

SIEMENS



New!  
frame size  
FSAA- up to  
32 % smaller!

# SINAMICS G120C

The compact and versatile inverter with optimum functionality

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

# 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

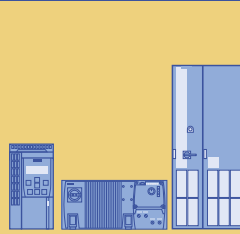
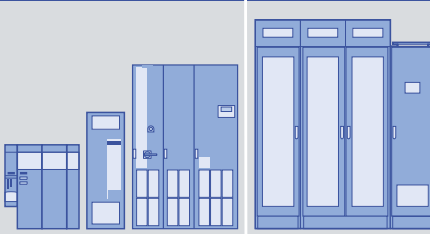
SINAMICS G120C was specifically designed for OEMs who require a cost-effective, space-saving inverter that is simple to operate and has a broad range of functions. This drive unit is especially compact with a high power density and sets itself apart as a result of its fast installation and commissioning, 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.

UP TO  
**60%**  
ENERGY SAVING POTENTIAL

With four frame sizes, SINAMICS G120C covers a range of power ratings from 0.55 kW up to 18.5 kW (0.75 hp up to 25 hp). 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 as well as USS/Modbus RTU 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><br>0.12–2700 kW  | <b>SINAMICS S</b><br>0.12–4500 kW<br><b>SINAMICS GM/SM/GL</b><br>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
- Integrated STO safety function
- IOP, BOP-2 and USB interface
- Optional interchangeable memory card (SD)
- Electrically isolated inputs

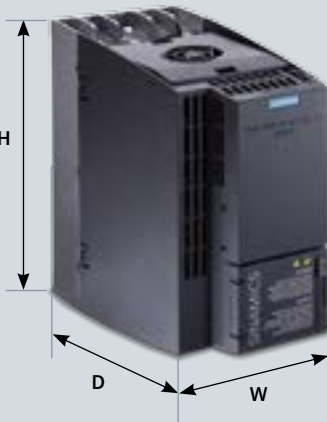
##### Communication

- PROFINET, PROFIBUS DP, USS/Modbus RTU
- Integral component of Totally Integrated Automation
- Supported profiles: PROFInergy and PROFIsafe

## SINAMICS G120C – advantages

|   | G120C features  | Your benefits   |
|---|---|---|
| <b>Small and rugged</b>   |   |   |
|    | <ul style="list-style-type: none"> <li>• FSAA needs up to 32 % less space compared to FSA</li> <li>• High power density, low envelope dimensions</li> <li>• Several devices can be mounted directly next to one another</li> <li>• Operation up to an ambient temperature of 60 °C</li> </ul> | <ul style="list-style-type: none"> <li>• Simple installation in the smallest space</li> <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> <li>• Identical options</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</li> <li>• High degree of service friendliness</li> <li>• Options for SINAMICS FSA and MICROMASTER MM4 can also be used for the new frame size FSAA</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>• FSAA is fully compatible to the other three frame sizes.</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>• When the product is being replaced, new dimensioning is not required as the drilling template is identical to SINAMICS FSA and MICROMASTER MM4</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, PROFInergy</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 no external components are required as a result of the certified Safe Torque Off (STO) safety function integrated as standard.</li> </ul>                                   |
| <b>State-of-the-art communication</b>   |   |   |
|  | <p>The following versions are available:</p> <ul style="list-style-type: none"> <li>• PROFINET</li> <li>• PROFIBUS DP</li> <li>• Ethernet/IP</li> </ul>   | <ul style="list-style-type: none"> <li>• Uses all of the common bus systems</li> <li>• Can be flexibly used</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 |     |                                 |                                 |
|----------------------------------|------------------|----------------------|----------------------|-----------------|--|---|------------|------------|-----|---------------------------------|---------------------------------|
| $P_{LO^1}$<br>kW                 | $P_{LO^1}$<br>hp | $I_{LO^1\_out}$<br>A | $I_{HO^2\_out}$<br>A |                 |  |   |            | W          | H   | D <sup>3</sup>                  |                                 |
| 3-phase supply voltage 380–480 V |                  |                      |                      |                 |  |   |            | mm         | mm  | mm                              |                                 |
| 0.55                             | 0.75             | 1.7                  | 1.3                  | 6SL3210-1KE11-8 |  | 2 | New        | F5AA       | 73  | 173                             | 155<br>(PROFINET:<br>+ 22.4 mm) |
| 0.75                             | 1.0              | 2.2                  | 1.7                  | 6SL3210-1KE12-3 |  | 2 | New        |            |     |                                 |                                 |
| 1.1                              | 1.5              | 3.1                  | 2.2                  | 6SL3210-1KE13-2 |  | 2 | New        |            |     |                                 |                                 |
| 1.5                              | 2.0              | 4.1                  | 3.1                  | 6SL3210-1KE14-3 |  | 2 | New        |            |     |                                 |                                 |
| 2.2                              | 3.0              | 5.6                  | 4.1                  | 6SL3210-1KE15-8 |  | 2 | New        |            |     |                                 |                                 |
| 3                                | 4.0              | 7.3                  | 5.6                  | 6SL3210-1KE17-5 |  | 1 |            | F5A        | 196 | 203<br>(PROFINET:<br>+ 22.4 mm) |                                 |
| 4                                | 5.0              | 8.8                  | 7.3                  | 6SL3210-1KE18-8 |  | 1 |            |            |     |                                 |                                 |
| 5.5                              | 7.5              | 12.5                 | 8.8                  | 6SL3210-1KE21-3 |  | 1 |            | F5B        | 100 |                                 |                                 |
| 7.5                              | 10.0             | 16.5                 | 12.5                 | 6SL3210-1KE21-7 |  | 1 |            |            |     |                                 |                                 |
| 11                               | 15.0             | 25.0                 | 16.5                 | 6SL3210-1KE22-6 |  | 1 |            | F5C        | 140 | 295                             |                                 |
| 15                               | 20.0             | 31.0                 | 25.0                 | 6SL3210-1KE23-2 |  | 1 |            |            |     |                                 |                                 |
| 18.5                             | 25.0             | 37.0                 | 31.0                 | 6SL3210-1KE23-8 |  | 1 |            |            |     |                                 |                                 |

### EMC filter

Integrated EMC Class A/C2 filter<sup>4</sup> A  
 Unfiltered version U

### Integrated communication interface

RS485 with USS/Modbus RTU B  
 SUB-D with PROFIBUS DP P  
 PROFINET; Ethernet/IP F

<sup>1</sup>LO = Low Overload (continuous operation)

<sup>2</sup>HO = High Overload (cyclic duty)

<sup>3</sup>Frame size F5A- F5C with PROFINET depth: additional, 22.4 mm

<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 AC 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<br>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-Inverters with Class A filter | <ul style="list-style-type: none"> <li>Device fulfills the requirements according to EN 61800-3 Category C3 (industrial low-voltage line supplies)</li> <li>Device complies with the limit values of cable-conducted and radiated interference voltages according to EN 61800-3 Category C2 (public low-voltage grid)</li> </ul> |
| 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 setpoint, PID controller, motor holding brake control   |
| Braking                           | Integrated braking chopper   |

| Options                              |                            |                    |
|--------------------------------------|----------------------------|--------------------|
| <b>Braking resistor</b>              |                            |                    |
| F5AA                                 | 0.55–1.5 kW                | 6SL3201-0BE14-3AA0 |
| F5AA/F5A                             | 2.2–4 kW                   | 6SL3201-0BE21-0AA0 |
| F5B                                  | 5.5–7.5 kW                 | 6SL3201-0BE21-8AA0 |
| F5C                                  | 11–18.5 kW                 | 6SL3201-0BE23-8AA0 |
| <b>Input reactor</b>                 |                            |                    |
| F5AA                                 | 0.55–1.1 kW                | 6SL3203-0CE13-2AA0 |
| F5AA/F5A                             | 1.5–4 kW                   | 6SL3203-0CE21-0AA0 |
| F5B                                  | 5.5–7.5 kW                 | 6SL3203-0CE21-8AA0 |
| F5C                                  | 11–18.5 kW                 | 6SL3203-0CE23-8AA0 |
| <b>Output reactor</b>                |                            |                    |
| F5AA                                 | 0,55–2,2 kW                | 6SL3202-0AE16-1CA0 |
| F5A                                  | 3–4 kW                     | 6SL3202-0AE18-8CA0 |
| F5B                                  | 5,5–7,5 kW                 | 6SL3202-0AE21-8CA0 |
| F5C                                  | 11–18,5 kW                 | 6SL3202-0AE23-8CA0 |
| <b>Operator panels</b>               |                            |                    |
| BOP-2                                | Basic Operator Panel       | 6SL3255-0AA00-4CA1 |
| IOP                                  | Intelligent Operator Panel | 6SL3255-0AA00-4JA1 |
| <b>Trainings case SINAMICS G120C</b> |                            |                    |
| G120C PN F5A with motor and panels   |                            | 6AG1067-2AA00-0AA0 |

Contact person:

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