

SINAMICS G120C compact inverters

0.55 kW to 18.5 kW (0.75 hp to 25 hp)

SINAMICS G120C compact inverters**Overview**

SINAMICS G120C frame sizes FSA, FSB and FSC with mounted blanking cover

SINAMICS G120C compact inverters offer a well-balanced combination of features to address a wide range of applications. They are compact, rugged devices that are easy to operate and can be optionally equipped with a basic or advanced operator panel.

SINAMICS G120C inverters are especially suitable when it comes to meeting the requirements of system integrators, OEMs and distributors regarding high productivity and tailored performance.

Benefits

- Compact design
- Side-by-side design
- High power density, low envelope dimensions
- Simple installation in the tightest space
- Low space requirement
- Use in small control cabinets, close to the machine
- Optimized parameter set
- Optimized commissioning
- Getting Started document
- BOP-2 or IOP operator panels can be used
- Integrated USB connection
- Simple and fast software parameter assignment
- Simple to use during commissioning and in operation
- Minimized training costs, existing SINAMICS know-how can be used
- High degree of service friendliness, simple maintenance
- Plug-in terminals
- Cloning function using BOP-2, IOP or memory card
- Operating hours counter for "drive on" and "motor on"
- Fast mechanical installation
- Intuitive standard commissioning
- Component of Totally Integrated Automation
- Energy-efficient, sensorless vector control
- Automatic flux reduction with V/f ECO
- Integrated energy saving computer
- Safety Integrated (STO)
- Communications versions with PROFINET / EtherNet/IP, PROFIBUS DP, CANopen, USS/Modbus RTU
- Coated modules
- Operation up to an ambient temperature of 60 °C (140 °F)

Design

SINAMICS G120C is a compact inverter for control cabinet mounting in IP20 degree of protection where the Control Unit (CU) and Power Module (PM) function units are combined in one device.

The compact mechanical design and the high power density allow these devices to be installed in machine control enclosures and control cabinets for maximum space utilization. The SINAMICS G120C compact inverter can be butt-mounted directly, without derating; the PROFINET version can be butt-mounted up to 55 °C (131 °F).



SINAMICS G120C, frame size FSB, with BOP-2

SINAMICS G120C can be integrated into the widest range of applications, either using the integrated digital and analog inputs or via the integrated fieldbus interface (available in the USS, Modbus RTU, PROFIBUS, PROFINET / EtherNet/IP, CANopen versions). Especially the product versions with integrated PROFIBUS/PROFINET interface make full integration into the Siemens TIA family possible, therefore allowing the advantages of the seamless TIA product family to be fully utilized. SINAMICS G120C drives are preset in the factory so that they can be immediately connected to PROFIBUS, PROFINET or CANopen fieldbus systems and used without parameterization.

SINAMICS G120C is also equipped with the safety function STO (Safe Torque Off) as standard, which is used to safely stop drives. As a consequence, machine manufacturers can simply comply with current machinery directives with minimum associated costs.

SINAMICS G120C can control asynchronous (induction) motors in the power range from 0.37 kW up to 18.5 kW (0.5 hp up to 25 hp). Reliable and efficient motor operation is achieved by using state-of-the-art IGBT technology combined with vector control. The extensive range of functions integrated in the SINAMICS G120C also offers a high degree of protection for the inverter and motor.

Line-side componentsLine reactors

Line reactors smooth the current drawn by the inverter and thus reduce harmonic components in the line current. Through the reduction of the current harmonics, the thermal load on the power components in the rectifier and in the DC-link capacitors is reduced as well as the harmonic effects on the supply. The use of a line reactor increases the service life of the inverter.

Recommended line-side power components

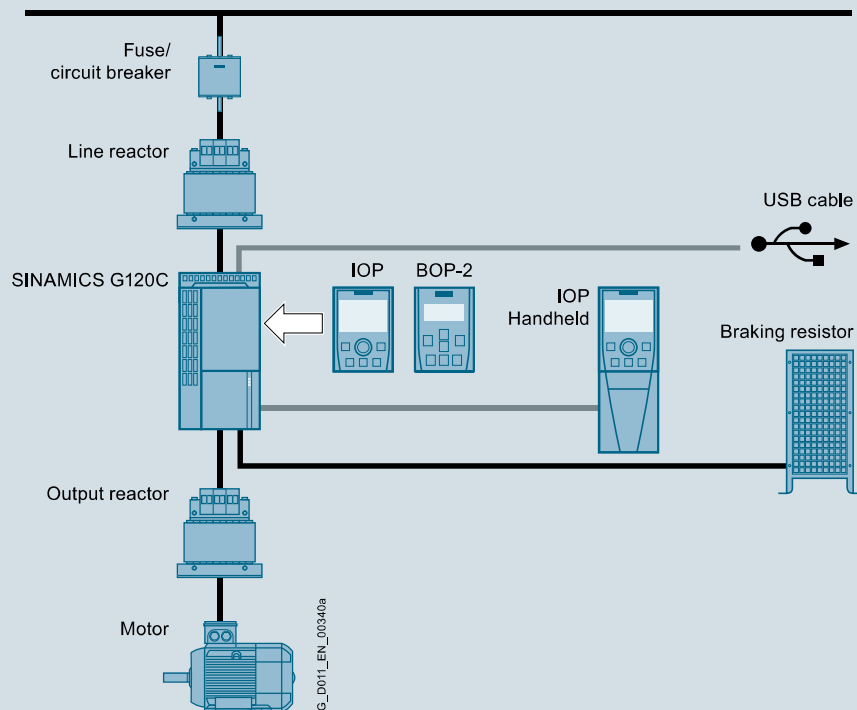
Standard fuses can be used for the SINAMICS G120C. These must be dimensioned to comply with local regulations. In this chapter, you will find recommended components such as fuses and circuit breakers in compliance with IEC and UL regulations.

SINAMICS G120C compact inverters

0.55 kW to 18.5 kW (0.75 hp to 25 hp)

SINAMICS G120C compact inverters

Design



DC link components

Braking resistors

The excess energy of the DC link is dissipated using the braking resistor. The braking resistors are designed for use with the SINAMICS G120C. This has an integrated brake chopper (electronic switch).

Load-side power components

Output reactors

Output reactors reduce the rate of voltage rise (dv/dt) and the height of the current peaks, and enable longer motor cables to be connected.

Supplementary system components

Intelligent Operator Panel IOP

Graphics-based, user-friendly and powerful operator panel for commissioning and diagnostics as well as local operator control and monitoring of SINAMICS G120C.

Basic Operator Panel BOP-2

A 2-line display to provide support when commissioning and troubleshooting the drive. The drive can be locally controlled.

Memory card

The parameter settings for an inverter can be stored on the SINAMICS SD memory card. When service is required, e.g. after the inverter has been replaced and the data have been downloaded from the memory card the drive system is immediately ready for use again. The associated memory card holder is integrated in the inverter.

PC inverter connection kit 2

For controlling and commissioning an inverter directly from a PC if the STARTER commissioning tool or SINAMICS Startdrive has been installed on the PC.

Spare parts

Shield plates

A set of shield plates is included in the scope of delivery for the motor and signal cables corresponding to the frame size of the SINAMICS G120C, and can also be ordered as spare parts.

Spare Parts Kit

This kit comprises 5 sets of I/O terminals, 1 RS485 terminal, 2 pairs of Control Unit doors (1 x PN and 1 x other communication versions) and 1 blanking cover.

Set of connectors

A set of connectors for the line feeder cable, braking resistor and motor cable can be ordered corresponding to the frame size of the SINAMICS G120C inverter.

Roof-mounted fan

A roof-mounted fan (at the top of the device) comprising a pre-assembled unit with holder and fan can be ordered corresponding to the frame size of the SINAMICS G120C.

Fan unit

A replacement fan (at the rear of the device; heat sink) comprising a pre-assembled unit with holder and fan can be ordered corresponding to the frame size of the SINAMICS G120C.