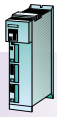
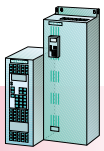




Communication package for SIMATIC S5

The SIMATIC optional software package "DVA_S5" is available for integrating variable-speed drives such as SIMOREG and SIMOVERT into the higher-level control system STEP 5 (version ≥ 6.0) of SIMATIC S5.

This software supports communication between SIMATIC and Siemens drive units (SIMOVERT MASTERDRIVES) via PROFIBUS DP and the USS protocol. It enables the SIMATIC programmer to integrate communication with the drives into his control program without the need for detailed knowledge of the indicated communication systems, SIMATIC communication and the mechanisms of drive-related user data transfer. The user thus reduces programming time and costs.

Example programs are available for demonstrating the required configuration steps and can also be directly adopted by the user in his application.

Detailed documentation on every software component is included in the scope of supply.

Scope of supply	Order No.	Supplied as	Documentation
"DVA_S5" option software for SIMATIC S5 (STEP 5 > V 6.0)			
• **"PROFIBUS DP" communication software** for S5-95U/DP-Master S5-115 ... 155U with IM308-B/C	**6DD1800–0SW0**	3.5" floppy disk	German/English
• **"USS Protocol" communication software** for S5-95/S5-100 with CP 521Si S5-115 to S5-155U with CP 524			

Example of the user interface for a drive using PPO type 1 (SIMATIC S5, PROFIBUS DP communication)

DBW n	Communication control word (KSTW)		Communication control	
DBW n + 2	Internal			
DBW n + 4	Communication indicator word		Communication tracking	
DBW n + 6	Internal		PKW attempt counter	
DBW n + 8	Pafe 1-byte, Pafe 2-byte		Parameter error	
DBW n + 10	Parameter ID	PKE		
DBW n + 12	Index	IND	Intermediate memory for current PKW task	
DBW n + 14	Parameter value 1	PWE1		
DBW n + 16	Parameter value 2	PWE2		
DBW n + 18	Parameter ID	PKE		
DBW n + 20	Index	IND	PKW area	
DBW n + 22	Parameter value 1	PWE1		
DBW n + 24	Parameter value 2	PWE2		transmit mailbox
DBW n + 26	Control word (STW)	PZD1	PZD area	
DBW n + 28	Main setpoint (HSW)	PZD2		
DBW n + 30	Parameter ID	PKE		
DBW n + 32	Index	IND	PKW area	
DBW n + 34	Parameter value 1	PWE1		
DBW n + 36	Parameter value 2	PWE2		receive mailbox
DBW n + 38	Status word (ZSW)	PZD1	PZD area	
DBW n + 40	Main actual value (HIW)	PZD2		
(n = 2, 4, 6 ...)				

Software requirements

- STEP 5 – from version 6.x (DVA_S5).

Software functions

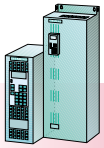
One or more data blocks form the user interface (see overview above) for the transfer of user data between the SIMATIC program and the drives.

Two function blocks are available for transmitting and receiving these user data.

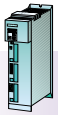
A further function block supports generation and presetting of the data blocks necessary for communication.

The performance characteristics are as follows:

- Generation of data blocks for communication depending on the configured bus configuration
- Presetting of these data blocks
- Cyclic user data transfer
- Execution and monitoring of parameter tasks.



Compact and chassis units



Compact PLUS units

Operator control, visualization and communication with SIMATIC

Start-up, parameterization and diagnostics with DriveMonitor

The DriveMonitor computer program can be used for control and visualization of SIMOVERT MASTERDRIVES by means of a graphic user interface.

Designation	Order No.	Supplied as
DriveMonitor Version ≥ 5.1 for SIMOVERT MASTERDRIVES with documentation (operating instructions, Compendium, 5 languages)		
Supplied separately	**6SX7010–0FA10**	CD-ROM
Interface converter SU1 RS 232 C – RS 485, incl. mounting accessories; Power supply: 115/230 V AC	**6SX7005–0AA00**	–
Combination cable for the firmware boot function and DriveMonitor (RS 232 C). Pre-assembled signal cables with a boot switch integrated in the cable connector housing for boating firmware. In addition, the cable can be used for DriveMonitor (RS 232 C). Length 3 m (9.8 ft).	**9AK1012–1AA00**	–

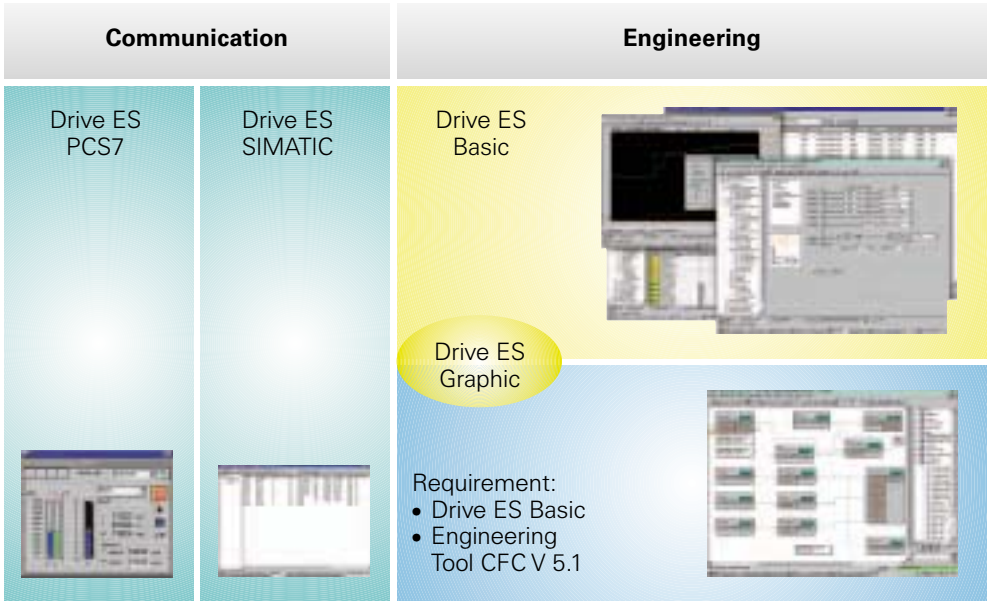
Selection and ordering data

Engineering package Drive ES

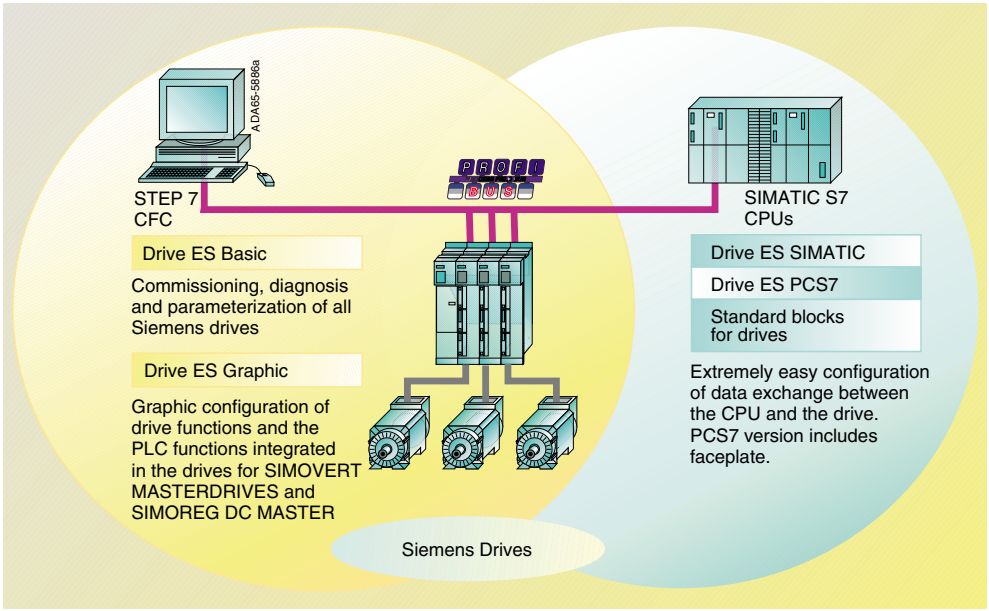
With Drive ES (*D*rive *E*ngineering *S*ystem) the SIMOVERT MASTERDRIVES series can be fully integrated into the SIMATIC automation world with regard to communication, configuring and data management.

Drive ES consists of four individually available software packages: Drive ES Basic, Drive ES Graphic, Drive ES SIMATIC and Drive ES PCS7.

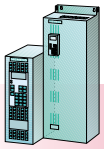
- Drive ES Basic is the basic software for assigning parameters to all drives online and offline, and the basis for the Drive ES Graphic software.
- Drive ES Graphic is the software for the graphic online and offline configuring of BICO function blocks. Requirements are an installed Drive ES Basic and an installed SIMATIC CFC ≥ V 5.1 (graphic programming tool, see Catalog ST 70, Industrial software).
- Drive ES SIMATIC requires an installed STEP 7. It provides its own SIMATIC library, allowing simple and reliable programming of the PROFIBUS DP interface in the SIMATIC CPU for the drives.
- Drive ES PCS7 requires an installed SIMATIC PCS7, version 5.0 or greater. Drive ES PCS7 provides a library with function blocks for the drives and the associated faceplates for the operator station. It is therefore possible for an operator to control the drives from the PCS7 process control system.



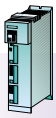
Product structure Drive ES



Distribution of tasks for the Drive ES packages



Compact and chassis units



Compact PLUS units

Engineering system Drive ES

Drive ES Basic

- Drive ES is based on the user interface of the STEP 7 manager.
- Parameters and charts of drives are available in the STEP 7 manager (system-wide data management).
- Drive ES ensures the unique assignment of parameters and charts to a drive.
- Archiving of a SIMATIC project including drive data
- Facility for using SIMATIC Teleservice (V5)
- Communication via PROFIBUS DP or USS with the drive

Functions

- Trace evaluation for SIMOVERT MASTERDRIVES
- Reading out of the fault memory for SIMOVERT MASTERDRIVES
- Upread and download of parameter sets (as a complete file or as difference file from factory setting)
- Free assembly and editing of parameter sets
- Utilization of script files
- Controlled commissioning for SIMOVERT MASTERDRIVES

Installation with STEP 7

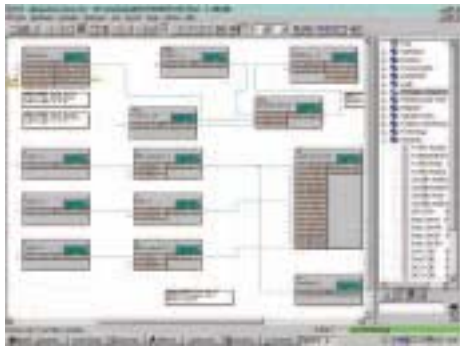
Drive ES Basic can be installed as an option for STEP 7 (≥ V 5.0), becoming homogeneously integrated in the SIMATIC environment.

Installation without STEP 7

Drive ES Basic can also be installed without STEP 7, by providing its own drive manager (based on the SIMATIC manager).

Drive ES Graphic

- Function charts are saved drive-specific in SIMATIC CFC format
- Configuring of drive functions in BICO technology with SIMATIC CFC
- Offline functionality
- Test mode (online functionality) with Change connection, Change value, Activate block
- Readback and reverse documentation
- For SIMOVERT MASTERDRIVES Vector Control software version ≥ 3.2 and Motion Control software version ≥ 1.3.



Graphic programming with Drive ES Graphic and CFC

Drive ES SIMATIC

- Provides function blocks and examples of projects for the SIMATIC CPU which handle communication via PROFIBUS DP or USS with Siemens drives.
- Communication set-up via parameters as opposed to programming.

Features

- Blocks in STEP 7 design; symbolic addressing; function blocks with entity data, online help
- Can be used in all SIMATIC programming and configuring environments such as LAD, FBD, STL, SCL, CFC.
- New block structure: modular individual functions for runtime-optimized programming

Block functions

- Writing and reading of process data of freely configurable length and consistency
- Cyclic and acyclic exchange of parameters, monitoring of communication, reading out of fault memory from SIMOVERT MASTERDRIVES
- Parameter download via the CPU to the drive.

Integration of the drives into the STEP 7 manager

- Complete reparameterization after converter exchange at the push of a button from the CPU.

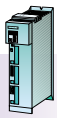
Drive ES PCS7

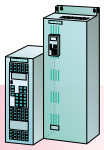
- Incorporates the drives with PROFIBUS DP-interface in PCS 7.
- For use with STEP 7 or PCS 7, ≥ V 5.

Block functions

- Image and control blocks for incorporating drives in PCS 7 (SIMOVERT MASTERDRIVES with speed interface).

Selection and ordering data





Integration of drives in SIMATIC S7 with Drive ES

Drive ES Basic is used for convenient start-up, servicing and diagnostics of Siemens drives. It can be integrated in STEP 7 or installed on a PC/PG as a stand-alone version.
For the stand-alone version, Drive ES Basic installs a drive manager instead of the SIMATIC manager but the drive manager has the same look and feel. For integrated installation as an option for STEP 7, the basic STEP 7 version as indicated in the ordering data must be used.

In conjunction with the SIMATIC tool CFC (Continuous Function Chart), Drive ES Graphic is an option for Drive ES Basic and used for the graphic configuring of functions provided in SIMOVERT MASTERDRIVES (base unit, free block and technology functions). Prerequisite: A Drive ES Basic V 5 and a CFC > V 5.1 must already have been installed on the computer.

Drive ES SIMATIC makes SIMATIC block libraries available, so that configuring the communication between SIMATIC S7 and Siemens drives (e.g. SIMOVERT MASTERDRIVES) only involves simple parameter assignment. Drive ES SIMATIC replaces the DVA_S7 software package for all STEP 7 versions ≥ V 5.0 and can also be installed and used independently, i.e. without Drive ES Basic.

Drive ES PCS7 provides a block library with image and control blocks with which Siemens drives (e.g. SIMOVERT MASTERDRIVES) can be integrated in the SIMATIC PCS7 process control system on the basics of a speed interface. The drives can then be controlled and visualized from the operator station (OS) via the drive faceplates. The PCS7 library can also be used independently, i.e. without Drive ES Basic, under PCS7 versions V 5.0 and V 5.1.

Scope of supply	Order No.	Supplied as	Documentation
Software packages Drive ES · Installation as integrated option for STEP 7 from version ≥ V 5.0			
Drive ES Basic V 5.0[1] Single license	**6SW1700–0JA00–0AA0**	1 CD-ROM	five standard languages
Drive ES Graphic V 5.0 Single license	**6SW1700–0JB00–0AA0**	1 CD-ROM	five standard languages
Drive ES SIMATIC V 5.0 Single license	**6SW1700–0JC00–0AA0**	1 CD-ROM	five standard languages
Software packages Drive ES · Installation as integrated option for STEP 7 from version ≥ V 5.1			
Drive ES Basic V 5.1[1] Single license	**6SW1700–5JA00–1AA0**	1 CD-ROM	five standard languages
Drive ES Basic V 5.1[1] copy license (60 installations)	**6SW1700–5JA00–1AA1**	1 CD-ROM	five standard languages
Drive ES Graphic V 5.1 Single license	**6SW1700–5JB00–1AA0**	1 CD-ROM	five standard languages
Drive ES SIMATIC V 5.1 Single license	**6SW1700–5JC00–1AA0**	1 CD-ROM	five standard languages
Drive ES PCS7 V 5.1 Single license	**6SW1700–5JD00–1AA0**	1 CD-ROM	five standard languages
Software packages Drive ES · Installation as integrated option for STEP 7 from version ≥ V 5.2			
Drive ES Basic V 5.2[1] Single license	**6SW1700–5JA00–2AA0**	1 CD-ROM	five standard languages
Drive ES Basic Upgrade[1] **V 5.x → V 5.2** Single license	**6SW1700–5JA00–2AA4**	1 CD-ROM	five standard languages
Drive ES Basic V 5.2[1] copy license (60 installations)	**6SW1700–5JA00–2AA1**	1 CD-ROM + Copy license contract	five standard languages
Drive ES Graphic V 5.2 Single license	**6SW1700–5JB00–2AA0**	1 CD-ROM	five standard languages
Drive ES Graphic Upgrade V 5.x → V 5.2 Single license	**6SW1700–5JB00–2AA4**	1 CD-ROM	five standard languages
Drive ES SIMATIC V 5.3 Single license	**6SW1700–5JC00–3AA0**	1 CD-ROM	five standard languages
Drive ES SIMATIC Upgrade V 5.x → V 5.3 Single license	**6SW1700–5JC00–3AA4**	1 CD-ROM	five standard languages
Drive ES SIMATIC V 5.x Copy/runtime license	**6SW1700–5JC00–1AC0**	Product document only (w/o software and documentation)	five standard languages
Drive ES PCS7 V 5.2 Single license	**6SW1700–5JD00–2AA0**	1 CD-ROM	five standard languages
Drive ES PCS7 Upgrade V 5.x → V 5.2 Single license	**6SW1700–5JD00–2AA4**	1 CD-ROM	five standard languages
Drive ES PCS7 V 5.x Copy/runtime license	**6SW1700–5JD00–1AC0**	Product document only (w/o software and documentation)	five standard languages

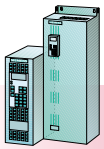
Contents of the Drive ES SIMATIC package

- **Communication software "PROFIBUS DP"** for
  S7-300 with CPUs with integrated DP interface (block libraries DRVDPS7, POSMO)
  S7-400 with CPUs with integrated DP interface or with CP443-5 (block libraries DRVDPS7, POSMO)
  S7-300 with CP342-5 (block library DRVDPS7C)
- **Communication software "USS-Protocoll"** for
  S7-200 with CPU 214/CPU 215/CPU 216 (driver program DRVUSS2 for programming tool STEP 7-micro)
  S7-300 with CP 340/341 and S7-400 with CP 411 (block library DRVUSSS7)
- **STEP 7 Slave object manager**
  for convenient configuration of drives as well as for acyclic PROFIBUS DP communication with the drives, support for conversion of DVA_S7 for Drive ES projects (only from V 5.1)
- **SET-UP program** for installation of the software in the STEP 7 environment

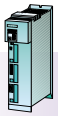
Contents of the Drive ES PCS7 package (the PCS7 package can be used with the PCS7 versions V 5.0 and V 5.1)

- **Block library for SIMATIC PCS7**
  Image and control blocks for SIMOVERT MASTERDRIVES VC and MC as well as MICRO-/MIDIMASTER 3rd and 4th generation
- **STEP 7 Slave object manager**
  for convenient configuration of drives as well as for acyclic PROFIBUS DP communication with the drives
- **SETUP program** for software installation in the PCS7 environment

1) Drive ES Basic can also be installed stand-alone without STEP 7 (for details see accompanying text).



Compact and chassis units



Compact PLUS units

Engineering system Drive ES

Software update service Drive ES

A software update service can also be purchased for the Drive ES software. The user automatically receives the current software, service packs and complete versions for one year after the date of ordering.

Duration of the update service: 1 year.

6 weeks before expiry, the customer and his Siemens contact will be informed in writing that this period is about to expire. If the customer does not cancel the update service, it is automatically extended by another year.

The update service can only be ordered if the customer already has a complete version of the software.

Scope of supply	Order No.
Software update service	
Drive ES Basic	**6SW1700–0JA00–0AB2**
Drive ES Graphic	**6SW1700–0JB00–0AB2**
Drive ES SIMATIC	**6SW1700–0JC00–0AB2**
Drive ES PCS7	**6SW1700–0JD00–0AB2**