

Article No. : 6SL4112-0KP15-0A0

Client order no. :  
Order no. :  
Offer no. :  
Remarks :

Item no. :  
Consignment no. :  
Project :

Figure similar



### Rated data

Input		
Number of phases	3 AC	
Line voltage	200...240V (–20+10 %)	
Line frequency	50/60 Hz (47 ... 63 Hz)	
Voltage range (voltage class)	200 ... 240 V (230V IEC)	200 ... 240 V (240V NEC)
Rated current	22.0 A	20.0 A

Output		
Number of phases	3 AC	
Voltage range (voltage class)	200 ... 240 V (230V IEC)	200 ... 240 V (240V NEC)
Rated power (LO)	5.50 kW	7.50 hp
Rated power (HO)	4.00 kW	5.00 hp
Rated current (LO)	27.0 A	22.0 A
Rated current (HO)	19.0 A	15.2 A
Rated current (IN)	27.7 A	22.6 A
Max. output current	40.5 A	
Pulse frequency (factory setting)	4 kHz	
Output frequency for vector control	0 ... 480 Hz	
Output frequency for V/f control	0 ... 550 Hz	

Overload capability	
Low Overload (LO)	
150% rated current (LO) for 3 s, followed by 110% rated current (LO) for 57 s in a 300 s cycle time	

High Overload (HO)	
200% rated current (HO) for 3 s, followed by 150% rated current (HO) for 57 s in a 300 s cycle time	

### Electronic power supply

Voltage	24 V (20.4 ... 28.8 V)
Current demand, max.	2.00 A

### General tech. specifications

Power factor λ (typical)	
Displacement factor cos φ (typical)	0.98
Efficiency η	0.96
Sound pressure level (1m)	67 dB
Filter class (integrated)	Unfiltered

### Communication

Communication	PROFINET, Modbus TCP, EtherNet/IP
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### SINAMICS SDI Standard Operator Panel

User interface	
Operator element version	Integrated SDI standard for monitoring and diagnostics
Interface design	RJ45 with 100 MBit/s Ethernet
Display design	1.4" graphic display
Screen resolution	128 x 160 Pixel

### Inputs / outputs

Standard digital inputs	
Number	6 (additionally 2 AI configurable as 2 DI)
Switching level: 0 → 1	11 V
Switching level: 1 → 0	5 V
Max. inrush current	4 mA
Number as rapid input	1 (DI5)

Fail-safe digital inputs	
Number	1 (additionally 4 DI configurable as 2 FDI)

Digital outputs	
Number as relay changeover contact	2
Output (resistive load)	DC 30 V, max. 0.5 A
Number as transistor	1
Output (resistive load)	DC 30 V, max. 0.4 A

Analog inputs	
Number	2 (Differential input)
Resolution	16 bit

Operating mode	
Voltage bipolar	–10 ... 10 V
Voltage unipolar	0 ... 10 V
Current	0 ... 20 mA
Current monitored	4 ... 20 mA

Switching threshold as digital input	
0 → 1	11 V
1 → 0	5 V

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### Analog outputs

Number	1 (Non-isolated output)
Operating mode	
Voltage unipolar	0 ... 10 V
Current	0 ... 20 mA
Current monitored	4 ... 20 mA

### Motor temperature interface

1 input for motor temperature, connectable PTC, KTY 84, PT1000, and bimetal temperature switch
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### PTC interface

Short-circuit monitoring < 200Ohm, overtemperature>1650Ohm
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### KTY84 interface

Short-circuit monitoring < 500Ohm; wire breakage>2120Ohm; measurement current 2mA
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### PTC1000 interface

Short-circuit monitoring < 603Ohm; wire breakage>2120Ohm; measurement current 2mA
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### Closed-loop control techniques

V/f linear / square-law / parameterizable	Yes
V/f with flux current control (FCC)	Yes
V/f ECO linear / square-law	Yes
Sensorless vector control	Yes
Vector control, with sensor	Yes
Encoderless torque control	Yes
Torque control, with encoder	Yes

### Ambient conditions

Cooling	Air cooling using an integrated fan
Cooling air requirement	0.036 m³/s (1.259 ft³/s)
Installation altitude (without derating)	1,000 m (3,281 ft)
Max. ambient temperature with derating	50 °C
Ambient temperature with high overload (without derating)	45 °C
Ambient temperature with low overload (without derating)	40 °C

### Relative humidity during

Max. operation	95 %
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### Environmental conditions

#### Chemically active substances

Operation	Class 3C3, according to IEC 60721-3-3: 2002
Transport	Class 2C2 according to IEC 60721-3-2:1997 in marine- and weather-resistant transport packaging
Storage	Class 1C2 according to IEC 60721-3-1: 2002 in the transport packaging

#### Biologically active substances

Operation	Class 3B1 according to IEC 60721-3-3: 2002
Transport	Class 2B1 according to IEC 60721-3-2:1997 in the transport packaging
Storage	Class 1B1 according to IEC 60721-3-1:1997 in the transport packaging

#### Mechanically active substances

Operation	Class 3S2 according to IEC 60721-3-3: Ed. 2.2 2002 (Conductive dusts are not permitted.)
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#### Climatic environmental conditions

Operation	Class 3K3 according to IEC 60721-3-3 Ed. 2.2: 2002
Transport	Class 2K4 according to IEC 60721-3-2:1997 in the transport packaging; temperature -40 ... +70 °C; relative atmospheric humidity 5..95% (without condensation)
Storage	Class 1K4 according to IEC 60721-3-1:1997 in the transport packaging; temperature -25 ... +55 °C; relative atmospheric humidity 5..95% (without condensation), storage altitude <=4000m; condensation, spray water, ice formation, salt mist not permissible

#### Mechanical environmental conditions

Operation	Class 3M1 according to IEC 60721-3-3 Ed. 2.2: 2002
Transport	Class 2M3 according to IEC 60721-3-2:1997 in the transport packaging
Storage	Class 1M2 according to IEC 60721-3-1:1997 in the transport packaging

### Integrated Safety functions

Safety function "Safe Torque Off"	Yes
Safe Stop 1 (SS1)	Yes
Safe Motor Temperature (SMT)	No
Extended software functions can be enabled with a license using an SD card.	

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Connections	
Signal cable	
Type	Push-in connection
Conductor cross-section	0.20 ... 2.50 mm² (24 ... 12 AWG)
Line side	
Type	screw terminal
Conductor cross-section	
for single-core cables	2.00 ... 16.00 mm² (14 ... 6 AWG)
for multi-core cables	2.00 ... 16.00 mm² (14 ... 6 AWG)
Motor end	
Type	screw terminal
Conductor cross-section	2.50 ... 16.00 mm² (14 ... 6 AWG)
DC link	
Type	screw terminal
Conductor cross-section	2.00 ... 16.00 mm² (14 ... 6 AWG)
PE connection	
Type	M4, screw terminal
Conductor cross-section	2.00 ... 16.00 mm² (14 ... 6 AWG)
Type	screw terminal, M4
Conductor cross-section	2.00 ... 16.00 mm² (14 ... 6 AWG)
Max. motor cable length	
Shielded	200 m (656 ft)
Unshielded	300 m (984 ft)

Mechanical data	
Degree of protection	IP55 / UL type 12
Frame size	FSC
Net weight	21.1 kg (46.52 lb)
Dimensions	
Width	245 mm (9.65 in)
Height	460 mm (18.11 in)
Depth	250 mm (9.84 in)

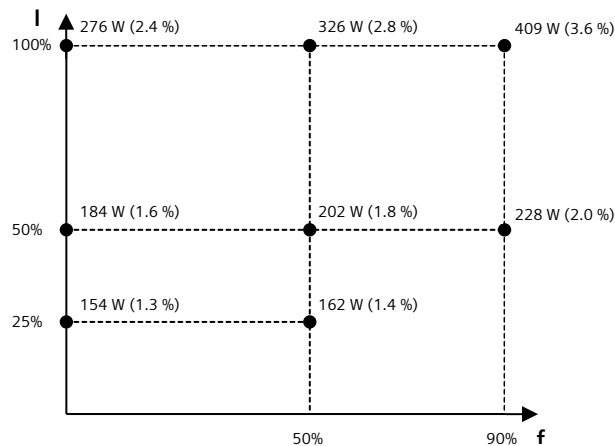
Memory card	
1 slot for SD card	SINAMICS SD card, 8GByte

Certificates	
Certificate of suitability	CE, cULus (UL 61800-5-1, CSA 22.2 No. 274) , EAC, UKCA
CE marking	
EMC directive 2014/30/EU; Low Voltage Directive 2014/35/EU; RoHS Directive 2011/65/EU; energy efficiency and eco design 2009/125/EU	
Verification of suitability for fail-safety	SIL 3 according to IEC 61508 and IEC 61800-5-2, PL e according to ISO 13849-1, Category 4 according to ISO 13849-1
Environmental compatibility	RoHS II, REACH, Green Passport
Explosion protection	-
shipbuilding approval	No

Converter losses to IEC61800-9-2*	
Efficiency class	IE2
In scope of Ecodesign Directive	No (in the valid range)
Reason of exception	no exception

### IEC power loss data based on

Input	3 AC 230 V, 50 Hz
Output	3 AC 0 - 230 V, 50 Hz, 4 kHz Space-vector modulation
Rated apparent power	11 kVA
Power loss in standby	31.2 W (0.3%)



## Data sheet for SINAMICS G220

Article No. : 6SL4112-0KP15-0AF0

NEC power loss data based on

Input	3 AC 240 V, 60 Hz
Output	3 AC 0 - 240 V, 60 Hz, 4 kHz Space-vector modulation
Rated apparent power	9.4 kVA
Power loss in standby	31.2 W (0.3%)

the absolute power losses for motor voltages according to NEC (AC 230 V, AC 460 V, AC 575 V) are approximately 2 % lower

The percentage values show the losses in relation to the rated apparent power of the converter.

The diagram shows the losses for the points (as per standard IEC61800-9-2) of the relative torque generating current (I) over the relative motor stator frequency (f). The values are valid for the basic version of the converter without options/components.

\*calculated values

