



SIEMENS

ELTRA  
trade

# Sinamics Drives. Low Voltage Converters.

Siemens Sinamics G is a range of standard frequency inverters for work with low voltage AC motors. They are designed to perform basic production tasks with the simple and medium requirements for inverter operation.

The series of Siemens standard performance frequency converters include:

- Sinamics G110 (single-phase)
- Sinamics G120 (modular)
- Sinamics G120 C (compact)
- Sinamics G130 (chassis units)
- Sinamics G150 (cabinet for high power)
- Sinamics G180 (cabinet and chassis units)

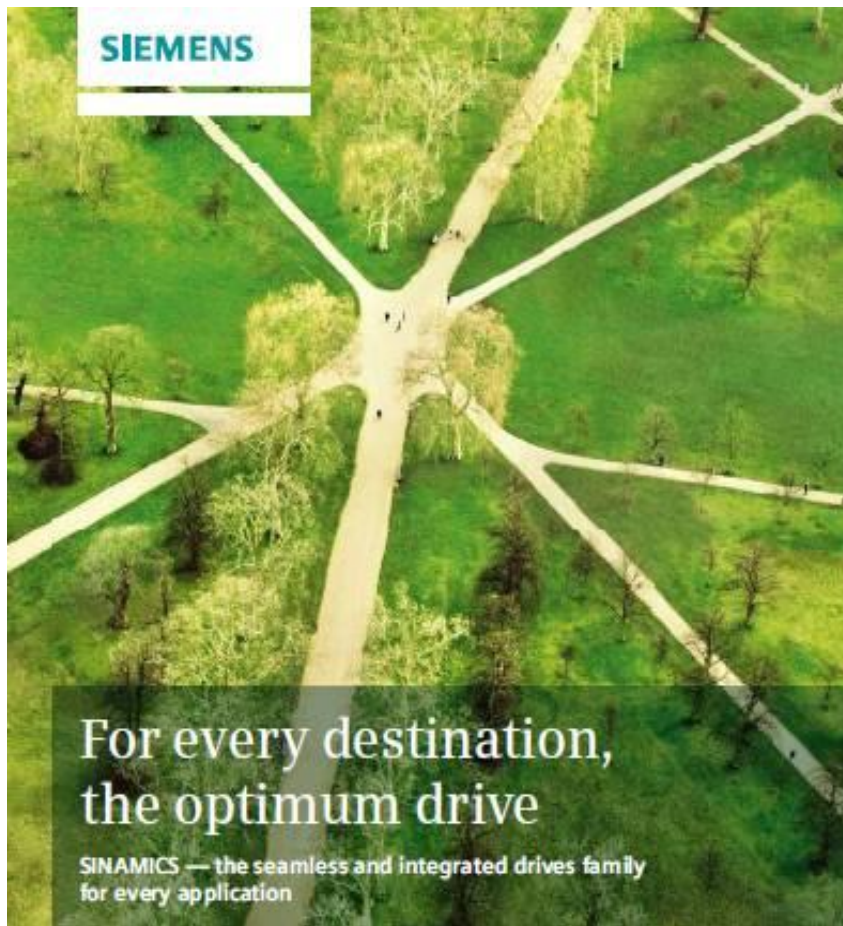


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[info@eltra-trade.com](mailto:info@eltra-trade.com)

## SINAMICS - Follow the largest family to find the optimum solution

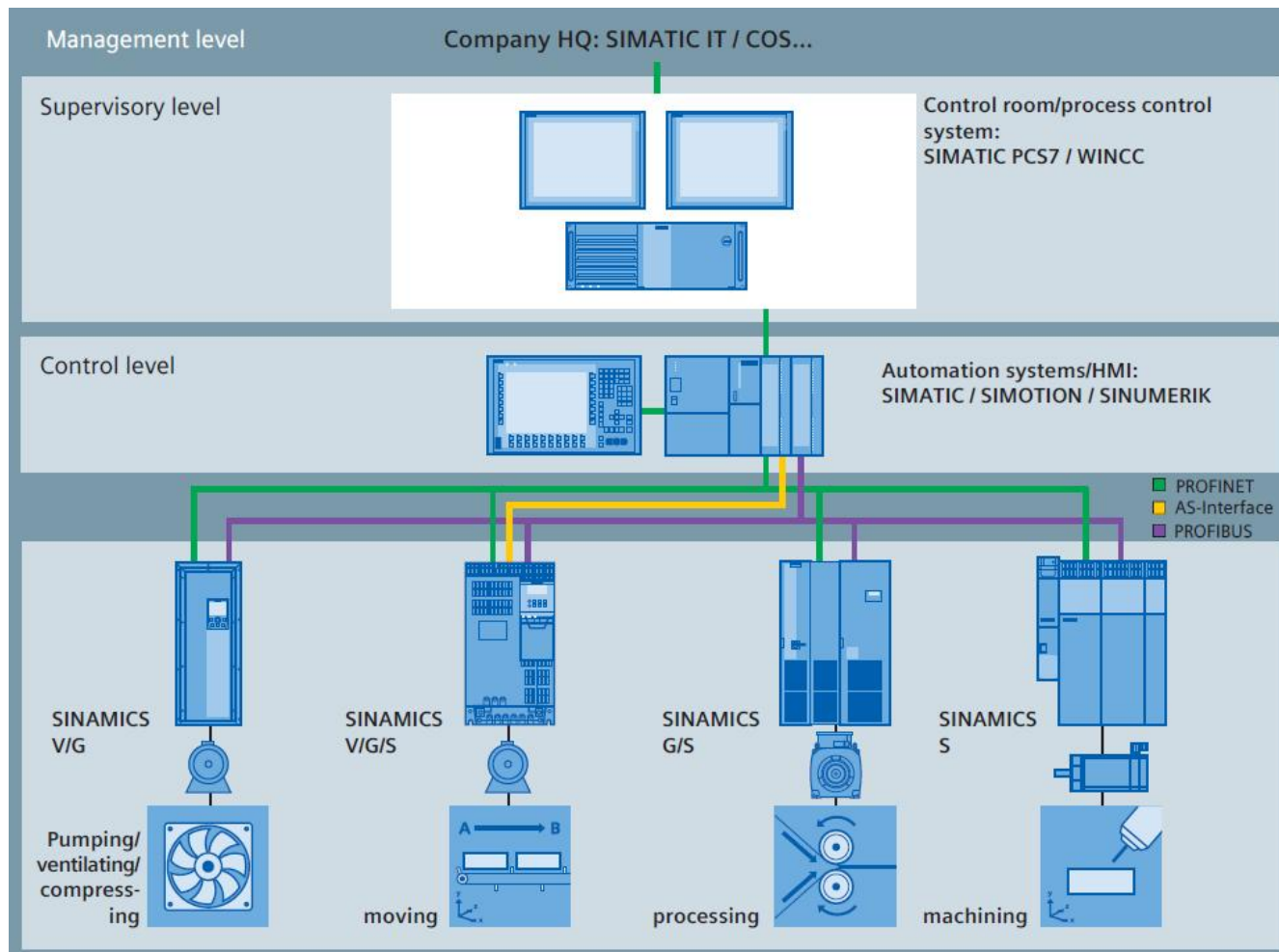


**Siemens is the TOP  
SUPPLIER for drive  
technology**

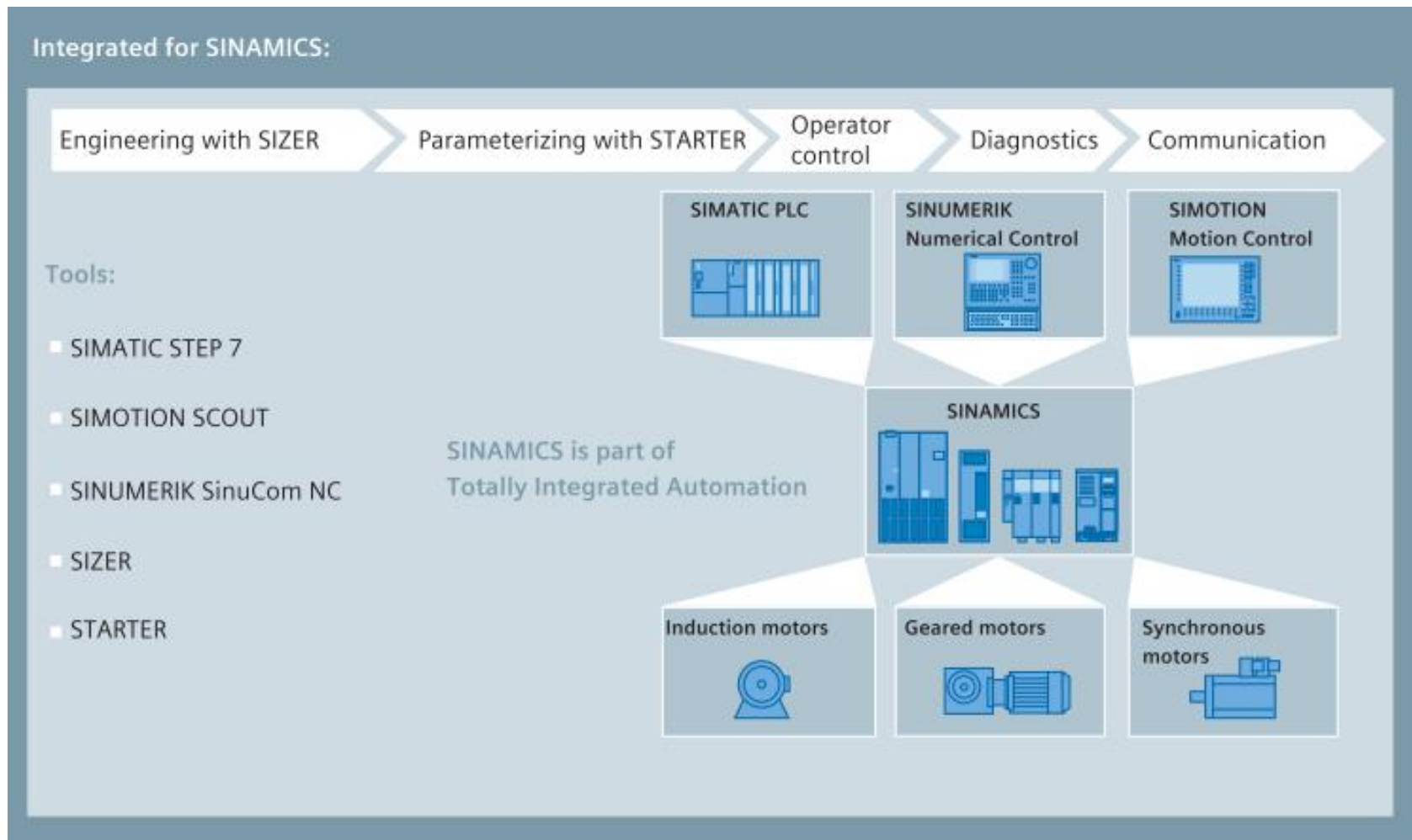
**For variable speed  
drives we  
recommend for the  
future one brand:  
SINAMICS**

# The drives family SINAMICS

## Totally integrated in control and supervisory level

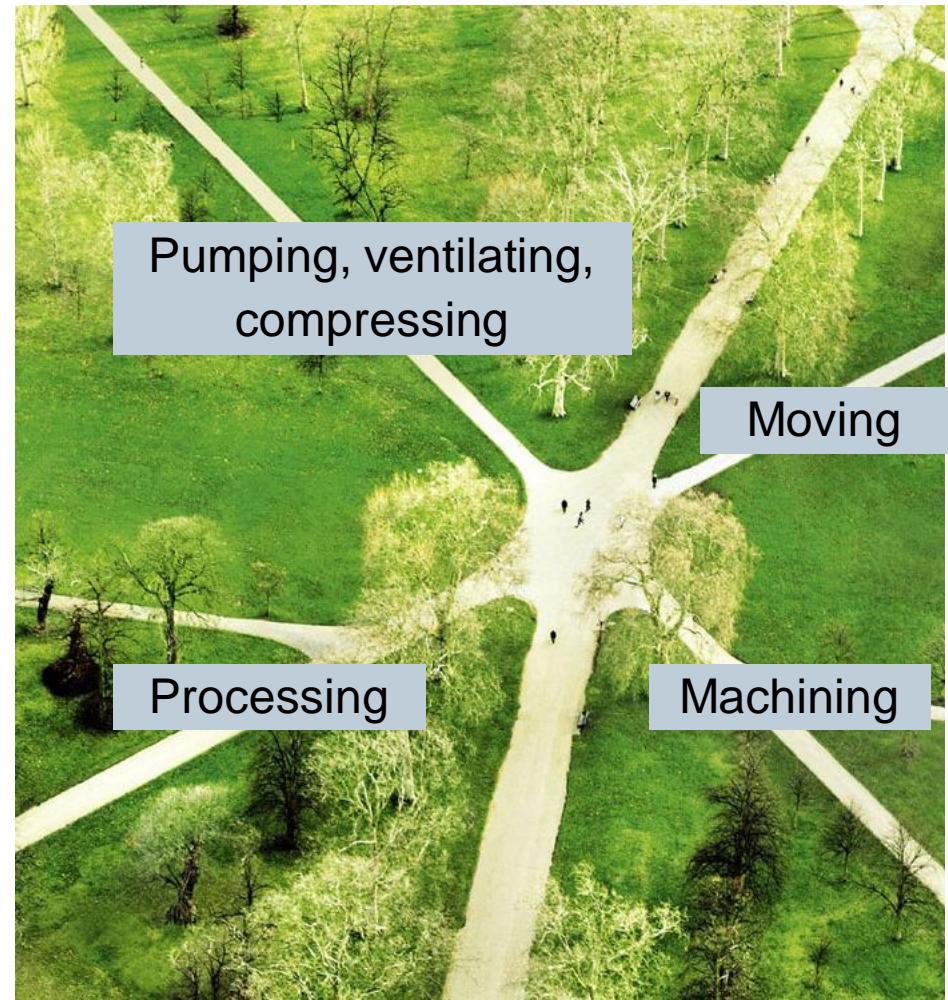


# The drives family SINAMICS – Perfect interaction with automation and motors









## SINAMICS, the optimum drive for every purpose

Efficient pumping, blowing, and compressing, or precise motion, machining, and processing, the number of applications for converters is almost boundless: It is just as well there is a single drive family for all applications, which is able to meet any requirement perfectly: SINAMICS. Our portfolio stands for integrated engineering, highest energy efficiency, and easy operation.



# SINAMICS





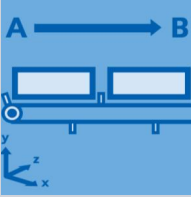


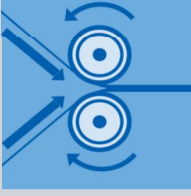


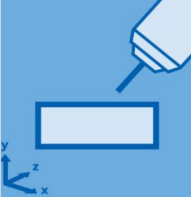

## Overview of the Portfolio

	V series	G series	S series
			
	Basic	Efficient	Flexible
Application examples			
Requirements	Basic Performance Plug 'n' play Ruggedness	General Performance Application-opt. variants High usability	High Performance Highest functionality Innovation driver
Closed-loop control performance	■	■ ■	■ ■ ■
(TIA) Totally Integrated Automation Integration	-	■ ■ ■	■ ■ ■
Energy recovery topology	-	■ ■	■ ■ ■
Integrated safety functions	■	■ ■	■ ■ ■

Standard ■    Mid-range ■ ■    High-end ■ ■ ■

# SINAMICS

## Targeted Applications / Types of Use

Type of use		Low BASIC	SINAMICS Performance EFFICIENT	High FLEXIBLE
	Pumping	 <b>V SERIES</b>	 <b>G SERIES</b>	 <b>S SERIES</b>
	Blowing			
	Compressing			
	Moving	 <b>V SERIES</b>	 <b>G SERIES</b>	 <b>S SERIES</b>
	Processing	 <b>G SERIES</b>		 <b>S SERIES</b>
	Machining	 <b>S SERIES</b>		



# The drives family SINAMICS

## Suitable for pumping, ventilating, compressing



**Pumping,  
ventilating,  
compressing**  
*Pumpen, lüften,  
verdichten*

**Typical applications:**  
Centrifugal pumps, eccentric  
spiral/worm/screw pumps,  
hydraulic pumps, dosing pumps,  
descaling pumps, fans,  
compressors

*Typische Applikationen:*  
Kreiselpumpen, Exzentrerschnecken-  
pumpen, Hydraulikpumpen, Dosier-  
pumpen, Entzunderungspumpen,  
Lüfter, Kompressoren

**SINAMICS products**  
*SINAMICS Produkte*

S120

S110

GL/GM150

G180

G130/G150

G120

G120C

G120P

G110

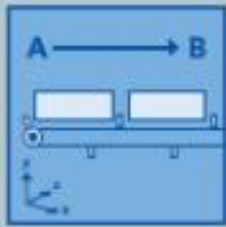
V20

Performance



# The drives family SINAMICS

## Suitable for moving



**Moving**  
*Bewegen*

### Typical applications:

Conveyors, elevators/escalators,  
hoisting devices, ship's drives,  
cable railways, test stands,  
rack feeders, roll changers,  
pick & place, indexing tables,  
cross cutters, roller feeds

### Typische Applikationen:

Förderer, Aufzüge, Roll-/Fahrtreppen,  
Hebezeuge, Schiffsantriebe,  
Seilbahnen, Prüfstände,  
Regalbediengeräte, Rollenwechsler,  
Pick & Place, Rundtakttische,  
Querschneider, Walzenvorschub

**SINAMICS products**  
*SINAMICS Produkte*

SM/SL150

S150

S120

S110

DCM

GM/GL150

G180

G130/G150

G120

G120C

G120D

G110D

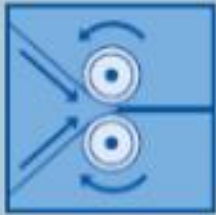
G110

V20

Performance



# The drives family SINAMICS Suitable for processing



**Processing**  
*Verarbeiten*

**Typical applications: Mixer, crushers, centrifuges, extruders, winders/unwinders, leading/following drives, rolling mills, mechanical presses, servo presses, printing machines, tubular bagging machines, single/ coordinated axis motion control**

*Typische Applikationen: Mischer, Brecher, Zentrifugen, Extruder, Auf-/Abwickler, Leit-/Folgeantriebe, Walzwerke, Pressenhauptantriebe, Servopressen, Druckmaschinen, Schlauchbeutelmaschinen, Einzel-/Mehrachs-Motion Control*

**SINAMICS products**  
*SINAMICS Produkte*

**SM/SL150**

**S150**

**S120**

**S110**

**DCM**

**GL/GM150**

**G180**

**G130/G150**

**G120**

**G120C**

**G110**

**V20**

**Performance**



# The drives family SINAMICS

## Suitable for machining



**Machining**  
*Bearbeiten*

**Typical applications:**  
Main and axis drives for  
Turning, milling, drilling,  
sawing, gear cutting,  
grinding, laser machining,  
nibbling and punching

*Typische Applikationen:*  
*Haupt- und Achsantriebe für*  
*drehen, fräsen, bohren, sägen,*  
*verzahnen, schleifen, lasern,*  
*nibbeln und stanzen*

**SINAMICS products**  
*SINAMICS Produkte*

**S120**  
**S110**



**Performance**



## **Applications & benefits: SINAMICS offers ...**

### **Innovative and future orientated drives technology on a basis of hard- and software platforms**

- A scalable and modular drive solution for each and every drive task and application
- Broad range of functions, power ratings and voltages
- Can be flexibly integrated into the automation environment, part of IDS and TIA
- Integrated safety functions
- High degree of flexibility and combinability
- Simplified and standard engineering and commissioning
- Continuous usability, common selection and engineering tools

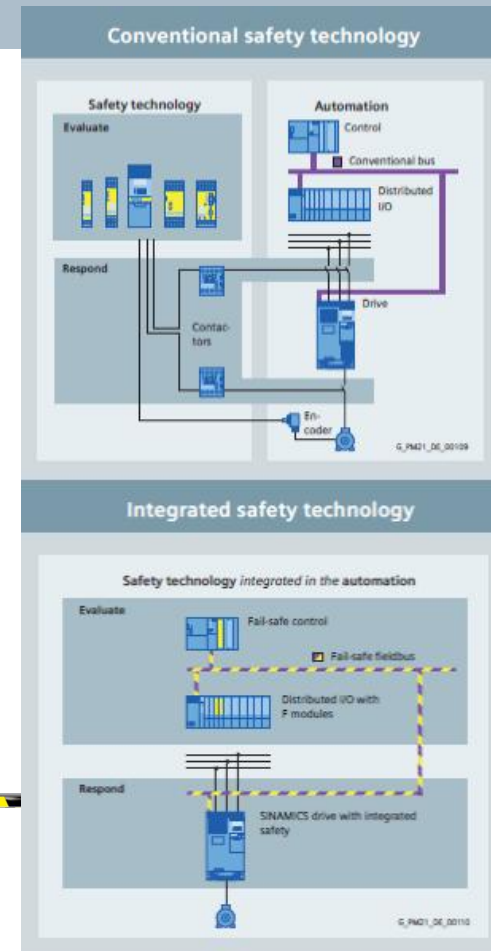
**SINAMICS can offer the right drive for EVERY task**

## Applications & benefits: SINAMICS Safety Integrated reacts surely faster

There is an increased risk of injury wherever rotating units such as saws, rollers and spindles are used, but also where handling axes and machine slides are often moved with a high linear velocity.

Safety Integrated - for SINAMICS reliably masters specific hazardous situations. It has a significantly faster response time and a higher degree of functionality with generally unchanged and occasionally even increased productivity. Lower costs, increased safety.

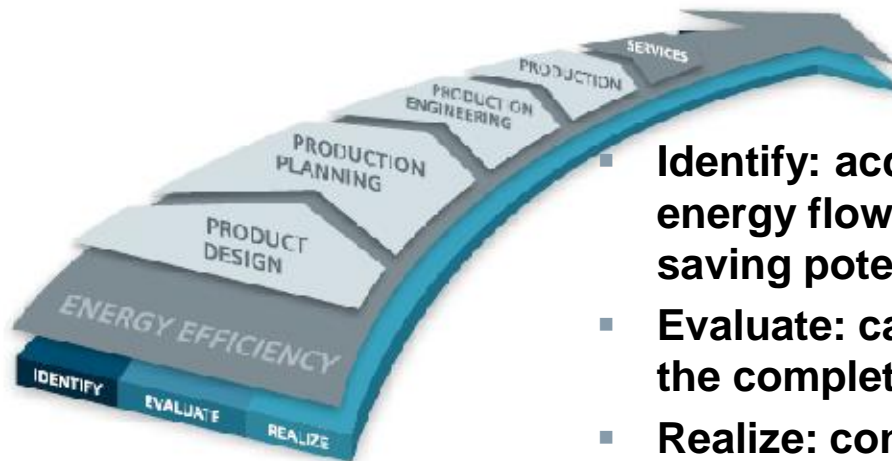
These are certified according to IEC 61508/SIL 2, EN ISO 13849-1 Cat. 3 and PL d.



*Integrated safety technology reduces the number of components and wiring costs*

## Applications & benefits: Energy efficient

**SINAMICS is a decisive part of the overall energy management process of Siemens**



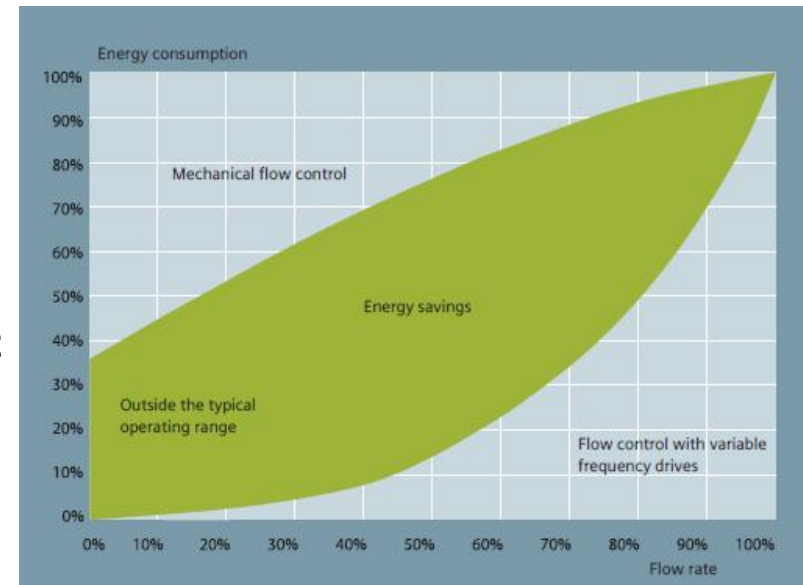
- **Identify:** acquiring, visualizing and analyzing the energy flows – detecting of hidden energy-saving potential
- **Evaluate:** calculating the saving potentials for the complete live cycle costs
- **Realize:** concrete measures allow the existing cost saving potential to be fully utilized

**Particularly in the phase “realize” SINAMICS plays a key role.  
The reason: Electric drives use about two-thirds of all of the industrial power consumed.**

## Applications & benefits: Energy efficient

### Intelligent energy-saving functions

- Energy recovery when braking
- Energy equalization in the DC link
- Storing excess energy
- Automatic adaptation of the operating point
- Energy-saving when idle
- Reducing the power loss
- Cascading drives
- Energy transparency in all engineering phases
- SINAMICS in combination with SIMOTICS
- Determining the energy-saving potential with SinaSave



Especially energy saving for pump, fan and compressor applications



# Energy Efficiency – Integrated Product Portfolio

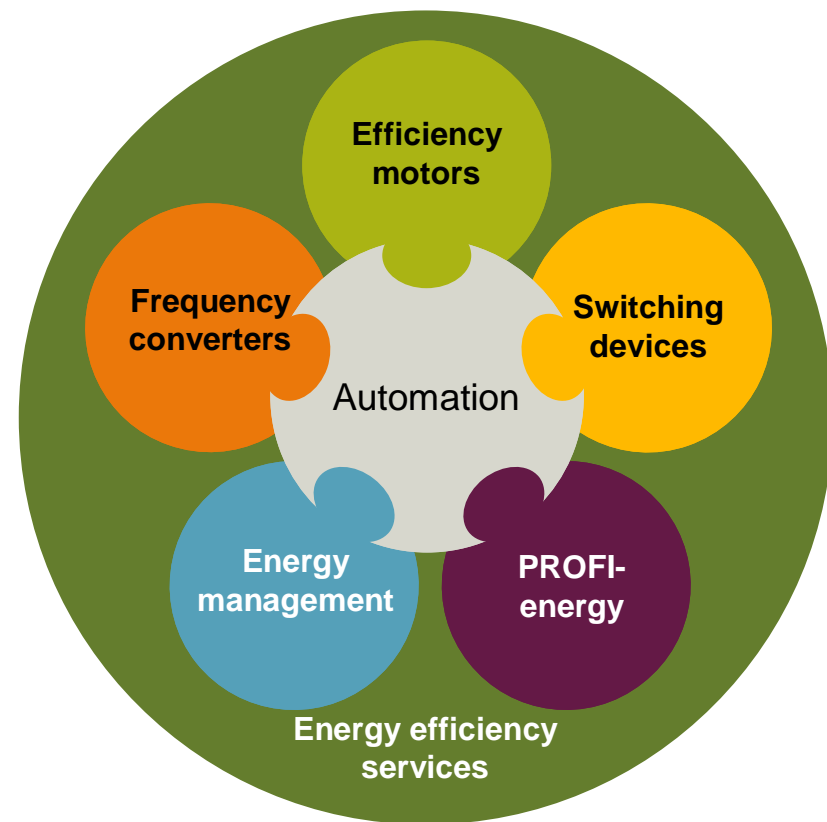
The integrated product portfolio  
of Siemens Industry with Totally Integrated Automation

... from the field level

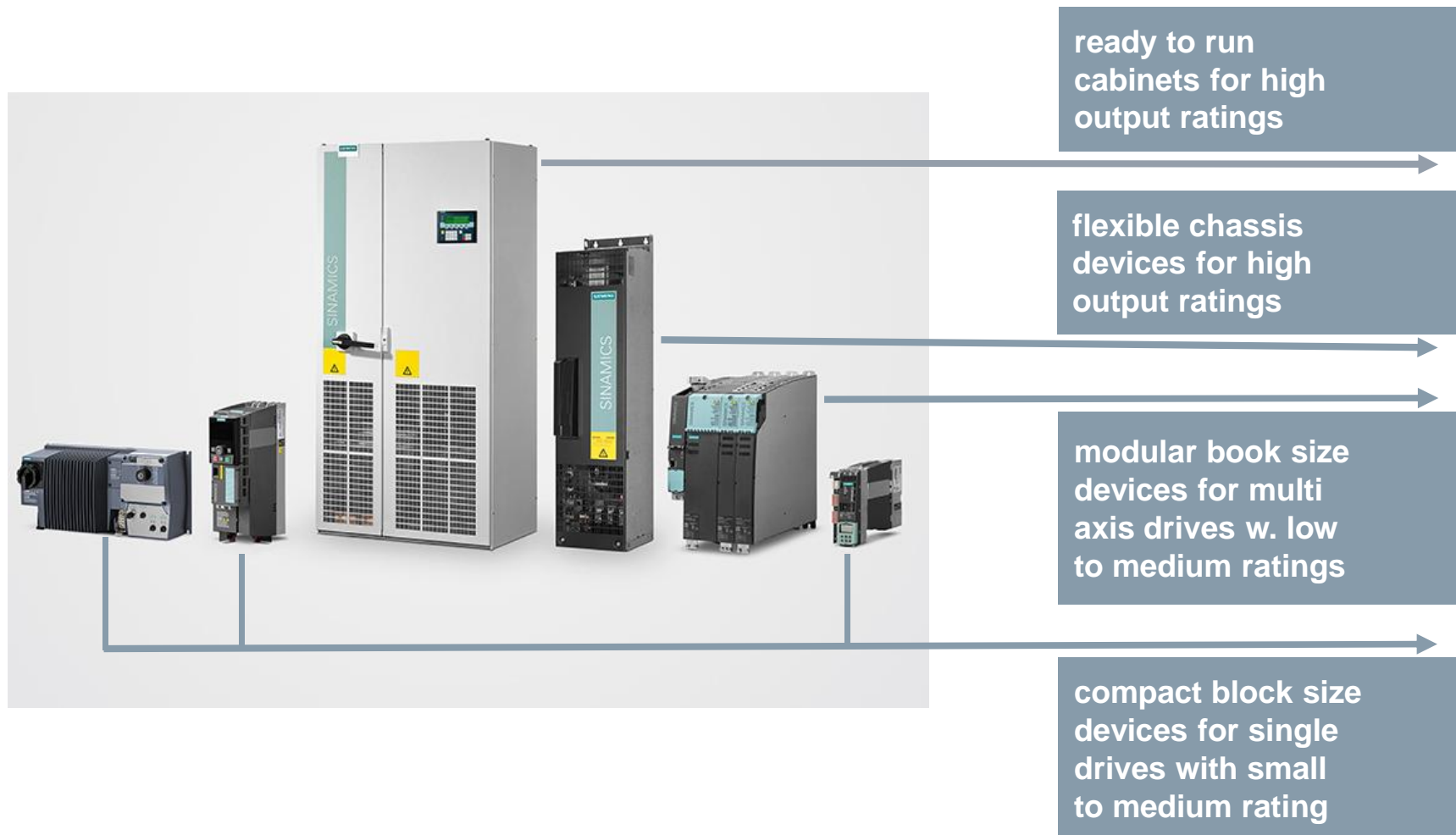
... to the control level

... up to management level

facilitates energy-efficient  
production



## Family members: The drives of the SINAMICS family are available in different housings



## Family members: SINAMICS V – drives for basic performance applications

### SINAMICS V20



Blocksize unit

The versatile converter for basic applications

Industry, trade




IP20

1 AC 200 – 240 V: 0.12 – 3 kW  
3 AC 380 – 480 V: 0.37 – 15 kW

V/f control

**SINAMICS offers basic drives ...**

# Family members: SINAMICS G – the universal drives for general performance applications

 <b>SINAMICS G120</b>	 <b>SINAMICS G120C</b>	 <b>SINAMICS G120P / G120P Cabinet</b>
Blocksize unit	Blocksize unit	Blocksize unit, chassis unit, wall mounted unit and converter cabinet unit
Modular frequency converter for variable-speed single drives	The compact and versatile inverter with optimum functionality	The specialist for pumps, fans and compressors
Industrial applications	Machine builder and distributors, i.e. for conveyors, mixer, extruder, pumps, fans, compressors or simple handling machines	Wide application range in the industry, water/wastewater and building technology, heating, ventilating, air-conditioning
IP20	IP20	IP20, IP55
3 AC 380 – 480 V: 0.37 – 250 kW 3 AC 660 – 690V: 11 – 55 kW	3 AC 380 – 480 V: 0.55 – 18.5 kW	3AC 380 – 480 V: 0.37 ...400 kW
V/f control, vector control with/without encoder, torque control with/without encoder	V/f control, vector control without encoder	V/f control, vector control without encoder, torque control without encoder
<b>SINAMICS offers all-rounders ...</b>		

## Family members: SINAMICS G – the universal drives for general performance applications

### SINAMICS G110D



Blocksize unit

Distributed drive for basic single-axis applications in the lower power range

Simple conveyor technology applications in airports and horizontal logistics with AS-i communication and local/remote operation.

IP65

3 AC 380 – 480 V: 0.75 – 7.5 kW +/- 10%

V/f control

### SINAMICS G120D



Blocksize unit

Distributed drives for complex single-axis/multi-axis applications

Conveyor technology applications, especially designed for the automobile industry, also for other high-performance conveyor applications with BUS connection.

IP65

3 AC 380 – 480 V: 0.75 – 7.5 kW

V/f control, vector control with/without encoder, torque control with/without encoder

### SINAMICS G110M



Motor integrated

The distributed inverter for SIMOGEAR geared motors

Industrial applications




Up to IP66

3AC 380 V - 500 V -10/+6%  
0.37 kW up to 4 kW




U/f control, FCC (closed-loop flux-current control), sensorless vector control

**SINAMICS offers all-rounders ...**

# Family members: SINAMICS G – the universal drives for general performance applications




 <b>SINAMICS G130</b>	 <b>SINAMICS G150</b>	 <b>SINAMICS G180</b>
Chassis unit	Converter cabinet unit	Compact unit, converter cabinet unit
The universal drive solution for highrating single-motor drives	The universal drive solution for highrating single-motor drives	The drive solution specifically for oil & gas, chemical and process industries
Industrial manufacturing and processing plants	Industrial manufacturing and processing plants	General machinery construction applications
IP00 / IP20	IP20 – IP54	IP20 – IP54
3 AC 380 – 480 V: 110 – 560 kW 3 AC 500 – 600 V: 110 – 560 kW 3 AC 660 – 690 V: 75 – 800 kW	3 AC 380 – 480 V: 110 – 900 kW 3 AC 500 – 600 V: 110 – 1,000 kW 3 AC 660 – 690 V: 75 – 2,700 kW	3 AC 380 – 480 V: 2.2 – 4,100 kW 3 AC 500 – 600 V: 2.2 – 5,300 kW 3 AC 500 – 690 V: 2.6 – 6,600 kW 3 AC 660 – 690 V: 7.5 – 6,600 kW
V/f control, vector control with/without encoder, closed-loop speed/torque control	V/f control, vector control with/without encoder, closed-loop speed/torque control	V/f control, vector control with encoder, closed-loop speed/torque control
<h2 style="text-align: center;">SINAMICS offers all-rounders ...</h2>		

## Family members: SINAMICS S - basic servo drives and flexible, modular drive systems

 <b>SINAMICS S110</b>	 <b>SINAMICS S120 AC Drives</b> 	
Blocksize unit	Blocksize unit	Chassis unit
Single-axis positioning drive	Modular drive system for sophisticated single-/multi-axis applications	
Machine makers and plant construction, laboratory automation systems, solar technology, medical technology	Machine building and plant construction	
IP20	IP20	IP20, optional: IP 43
1 AC 200 – 240 V: 0.12 – 0.75kW 3 AC 380 – 480 V: 0.37 – 90kW	1 AC 200 – 240 V: 0.12 – 0.75 kW 3 AC 380 – 480 V: 0.37 – 90 kW	3 AC 380 – 480 V: 110 – 250 kW
V/f control, servo control with/without encoder, closed-loop speed/torque control	V/f control, vector control with/without encoder, servo control with/without encoder, closed-loop speed/torque control	

**... specialists and universalists...**

# Family members: SINAMICS S120 – for applications with high performance requirements

	<b>SINAMICS S120 DC Drives</b>		<b>SINAMICS S120 Cabinet Modules</b>	
<b>Booksize unit</b>		<b>Chassis unit</b>		<b>Cabinet Modules</b>
<b>Modular drive system for sophisticated single-/multi-axis applications</b>				
<b>Machine building and plant construction</b>			<b>Plant construction</b>	
<b>IP20</b>	<b>IP00, IP20, optional: IP 43</b>		<b>IP20 (IP21, 23, 43, 54)</b>	
<b>AC 380 – 480 V: 1.6 – 107 kW</b>	<b>3 AC 380 – 480 V: 110 – 3,000 kW 3 AC 500 – 690 V: 75 – 4,500 kW</b>		<b>3 AC 380 – 480 V: 1.6 – 3,000 kW 3 AC 500 – 690 V: 75 – 4,500 kW</b>	
<b>V/f control, vector control with/without encoder, servo control with/without encoder, closed-loop speed/torque control</b>				

**...universalists...**



## Family members: SINAMICS S150 ready to run cabinet SINAMICS DCM - scalable DC converters

### SINAMICS S150



Converter cabinet unit

Frequency converter for demanding variable speed single drives

Plant construction, operators of plants

IP20 (IP21, IP23, IP43, IP54)

3 AC 380 – 480 V: 110 – 800 kW  
3 AC 500 – 690 V: 75 – 1,200 kW

V/f control, vector control with/without encoder, servo control with/without encoder, closed-loop speed/torque control

### SINAMICS DCM / Cabinet



DC converter unit, converter cabinet

Scalable DC converter for basic and demanding applications

Rolling mill drives, wire-drawing machines, extruders and kneaders, presses, elevators and crane systems, cable railways and lifts, mine hoists, test stand drives

IP00 – IP54

1 AC 85 V – 3 AC 950 V: 6 – 2,508 kW  
(parallel connection up to 30 MW)

closed-loop speed/torque control

... and ready-to-connect LV drive cabinets...

## Family members: SINAMICS medium voltage converters

### SINAMICS PERFECT HARMONY GH180

Converter cabinet unit



The Perfect Harmony of Performance, Process and Technology

pumps, fans, compressors, mills, kilns, crushers, conveyors, retrofits



IP21 or higher, air cooling  
IP52 water cooling

Motor voltage: 2.3 to 11 kV  
Power rating: 0.18 to 15.5 MVA

V/f control, vector control with/without encoder,  
closed-loop speed/torque control

... and ready-to-connect MV drive cabinets.

# Family members: SINAMICS medium voltage converters

 <b>SINAMICS GL150</b>	 <b>SINAMICS GM150</b>
<p>Converter cabinet unit</p>	<p>Converter cabinet unit</p>
<p>Frequency converter for synchronous motors with the highest power rating</p>	<p>Frequency converter for medium-voltage variable speed drives</p>
<p>Machine building and plant construction</p>	<p>Machine building and plant construction</p>
<p>Air-cooled IP20 (opt. IP42), liquid-cooled IP41 (opt. IP54)</p>	<p>Air-cooled IP22 (opt. IP42), liquid-cooled IP43 (opt. IP54)</p>
<p>3 AC 2.3 bis 36 kV motor voltage 1.5 – 12 kV: 2,800 – 85,000 kW</p>	<p>3 AC 2.3 bis 36 kV motor voltage 1.5 – 12 kV: 820 – 18,000 kW (for induction motors)</p>
<p>Vector control with/without encoder, closed-loop speed/torque control</p>	<p>V/f control, vector control with/without encoder, closed-loop speed/torque control</p>

**... and ready-to-connect MV drive cabinets...**

# Family members: SINAMICS medium voltage converters

## SINAMICS SM150



Converter cabinet unit

Frequency converter for demanding single- and multi-axis applications in the medium-voltage range

Industrial manufacturing and processing plants

IP43 (opt. IP54)

3 AC 2.3 – 36 kV motor voltage 1.5 – 12 kV:  
2,800 – 31,500 kW

V/f control, vector control with/without encoder,  
closed-loop speed/torque control

## SINAMICS SL150



Converter cabinet unit

Cycloconverter for slow-speed synchronous and induction motors with a high torque

Machine building and plant construction

Control section: IP20  
Power unit: IP41, optional IP54

3 AC 2.3 – 36 kV motor voltage 1.5 – 12 kV:  
3,000 – 40,000 kW

Vector control with/without encoder,  
closed-loop speed/torque control

... and ready-to-connect MV drive cabinets.

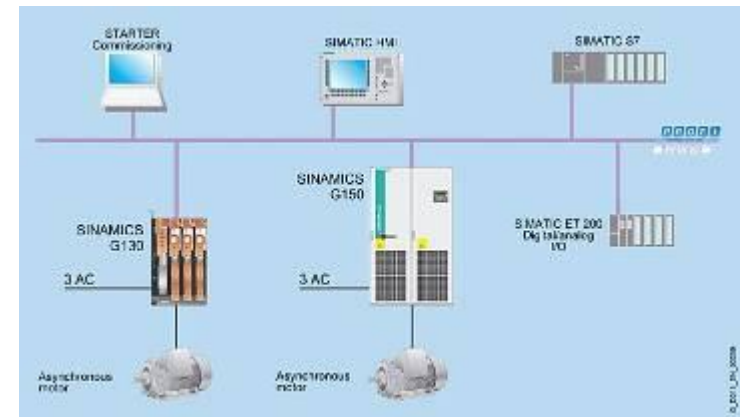
# SINAMICS G130/G150

## The universal variable frequency drive for high-rating single-motor drives

- ⑩ The quiet and compact drive for single-
- ⑩ motor applications, which do not require
- ⑩ energy recovery, e.g. pumps, fans, com-
- ⑩ pressors, extruders, mixers and crushers.

### Features

- V/f control and vector control with or without encoder
- Power range from 75 up to 2700 kW
- Simple commissioning and operator control
- Available as standard cabinet or as chassis modules
- Service-friendly thanks to easily accessible device modules
- Communication via PROFIBUS, PROFINET and other interfaces
- Energy-efficient through variable-speed operation
- Safety Integrated
- 100% line supply voltage at the motor without any secondary effects
- When required, with integrated line harmonics filter and dv/dt filter



# SINAMICS S120

## The flexible, modular drive system for sophisticated tasks

⑩ The modular drive system in different formats for high-performance and motion control applications in single- and multi-axis configurations for synchronous and induction motors.

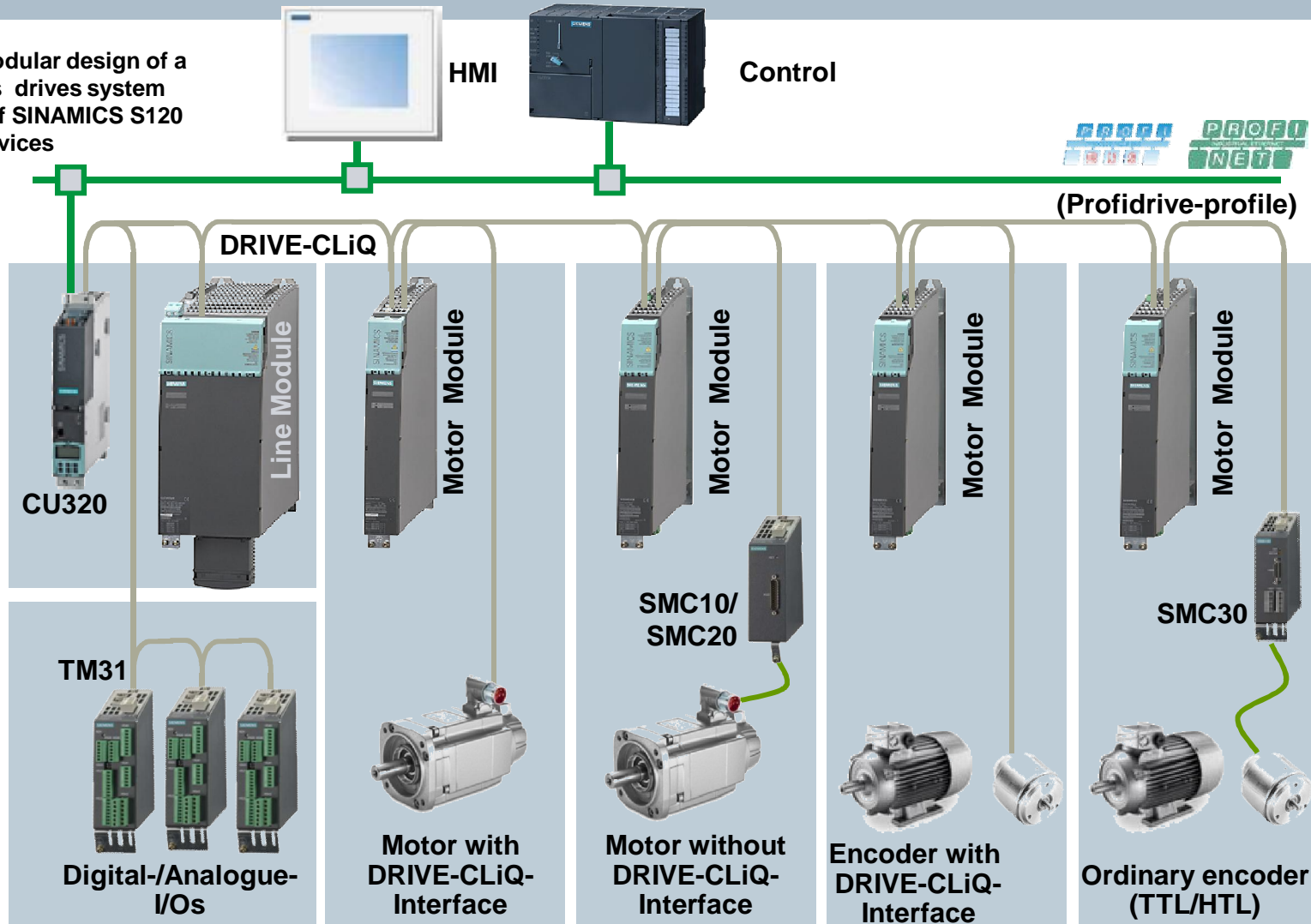
### Features

- Power range: 0.12–4500 kW
- Servo/vector control, V/f control
- Integrated safety and positioning functions
- Freely configurable logic and closed-loop control functions
- Additional motion control functions in conjunction with SIMOTION or SINUMERIK
- High degree of scalability, flexibility, combinability
- Energy-efficient as a result of energy recovery or DC link PROFIBUS/PROFINET/CANopen interface
- Different cooling types: air, liquid, cold plate cooling



# SINAMICS S120 – scalability by modular system architecture

Example: Modular design of a multiple axis drives system consisting of SINAMICS S120 Booksize devices



# SINAMICS DCM

## The scalable DC drive for basic and demanding applications

Suitable for DC applications in all sectors, for instance, rolling mills, wire-drawing machines, extruders and kneaders, cable railways and elevators as well as test stands.

### Features

- Highest degree of scalability by being able to select between a Standard Control Unit and an Advanced Control Unit or a combination of both
- Power range: 6 kW–30 MW
- Maximum degree of flexibility for specific plant and system requirements
- Compatible to the predecessor product
- High plant availability through maximum reliability, service-friendly design and redundant concepts
- Simple and fast commissioning
- Communication via PROFIBUS, optionally PROFINET
- As ready-to-connect drive unit or Control Modules for retrofit projects





## SINAMICS GL150

### Rugged single-motor drive for highrating synchronous motors in the medium-voltage range

⑩ The single-motor drive that has an extremely high operational reliability is almost maintenance-free in a compact design with high power density for pumps, fans, compressors, extruders and kneaders in the double-digit Megawatt range.

#### Features

- Minimized number of components through the thyristor-based design
- Power range: 2.8–120 MW
- Communication via PROFIBUS, optionally PROFINET
- Simple installation, integration and operator control
- Highly reliable.
- Very compact in higher power range



# SINAMICS GM150

## The universal drive solution for medium-voltage single drives

⑩ For single-motor high-rating drives that do not require energy recovery, e.g. pumps, fans, compressors, extruders, mixers, crushers and main ship's drives.

### Features

- V/f control and vector control with or without encoder
- Power range: 820 kW–17 MW
- Simple integration and installation
- Straightforward operator control
- Communication via PROFIBUS, optionally PROFINET
- Intelligent maintenance functions



# SINAMICS SM150

## The sophisticated medium-voltage drive solution for single- and multi-motor drives

Ⓢ For single- and multi-motor drives with a high dynamic performance especially in rolling mills and in mining, which must be capable of energy recovery.

### Features

- 4Q operation with energy recovery as standard
- Power range: 2.8–31.5 MW
- Ideal for power exchange between regenerating and motoring applications
- High drive quality and availability
- Simple integration and installation
- Straightforward operator control
- Communication via PROFIBUS, optionally PROFINET
- Intelligent maintenance functions



# SINAMICS PERFECT HARMONY GH180



## The Perfect Harmony of Performance, Process and Technology

- For Oil & Gas, (Petro-)Chemical, Mining, Cement,
- Power Generation, Water/Wastewater, Pulp/Paper and general industry.

## Features

- Local manufacturing at Siemens Nasik.
- Very small footprint.
- Highest Efficiency & availability.
- No harmonic line filters or power factor compensation required
- Engineered to continue operating through component failures
  - Advanced cell bypass® provides greater operational availability
  - Process-tolerant protection system (ProToPS®) in combination with cell bypass
- No common mode motor insulation stress through an integral isolation transformer
- Compatible with both new and existing 1.0 service factor motors
- Up to 2kM cable length can be supported from drive to Motor as a standard.



**SINAMICS PERFECT HARMONY HITS 10,000 LANDMARK**

## Pay As You Save ( PAYS) EMI scheme – Payment out of energy savings

**SIEMENS**

- On receipt of Initial payment of 10% VFD is supplied
- Customer pays as energy savings starts & enjoys full ROI typically in 08 – 18 months (application/rating dependent)

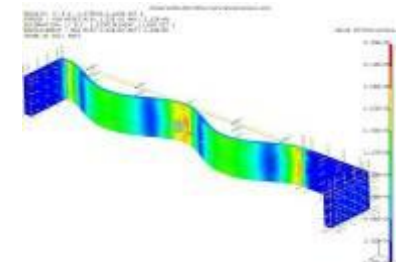
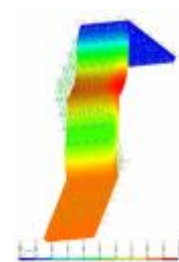
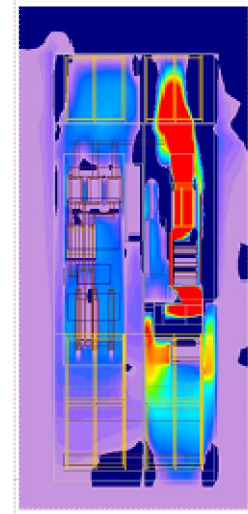
Pay - As - You - Save ! -  
with Perfect Harmony

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

# SINAMICS Cabinets

## Standardized quality

- very compact style
- type-tested units, norm oriented
- ready for connection
- maintainable construction
- high quality by series-manufacturing
- Design under consideration of temperature-, thermal and short circuit simulations
- Spare part concept supports through „Spares On Web“
- standardized interfaces
- short delivery times
- custom-designed options
- Usage of only a few types and parts and thereby high flexibility



**Tailored to customer needs.  
Influence of long experience in the design of cabinets**



There is drive for every goal

# SINAMICS Drives

# Commitment to our Partners

## Online Support



- Access to expert know-how online (FAQ, software, products and many more) in several languages

## Repairs



- In more than 20 workshops as well as in-house and local repairs, we offer fast and high quality repairs for our drive converters and motors worldwide

## Technical Consulting



- Engineering using the appropriate tools (SIZER) – also for customers
- Experienced sales engineers are always available to support you in your projects

## Technical Support



- Worldwide Experience at your service, On time

## Field Service



- Our experts from local and central service departments respond quickly and competently

## Optimization and modernization



- We support our customers when it comes to optimizing and modernizing
- e.g. for energy saving (SinaSave)
- Retrofit support



Eltra Trade s.r.o. supplies full range of Siemens Drives with the best prices and delivery terms.



We supply:

- **SINAMICS G**
- **SINAMICS G180**
- **SINAMICS S120CM**
- **SINAMICS V70**
- **SINAMICS DCM**
- **other Siemens products**



**Best prices**



**The fastest supply**



**Best level technical support**



**Customers in over 100 countries**

To find out stock ability and delivery time to your region, please contact our manager.



[info@eltra-trade.com](mailto:info@eltra-trade.com)