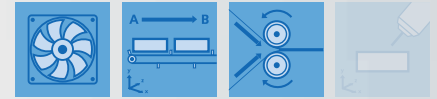


## SINAMICS G120C

### The compact, single-motor drive with small power rating and suitable functionality

The rugged standard drive defines new standards in its class regarding small size, fast commissioning times, extremely simple operator control, high degree of service-friendliness and integrated functionality. For example, for belt conveyors, mixers, extruders, pumps, fans, compressors and simple handling machines.

- Compact device
- Highest power density of its class
- Power range: 0.55–18.5 kW
- Simple commissioning and maintenance
- With BOP-2 or IOP operator panel
- Safety Integrated: STO
- Communication options: DP, CANopen, USS, Modbus RTU

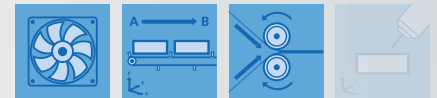


## SINAMICS G120

### The modular single-motor drive for small up to medium power ratings

The rugged standard drive for universal applications in the industrial environment can even be used under extreme environmental conditions thanks to its clever cooling concept. Power modules capable of energy recovery and Control Units can be freely combined.

- Power range: 0.37–250 kW
- Safety Integrated: STO, SS1, SLS and SBC (without encoder) up to SIL2 according to IEC 61508 and up to Category 3 according to EN 954-1; in compliance with IEC 61800-5-2
- Communication via PROFIBUS, PROFINET, RS 485, USS, Modbus RTU, CANopen
- Energy-efficient thanks to energy recovery and low harmonics
- Parameter copy function for series commissioning

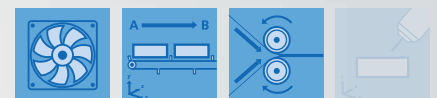


## SINAMICS G130 / G150

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

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

- 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

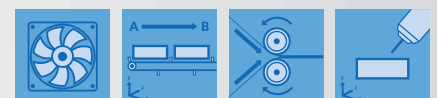


## SINAMICS S110

### The specialist for basic positioning tasks

The AC/AC unit for basic positioning of single axes with synchronous or induction motors.

- Servo control
- Power ratings from 0.12–90 kW
- Safety Integrated
- Integrated positioning functions
- Simple system connection to higher-level controls (e.g. PLCs) with PROFIBUS, PROFINET, CANopen



# Technical data



Use

| Designation   | SINAMICS G110  | SINAMICS G110D   | SINAMICS G120P   |
|---|--|--|--|
| <b>Continuous motion</b>                                |  |  |  |
| Pumping, ventilating, compressing                       | Basic  |  | Medium   |
| Moving  | Basic  | Basic  |  |
| Processing  |  |  |  |
| Machining   |  |  |  |
| <b>Discontinuous motion</b>                             |  |  |  |
| Pumping, ventilating, compressing                       |  |  |  |
| Moving  |  |  |  |
| Processing  |  |  |  |
| Machining   |  |  |  |
|   | Frequency converter for variable-speed drives in the lower power range                 | Distributed drive for basic single-axis applications in the lower power range  | Versatile single-motor inverter for pumps, fans and compressors  |
| Type of construction                                    | Blocksize unit   | Blocksize unit   | Blocksize unit   |
| Drive type  | AC/AC unit ready to be connected up  | AC/AC unit ready to be connected up  | AC/AC unit, modular  |
| Degree of protection                                    | IP20   | IP65   | <ul style="list-style-type: none"> <li>• With operator unit: IP54/UL Type 12</li> <li>• With blanking cover: IP55/UL Type 12</li> </ul>  |
| <b>Line voltage <math>V_{line}</math> /power ranges</b> |  |  |  |
| 1AC 200 ... 240 V                                       | 0.12 ... 3 kW  | –  | –  |
| 3AC 380 ... 480 V                                       | –  | 0.75 ... 7.5 kW $\pm 10\%$   | 0.37 ... 90 kW $\pm 10\%$  |
| 3AC 500 ... 600 V                                       | –  | –  | –  |
| 3AC 500 ... 690 V                                       | –  | –  | –  |
| 3AC 660 ... 690 V                                       | –  | –  | –  |
| 1AC 85 ... 3AC 950 V                                    | –  | –  | –  |
| 3AC 2.3 ... 36 kV motor voltage 1.5 ... 13.4 kV         | –  | –  | –  |
| <b>Current infeed</b>                                   |  |  |  |
|   | Uncontrolled   | Uncontrolled   | Uncontrolled   |
| <b>Energy recovery</b>                                  |  |  |  |
|   | No   | No   | No   |
| <b>Output frequency</b>                                 |  |  |  |
|   | 0 ... 650 Hz   | 0 ... 200 Hz ( $U/f$ )   | 0 ... 200 Hz ( $U/f$ )   |
| <b>Closed-loop control mode</b>                         |  |  |  |
| V/f control   | Yes  | Yes  | Yes  |
| Vector control with/ without encoder                    | –  | –  | Yes  |
| Servo control with / without encoder                    | –  | –  | –  |
| Closed-loop speed/torque control                        | Yes  | –  | Yes  |
| <b>Motors</b>   |  |  |  |
| Induction motors  | Yes  | Yes  | Yes  |
| Synchronous motors                                      | –  | –  | –  |
| Torque motors   | –  | –  | –  |
| Linear motors   | –  | –  | –  |
| <b>Control dynamic performance</b>                      |  |  |  |
| Vector control (SINAMICS DCM: V/f control)              | Rise time, speed control   | –  | –  |
|   | Rise time, torque control  | –  | –  |
| Servo control   | Rise time, speed control   | –  | –  |
|   | Rise time torque control   | –  | –  |
| <b>Technological functions</b>                          |  |  |  |
|   | Flying restart, automatic restart, compound braking (2- or 3-wire control), DC braking | Flying restart, automatic restart, BICO technology, technology controller, free function blocks, compound braking, DC braking, dynamic braking | Automatic restart, energy-saving mode, hibernation, flying restart, motor staging, 4 PID technology controllers, logical and arithmetic functions, extended emergency service operation, multi-zone controller, bypass |
| <b>Safety functions</b>                                 |  |  |  |
|   | –  | –  | –  |
| <b>Communication profiles</b>                           |  |  |  |
|   | RS 485   | RS 232, AS-Interface   | USS, Modbus RTU, BacNet MS/TP, PROFIBUS DP, CANopen  |
| <b>Catalog</b>  |  |  |  |
|   | D11.1  | D11.1  | D11.1  |

## Low voltage



| SINAMICS G120D  | SINAMICS G120C                                  | SINAMICS G120   | SINAMICS G130   | SINAMICS G150   | SINAMICS S110   |
|---|---|---|---|---|---|
| Medium  | Basic/medium<br>Basic/medium<br>Basic/medium    | Medium<br>Medium<br>Medium  | Basic/medium<br>Basic/medium<br>Basic/medium  | Basic/medium<br>Basic/medium<br>Basic/medium                  | Basic/medium  |
|   |   |   |   |   | Basic/medium<br>Basic/medium<br>Basic/medium<br>Basic/medium  |
| Distributed drives for complex single-axis/multi-axis applications  | Compact single drive for machinery construction | Modular frequency converter for variable-speed single drives  | Frequency converter for variable-speed single drives  |   | Single-axis positioning drive   |
| Blocksize unit<br>AC/AC unit, modular   | Blocksize unit<br>AC/AC unit, compact           | Blocksize unit<br>AC/AC unit, modular   | Chassis unit<br>AC/AC unit, modular   | Converter cabinet unit<br>AC/AC unit ready to be connected up | Blocksize unit<br>AC/AC unit, modular   |
| IP65  | IP20  | IP20  | IP00/IP20   | IP20 (IP21/IP23/IP43/IP54)                                    | IP20  |
| –   | –   | –   | –   | –   | 0.12 ... 0.75 kW  |
| 0.75 ... 7.5 kW   | 0.55 ... 18.5 kW                                | 0.37 ... 250 kW   | 110 ... 560 kW  | 110 ... 900 kW  | 0.37 ... 90 kW  |
| –   | –   | –   | 110 ... 560 kW  | 110 ... 1000 kW   | –   |
| –   | –   | –   | –   | –   | –   |
| –   | –   | 11 ... 55 kW  | 75 ... 800 kW   | 75 ... 2700 kW  | –   |
| –   | –   | –   | –   | –   | –   |
| Uncontrolled<br>Yes   | Uncontrolled<br>No                              | Uncontrolled<br>optional  | Uncontrolled<br>No  |   | Uncontrolled<br>No  |
| 0 ... 650 Hz  | 0 ... 650 Hz                                    | 0 ... 650 Hz (V/f)  | 0 ... 300 Hz  |   | 0 ... 300 Hz  |
| Yes   | Yes   | Yes   | Yes   |   | Yes   |
| Yes   | –   | Yes   | Yes   |   | –   |
| –   | –   | –   | –   |   | Yes   |
| Yes   | Yes   | Yes   | Yes   |   | Yes   |
| Yes   | Yes   | Yes   | Yes   |   | Yes   |
| –   | –   | –   | Yes, encoderless  |   | Yes   |
| –   | –   | –   | Yes, encoderless  |   | –   |
| –   | –   | –   | –   |   | –   |
| 35 ... 40 ms<br>approx. 3 ms  | –   | 35 ... 40 ms<br>approx. 3 ms  | 11 ... 15 ms<br>2 ... 3 ms  | 11 ... 15 ms<br>2 ... 3 ms                                    | –   |
| –   | –   | –   | –   | –   | 5 ... 7 ms <sup>3</sup>   |
| –   | –   | –   | –   | –   | 1 ... 2 ms <sup>3</sup>   |
| Flying restart, automatic restart, kinetic buffering, BICO technology, technology controller, free function blocks, compound braking, DC braking, dynamic braking |   |   | Flying restart, automatic restart, kinetic buffering, BICO technology, technology controller, Drive Control Chart |   | Basic positioner, BICO technology, technology controller, controller optimization using auto-tuning |
| STO, SS1, SLS   | STO   | STO, SS1, SLS, SDI, SSM SBC   | STO, SS1  |   | STO, SOS, SBC, SS1, SS2, SLS, SDI, SSM  |
| PROFIBUS and PROFINET, also with PROFIdrive profile 4 with PROFIsafe  | PROFIBUS DP, CAN, USS, Modbus RTU               | RS 232, RS 485, PROFIBUS and PROFINET, also with PROFIdrive profile 4 with NAMUR, with PROFIsafe; Modbus RTU, CANopen | RS 232, RS 485, PROFIBUS DP, CANopen, PROFINET (PROFIdrive profile 4 with NAMUR), PROFIsafe                       |   | PROFIBUS DP, PROFINET <sup>1</sup> , CANopen, pulse/direction interface, USS protocol               |
| D11.1   | D11.1   | D11.1   | D11   |   | PM22  |