

SIEMENS



# SINAMICS G120C

The compact and versatile inverter with optimum functionality

[siemens.com/sinamics-g120c](https://www.siemens.com/sinamics-g120c)

Answers for industry.

# The compact inverter for countless applications

The SINAMICS G120C defines new standards in its class regarding size, fast commissioning, extremely simple operator control, high level of service-friendliness and highly integrated functionality.

It is predestined for machinery construction and sales through distribution channels and covers the requirements of many applications, e.g. for conveyor belts, mixers, extruders, pumps, fans, compressors and basic handling machines.

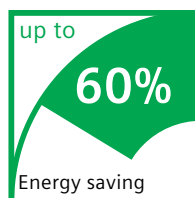


SINAMICS offers a whole raft of advantages:

- Standard operator control and functionality as a result of the common hardware and software platform
- Both low voltage as well as medium voltage
- A common engineering approach for all drives
  - SIZER for engineering
  - STARTER for parameterization and commissioning
- High degree of flexibility and combinability
- Identical options
- Minimized training costs

## Decisive advantages for machinery construction

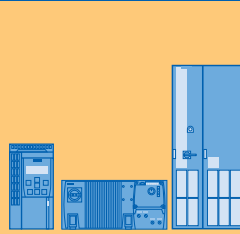
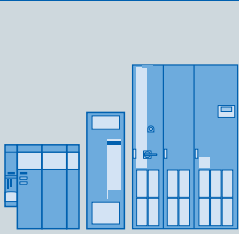
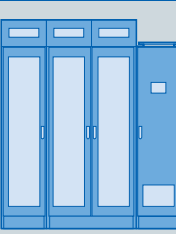
SINAMICS G120C was specifically designed for OEMs who require a cost-effective, space-saving inverter that is simple to operate and has a broad range of functions. This drive unit is especially compact with a high power density and sets itself apart as a result of its fast installation and commissioning, user-friendly connections and simple commissioning tools. Already integrated: Safety functions (STO via terminal/with PROFIsafe), drive networking via standard fieldbus systems as well as a card slot for cloning parameter sets.



With three frame sizes, SINAMICS G120C covers a range of power ratings from 0.55 kW up to 18.5 kW. To increase the energy efficiency, the inverter is equipped with vector control to achieve optimum energy efficiency and/or has automatic flux reduction. The device is an integral component of Totally Integrated Automation and has PROFINET, PROFIBUS DP, USS/Modbus RTU as well as CANopen communication interfaces. Operation/commissioning is quickly and simply realized with a PC via USB or using the BOP-2 (Basic Operator Panel) or IOP (Intelligent Operator Panel).

## SINAMICS G120C is part of the SINAMICS family

SINAMICS G120C is a member of the seamless and integrated family of SINAMICS drives – the first choice for innovative drive solutions that are fit for the future. SINAMICS offers the optimum drive for each and every application. As a consequence, all of the drives can be configured, parameterized, commissioned and operated in a standard fashion.

Low voltage		Medium voltage
		
<b>SINAMICS G</b> 0.12–2700 kW	<b>SINAMICS S</b> 0.12–4500 kW	<b>SINAMICS GM/SM/GL</b> 0.8–120 MW



#### Highlights at a glance

##### Mechanical design

- Compact
- Simple commissioning and maintenance
- Side-by-side mounting without derating
- Pluggable terminals

##### Electronics

- Integrated braking chopper
- STO safety function
- IOP, BOP-2 and USB interface
- Optional interchangeable memory card (SD)
- Electrically isolated inputs

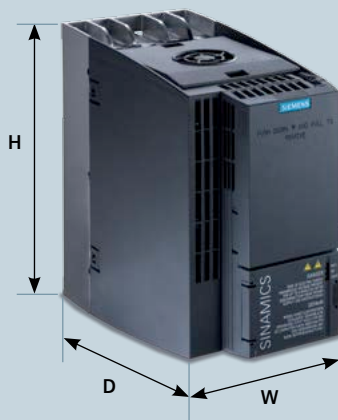
##### Communication

- PROFINET, PROFIBUS DP, CANopen, USS/Modbus RTU
- Integral component of Totally Integrated Automation
- Supported profiles: PROFIenergy und PROFIsafe

## SINAMICS G120C – advantages

	G120C features	Your benefits
<b>Small and rugged</b>		
	<ul style="list-style-type: none"> <li>• High power density, low envelope dimensions</li> <li>• Several devices can be mounted directly next to one another</li> <li>• Coated modules</li> <li>• Operation up to an ambient temperature of 60 °C</li> <li>• Simple installation in the smallest space</li> </ul>	<ul style="list-style-type: none"> <li>• Low space requirement</li> <li>• Long service life, high reliability</li> <li>• Can be used in small control cabinets, close to the machine</li> </ul>
<b>Operator friendliness</b>		
	<ul style="list-style-type: none"> <li>• Optimized parameter set</li> <li>• Optimized commissioning</li> <li>• Getting-Started document</li> <li>• BOP-2 and IOP operator panels can be used</li> <li>• Integrated USB port</li> </ul>	<ul style="list-style-type: none"> <li>• Simple and fast software parameterization</li> <li>• Simple operability during commissioning and in operation</li> <li>• Minimized training costs, utilization of already existing SINAMICS know-how</li> <li>• High degree of service friendliness</li> </ul>
<b>Installation and maintenance</b>		
	<ul style="list-style-type: none"> <li>• Pluggable terminals</li> <li>• Cloning function using BOP-2, IOP or SD card</li> <li>• G120C integrated in TIA teleservice</li> <li>• Operating hours counter for "Drive on" and "Motor on"</li> </ul>	<ul style="list-style-type: none"> <li>• Fast mechanical installation</li> <li>• Intuitive series commissioning</li> <li>• Integration in the automation environment</li> <li>• Simple maintenance</li> </ul>
<b>Leading technological functions</b>		
	<ul style="list-style-type: none"> <li>• Energy-efficient, encoderless vector control</li> <li>• Automatic flux reduction with V/f ECO</li> <li>• Integrated energy calculator</li> <li>• Safety Integrated (STO)</li> <li>• Supported profiles: PROFIsafe, PROFIenergy</li> </ul>	<ul style="list-style-type: none"> <li>• High control quality</li> <li>• Energy-efficient motor control</li> <li>• Energy-saving can be measured</li> <li>• Integrated safety functions without supplementary costs</li> </ul>
<b>State-of-the-art communication</b>		
	<p>The following communication versions are available:</p> <ul style="list-style-type: none"> <li>• PROFINET</li> <li>• PROFIBUS DP</li> <li>• CANopen</li> <li>• USS/Modbus RTU</li> </ul>	<ul style="list-style-type: none"> <li>• Uses all of the common bus systems</li> <li>• Can be flexibly used</li> <li>• Reliable communication</li> <li>• Can be simply plugged in</li> <li>• Uninterruptible thanks to the optional 24V power supply</li> </ul>

# Selection and ordering data



Rated data				Article Number			Frame size	Dimensions					
P <sub>LO</sub> <sup>1</sup> kW	P <sub>LO</sub> <sup>1</sup> Hp	I <sub>LO</sub> <sup>1</sup> <sub>out</sub> A	I <sub>HO</sub> <sup>2</sup> <sub>out</sub> A					B	H	T <sup>3</sup>			
3-phase supply voltage 380–480 V								mm	mm	mm			
0.55	0.75	1.7	1.3	6SL3210-1KE11-8				FSA	73	196	203 (PROFINET: + 22,4 mm)		
0.75	1.0	2.2	1.7	6SL3210-1KE12-3									
1.1	1.5	3.1	2.2	6SL3210-1KE13-2									
1.5	2.0	4.1	3.1	6SL3210-1KE14-3									
2.2	3.0	5.6	4.1	6SL3210-1KE15-8									
3	4.0	7.3	5.6	6SL3210-1KE17-5									
4	5.0	8.8	7.3	6SL3210-1KE18-8				FSB	100	295			
5.5	7.5	12.5	8.8	6SL3210-1KE21-3									
7.5	10.0	16.5	12.5	6SL3210-1KE21-7									
11	15.0	25.0	16.5	6SL3210-1KE22-6				FSC	140				
15	20.0	31.0	25.0	6SL3210-1KE23-2									
18.5	24.0	37.0	31.0	6SL3210-1KE23-8									

## EMC filter

Integrated EMC Class A/C2 filter<sup>4</sup>

Unfiltered version

## Integrated communication interface

RS485 with USS/Modbus RTU

SUB-D with PROFIBUS DP

SUB-D with CANopen

PROFINET

A

U

B 1

P 1

C 1

F 1

<sup>1</sup>LO = Low Overload

<sup>2</sup>HO = High Overload

<sup>3</sup>Frame size FSA- FSC with PROFINET depth: additional, 22.4mm

<sup>4</sup>For detailed information on maintaining interference classes, refer to the product documentation

<sup>5</sup>The continuous output current is not reduced when using the overload capability

Technical data	
Voltage/frequency	3-phase 380–480 V –20 % +10 % with 50/60 Hz +/-5 %
Power range	0.55–18.5 kW/ 0.75–25 Hp
Overload power	For $I_{LO_{out}}$ (LO <sup>1</sup> ): 150% for 3 sec. <b>Plus</b> 110% for 57 sec. within a 300 sec. load cycle For $I_{HO_{out}}$ (HO <sup>2</sup> ): 200% for 3 sec. <b>Plus</b> 150% for 57 sec. within a 300 sec. load cycle <sup>5</sup>
Degree of protection	IP20/UL open type
Ambient temperature	–10° to 40 °C without derating/up to 60 °C with derating
EMV	Acc. to IEC 61800-3, Category 2 (FS A,B) or Category 3 (FSC) with internal EMC filter
Motor cable lengths	50 m shielded/100 m unshielded
Signal inputs/outputs	6 DI/ 2 DO/ 1 AI/ 1 AO
Safety technology	SIL 2 acc. EN 61508, PL d acc. EN ISO 13849, class 3 acc. EN 60204
Control modes	Vector, V/f, V/f ECO
Energy functions	Energy-saving calculator, energy consumption calculator, automatic flux reduction
Function	Fixed velocity/speed setpoint, 2/3 wire control, PID controller, motor holding brake control
Braking	Integrated braking chopper

## Options

### Braking resistor

FSA	0.55–1.5 kW	6SL3201-0BE14-3AA0
FSA	2.2–4 kW	6SL3201-0BE21-0AA0
FSB	5.5–7.5 kW	6SL3201-0BE21-8AA0
FSC	11–18.5 kW	6SL3201-0BE23-8AA0

### Input reactor

FSA	0.55–1.1 kW	6SL3203-0CE13-2AA0
FSA	1.5–4 kW	6SL3203-0CE21-0AA0
FSB	5.5–7.5 kW	6SL3203-0CE21-8AA0
FSC	11–18.5 kW	6SL3203-0CE23-8AA0

### Operator panels

BOP-2	Basic Operator Panel	6SL3255-0AA00-4CA1
IOP	Intelligent Operator Panel	6SL3255-0AA00-4JA1

### Output reactor

FSA	0.55–2.2 kW	6SL3202-0AE16-1CA0
FSA	3–4 kW	6SL3202-0AE18-8CA0
FSB	5.5–7.5 kW	6SL3202-0AE21-8CA0
FSC	11–18.5 kW	6SL3202-0AE23-8CA0

### Democase

SINAMICS G120C Profinet	6AG1067-2AA00-0AA0
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