

# SIMOVERT® MASTERDRIVES Motion Control

## Overview

### Application

The MASTERDRIVES Motion Control (MC) frequency converters are specially designed for industrial servo drive applications.

In addition to the well-proven modular hardware concept, MASTERDRIVES Motion Control offers a modular software featuring

- freely interconnectable function blocks and
- integrated technology functions.

The MASTERDRIVES Motion Control series is compatible regarding

- communication,
- technology,
- operator control and visualization

and is available for line voltages of 3-ph. 380 V to 480 V AC, 50/60 Hz, and in the following designs, depending on the power rating:

- Compact PLUS 0.55 kW to 18.5 kW (0.75 HP to 25 HP)
- Compact units 2.2 kW to 37 kW (3 HP to 50 HP)
- Chassis units 45 kW to 250 kW (60 HP to 335 HP).

The MASTERDRIVES Motion Control concept is characterized by:

- a very high-level dynamic response
- positioning
- angular synchronism between drives
- cam plates.

It thus satisfies the most stringent demands placed on servo technology.

The MASTERDRIVES Motion Control converters are excellently matched to Siemens compact and highly dynamic servomotors.

These synchronous servomotors and asynchronous servomotors are primarily suited for highly dynamic applications.

Corresponding to highly dynamic MC control on the motor side, MASTERDRIVES AFE (Active Front End) using active line-angle-

### Compact PLUS units



oriented vector control is now available on the line side for optimum energy supply.

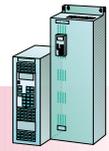
MASTERDRIVES AFE is characterized by:

- absence of system perturbations, i.e. very good overall power factor
- stall-protected operation even in the event of supply dips and supply failure
- highly dynamic rectifier and regenerative units
- reactive-power compensation possible
- four-quadrant operation.

The program is rounded off by a complete spectrum of system components and accessories.

Customer-specific, integrated solutions (automation –

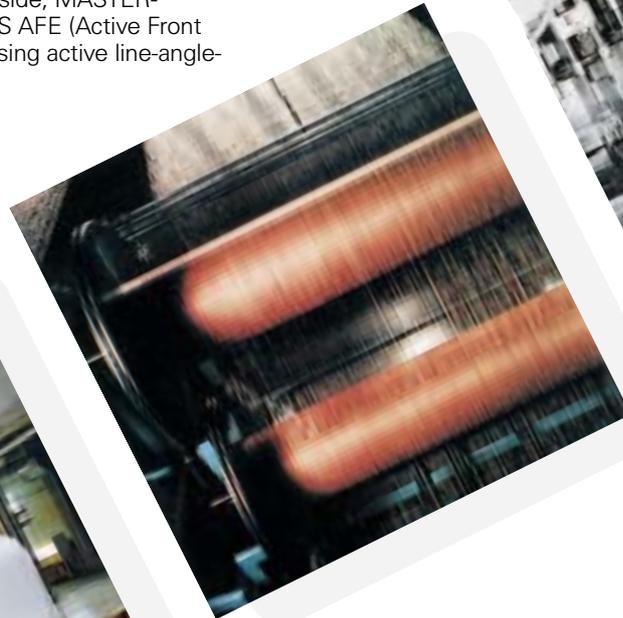
### Compact and chassis units



converter – motor) are available for many applications in all industrial sectors.

For MASTERDRIVES, easy-to-use project-planning tools (PATH) and start-up tools (DriveMonitor) are available.

Siemens' world-wide service and sales network enable all our customers and MASTERDRIVES users to obtain direct access to expert advice and project planning as well as training and service.



### Customized solutions

The compact and chassis units can be used in air-cooled or water-cooled control cabinets and plant configurations.

Rectifier and regenerative units can also be provided as Active Front End units.

Our sales departments, working with our applications workshops, will help you to find the best solution for your requirements.



Compact and chassis units



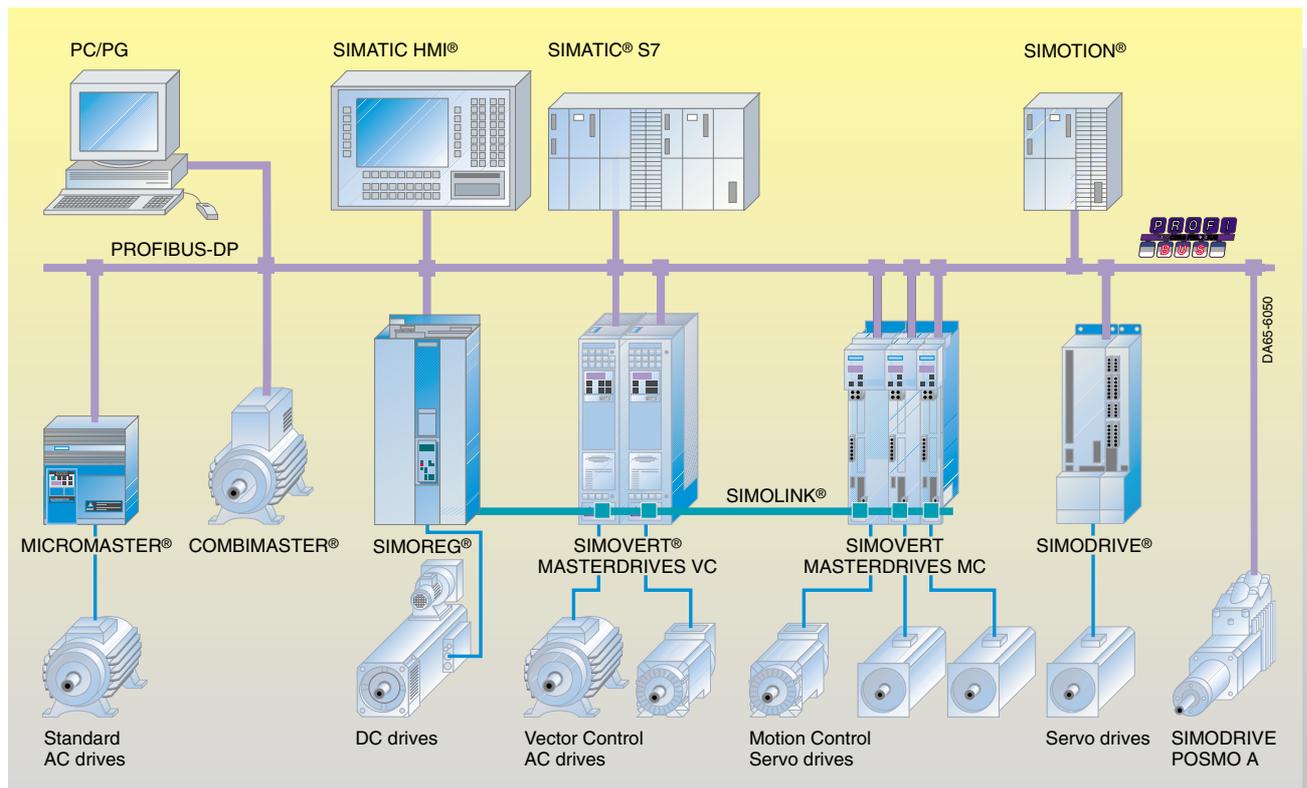
Compact PLUS units

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Application

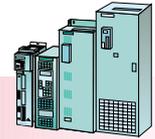


Optimal integration of drives into the world of automation



# SIMOVERT® MASTERDRIVES Vector Control

## Overview



### Applications

#### Top solutions with engineered drives

The SIMOVERT MASTERDRIVES Vector Control frequency converters are voltage-source DC link converters with fully digital technology and IGBT inverters which, in conjunction with Siemens three phase AC motors, provide high-performance, economical drives for all industrial sectors and applications.

#### SIMOVERT MASTERDRIVES – system-based drive technology

##### A uniform, modular series of standard units

The SIMOVERT MASTERDRIVES Vector Control series of converters is both uniform and modular in design.

- The power output of the standard units ranges from 0.55 kW to 2300 kW.
- All internationally standard supply voltages from 380 V to 690 V are covered.

- Depending on the application and the required output, there are four types of housing design available: the Compact PLUS unit, the compact unit, the chassis unit and the cabinet unit.
- The hardware and software modules enable tailored and cost effective drive solutions.

As a counterpart to extremely high-performance VC control on the motor side, the SIMOVERT MASTERDRIVES AFE (Active Front End) unit ensures optimum energy supply on the line side as well with its active, line-angle-oriented vector control. SIMOVERT MASTERDRIVES AFE units are characterized by

- freedom from system perturbations, i.e. a very favorable overall power factor
- commutation failure-protected operation even in the event of supply dips and power failure

### Compact PLUS/compact and chassis units · cabinet units

- the possibility of reactive power compensation
- four-quadrant operation.

The units are designed as:

- converters for connection to a 3-phase AC system
- inverters for connection to a DC bus
- rectifier units for supplying power to the DC bus.

A wide spectrum of system components and accessories rounds off the range of products.

#### SIMOVERT MASTERDRIVES The tailored solution

All SIMOVERT MASTERDRIVES share a consistently uniform design. Throughout the whole power range, the units (converters, inverters) and system components (rectifier units, braking units) have a uniform design and a uniform connection system.

They can be combined in many ways and arranged side by side to match every possible drive requirement.

Being system modules, they can be used to create the most suitable drive system, whether this involves single drives or multi-motor drives.

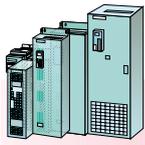
#### Customer-specific solutions

Cabinets and system configurations for power output ranges from 0.55 kW to 6000 kW can be created to match specific customer requirements, with either air-cooling or water-cooling in our application workshop.

Examples of such applications are

- multi-motor drives (steel-works and rolling mills, the paper and plastic-film industries) and
- single drives
  - in adapted design (e.g. marine drives)
  - for test stands (e.g. with Active Front End for low supply stressing).





Compact PLUS/compact and chassis units · cabinet units

# SIMOVERT MASTERDRIVES Vector Control Overview

## Applications

### **SIMOVERT MASTERDRIVES with water-cooling – for harsh environments**

The compact and chassis converters and inverters are also available with water-cooling. By installing in appropriate cabinets, high degrees of protection are achieved in a closed system, thus making them suitable for use in any harsh industrial environment.

### **New! The Compact PLUS series**

The youngest member of the SIMOVERT MASTERDRIVES Vector Control family with power outputs of 0.55 kW to 18.5 kW rounds off the product range in the lower power output range. The Compact PLUS series is ideal for applications in machines where only limited space is available.

### **SIMOVERT MASTERDRIVES – electromagnetically compatible in any environment**

The SIMOVERT MASTERDRIVES frequency converters comply with the relevant EMC standard for power electronics.

EMC compliant installation enables them to be used in industry and residential buildings.

### **Designed for world-wide use**

The SIMOVERT MASTERDRIVES satisfy the relevant international standards and regulations – from the European EN standard and IEC to UL and CSA.

### **Quality in accordance with DIN ISO 9001**

The quality standards according to which the SIMOVERT MASTERDRIVES are manufactured are high and have been acclaimed. All aspects of production, i.e. development, mechanical design, manufacturing, order processing and the logistics supply center of the SIMOVERT MASTERDRIVES, have been certified by an independent authority in accordance with DIN ISO 9001.

### **Engineering technology with maximum benefit to the customer**

The advantages to the customer are apparent:

- solutions, optimized with regard to price and performance
- high quality,
- maximum reliability

and as a result

- flexible production and
- optimized processes.

Our world-wide service and sales network provides all our customers and SIMOVERT MASTERDRIVES users with a direct line to:

- individual advice
- planning
- training and
- service.

