

Article No. : 6SL3220-3YE24-1AF0



Figure similar

Client order no. :  
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### Rated data

#### Input

Number of phases	3 AC	
Line voltage	380 ... 480 V +10 % -20 %	
Line frequency	47 ... 63 Hz	
<b>Rated voltage</b>	<b>400V IEC</b>	<b>480V NEC</b>
Rated current (LO)	17.00 A	14.30 A
Rated current (HO)	13.25 A	10.60 A

#### Output

Number of phases	3 AC	
<b>Rated voltage</b>	<b>400V IEC</b>	<b>480V NEC<sup>1)</sup></b>
Rated power (LO)	7.50 kW	10.00 hp
Rated power (HO)	5.50 kW	7.50 hp
Rated current (LO)	18.00 A	14.00 A
Rated current (HO)	13.20 A	11.00 A
Rated current (IN)	18.50 A	
Max. output current	24.00 A	
Pulse frequency	4 kHz	
Output frequency for vector control	0 ... 200 Hz	
Output frequency for V/f control	0 ... 550 Hz	

#### Overload capability

Low Overload (LO)	
110% base load current IL for 60 s in a 300 s cycle time	
High Overload (HO)	
150% x base load current IH for 60 s within a 600 s cycle time	

General tech. specifications	
Power factor $\lambda$	0.70 ... 0.85
Offset factor $\cos \varphi$	0.96
Efficiency $\eta$	0.97
Sound pressure level (1m)	63 dB
Power loss <sup>3)</sup>	0.259 kW
Filter class (integrated)	RFI suppression filter for Category C2
EMC category (with accessories)	Category C2
Safety function "Safe Torque Off"	without SIRIUS device (e.g. via S7-1500F)

### Communication

Communication PROFINET, EtherNet/IP

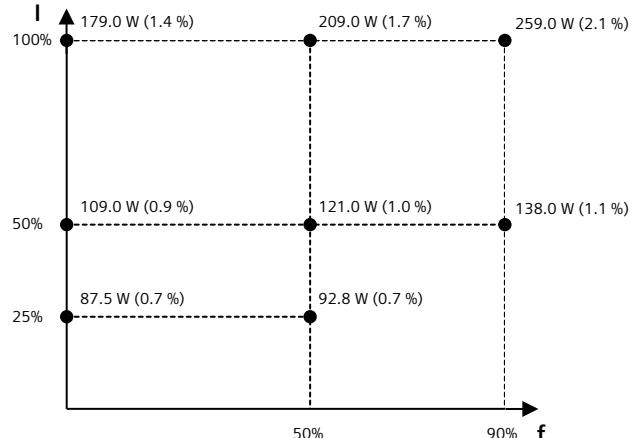
### Inputs / outputs

<b>Standard digital inputs</b>	
Number	6
Switching level: 0 → 1	11 V
Switching level: 1 → 0	5 V
Max. inrush current	15 mA
<b>Fail-safe digital inputs</b>	
Number	1
<b>Digital outputs</b>	
Number as relay changeover contact	2
Output (resistive load)	DC 30 V, 5.0 A
Number as transistor	0
<b>Analog / digital inputs</b>	
Number	2 (Differential input)
Resolution	10 bit
<b>Switching threshold as digital input</b>	
0 → 1	4 V
1 → 0	1.6 V
<b>Analog outputs</b>	
Number	1 (Non-isolated output)
<b>PTC/ KTY interface</b>	
1 motor temperature sensor input, sensors that can be connected PTC, KTY and Thermo-Click, accuracy $\pm 5^\circ\text{C}$	

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	No
Encoderless torque control	No
Torque control, with encoder	No

Article No. : 6SL3220-3YE24-1AF0

Ambient conditions		Mechanical data	
Standard board coating type	Class 3C2, according to IEC 60721-3-3: 2002	Degree of protection	IP20 / UL open type
Cooling	Air cooling using an integrated fan	Frame size	FSB
Cooling air requirement	0.009 m <sup>3</sup> /s (0.325 ft <sup>3</sup> /s)	Net weight	6.16 kg (13.58 lb)
Installation altitude	1,000 m (3,280.84 ft)	Dimensions	
Ambient temperature		Width	100 mm (3.94 in)
Operation	-20 ... 45 °C (-4 ... 113 °F)	Height	275 mm (10.83 in)
Transport	-40 ... 70 °C (-40 ... 158 °F)	Depth	218 mm (8.58 in)
Storage	-25 ... 55 °C (-13 ... 131 °F)	Standards	
Relative humidity		Compliance with standards	UL, cUL, CE, C-Tick (RCM), EAC, KCC, SEMI F47, REACH
Max. operation	95 % At 40 °C (104 °F), condensation and icing not permissible	CE marking	EMC Directive 2004/108/EC, Low-Voltage Directive 2006/95/EC
Connections			
Signal cable			
Conductor cross-section	0.15 ... 1.50 mm <sup>2</sup> (AWG 24 ... AWG 16)	Converter losses to IEC61800-9-2*	
Line side			
Version	screw-type terminal	Efficiency class	IE2
Conductor cross-section	1.50 ... 6.00 mm <sup>2</sup> (AWG 16 ... AWG 10)	Comparison with the reference converter (90% / 100%)	38.3 %
Motor end			
Version	Screw-type terminals		
Conductor cross-section	1.50 ... 6.00 mm <sup>2</sup> (AWG 16 ... AWG 10)		
DC link (for braking resistor)			
PE connection	On housing with M4 screw		
Max. motor cable length			
Shielded	150 m (492.13 ft)		



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.

\*converted values

<sup>1)</sup>The output current and HP ratings are valid for the voltage range 440V-480V

<sup>2)</sup>Typical value. More information can be found in the element group "Converter losses to IEC 61800-9-2" in this datasheet.

Article No. : 6SL3220-3YE24-1AF0

### Operator panel: Intelligent Operator Panel (IOP-2)

Screen		Ambient conditions	
Display design	LCD color	Ambient temperature	
Screen resolution	320 x 240 Pixel	Operation	0 ... 50 °C (32 ... 122 °F) 55 °C only with door installation kit
Mechanical data		Relative humidity at 25°C during	
Degree of protection	IP55 / UL type 12	Storage	-40 ... 70 °C (-40 ... 158 °F)
Net weight	0.134 kg (0.30 lb)	Transport	-40 ... 70 °C (-40 ... 158 °F)
Dimensions			
Width	70.00 mm (2.76 in)	Max. operation	95 %
Height	106.85 mm (4.21 in)	Certificate of suitability	CE, cULus, EAC, KCC, RCM
Depth	19.65 mm (0.77 in)	Approvals	

Article No. : 6SL3220-3YE24-1AF0

I/O Extension Module	
Inputs / outputs	Mechanical data
<b>Digital inputs</b>	<b>Dimensions</b>
Number of digital inputs <sup>1)</sup> 2	Width 71 mm (2.80 in)
Conductor cross-section 0.5 ... 1.5 mm <sup>2</sup> (AWG 21 ... AWG 16) Alternatively 2 x 0.5 mm <sup>2</sup>	Height 117 mm (4.61 in)
Input voltage (0→1) 11 V	Depth 27 mm (1.06 in)
Input voltage (1→0) 5 V	
Input voltage, max. 30 V	
<b>Digital outputs</b>	
Number of digital outputs 4	
Conductor cross-section 1.5 mm <sup>2</sup> (AWG 16)	
Output current <sup>2)</sup> 2 A	
<b>Analog inputs</b>	
Number of analog inputs <sup>3)</sup> 2	
Conductor cross-section 0.5 ... 1.5 mm <sup>2</sup> (AWG 21 ... AWG 16) alternatively 2*0.5 mm <sup>2</sup>	
Current 0 ... 20 mA	
<b>Analog outputs</b>	
Number of analog outputs 2	
Type of analog outputs <sup>4)</sup> Non-isolated output	
Conductor cross-section 0.5 ... 1.5 mm <sup>2</sup> (AWG 21 ... AWG 16) Alternatively 2 x 0.5 mm <sup>2</sup>	
Output voltage 0 ... 10 V	
Output current 0 ... 20 mA	

<sup>1)</sup>DI 6: digital input; DI 7: P or M switch; DI COM: Input for Control Unit interface (24 V out, max. 250 mA)

<sup>2)</sup>The max. current depends on the temperature and the size of the connected converted. It varies between 2 A and 3 A at 30 V DC.

<sup>3)</sup>2 analog inputs for the connection of Pt1000/Ni1000 temperature sensors. One of which can be optionally used as analog input.

<sup>4)</sup>Switchable between voltage (0 ... 10 V) and current (0 ... 20 mA) using a parameter

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