

SINAMICS G120D

The distributed frequency inverter with high degree of protection, compact, safe and capable of energy recovery



SINAMICS Drives

www.siemens.com/sinamics-g120d

SIEMENS

SINAMICS G120D

optimal mechanical design and capable of energy recovery

Applications: Conveyor systems

SINAMICS G120D has been specifically designed for sophisticated conveyor-related applications in the industrial environment where a distributed, communications-capable drive is required. This frequency inverter has been specifically tailored to assembly lines in the automobile sector.

It is also suitable for many other high-performance applications, e.g. in airports, in the food & beverage industry (without tensides) and in distribution logistics (e.g. electric suspended mono-rails).

It is a perfect fit in distributed architectures

The distributed SINAMICS G120D frequency inverter offers many advantages as a result of its extremely low profile, an identical drill pattern across power ratings and a high degree of protection.

It offers safety functions that are absolutely unique in its class. Due to its capability of line-commutated energy recovery, braking resistors are not required in the generating mode, which contributes to considerable energy savings. And of course, it goes without saying that the frequency inverter is communications-capable.

SINAMICS G120D is the frequency inverter that sets new standards in distributed architectures. It has a modular design: It comprises a Power Module and a Control Unit and covers an especially wide range of powers from 0.75 kW up to 7.5 kW.

Highlights

Mechanical system

- Low-profile design
- Can be exchanged/replaced thanks to the identical drill pattern
- Rugged metal enclosure
- High IP65 degree of protection
- As a result of its modularity only a low stock inventory required

Electronics

- Energy recovery, low harmonics are fed back into the line supply, energy saving, no braking resistors required
- Safety Integrated (STO, SS1, SLS) without encoder
- Interchangeable MMC memory card

Communication

- PROFIBUS, PROFINET, PROFIsafe
- Integrated in Totally Integrated Automation



SINAMICS G120D is part of the SINAMICS drive family for innovative and leading-edge drive solutions


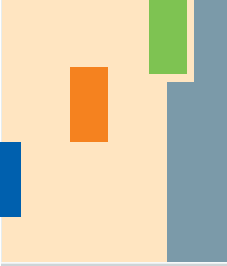

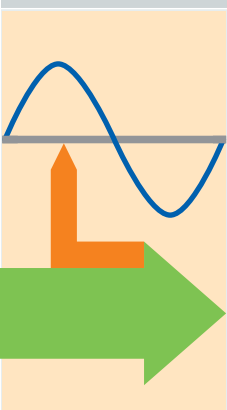
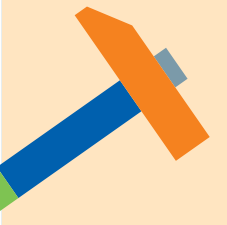
- Wide range of power ratings from 0.12 kW to 120 MW
- Both in low-voltage as well as in medium-voltage versions
- Seamless, integrated functionality by using common hardware and software platforms
- One standard engineering for all drives
 - SIZER for engineering
 - STARTER for parameterizing and commissioning
- High degree of flexibility and the ability to be combined

SINAMICS offers the optimum drive for every drive application – and all drives can be configured, parameterized, commissioned and operated in the same standard way.

Low voltage		Medium voltage
SINAMICS G 0.12 – 1500 kW	SINAMICS S 0.12 – 4500 kW	SINAMICS GM/SM/GL 0.8 – 120 MW

SINAMICS G120D

Innovations for distributed drive technology

Function	Benefits
Optimized design	
	Identical drill pattern for all power ratings from 0.75 kW to 7.5 kW Easy to exchange/replace, also with other power ratings System engineering is independent of the power required from the inverter Compact size for high power ratings
	Extremely low-profile design Low space requirement
Seamless integration & modularity	
	Power ratings from 0.75 kW to 7.5 kW Seamlessly covers all requirements of conveyor technology
	Same power unit for standard and safety versions Optimized Asset Management
	Control Unit can be operated independently of the Power Module Bus communication is not interrupted when the Power Module is replaced (Hot Swapping) High degree of system availability Can be quickly and simply replaced when a fault develops
	Plug-in connection system High degree of system availability Can be quickly and simply replaced when a fault develops
Safety Integrated acc. to Category 3 of EN 954-1 and to SIL 2 of IEC 61508	
	Safe Torque Off (STO) in compliance with EN 60204 Prevents the drive from accidentally starting Drive is safely brought into a no-torque condition Preventing restarting does not require electrical isolation between the motor and frequency inverter
	Safe Stop 1 (SS1) in compliance with EN 60204 Drive stopping is quickly and safely monitored Independent and continuous monitoring guarantees the shortest response times when a fault develops An encoder is not required
	Safely Limited Speed (SLS) in compliance with EN 60204 The drive speed is reduced and monitored Independent and continuous monitoring An encoder is not required
Energy recovery for all power ratings	
	A braking resistor is not required A braking chopper is not required Energy saving Significantly lower space requirement Simple securing of higher degree of protection Less wiring costs Shorter installation times Reduced spare parts stocking (of supplementary components) High application flexibility Significant cost saving
	Low harmonics fed back into the line supply Compensation of inductive reactive power A line reactor is not required Lower costs for reactive power compensation Reduced energy costs
	Power factor 0.9 (normally approx. 0.7) Lower current consumption (approx. 80 %) than for comparable frequency converters A cost saving (up to 20 %) over comparable frequency inverters can be achieved thanks to the reduced input current and lower cross-section of the feeder cable
	Less apparent power as for conventional frequency converters Reduced power costs Lower connection power required
Mechanical and electrical ruggedness	
	Wide voltage range from 380 V to 480 V ± 10 % Rugged with respect to voltage fluctuations High plant availability
	Completely metal housing High lifetime High plant availability
	Short-circuit-proof inputs and outputs PTC/KTY separated with respect to 24 V Increased ruggedness and availability Protected with respect to other parts of the plant or system
	Coated electronic boards/modules Extremely long operating life

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AD2-21-159-047

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