

Article No. : 6SL4112-0KQ15-0AF0

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 $\cos \varphi$ (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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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

PTC1000 interface

Short-circuit monitoring < 603Ohm; wire breakage > 2120Ohm; measurement current 2mA

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 m ³ /s (1.259 ft ³ /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

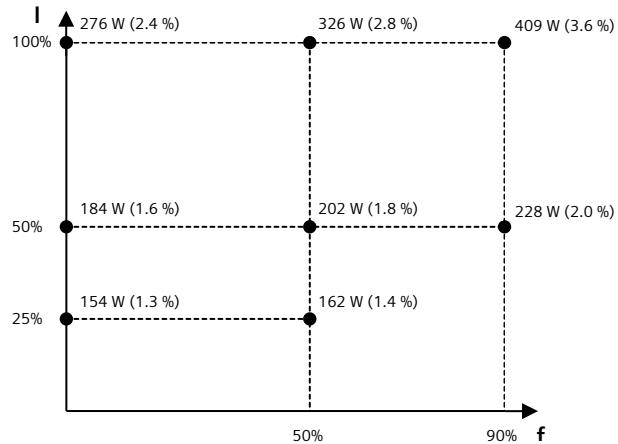
Integrated Safety functions

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		Certificates	
Signal cable			
Type	Push-in connection	Certificate of suitability	CE, cULUs (UL 61800-5-1, CSA 22.2 No. 274), EAC, UKCA
Conductor cross-section	0.20 ... 2.50 mm ² (24 ... 12 AWG)	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
Line side			
Type	screw terminal	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
Conductor cross-section		Environmental compatibility	RoHS II, REACH, Green Passport
for single-core cables	2.00 ... 16.00 mm ² (14 ... 6 AWG)	Explosion protection	-
for multi-core cables	2.00 ... 16.00 mm ² (14 ... 6 AWG)	Shipbuilding approval	No
Motor end		Converter losses to IEC61800-9-2*	
Type	screw terminal	Efficiency class	IE2
Conductor cross-section	2.50 ... 16.00 mm ² (14 ... 6 AWG)	In scope of Ecodesign Directive	No (in the valid range)
DC link		Reason of exception	no exception
Type	screw terminal	IEC power loss data based on	
Conductor cross-section	2.00 ... 16.00 mm ² (14 ... 6 AWG)	Input	3 AC 230 V, 50 Hz
PE connection		Output	3 AC 0 - 230 V, 50 Hz, 4 kHz Space-vector modulation
Type	M4, screw terminal	Rated apparent power	11 kVA
Conductor cross-section	2.00 ... 16.00 mm ² (14 ... 6 AWG)	Power loss in standby	31.2 W (0.3%)
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	F3C		
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		



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

