SIEMENS

Ingenuity for life

SINAMICS G120L

General Purpose Single Drive Converter

Brochure 2016.10

siemens.com.cn/fom

Reliable.Energy-efficient.

SINAMICS G120L fulfills the highest requirements

SINAMICS offers the optimum drive for every drive task – and all of these drives can be engineered, parameterized, commissioned and operated in the same standard way.

SINAMICS G120L series of inverters

SINAMICS G120L is enable the user to have an easy (modular design) and efficient control of any application powered by any AC motor.

Controlling applications such as a fan, pump or compressor with accuracy when parameterised in Sensorless Vector mode of control.

SINAMICS G120L currently covers a power range.

Line voltage	Power rate
3 AC 380 V (-15 %) ... 440 V (+10 %)	280 ... 560 kW
3 AC 500 V (-10%) ... 690 V (+10%)	500 ... 630 kW

SINAMICS G120L sets itself apart as a result of the standard operation as well as identical selection and commissioning tools.

SINAMICS G120L highlights

Ruggedness

- Ambient temperatures from 0 °C to 50 °C
- Degree of protection IP20/IP00 (depend on power rate)
- Coated modules

Communication

- Integrated in the building automation through Modbus RTU, BACnet MS/TP, Siemens FLN P1
- Embedded in Totally Integrated Automation through PROFINET and PROFIBUS

Energy saving using innovative technology

- Efficiency > 98 % for the PM330L
- Flux reduction in the partial load range
- Hibernation mode

Special functions for pump&fan

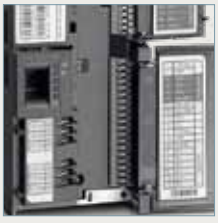
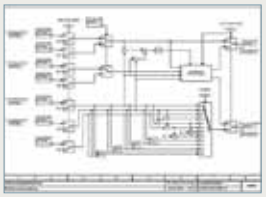
- Control of flaps, heating and cooling valves using additional PID controller
- Closed-loop control of pressure, temperature and air quality in up to three zones
- Essential Service Mode for maximum operating time of the drive in the case of fire

EPLAN data can be downloaded from image database at no charge
https://www.automation.siemens.com/bilddb/index.aspx

[1] You can obtain more detailed information about SINAMICS G120L and download the SINAMICS G120L brochure at:
http://www.ad.siemens.com.cn/download

Innovations for drive technology

Your advantages at a glance

	Function	Customer benefits
Use on public grids and in industry		
	• Built in units: 280 kW - 560 kW @380 V 500 kW - 630 kW @690 V	• 7 power rate provided @380 V 3 power rate provided @690 V
	• Optional output filter	• Adaptation to different installations and plants
User-friendly handling		
	• Pluggable operator panels	• Fast commissioning without requiring expert knowledge • Display with user-friendly plain text (IOP) or two lines (BOP-2)
	• Application support using wizards in the IOP and macros in STARTER	• Prompted commissioning for applications in building technology as well as the water and process industries
	• SINAMICS SD card	• Data backup by simply replacing
Expanded inputs/outputs		
	• Isolated digital inputs (own potential group)	• Avoidance of parasitic voltages
	• Isolated analog inputs	• EMC-compliant installation without requiring additional components
	• Two resistance thermometers can be directly connected LG-Ni1000/ PT1000	• Temperature sensors can be connected without requiring a separate evaluation
	• Motor temperature monitoring	• Motor protection by directly connecting thermistors or bimetallic sensors
	• Digital outputs with 230 V relay	• Auxiliary units and actuator drives can be directly controlled
Innovative functions		
	• Automatic restart	• Automatic acknowledgment of the fault after a power failure and automatic restart
	• Flying restart	• Inverter can be synchronized to a motor that is still rotating
	• Skip frequencies	• System-resonant frequencies can be skipped
	• Load torque monitoring	• Drive is equipped with dry running protection, locked rotor protection and broken belt monitoring
	• Real-time clock	• Precise time stamp for fault and alarm logging buffer time up to 5 days
	• 3 freely programmable digital timers	• Three selectable events can be controlled as a function of the day of the week/hour/minute
	• Free function blocks	• Flexible use of integrated functions for optimum use in building technology, additional external components can be eliminated
	• PID controller	• The drive speed is controlled depending on process variables such as temperature/pressure/flow/air quality
	• Cascading drives	• Flow rate can be adapted in an energy-efficient way by switching in or switching out up to three fixed-speed drives
Communication interfaces – simple and direct integration into the automation environment		
	• Different communication interfaces: PROFINET, PROFIBUS DP, EtherNET/IP, USS / Modbus RTU, CANopen, BACnet MS /T P, Siemens FLN P1	• Simple integration into building control, process control and automation systems

Technical data

SINAMICS G120L in detail

Power Modules	PM330L	
Mechanical data		
Format	Built-in unit	
Degree of protection	IP20/IP00 (depend on power rate)	
Operating temperature	0 °C to +40 °C, to +50 °C with power derating	
Electrical data		
Power rating (low overload LO) Rated output current (low overload LO)	280 ... 560 kW @380 V 525 ... 1015 A	500 ... 630 kW @690 V 520 ... 650 A
Line voltage	3 AC 380 V (-15 %) ... 440 V (+10 %)	3 AC 500 V (-10%) ... 690 V (+10%)
Line frequency	47 ... 63 Hz	
Overload capability (Low overload LO) (Hight overload HO)	280 to 630 kW: 135 % for 3 s or 110 % for 60 s within load a cycle of 300 s 150% for 60 s within load a cysle of 300 s	
Output frequency – U/f control mode – vector control mode	 0 ... 100 Hz 0 ... 100 Hz	
Pulse frequency	Self-adjusting up to 4 kHz	
Motor cable lengths	100 m[1)] / 300 m[2)]	
Control Unit	**CU230P-2**	
Communication		
Digital/analog inputs and outputs	6DI / 3DO / 4AI / 2 AO, 1x KTY / PTC / Thermo-Click sensor, 2 x Ni1000-in / PT1000-in (part of the 4AI)	
Integrated interface	PROFINET, PROFIBUS DP, EtherNET/IP, USS / Modbus RTU, BACnet MS / TP, Siemens FLN P1	
Functions		
Open-loop/closed-loop control modes	V/f (linesr, square law, FCC, ECO) Vector control without encoder (SLVC)	
Protection functions	Undervoltage, overvoltage, overcontrol/overload, ground fault, short circuit, stall protection, locked rotor protection, motor overtemperature, inverter overtemperature, parameter interlocking	
Brake functions	DC braking, dynamic braking with optional braking chopper	
Motors that can be connected	3-phase induction motors and 3-phase synchronous motors	
Commissioning		
Operator panel	IOP and BOP-2 with Wizard for fast commissioning	
Operating software	STARTER	
Additional information		
Conformance with standards	CE	
Electromagnetic compatibility (EMC)	• Devices with integrated EMI filter for installations according to IEC 61800-3 Category C3 • Additional line filter to comply with EMC limit values according to IEC 61800-3 Category C2	

[1)] Compliance with IEC 61800-3 Category C2 / [2)] Maximum shielded cable length

SINAMICS G120L configuration

This is how you obtain your drive solution in four simple steps

1. Power Modules

Step 1:
Select the Power Module as built-in unit in degree of IP20 (HX@380 V, JX@690 V) IP00 (JX@380 V)

2 . Control Unit

Step 2:
Select the CU230P-2 Control Unit in the required communication version (PROFINET, PROFIBUS DP, EtherNET / IP, HVAC)

3. Operator Panel

Step 3:
Select an operator panel BOP-2 or IOP (optional)

4. EMC components

Step 4:
Select the required reactors and filters to comply with the electromagnetic compatibility (EMC) according to IEC 61800-3

The SINAMICS G120L Converter comprises PM330L Power Modules, the CU230P-2 Control Unit as well as an operator panel (IOP or BOP-2) When ordering, an article number is specified for each component. The article numbers are listed in the table opposite.

Selection and ordering data

Built-in units with PM330L Power Modules

Select the Power Module ...			Built-in units
PM330L[1]			6SL3310-1C_ _ - _AA0
Rated power kW	**Rated Current A 380/690 V**	**Dimension drawings**	**Article No.**
380 V ... 440 V			
280	535	HX	6SL3310-1CE35-2AA0
315	605	HX	6SL3310-1CE35-8AA0
355	670	HX	6SL3310-1CE36-6AA0
400	750	HX	6SL3310-1CE37-4AA0
450	840	JX	6SL3310-1CE38-3AA0
500	925	JX	6SL3310-1CE38-8AA0
560	1035	JX	6SL3310-1CE41-0AA0
500 V ... 690 V			
500	535	JX	6SL3310-1CG35-3AA0
560	595	JX	6SL3310-1CG36-0AA0
630	665	JX	6SL3310-1CG36-7AA0

[1] PM330L Power Modules in the basic version comply with IEC 61800-3 Category C3
HX@380V Dimension drawing：548 mm（W）*1487.5 mm（H）*410 mm（D）
JX@380V Dimension drawing：801 mm（W）*1438 mm（H）*410 mm（D）
JX@690V Dimension drawing：801 mm（W）*1621 mm（H）*393 mm（D）

Select a Control Unit		
Designation	**Communication**	**Article No.**
CU230P-2 PN	• PROFINET (PROFIdrive, PROFIenergy) • Ethernet/IP (ODVA AC/AC Drive, SINAMICS Profile)	6SL3243-0BB30-1FA0
CU230P-2 DP	• PROFIBUS DP (PROFIdrive)	6SL3243-0BB30-1PA3
CU230P-2 HVAC	• USS / Modbus RTU / BACnet MS / TP / P1 protocol	6SL3243-0BB30-1HA3

Select an operator panel and the required accessories	
Designation	**Article No.**
Basic Operator Panel (BOP-2)	6SL3255-0AA00-4CA1
Intelligent Operator Panel (IOP)	6SL3255-0AA00-4JA1
Intelligent Operator Panel (IOP) (support Chinese language)	6SL3255-0AA00-4JC1
IOP Handheld	6SL3255-0AA00-4HA0
IOP/BOP-2 door mounting kit	6SL3256-0AP00-0JA0
SINAMICS SD card – 512 MB	6SL3054-4AG00-2AA0
PC inverter connection kit 2	6SL3255-0AA00-2CA0

G120L	PM330L	External Class A filter[2]	Line reactor [3]
Rated power kW	**Article No.**	**Article No.**	**Article No.**
380 V...440 V			
280	6SL3310-1CE35-2AA0	6SL3760-0MR00-0AA0	6SL3000-0CE36-3AA0
315	6SL3310-1CE35-8AA0		
355	6SL3310-1CE36-6AA0		6SL3000-0CE37-7AA0
400	6SL3310-1CE37-4AA0		
450	6SL3310-1CE38-3AA0		6SL3000-0CE38-7AA0
500	6SL3310-1CE38-8AA0		6SL3000-0CE41-0AA0
560	6SL3310-1CE41-0AA0		6SL3000-0CE41-0AA0
500 V...690 V			
500	6SL3310-1CG35-3AA0	6SL3760-0MS00-0AA0	6SL3000-0CH36-0AA0
560	6SL3310-1CG36-0AA0		6SL3000-0CH38-4AA0
630	6SL3310-1CG36-7AA0		6SL3000-0CH38-4AA0

[2] PM330L Power Modules with external Class A filter comply with IEC 61800-3 Category C2
[3] Line reactors are recommended for PM330L Power Modules. Grid requirement Short-circuit power Rsc > 33 line reactor required.

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743-SH902808-10150

The information in this document contains general descriptions of the technical options available, which may not apply in all cases. The required technical options should therefore be specified in the contract.