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Data sheet for SINAMICS G120X

MLFB-Ordering data

6SL3220-3YH58-1CF0

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	500 ... 690 V +10 % -10 %	
Line frequency	47 ... 63 Hz	
Rated voltage	**690V IEC**	**600V NEC**
Rated current (LO)	416.00 A	408.00 A
Rated current (HO)	327.00 A	333.00 A

Output

Number of phases	3 AC	
Rated voltage	**690V IEC**	**600V NEC**
Rated power (LO)	355.00 kW	400.00 hp
Rated power (HO)	315.00 kW	350.00 hp
Rated current (LO)	385.00 A	388.00 A
Rated current (HO)	330.00 A	320.00 A
Rated current (IN)	400.00 A	
Max. output current	529.00 A	
Pulse frequency	2 kHz	
Output frequency for vector control	0 ... 100 Hz	
Output frequency for V/f control	0 ... 100 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 λ	0.75 ... 0.93
Offset factor cos φ	0.96
Efficiency η	0.98
Sound pressure level (1m)	74 dB
Power loss	6.191 kW
Filter class (integrated)	RFI suppression filter for Category C3
EMC category (with accessories)	Category C3

Ambient conditions

Standard board coating type	Class 3C2, according to IEC 60721-3-3: 2002
Cooling	Air cooling using an integrated fan
Cooling air requirement	0.362 m³/s (12.784 ft³/s)
Installation altitude	1000 m (3280.84 ft)

Ambient temperature

Operation	0 ... 45 °C (32 ... 113 °F)
Transport	-40 ... 70 °C (-40 ... 158 °F)
Storage	-25 ... 55 °C (-13 ... 131 °F)

Relative humidity

Max. operation	95 % At 40 °C (104 °F), condensation and icing not permissible

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Mechanical data

Degree of protection	IP20 / UL open type
Size	FSH
Net weight	158 kg (348.33 lb)
Width	548 mm (21.57 in)
Height	1695 mm (66.73 in)
Depth	393 mm (15.47 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

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)

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

Connections

Signal cable

Conductor cross-section	0.15 ... 1.50 mm² (AWG 24 ... AWG 16)

Line side

Version	M12 screw
Conductor cross-section	240.00 mm² (MCM 2 x 500 ... MCM 4 x 500)

Motor end

Version	M12 screw
Conductor cross-section	240.00 mm² (MCM 2 x 500 ... MCM 4 x 500)

DC link (for braking resistor)

PE connection	M12 screw

Max. motor cable length

Shielded	150 m (492.13 ft)

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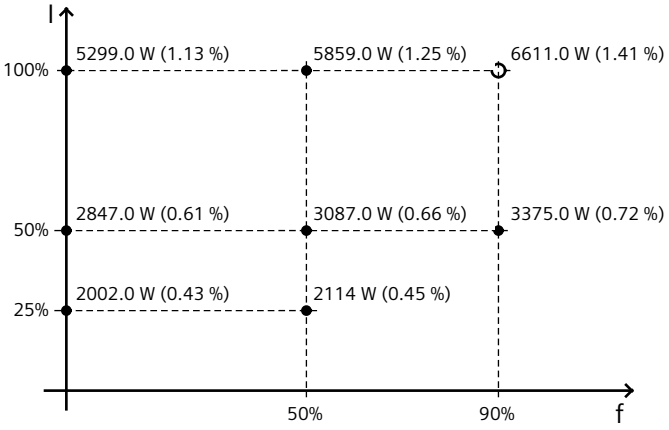
Figure similar

Converter losses to EN 50598-2*

Efficiency class	IE2
Comparison with the reference converter (90% / 100%)	-34.60 %



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 %

Approvals

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

I/O Extension Module

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