The main specification of the inverter G120 are the following:

- Wide power range - from 0.55 to 2.50 kW.
- Three variants of frequency converters with voltages of 200V, 400V and 690 V.
- Additional security features: Sinamics G120 can be equipped with two types of safety packages - STARTER or Start drive.
- System is easily combining with the diversity of applications.
- Modular design with easy connection and building.
- IP20 / IP55 Enclosure rating.
- From 4 to 11 digital in

To find out stock ability and delivery time to your region, please contact our manager.

info@eltra-trade.com
SINAMICS – the optimum drive for every application

The drive family for future-proof drive solutions

<table>
<thead>
<tr>
<th>Low voltage</th>
<th>DC voltage</th>
<th>Medium voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Performance</td>
<td>General Performance</td>
<td>For basic servo applications</td>
</tr>
<tr>
<td>V20</td>
<td>G120C/G120/G120P</td>
<td>G110D/G120D/G120P</td>
</tr>
<tr>
<td>0.12–15 kW</td>
<td>0.37–400 kW</td>
<td>0.37–7.5 kW</td>
</tr>
<tr>
<td>Pumps, fans, compressors, conveyor belts, mixers, mills, textile machines</td>
<td>Pumps, fans, compressors, conveyor technology, mixers, mills and extruders, single-axis positioning applications (G120)</td>
<td>Conveyor technology, single-axis positioning applications (G120)</td>
</tr>
</tbody>
</table>

**Engineering Tools**

| DT Configurator – selecting and configuring | SIZER – simple planning and engineering | STARTER and Startdrive – for fast commissioning, optimization and diagnostics* |

*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.

*Exception: V20 – does not require an engineering tool; G180 is commissioned using the IMS (Inverter Management Software) software

**SINAMICS – can tackle every application**

- Wide range of power ratings from 0.12 kW to 85 MW
- Available in low-voltage as well as medium-voltage versions
- Standard functionality based on a common hardware and software platform
- One standard engineering process using only two tools for all of the drives: SIZER for engineering and STARTER for parameterizing and commissioning
- High degree of flexibility and combinability

**SINAMICS offers a wealth of advantages:**

- Standard and unified operation and functionality as a result of the common hardware and software platform
- Low voltage and medium voltage
- All of the drives are engineered in exactly the same way – SIZER for engineering
- STARTER for parameterizing and commissioning
- High degree of flexibility and combinability
- Identical options
- Minimized training costs

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SINAMICS G120P fulfills the highest requirements

SINAMICS G120P inverters cover a power range from 0.37 to 400 kW, and are specifically tailored to address pump, fan and compressor applications in municipal and industrial environments. Built-in units, wall-mounting units and cabinets are available. SINAMICS G120P is used for basic variable-speed control as well as complex control tasks in building technology, the water and process industries. SINAMICS G120P sets itself apart as a result of the standard operation as well as identical selection and commissioning tools.

You can obtain more detailed information about SINAMICS G120P Cabinet and download the SINAMICS G120P Cabinet brochure at:

www.siemens.com/sinamics-g120p-cabinet
## Innovations for drive technology

### Your advantages at a glance

<table>
<thead>
<tr>
<th>Function</th>
<th>Customer benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use on public grids and in industry</strong></td>
<td></td>
</tr>
<tr>
<td>Built-in units from 0.37 kW to 400 kW</td>
<td>8 frame sizes cover a wide power range</td>
</tr>
<tr>
<td>Units for wall-mounting from 0.37 kW to 90 kW with Class A and B line filters</td>
<td>Inverters can be connected locally directly to public grids</td>
</tr>
<tr>
<td>Optional output filter</td>
<td>Adaptation to different installations and plants</td>
</tr>
<tr>
<td><strong>User-friendly handling</strong></td>
<td></td>
</tr>
<tr>
<td>Pluggable operator panels</td>
<td>Fast commissioning without requiring expert knowledge</td>
</tr>
<tr>
<td>Application support using wizards in the IOP and macros in STARTER</td>
<td>Display with user-friendly plain text (IOP) or two lines (BOP-2)</td>
</tr>
<tr>
<td>SINAMICS SD card</td>
<td>Prompted commissioning for applications in building technology as well as the water and process industries</td>
</tr>
<tr>
<td><strong>Expanded inputs/outputs</strong></td>
<td></td>
</tr>
<tr>
<td>Isolated digital inputs (own potential group)</td>
<td>Avoidance of parasitic voltages</td>
</tr>
<tr>
<td>Isolated analog inputs</td>
<td>EMC-compliant installation without requiring additional components</td>
</tr>
<tr>
<td>Two resistance thermometers can be directly connected LG-Ni1000/ PT1000</td>
<td>Temperature sensors can be connected without requiring a separate evaluation</td>
</tr>
<tr>
<td>Motor temperature monitoring</td>
<td>Motor protection by directly connecting thermistors or bimetallic sensors</td>
</tr>
<tr>
<td>Digital outputs with 230 V relay</td>
<td>Auxiliary units and actuator drives can be directly controlled</td>
</tr>
<tr>
<td><strong>Innovative functions</strong></td>
<td></td>
</tr>
<tr>
<td>Automatic restart</td>
<td>Automatic acknowledgment of the fault after a power failure and automatic restart</td>
</tr>
<tr>
<td>Flying restart</td>
<td>Inverter can be synchronized to a motor that is still rotating</td>
</tr>
<tr>
<td>Skip frequencies</td>
<td>System-resonant frequencies can be skipped</td>
</tr>
<tr>
<td>Load torque monitoring</td>
<td>Drive is equipped with dry running protection, locked rotor protection and broken belt monitoring</td>
</tr>
<tr>
<td>Real-time clock</td>
<td>Precise time stamp for fault and alarm logging buffer time up to 5 days</td>
</tr>
<tr>
<td>3 freely programmable digital timers</td>
<td>Three selectable events can be controlled as a function of the day of the week/hour/minute</td>
</tr>
<tr>
<td>Free function blocks</td>
<td>Flexible use of integrated functions for optimum use in building technology, additional external components can be eliminated</td>
</tr>
<tr>
<td>PID controller</td>
<td>The drive speed is controlled depending on process variables such as temperature/pressure/flow/air quality</td>
</tr>
<tr>
<td>Cascading drives</td>
<td>Flow rate can be adapted in an energy-efficient way by switching in or switching out up to three fixed-speed drives</td>
</tr>
<tr>
<td><strong>Communication interfaces – simple and direct integration into the automation environment</strong></td>
<td></td>
</tr>
<tr>
<td>Different communication interfaces: PROFINET, PROFINET-IP, EtherNET/IP, USS/Modbus RTU, CANopen, BACnet MS/TP, Siemens FLN P1</td>
<td>Simple integration into building control, process control and automation systems</td>
</tr>
</tbody>
</table>

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## Technical data

### SINAMICS G120P in detail

### Mechanical data

<table>
<thead>
<tr>
<th>Power Modules</th>
<th>PM230</th>
<th>PM240</th>
<th>PM330</th>
<th>PM230</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Built-in unit</td>
<td>IP20/UL Open Type</td>
<td>Wall-mounting</td>
<td></td>
</tr>
<tr>
<td>Degree of protection</td>
<td></td>
<td>Max. IP55 / UL Type 12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Operating temperature

- 0°C to +40°C, to +60°C with power derating
- 0°C to +40°C, to +50°C with power derating
- 0°C to +40°C, to +60°C with power derating

### Electrical data

#### Power rating (low overload LO)
- Rated output current
  - 0.37 ... 75 kW
  - 1.3 ... 145 A
  - 90 ... 132 kW
  - 178 ... 250 A
  - 160 ... 400 kW
  - 300 ... 735 A
  - 0.37 ... 90 kW
  - 1.3 ... 178 A

#### Line voltage
- 3-ph. 380 ... 480 V AC ±10 %

#### Line frequency
- 47 ... 63 Hz

#### Overload capability
- 0.37 to 18.5 kW: 150% for 3 s plus 110% for 57 s within a cycle of 300 s
- 110 to 132 kW: 150% for 1 s plus 110% for 59 s within a cycle of 300 s
- 160 to 400 kW: 135% for 3 s or 110% for 60 s within a cycle of 300 s
- 0.37 to 18.5 kW: 150% for 3 s plus 110% for 57 s within a cycle of 300 s
- 22 to 90 kW: 110% for 60 s within a cycle of 300 s

#### Output frequency
- 0 ... 650 Hz
- 0 ... 200 Hz
- 0 ... 100 Hz
- 0 ... 100 Hz
- 0 ... 650 Hz

#### Pulse frequency
- 4 kHz
- Higher pulse frequencies up to 16 kHz with derating
- 90 kHz: 4 kHz
- 110 to 132 kHz: 2 kHz
- Higher pulse frequencies up to 16 kHz with derating
- 4 kHz
- Higher pulse frequencies up to 16 kHz with derating

#### Motor cable lengths
- FSA to FSC: 25 m \(n/1/100 \text{ m}^2\)
- FSC to FSF: 25 m \(n/1/200 \text{ m}^2\)
- 50 m \(n/1/100 \text{ m}^2\)
- 100 m \(n/1/300 \text{ m}^2\)
- FSA to FSC: 25 m \(n/1/100 \text{ m}^2\)
- FSC to FSF: 25 m \(n/1/200 \text{ m}^2\)

### Control Unit

- CU230P-2

### Communication

#### Digital/analog inputs and outputs
- 6DI / 3DO / 4AI / 2 AO, 1x KTY / PTC / Thermo-Click sensor, 2x Ni1000-in/PT1000-in (part of the 4AI)

#### Integrated interface
- PROFINET, PROFIBUS DP, EtherNET/IP, USS / Modbus RTU, CANopen, BACnet MS/TP, Siemens FLN P1

### Functions

#### Open-loop/closed-loop control modes
- V/f (linear, square law, FCC, ECO)
- Vector control without encoder (SLVC)
- Sensorless vector control (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 brake
- DC braking, dynamic braking with integrated braking chopper
- DC braking, dynamic braking with optional braking chopper
- DC brake

#### 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 and Startdrive for PC-based commissioning

### Additional information

#### Conformance with standards
- UL, CE, C-Tick SEMI F 47
- UL, cUL CE, C-Tick SEMI F 47
- cULus, CE, C-Tick GHOST-R, KC
- UL, CE, C-Tick SEMI F 47

#### Electromagnetic compatibility (EMC)
- Devices with integrated Class A line filter to comply with EMC limit values according to EN 61800-3 Category C1
- Devices with integrated Class B line filter to comply with EMC limit values for cable-conducted interference voltages according to EN 61800-3 Category C2
- Additional line filter to comply with EMC limit values according to EN 61800-3 Category C3
- Devices with integrated Class A line filter to comply with EMC limit values according to EN 61800-3 Category C3

---

1) Compliance with EN 61800-3 Category C2
2) Maximum shielded cable length
**SINAMICS G120P 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 protection IP20, IP20 push-through for wall-mounting in degree of protection IP55

2. **Control Unit**

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

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 G120P inverter comprises the PM230, PM240, PM330 Power Modules, the CU230P-2 Control Unit as well as an operator panel (IOP or BOP-2) or optional blanking cover. 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 PM230, PM240, PM330 Power Modules in IP20**

Wall-mounting units with PM230 Power Module in IP55

**Table:**

<table>
<thead>
<tr>
<th>Degree of protection</th>
<th>Built-in units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP20/IP20 push-through</td>
<td>IP20/IP20 push-through</td>
</tr>
</tbody>
</table>

**PM230**

- **Unfiltered**
  - 6SL3210-1NE11-3
  - 6SL3210-1NE11-4
  - 6SL3210-1NE11-5
- **Class A filter**
  - 6SL3210-1NE11-6
  - 6SL3210-1NE11-7
- **Class B filter**
  - 6SL3210-1NE11-8

**PM240**

- **Unfiltered**
  - 6SL3224-0BE11-0
  - 6SL3224-0BE12-0
  - 6SL3224-0BE12-1
- **Class A filter**
  - 6SL3224-0BE12-2
  - 6SL3224-0BE12-3
- **Class B filter**
  - 6SL3224-0BE12-4

**PM330**

- **Unfiltered**
  - 6SL3310-1PE11-0
  - 6SL3310-1PE12-0
  - 6SL3310-1PE12-1
- **Class A filter**
  - 6SL3310-1PE12-2
  - 6SL3310-1PE12-3
- **Class B filter**
  - 6SL3310-1PE12-4

---

You can find additional technical data on the SINAMICS G120P as well as the SINAMICS G120P Cabinet units in Catalog D.35

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### Select a Control Unit

<table>
<thead>
<tr>
<th>Designation</th>
<th>Communication</th>
<th>Article No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU230P-2 PN</td>
<td>• PROFINET (PROFIdrive, PROFIdenergy) &lt;br&gt;• Ethernet/IP (ODVA ACIAC Drive, SINAMICS Profile)</td>
<td>6SL3243-08B30-1FA0</td>
</tr>
<tr>
<td>CU230P-2 DP</td>
<td>PROFIBUS DP (PROFIdrive)</td>
<td>6SL3243-08B30-1PA3</td>
</tr>
<tr>
<td>CU230P-2 HVAC</td>
<td>USS / Modbus RTU / BACnet MS/TP / P1 protocol</td>
<td>6SL3243-08B30-1HA3</td>
</tr>
<tr>
<td>CU230P-2 CAN</td>
<td>CANopen</td>
<td>6SL3243-08B30-1CA3</td>
</tr>
</tbody>
</table>

### Select an operator panel and the required accessories

<table>
<thead>
<tr>
<th>Designation</th>
<th>Article No.</th>
<th>Designation</th>
<th>Article No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINAMICS O&amp;O Panel (BOP-2)</td>
<td>6SL3255-0AA00-4CA1</td>
<td>SS 512 MB</td>
<td>6SL3054-4AG00-2AA0</td>
</tr>
<tr>
<td>Intelligent Operator Panel (IOP)</td>
<td>6SL3255-0AA00-4JA1</td>
<td>PC inverter connection kit 2</td>
<td>6SL3255-0AA00-2CA0</td>
</tr>
<tr>
<td>IOP Handheld</td>
<td>6SL3255-0AA00-4HA0</td>
<td>Shield connection kit 2</td>
<td>6SL3264-1EA00-0FA0</td>
</tr>
<tr>
<td>IOP/BOP-2</td>
<td>6SL3256-0AP00-0JA0</td>
<td>Door mounting kit</td>
<td>6SL3264-1EA00-0HB0</td>
</tr>
</tbody>
</table>

1) Electromagnetic compatibility
2) PM230 Power Modules with integrated Class A filter comply with EN 61800-3 Categories C2 and C3
3) PM230 Power Modules with integrated Class B filter comply with EN 61800-3 Category C1 for cable-conducted interference voltages
4) PM230 Power Modules (unfiltered) with external Class B filter comply with EN 61800-3 Category C1 for cable-conducted interference voltages
5) PM240 Power Modules with integrated and external Class A filter comply with EN 61800-3 Category C3
6) PM330 Power Modules in the basic version comply with EN 61800-3 Category C3
7) PM330 Power Modules with external Class A filter comply with EN 61800-3 Category C2
8) Line reactors are mandatory for PM330 Power Modules
Eltra Trade s.r.o. supplies full range of Siemens Drives with the best prices and delivery terms.

We supply:

- SINAMICS G150
- SINAMICS G180
- SINAMICS S120
- SINAMICS V90
- SINAMICS Perfect Harmony
- other Siemens products

To find out stock ability and delivery time to your region, please contact our manager.

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