

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
Continuous motion			
Pumping, ventilating, compressing	Basic		Medium
Moving	Basic	Basic	
Processing			
Machining			
Discontinuous motion			
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"> • With operator unit: IP54/UL Type 12 • With blanking cover: IP55/UL Type 12
Line voltage V_{line} /power ranges			
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	–	–	–
Current infeed			
	Uncontrolled	Uncontrolled	Uncontrolled
Energy recovery			
	No	No	No
Output frequency			
	0 ... 650 Hz	0 ... 200 Hz (U/f)	0 ... 200 Hz (U/f)
Closed-loop control mode			
V/f control	Yes	Yes	Yes
Vector control with/ without encoder	–	–	Yes
Servo control with / without encoder	–	–	–
Closed-loop speed/torque control	Yes	–	Yes
Motors			
Induction motors	Yes	Yes	Yes
Synchronous motors	–	–	–
Torque motors	–	–	–
Linear motors	–	–	–
Control dynamic performance			
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	–	–
Technological functions			
	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
Safety functions			
	–	–	–
Communication profiles			
	RS 485	RS 232, AS-Interface	USS, Modbus RTU, BacNet MS/TP, PROFIBUS DP, CANopen
Catalog			
	D11.1	D11.1	D11.1

Low voltage



SINAMICS G120D	SINAMICS G120C	SINAMICS G120	SINAMICS G130	SINAMICS G150	SINAMICS S110
Medium	Basic/medium Basic/medium Basic/medium	Medium Medium Medium	Basic/medium Basic/medium Basic/medium	Basic/medium Basic/medium Basic/medium	Basic/medium
					Basic/medium Basic/medium Basic/medium 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 AC/AC unit, modular	Blocksize unit AC/AC unit, compact	Blocksize unit AC/AC unit, modular	Chassis unit AC/AC unit, modular	Converter cabinet unit AC/AC unit ready to be connected up	Blocksize unit 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 Yes	Uncontrolled No	Uncontrolled optional	Uncontrolled No		Uncontrolled 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 approx. 3 ms	–	35 ... 40 ms approx. 3 ms	11 ... 15 ms 2 ... 3 ms	11 ... 15 ms 2 ... 3 ms	–
–	–	–	–	–	5 ... 7 ms ³
–	–	–	–	–	1 ... 2 ms ³
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 ¹ , CANopen, pulse/direction interface, USS protocol
D11.1	D11.1	D11.1	D11		PM22