SIEMENS


# SINAMICS G120C

## The perfect balance of performance, simplicity and cost-efficiency

usa.siemens.com/sinamics-g120c

Answers for industry.

# The compact drive for countless applications

## SINAMICS G120C — a new standard in its class

**Compact in size and easy-to-operate, SINAMICS G120C provides world-class functionality in a highly-serviceable package for applications ranging from pumps and compressors to extruders and basic handling machines.**

### SINAMICS offers a variety of advantages:

- Common hardware and software
- Standard operator control and functionality
- Part of the Siemens Totally Integrated Automation (TIA) concept
- Common engineering approach with STARTER and SIZER tools
- Wide range of communcation options including PROFINET and EtherNet / IP.

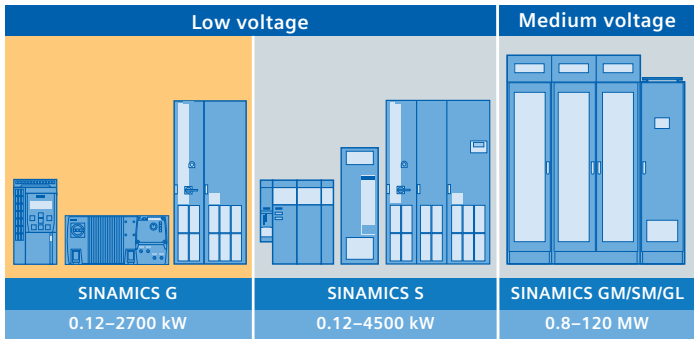
### Decisive advantages for machine building

SINAMICS G120C was specifically designed for OEMs requiring a cost-effective, space-saving drive that is easy-to-operate and has a wide range of functionality. 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. Safety functions (STO via terminal / with PROFIsafe) are already integrated — drive networking via standard fieldbus systems, as well as a card slot for cloning parameter sets, are also included.


With three sizes, the SINAMICS G120C covers a power range from 0.55–18.5kW. To increase its energy efficiency, the drive is equipped with vector control and comes with automatic flux reduction (ECO mode). Operator control and commissioning are quickly and easily achieved with a PC via USB or via BOP-2 (Basic Operator Panel) or IOP (Intelligent Operator Panel). The G120C is an integral component of Totally Integrated Automation and has PROFINET, EtherNet / IP, PROFIBUS DP, USS / Modbus RTU, as well as CANopen communication interfaces. Comissioning and operation are quickly and easily achieved with a PC via USB, by the BOP-2 (Basic Operator Panel) or IOP (Intelligent Operator Panel).

### SINAMICS — one family, one source, all applications.

The G120C is a part of the SINAMICS family of integrated drives, which offers the optimal drive for every application. As a result, these drives can be configured, parameterized, commissioned and operated in a standard fashion.



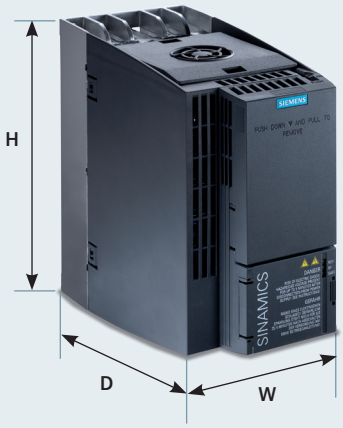
**Highlights at a glance**

| |
|---|
| **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, EtherNet / IP, PROFIBUS DP, CANopen, USS / Modbus RTU |
| ▪ Integral component of Totally Integrated Automation |
| ▪ Supported profiles: PROFIenergy und PROFIsafe |

## SINAMICS G120C — advantages

| | G120C features | Your benefits |
|---|---|---|
| | **Small and rugged** | |
|  | ▪ High power density, low envelope dimensions<br>▪ Several devices can be mounted side-by-side<br>▪ Coated modules<br>▪ Operation up to an ambient temperature of 60° C<br>▪ Simple installation in the smallest space | ▪ Low space requirement<br>▪ Long service life, high reliability<br>▪ Can be used in small control cabinets, close to the machine |
| | **User-friendly** | |
|  | ▪ Optimized parameter set<br>▪ Optimized commissioning<br>▪ Getting Started document<br>▪ BOP-2 and IOP operator panels can be used<br>▪ Integrated USB port | ▪ Simple and fast software parameterization<br>▪ Simple operability during commissioning and in operation<br>▪ Minimized training costs, utilization of already existing SINAMICS expertise<br>▪ Service-friendly |
| | **Installation and maintenance** | |
|  | ▪ Pluggable terminals<br>▪ Cloning function using BOP-2, IOP or SD card<br>▪ G120C integrated into Siemens TIA<br>▪ Operating hours counter for “Drive on” and “Motor on” | ▪ Fast mechanical installation<br>▪ Intuitive series commissioning<br>▪ Integration in the automation environment<br>▪ Simple maintenance |
| | **Leading technology functions** | |
|  | ▪ Energy-efficient, encoderless vector control<br>▪ Automatic flux reduction with V/f ECO<br>▪ Integrated energy calculator<br>▪ Safety Integrated (STO)<br>▪ Supported profiles: PROFIsafe, PROFIenergy | ▪ High control quality<br>▪ Energy-efficient motor control<br>▪ Energy-saving can be measured<br>▪ Integrated safety functions without additional costs |
| | **State-of-the-art communication** | |
|  | The following communication versions are available:<br>▪ PROFINET, EtherNet / IP<br>▪ PROFIBUS DP<br>▪ CANopen<br>▪ USS / Modbus RTU | ▪ Uses all of the common bus systems<br>▪ Flexible use<br>▪ Reliable communication<br>▪ Can be simply plugged in<br>▪ Uninterruptible, due to the optional 24V power supply |

## Selection and ordering information




| Rated data | | | | Order Number | | | | Frame size | Dimensions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $P_{LO}$ [1] kW | $P_{LO}$ [1] Hp | $I_{LO\_out}$ [1] A | $I_{HO\_out}$ [2] A | | | | | | B | H | T [3] |
| **3-phase supply voltage 380–480V** | | | | | | | | | | | |
| 0.55 | 0.75 | 1.7 | 1.3 | 6SL3210-1KE11-8 | | | | FSA | 73 mm 2.87 in. | 196 mm 7.72 in. | 203 mm (PROFINET, EtherNet / IP: + 8.87 in.) |
| 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 | | | | | | | |
| 5.5 | 7.5 | 12.5 | 8.8 | 6SL3210-1KE21-3 | | | | FSB | 100 mm 3.94 in. | | |
| 7.5 | 10.0 | 16.5 | 12.5 | 6SL3210-1KE21-7 | | | | | | | |
| 11 | 15.0 | 25.0 | 16.5 | 6SL3210-1KE22-6 | | | | FSC | 140 mm 5.51 in. | 295 mm 11.61 in. | |
| 15 | 20.0 | 31.0 | 25.0 | 6SL3210-1KE23-2 | | | | | | | |
| 18.5 | 25.0 | 37.0 | 31.0 | 6SL3210-1KE23-8 | | | | | | | |
| **EMC filter** | | | | | | | | | | | |
| Integrated EMC Class A/C2 filter [4] | | | | | A | | | | | | |
| Unfiltered version | | | | | U | | | | | | |
| **Integrated communication interface** | | | | | | | | | | | |
| RS485 with USS / Modbus RTU | | | | | | B | 1 | | | | |
| SUB-D with PROFIBUS DP | | | | | | P | 1 | | | | |
| SUB-D with CANopen | | | | | | C | 1 | | | | |
| PROFINET, EtherNet / IP | | | | | | F | 1 | | | | |

[1] LO = Low Overload
[2] HO = High Overload
[3] Frame size FSA- FSC with PROFINET, EtherNet / IP depth: additional, 22.4mm
[4] For detailed information on maintaining interference classes, refer to the product documentation
[5] The continuous output current is not reduced when using the overload capability

| Technical data | |
|---|---|
| Voltage / frequency | 3-phase 380–480V –20% +10% with 50 / 60 Hz +/–5% |
| Power range | 0.55–18.5kW / 0.75–25hp |
| Overload power | For $I_{HO\_out}$: 2.0 x $I_{HO\_out}$ for 3s and then 1.5 x $I_{HO\_out}$ for 57s in a 300s cycle For $I_{LO\_out}$: 1.5 x $I_{LO\_out}$ for 3s and then 1.1 x $I_{LO\_out}$ for 57s in a 300s cycle |
| Degree of protection | IP20 / UL open type |
| Ambient temperature | 0–40° 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 | 50m shielded / 100m 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, Safe Torque Off (STO) |
| 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 | 0.55–1.5kW | 6SL3201-0BE14-3AA0 |
| FSA | 2.2–4kW | 6SL3201-0BE21-0AA0 |
| FSB | 5.5–7.5kW | 6SL3201-0BE21-8AA0 |
| FSC | 11–18.5kW | 6SL3201-0BE23-8AA0 |
| **Input reactor** | | |
| FSA | 0.55–1.1kW | 6SL3203-0CE13-2AA0 |
| FSA | 1.5–4kW | 6SL3203-0CE21-0AA0 |
| FSB | 5.5–7.5kW | 6SL3203-0CE21-8AA0 |
| FSC | 11–18.5kW | 6SL3203-0CE23-8AA0 |
| **Operator panels** | | |
| BOP-2 | Basic Operator Panel | 6SL3255-0AA00-4CA1 |
| IOP | Intelligent Operator Panel | 6SL3255-0AA00-4JA1 |
| **Output reactor** | | |
| FSA | 0.55–2.2kW | 6SL3202-0AE16-1CA0 |
| FSA | 3–4kW | 6SL3202-0AE18-8CA0 |
| FSB | 5.5–7.5kW | 6SL3202-0AE21-8CA0 |
| FSC | 11–18.5kW | 6SL3202-0AE23-8CA0 |

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