



Figure similar

### MLFB-Ordering data

6SL3220-3YE28-0AF0

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

Rated data			General tech. specifications	
<b>Input</b>			<b>Power factor <math>\lambda</math></b>	0.70 ... 0.85
Number of phases	3 AC		<b>Offset factor <math>\cos \phi</math></b>	0.96
Line voltage	380 ... 480 V +10 % -20 %		<b>Efficiency <math>\eta</math></b>	0.98
Line frequency	47 ... 63 Hz		<b>Sound pressure level (1m)</b>	67 dB
Rated voltage	400V IEC	480V NEC	<b>Power loss</b>	0.396 kW
Rated current (LO)	29.50 A	29.50 A	<b>Filter class (integrated)</b>	RFI suppression filter for Category C2
Rated current (HO)	23.97 A	24.50 A	<b>EMC category (with accessories)</b>	Category C2
<b>Output</b>			<b>Ambient conditions</b>	
Number of phases	3 AC		<b>Standard board coating type</b>	Class 3C2, according to IEC 60721-3-3: 2002
Rated voltage	400V IEC	480V NEC	<b>Cooling</b>	Air cooling using an integrated fan
Rated power (LO)	15.00 kW	20.00 hp	<b>Cooling air requirement</b>	0.018 m <sup>3</sup> /s (0.653 ft <sup>3</sup> /s)
Rated power (HO)	11.00 kW	15.00 hp	<b>Installation altitude</b>	1000 m (3280.84 ft)
Rated current (LO)	32.00 A	27.00 A	<b>Ambient temperature</b>	
Rated current (HO)	26.00 A	21.00 A	<b>Operation</b>	-20 ... 45 °C (-4 ... 113 °F)
Rated current (IN)	33.00 A		<b>Transport</b>	-40 ... 70 °C (-40 ... 158 °F)
Max. output current	43.00 A		<b>Storage</b>	-25 ... 55 °C (-13 ... 131 °F)
Pulse frequency	4 kHz		<b>Relative humidity</b>	
Output frequency for vector control	0 ... 200 Hz		<b>Max. operation</b>	95 % At 40 °C (104 °F), condensation and icing not permissible
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



Figure similar

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### Mechanical data

Degree of protection	IP20 / UL open type
Size	FSC
Net weight	8 kg (16.89 lb)
Width	140 mm (5.51 in)
Height	295 mm (11.61 in)
Depth	218 mm (8.58 in)

### Inputs / outputs

#### Standard digital inputs

Number	6
Switching level: 0→1	11 V
Switching level: 1→0	5 V
Max. inrush current	15 mA

#### Fail-safe digital inputs

Number	1
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#### Digital outputs

Number as relay changeover contact	2
Output (resistive load)	DC 30 V, 5.0 A
Number as transistor	0

#### Analog / digital inputs

Number	2 (Differential input)
Resolution	10 bit

#### Switching threshold as digital input

0→1	4 V
1→0	1.6 V

#### Analog outputs

Number	1 (Non-isolated output)
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#### PTC/ KTY interface

1 motor temperature sensor input, sensors that can be connected: PTC, KTY and Thermo-Click, accuracy ±5 °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	Yes
Torque control, with encoder	No

### Communication

Communication	PROFINET, EtherNet/IP
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### Connections

#### Signal cable

Conductor cross-section	0.15 ... 1.50 mm <sup>2</sup> (AWG 24 ... AWG 16)
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#### Line side

Version	screw-type terminal
Conductor cross-section	1.50 ... 16.00 mm <sup>2</sup> (AWG 16 ... AWG 6)

#### Motor end

Version	Screw-type terminals
Conductor cross-section	1.50 ... 16.00 mm <sup>2</sup> (AWG 16 ... AWG 6)

#### DC link (for braking resistor)

PE connection	On housing with M4 screw
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#### Max. motor cable length

Shielded	150 m (492.13 ft)
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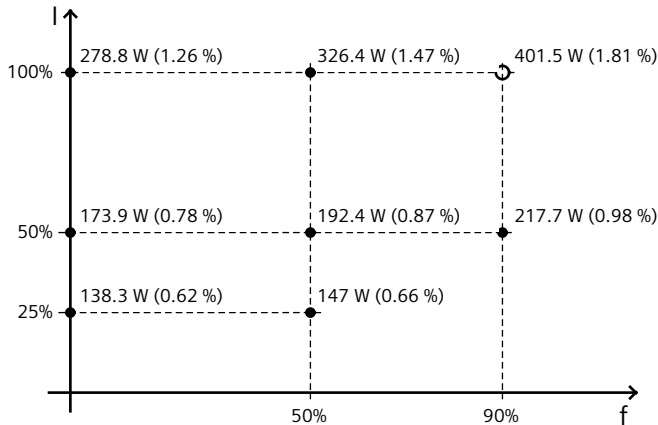
Figure similar

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### Converter losses to EN 50598-2\*

Efficiency class	IE2
Comparison with the reference converter (90% / 100%)	-35.90 %



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 EN 50598) 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

### Standards

**Compliance with standards** UL, cUL, CE, C-Tick (RCM), EAC, KCC, SEMI F47, REACH

### CE marking

EMC Directive 2004/108/EC, Low-Voltage Directive 2006/95/EC

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

#### Screen

Display design	LCD colors
Screen resolution	320 x 240 Pixel

#### Mechanical data

Degree of protection	IP55 / UL type 12
Net weight	0.13 kg (0.30 lb)
Width	70.0 mm (2.76 in)
Height	106.85 mm (4.21 in)
Depth	19.65 mm (0.77 in)

#### Ambient conditions

##### Ambient temperature during

Operation	0 ... 50 °C (32 ... 122 °F)
	55 °C only with door mounting kit
Storage	-40 ... 70 °C (-40 ... 158 °F)
Transport	-40 ... 70 °C (-40 ... 158 °F)

##### Relative humidity at 25°C during

Max. operation	95 %
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### Approvals

**Certificate of suitability** CE, cULus, EAC, KCC, RCM