



Figure similar

### MLFB-Ordering data

6SL3220-3YH28-1UF0

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>	0.90 ... 0.95
Number of phases	3 AC		<b>Offset factor <math>\cos \phi</math></b>	0.99
Line voltage	500 ... 690 V +10 % -20 %		<b>Efficiency <math>\eta</math></b>	0.98
Line frequency	47 ... 63 Hz		<b>Sound pressure level (1m)</b>	70 dB
Rated voltage	690V IEC	600V NEC	<b>Power loss</b>	0.450 kW
Rated current (LO)	18.00 A	18.00 A	<b>Filter class (integrated)</b>	Unfiltered
Rated current (HO)	14.60 A	14.60 A	<b>EMC category (with accessories)</b>	without
<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	690V IEC	600V NEC	<b>Cooling</b>	Air cooling using an integrated fan
Rated power (LO)	15.00 kW	15.00 hp	<b>Cooling air requirement</b>	0.055 m <sup>3</sup> /s (1.942 ft <sup>3</sup> /s)
Rated power (HO)	11.00 kW	10.00 hp	<b>Installation altitude</b>	1000 m (3280.84 ft)
Rated current (LO)	19.00 A	19.00 A	<b>Ambient temperature</b>	
Rated current (HO)	14.00 A	14.00 A	<b>Operation</b>	-20 ... 45 °C (-4 ... 113 °F)
Rated current (IN)	20.00 A		<b>Transport</b>	-40 ... 70 °C (-40 ... 158 °F)
Max. output current	26.00 A		<b>Storage</b>	-25 ... 55 °C (-13 ... 131 °F)
Pulse frequency	2 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	FSD
Net weight	17 kg (36.60 lb)
Width	200 mm (7.87 in)
Height	472 mm (18.58 in)
Depth	248 mm (9.76 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	10.00 ... 35.00 mm <sup>2</sup> (AWG 8 ... AWG 2)

#### Motor end

Version	Screw-type terminals
Conductor cross-section	10.00 ... 35.00 mm <sup>2</sup> (AWG 8 ... AWG 2)

#### DC link (for braking resistor)

PE connection	Screw-type terminals
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#### Max. motor cable length

Shielded	200 m (656.17 ft)
Unshielded	300 m (984.25 ft)



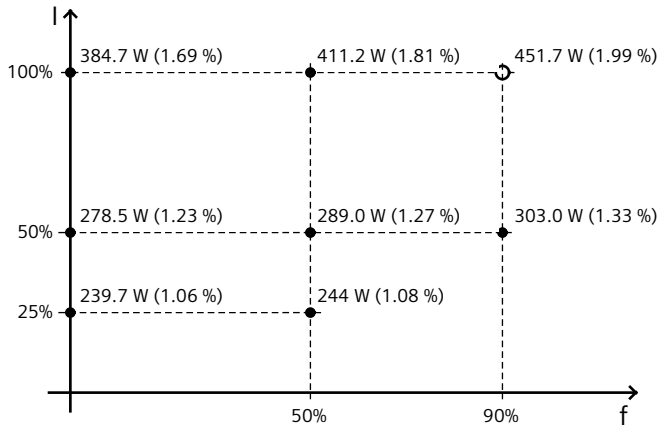
Figure similar

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

Efficiency class	IE2
Comparison with the reference converter (90% / 100%)	-39.40 %



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

### 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

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

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

<b>Max. operation</b>	95 %
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### Approvals

<b>Certificate of suitability</b>	CE, cULus, EAC, KCC, RCM
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### I/O Extension Module

Technical specifications for the I/O Extension Modul are available via direct input (MLFB 6SL3255-0BE00-0AA0).