

Article No. : 6SL4113-0DA18-2AF0



Figure similar

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

Item no. :
Consignment no. :
Project :

Rated data		
Input		
Number of phases	3 AC	
Line voltage	380...415V / 440...500V (-20+10 %)	
Line frequency	50/60 Hz (47 ... 63 Hz)	
Voltage range (voltage class)	380 ... 415 V (400V IEC)	440 ... 500 V (480V NEC)
Rated current	31.0 A	25.0 A
Output		
Number of phases	3 AC	
Voltage range (voltage class)	380 ... 415 V (400V IEC)	440 ... 500 V (480V NEC)
Rated power (LO)	15.00 kW	20.00 hp
Rated power (HO)	11.00 kW	15.00 hp
Rated current (LO)	34.0 A	27.0 A
Rated current (HO)	27.0 A	21.0 A
Rated current (IN)	34.9 A	27.7 A
Rated Current (SRM)	35.0 A	
Max. output current	54.0 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 $\cos \phi$ (typical)	0.98	
Efficiency η	0.97	
Sound pressure level (1m)	67 dB with the control cabinet closed	
Filter class (integrated)	RFI suppression filter for Category C2	

Communication		
Communication		PROFINET, Modbus TCP, EtherNet/IP
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

PTC interface

Short-circuit monitoring < 200Ohm, overtemperature > 1650Ohm

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	60 °C
Ambient temperature with high overload (without derating)	50 °C
Ambient temperature with low overload (without derating)	45 °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 3S1 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		Certificate of suitability	CE, KC, cULus (UL 61800-5-1, CSA 22.2 No. 274), EAC, UKCA
Type	Push-in connection	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
Conductor cross-section	0.20 ... 2.50 mm ² (24 ... 12 AWG)	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
Line side		Environmental compatibility	RoHS II, REACH, Green Passport
Type	screw terminal	Explosion protection	-
Conductor cross-section		Shipbuilding approval	No
for single-core cables	2.00 ... 16.00 mm ² (14 ... 6 AWG)	Converter losses to IEC61800-9-2*	
for multi-core cables	2.00 ... 16.00 mm ² (14 ... 6 AWG)	Efficiency class	IE2
Motor end		In scope of Ecodesign Directive	No (in the valid range)
Type	screw terminal	Reason of exception	no exception
Conductor cross-section	2.50 ... 16.00 mm ² (14 ... 6 AWG)	IEC power loss data based on	
DC link		Input	3 AC 400 V, 50 Hz
Type	screw terminal	Output	3 AC 0 - 400 V, 50 Hz, 4 kHz Space-vector modulation
Conductor cross-section	2.00 ... 16.00 mm ² (14 ... 6 AWG)	Rated apparent power	24.2 kVA
PE connection		Power loss in standby	19.8 W (0.1%)
Type	M4, screw terminal		
Conductor cross-section	2.00 ... 16.00 mm ² (14 ... 6 AWG)		
Max. motor cable length			
Shielded	200 m (656 ft)		
Unshielded	300 m (984 ft)		
with EMC category C2			
Shielded	150 m (492 ft)		
Mechanical data			
Degree of protection	IP20 / UL open type		
Frame size	FSC		
Net weight	10.0 kg (22.05 lb)		
Dimensions			
Width	125 mm (4.92 in)		
Height	355 mm (13.98 in)		
Depth	209 mm (8.23 in)		
Memory card			
1 slot for SD card	SINAMICS SD card, 8GByte		

NEC power loss data based on

Input	3 AC 480 V, 60 Hz
Output	3 AC 0 - 480 V, 60 Hz, 4 kHz Space-vector modulation
Rated apparent power	23 kVA
Power loss in standby	19.8 W (0.1%)

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

