

# MICROMASTER - MICROMASTER 4



## Overview

The MICROMASTER 4 inverters are divided in the following ranges:

Performance functionality	MICROMASTER 411	MICROMASTER 420	MICROMASTER 430	MICROMASTER 440
Main characteristics	<b>"The decentralized"</b> for use in a broad range of drive applications from simple individual pump or fan applications up to multiple drive conveyor applications incorporating networked control systems.	<b>"The universal"</b> for three-phase networks and optional fieldbus interfacing, e.g. for conveyor belts, material transport, pumps, fans and machine tools.	<b>"The specialist for pumps and fans"</b> with optimized OP (manual/automatic switchover), matched software functionality and optimized power yield.	<b>"The all-purpose"</b> with advanced vector control (with and without encoder feedback) for versatile applications in sectors such as conveying systems, textiles, elevators, hoisting equipment and machine construction.
Power ranges	0.37 kW to 3 kW	0.12 kW to 11 kW	7.5 kW to 250 kW	0.12 kW to 250 kW

Voltage ranges	380 V to 480 V 3 AC	200 V to 240 V 1 AC 200 V to 240 V 3 AC 380 V to 480 V 3 AC	380 V to 480 V 3 AC	200 V to 240 V 1 AC 200 V to 240 V 3 AC 380 V to 480 V 3 AC 500 V to 600 V 3 AC
Control	<ul style="list-style-type: none"> <li>• V/f characteristic</li> <li>• Multipoint characteristic (programmable V/f characteristic)</li> <li>• FCC (flux current control)</li> </ul>	<ul style="list-style-type: none"> <li>• V/f characteristic</li> <li>• Multipoint characteristic (programmable V/f characteristic)</li> <li>• FCC (flux current control)</li> </ul>	<ul style="list-style-type: none"> <li>• V/f characteristic</li> <li>• Multipoint characteristic (programmable V/f characteristic)</li> <li>• FCC (flux current control)</li> </ul>	<ul style="list-style-type: none"> <li>• V/f characteristic</li> <li>• Multipoint characteristic (programmable V/f characteristic)</li> <li>• FCC (flux current control)</li> <li>• Vector control</li> </ul>
Process control	Internal PI controller	Internal PI controller	Internal PID controller	internal PID controller (autotuning)
Inputs	3 digital inputs 1 analog input	3 digital inputs 1 analog input	6 digital inputs 2 analog inputs 1 PTC/KTY input	6 digital inputs 2 analog inputs 1 PTC/KTY input
Outputs	1 relay output	1 analog output 1 relay output	2 analog outputs 3 relay outputs	2 analog outputs 3 relay outputs
Interfacing to automation system	The ideal partner for your automation tasks, whether with SIMATIC S7-200, SIMATIC S7-300/400 (TIA) or SIMOTION	The ideal partner for your automation tasks, whether with SIMATIC S7-200, SIMATIC S7-300/400 (TIA) or SIMOTION	The ideal partner for your automation tasks, whether with SIMATIC S7-200, SIMATIC S7-300/400 (TIA) or SIMOTION	The ideal partner for your automation tasks, whether with SIMATIC S7-200, SIMATIC S7-300/400 (TIA) or SIMOTION
Additional features	<ul style="list-style-type: none"> <li>• Compound braking for controlled rapid braking</li> </ul>	<ul style="list-style-type: none"> <li>• BICO technology</li> <li>• Compound braking for controlled rapid braking</li> </ul>	<ul style="list-style-type: none"> <li>• Low-energy mode</li> <li>• Load torque monitoring (detects running dry of pumps)</li> <li>• Motor staging</li> <li>• Bypass mode</li> <li>• BICO technology</li> </ul>	<ul style="list-style-type: none"> <li>• 3 selectable drive data kits</li> <li>• Integrated brake chopper (up to 75 kW)</li> <li>• Torque control</li> <li>• BICO technology</li> </ul>

Various options are available for the MICROMASTER 4 inverters:

- Filters
- Chokes
- Operator panels
- PROFIBUS module
- DeviceNet module
- CANopen module
- Pulse encoder evaluation module
- Gland plates
- Mounting kits, etc.

Assignment of operator panels and modules to the inverter ranges:

Options	MICROMASTER 411	MICROMASTER 420	MICROMASTER 430	MICROMASTER 440
Operator panel BOP	X	X		X
Operator panel BOP-2			X	
Operator panel AOP		X		X
Operator panel AAOP		X		X
<b>Modules</b>				
PROFIBUS	X	X	X	X
DeviceNet		X	X	X
CANopen		X	X	X
Pulse encoder evaluation			X	X

Actual technical documentation (Catalogs, Dimensions, Certificates, Manuals and Operating instructions) is available on the Internet at:

<http://www.siemens.com/micromaster>

and offline on CD-ROM CA 01 Vol. 2 "Configure your system" in the SD Configurator, which can be ordered under the following address:

<http://www.siemens.com/automation/ca01>

## Integration

### Integration of drives into the SIMATIC S7 automation system with Drive ES

**Drive ES Basic** supports user-friendly start-up, service and diagnostics of all Siemens drives.

For integrated installation as a STEP 7 option, it is important to note the version of STEP 7 that is being used with regard to the ordering information.

**Drive ES SIMATIC** provides libraries that contain SIMATIC function blocks so that the communication between the SIMATIC S7 CPU and the Siemens drive (e.g. MICROMASTER 4) can be reduced to simple parameterization. Drive ES SIMATIC replaces the software package DVA\_S7 for all STEP 7 versions 5.0 and can also be installed and implemented as stand-alone software, i.e. without Drive ES Basic.

Contents of the Drive ES SIMATIC package:

- Communications software "PROFIBUS DP" for
  - SIMATIC S7-300 with CPUs with integral DP interface (function block libraries DRVDPS7, POSMO)
  - SIMATIC S7-400 with CPUs with integral DP interface or with CP443-5 (function block library DRVDPS7, POSMO)
  - SIMATIC S7-300 with CP342-5 (function block library DRVDPS7C)
- Communications software "USS protocol" for
  - SIMATIC S7-200 with CPU 214/CPU 215/CPU216 (driver program DRVUSS2 for programming tool STEP 7-Micro)
  - SIMATIC S7-300 with CP 340/341 and SIMATIC S7-400 with CP 441 (function block library DRVUSSS7)
- STEP 7 slave object manager
  - For easy configuration of drives
  - For acyclic PROFIBUS DP communication with the drives
  - Support for converting DVA\_S7 to Drive ES projects (from V5.1)
- SETUP program
  - For installing the software in the STEP 7 environment

**Drive ES PCS7** provides a function block library with image and control blocks that can be used to integrate a Siemens drive (e.g. MICROMASTER 4) based on a speed interface into the SIMATIC PCS7 process control system. Operation and monitoring of the drive is then possible from the Operator Station (OS) using the drive faceplates. The PCS7 library can be implemented as stand-alone software, i.e. even without Drive ES Basic, under PCS7 versions 5.0 and 5.1.

Contents of the Drive ES PCS7 package (the PCS7 package can be used with the PCS7 versions V5.0, V5.1 and V6.0):

- Function block library for SIMATIC PCS7
  - Image and control blocks for SIMOVERT MASTERDRIVES VC and MC as well as MICROMASTER 3/ MIDIMASTER 3 and MICROMASTER 4
- STEP 7 slave object manager
  - For easy configuration of drives
  - For acyclic PROFIBUS DP communication with the drives
- SETUP program
  - For installing the software in the PCS7 environment

Drive ES software package Installation as an integrated option to STEP 7 from V5.2	Supply format	Documentation	Order No.
Drive ES Basic V5.3 *) single license	CD-ROM	Five standard languages	<b>6SW1700-5JA00-3AA0</b>
Drive ES Basic Upgrade *) from V5.x to V5.3 single license	CD-ROM	Five standard languages	<b>6SW1700-5JA00-3AA4</b>
Drive ES Basic V5.3 *) copy license (60 installations)	CD-ROM and copy license	Five standard languages	<b>6SW1700-5JA00-3AA1</b>
Drive ES SIMATIC V5.3 single license/runtime license	CD-ROM	Five standard languages	<b>6SW1700-5JC00-3AA0</b>

Drive ES SIMATIC Upgrade from V5.x to V5.3 single license	CD-ROM	Five standard languages	<b>6SW1700-5JC00-3AA4</b>
Drive ES SIMATIC V5.x copy license /runtime license	Product license only (without software and documentation)	Five standard languages	<b>6SW1700-5JC00-1AC0</b>
Drive ES PCS7 V5.2 single license	CD-ROM	Five standard languages	<b>6SW1700-5JD00-2AA0</b>
Drive ES PCS7 V6.0 single license/runtime license	CD-ROM	Five standard languages	<b>6SW1700-6JD00-0AA0</b>
Drive ES PCS7 Upgrade from V5.x to V6.0 single license	CD-ROM	Five standard languages	<b>6SW1700-6JD00-0AA4</b>
Drive ES PCS7 V5.x/V6.x copy license /runtime license	Product license only (without software and documentation)	Five standard languages	<b>6SW1700-5JD00-1AC0</b>

\*) Drive ES Basic can also be installed stand-alone without STEP 7.

## Software update service for Drive ES

A software update service can also be purchased for the Drive ES software. The user is automatically supplied with 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 the update service will automatically be extended by another year if it is not cancelled on the part of the customer.

The update service can only be ordered to customers who have previously purchased a complete version.

Software update service		Order No.
Drive ES Basic	Update service for single license	<b>6SW1700-0JA00-0AB2</b>
	Update service for copy license	<b>6SW1700-0JA00-1AB2</b>
Drive ES SIMATIC	Update service for single license	<b>6SW1700-0JC00-0AB2</b>
Drive ES PCS7	Update service for single license	<b>6SW1700-0JD00-0AB2</b>