

**SIEMENS**

*Ingenuity for life*



Simply switch  
over now!

From MICROMASTER  
over to SINAMICS

[www.siemens.com/sinamics](http://www.siemens.com/sinamics)



# More power, more functions

SINAMICS – the new generation of converters  
from Siemens


As machine builder and plant construction company, you are well aware that the requirements placed on motors and drives are continually increasing. And you are used to obtaining components from us with which you can completely fulfill these requirements. It is also just as true to say: When our components provide more power and performance as well as a higher functionality, then this opens up new possibilities for you to improve your plants, systems and products. It also means that you can offer your customers more – and expand your position in the market.

However, in one generation of devices, this can only be implemented to a certain degree with justifiable costs. At some point, constraints are reached that can no longer be resolved using the existing technology – and a new approach must be found.

This point has been reached with our well-proven MICROMASTER drives. We have therefore decided to replace our MICROMASTER drives by converters from the current SINAMICS drive family.

This offers you some decisive advantages: When switching over from MICROMASTER to SINAMICS, you have drives with significantly increased power and functionality to address even more applications. And: With our new generation of drives, you are well-placed for the future and can offer your customers an increased security of investment.





*I wish to simply implement safety functions without having to purchase and connect additional external components.*

*I want to fully utilize the advantages of Ethernet-based communication – such as the high-performance, simple cabling and fast replacement of devices, i.e. just like PROFINET offers.*

*As I am also using a SIMATIC-S7 controller, it is important that I can engineer my control and drive technology quickly, simply and in a standard fashion via the TIA Portal.*

*To address my special application requirements, I would like to have functions and macros already integrated in the drive that make it easier for me to configure my application during the commissioning phase.*

*For my series commissioning and in the case of service, I am looking for a simple and quick way of copying parameters from one drive device to the other, e.g. using a pluggable memory card.*

*To make my system even more efficient, I would like to be able to use the integrated energy saving function. This will allow me to save energy in the standby mode and in partial load operation – and it can also offer energy recovery functionality.*

# SINAMICS: The system-based advantages

You will become faster:



**Simpler engineering with graphic commissioning, trace (oscilloscope function) and integration in the TIA Portal**

- Faster commissioning
- Easier to diagnose and troubleshoot
- Simpler to connect to the control system



**Parameters are cloned instead of programming**

- Simple data exchange using a memory card
- Straightforward series commissioning
- Simplified device replacement when service is required



**Commissioning Wizard with optimized user prompting**

- Intuitive operator panel
- Optimized application settings, including
- Simplified, error-free commissioning

You will become more flexible and perform better:



**Wide range of hardware versions for various applications**

- Push-through mounting for simplified cabinet cooling
- Modular design for reduced spare parts inventory (G120/G120P)
- Distributed installation without electrical cabinet in an IP55 design (for G120P)



**Integrated DC link reactor**

- Lower costs and less space as an input reactor is not required
- Allows longer motor cables to be used



**Standard USB interface to connect a PC**

You will become safer and more efficient:



**SINAMICS with Safety Integrated**

- Integrated and certified safety functions as standard without requiring any additional components
- Safety-related communication via PROFIsafe
- Depending on the converter, "Safe Torque Off (STO)", "Safe Stop (SS1)", "Safe Brake Control (SBC)", "Safely Limited Speed (SLS)", "Safe Speed Monitoring (SSM)" as well as "Safe Direction of Rotation (SDI)" can be used



**Simple connection to the automation system and improved control response**

- PROFIBUS or PROFINET fieldbus interface is already integrated in SINAMICS
- Rugged open-loop and closed-loop control response for drives with low dynamic requirements – as well as for demanding drives with speed and torque control



**Consequential cost reduction**

- Integrated functionality, for example Safety Integrated, integrated DC link reactor, energy-saving functions etc.



**High energy efficiency**

- ECO mode in partial load operation or integrated energy recovery without requiring any additional modules



**Positioning technology function integrated in the drive (EPos)**

- No additional positioning modules and encoder interfaces are required

# The SINAMICS value added

## MICROMASTER 4 family

### MM420



3 AC 400 V

1/3 AC 230 V

## SINAMICS G family

### G120C



### G120 (modular design)



## An overview of additional functions:

Power range	up to 132 kW	up to 55 kW
Safety Integrated	STO	STO
Extended Safety Integrated functions (version)	–	SS1, SBC, SLS, SSM, SDI
PROFINET communication	●	●
Graphic commissioning, trace, TIA Portal	●	●
Parameters are copied using an SD card	●	●
Integrated DC link reactor	from 18.5 kW	from 11 kW
Push-through design (depending on the Power Module)	–	●
Degree of protection IP55 (depending on the Power Module)	–	–
Rugged and dynamic control response (e.g. Vector Control)	●	●
Integrated positioning function (depending on the Control Unit)	–	●
Integrated energy recovery (depending on the Power Module)	–	–
Extended pump, fan and compressor functions	–	–



3 AC 400 V



3 AC 400 V

1/3 AC 230 V  
3 AC 600 V



up to 560 kW
STO (from 22 kW)
–
•
•
•
from 22 kW up to 132 kW
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up to 132 kW
STO
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from 18.5 kW
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up to 55 kW (230 V); 250 kW (400 V); 132 kW (690 V)
STO
SS1, SBC, SLS, SSM, SDI
•
•
•
from 11 kW (230 V)/18.5 kW up to 132 kW
•
–
•
•
–



# Switch over now from MICROMASTER to SINAMICS

The switch is quite simple

Three simple steps can help you to switch over from MICROMASTER to SINAMICS:

1.

Go to the  
[www.siemens.com/tool-micromaster](http://www.siemens.com/tool-micromaster)  
web site

2.

Enter the order number of your  
MICROMASTER device (you can find this  
on the rating plate or in your last order)  
in the tool – the alternative article list is  
displayed.



3.

Select the suggested SINAMICS  
converter to address your specific  
requirements – using the “Article number  
list” button, go directly to the Siemens  
Industry Mall and order your converter.



Or:

Determine the output current of your MICROMASTER (this is specified on the rating plate or in the data sheet). Then select the appropriate converter from the SINAMICS portfolio in the Motion Control Drive Catalog D31 – or via the Siemens Configurator for Drive technology (DT Configurator), link: <http://www.siemens.com/dt-configurator>

Example:

<b>MICROMASTER 420</b> <b>Order No.</b> Without filter                      Rated output current Line voltage 3 AC 380–480 <b>6SE6420-2UD21-5AA1</b> <b>4.0 A</b>	➔	<b>SINAMICS G120C</b> <b>Article No.</b> Without filter                      Output current – Line voltage 3 AC 380–480              base load current ( $I_{L0}$ ) <b>6SL3210-1KE15-8UB2</b> <b>4.1 A</b>				
<b>MICROMASTER 430</b> <b>Order No.</b> Without filter                      Rated output current Line voltage 3 AC 380–480 <b>6SE6430-2UD31-5CA0</b> <b>32 A</b>	➔	<b>SINAMICS G120P (in an IP20 design)</b> <b>Article No. (PM230P-2 Power Module)</b> Without filter                      Output current – Line voltage 3 AC 380–480              base load <b>6SL3210-1NE23-2UG1</b> <b>32 A</b>	+	<b>Article No.</b> (CU230P-2 HVAC Control Unit) <b>6SL3243-0BB30-1HA3</b>		
<b>MICROMASTER 440</b> <b>Order No.</b> Without filter                      Rated output current (CT) Line voltage 3 AC 200–240 <b>6SE6440-2UC25-5CA1</b> <b>22 A</b>	+	<b>Order No.</b> <b>PROFIBUS module</b> <b>6SE6400-1PB00-0AA0</b>	➔	<b>SINAMICS G120 modular</b> <b>Article No. (PM240-2 Power Module)</b> Without filter                      Output current – Line voltage 3 AC 380–480              base load current ( $I_{L0}$ ) <b>6SL3210-1PC22-8ULO</b> <b>22 A</b>	+	<b>Article No.</b> (CU240E-2 DP Control Unit) with Safety Integrated functions and PROFIBUS communication. <b>6SL3244-0BB12-1PA1</b>

Additional information and detailed technical data for the SINAMICS series is provided in our Motion Control Drives Catalog D31.

Questions relating to our products or  
your order

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**Product catalogue and online ordering system**  
<http://www.siemens.com/industrymall>

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Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

To ensure the secure operation of a plant or machine, it is also necessary to take suitable preventive action (e.g. cell protection concept) and to integrate the automation and drive components into a state-of-the-art, holistic industrial security policy for the entire plant or machine. Products used from other manufacturers should also be taken into account here.