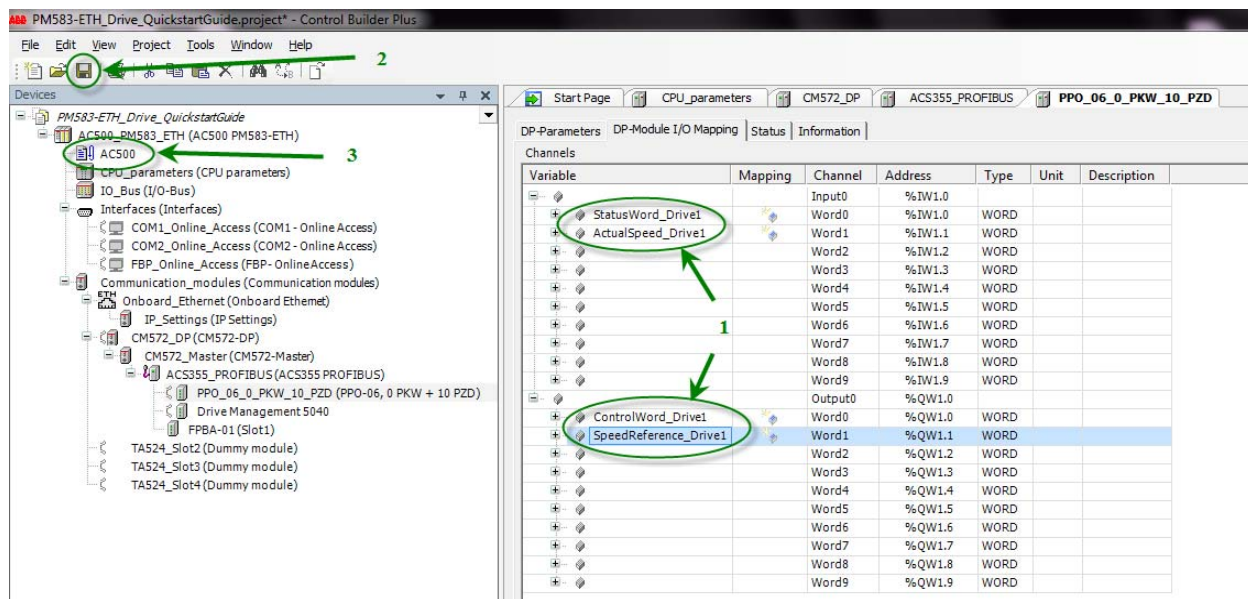
Quickstart Guide

ABB PLC and drives integration using PROFIBUS DP

Double-click the drive (1) to view or modify the Station address (PROFIBUS DP node address) of the drive (2).



Create global variables connected to the Process Data of actual drive. Double-click “PPO_XX.....” under the actual drive and open the “DP-Module I/O Mapping” tab. Give suitable names at least to the Status Word, Actual Speed, Control Word and Speed Reference (1), see example in the picture below. The variables you create are global and the names must be **unique** within the whole project. Then save the project (2) and double-click “AC500” (3) to open CODESYS or continue to add more drives.



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ABB PLC and drives integration using PROFIBUS DP

More process data between PLC and drive (optional)

If you want to add more process data between PLC and drive, see example in the picture below where actual current, motor temp have been added to Inputs and acceleration time has been added to Outputs. This “extra” communication also needs specific drive parameter settings, see chapter “Drive configuration”.

Note! Variables which will be written from the PLC to the drive will set the parameter in the drive to zero if they are not set somewhere in the program.

Variable	Mapping	Channel	Address	Type	Unit	Description
StatusWord_Drive1		Input0	%IW1.0	WORD		
ActualSpeed_Drive1		Word0	%IW1.0	WORD		
ActualCurrent_Drive1		Word1	%IW1.1	WORD		
MotorTemp_Drive1		Word2	%IW1.2	WORD		
		Word3	%IW1.3	WORD		
		Word4	%IW1.4	WORD		
		Word5	%IW1.5	WORD		
		Word6	%IW1.6	WORD		
		Word7	%IW1.7	WORD		
		Word8	%IW1.8	WORD		
		Word9	%IW1.9	WORD		
ControlWord_Drive1		Output0	%QW1.0	WORD		
SpeedReference_Drive1		Word0	%QW1.1	WORD		
AccelerationTime_Drive1		Word2	%QW1.2	WORD		
		Word3	%QW1.3	WORD		
		Word4	%QW1.4	WORD		

Add more drives (optional)

If you want to add more drives to your project, follow the same procedure as above. When the hardware is added, a unique “Station address” (node address) has been given to the drive and drive global variables have been added in DP-Module I/O Mapping according to earlier instruction, then save the project.

Variable	Mapping	Channel	Address	Type	Unit	Description
StatusWord_Drive2		Input0	%IW1.10	WORD		
ActualSpeed_Drive2		Word0	%IW1.10	WORD		
ActualCurrent_Drive2		Word1	%IW1.11	WORD		
MotorTemp_Drive2		Word2	%IW1.12	WORD		
		Word3	%IW1.13	WORD		
		Word4	%IW1.14	WORD		
		Word5	%IW1.15	WORD		
		Word6	%IW1.16	WORD		
		Word7	%IW1.17	WORD		
		Word8	%IW1.18	WORD		
		Word9	%IW1.19	WORD		
ControlWord_Drive2		Output0	%QW1.10	WORD		
SpeedReference_Drive2		Word0	%QW1.11	WORD		
AccelerationTime_Drive2		Word2	%QW1.12	WORD		
		Word3	%QW1.13	WORD		
		Word4	%QW1.14	WORD		
		Word5	%QW1.15	WORD		
		Word6	%QW1.16	WORD		
		Word7	%QW1.17	WORD		
		Word8	%QW1.18	WORD		
		Word9	%QW1.19	WORD		

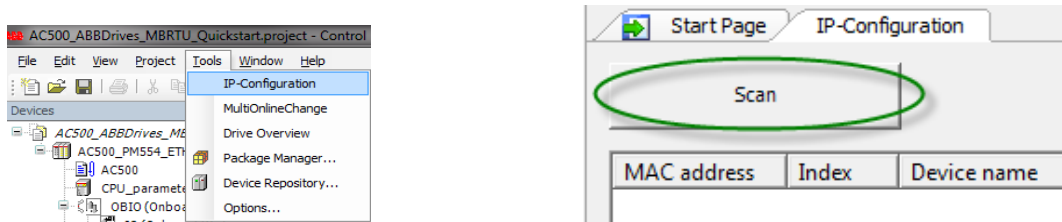
Continue to add as many drives as you need.

IP configuration of CPU (for Ethernet connection between PC and PLC)

If the CPU has an Ethernet port and the CPU IP address has not already been configured, follow the steps below.

De-activate the firewall of the PC, or allow the connection if question comes up. Connect an Ethernet cable between PC and PLC (or via a switch).

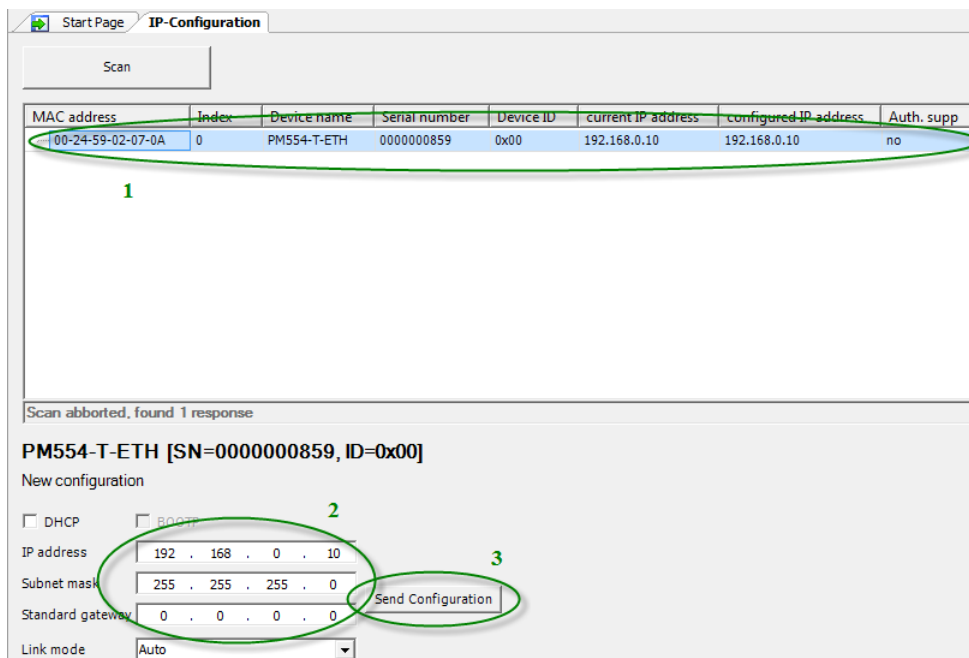
Open the IP configuration tool from the “Tools” menu and press the “Scan” button.



Select actual PLC from the scanned objects (1), make your network settings (2) and press the “Send Configuration” button. This needs to be done the first time you connect to the PLC even if the IP address is already correct.

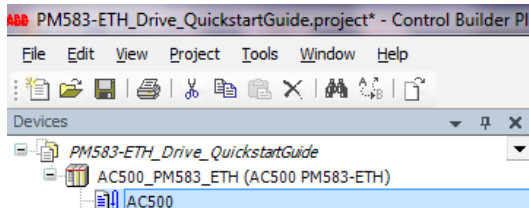
Note! The PLC needs to be in “STOP” mode for IP configuration.

After the new configuration was sent the PLC will automatically reboot.



CODESYS

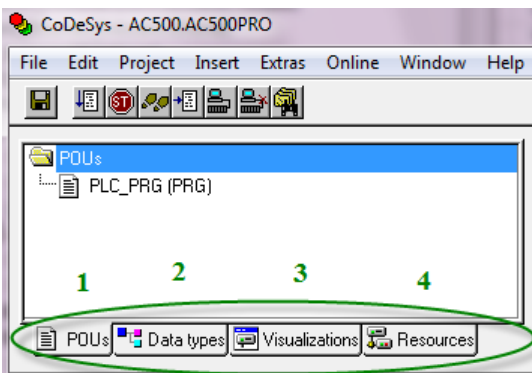
Double-click “AC500” from the Device tree in the Control Builder Plus project to open CODESYS.



CODESYS tabs

In CODESYS there are four different tabs for programming, configuration, etc.

1. POU's (Program Organization Units): This tab contains your Functions, Function blocks and Programs.
2. Data types: In this tab, along with the standard data types you can define your own user-specific data types.
3. Visualizations: In this tab you can create your own or use predefined visualizations so that you can display your project variables. In Online mode, these can then change their form/color/text/position/output in response to specified variable values.
4. Resources: In this tab you can configure and organize your project. It includes Global variables, Library manager, etc.

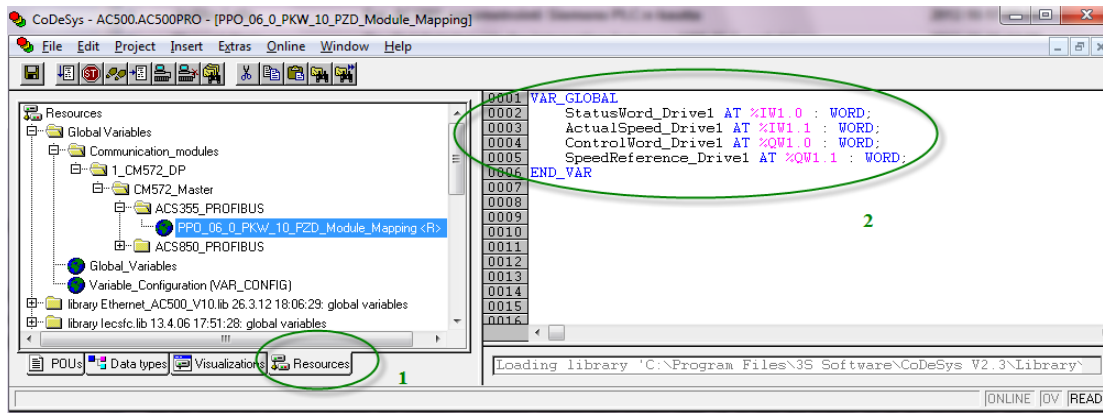


Quickstart Guide

ABB PLC and drives integration using PROFIBUS DP

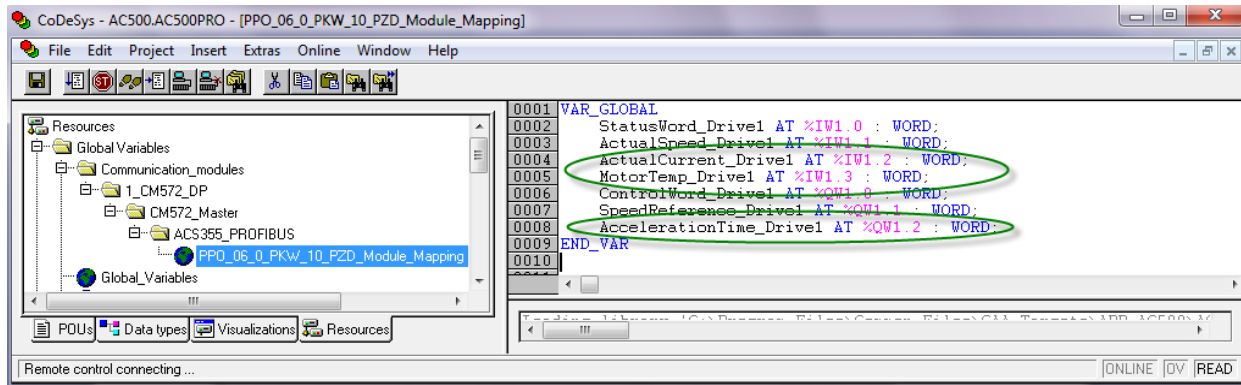
Global variables

In the “Resources” tab (1), check that “Global variables” for actual drive/drives have been created (2).



Also see example below, where optional process data has been added in the hardware configuration, see chapter “Hardware configuration → More process data between PLC and drive”.

Note! These optional variables can be used anywhere in the program. Variables which will be written from the PLC to the drive will set the parameter in the drive to zero if they are not set somewhere in the program. See “AccelerationTime_Drive1” in the example below.

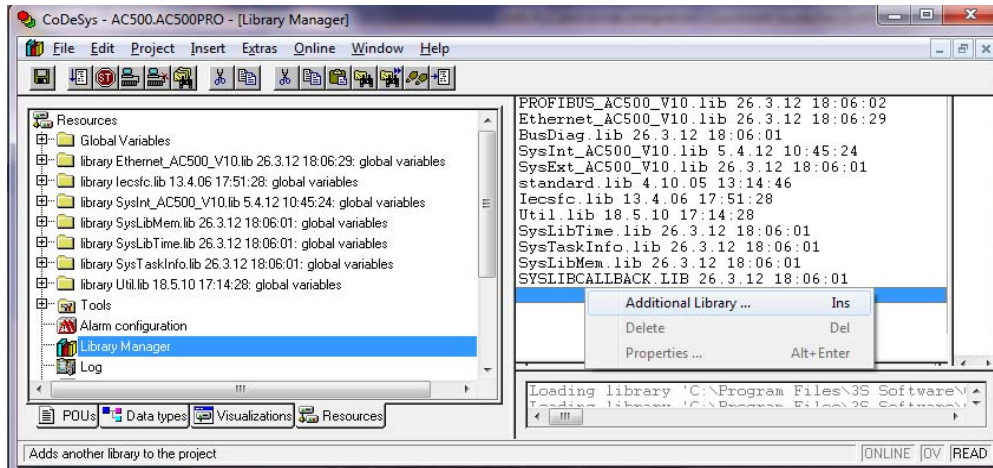


Quickstart Guide

ABB PLC and drives integration using PROFIBUS DP

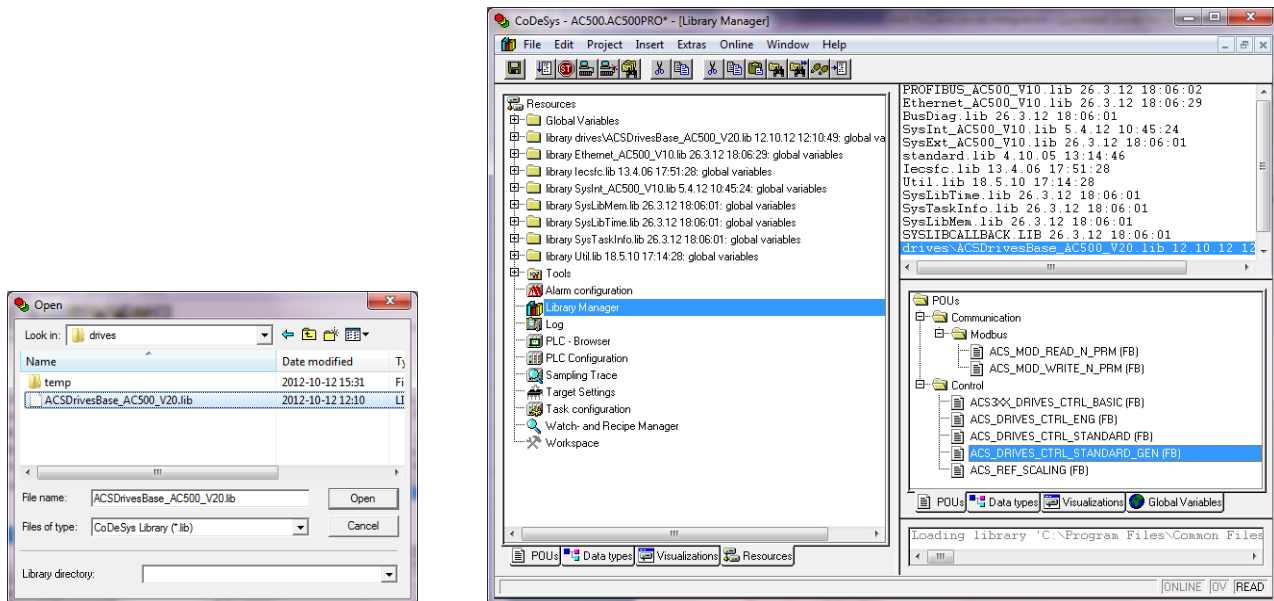
Library Manager

Open the Library Manager by double-clicking “Library Manager” from the “Resources” tab. Right-click in the library field and choose “Additional Library”.



Find your “ACSDrivesBase” library file and click “Open”. The library is added to the project.

Note! When copying projects, the used libraries must be found on the same library path as on the original PC. Otherwise a warning will show that a library cannot be found. If so, this red marked library has to be deleted and added newly from the now different path to the project.



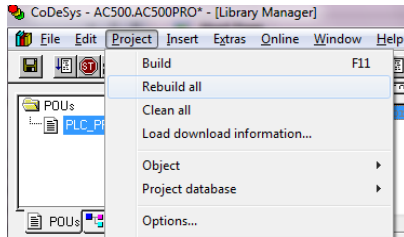
Quickstart Guide

ABB PLC and drives integration using PROFIBUS DP

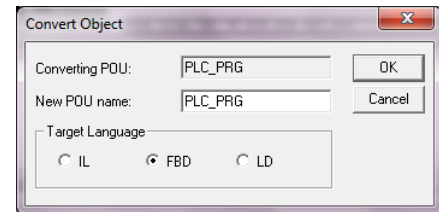
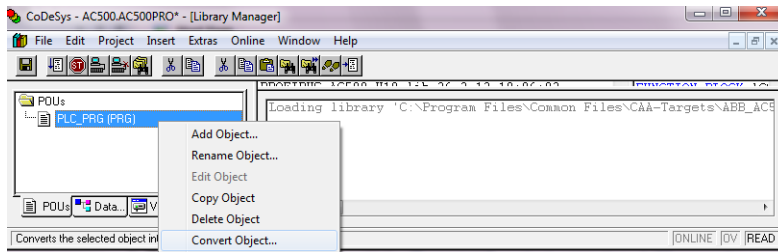
PLC logic

The following program handles a Speed control drive application.

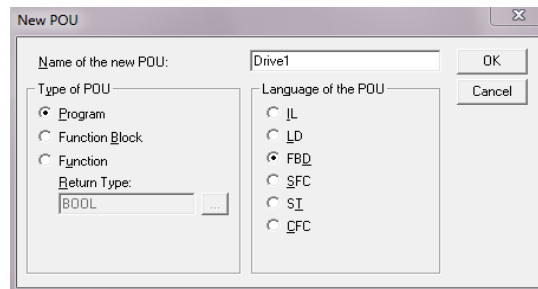
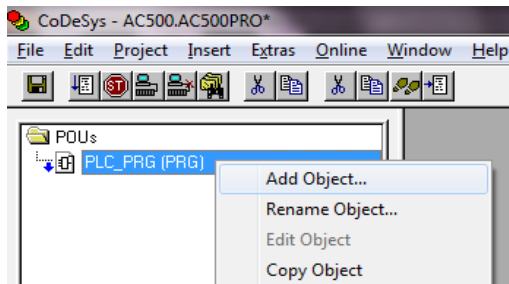
Compile your project, choose “Rebuild all” from the “Project” menu.



Right-click “PLC_PRG” in the “POUs” tab and choose “Convert Object”. Choose Target Language “FBD” and click “OK”.



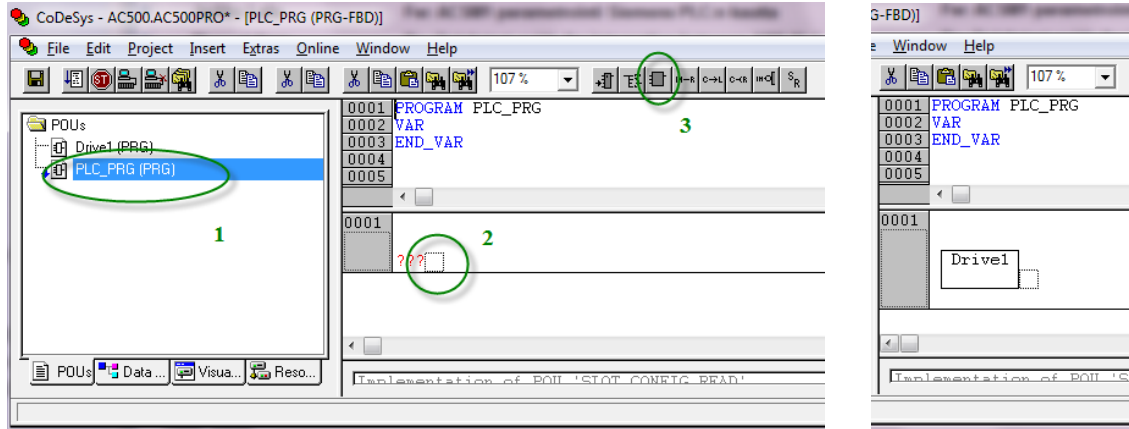
Right-click in the POU's field and choose “Add Object”. Set Type of POU to “Program” and Language of the POU to “FBD”, give the new Program a suitable name and click “OK”.



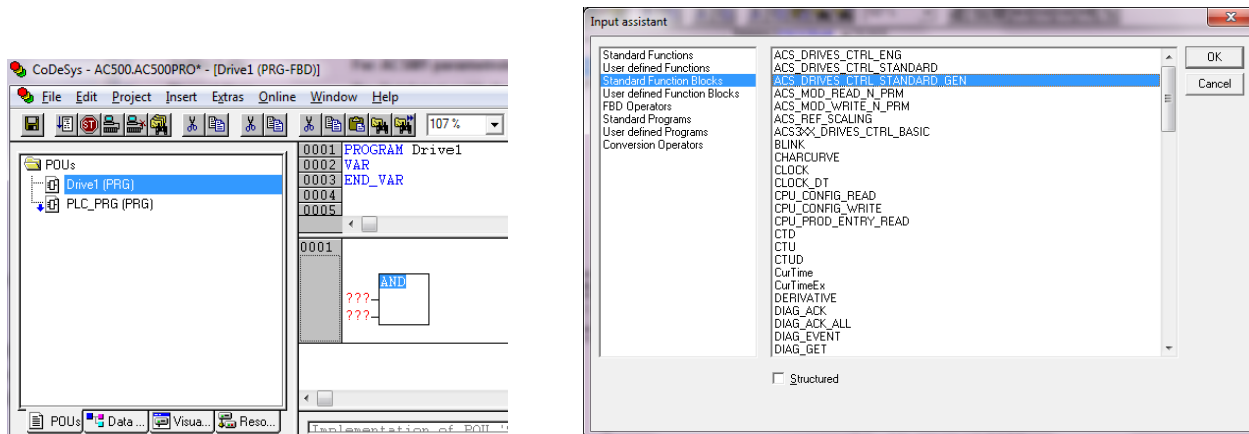
Quickstart Guide

ABB PLC and drives integration using PROFIBUS DP

Double-click “PLC_PRG” (1) to open the main program. Select the marked box (2) in Network 0001 and insert a box (3). Write the name of your new Program (PRG) to call for it from the main program.



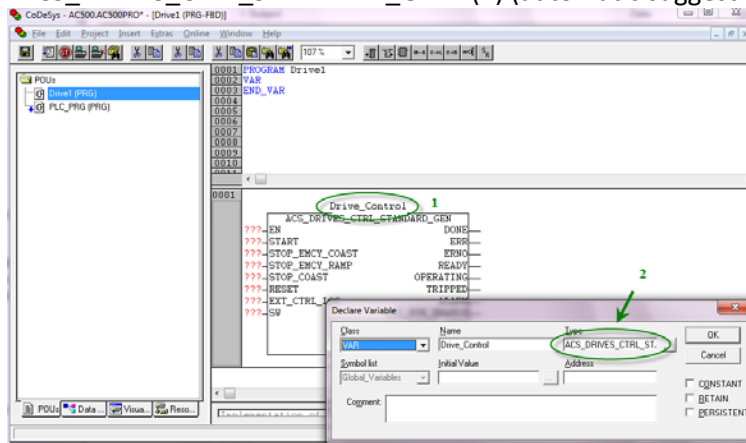
Double-click your new program and add a box as described above. This time, press F2 while the block title is selected and choose “ACS_DRIVES_CTRL_STANDARD_GEN” from “Standard Function Blocks”, then click “OK” (Tip: untick the “Structured” box in the Input assistant).



Quickstart Guide

ABB PLC and drives integration using PROFIBUS DP

Give the instance of the drive control block a suitable name (1) and declare the variable of type “ACS_DRIVES_CTRL_STANDARD_GEN” (2) (automatic suggestion).

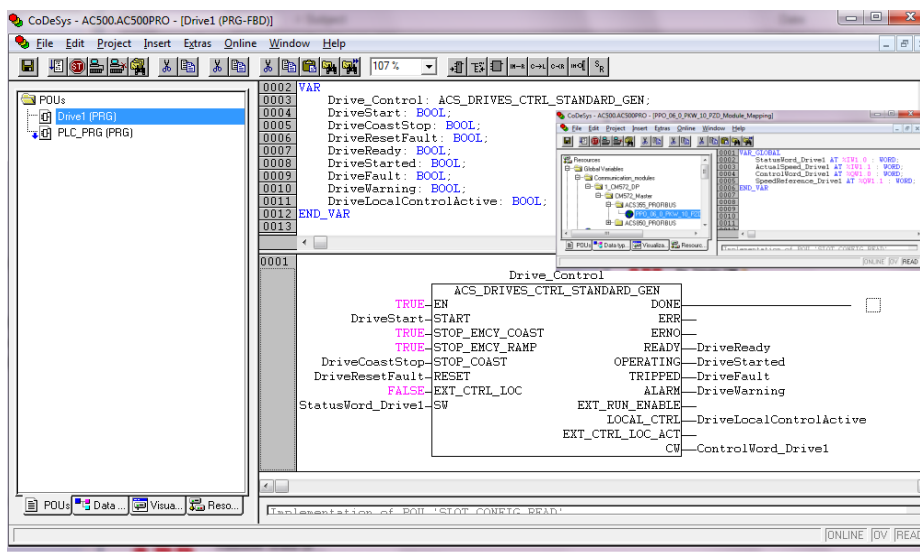


Connect the function block inputs and outputs according to your needs. In the example below, the block will always be enabled, emergency stop functions are not used, the drive is started by the variable “DriveStart”, ramp stop by setting “DriveStart” = FALSE, coast stop by setting “DriveCoastStop” = TRUE, fault reset by setting “DriveResetFault” = TRUE (positive edge).

The variables declared between “VAR” and “END_VAR” in the picture below are local variables and can only be accessed from the actual program (PRG) or from the Visualization objects (see chapter “Visualizations”).

Note! The variables connected to block inputs “SW” (Status Word) and “CW” (Control Word) must be the Global variables that belong to actual drive, see chapter “Global variables”.

Tip! Click inside the name of the function block and press F1 to open the description of the block in the online help.



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Create a second network (Ctrl +T) in the same program and add the block “ACS_REF_SCALING” in the same way as for “ACS_DRIVES_CTRL_STANDARD_GEN”. Connect the function block inputs and outputs according to your needs. In the example below, the block will always be enabled, “SPEED_SCALE_MAX” = 20000 for the ABB drives communication profile, “SPEED_REF_MAX” is set to the same value as the reference scaling parameter in the drive (for instance P11.05 in ACS355) and “DriveSpeedReference_rpm” is the variable used for setting the speed reference.

Note! The variables connected to “ACT_SPEED_FB” and “SPEED_REF_FB” must be the Global variables that belong to actual drive, see chapter “Global variables”.

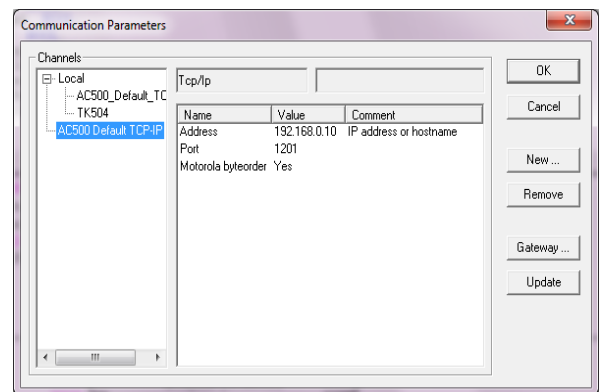
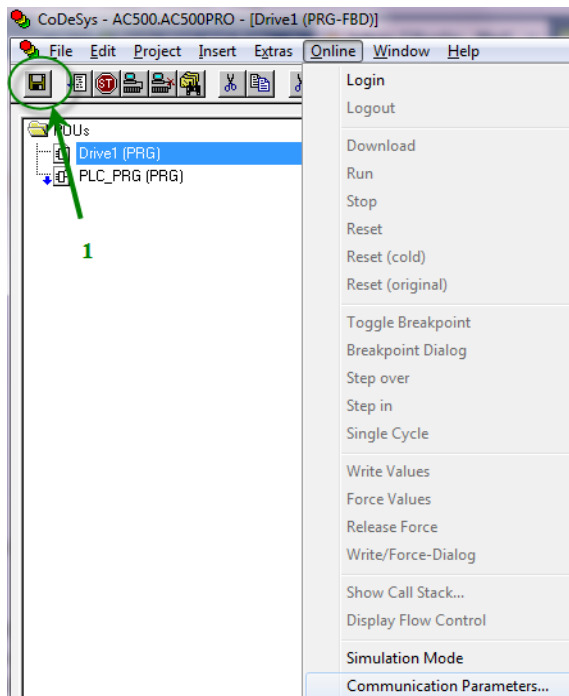
```
0001 PROGRAM Drive1
0002 VAR
0003   Drive_Control: ACS_DRIVES_CTRL_STANDARD_GEN;
0004   DriveStart: BOOL;
0005   DriveCoastStop: BOOL;
0006   DriveResetFault: BOOL;
0007   DriveReady: BOOL;
0008   DriveStarted: BOOL;
0009   DriveFault: BOOL;
0010   DriveWarning: BOOL;
0011   DriveLocalControlActive: BOOL;
0012   Drive_Reference: ACS_REF_SCALING;
0013   DriveSpeedReference_rpm: REAL;
0014   DriveActualSpeed_rpm: REAL;
0015 END_VAR

0001
    Drive_Control
    ACS_DRIVES_CTRL_STANDARD_GEN
    TRUE-EN
    DriveStart-START
    TRUE-STOP_EMCY_COAST
    TRUE-STOP_EMCY_RAMP
    DriveCoastStop-STOP_COAST
    DriveResetFault-RESET
    FALSE-EXT_CTRL_LOC
    StatusWord_Drive1-SW
    DONE
    ERR
    ERNO
    READY-DriveReady
    OPERATING-DriveStarted
    TRIPPED-DriveFault
    ALARM-DriveWarning
    EXT_RUN_ENABLE
    LOCAL_CTRL-DriveLocalControlActive
    EXT_CTRL_LOC_ACT
    CW-ControlWord_Drive1

0002
    Drive_Reference
    ACS_REF_SCALING
    TRUE-EN
    20000-SPEED_SCALE_MAX
    1500-SPEED_REF_MAX
    DriveSpeedReference_rpm-SPEED_REF
    ActualSpeed_Drive1-ACT_SPEED_FB
    TORQUE_SCALE_MAX
    TORQUE_REF_MAX
    TORQUE_REF
    ACT_TORQUE_FB
    DONE
    ERR
    ERNO
    SPEED_REF_FB-SpeedReference_Drive1
    ACT_SPEED-DriveActualSpeed_rpm
    TORQUE_REF_FB
    ACT_TORQUE
```

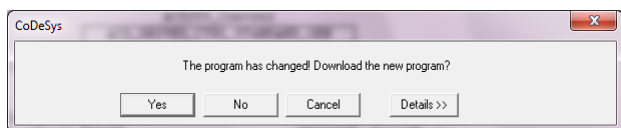
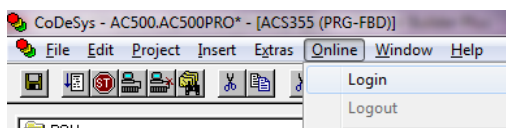
Download program to PLC

Save the program and choose “Communication Parameters” from the “Online” menu. Set communication Parameters according to your online connection. In the example below, the “Address” 192.168.0.10 corresponds to the IP address of actual CPU and is also the default IP address of AC500 CPUs. Note that in case of Ethernet connection, the IP address of your PC port or Ethernet adapter should belong to the same subnet as the CPU, 192.168.0.XXX (XXX between 1 and 255).



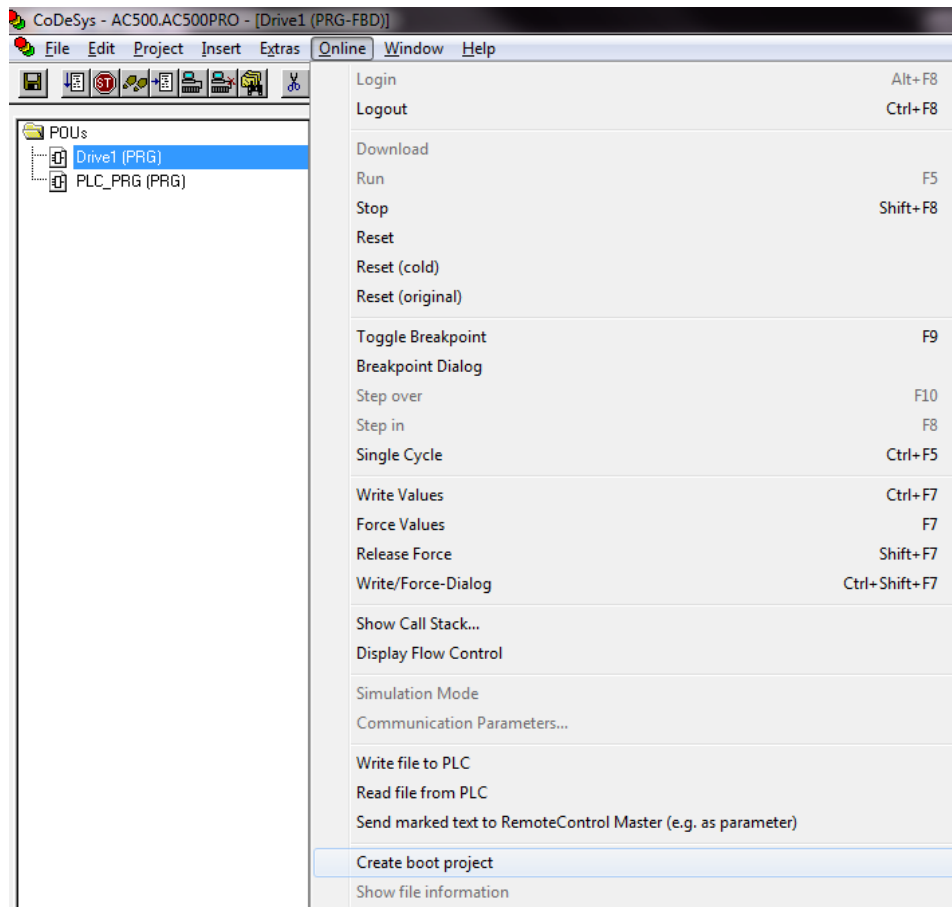
Choose “Login” from the “Online” menu and in the following pop-up window, click “Yes”. Then choose “Run” from the “Online” menu to start the PLC. Check that the CPU display shows “run”.

Note! If the display still shows “stop” you might have some PLC errors that you need to reset first. You can do that either by pressing the “DIAG” button on the PLC itself followed by the “OK” button until all errors are reset. You can also do it in online mode by using the “diagreset” command from the “PLC Browser” in the CODESYS “Resources” tab.



Create boot project

In “online” mode (Login), choose “Create boot project” from the “Online” menu. With this command, the compiled project is stored to the flash in such a way that the PLC will load it automatically when restarted.

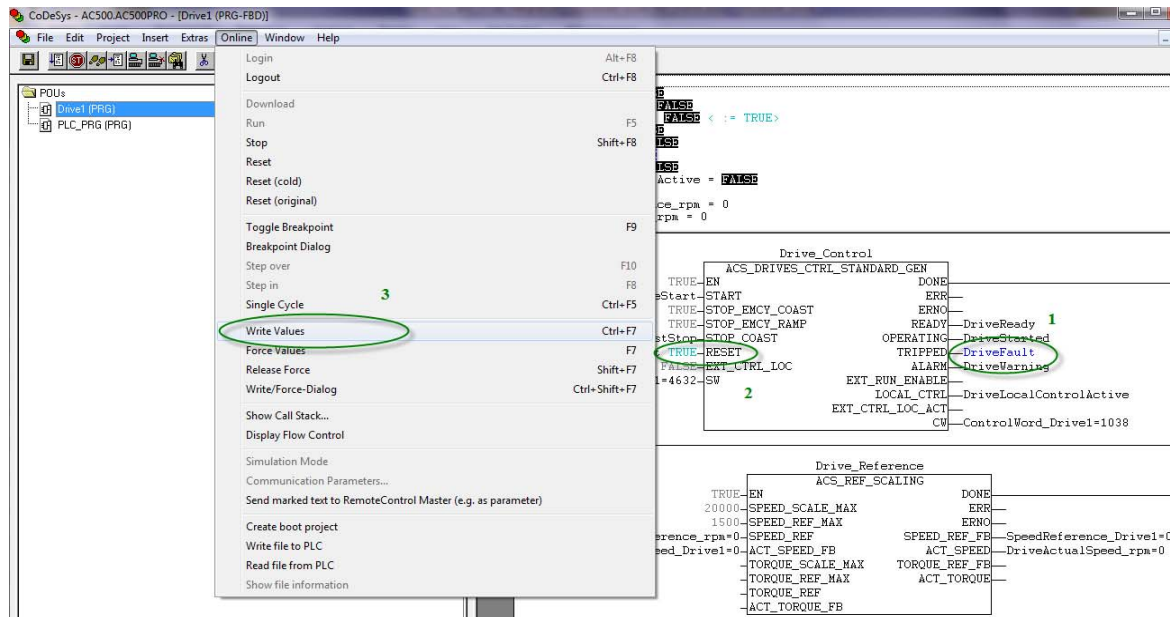


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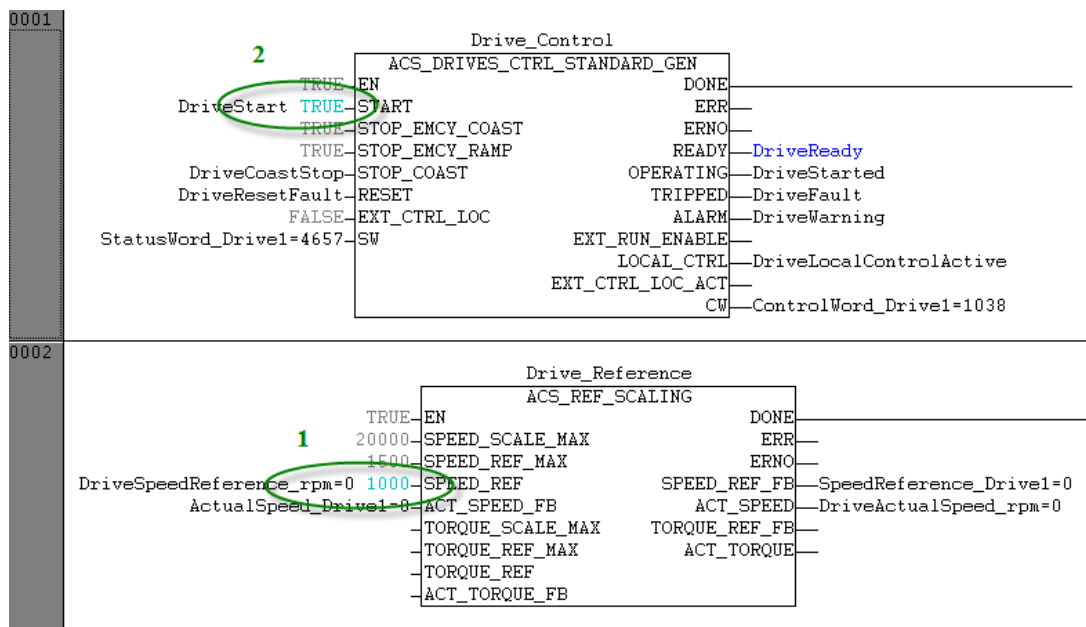
ABB PLC and drives integration using PROFIBUS DP

Test the program

Test your program. If the drive has an active fault ("TRIPPED" output is colored blue) (1), then try to reset by setting the "RESET" input = TRUE (2). Double-click the input variable and choose "Write Values" from the "Online" menu (3).



When the "READY" output is TRUE (blue), then set the "SPEED_REF" input (1) to desired speed (rpm value in this example) and set "START" input = TRUE (2). Write values from the Online menu or Ctrl+F7. Check that the drive starts and follows the given speed reference.

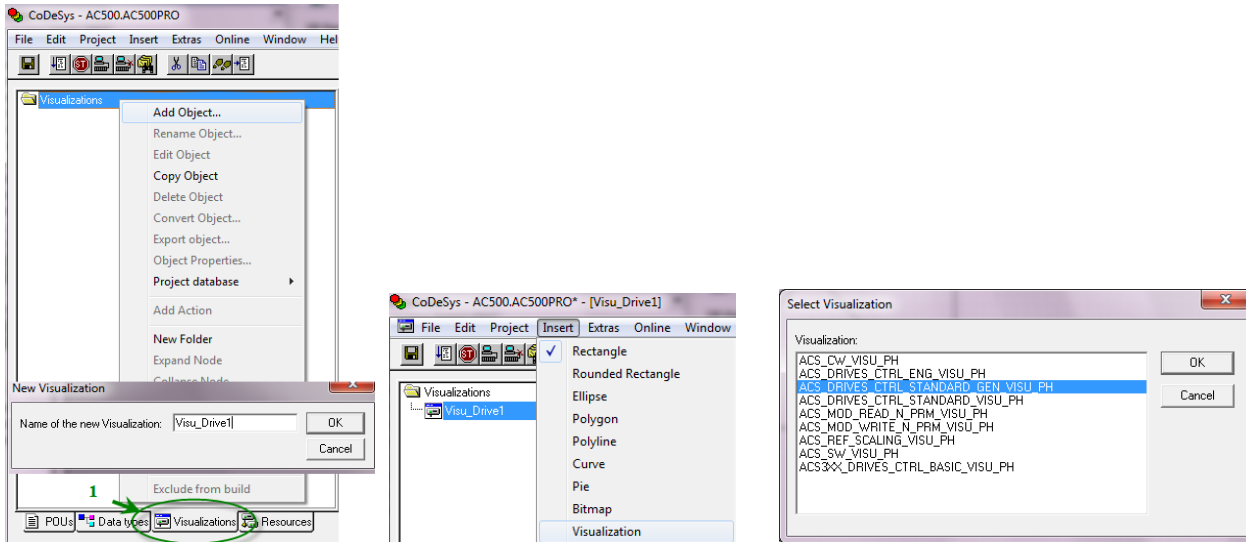


Quickstart Guide

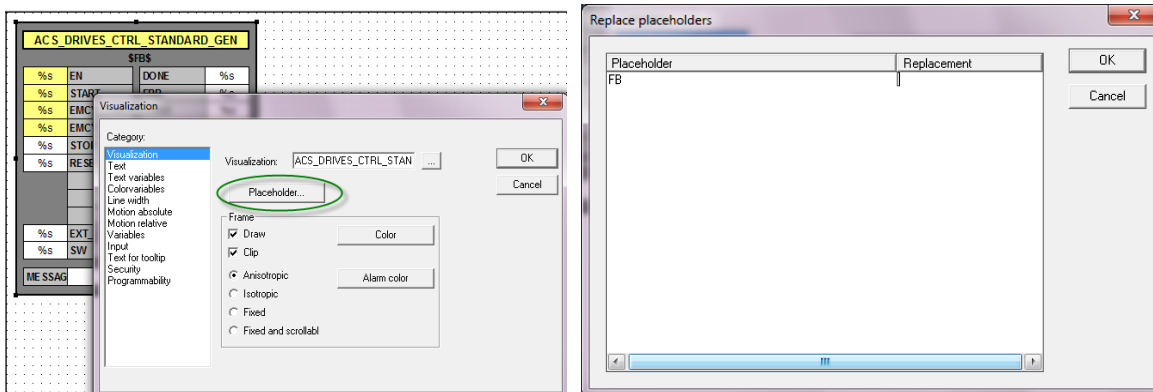
ABB PLC and drives integration using PROFIBUS DP

Visualizations

Visualizations are **optional** and can be a good way to test the communication between PLC and drive. Right-click “Visualizations” in the “Visualizations” tab (1) and choose “Add Object”, give the visualization page a suitable name. From the new page, choose “Visualization” from the “Insert” menu and draw a box. Select Visualization “ACS_DRIVES_CTRL_STANDARD_GEN_VISU_PH”.



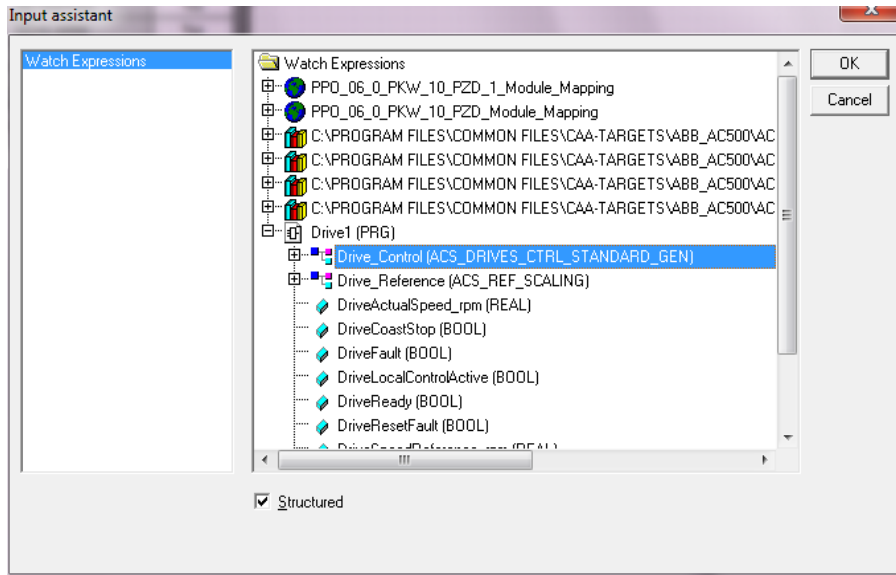
Double-click the new visualization object for Settings and click “Placeholder”. Select the “Replacement” field and press F2.



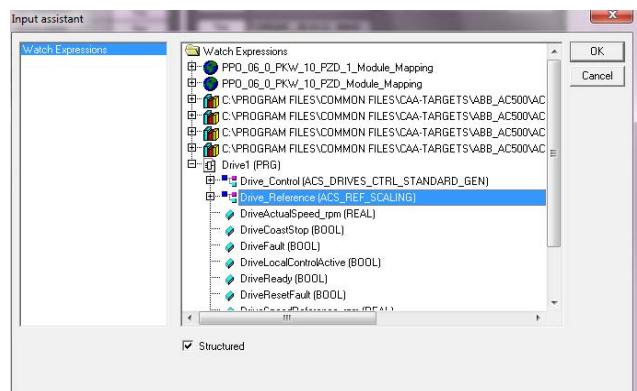
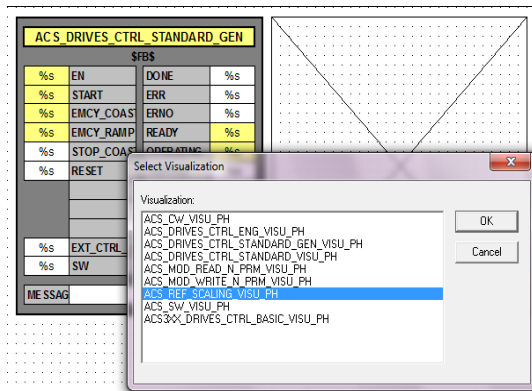
Quickstart Guide

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To make a connection to the instance of the function block “ACS_DRIVES_CTRL_STANDARD_GEN”, choose the instance from actual program (PRG) and click “OK” until all pop-up windows are closed. Tip: Tick the “Structured” box in the Input assistant window for a better overview.



On the same page, create a visualization window for the speed reference and actual speed. Insert → Visualization → Select “ACS_REF_SCALING_VISU_PH” → double-click the new object and click “Placeholder” → Press F2 from the “Replacement” field → Choose the instance of function block “ACS_REF_SCALING” → click “OK” until all pop-up windows are closed.



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Go online again by choosing “Login” from the “Online” menu and then “Run” from the same menu (if the PLC is not already in run mode).

The status of the function block inputs and outputs are now displayed in the visualization window. Block inputs which have not been connected to the function blocks in the program “PRG” can be changed from the visualization window.

Note! In this example all block inputs have already been connected to the function blocks, so they cannot be changed from the visualization view.

Some examples of what can be seen in the visualization:

- SW field: actual 16-bit Status Word from the drive.
- CW field: actual 16-bit Control Word sent from the PLC to the drive.
- SPEED_REF: speed reference, in this case in rpm.
- SPEED_REF_FB: unscaled speed reference sent from the PLC to the drive.
- ACT_SPEED_FB: unscaled value of the drive actual speed.
- ACT_SPEED: scaled value of the drive actual speed, in this case 1003 rpm.
- MESSAGE field: information about the actual state, e.g. “Operation” or “Wait for rising edge of START”.

The screenshot shows the CoDeSys software interface with two visualization windows open. The left window, titled 'ACS_DRIVES_CTRL_STANDARD_GEN', displays the 'Drive1.Drive_Control' block with various status and control fields. The right window, titled 'ACS_REF_SCALING', displays the 'Drive1.Drive_Reference' block with speed and torque reference and feedback fields. Both windows show real-time data values.

ACS_DRIVES_CTRL_STANDARD_GEN			
Drive1.Drive_Control			
TRUE	EN	DONE	TRUE
TRUE	START	ERR	FALSE
TRUE	EMCY_COAST	ERNO	0
TRUE	EMCY_RAMP	READY	TRUE
FALSE	STOP_COAST	OPERATING	TRUE
FALSE	RESET	TRIPPED	FALSE
		ALARM	FALSE
		EXT_RUN_EN	TRUE
		LOCAL_CTRL	FALSE
FALSE	EXT_CTRL_LOC	EXT_CTRL_LOC	FALSE
4919	SW	CW	1151
MESSAGE		Operation	

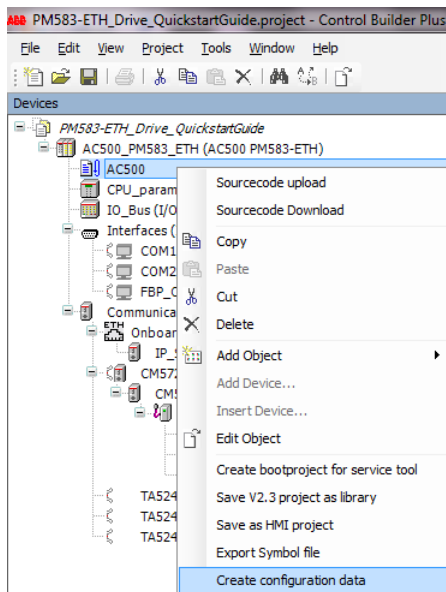
ACS_REF_SCALING			
Drive1.Drive_Reference			
TRUE	EN	DONE	TRUE
20000	SPEED_SCALE_MAX	ERR	FALSE
1500	SPEED_REF_MAX	ERNO	0
1000.00	SPEED_REF	SPEED_REF_FB	13333
13382	ACT_SPEED_FB	ACT_SPEED	1003.65
10000	TORQUE_SCALE_MAX		
100	TORQUE_REF_MAX		
0.00	TORQUE_REF	TORQUE_REF_FB	0
0	ACT_TORQUE_FB	ACT_TORQUE	0.00

Go offline by choosing “Logout” from the “Online” menu.

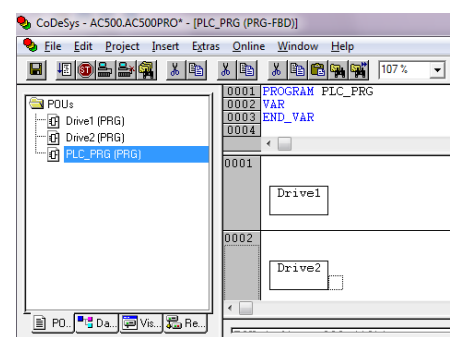
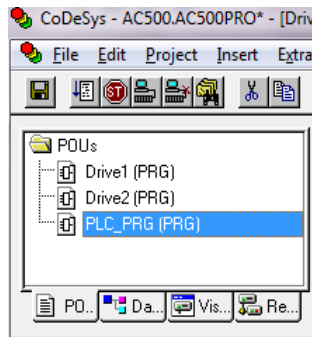
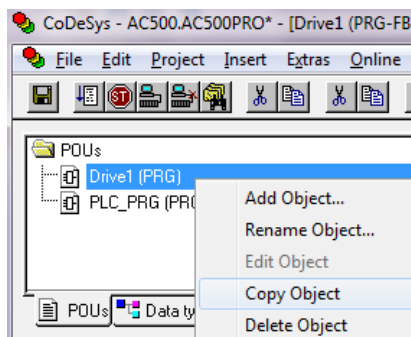
Add more drives (optional)

If you have not already added the additional drives to the hardware, then follow the instructions in chapter “Hardware configuration” → “Add more drives”.

When the new drives are added, right-click the “AC500” symbol and choose “Create configuration data” to update Global variables. This must be done in offline mode so make sure to Logout from the “Online” menu in CODESYS before.



In the CODESYS “POUs” tab, right-click the program for your earlier drive and choose “Copy Object”, give the new program a suitable name and double-click “PLC_PRG”. Add the new program to the main program by copying Network 0001 to Network 0002 and rename the block in Network 0002 to according to your new program.



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Double-click and open the new program. The variables connected to block inputs/outputs “SW”, “CW”, “ACT_SPEED_FB” and “SPEED_REF_FB” are global (do not belong only to this program) and must be changed according to the “new” drive in the Global variable list.

The screenshot displays the CoDeSys - AC500.AC500PRO* - [Drive2 (PRG-FBD)] window. The left pane shows the project structure with 'Drive2 (PRG)' selected. The main editor shows the ladder logic for Drive2, including variable declarations and function block calls. The 'Drive_Control' block is connected to 'StatusWord_Drive2-SW' and 'ControlWord_Drive2-CW'. The 'Drive_Reference' block is connected to 'SpeedReference_Drive2-SPEED_REF_FB' and 'DriveActualSpeed_rpm-ACT_SPEED_FB'.

```
0001 PROGRAM Drive2
0002 VAR
0003   Drive_Control: ACS_DRIVES_CTRL_STANDARD_GEN;
0004   DriveStart: BOOL;
0005   DriveCoastStop: BOOL;
0006   DriveResetFault: BOOL;
0007   DriveReady: BOOL;
0008   DriveStarted: BOOL;
0009   DriveFault: BOOL;
0010   DriveWarning: BOOL;
0011   DriveLocalControlActive: BOOL;
0012   Drive_Reference: ACS_REF_SCALING;
0013   DriveSpeedReference_rpm: REAL;
0014   DriveActualSpeed_rpm: REAL;
0015 END_VAR
0016
```

0001

Drive_Control

ACS_DRIVES_CTRL_STANDARD_GEN

TRUE EN

DriveStart-START

TRUE STOP_EMCY_COAST

TRUE STOP_EMCY_RAMP

DriveCoastStop-STOP_COAST

DriveResetFault-RESET

FALSE EXT_CTRL_LOC

StatusWord_Drive2-SW

DONE

ERR

ERNO

READY-DriveReady

OPERATING-DriveStarted

TRIPPED-DriveFault

ALARM-DriveWarning

EXT_RUN_ENABLE

LOCAL_CTRL-DriveLocalControlActive

EXT_CTRL_LOC_ACT

CW-ControlWord_Drive2

0002

Drive_Reference

ACS_REF_SCALING

TRUE EN

20000 SPEED_SCALE_MAX

1500 SPEED_REF_MAX

DriveSpeedReference_rpm-SPEED_REF

ActualSpeed_Drive2-ACT_SPEED_FB

TORQUE_SCALE_MAX

TORQUE_REF_MAX

TORQUE_REF

ACT_TORQUE_FB

DONE

ERR

ERNO

SPEED_REF_FB-SpeedReference_Drive2

ACT_SPEED-DriveActualSpeed_rpm

TORQUE_REF_FB

ACT_TORQUE

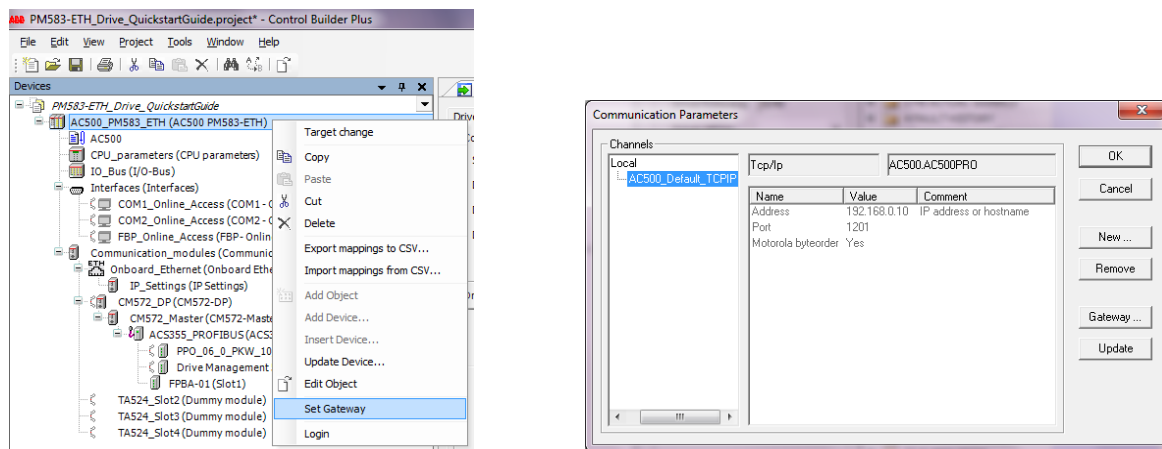
Continue to add as many drives as you need. If you want to create visualization pages/objects for the additional drives, make sure that you connect the Placeholders to the function block instances for the correct program (PRG), “Drive2” in this example.

Drive Manager

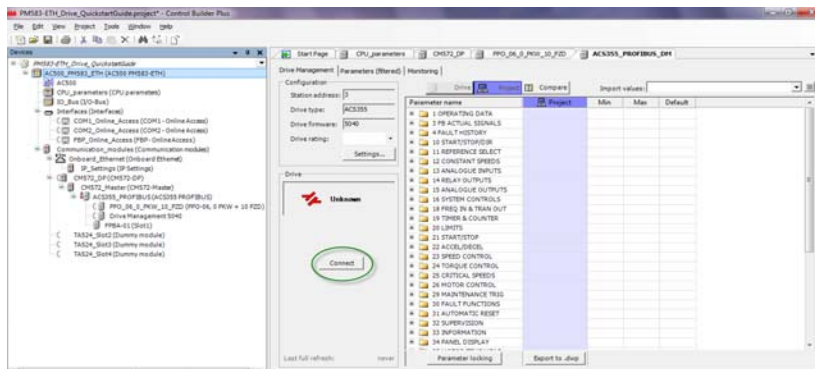
The following steps need to be fulfilled before connection to the drive can be established from Drive Manager (see also chapter “Drive configuration”):

1. Activate the drive fieldbus module from drive parameters (activate fieldbus module, set correct node number and update fieldbus settings).
2. Download the Control Builder Plus project to the PLC from CODESYS (Online → Login).
3. Set the PLC in “Run” mode from CODESYS (Online → Run).

Set Gateway for connection to PLC and drives. Right-click the target line and choose “Set Gateway”, see picture below. Choose the correct communication parameters, see example below for Ethernet connection to an AC500 with default settings (IP address 192.168.0.10). If Ethernet is used, make sure the Ethernet port of your PC is in the same subnet as the PLC (192.168.0.XXX), see also description in chapter “Download program to PLC”.



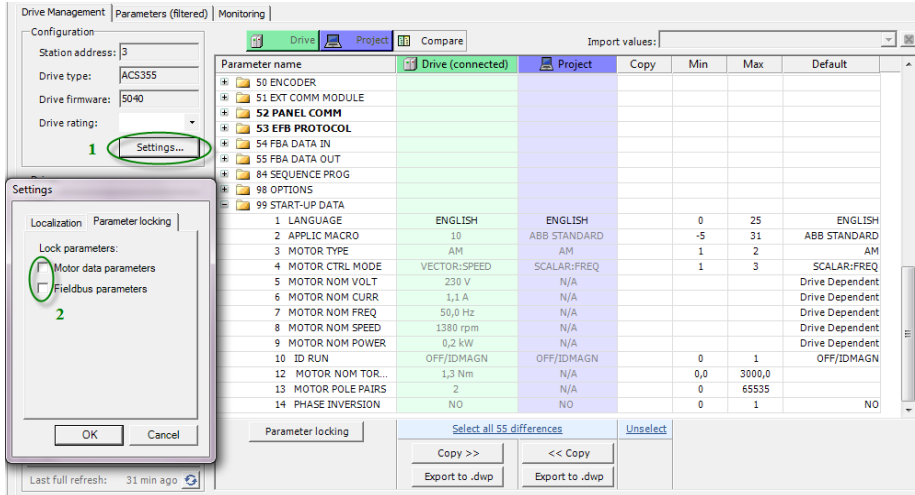
Start Drive Manager by double-clicking “Drive Management XXXX” under actual drive and click the “Connect” button.



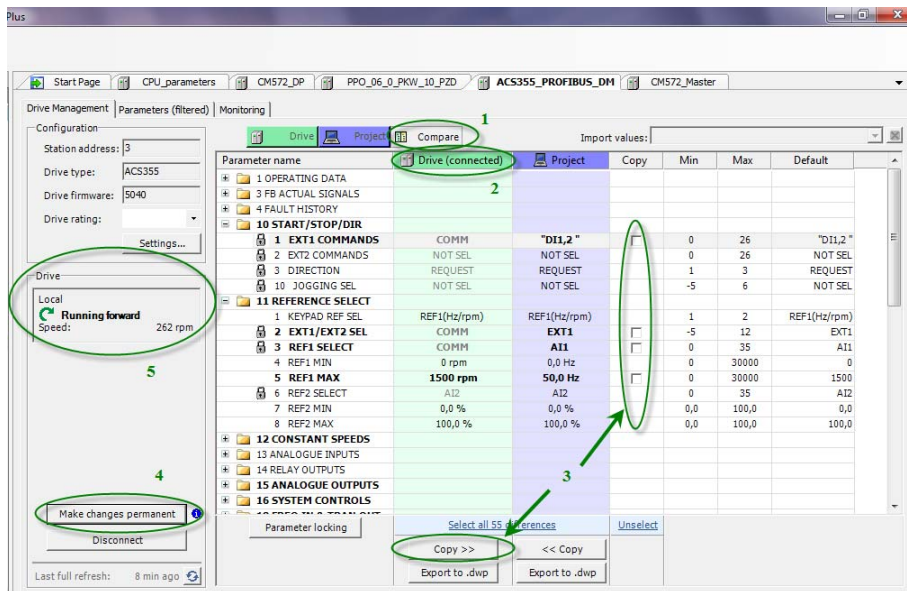
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To allow settings in “Motor data parameters” and “Fieldbus parameters”, click the “Settings” button (1) and untick the boxes in the “Parameter locking” tab.



Open the “Compare” view (1) and make your online drive parameter settings in the “Drive (connected)” column (2). If you want to copy the online parameter values to your complete project, tick the boxes for the parameters you want to copy in the “Copy” column and then click “Copy >>” (3). Parameters in **bold** indicate that there are differences in parameter settings between the online drive and the project file. To save your parameter settings to the flash memory of the drive (keep settings even after power down), click the “Make changes permanent” button (4). The “Drive” field shows the drive’s actual status (5).



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General Drive Manager tips

Monitor the status of all your drives in a single view. Connect the drives you want to see one by one by double-clicking “DriveManagement” (1) and then “Connect” (2) for actual drives. Then choose “Drive Overview” from the “Tools” menu.

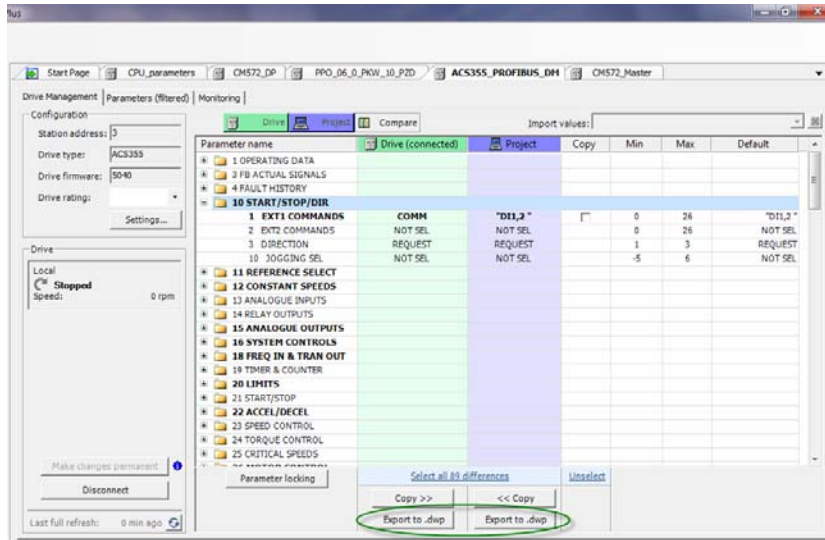
The screenshot displays the Control Builder Plus software interface. On the left, the 'Devices' tree shows the project structure, including 'ACS500_ABBDrives_PB_Demo'. The 'Drive Management' window is open, showing a list of drives. A red 'Disconnected' status is visible. A green circle highlights the 'Connect' button. To the right, the 'Tools' menu is open, showing the 'Drive Overview' option. Below the screenshot, a table titled 'Drive overview' provides a summary of the connected drives.

Drive Name	Drive Type	Firmware Version	Status	Speed
ACS850_PROFIBUS	ACS850 PROFIBUS	UIFI2200	750	
ACSM1_Motion_PROFIBUS	ACSM1 Motion PROFIBUS	UMFI1600	1048	
ACS880_PROFIBUS	ACS880 PROFIBUS	AINF0 1.10.0.0	0	
ACS355_PROFIBUS	ACS355 PROFIBUS	5040	750	
ACSM1_Speed_PROFIBUS	ACSM1 Speed PROFIBUS	UMFI1600	0	

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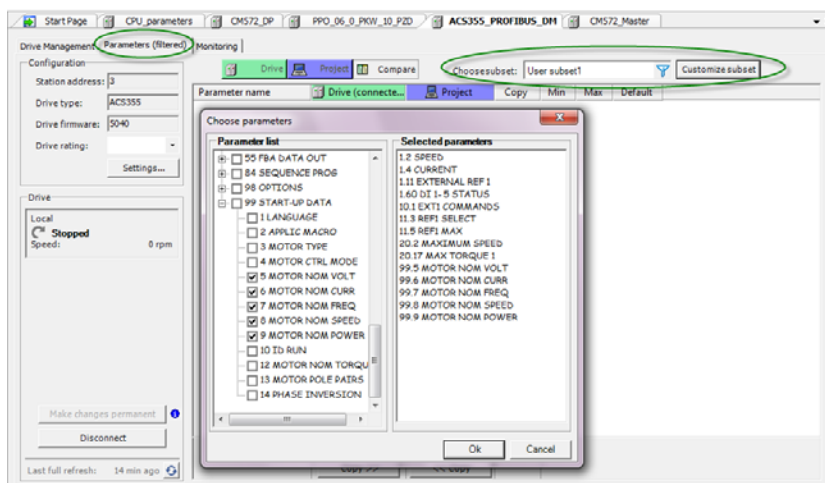
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Export your Online (Drive (connected)) or Project parameter file to drive-specific pc tool format. For example “.dwp” (ACS355), “.dsp” (ACS850, ACSM1) or “.dcpparamsbak” (ACS880). These files will be possible to open from *DriveWindow Light* (ACS355), *DriveStudio* (ACS850, ACSM1) or *Drive Composer* (ACS880).



Open the predefined parameter subset for a list with only the most common parameters. Open the “Parameters (filtered)” tab and choose “Default subset” from the “Choose subset” menu.

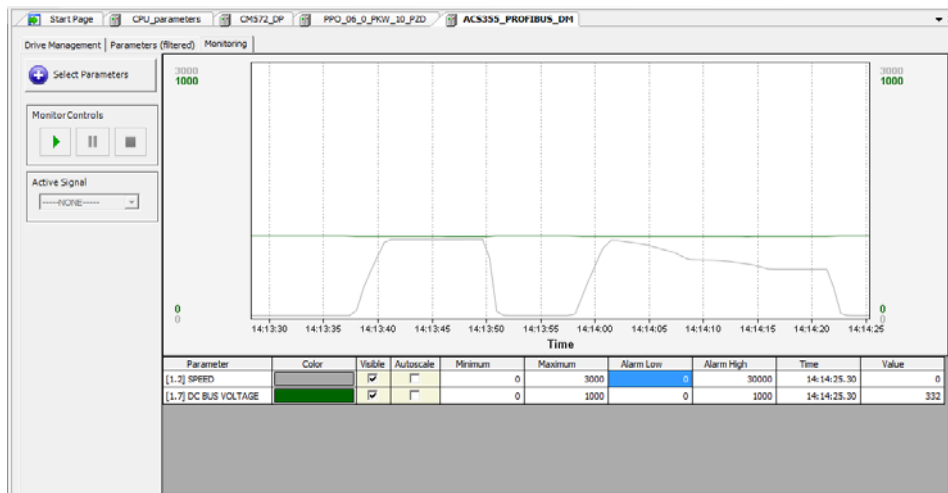
Or create your own parameter subset for a list with your preferred parameters. From the “Parameters (filtered)” tab, choose one of the User subsets from the “Choose subset” menu and click “Customize subset”. Then add parameters of your choice.



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Monitor drive signals from the “Monitoring” tab.



Check out more tips in Control Builder Plus → Help → Contents → Drive Manager.

Other useful documentation

- ABB Configurator Help (Contents → Control Builder Plus → Drive Manager)
- CODESYS Help (Contents → Target system → AC500 / S500 → ACS Drives Libraries)
- User's manual FPBA-01 PROFIBUS DP adapter module [3AFE68573271]
- User's manual PROFIBUS DP Adapter Module RPBA-01 [3AFE64504215]
- User's manual ACS355 drives [3AUA0000066143]
- ACS850 Firmware Manual Standard Control Program [3AUA0000045497]
- Firmware manual ACS880 primary control program [3AUA0000085967]
- ACSM1 Firmware Manual Speed and Torque Control [3AFE68848270]
- ACSM1 Firmware Manual Motion Control [3AFE68848270]
- User's Manual ACS550-01 Drives [3AUA0000001418]
- Firmware Manual ACS800 Standard Control Program [3AFE64527592]

Revision

Rev	Page (P) Chap (C)	Description	Date
A	-	New document	2012-11-26
B		New Safety Instructions, Update (C) Starting up ACSxxx	2013-02-01
C		Update (C) Starting up ACSxxx Update (C) Install PS553-Drives library	2013-03-22
D	P 17	Corrections ACS550 Minimum Parameters	2013-05-13
E	P 16	Correction for ACSM1: Ext1/2 to Par34.01	2013-07-15

For more information please contact your local ABB
representative or visit:
www.abb.com/drives
www.abb.com/drivespartners

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