



Figure similar

### MLFB-Ordering data

6SL3220-1YE28-0UP0

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

Rated data			General tech. specifications	
<b>Input</b>				
Number of phases	3 AC		Power factor $\lambda$	0.70 ... 0.85
Line voltage	380 ... 480 V +10 % -20 %		Offset factor $\cos \phi$	0.96
Line frequency	47 ... 63 Hz		Efficiency $\eta$	0.98
Rated voltage	400V IEC	480V NEC	Sound pressure level (1m)	67 dB
Rated current (LO)	29.50 A	29.50 A	Power loss	0.396 kW
Rated current (HO)	23.97 A	24.50 A	Filter class (integrated)	Unfiltered
<b>Output</b>				
Number of phases	3 AC		EMC category (with accessories)	without
Rated voltage	400V IEC	480V NEC	<b>Ambient conditions</b>	
Rated power (LO)	15.00 kW	20.00 hp	Standard board coating type	Class 3C2, according to IEC 60721-3-3: 2002
Rated power (HO)	11.00 kW	15.00 hp	Cooling	Air cooling using an integrated fan
Rated current (LO)	32.00 A	27.00 A	Cooling air requirement	0.018 m <sup>3</sup> /s (0.653 ft <sup>3</sup> /s)
Rated current (HO)	26.00 A	21.00 A	Installation altitude	1000 m (3280.84 ft)
Rated current (IN)	33.00 A		<b>Ambient temperature</b>	
Max. output current	43.00 A		Operation	-20 ... 45 °C (-4 ... 113 °F)
Pulse frequency	4 kHz		Transport	-40 ... 70 °C (-40 ... 158 °F)
Output frequency for vector control	0 ... 200 Hz		Storage	-25 ... 55 °C (-13 ... 131 °F)
Output frequency for V/f control	0 ... 550 Hz		<b>Relative humidity</b>	
			Max. operation	95 % At 40 °C (104 °F), condensation and icing not permissible

### 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



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### Mechanical data

Degree of protection	IP20 / UL open type
Size	FSC
Net weight	7 kg (15.74 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	PROFIBUS DP
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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)
Unshielded	300 m (984.25 ft)



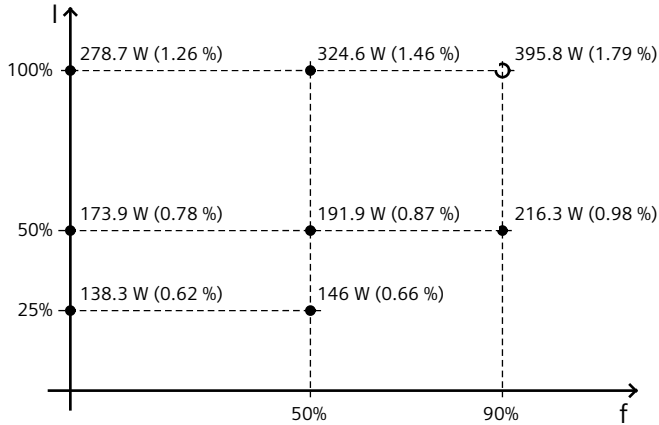
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### Converter losses to EN 50598-2\*

Efficiency class	IE2
Comparison with the reference converter (90% / 100%)	-35.40 %



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